2022 CALIFORNIA GAS REPORT
Workpapers

REDACTED VERSION

Prepared By:

SoCalGas

A Sempra Energy utility®

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2022 CALIFORNIA GAS REPORT

HISTORICAL DATA

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND SENDOUT - MMCF/DAY
RECORDED YEARS 2017 T O 2021

Line	CAPACIT Y AVAILABLE		2017	2018	2019	2020	2021
1	California Source Gas						
	Out-of-State Gas						
2	California Offshore -POPCO / PIOC						
3	El Paso Natural Gas Co.						
4	Transwestern Pipeline Co.						
5	Kern / Mojave						
6	PGT / PG&E						
7	Other						
8	Total Out-of-State Gas						
9	TOTAL CAPACITY AVAILABLE						
	GAS SUPPLY T AKEN						
10	California Source Gas		84	104	97	87	86
	Out-of-State Gas						
11	Other Out-of-State		2,434	2,246	2,305	2,366	2,377
12	Total Out-of-State Gas		2,434	2,246	2,305	2,366	2,377
13	TOTAL SUPPLY TAKEN		2,518	2,350	2,402	2,453	2,463
14	Net Underground Storage Withdrawal		(14)	(8)	7	(19)	(20)
15	TOTAL THROUGHPUT (1)(2)		2,504	2,342	2,409	2,435	2,443
	DELIVERIES BY END-USE						
16	Core	Residential	565	569	645	635	621
17		Commercial	214	217	226	196	211
18		Industrial	55	57	61	53	55
19		NGV	38	40	41	37	40
20		Subtotal	872	883	973	920	927
21	Noncore	Commercial	56	59	58	57	57
22		Industrial	389	389	**357**	369	376
23		EOR Steaming	39	38	51	51	34
24		Electric Generation	713	615	589	641	654
25		Subtotal	1,198	1,101	1,055	1,118	1,121
26	Wholesale/International		401	333	342	374	372
27	Co. Use & LUAF		33	25	39	23	23
28	SYSTEM TOTAL-THROUGHPUT (1)(2)		2,504	2,342	2,409	2,435	2,443
	TRANSPORTATION AND EXCHANGE						
29	Core	All End Uses	62	71	74	63	64
30	Noncore	Commercial/Industrial	446	448	415	426	433
31		EOR Steaming	39	38	51	51	34
32		Electric Generation	713	623	589	641	654
33		Subtotal-Retail	1,260	1,181	1,129	1,181	1,185
34	Wholesale/International		401	333	342	374	372
35	TOTAL TRANSPORTATION & EXCHANGE		1,660	1,514	1,471	1,554	1,557
36	CURTAILMENT (3)						
37	REFUSAL						
38		Total BTU Factor (Dth/Mcf)	1.0343	1.0319	1.0336	1.0293	1.0322

NOT ES:
(1) The wholesale volumes only reflect natural gas supplied by SoCalGas; and, do not include supplies from other sources.
Refer to the supply source data provided in each utility's report for a complete accounting of their supply sources.
(2) Deliveries by end-use includes sales, transportation, and exchange volumes and data includes effect of prior period adjustments.
(3) The table does not explicitly show any curtailment numbers for the recorded years because, during some curtailment events.
the estimate of the curtailed volume is not available. This table does not explicitly show any curtailment data for the recorded years, the noncore customer usage data implicitly captures the effects of any curtailment events.

2022 CALIFORNIA GAS REPORT

FORECAST OF REQUIREMENTS-SUMMARY

TABLE 1-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2022 THRU 2026

AVERAGE TEMPERATURE YEAR

LINE			2022	2023	2024	2025	2026	LINE
	CAPACITY AVAILABLE							
1	California Line 85 Zone (California Producers)		60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	2
	Out-of-State Gas							
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN							
8	California Source Gas [5/]		61	61	61	61	61	8
9	Out-of-State		2,379	2,354	2,266	2,219	2,190	9
10	TOTAL SUPPLY TAKEN		2,440	2,415	2,327	2,280	2,251	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,440	2,415	2,327	2,280	2,251	12
	REQUIREMENTS FORECAST BY END-USE [7/]							
13	CORE [8/]	Residential	610	604	594	585	575	13
14		Commercial	206	200	194	190	185	14
15		Industrial	54	54	53	52	51	15
16		NGV	41	42	43	44	45	16
17		Subtotal-CORE	912	900	883	870	856	17
18	NONCORE	Commercial	48	49	49	49	49	18
19		Industrial	389	390	389	389	388	19
20		EOR Steaming	27	27	27	27	27	20
21		Electric Generation (EG)	670	667	612	584	571	21
22		Subtotal-NONCORE	1,135	1,132	1,076	1,049	1,035	22
23	WHOLESALE &	Core	208	208	207	207	206	23
24	INTERNATIONAL	Noncore Excl. EG	28	27	27	28	28	24
25		Electric Generation (EG)	127	117	104	97	97	25
26		Subtotal-WHOLESALE & INTL.	363	352	339	332	331	26
27		Co. Use & LUAF	31	30	29	29	28	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,440	2,415	2,327	2,280	2,251	28
	TRANSPORTATION AND EXCHANGE							
29	CORE	All End Uses	64	64	63	63	62	29
30	NONCORE	Commercial/Industrial	437	438	437	438	437	30
31		EOR Steaming	27	27	27	27	27	31
32		Electric Generation (EG)	670	667	612	584	571	32
33		Subtotal-RETAIL	1,199	1,196	1,139	1,112	1,097	33
	WHOLESALE &							
34	INTERNATIONAL	All End Uses	363	352	339	332	331	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,562	1,548	1,478	1,443	1,428	35
	CURTAILMENT (RETAIL & WHOLESALE)							
36		Core	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area dem

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

	2022	2023	2024	2025	2026
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.3	1.3	1.3	1.2	1.2

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

	2022	2023	2024	2025	2026
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	874.8	863.0	846.6	833.5	819.5

TABLE 2-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2027 THRU 2035

AVERAGE TEMPERATURE YEAR

LINE			2027	2028	2029	2030	2035	LINE
	CAPACITY AVAILABLE							
1	California Line 85 Zone (California Producers)		60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	2
	Out-of-State Gas							
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,590	1,590	1,590	5
6	Total Out-of-State Gas		3,225	3,225	3,565	3,565	3,565	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,775	3,775	3,775	7
	GAS SUPPLY TAKEN							
8	California Source Gas [5/]		61	61	61	61	61	8
9	Out-of-State		2,160	2,106	2,080	2,034	1,912	9
10	TOTAL SUPPLY TAKEN		2,221	2,167	2,141	2,095	1,973	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,221	2,167	2,141	2,095	1,973	12
	REQUIREMENTS FORECAST BY END-USE [7/]							
13	CORE [8/]	Residential	565	552	542	530	466	13
14		Commercial	181	177	174	170	155	14
15		Industrial	50	49	48	47	44	15
16		NGV	46	47	48	50	54	16
17		Subtotal-CORE	842	825	813	797	719	17
18	NONCORE	Commercial	49	49	49	49	48	18
19		Industrial	388	388	388	387	385	19
20		EOR Steaming	26	25	24	24	20	20
21		Electric Generation (EG)	558	529	516	493	461	21
22		Subtotal-NONCORE	1,021	991	977	952	914	22
23	WHOLESALE &	Core	206	205	204	203	199	23
24	INTERNATIONAL	Noncore Excl. EG	28	28	28	28	29	24
25		Electric Generation (EG)	96	92	92	88	87	25
26		Subtotal-WHOLESALE & INTL.	330	324	325	319	315	26
27		Co. Use & LUAF	28	27	27	26	25	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,221	2,167	2,141	2,095	1,973	28
	TRANSPORTATION AND EXCHANGE							
29	CORE	All End Uses	62	62	62	61	61	29
30	NONCORE	Commercial/Industrial	437	437	436	436	433	30
31		EOR Steaming	26	25	24	24	20	31
32		Electric Generation (EG)	558	529	516	493	461	32
33		Subtotal-RETAIL	1,083	1,052	1,039	1,013	975	33
	WHOLESALE &							
34	INTERNATIONAL	All End Uses	330	324	325	319	315	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,413	1,376	1,363	1,333	1,290	35
	CURTAILMENT (RETAIL & WHOLESALE)							
36		Core	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demar

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

	2027	2028	2029	2030	2035
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.2	1.2	1.2	1.2	1.1

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

	2027	2028	2029	2030	2035
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	805.2	788.0	775.2	759.4	679.7

2022 CALIFORNIA GAS REPORT

FORECAST OF REQUIREMENTS - AVERAGE TEMPERATURE YEAR DETAIL

Work Paper: TABLE 1-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2022

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,858	2,828	2,499	2,348	2,102	2,060	2,085	2,160	2,161	2,090	2,430	2,953	2,379	9
10	TOTAL SUPPLY TAKEN		2,919	2,889	2,560	2,409	2,163	2,121	2,146	2,221	2,222	2,151	2,491	3,014	2,440	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,919	2,889	2,560	2,409	2,163	2,121	2,146	2,221	2,222	2,151	2,491	3,014	2,440	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	997	961	758	649	454	362	336	336	343	413	683	1,047	610	13
14		Commercial	265	276	226	213	177	170	160	160	166	171	219	274	206	14
15		Industrial	58	62	57	57	51	52	48	48	53	55	58	56	54	15
16		NGV	34	37	39	40	39	42	42	44	45	44	44	43	41	16
17		Subtotal-CORE	1,355	1,336	1,080	959	721	625	587	588	607	683	1,005	1,420	912	17
18	NONCORE	Commercial	57	57	52	48	44	40	38	39	52	47	49	58	48	18
19		Industrial	396	386	381	385	375	384	386	401	400	398	388	388	389	19
20		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	20
21		Electric Generation (EG)	605	606	606	602	652	706	769	817	785	651	616	621	670	21
22		Subtotal-NONCORE	1,086	1,077	1,067	1,062	1,098	1,158	1,219	1,285	1,264	1,123	1,081	1,095	1,135	22
23	WHOLESALE &	Core	294	290	239	214	176	152	145	144	148	164	227	306	208	23
24	INTERNATIONAL	Noncore Excl. EG	28	30	27	30	29	30	27	27	27	27	26	27	28	24
25		Electric Generation (EG)	121	120	114	114	111	129	141	149	149	127	121	128	127	25
26		Subtotal-WHOLESALE & INT	442	440	381	358	317	311	313	320	323	318	374	461	363	26
27		Co. Use & LUAF	37	36	32	30	27	27	27	28	28	27	31	38	31	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,919	2,889	2,560	2,409	2,163	2,121	2,146	2,221	2,222	2,151	2,491	3,014	2,440	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	71	74	67	65	58	58	56	57	58	59	68	77	64	29
30	NONCORE	Commercial/Industrial	453	443	433	433	419	424	423	441	452	445	438	447	437	30
31		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	31
32		Electric Generation (EG)	605	606	606	602	652	706	769	817	785	651	616	621	670	32
33		Subtotal-RETAIL	1,157	1,151	1,134	1,128	1,155	1,216	1,276	1,342	1,323	1,182	1,148	1,172	1,199	33
	WHOLESALE &															
34	INTERNATIONAL	All End Uses	442	440	381	358	317	311	313	320	323	318	374	461	363	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,599	1,591	1,514	1,486	1,472	1,527	1,589	1,662	1,646	1,500	1,523	1,633	1,562	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:
1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)
2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand
3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision
4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.
5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,325	1,302	1,046	922	684	585	548	549	566	644	967	1,386	875

Work Paper: **TABLE 1-SCG**

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2023

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,844	2,795	2,479	2,325	2,085	2,044	2,064	2,118	2,128	2,061	2,408	2,921	2,354	9
10	TOTAL SUPPLY TAKEN		2,905	2,856	2,540	2,386	2,146	2,105	2,125	2,179	2,189	2,122	2,469	2,982	2,415	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,905	2,856	2,540	2,386	2,146	2,105	2,125	2,179	2,189	2,122	2,469	2,982	2,415	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	986	951	751	642	450	359	334	333	340	410	677	1,036	604	13
14		Commercial	257	267	219	207	172	164	156	156	161	166	213	265	200	14
15		Industrial	57	62	56	56	50	51	48	48	52	54	57	55	54	15
16		NGV	35	37	40	41	40	43	43	45	46	45	45	44	42	16
17		Subtotal-CORE	1,336	1,317	1,066	946	712	617	580	582	599	675	992	1,400	900	17
18	NONCORE	Commercial	58	57	53	49	44	41	38	40	52	47	50	58	49	18
19		Industrial	395	382	381	387	377	388	388	404	404	394	388	389	390	19
20		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	20
21		Electric Generation (EG)	618	603	610	601	652	705	764	793	769	645	614	621	667	21
22		Subtotal-NONCORE	1,098	1,069	1,071	1,063	1,100	1,160	1,217	1,265	1,252	1,113	1,079	1,096	1,132	22
23	WHOLESALE &	Core	295	292	241	214	176	152	145	144	148	164	227	306	208	23
24	INTERNATIONAL	Noncore Excl. EG	27	29	27	29	29	30	27	27	26	27	26	27	27	24
25		Electric Generation (EG)	112	112	104	103	102	119	128	135	136	117	114	115	117	25
26		Subtotal-WHOLESALE & INTL	434	433	372	346	307	301	301	305	310	308	367	448	352	26
27		Co. Use & LUAF	37	36	32	30	27	27	27	27	28	27	31	38	30	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,905	2,856	2,540	2,386	2,146	2,105	2,125	2,179	2,189	2,122	2,469	2,982	2,415	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	70	74	66	65	58	58	56	57	58	59	67	76	64	29
30	NONCORE	Commercial/Industrial	452	439	434	435	421	428	426	444	456	441	437	447	438	30
31		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	31
32		Electric Generation (EG)	618	603	610	601	652	705	764	793	769	645	614	621	667	32
33		Subtotal-RETAIL	1,169	1,143	1,137	1,128	1,158	1,218	1,273	1,321	1,310	1,172	1,146	1,172	1,196	33
	WHOLESALE &															
34	INTERNATIONAL	All End Uses	434	433	372	346	307	301	301	305	310	308	367	448	352	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,603	1,576	1,509	1,475	1,465	1,519	1,574	1,626	1,620	1,480	1,513	1,620	1,548	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

6/ Excludes own-source gas supply of gas procurement by the City of Long Beach: 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d: 1,306 1,284 1,032 910 675 577 541 542 559 636 954 1,366 863.0

Work Paper: TABLE 1-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2024

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,752	2,655	2,396	2,248	1,993	1,945	1,986	2,028	2,026	2,003	2,333	2,842	2,266	9
10	TOTAL SUPPLY TAKEN		2,813	2,716	2,457	2,309	2,054	2,006	2,047	2,089	2,087	2,064	2,394	2,903	2,327	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,813	2,716	2,457	2,309	2,054	2,006	2,047	2,089	2,087	2,064	2,394	2,903	2,327	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	972	905	740	634	444	355	330	329	336	405	667	1,020	594	13
14		Commercial	250	251	213	201	167	160	152	152	157	161	207	258	194	14
15		Industrial	56	58	55	55	49	50	47	47	51	53	56	54	53	15
16		NGV	36	37	41	42	41	44	44	46	47	46	46	45	43	16
17		Subtotal-CORE	1,313	1,251	1,048	931	701	608	572	574	591	665	976	1,376	883	17
18	NONCORE	Commercial	57	55	53	48	44	41	38	40	52	47	50	59	49	18
19		Industrial	393	379	381	385	375	386	388	404	402	397	389	389	389	19
20		EOR Steaming	27	26	27	27	27	27	27	27	27	27	27	27	27	20
21		Electric Generation (EG)	568	560	558	557	587	631	705	728	693	603	568	579	612	21
22		Subtotal-NONCORE	1,045	1,021	1,018	1,018	1,034	1,085	1,158	1,199	1,174	1,075	1,034	1,054	1,076	22
23	WHOLESALE &	Core	294	282	240	213	176	152	145	144	148	164	227	305	207	23
24	INTERNATIONAL	Noncore Excl. EG	26	27	27	30	29	30	27	27	27	27	26	27	27	24
25		Electric Generation (EG)	99	101	92	88	89	106	119	120	121	106	100	104	104	25
26		Subtotal-WHOLESALE & INTL	419	410	359	331	294	288	292	290	295	297	353	436	339	26
27		Co. Use & LUAF	35	34	31	29	26	25	26	26	26	26	30	37	29	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,813	2,716	2,457	2,309	2,054	2,006	2,047	2,089	2,087	2,064	2,394	2,903	2,327	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	70	70	66	64	57	57	56	56	58	58	66	75	63	29
30	NONCORE	Commercial/Industrial	450	434	433	433	419	426	426	443	454	445	439	448	437	30
31		EOR Steaming	27	26	27	27	27	27	27	27	27	27	27	27	27	31
32		Electric Generation (EG)	568	560	558	557	587	631	705	728	693	603	568	579	612	32
33		Subtotal-RETAIL	1,115	1,091	1,084	1,082	1,091	1,142	1,214	1,255	1,232	1,134	1,101	1,129	1,139	33
34	WHOLESALE & INTERNATIONAL	All End Uses	419	410	359	331	294	288	292	290	295	297	353	436	339	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,534	1,501	1,443	1,413	1,384	1,430	1,505	1,546	1,527	1,431	1,454	1,565	1,478	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,284	1,218	1,014	895	665	568	533	534	551	626	939	1,343	847

Work Paper: TABLE 1-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2025

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) 1/		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) 2/		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) 3/		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE 4/		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas 5/		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,697	2,662	2,343	2,198	1,950	1,903	1,927	1,968	1,977	1,953	2,285	2,787	2,219	9
10	TOTAL SUPPLY TAKEN		2,758	2,723	2,404	2,259	2,011	1,964	1,988	2,029	2,038	2,014	2,346	2,848	2,280	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT 6/		2,758	2,723	2,404	2,259	2,011	1,964	1,988	2,029	2,038	2,014	2,346	2,848	2,280	12
	REQUIREMENTS FORECAST BY END-USE 7/															
13	CORE 8/	Residential	954	920	726	623	437	349	325	324	331	398	655	1,001	585	13
14		Commercial	243	253	208	196	163	156	148	149	154	157	202	251	190	14
15		Industrial	55	59	54	54	48	49	46	46	50	52	55	53	52	15
16		NGV	37	39	42	43	42	45	45	47	48	47	47	46	44	16
17		Subtotal-CORE	1,288	1,271	1,029	915	690	599	563	565	582	655	959	1,351	870	17
18	NONCORE	Commercial	57	57	53	49	44	41	38	40	52	47	50	59	49	18
19		Industrial	393	383	381	384	375	385	388	404	402	396	388	389	389	19
20		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	20
21		Electric Generation (EG)	542	539	533	533	564	601	661	684	663	576	546	557	584	21
22		Subtotal-NONCORE	1,020	1,007	994	993	1,010	1,054	1,115	1,155	1,144	1,047	1,011	1,032	1,049	22
23	WHOLESALE &	Core	292	290	239	213	176	152	145	144	147	164	226	303	207	23
24	INTERNATIONAL	Noncore Excl. EG	27	29	27	30	29	30	27	27	27	27	26	28	28	24
25		Electric Generation (EG)	96	92	84	80	81	105	112	112	111	96	94	98	97	25
26		Subtotal-WHOLESALE & INTL	415	410	350	322	286	286	285	283	285	287	346	429	332	26
27		Co. Use & LUAF	35	34	30	29	25	25	25	26	26	25	30	36	29	27
28	SYSTEM TOTAL THROUGHPUT 6/		2,758	2,723	2,404	2,259	2,011	1,964	1,988	2,029	2,038	2,014	2,346	2,848	2,280	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	69	72	65	64	57	57	56	56	58	58	66	74	63	29
30	NONCORE	Commercial/Industrial	451	441	433	433	419	426	426	444	454	443	438	447	438	30
31		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	31
32		Electric Generation (EG)	542	539	533	533	564	601	661	684	663	576	546	557	584	32
33		Subtotal-RETAIL	1,089	1,079	1,059	1,057	1,067	1,111	1,171	1,212	1,202	1,105	1,077	1,107	1,112	33
	WHOLESALE &															
34	INTERNATIONAL	All End Uses	415	410	350	322	286	286	285	283	285	287	346	429	332	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,504	1,489	1,410	1,380	1,352	1,398	1,455	1,494	1,487	1,392	1,423	1,535	1,443	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,259	1,237	995	878	653	559	524	525	542	616	922	1,317	834

Work Paper: TABLE 1-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2026

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,662	2,620	2,316	2,166	1,911	1,873	1,903	1,952	1,966	1,931	2,257	2,742	2,190	9
10	TOTAL SUPPLY TAKEN		2,723	2,681	2,377	2,227	1,972	1,934	1,964	2,013	2,027	1,992	2,318	2,803	2,251	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,723	2,681	2,377	2,227	1,972	1,934	1,964	2,013	2,027	1,992	2,318	2,803	2,251	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	937	903	714	612	430	344	320	319	326	392	644	983	575	13
14		Commercial	237	247	203	192	160	153	145	145	150	154	197	245	185	14
15		Industrial	54	58	53	53	47	48	45	45	49	51	54	52	51	15
16		NGV	37	40	43	44	43	46	46	48	49	48	48	47	45	16
17		Subtotal-CORE	1,266	1,249	1,012	900	679	590	556	558	575	645	944	1,327	856	17
18	NONCORE	Commercial	57	57	53	49	44	41	38	40	52	47	50	59	49	18
19		Industrial	393	383	380	383	373	384	388	403	401	396	388	389	388	19
20		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	20
21		Electric Generation (EG)	535	524	526	517	541	585	647	672	657	565	539	544	571	21
22		Subtotal-NONCORE	1,012	990	984	975	985	1,037	1,100	1,141	1,137	1,035	1,003	1,018	1,035	22
23	WHOLESALE &	Core	291	289	238	212	175	152	145	143	147	163	225	302	206	23
24	INTERNATIONAL	Noncore Excl. EG	27	29	27	30	29	30	27	27	27	27	26	28	28	24
25		Electric Generation (EG)	93	92	86	81	79	101	112	118	116	97	91	94	97	25
26		Subtotal-WHOLESALE & INTL	411	409	351	323	283	283	284	288	290	288	343	423	331	26
27		Co. Use & LUAF	34	34	30	28	25	24	25	25	26	25	29	35	28	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,723	2,681	2,377	2,227	1,972	1,934	1,964	2,013	2,027	1,992	2,318	2,803	2,251	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	68	71	65	64	57	57	56	56	58	58	66	74	62	29
30	NONCORE	Commercial/Industrial	450	440	432	432	417	425	426	443	453	443	437	447	437	30
31		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	31
32		Electric Generation (EG)	535	524	526	517	541	585	647	672	657	565	539	544	571	32
33		Subtotal-RETAIL	1,080	1,061	1,049	1,039	1,042	1,094	1,155	1,198	1,195	1,093	1,068	1,091	1,097	33
34	WHOLESALE & INTERNATIONAL	All End Uses	411	409	351	323	283	283	284	288	290	288	343	423	331	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,491	1,470	1,400	1,362	1,325	1,377	1,439	1,486	1,485	1,380	1,411	1,515	1,428	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

6/ Excludes own-source gas supply of gas procurement by the City of Long Beach: 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d: 1,236 1,215 978 864 643 551 516 518 534 606 906 1,293 820

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2027

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,609	2,576	2,271	2,122	1,877	1,840	1,880	1,955	1,976	1,910	2,224	2,708	2,160	9
10	TOTAL SUPPLY TAKEN		2,670	2,637	2,332	2,183	1,938	1,901	1,941	2,016	2,037	1,971	2,285	2,769	2,221	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,670	2,637	2,332	2,183	1,938	1,901	1,941	2,016	2,037	1,971	2,285	2,769	2,221	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	919	886	700	601	422	338	315	314	321	385	632	964	565	13
14		Commercial	232	242	198	187	156	150	142	143	147	151	193	239	181	14
15		Industrial	53	57	52	52	47	48	44	44	48	51	53	51	50	15
16		NGV	38	41	44	45	44	47	47	49	50	49	49	48	46	16
17		Subtotal-CORE	1,242	1,226	994	885	669	582	548	550	567	636	928	1,303	842	17
22	NONCORE	Subtotal-NONCORE	987	974	959	953	963	1,009	1,083	1,161	1,151	1,022	984	1,008	1,021	22
26	WHOLESALE & INTERNATIONAL	Subtotal-WHOLESALE & INTL	408	404	350	317	282	286	285	280	293	288	344	424	330	26
27		Co. Use & LUAF	34	33	29	28	24	24	24	25	26	25	29	35	28	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,670	2,637	2,332	2,183	1,938	1,901	1,941	2,016	2,037	1,971	2,285	2,769	2,221	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	68	71	64	63	57	57	56	56	57	58	65	73	62	29
30	NONCORE	All End Uses	987	974	959	953	963	1,009	1,083	1,161	1,151	1,022	984	1,008	1,021	30
33		Subtotal-RETAIL	1,055	1,045	1,023	1,016	1,019	1,066	1,139	1,217	1,209	1,080	1,049	1,081	1,083	33
34	WHOLESALE & INTERNATIONAL	All End Uses	408	404	350	317	282	286	285	280	293	288	344	424	330	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,462	1,449	1,372	1,333	1,301	1,352	1,424	1,496	1,502	1,368	1,393	1,504	1,413	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,212	1,192	960	848	632	542	508	510	526	597	890	1,269	805

Work Paper: TABLE 2-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2028

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,558	2,465	2,227	2,094	1,850	1,802	1,824	1,880	1,887	1,868	2,177	2,649	2,106	9
10	TOTAL SUPPLY TAKEN		2,619	2,526	2,288	2,155	1,911	1,863	1,885	1,941	1,948	1,929	2,238	2,710	2,167	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,619	2,526	2,288	2,155	1,911	1,863	1,885	1,941	1,948	1,929	2,238	2,710	2,167	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	900	838	686	589	414	332	309	308	315	378	620	944	552	13
14		Commercial	226	228	194	183	153	146	139	140	144	148	189	234	177	14
15		Industrial	52	54	51	51	46	47	44	44	48	50	52	50	49	15
16		NGV	39	41	45	46	45	48	48	51	52	50	51	50	47	16
17		Subtotal-CORE	1,217	1,160	976	870	658	573	540	542	558	626	911	1,277	825	17
22	NONCORE	Subtotal-NONCORE	965	945	942	942	950	987	1,044	1,094	1,081	994	959	981	991	22
26	WHOLESALE & INTERNATIONAL	Subtotal-WHOLESALE & INTL	404	389	341	317	279	279	277	281	283	285	339	418	324	26
27		Co. Use & LUAF	33	32	29	27	24	23	24	24	25	24	28	34	27	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,619	2,526	2,288	2,155	1,911	1,863	1,885	1,941	1,948	1,929	2,238	2,710	2,167	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	67	68	64	63	56	57	56	56	57	58	65	73	62	29
30	NONCORE	All End Uses	965	945	942	942	950	987	1,044	1,094	1,081	994	959	981	991	30
33		Subtotal-RETAIL	1,032	1,013	1,006	1,005	1,007	1,044	1,099	1,150	1,139	1,052	1,024	1,053	1,052	33
34	WHOLESALE & INTERNATIONAL	All End Uses	404	389	341	317	279	279	277	281	283	285	339	418	324	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,436	1,402	1,348	1,321	1,286	1,323	1,377	1,431	1,422	1,337	1,364	1,471	1,376	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)
2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand
3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision
4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.
5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,188	1,128	941	833	621	533	500	502	517	586	874	1,243	788

Work Paper: TABLE 2-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2029

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	5
6	Total Out-of-State Gas		3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,525	2,490	2,195	2,057	1,824	1,781	1,806	1,855	1,862	1,839	2,149	2,603	2,080	9
10	TOTAL SUPPLY TAKEN		2,586	2,551	2,256	2,118	1,885	1,842	1,867	1,916	1,923	1,900	2,210	2,664	2,141	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,586	2,551	2,256	2,118	1,885	1,842	1,867	1,916	1,923	1,900	2,210	2,664	2,141	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	880	849	671	577	406	326	303	303	309	371	607	923	542	13
14		Commercial	221	231	190	179	150	144	137	137	142	145	185	229	174	14
15		Industrial	51	55	50	50	45	46	43	43	47	49	52	49	48	15
16		NGV	40	43	46	47	46	49	49	52	53	52	52	51	48	16
17		Subtotal-CORE	1,193	1,178	957	854	647	565	532	534	550	616	895	1,252	813	17
22	NONCORE	Subtotal-NONCORE	959	940	931	924	934	971	1,031	1,076	1,065	980	950	961	977	22
26	WHOLESALE & INTERNATIONAL	Subtotal-WHOLESALE & INTL	402	402	340	314	281	283	281	282	283	280	337	417	325	26
27		Co. Use & LUAF	33	32	28	27	24	23	24	24	24	24	28	34	27	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,586	2,551	2,256	2,118	1,885	1,842	1,867	1,916	1,923	1,900	2,210	2,664	2,141	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	67	70	64	63	56	57	56	56	57	58	65	72	62	29
30	NONCORE	All End Uses	959	940	931	924	934	971	1,031	1,076	1,065	980	950	961	977	30
33		Subtotal-RETAIL	1,026	1,010	994	987	990	1,028	1,086	1,132	1,122	1,038	1,015	1,034	1,039	33
34	WHOLESALE & INTERNATIONAL	All End Uses	402	402	340	314	281	283	281	282	283	280	337	417	325	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,427	1,411	1,334	1,300	1,271	1,311	1,367	1,413	1,406	1,318	1,352	1,451	1,363	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

6/ Excludes own-source gas supply of gas procurement by the City of Long Beach

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ own-source gas supply	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ transportation (CAT) in MDth/d	1,163	1,144	922	817	610	524	492	494	509	576	857	1,218	775

Work Paper: TABLE 2-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2035

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) 1/		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) 2/		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) 3/		1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	5
6	Total Out-of-State Gas		3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	6
7	TOTAL CAPACITY AVAILABLE 4/		3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	7
	GAS SUPPLY TAKEN															
8	California Source Gas 5/		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,287	2,262	2,003	1,892	1,688	1,654	1,672	1,733	1,733	1,702	1,979	2,365	1,912	9
10	TOTAL SUPPLY TAKEN		2,348	2,323	2,064	1,953	1,749	1,715	1,733	1,794	1,794	1,763	2,040	2,426	1,973	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT 6/		2,348	2,323	2,064	1,953	1,749	1,715	1,733	1,794	1,794	1,763	2,040	2,426	1,973	12
	REQUIREMENTS FORECAST BY END-USE 7/															
13	CORE 8/	Residential	751	725	575	496	351	283	264	264	269	321	521	787	466	13
14		Commercial	196	204	168	160	134	129	123	123	127	130	164	202	155	14
15		Industrial	47	50	46	46	41	42	39	39	43	45	47	45	44	15
16		NGV	45	48	52	53	51	55	55	58	60	58	59	57	54	16
17		Subtotal-CORE	1,039	1,027	841	755	577	510	482	485	499	554	791	1,091	719	17
22	NONCORE	Subtotal-NONCORE	894	879	870	867	878	909	956	1,008	997	913	889	909	914	22
26	WHOLESALE & INTERNATIONAL	Subtotal-WHOLESALE & INTL	386	388	328	306	271	275	274	278	276	274	335	396	315	26
27		Co. Use & LUAF	30	29	26	25	22	22	22	23	23	22	26	31	25	27
28	SYSTEM TOTAL THROUGHPUT 6/		2,348	2,323	2,064	1,953	1,749	1,715	1,733	1,794	1,794	1,763	2,040	2,426	1,973	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	64	67	62	62	56	57	56	56	58	58	64	70	61	29
30	NONCORE	All End Uses	894	879	870	867	878	909	956	1,008	997	913	889	909	914	30
33		Subtotal-RETAIL	957	946	932	929	934	966	1,011	1,065	1,054	970	952	978	975	33
34	WHOLESALE & INTERNATIONAL	All End Uses	386	388	328	306	271	275	274	278	276	274	335	396	315	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,343	1,333	1,260	1,235	1,206	1,241	1,285	1,343	1,330	1,244	1,287	1,374	1,290	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:
1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)
2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand
3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision
4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.
5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach: 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1
7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d: 1,006 991 804 715 538 467 440 442 455 512 751 1,054 680

Work Paper: TABLE 2-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2030

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	5
6	Total Out-of-State Gas		3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,462	2,439	2,152	2,019	1,800	1,744	1,762	1,791	1,811	1,797	2,105	2,549	2,034	9
10	TOTAL SUPPLY TAKEN		2,523	2,500	2,213	2,080	1,861	1,805	1,823	1,852	1,872	1,858	2,166	2,610	2,095	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,523	2,500	2,213	2,080	1,861	1,805	1,823	1,852	1,872	1,858	2,166	2,610	2,095	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	859	829	656	564	397	319	297	296	303	363	593	901	530	13
14		Commercial	217	226	186	176	147	141	134	134	139	142	181	224	170	14
15		Industrial	51	54	49	49	44	45	42	42	46	48	51	48	47	15
16		NGV	41	44	47	48	47	51	50	53	54	53	53	52	50	16
17		Subtotal-CORE	1,167	1,153	938	838	635	556	524	526	542	606	878	1,225	797	17
22	NONCORE	Subtotal-NONCORE	931	923	912	911	924	952	1,001	1,024	1,025	951	927	942	952	22
26	WHOLESALE & INTERNATIONAL	Subtotal-WHOLESALE & INTL	393	393	335	306	279	274	276	278	282	278	333	410	319	26
27		Co. Use & LUAF	32	32	28	26	23	23	23	23	24	23	27	33	26	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,523	2,500	2,213	2,080	1,861	1,805	1,823	1,852	1,872	1,858	2,166	2,610	2,095	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	66	69	63	63	56	57	56	56	57	58	64	72	61	29
30	NONCORE	All End Uses	931	923	912	911	924	952	1,001	1,024	1,025	951	927	942	952	30
33		Subtotal-RETAIL	997	992	975	973	980	1,009	1,056	1,080	1,082	1,008	992	1,014	1,013	33
34	WHOLESALE & INTERNATIONAL	All End Uses	393	393	335	306	279	274	276	278	282	278	333	410	319	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,390	1,385	1,311	1,279	1,259	1,283	1,332	1,358	1,364	1,286	1,325	1,424	1,333	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,137	1,118	903	800	598	515	483	485	500	566	840	1,191	759

2022 CALIFORNIA GAS REPORT

FORECAST OF REQUIREMENTS - COLD TEMPERATURE YEAR

TABLE 3-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2022 THRU 2026

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			2022	2023	2024	2025	2026	LINE
	CAPACITY AVAILABLE							
1	California Line 85 Zone (California Producers)		60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	2
	Out-of-State Gas							
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN							
8	California Source Gas [5/]		61	61	61	61	61	8
9	Out-of-State		2,452	2,432	2,343	2,298	2,267	9
10	TOTAL SUPPLY TAKEN		2,513	2,493	2,404	2,359	2,328	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,513	2,493	2,404	2,359	2,328	12
	REQUIREMENTS FORECAST BY END-USE [7/]							
13	CORE [8/]	Residential	660	653	642	632	622	13
14		Commercial	214	208	202	197	193	14
15		Industrial	55	55	53	52	51	15
16		NGV	41	42	43	44	45	16
17		Subtotal-CORE	970	957	940	926	911	17
18	NONCORE	Commercial	49	49	49	50	50	18
19		Industrial	389	390	389	389	388	19
20		EOR Steaming	27	27	27	27	27	20
21		Electric Generation (EG)	670	671	616	591	578	21
22		Subtotal-NONCORE	1,136	1,138	1,081	1,057	1,042	22
23	WHOLESALE &	Core	221	221	220	220	219	23
24	INTERNATIONAL	Noncore Excl. EG	28	28	28	28	28	24
25		Electric Generation (EG)	127	118	105	98	98	25
26		Subtotal-WHOLESALE & INTL.	376	366	353	346	345	26
27		Co. Use & LUAF	32	31	30	30	29	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,513	2,493	2,404	2,359	2,328	28
	TRANSPORTATION AND EXCHANGE							
29	CORE	All End Uses	66	65	64	64	64	29
30	NONCORE	Commercial/Industrial	438	439	438	439	438	30
31		EOR Steaming	27	27	27	27	27	31
32		Electric Generation (EG)	670	671	616	591	578	32
33		Subtotal-RETAIL	1,201	1,203	1,146	1,121	1,106	33
	WHOLESALE &							
34	INTERNATIONAL	All End Uses	376	366	353	346	345	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,577	1,569	1,498	1,467	1,451	35
	CURTAILMENT (RETAIL & WHOLESALE)							
36		Core	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on loca

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may var that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economi

	2022	2023	2024	2025	2026
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.3	1.3	1.3	1.3	1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

	2022	2023	2024	2025	2026
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	934	921	903	889	874

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2027 THRU 2035

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			2027	2028	2029	2030	2035	LINE
	CAPACITY AVAILABLE							
1	California Line 85 Zone (California Producers)		60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	2
	Out-of-State Gas							
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,590	1,590	1,590	5
6	Total Out-of-State Gas		3,225	3,225	3,565	3,565	3,565	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,775	3,775	3,775	7
	GAS SUPPLY TAKEN							
8	California Source Gas [5/]		61	61	61	61	61	8
9	Out-of-State		2,239	2,180	2,156	2,104	1,992	9
10	TOTAL SUPPLY TAKEN		2,300	2,241	2,217	2,165	2,053	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,300	2,241	2,217	2,165	2,053	12
	REQUIREMENTS FORECAST BY END-USE [7/]							
13	CORE [8/]	Residential	610	597	586	573	506	13
14		Commercial	189	184	181	177	161	14
15		Industrial	51	50	49	48	45	15
16		NGV	46	47	48	50	54	16
17		Subtotal-CORE	896	878	864	848	766	17
18	NONCORE	Commercial	50	49	49	49	49	18
19		Industrial	388	388	388	387	385	19
20		EOR Steaming	26	25	24	24	20	20
21		Electric Generation (EG)	567	534	524	496	474	21
22		Subtotal-NONCORE	1,031	996	985	956	928	22
23	WHOLESALE &	Core	219	217	217	216	212	23
24	INTERNATIONAL	Noncore Excl. EG	28	28	28	28	29	24
25		Electric Generation (EG)	98	93	94	89	92	25
26		Subtotal-WHOLESALE & INTL.	344	339	339	334	333	26
27		Co. Use & LUAF	29	28	28	27	26	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,300	2,241	2,217	2,165	2,053	28
	TRANSPORTATION AND EXCHANGE							
29	CORE	All End Uses	64	63	63	63	62	29
30	NONCORE	Commercial/Industrial	438	437	437	436	434	30
31		EOR Steaming	26	25	24	24	20	31
32		Electric Generation (EG)	567	534	524	496	474	32
33		Subtotal-RETAIL	1,095	1,059	1,048	1,019	990	33
	WHOLESALE &							
34	INTERNATIONAL	All End Uses	344	339	339	334	333	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,439	1,398	1,387	1,353	1,324	35
	CURTAILMENT (RETAIL & WHOLESALE)							
36		Core	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on loca

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economic

	2027	2028	2029	2030	2035
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.3	1.3	1.3	1.3	1.3
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	859	841	827	811	727

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

2022 CALIFORNIA GAS REPORT

FORECAST OF REQUIREMENTS - COLD TEMPERATURE YEAR DETAIL

Work Paper: TABLE 3-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2022

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		3,034	2,995	2,616	2,424	2,135	2,067	2,087	2,162	2,165	2,111	2,519	3,147	2,452	9
10	TOTAL SUPPLY TAKEN		3,095	3,056	2,677	2,485	2,196	2,128	2,148	2,223	2,226	2,172	2,580	3,208	2,513	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		3,095	3,056	2,677	2,485	2,196	2,128	2,148	2,223	2,226	2,172	2,580	3,208	2,513	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	1,117	1,075	837	699	476	367	337	336	345	428	743	1,180	660	13
14		Commercial	285	295	239	221	181	169	160	161	166	173	229	296	214	14
15		Industrial	60	64	58	57	51	52	48	48	53	55	59	58	55	15
16		NGV	34	37	39	40	39	42	42	44	45	44	44	43	41	16
17		Subtotal-CORE	1,497	1,471	1,173	1,018	747	630	588	589	609	700	1,076	1,577	970	17
18	NONCORE	Commercial	59	59	53	49	44	40	38	39	52	47	50	60	49	18
19		Industrial	396	386	381	385	375	384	386	401	400	398	388	388	389	19
20		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	20
21		Electric Generation (EG)	605	606	606	602	652	706	769	817	785	651	616	621	670	21
22		Subtotal-NONCORE	1,088	1,078	1,068	1,063	1,098	1,158	1,219	1,285	1,265	1,123	1,082	1,097	1,136	22
23	WHOLESALE &	Core	323	318	261	228	182	154	146	144	148	168	243	338	221	23
24	INTERNATIONAL	Noncore Excl. EG	28	30	28	31	30	30	27	27	27	27	26	28	28	24
25		Electric Generation (EG)	121	120	114	114	111	129	141	149	149	127	121	128	127	25
26		Subtotal-WHOLESALE & INT	472	468	402	373	323	313	314	320	324	322	390	493	376	26
27		Co. Use & LUAF	39	39	34	31	28	27	27	28	28	27	33	40	32	27
28	SYSTEM TOTAL THROUGHPUT [6/]		3,095	3,056	2,677	2,485	2,196	2,128	2,148	2,223	2,226	2,172	2,580	3,208	2,513	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	75	78	69	67	59	58	56	57	58	59	69	81	66	29
30	NONCORE	Commercial/Industrial	455	445	434	434	419	425	423	441	452	445	439	449	438	30
31		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	31
32		Electric Generation (EG)	605	606	606	602	652	706	769	817	785	651	616	621	670	32
33		Subtotal-RETAIL	1,163	1,157	1,137	1,130	1,157	1,216	1,276	1,342	1,323	1,183	1,151	1,178	1,201	33
	WHOLESALE &															
34	INTERNATIONAL	All End Uses	472	468	402	373	323	313	314	320	324	322	390	493	376	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,635	1,624	1,540	1,503	1,480	1,529	1,589	1,662	1,647	1,504	1,541	1,671	1,577	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,467	1,438	1,139	981	711	590	549	550	569	661	1,039	1,544	934

Work Paper: TABLE 3-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2023

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		3,020	2,961	2,595	2,401	2,121	2,058	2,072	2,143	2,142	2,086	2,498	3,112	2,432	9
10	TOTAL SUPPLY TAKEN		3,081	3,022	2,656	2,462	2,182	2,119	2,133	2,204	2,203	2,147	2,559	3,173	2,493	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		3,081	3,022	2,656	2,462	2,182	2,119	2,133	2,204	2,203	2,147	2,559	3,173	2,493	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	1,104	1,063	828	692	472	364	335	334	342	424	736	1,166	653	13
14		Commercial	276	286	232	215	175	165	156	156	162	168	223	287	208	14
15		Industrial	59	63	57	57	50	51	48	48	52	55	58	57	55	15
16		NGV	35	37	40	41	40	43	43	45	46	45	45	44	42	16
17		Subtotal-CORE	1,475	1,450	1,157	1,004	738	622	581	583	602	691	1,061	1,554	957	17
18	NONCORE	Commercial	59	59	54	49	44	41	38	40	52	47	50	61	49	18
19		Industrial	395	382	381	387	377	388	388	404	404	394	388	389	390	19
20		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	20
21		Electric Generation (EG)	621	604	610	601	653	710	768	815	779	648	616	622	671	21
22		Subtotal-NONCORE	1,102	1,073	1,072	1,065	1,102	1,166	1,222	1,286	1,262	1,117	1,082	1,098	1,138	22
23	WHOLESALE &	Core	325	320	262	228	182	154	146	144	149	168	243	337	221	23
24	INTERNATIONAL	Noncore Excl. EG	27	29	27	30	29	30	27	27	27	27	26	28	28	24
25		Electric Generation (EG)	113	113	104	104	104	121	130	137	136	118	114	116	118	25
26		Subtotal-WHOLESALE & INTL	465	462	394	362	315	305	303	308	311	312	383	481	366	26
27		Co. Use & LUAF	39	38	34	31	28	27	27	28	28	27	32	40	31	27
28	SYSTEM TOTAL THROUGHPUT [6/]		3,081	3,022	2,656	2,462	2,182	2,119	2,133	2,204	2,203	2,147	2,559	3,173	2,493	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	74	77	69	67	58	58	56	57	58	59	69	80	65	29
30	NONCORE	Commercial/Industrial	454	441	435	436	421	428	426	444	456	441	438	449	439	30
31		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	31
32		Electric Generation (EG)	621	604	610	601	653	710	768	815	779	648	616	622	671	32
33		Subtotal-RETAIL	1,177	1,150	1,140	1,131	1,160	1,223	1,278	1,343	1,320	1,176	1,151	1,178	1,203	33
34	WHOLESALE & INTERNATIONAL	All End Uses	465	462	394	362	315	305	303	308	311	312	383	481	366	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,641	1,611	1,535	1,493	1,475	1,528	1,581	1,651	1,631	1,488	1,534	1,659	1,569	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

6/ Excludes own-source gas supply of gas procurement by the City of Long Beach: 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d: 1,446 1,417 1,123 968 701 583 542 543 561 653 1,025 1,522 921

Work Paper: **TABLE 3-SCG**

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2024

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) 1/		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) 2/		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) 3/		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE 4/		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas 5/		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,926	2,815	2,510	2,324	2,029	1,960	1,997	2,041	2,039	2,025	2,423	3,038	2,343	9
10	TOTAL SUPPLY TAKEN		2,987	2,876	2,571	2,385	2,090	2,021	2,058	2,102	2,100	2,086	2,484	3,099	2,404	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT 6/		2,987	2,876	2,571	2,385	2,090	2,021	2,058	2,102	2,100	2,086	2,484	3,099	2,404	12
	REQUIREMENTS FORECAST BY END-USE 7/															
13	CORE 8/	Residential	1,087	1,011	815	682	465	359	331	330	338	418	725	1,148	642	13
14		Commercial	269	268	226	209	171	161	152	152	158	164	217	279	202	14
15		Industrial	58	60	56	55	49	50	47	47	51	53	57	56	53	15
16		NGV	36	37	41	42	41	44	44	46	47	46	46	45	43	16
17		Subtotal-CORE	1,450	1,376	1,138	988	726	613	573	575	594	681	1,045	1,528	940	17
18	NONCORE	Commercial	59	57	54	49	44	41	38	40	52	48	51	61	49	18
19		Industrial	393	379	381	385	375	386	388	404	402	397	389	389	389	19
20		EOR Steaming	27	26	27	27	27	27	27	27	27	27	27	27	27	20
21		Electric Generation (EG)	570	563	558	558	589	635	712	739	703	605	571	585	616	21
22		Subtotal-NONCORE	1,049	1,025	1,019	1,019	1,035	1,088	1,165	1,209	1,184	1,077	1,038	1,063	1,081	22
23	WHOLESALE &	Core	324	309	262	227	182	154	146	144	148	168	242	336	220	23
24	INTERNATIONAL	Noncore Excl. EG	27	28	27	30	29	30	27	27	27	27	26	28	28	24
25		Electric Generation (EG)	100	102	93	90	91	110	121	120	121	107	101	105	105	25
26		Subtotal-WHOLESALE & INTL	450	439	381	347	302	294	294	291	296	301	370	469	353	26
27		Co. Use & LUAF	38	36	32	30	26	25	26	27	26	26	31	39	30	27
28	SYSTEM TOTAL THROUGHPUT 6/		2,987	2,876	2,571	2,385	2,090	2,021	2,058	2,102	2,100	2,086	2,484	3,099	2,404	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	73	74	68	66	58	58	56	56	58	59	68	79	64	29
30	NONCORE	Commercial/Industrial	452	436	434	434	419	426	426	443	454	445	440	450	438	30
31		EOR Steaming	27	26	27	27	27	27	27	27	27	27	27	27	27	31
32		Electric Generation (EG)	570	563	558	558	589	635	712	739	703	605	571	585	616	32
33		Subtotal-RETAIL	1,123	1,099	1,088	1,085	1,093	1,146	1,221	1,266	1,242	1,136	1,107	1,142	1,146	33
	WHOLESALE &															
34	INTERNATIONAL	All End Uses	450	439	381	347	302	294	294	291	296	301	370	469	353	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,573	1,537	1,469	1,432	1,395	1,439	1,515	1,557	1,538	1,437	1,476	1,611	1,498	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,421	1,344	1,104	952	690	574	534	535	553	642	1,008	1,496	903

Work Paper: TABLE 3-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2025

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) 1/		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) 2/		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) 3/		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE 4/		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas 5/		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,869	2,824	2,458	2,273	1,988	1,920	1,941	1,992	2,013	1,978	2,372	2,978	2,298	9
10	TOTAL SUPPLY TAKEN		2,930	2,885	2,519	2,334	2,049	1,981	2,002	2,053	2,074	2,039	2,433	3,039	2,359	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT 6/		2,930	2,885	2,519	2,334	2,049	1,981	2,002	2,053	2,074	2,039	2,433	3,039	2,359	12
	REQUIREMENTS FORECAST BY END-USE 7/															
13	CORE 8/	Residential	1,068	1,028	801	670	458	353	326	325	333	412	712	1,127	632	13
14		Commercial	262	271	220	204	167	157	149	149	154	160	211	272	197	14
15		Industrial	57	61	55	54	48	49	46	46	50	52	56	55	52	15
16		NGV	37	39	42	43	42	45	45	47	48	47	47	46	44	16
17		Subtotal-CORE	1,423	1,398	1,117	971	715	604	564	566	585	671	1,026	1,500	926	17
18	NONCORE	Commercial	59	59	54	49	44	41	38	40	52	48	51	61	50	18
19		Industrial	393	383	381	384	375	385	388	404	402	396	388	389	389	19
20		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	20
21		Electric Generation (EG)	544	541	535	534	566	606	671	706	693	581	548	564	591	21
22		Subtotal-NONCORE	1,024	1,010	997	995	1,013	1,060	1,125	1,177	1,175	1,052	1,015	1,040	1,057	22
23	WHOLESALE &	Core	322	318	260	226	182	153	145	144	148	167	241	334	220	23
24	INTERNATIONAL	Noncore Excl. EG	27	29	27	30	29	30	27	27	27	27	27	28	28	24
25		Electric Generation (EG)	97	93	85	82	85	109	114	113	113	96	94	98	98	25
26		Subtotal-WHOLESALE & INTL	446	439	373	339	296	292	287	284	288	291	362	460	346	26
27		Co. Use & LUAF	37	36	32	29	26	25	25	26	26	26	31	38	30	27
28	SYSTEM TOTAL THROUGHPUT 6/		2,930	2,885	2,519	2,334	2,049	1,981	2,002	2,053	2,074	2,039	2,433	3,039	2,359	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	73	75	68	66	58	57	56	56	58	59	68	78	64	29
30	NONCORE	Commercial/Industrial	452	442	435	434	419	426	426	444	454	444	439	449	439	30
31		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	31
32		Electric Generation (EG)	544	541	535	534	566	606	671	706	693	581	548	564	591	32
33		Subtotal-RETAIL	1,096	1,086	1,065	1,060	1,070	1,117	1,181	1,233	1,232	1,110	1,083	1,119	1,121	33
34	WHOLESALE & INTERNATIONAL	All End Uses	446	439	373	339	296	292	287	284	288	291	362	460	346	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,543	1,525	1,438	1,399	1,366	1,409	1,468	1,517	1,520	1,401	1,444	1,579	1,467	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,394	1,365	1,083	935	678	564	525	526	544	632	989	1,467	889

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2026

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,833	2,780	2,429	2,243	1,950	1,890	1,918	1,968	1,992	1,956	2,345	2,927	2,267	9
10	TOTAL SUPPLY TAKEN		2,894	2,841	2,490	2,304	2,011	1,951	1,979	2,029	2,053	2,017	2,406	2,988	2,328	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,894	2,841	2,490	2,304	2,011	1,951	1,979	2,029	2,053	2,017	2,406	2,988	2,328	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	1,049	1,010	787	659	450	348	321	320	328	405	700	1,107	622	13
14		Commercial	256	265	215	199	163	154	146	146	151	156	207	265	193	14
15		Industrial	56	60	54	53	48	48	45	45	49	52	55	54	51	15
16		NGV	37	40	43	44	43	46	46	48	49	48	48	47	45	16
17		Subtotal-CORE	1,398	1,374	1,098	955	704	596	557	559	577	661	1,010	1,473	911	17
18	NONCORE	Commercial	59	59	54	49	44	41	38	40	52	48	51	61	50	18
19		Industrial	393	383	380	383	373	384	388	403	401	396	388	389	388	19
20		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	20
21		Electric Generation (EG)	539	526	526	520	545	591	659	686	678	569	542	546	578	21
22		Subtotal-NONCORE	1,018	994	986	980	989	1,042	1,112	1,156	1,158	1,039	1,007	1,022	1,042	22
23	WHOLESALE &	Core	321	317	260	226	181	153	145	144	148	167	241	333	219	23
24	INTERNATIONAL	Noncore Excl. EG	27	29	27	30	30	30	28	27	27	27	27	28	28	24
25		Electric Generation (EG)	94	92	87	84	82	105	113	118	117	97	92	94	98	25
26		Subtotal-WHOLESALE & INTL	442	438	374	340	293	288	286	289	292	292	359	455	345	26
27		Co. Use & LUAF	37	36	31	29	25	25	25	26	26	25	30	38	29	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,894	2,841	2,490	2,304	2,011	1,951	1,979	2,029	2,053	2,017	2,406	2,988	2,328	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	72	75	67	65	57	57	56	56	58	58	67	78	64	29
30	NONCORE	Commercial/Industrial	452	442	434	432	418	425	426	443	453	443	438	449	438	30
31		EOR Steaming	27	27	27	27	27	27	27	27	27	27	27	27	27	31
32		Electric Generation (EG)	539	526	526	520	545	591	659	686	678	569	542	546	578	32
33		Subtotal-RETAIL	1,090	1,068	1,053	1,045	1,046	1,099	1,167	1,212	1,215	1,097	1,074	1,099	1,106	33
	WHOLESALE &															
34	INTERNATIONAL	All End Uses	442	438	374	340	293	288	286	289	292	292	359	455	345	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,532	1,506	1,427	1,385	1,339	1,387	1,453	1,501	1,508	1,389	1,433	1,555	1,451	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)
2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand
3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision
4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.
5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/	1,368	1,341	1,064	919	667	556	517	519	536	622	973	1,441	874

Work Paper: TABLE 4-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2027

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) 1/		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) 2/		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) 3/		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE 4/		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas 5/		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,778	2,734	2,382	2,198	1,918	1,859	1,898	1,989	2,007	1,935	2,314	2,889	2,239	9
10	TOTAL SUPPLY TAKEN		2,839	2,795	2,443	2,259	1,979	1,920	1,959	2,050	2,068	1,996	2,375	2,950	2,300	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT 6/		2,839	2,795	2,443	2,259	1,979	1,920	1,959	2,050	2,068	1,996	2,375	2,950	2,300	12
	REQUIREMENTS FORECAST BY END-USE 7/															
13	CORE 8/	Residential	1,029	990	772	647	443	342	316	315	323	398	687	1,086	610	13
14		Commercial	250	259	210	195	160	150	143	143	148	153	202	259	189	14
15		Industrial	55	59	53	53	47	48	44	44	48	51	54	53	51	15
16		NGV	38	41	44	45	44	47	47	49	50	49	49	48	46	16
17		Subtotal-CORE	1,372	1,349	1,079	939	693	587	549	551	569	651	993	1,446	896	17
22	NONCORE	Subtotal-NONCORE	993	977	961	957	969	1,018	1,098	1,191	1,173	1,027	992	1,011	1,031	22
26	WHOLESALE & INTERNATIONAL	Subtotal-WHOLESALE & INTL	438	434	372	334	293	291	287	282	300	293	360	455	344	26
27		Co. Use & LUAF	36	35	31	28	25	24	25	26	26	25	30	37	29	27
28	SYSTEM TOTAL THROUGHPUT 6/		2,839	2,795	2,443	2,259	1,979	1,920	1,959	2,050	2,068	1,996	2,375	2,950	2,300	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	71	74	67	65	57	57	56	56	58	58	67	77	64	29
30	NONCORE	All End Uses	993	977	961	957	969	1,018	1,098	1,191	1,173	1,027	992	1,011	1,031	30
33		Subtotal-RETAIL	1,065	1,051	1,027	1,022	1,026	1,075	1,154	1,248	1,230	1,085	1,059	1,088	1,095	33
34	WHOLESALE & INTERNATIONAL	All End Uses	438	434	372	334	293	291	287	282	300	293	360	455	344	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,503	1,485	1,399	1,356	1,319	1,366	1,441	1,530	1,531	1,378	1,419	1,544	1,439	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)
2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand
3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision
4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.
5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach: 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3 1.3
7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d: 1,342 1,316 1,045 903 656 547 509 511 528 612 956 1,413 859

Work Paper: TABLE 4-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2028

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) 1/		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) 2/		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) 3/		1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	1,250	5
6	Total Out-of-State Gas		3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	3,225	6
7	TOTAL CAPACITY AVAILABLE 4/		3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	3,435	7
	GAS SUPPLY TAKEN															
8	California Source Gas 5/		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,724	2,615	2,337	2,170	1,890	1,814	1,833	1,897	1,905	1,894	2,261	2,828	2,180	9
10	TOTAL SUPPLY TAKEN		2,785	2,676	2,398	2,231	1,951	1,875	1,894	1,958	1,966	1,955	2,322	2,889	2,241	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT 6/		2,785	2,676	2,398	2,231	1,951	1,875	1,894	1,958	1,966	1,955	2,322	2,889	2,241	12
	REQUIREMENTS FORECAST BY END-USE 7/															
13	CORE 8/	Residential	1,008	937	757	634	434	336	310	309	317	391	674	1,064	597	13
14		Commercial	244	244	205	191	156	147	140	140	145	150	197	253	184	14
15		Industrial	54	56	52	52	46	47	44	44	48	50	53	52	50	15
16		NGV	39	41	45	46	45	48	48	51	52	50	51	50	47	16
17		Subtotal-CORE	1,345	1,277	1,059	923	681	578	541	543	561	641	975	1,418	878	17
22	NONCORE	Subtotal-NONCORE	970	949	945	945	954	990	1,050	1,108	1,094	1,000	961	984	996	22
26	WHOLESALE & INTERNATIONAL	Subtotal-WHOLESALE & INTL	435	417	364	335	290	284	279	283	286	289	356	450	339	26
27		Co. Use & LUAF	35	34	30	28	25	24	24	25	25	25	29	36	28	27
28	SYSTEM TOTAL THROUGHPUT 6/		2,785	2,676	2,398	2,231	1,951	1,875	1,894	1,958	1,966	1,955	2,322	2,889	2,241	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	70	71	66	64	57	57	56	56	57	58	67	76	63	29
30	NONCORE	All End Uses	970	949	945	945	954	990	1,050	1,108	1,094	1,000	961	984	996	30
33		Subtotal-RETAIL	1,041	1,020	1,011	1,009	1,011	1,047	1,105	1,164	1,152	1,059	1,028	1,060	1,059	33
34	WHOLESALE & INTERNATIONAL	All End Uses	435	417	364	335	290	284	279	283	286	289	356	450	339	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,476	1,437	1,375	1,344	1,302	1,331	1,384	1,447	1,438	1,347	1,384	1,510	1,398	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,315	1,245	1,025	886	644	538	501	503	519	602	938	1,385	841

Work Paper: TABLE 4-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2029

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) 1/		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) 2/		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) 3/		1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	5
6	Total Out-of-State Gas		3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	6
7	TOTAL CAPACITY AVAILABLE 4/		3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	7
	GAS SUPPLY TAKEN															
8	California Source Gas 5/		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,689	2,644	2,304	2,130	1,863	1,794	1,820	1,881	1,886	1,869	2,233	2,782	2,156	9
10	TOTAL SUPPLY TAKEN		2,750	2,705	2,365	2,191	1,924	1,855	1,881	1,942	1,947	1,930	2,294	2,843	2,217	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT 6/		2,750	2,705	2,365	2,191	1,924	1,855	1,881	1,942	1,947	1,930	2,294	2,843	2,217	12
	REQUIREMENTS FORECAST BY END-USE 7/															
13	CORE 8/	Residential	986	950	741	621	426	330	304	303	311	383	660	1,041	586	13
14		Commercial	239	247	201	187	153	144	137	137	142	147	193	248	181	14
15		Industrial	53	57	51	51	45	46	43	43	47	49	52	51	49	15
16		NGV	40	43	46	47	46	49	49	52	53	52	52	51	48	16
17		Subtotal-CORE	1,318	1,297	1,039	906	670	570	533	535	553	631	958	1,391	864	17
22	NONCORE	Subtotal-NONCORE	964	944	933	927	938	974	1,041	1,099	1,085	990	953	968	985	22
26	WHOLESALE & INTERNATIONAL	Subtotal-WHOLESALE & INTL	432	431	363	330	291	288	283	282	284	285	354	449	339	26
27		Co. Use & LUAF	35	34	30	28	24	23	24	24	25	24	29	36	28	27
28	SYSTEM TOTAL THROUGHPUT 6/		2,750	2,705	2,365	2,191	1,924	1,855	1,881	1,942	1,947	1,930	2,294	2,843	2,217	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	70	73	66	64	57	57	56	56	57	58	66	76	63	29
30	NONCORE	All End Uses	964	944	933	927	938	974	1,041	1,099	1,085	990	953	968	985	30
33		Subtotal-RETAIL	1,034	1,017	999	991	995	1,031	1,097	1,156	1,143	1,048	1,019	1,044	1,048	33
34	WHOLESALE & INTERNATIONAL	All End Uses	432	431	363	330	291	288	283	282	284	285	354	449	339	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,467	1,448	1,362	1,321	1,286	1,319	1,379	1,438	1,427	1,333	1,373	1,493	1,387	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:	1,289	1,263	1,005	869	633	529	493	495	511	591	920	1,357	827

Work Paper: TABLE 4-SCG

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2030

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) [1/]		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) [2/]		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) [3/]		1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	5
6	Total Out-of-State Gas		3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	6
7	TOTAL CAPACITY AVAILABLE [4/]		3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	7
	GAS SUPPLY TAKEN															
8	California Source Gas [5/]		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,621	2,590	2,259	2,090	1,836	1,755	1,772	1,803	1,825	1,820	2,187	2,723	2,104	9
10	TOTAL SUPPLY TAKEN		2,682	2,651	2,320	2,151	1,897	1,816	1,833	1,864	1,886	1,881	2,248	2,784	2,165	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT [6/]		2,682	2,651	2,320	2,151	1,897	1,816	1,833	1,864	1,886	1,881	2,248	2,784	2,165	12
	REQUIREMENTS FORECAST BY END-USE [7/]															
13	CORE [8/]	Residential	963	928	724	608	416	323	298	297	304	375	645	1,017	573	13
14		Commercial	234	242	197	183	150	142	134	135	139	144	189	242	177	14
15		Industrial	52	56	50	50	45	45	42	42	46	48	51	50	48	15
16		NGV	41	44	47	48	47	51	50	53	54	53	53	52	50	16
17		Subtotal-CORE	1,290	1,269	1,018	889	658	560	525	527	544	621	939	1,361	848	17
22	NONCORE	Subtotal-NONCORE	934	926	914	913	926	954	1,006	1,033	1,035	955	929	945	956	22
26	WHOLESALE & INTERNATIONAL	Subtotal-WHOLESALE & INTL	424	422	359	323	289	279	279	280	283	282	351	442	334	26
27		Co. Use & LUAF	34	33	29	27	24	23	23	24	24	24	28	35	27	27
28	SYSTEM TOTAL THROUGHPUT [6/]		2,682	2,651	2,320	2,151	1,897	1,816	1,833	1,864	1,886	1,881	2,248	2,784	2,165	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	69	72	65	64	57	57	56	56	57	58	66	75	63	29
30	NONCORE	All End Uses	934	926	914	913	926	954	1,006	1,033	1,035	955	929	945	956	30
33		Subtotal-RETAIL	1,003	998	980	977	983	1,011	1,062	1,090	1,092	1,013	995	1,020	1,019	33
34	WHOLESALE & INTERNATIONAL	All End Uses	424	422	359	323	289	279	279	280	283	282	351	442	334	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,428	1,420	1,338	1,299	1,272	1,290	1,341	1,369	1,376	1,295	1,346	1,463	1,353	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)

2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand

3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision

4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.

5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.

6/ Excludes own-source gas supply of gas procurement by the City of Long Beach

7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.

8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/ Own-source gas supply (City of Long Beach)	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
8/ Core end-use demand exclusive of CAT (MDth/d)	1,260	1,236	983	851	621	520	484	486	502	581	901	1,328	811

Work Paper: **TABLE 4-SCG**

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2035

COLD TEMPERATURE YEAR (1 IN 35 COLD YEAR EVENT) & DRY HYDRO YEAR

LINE			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	CAPACITY AVAILABLE															
1	California Line 85 Zone (California Producers)		60	60	60	60	60	60	60	60	60	60	60	60	60	1
2	California Coastal Zone (California Producers)		150	150	150	150	150	150	150	150	150	150	150	150	150	2
	Out-of-State Gas															
3	Wheeler Ridge Zone (KR, MP, PG&E, OEHI) 1/		765	765	765	765	765	765	765	765	765	765	765	765	765	3
4	Southern Zone (EPN,TGN,NBP) 2/		1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	4
5	Northern Zone (TW,EPN,QST, KR) 3/		1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	5
6	Total Out-of-State Gas		3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	3,565	6
7	TOTAL CAPACITY AVAILABLE 4/		3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	3,775	7
	GAS SUPPLY TAKEN															
8	California Source Gas 5/		61	61	61	61	61	61	61	61	61	61	61	61	61	8
9	Out-of-State		2,443	2,407	2,109	1,959	1,725	1,665	1,703	1,786	1,784	1,748	2,061	2,544	1,992	9
10	TOTAL SUPPLY TAKEN		2,504	2,468	2,170	2,020	1,786	1,726	1,764	1,847	1,845	1,809	2,122	2,605	2,053	10
11	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	11
12	TOTAL THROUGHPUT 6/		2,504	2,468	2,170	2,020	1,786	1,726	1,764	1,847	1,845	1,809	2,122	2,605	2,053	12
	REQUIREMENTS FORECAST BY END-USE 7/															
13	CORE 8/	Residential	847	815	637	536	369	287	265	264	271	333	569	893	506	13
14		Commercial	211	219	178	166	137	130	123	123	128	131	172	219	161	14
15		Industrial	48	52	47	46	41	42	39	39	43	45	48	47	45	15
16		NGV	45	48	52	53	51	55	55	58	60	58	59	57	54	16
17		Subtotal-CORE	1,151	1,134	914	802	598	514	483	485	501	567	847	1,216	766	17
22	NONCORE	Subtotal-NONCORE	904	885	876	870	885	911	981	1,042	1,025	931	896	928	928	22
26	WHOLESALE & INTERNATIONAL	Subtotal-WHOLESALE & INTL	417	417	352	322	280	279	278	296	295	287	352	429	333	26
27		Co. Use & LUAF	32	31	27	25	23	22	22	23	23	23	27	33	26	27
28	SYSTEM TOTAL THROUGHPUT 6/		2,504	2,468	2,170	2,020	1,786	1,726	1,764	1,847	1,845	1,809	2,122	2,605	2,053	28
	TRANSPORTATION AND EXCHANGE															
29	CORE	All End Uses	67	70	64	63	56	57	56	56	58	58	65	73	62	29
30	NONCORE	All End Uses	904	885	876	870	885	911	981	1,042	1,025	931	896	928	928	30
33		Subtotal-RETAIL	971	955	940	933	941	968	1,037	1,098	1,083	989	961	1,001	990	33
34	WHOLESALE & INTERNATIONAL	All End Uses	417	417	352	322	280	279	278	296	295	287	352	429	333	34
35	TOTAL TRANSPORTATION & EXCHANGE		1,388	1,373	1,292	1,255	1,221	1,247	1,315	1,395	1,378	1,277	1,313	1,430	1,324	35
	CURTAILMENT (RETAIL & WHOLESALE)															
36		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	36
37		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	37
38		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	38

NOTES:

1/ Wheeler Ridge Zone: KR & MP at Wheeler Ridge, PG&E at Kern Stn., OEHI at Gosford)
2/ Southern Zone (EPN at Ehrenberg, TGN at Otay Mesa, NBP at Blythe); ability to receive 1,210 MMcfd dependent on local area demand
3/ Northern Zone (TW at No. Needles, EPN at Topok, QST at No. Needles, KR at Kramer Jct.); projected capacity may vary from that shown over the span of the CGR timeframe pending 2024 General Rate Case decision
4/ Represents the outlook for firm receipt capacities at the time of publication; subject to change over the span of the CGR timeframe.
5/ Average 2021 recorded California Source Gas; production less than capacity due to reservoir performance and economics.
6/ Excludes own-source gas supply of gas procurement by the City of Long Beach
7/ Requirement forecast by end-use includes sales, transportation, and exchange volumes.
8/ Core end-use demand exclusive of core aggregation transportation (CAT) in MDth/d:

Note	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
6/	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
8/	1,119	1,098	877	763	559	472	441	443	457	526	807	1,180	727

2022 CALIFORNIA GAS REPORT

CUSTOMER FORECAST

A Sempra Energy utility®

2022 California Gas Report (recorded data through 2021)

SoCalGas *Connected* Meter Forecast							
YEAR	Residential Single-Family	Residential Multi-Family	Residential Master Meter	Commercial	Industrial	NGV	Total
2019	3,797,955	1,900,271	40,257	248,943	25,189	336	6,012,951
2020	3,820,836	1,912,460	39,301	249,302	24,938	339	6,047,176
2021	3,844,078	1,924,441	39,312	249,422	24,764	346	6,082,363
2022	3,868,804	1,939,204	38,997	249,777	24,517	349	6,121,648
2023	3,893,945	1,957,761	38,685	250,074	24,271	353	6,165,089
2024	3,918,212	1,975,997	38,376	250,204	24,029	357	6,207,175
2025	3,941,953	1,993,658	38,069	250,333	23,788	361	6,248,162
2026	3,965,467	2,011,020	37,764	250,484	23,550	365	6,288,650
2027	3,988,538	2,028,381	37,462	250,614	23,315	369	6,328,679
2028	4,010,691	2,045,333	37,162	250,723	23,082	373	6,367,364
2029	4,032,221	2,061,869	36,865	250,821	22,851	377	6,405,004
2030	4,053,415	2,078,231	36,570	250,920	22,622	381	6,442,139
2031	4,074,176	2,094,516	36,278	251,010	22,396	385	6,478,761
2032	4,094,554	2,110,515	35,987	251,117	22,172	389	6,514,734
2033	4,114,828	2,126,270	35,700	251,233	21,951	393	6,550,375
2034	4,134,719	2,141,970	35,414	251,348	21,731	397	6,585,579
2035	4,154,223	2,157,455	35,131	251,458	21,514	401	6,620,182

SoCalGas *Active* Meter Forecast							
YEAR	Residential Single-Family	Residential Multi-Family	Residential Master Meter	Commercial	Industrial	NGV	Total
2019	3,742,106	1,824,603	39,591	189,380	16,068	336	5,812,084
2020	3,769,495	1,832,425	38,644	189,399	15,811	339	5,846,113
2021	3,790,736	1,839,450	38,610	188,690	15,674	346	5,873,506
2022	3,814,617	1,857,865	38,301	189,577	15,518	349	5,916,227
2023	3,839,406	1,875,644	37,994	189,804	15,362	353	5,958,563
2024	3,863,332	1,893,115	37,690	189,902	15,209	357	5,999,605
2025	3,886,741	1,910,035	37,389	190,000	15,057	361	6,039,583
2026	3,909,926	1,926,669	37,090	190,114	14,906	365	6,079,070
2027	3,932,674	1,943,301	36,793	190,213	14,757	369	6,118,107
2028	3,954,517	1,959,543	36,499	190,296	14,610	373	6,155,838
2029	3,975,745	1,975,386	36,207	190,370	14,463	377	6,192,548
2030	3,996,642	1,991,061	35,917	190,445	14,319	381	6,228,765
2031	4,017,113	2,006,663	35,630	190,514	14,176	385	6,264,481
2032	4,037,206	2,021,991	35,345	190,595	14,034	389	6,299,560
2033	4,057,195	2,037,085	35,062	190,683	13,894	393	6,334,312
2034	4,076,807	2,052,127	34,781	190,770	13,755	397	6,368,637
2035	4,096,039	2,066,962	34,503	190,854	13,617	401	6,402,376

2022 CALIFORNIA GAS REPORT

EUFORECASTER

A Sempra Energy utility®

I. Introduction

End Use Forecaster is a market-segmentation and modeling framework that forecasts the impacts of competitive strategies and market scenarios on sales, revenues, and market shares. **EUForecaster is used to prepare the demand forecasts for the residential, core commercial and industrial, and noncore commercial and industrial markets.**

The object of this chapter is to familiarize you with the overall End Use Forecaster modeling structure and to describe how the system relates to common business issues concerning demand forecasting and market assessment. This chapter also serves to explain how the various modules within End Use Forecaster relate to one another. Subsequent chapters define the contents and features of each individual module.

End Use Forecaster: An Overview

End Use Forecaster, formerly known as Quant.sim, is a market segmentation, competitive assessment, and sales projection application developed to respond to market needs and overcome the limitations of existing demand forecasting and market planning tools. The application, originally developed in 1993, is constructed using SAS software.

We have found that each utility's market structure and competitive environment is unique and that a major shortcoming of other tools has been an inability to accurately capture this diversity. End Use Forecaster's Market Segmentation module provides the ability to update the model to reflect new strategies without writing SAS programming code. Unique market conditions translate into an inherently flexible, dynamic modeling framework that can rapidly adapt to new market conditions.

This flexibility is afforded through a model development approach that separates specific market issues from theoretical modeling constructs:

- ***Logic and theory***, the portion of the system comprised of the programming code and data structures, is stored and managed in one location
- ***Market data***, which are unique for every company and strategy, are stored in a separate location

This structure makes market segmentation and analyses relatively easy tasks compared to adapting spreadsheet models or rewriting "black box" programming code. As an example, consider the "DSM planning" and "competitive assessment" market dimensions in the Table 1 below. The DSM dimensions show a standard end-use forecast model design for the utility industry, while the competitive assessment dimensions illustrate another way to set up End Use Forecaster to analyze new retail competition if retail choice is present in the jurisdiction.

Table 1. Alternative Market Segmentation Designs – Utility Industry Example

Market Dimension	DSM Planning	Competitive Assessment
Dimension 1	Market sector (residential, commercial, industrial, agricultural)	Risk of switching
Dimension 2	Customer type (dwelling, building, industry segments)	Customer value (to energy provider)
Dimension 3	End uses	Products and services
Dimension 4	Fuel types	Provider choices
Dimension 5	Efficiency levels	Product choices

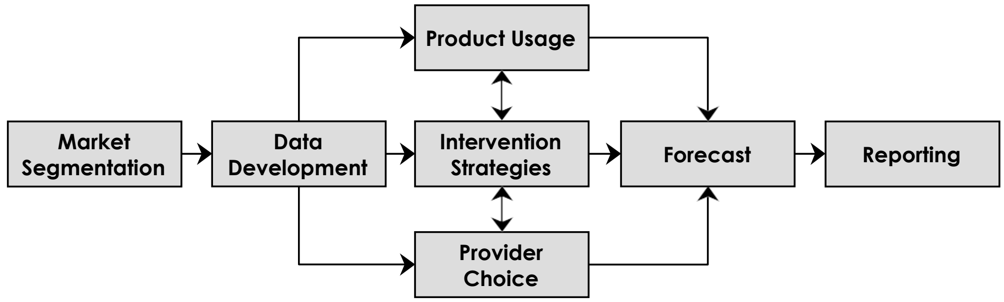
End Use Forecaster has other dimensions that capture factors affecting product demands. Perhaps the most important of these is End Use Forecaster's "vintaging" capability. Vintaging refers to product or service turnover that is a function of either physical lives or contract period. Accurate assessments of product turnover are crucial to obtaining accurate forecasts for any product where purchases are derived from a fraction of the population in the market at a moment of time. An example of vintaging would be accounting for energy-consuming equipment such as motors, boilers, water heaters, chillers, etc., where demand over a given time interval is the sum of demands from new customers plus those customers replacing existing equipment.

The effective use of the inherent multidimensionality of most business forecasting issues is a key strength of the End Use Forecaster framework. Critical dimensions of business issues (e.g., geography, customers, products, competitors, equipment lives, etc.) are included in every forecast, along with dimensions users can modify to resolve a variety of business issues. For example, forecasters may be interested in the price elasticity of demand, marketing staff may want to study market shares across various scenarios, and corporate finance may need the bottom line revenue forecast. All these (and more) are immediately available in every forecast due to the concentration of rich and flexible dimensionality.

Seven primary modules form the heart of the End Use Forecaster framework: Market Segmentation, Data Development, Product Usage, Provider Choice, Intervention Strategies, Forecasting, and Reporting. .

Figure 1 depicts the relationships between these modules. Each is summarized below and in the remaining chapters of this Reference Guide.

Figure 1. End Use Forecaster Modules and Structure



Interface Design

The user interface to the End Use Forecaster model is constructed using SAS/AF (Applications Facility). SAS/AF software provides dozens of predefined "classes" that enabled the development of End Use Forecaster. These classes include a wide selection of both visual and non-visual aspects. The visual classes, or widgets, define objects that are placed on the screen, including icons, push buttons, text boxes tables, etc. The non-visual classes use screen control language (SCL) that define the objects controlling End Use Forecaster behind the scenes. Figure 2 and Figure 3 show the first two screens users see after starting End Use Forecaster.

Figure 2. Welcome Screen

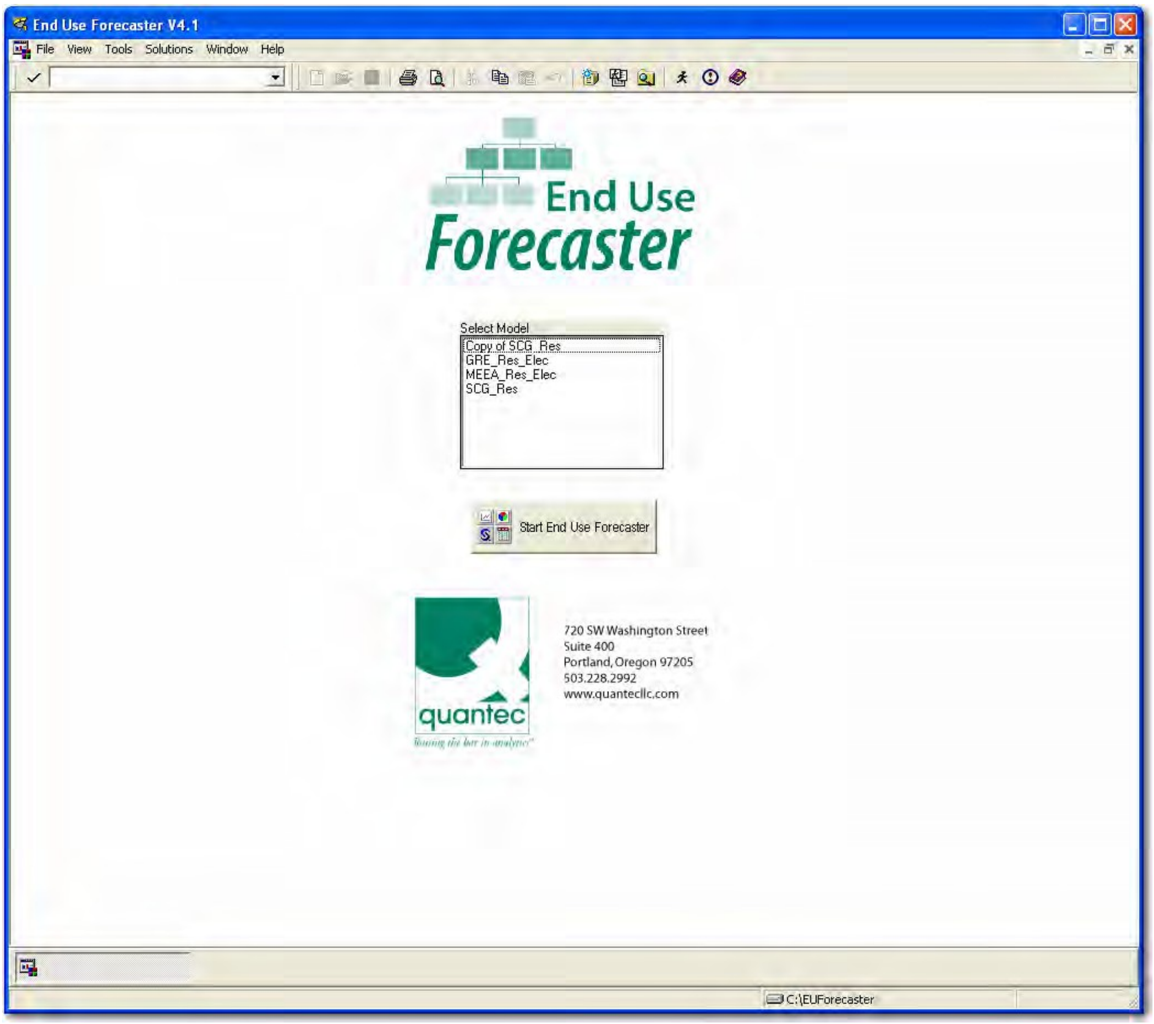
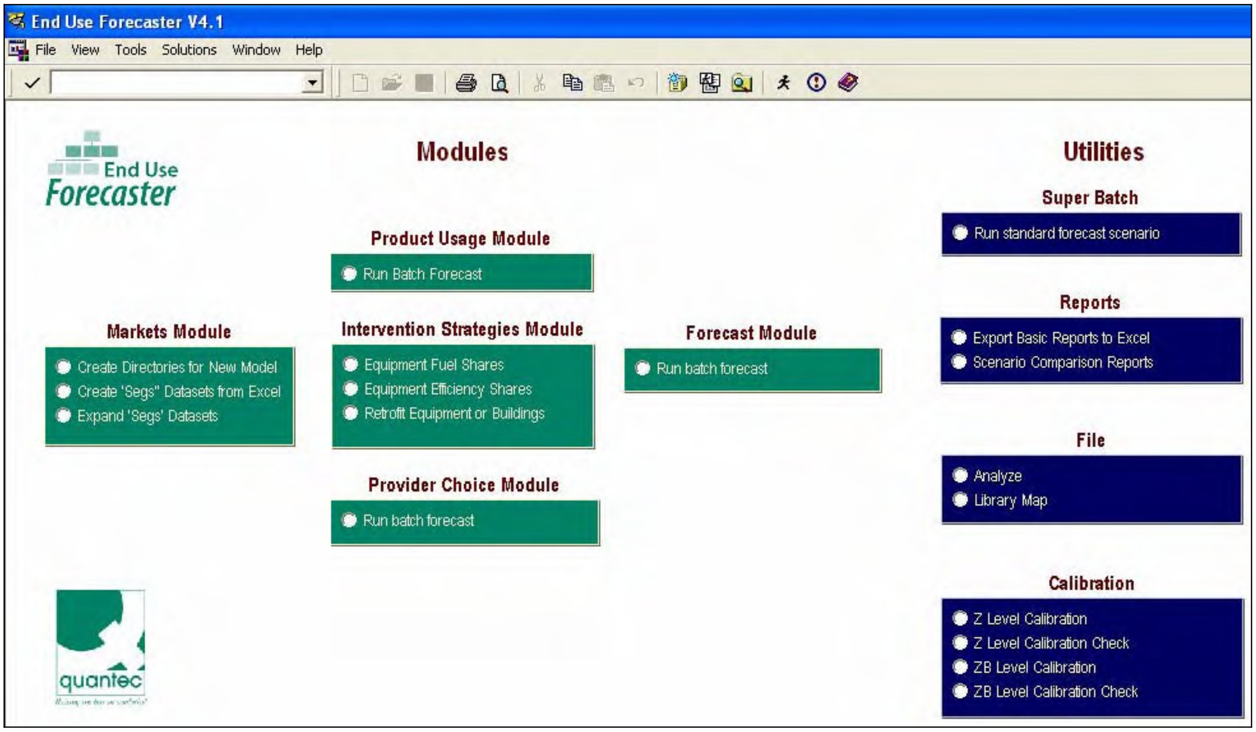


Figure 3. Main Dashboard



The interface is the only part of the End Use Forecaster framework that is compiled. All of the mathematical operations are in open SAS code, and End Use Forecaster's SAS/AF interface can also be edited and recompiled. This is a true "open architecture" design that allows users to modify and extend the End Use Forecaster framework.

In addition to End Use Forecaster's customized sets of tools, there is also a wide variety of data management, analysis, and reporting tools that are packaged with the SAS System.

Data Exchange

End Use Forecaster uses SAS/ACCESS software to provide direct and transparent access to various databases such as:

- DB2 Under UNIX and PC Hosts
- ORACLE
- SYBASE
- SQL/DS
- ODBC
- PC File Formats (Excel, Access)
- SYSTEM 2000 software

Since data access functions are separated from End Use Forecaster's logic, underlying data sources may change, but the model's capabilities will not be affected.

Market Segments

The primary goal of any market segmentation design in End Use Forecaster is to disaggregate the overall market into meaningful portions of customer types that behave similarly in terms of product demands and the set of choices they face. These disaggregations are arranged hierarchically, with Dimension 1 at the top of the "tree." Each Dimension 1 class can have one or more Dimension 2 classes, each Dimension 2 class can have one or more Dimension 3 classes, and so on.

Strategic Information Needs

A secondary goal of the market segmentation design is to designate groups of customers and products for which sufficient data are available to be fed into End Use Forecaster's forecasting framework. It may not be desirable to disaggregate the market into segments for which little or no data are available or where there is little distinction between two or more groups. Every new market segment requires additional disk storage space and more time to assemble the required End Use Forecaster data inputs. The objective should be to ***optimize*** the number of market segments: create enough market sectors to provide differentiation on answers to important questions but not so many that they become a burden to the overall process.

Data Development and Entry

Successful implementation of the End Use Forecaster model relies on highly integrated sets of information. Data entry is closely related to the market segmentation process, and both are addressed in this Reference Guide. Each set of input data uses different dimensions, so highly structured templates were designed to minimize redundancy and eliminate error at the same time.

End Use Forecaster uses market segmentation information and templates to set up all the required SAS datasets such that they are entirely consistent with the segmentation design.

Data Entry Formats

End Use Forecaster's datasets can be populated in several ways. The most common methods are:

- Exporting/importing data using SAS/ACCESS for PC file formats
- Programmatic data entry through simple SAS programs

As users gradually increase the number of distinct market segments from dozens to hundreds to thousands, it is anticipated that they will take advantage of SAS/ACCESS links to other company databases. Such links would allow for real-time forecast updates as database information is updated.

End Use Forecaster tracks consumption of resources (such as natural gas, electricity, water, minutes of telephone or Internet use, gasoline, etc.) through the Product Usage module. This module is only used when there are secondary, derived demands from customers' product choices. For example, a utility would be interested in the use of energy from appliances to generate natural gas or electricity forecasts, but other types of manufacturers may not need this information to develop sales forecasts. If certain parts of the model are not needed in a given application, you may assign default values (usually a 0 or 1) that essentially turn off that portion of the model.

Product usage can vary with a variety of factors such as weather, non-weather seasonal factors, customer characteristics, prices, and other product attributes. Several modeling techniques explain and predict product usage, including scalars (exogenous estimates), econometric functions, and other statistical models.

Regardless of the approach taken, the Product Usage module provides a forecast of the predicted consumption by combining (1) a forecast of consumption factors or drivers (i.e., independent or exogenous variables) and (2) a set of coefficients associated with each exogenous variable.

Provider Choice Module: Modeling Customer Service and Purchase Decisions

Types of Choices: The Provider Choice module analyzes customer choice decisions among competitors and product options. For example, a commercial building operator chooses between fuel (provider) types for HVAC systems, and then from various equipment efficiency levels (product options) within the fuel type. Purchase decisions are represented by a nested structure of provider and product option choices.

Modes of Choice Modeling

The Provider Choice module is designed for two types of modeling: (1) the estimation of choice parameters, and (2) the forecast of market shares given these choice parameters. More specifically, the Provider Choice Module:[1]

- ***Simulates parameter estimates*** relating to customer choice in markets where micro-(customer) level information is not available, but aggregate cost and market share figures are known, or
- ***Uses parameter estimates*** from the application of logistic regression, or other models of customer choice, to micro-level customer data.

---

1 The Provider Choice Module can be bypassed in some applications such as DSM potential analysis. In this type of framework, the base line fuel and efficiency shares are held constant and are determined outside the model. The Intervention Strategies Module is then used to view alternate market shares associated with, for example, technical and achievable DSM potential.

If primary market research is used to develop the micro data necessary for parameter estimates, the Provider Choice module essentially transforms a “static” market research report into a dynamic what-if analysis structure. This can significantly extend the usefulness and life of company market research resources.

After model parameters are simulated or input into the Provider Choice Module, it then forecasts the market share associated with each product and service alternative over the planning horizon.

Average versus Marginal Shares

The comparison of average versus marginal shares and associated trends is a key result of incorporating dynamic choice functions in the End Use Forecaster forecasting framework.

For example, the infusion of new energy consumption technologies (such as condensing furnaces) may be reaching 35% of new construction buildings, but if new construction in a given year only represents 2% of the total market, then the total impact on the market is merely 0.7%. As these rates of change accelerate and decelerate through the future, and as simulated what-if scenarios impact these forecasts of consumer choice, markedly different forecasts are possible over the longer term, while at the same time maintaining a realistic short-term profile.

Intervention Strategies Module: Analyzing Marketing Scenarios and DSM Potential

The Intervention Strategies module – a generic term to apply to activities typically associated with demand-side management (DSM) – is intended to capture the impacts of marketing, energy efficiency potential, and other programs designed to influence customer behavior. This module makes available a series of program designs that simulate the “what-if” impacts on the market shares, usage, and the resulting demand forecast. Three general types of program designs are available:

- ***Provider (fuel) substitution scenarios***. These scenarios modify the forecasted choices or market shares among provider (fuel) sources. Separate sets of assumptions apply to existing buildings and new construction buildings, permitting different types of programs to be designed.
- ***Product option (equipment efficiency) scenarios***. These scenarios modify efficiency or product option shares. For example, an efficiency program usually favors the highest available efficiency level for each market sector. These impacts affect choices at the point of new construction or replacement of existing end uses, and different assumptions can apply to each market. A technical potential scenario normally assigns a 100% share to the most efficient option. An achievable potential scenario assigns less than a 100% share to the most efficient option, with the level determined by experience with similar program designs or market research.
- ***Usage retrofit program scenarios***. These programs encourage consumers to change their product usage given the equipment they already have (e.g., improve the efficiency of existing equipment by installing efficiency measures or through better O&M procedures).

Examples include measures to tighten residential and commercial building envelopes, industrial process changes, and pipe and duct insulation.

Intervention strategies are incorporated directly into the relevant Product Usage or Provider Choice forecasts.

Forecast Module: Putting It All Together

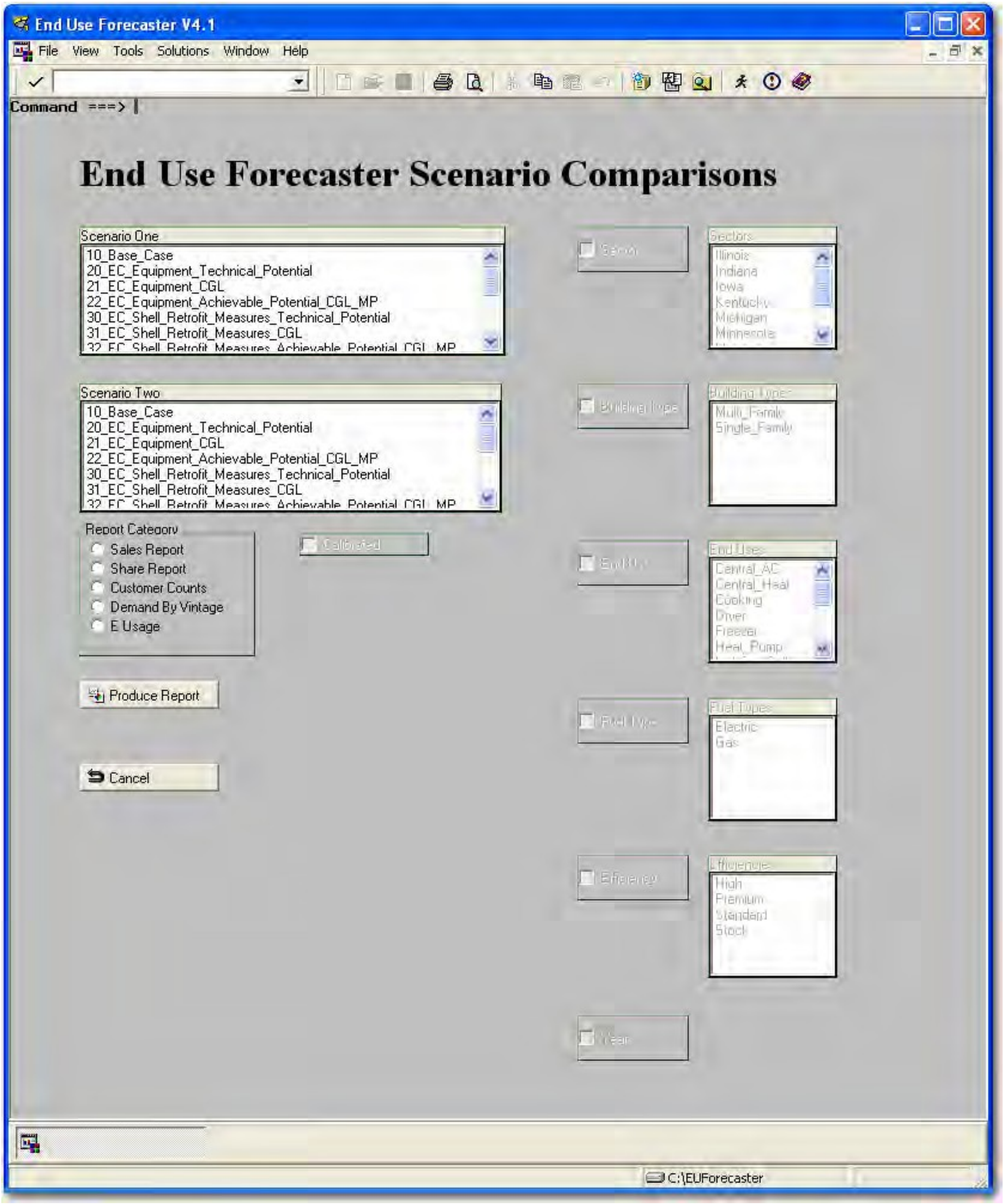
The Forecast Module incorporates all the information compiled from the other modules – Usage, Choice, and Intervention Strategies – related to the overall economic growth of the market segment and equipment lifetime (decay) functions to create the final forecast for a given scenario.

This module produces sales and market share reports that provide quick access to all forecast details. The reports produce forecast outputs in a "flat" matrix format, providing the ability to review the data for reasonability before pronouncing the forecast final.

Reporting: Getting the Projections Out to Decision-Makers

End Use Forecaster also produces reports that can be customized based upon the user's choice of segmentation combinations to analyze. These reports summarize and/or compare forecasts for two forecast scenarios specified by the user in the Scenario Comparison interface, as shown in Figure 4.

Figure 4. Report Customization



The user specifies the Report Category (sales, market share, customer counts or demand by vintage) and, based on the category selected, the user is given the option of selecting different combinations of segments to summarize and/or compare. Additionally, the user is given the option of summarizing the forecast data across all years within the forecast horizon or generating results on a year-by-year basis.

II. Application Structure

A solid understanding of how End Use Forecaster is organized will help users to understand the logic of the model and greatly improve the efficiency with which they use the application. The latest revisions to End Use Forecaster focused almost exclusively on consolidating libraries and datasets to make the model easier to use; the model's logic, repeatedly validated over its history, was left intact. Underlying the updates was an emphasis on consistency in the naming and organization of datasets and variables so as to maximize the intuitiveness of the model. This Chapter describes the model's organization with the intent of helping the user be a more effective modeler.

Hardware and Software

End Use Forecaster is a Windows application developed in PC-SAS. The code and datasets can easily be migrated to other platforms (UNIX, etc.), should the user desire, but the interfaces will not provide the same functionality on other systems. If a user desires a non-PC hardware/software solution, The Cadmus Group, formerly known as Quantec, will work with the SAS Institute to ensure compatibility and develop a customized solution.

Hardware

The minimum recommended hardware configuration slightly exceeds SAS Institute requirements to ensure that forecast simulations can be performed in a timely manner. The vast majority of PCs purchased since 2000 exceed these recommendations:

- Pentium 866 MHZ CPU
- 512 MB RAM
- SVGA compatible color monitor
- 10 GB hard disk drive of free space
- CD-ROM drive (for installation purposed only)

End Use Forecaster's performance (i.e., speed) increases significantly if the system is equipped with more advanced processors (e.g., Pentium III or better), additional RAM (1 GB RAM or more), and additional disk space (for storage).

Software

End Use Forecaster is designed for the Microsoft Windows operating system (compatible with Windows 95 and 98, Windows NT Workstation 4.0, Windows XP, and Windows 2000 Professional). It is currently configured for SAS version 9.1 and version 8.2. Seven SAS software products are required:

- Base SAS

- Full Screen Product (SAS/FSP)
- Econometrics and Time Series (SAS/ETS)
- Statistics (SAS/STAT)
- High-Resolution Graphics (SAS/GRAPH)
- Interactive Data Analysis (SAS/INSIGHT)
- Direct Database Access (SAS/ACCESS)

An additional module, Applications Facility (SAS/AF), is used in developing End Use Forecaster's graphical user interface. These modules are based on a special SAS code subset called SAS Control Language (SCL). This portion of End Use Forecaster is stored (compiled) within the model and does not require user modification.

If any of the required SAS products are missing from the site license, the software can be added for little additional cost. For organizations that do not yet have SAS, The Cadmus Group (Quantec) will be happy to work with the SAS Institute to ensure that you obtain a solution that will allow End Use Forecaster to run smoothly and cost effectively.

Installation of End Use Forecaster is site-specific because it is dependent on the location of SAS on your PCs. However, there is minimal customization. For each user we only need to modify two files in the End Use Forecaster\Config directory: autoexec.sas and EUForecaster.cfg. These files 'point' End Use Forecaster to your SAS installation and take advantage of the hard drive on your computer with the most disk space. These customized files are developed during installation, consistent with the installation of SAS on individual workstations.

Conventions

The majority of the nomenclature in this documentation comes directly from the SAS application in which End Use Forecaster was developed. The various components of SAS and the conventions used in referring to them throughout the documentation are:

- ***SAS libraries***, the logical names that refer to thephysical locations where SAS datasets are stored, are referred to using all uppercase letters (CONFIG, MODELCODE, etc.).
- ***SAS code***, which contain the routines for End Use Forecaster's modules, are referred to in normal text using the 'camelBack' syntax with the .sas suffix appended, such as choiceBatch.sas.
- ***SAS datasets*** are referred to using bold-face type using the 'camelBack' syntax, such as **equipmentAge_10**.
- ***SAS variables*** are referred to in italic type using the 'camelBack' syntax, such as *usageEquationStatus*.

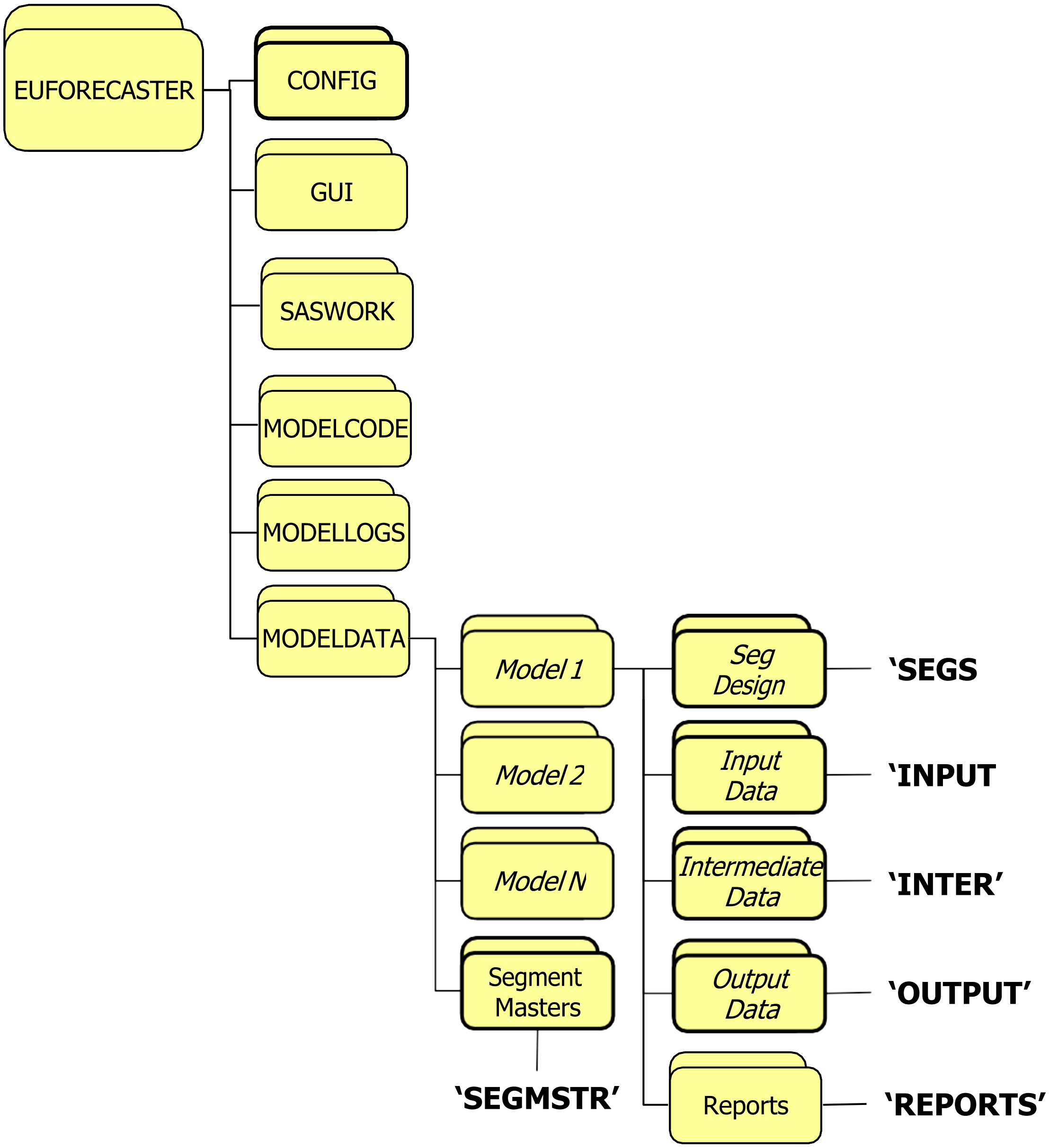
End Use Forecaster's modules run user-specified scenarios. To differentiate among these scenarios, scenario-specific datasets have a numeric suffix, such as **priceForecast_10**. In general cases, where the documentation does not refer to a specific scenario, datasets are referred to with an **"_xx"** suffix, such as **saturations_xx**.

Model Organization

The logic and theory underlying End Use Forecaster are separated from the data, which vary by individual segmentation design (model). This differentiation drives the structural organization of the model as well, and these two components are stored in different physical locations. The initial organization takes place in the underlying Windows folder structure, which serves as the basis for the SAS libraries that hold both the datasets and catalogs that dictate the model logic and data structure, as well as those datasets specific to individual segmentation designs.

As shown in Figure 5, the folder hierarchy begins with the folder 'EUFORECASTER.' With the exception of the SAS application itself, the entire model – all code, interfaces, and datasets – resides within this folder. Folders with bold outlines represent the physical locations of SAS libraries, the names of which are designated in single quotes. The folders with names in italics – note that they are all within the data folder – represent those libraries that will vary by individual model. The 'MODELDATA' folder will contain individual folders for every model created by a user. Each of these individual model folders will also contain the same set of subfolders as those shown within 'Model 1.' Because these folder serve as SAS libraries, the group of folders that will serve as 'Segs,' 'Input,' etc., will depend on which model the operator happens to be working with in a given session. The data for individual models will not be available at the same time.

Figure 5. End Use Forecaster Folder Structure



This organization can have implications for the user. For example, if a user has a data source that applies to more than one model, the 'MODELCODE' library can serve as a good place to store the raw data to avoid keeping copies in each of the model-specific libraries. Detailed descriptions of these folders and their contents are provided in Table 2.

Table 2. End Use Forecaster Folders

Folder	Full Path	SAS Library	Description
EUFORECASTER	EUFORECASTER	N/A	Root application folder.
GUI	EUFORECASTER\ GUI	App	Folder containing all the underlying application catalogs and GUIs.
MODELLOGS	EUFORECASTER\ MODELLOGS	N/A	Directory where logs of model operations are stored.
MODELCODE	EUFORECASTER\ MODELCODE	N/A	Contains all the SAS code underlying the different End Use Forecaster modules.
CONFIG	EUFORECASTER\ CONFIG	N/A	Contains SAS configuration files in which site-specific modifications are established.
MODELDATA	EUFORECASTER\ MODELDATA	N/A	Contains data for all of the user-created segmentation designs.
"Model_Name"	EUFORECASTER\ MODELDATA \ "Model_Name"	N/A	A folder with all data for a model based on a user-defined name.
SegDesign	EUFORECASTER\ MODELDATA \ "Model_Name" \ segDesign	SEGS	For each model, contains the SAS datasets that establish the specific segmentation design.
InputData	EUFORECASTER \MODELDATA\ "Model_Name"\ inputData	INPUT	For each model, contains all of the user-populated datasets that are necessary to run the different modules.
IntermediateData	EUFORECASTER\ MODELDATA \ "Model_Name"\ intermediateData	INTER	For each model, contains all of the intermediate, model-generated outputs from the usage and choice modules that are necessary to run other modules.
OutputData	EUFORECASTER\ MODELDATA \ "Model_Name"\ outputData	OUTPUT	For each model, contains the various final output sets generated by the forecast module.
Reports	EUFORECASTER\ MODELDATA \ "Model_Name"\ Reports	N/A	Contains the reports and excel files created by End Use Forecaster's Reporting Engine.
SegmentMasters	EUFORECASTER\ MODELDATA \ segmentMasters	SEGMSTR	Contains datasets with all of the necessary variables and structure for every model dataset. A SAS program combines these datasets with a specific segmentation design to generate all the datasets (unpopulated) necessary for a given model.

III. Market Segmentation and Data Entry Modules

End Use Forecaster's Market Segmentation module governs two distinct tasks: 1) the development of customized market segmentation designs; and 2) the population of the model with the necessary data. While the first consists of formal, specific steps, the nature of the second depends on a number of factors, including the complexity of the segmentation design, the format of the various data sources, as even as the technical skills of the operator. This chapter provides extensive detail on the first followed by a brief discussion of issues surrounding the second.

Development of Market Segmentation Design

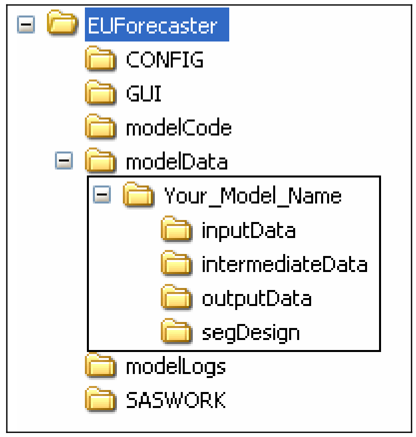
The execution of the first task – creation of a customized market segmentation design – is based on four steps, listed briefly below and then described in greater detail.

1) ***Creation of Model Data Folders*** – Creation of a specific directory structure for each model is necessary to perform subsequent steps.
2) ***Population of the Excel workbook*** **Seg_Design_Template.xls** – A step to define the various segments and their relationship with one another.
3) ***Creation of the Segs Library Datasets*** – This takes the Excel workbook and populates the "segs" library with the necessary segmentation design data sets.
4) ***Expansion of the Segmentation Design*** – This takes the segmentation design data sets in the "segs" library and merges them with the data set templates in the "segmstr" library, expanding them to create all the necessary – but still unpopulated! – data sets to run the basecase ("10") scenario in End Use Forecaster.

Creation of Model Data Folders

A prerequisite to setting up a new model is the creation of the necessary folders to contain the model-specific segmentation design and data. This means that within the c:\EUForecaster\modelData directory, you must have a folder with your model's name and within that folder you must have four folders called "inputData," "intermediateData," "outputData," and "segDesign," as shown in the interior boxed portion of Figure 6 below.

Figure 6. Data Folder Structure



There are multiple ways to create these folders. First, the user can manually create them in Windows Explorer. Alternately, one can copy the folder for an existing model and rename the root data folder to the preferred name, in which case subsequent steps will overwrite the existing datasets for the from model that was copied. Finally, the interface has an option in the Markets Module called "Create Directories for New Model." Selection of this option will prompt the user to enter the name for the new model and End Use Forecaster will create the desired folders.

Population of Seg_Design_Template.xls

The file ***Seg_Design_Template.xls***, a read-only file located in the root directory for End Use Forecaster (generally C:\EUForecaster) is the starting point for creating a custom segmentation design. It is here where you define the levels for the five primary dimensions that must exist in every segmentation design. While the experienced user will be very familiar with these dimensions, they deserve detailed discussion here. Starting at the top of the hierarchy, Dimensions 1 through 3 identify unique market segments. Dimensions 4 and 5 refer to the available product/service suppliers competing in the marketplace and product/service options, respectively. Although the actual use of these dimensions can vary, in and energy model the general use is as follows:

- Dimension 1: geographic region or sector
- Dimension 2: customer segment (home type, business type, or SIC)
- Dimension 3: end use
- Dimension 4: fuel type
- Dimension 5: efficiency level

In all designs, the first three dimensions define the basic market segmentation structure.

Dimension 1 always refers to geography, customer size, customer behavior, customer class, and/or any other features that separate groups of customers. Note that all of the aforementioned factors can be used within Dimension 1 (e.g., north-residential, north-commercial, south-residential, south-commercial, etc.).

Dimension 2 is reserved for factors that affect a particular group of customers in a similar manner, such as an exogenous rate of economic growth, building lives, or contract lives. In an end-use model, for example, this dimension might include various types of residential (single family, duplexes, multifamily, etc.) and commercial (office buildings, restaurants, hospitals, etc.) customers.

Dimension 3 refers to the products and services being marketed to each customer type, such as heating, cooling, or water heating. In a telecom model, this dimension would refer to basic service, Internet service, custom calling features, etc. As with the second dimension, each third dimension level has an associated physical or contract life. In an end-use energy model, each equipment type has a life span.

Dimensions 4 and 5 describe the product/competitive options within the major market categories that are defined by Dimensions 1 – 3. In an end-use model, fuel types are typically represented as Dimension 4 and various efficiency levels are represented by Dimension 5. In a competitive energy market, the fifth dimension could be used to represent various levels of retail services such as power quality or equipment maintenance offered by a provider.

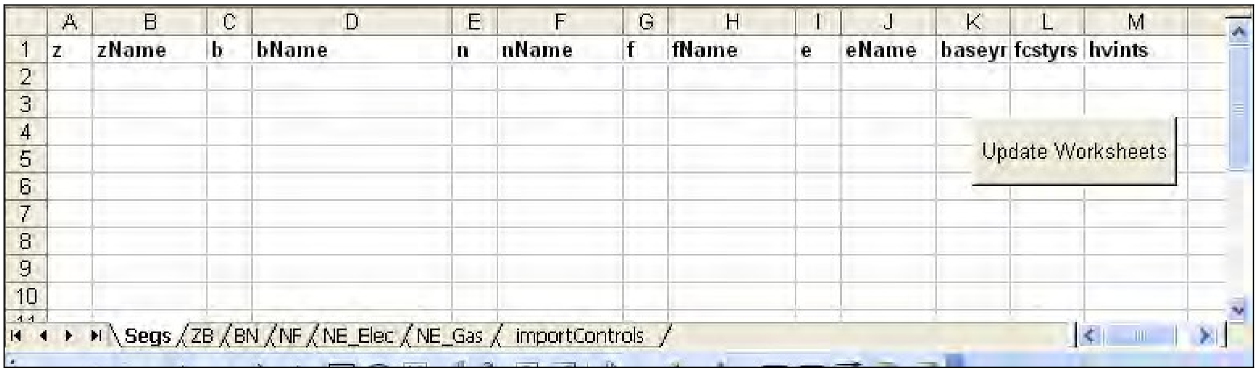
Table 3 summarizes the intended use of each of these dimensions. Note that while the model must include all five dimension, you are not required to use all of them. For example, suppose you want a design with alternative providers at Dimension 4 and do not wish to complicate the model with product/service options. In this case, you would assign only one alternative to Dimension 5, which effectively eliminates this dimension from the analysis. You could assign the same name to the single Dimension 5 alternative as that of the Dimension 4 to signify that in the design, this dimension has essentially been eliminated.

Table 3. End Use Forecaster Dimension Use Summary

Dimension	End Use Forecaster Dimension Name	End Use Forecaster Descriptive Name	End Use Forecaster Function	Special Features	No. Segment Levels in End Use Forecaster
One	z	zName	Factors that separate groups of customers		999
Two	b	bName	Additional factors that separate groups of customers	Building or contract life can be used to allow existing customers to decay over time	999
Three	n	nName	Equipment, products, services potentially purchased by Dimensions 1 – 2	Equipment or contract life can be used to allow existing equipment to decay over time	999
Four	f	fName	Providers of Dimension 3	Provider Choice module forecasts market shares	4
Five	e	eName	Service Options within Dimension 4	Provider Choice module forecasts product option shares	4

Open ***Seg_Design_Template.xls***. Excel will prompt you to either enable or disable macros and ***you will want to enable the macros***. Of the workbooks seven tabs, the first of interest is called "Segs," which is used for the definition of the different dimensions (z, b, n, f, and e) as well as the base year and years in the forecast rizon. That sheet should look like the image below, with no values for any of the dimensions:

Figure 7. Empty "Segs" Tab in Seg_Design_Template.xls



On this tab, first establish the base year of the forecast, the number of forecast years, and the number of historical vintages in columns K, L, and M below the headers baseyr, fcstyrs, and hvints, respectively. Next, the recommended first step is to fill in the columns for zName, bName, nName, fName, and eName with whatever zones, segments, end uses, fuels, and efficiency levels (or however you want to define the dimensions) that you want to include in the segmentation design. Once you have filled in the desired descriptive names, they then need to have their corresponding model values. ***These format for these is critical***. For z, b, and n the format is three-character numeric values. That is, they are a numeric values from 1 to 999 with leading zeros for all values below 100. In Excel, it is necessary to type an apostrophe (" ' ") prior to entering the value or else Excel will convert the cell to a numeric value and you will lose the leading zeros. For f and e, these are one-character numeric values. That is, they will have value of 1, 2, 3, or 4, but they must be in a character format. Again, a leading apostrophe will tell Excel to make these character. Figure 8 shows a fully populated "Segs" tab.

A Note on Naming Conventions – It is best to restrict the names of the different levels in each dimension used in the segmentation design to valid SAS variable names. According to SAS documentation, these names "can be up to 32 characters long. The first character must be a letter (A, B, C, . . . , Z) or underscore (_). Other characters can be letters, numbers (0, 1, . . . , 9), or underscores. Blanks cannot appear in SAS names, and special characters (for example, $, @, #), except underscores, are not allowed." While it is not an explicit requirement, using these names will greatly facilitate the process of model population because it will allow for the import and manipulation of data using names that need no modification to be applied directly to the model.

Figure 8. Example of Populated "Segs" Tab in Seg_Design_Template.xls

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	z	zName	b	bName	n	nName	f	fName	e	eName	baseyr	fcstyrs	hvints
2	001	Residential	001	Single_Family	001	Space_Heat	1	Natural_Gas	1	Stock	2003	22	3
3			002	MF2_2_TO_4_Un	002	Water_Heat	2	Electric	2	Standard			
4			003	MF3_GE_5_Units	003	Cooking			3	High			
5			004	MM_Master_Mete	004	Drying			4	Premium			
6			005	SM_Sub_Meter	005	Pool							
7					006	Spa							
8					007	Fireplace							
9					008	Barbecue							
10					009	Other							
11													
12													

Update Worksheets

Segs / ZB / BN / NF / NE_Elec / NE_Gas / importControls /

Once you have completed the "Segs" tab, selecting the Update Worksheets button will then populate the tabs "ZB," "BN," "NF," "NE_Elec," and "NE_Gas" with the desired segments in the correct format for the user to then fill out. For example, Figure 9 shows the "BN" tab as it will appear after activation of the Update Worksheets button.

Figure 9. Example of Unpopulated "BN" Tab in Seg_Design_Template.xls

Seg_Design_Template.xls [Read-Only]

	A	B	C	D	E	F
1	nName	Single_Family	MF2_2_TO_4_Units	MF3_GE_5_Units	MM_Master_Meter	SM_Sub_Meter
2	Space_Heat					
3	Water_Heat					
4	Cooking					
5	Drying					
6	Pool					
7	Spa					
8	Fireplace					
9	Barbecue					
10	Other					
11						

Segs / ZB / BN / NF / NE_Elec / NE_Gas / importControls /

Again, the segmentation is hierarchical. The purpose of the newly-populated tabs ("ZB," "BN," "NF," "NE_Elec," and "NE_Gas") is to allow the specification of which dimensions belong together – starting at the top of the hierarchy and moving down – in the segmentation design. For example, with the ZB tab, the purpose might be to define which building belong in each geographic area. The key here is that the design need not be symmetrical. You might have Z represent two geographic areas, one extremely urban that would not have manufactured housing and rural that would need this home type.

The population of these tabs is based on filling the relevant cells with "TRUE" or "FALSE," with the former indicating where the dimensional relationship should exist in the segmentation design. The relationships defined in these tabs is as follows:

- **ZB** – Define which levels of the second (b) dimension belong in each level of the first (z) dimension.
- **BN** – Define which levels of the third (n) dimension belong in each level of the second (b) dimension.
- **NF** – Define which levels of the fourth (f) dimension belong in each level of the third (n) dimension.
- **NE_Elec** – Define which levels of the fifth (e) dimension belong in each level of the third (n) dimension for the electric fuel type.
- **NE_Gas** – Define which levels of the fifth (e) dimension belong in each level of the third (n) dimension for the gas fuel type.

Figure 10 presents a fully-populated "NE_Elec" tab. Note the pattern of "TRUE" and "FALSE" indicating which of the efficiency levels apply to the different end uses.

Figure 10. Example of Populated "NE_Elec" Tab in Seg_Design_Template.xls

	A	B	C	D	E
1	**nName**	**Stock**	**Standard**	**High**	**Premium**
2	**Space_Heat**	TRUE	FALSE	FALSE	FALSE
3	**Water_Heat**	TRUE	TRUE	TRUE	TRUE
4	**Cooking**	TRUE	TRUE	FALSE	FALSE
5	**Drying**	TRUE	TRUE	FALSE	FALSE
6	**Pool**	TRUE	FALSE	FALSE	FALSE
7	**Spa**	TRUE	FALSE	FALSE	FALSE
8	**Fireplace**	TRUE	FALSE	FALSE	FALSE
9	**Barbecue**	TRUE	FALSE	FALSE	FALSE
10	**Other**	TRUE	FALSE	FALSE	FALSE
11					

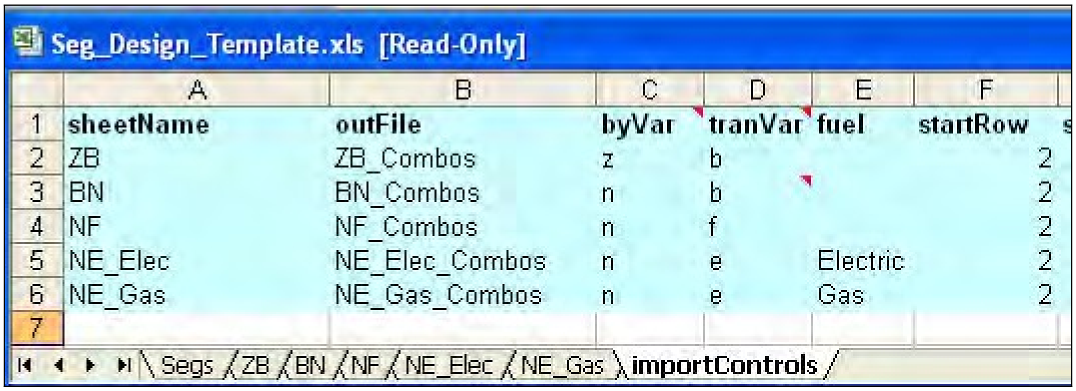
Segs / ZB / BN / NF / NE_Elec / NE_Gas / imp

Note that in filling in all of these sheets, make every effort to keep the data "clean." That is, there can be no data in adjoining rows or columns that is extraneous to the segmentation design. If there has been any work done in cells, it might be best to delete all the rows to the right of the last relevant column and all the rows below the last relevant row.

Finally, the last tab - importControls – tells SAS in the next step how to bring in the data contained on various tabs in the segmentation design workbook. Other than two cells, this entire workbook will populated itself dynamically based on the other tabs. Those two cells are E5 and

E6 – shown in Figure 11 with the values “Electric” and “Gas,” respectively – and the values the contain must be identical to whatever you have specified on the original “Segs” tab. That is, if you’ve called your fuels “Electricity” and “Natural Gas,” the values in those cells must be identical.

Figure 11. A portion of the importControls Tab in Seg_Design_Template.xls


Seg_Design_Template.xls [Read-Only]

	A	B	C	D	E	F
1	sheetName	outFile	byVar	tranVar	fuel	startRow
2	ZB	ZB_Combos	z	b		2
3	BN	BN_Combos	n	b		2
4	NF	NF_Combos	n	f		2
5	NE_Elec	NE_Elec_Combos	n	e	Electric	2
6	NE_Gas	NE_Gas_Combos	n	e	Gas	2
7						

Segs / ZB / BN / NF / NE_Elec / NE_Gas / importControls

Once you are done populating Seg_Design_Template.xls, you will have to save the workbook with a very specific name in the data folder for the model under creation (C:\EUForecaster\modelData*yourModelname*). That name must be whatever your model name is with “_Segments” appended at the end. For example, if you’ve created the a model for small commercial customers for a utililty’s end-use model, you might call the model “Small_Com.” Accordingly, you’d save the workbook as “Small_Com_Segments.xls.” Again, the file is read-only, so it will prompt you to save it under another name should you try to save it normally.

Creation of the Segs Library Datasets

After completing the Seg_Design_Template.xls and workbook and saving it under another name, the next step is convert this information into the various Segs library datasets. To do this, under the Market Module on the main dashboard, select the “Create ‘Segs’ Datasets from Excel” option. The interface will prompt you to say ‘OK’ or to cancel. If you are confident in your segmentation design, select ‘OK.” To check that this code has run correctly, you should see the all of the segmentation design datasets in the “Segs” library, as shown in Figure 12, and they should all have a modified date reflecting the time when the code was submitted.

Contents of 'Segs'

Name	Size	Type	D.	Modified
B_dim	5.0KB (2 Cols X 14 Rows...	Table		10Jan06:10:19:30
E_dim	5.0KB (2 Cols X 4 Rows) ...	Table		10Jan06:10:19:32
F_dim	5.0KB (2 Cols X 2 Rows) ...	Table		10Jan06:10:19:32
Initparm	5.0KB (2 Cols X 1 Rows) ...	Table		10Jan06:10:19:28
N_dim	5.0KB (2 Cols X 11 Rows...	Table		10Jan06:10:19:31
Z	5.0KB (3 Cols X 1 Rows) ...	Table		10Jan06:10:19:40
Zb	5.0KB (6 Cols X 14 Rows...	Table		13Jan06:10:43:41
Zbn	9.0KB (8 Cols X 87 Rows...	Table		13Jan06:10:43:41
Zbnf	17.0KB (10 Cols X 160 R...	Table		11Jan06:16:49:08
Zbnfe	33.0KB (11 Cols X 376 R...	Table		10Jan06:10:19:39
Z_dim	5.0KB (2 Cols X 1 Rows) ...	Table		10Jan06:10:19:29

Expansion on the Segmentation Design

Once the Segs library is populated with the desired segmentation design, the next step is to expand the Segs library datasets to create all of datasets necessary to run the model. Select "Expand 'Segs' Datasets" under the Markets Module on the main dashboard and say 'OK." Once this code has run, you should be able to look in the "Input" library and see datasets it has created, as shown in Figure 13.

Contents of 'Input'

Name	Size	Type	Modified
Accountdecay_10	17.0KB (10 Cols X 115 R...	Table	08Feb06:13:44:38
Calibrationzb_10	9.0KB (7 Cols X 105 Row...	Table	08Feb06:13:44:40
Calibrationz_10	5.0KB (5 Cols X 21 Rows...	Table	08Feb06:13:44:40
Choicebatchcontrol	9.0KB (10 Cols X 1 Rows...	Table	08Feb06:13:44:39
Choicedrivers_10	301.0KB (15 Cols X 2646...	Table	08Feb06:13:44:38
Choiceparameters_10	65.0KB (21 Cols X 282 R...	Table	08Feb06:13:44:38
Customercountsactual_10	9.0KB (9 Cols X 15 Rows...	Table	08Feb06:13:44:39
Customercountsforecast_10	17.0KB (9 Cols X 100 Ro...	Table	08Feb06:13:44:39
Dsmechoice_10	49.0KB (17 Cols X 183 R...	Table	08Feb06:13:44:38
Dsmfchoice_10	33.0KB (14 Cols X 99 Ro...	Table	08Feb06:13:44:38
Dsmretrofit_10	33.0KB (20 Cols X 122 R...	Table	08Feb06:13:44:38
Echoicestatus_10	9.0KB (10 Cols X 61 Row...	Table	08Feb06:13:44:39
Equipmentage_10	17.0KB (9 Cols X 99 Row...	Table	08Feb06:13:44:39
Equipmentdecay_10	25.0KB (14 Cols X 122 R...	Table	08Feb06:13:44:38
Esharesinitial_10	25.0KB (15 Cols X 126 R...	Table	08Feb06:13:44:39
Fchoicestatus_10	9.0KB (8 Cols X 33 Rows...	Table	08Feb06:13:44:39
Forecastbatchcontrol	9.0KB (11 Cols X 1 Rows...	Table	08Feb06:13:44:39
Fsharesinitial_10	9.0KB (12 Cols X 61 Row...	Table	08Feb06:13:44:39
Intro	5.0KB (2 Cols X 1 Rows) ...	Table	08Feb06:13:44:39
Priceforecast_10	105.0KB (10 Cols X 1281...	Table	08Feb06:13:44:38
Saturations_10	641.0KB (9 Cols X 9009 ...	Table	08Feb06:13:44:38
Usagebatchcontrol	5.0KB (4 Cols X 1 Rows) ...	Table	08Feb06:13:44:39
Usagedrivers_10	7.9MB (33 Cols X 31752 ...	Table	08Feb06:13:44:39
Usageparameters_10	769.0KB (34 Cols X 2898...	Table	08Feb06:13:44:39

Note that this step will often be used more than once, as it also serves as a means of "refreshing" the model. Throughout the process of populating the model, any number of operator error-based issues can corrupt the structure of these input data sets, which will lead to questionable results during operation of the model. For example, necessary rows might be lost during an incorrect merge or a typo will lead to an incorrect variable name. When this happens, the easiest to way to recover is to perform this step, which will re-create all the datasets in the required structure.

Model Population

Once the starting datasets in the Input library have been created, you must enter data into the SAS datasets that were automatically created by building the segment master. Table 4 shows all the datasets that are created in the INPUT library and the module with which they are associated. The table also provides a brief outline of the information to be entered in each dataset with more detailed information provided in subsequent chapters.

Module	Dataset	Contents
Usage	**usageBatchControl**	See Batch Control Usage below
Usage	**usageDrivers_10**	Equipment usage equation forecast drivers
Usage	**usageParameters_10**	Coefficients describing how usage varies by weather, customer characteristics, prices, and other variables
Choice	**choiceBatchControl**	See Batch Control Usage below
Choice	**choiceDrivers_10**	Choice forecast drivers, including capital costs for equipment in existing, conversion, and new construction buildings, plus future availability of each equipment type
Choice	**choiceParameters_10**	Provider Choice function initialization parameters for Dimension 4 and 5 purchase choices
Choice	**eChoiceStatus_10**	A status variable that tells the Choice Module how to model shares for Dimension 5. Set this variable to "1" to hold the initial market shares constant over the forecast horizon.
Choice	**eSharesInitial_10**	Average and marginal market shares for existing, conversion, and new customers for Dimension 5
Choice	**fChoiceStatus_10**	A status variable that tells the Choice Module how to model shares for Dimension 4. Set this variable to "1" to hold the initial market shares constant over the forecast horizon.
Choice	**fSharesInitial_10**	Average and marginal market shares for existing, conversion, and new customers for Dimension 4
Choice	**priceForecast_10**	Fuel, product, or service price forecasts in native units (e.g., therms, kWh, gallons, cubic meters)
Forecast	**ForecastBatchControl**	See Batch Control Usage below
Forecast	**accountDecay_10**	Decay functional form indicator and parameters for existing, conversion, and new accounts
Forecast	**customerCountsActual_10**	Number of existing accounts, non-accounts on main, and non-accounts off main
Forecast	**customerCountsForecast_10**	Forecast of new construction (economic activity driving demand), capture rates, units per account, and number of units (i.e., units are a scale of measurement consistent with results of the usage forecast, such as buildings, square footage, apartments, etc.)
Forecast	**equipmentAge_10**	Mean age of end uses by historical vintage in the baseline (i.e., 0th) year of the forecast, used to initialize the age dimension in the turnover/vintage module
Forecast	**equipmentDecay_10**	Decay functional form indicator and parameters for equipment (end-uses) in existing, conversion, and new buildings
Forecast	**saturations_10**	Saturation (percentage of accounts that have the equipment) independent of fourth dimension market shares
N/A	**calibrationZ_10**	Total actual sales in base year for Dimension 1
N/A	**calibrationZB_10**	Total actual sales in base year for Dimension 2
Intervention Strategies	**dsmEChoice_10**	Exogenous parameters that change Dimension 5 market shares for existing, conversion, and/or new customers through 'what if' intervention strategies
Intervention Strategies	**dsmFChoice_10**	Exogenous parameters that change Dimension 4 market shares for existing, conversion, and/or new customers through 'what if'' intervention strategies
Intervention Strategies	**dsmRetrofit_10**	Exogenous parameters that adjust product usage through 'what if' convention strategies

The method for populating these datasets, however, depends on the interaction of several factors. If the operators SAS skills are limited and the overall segmentation design is simple enough that that datasets do not exceed Excel's row limits, the data can be exported, populated manually, and then re-imported. If the data that will go into the model already exist in an electronic format and the operator has SAS skills that cover basic merges and data manipulation, the datasets can be populated via SAS code. Another option is to create data entry templates that conform to the format of the various data sources that will then be imported into SAS, manipulated to take on the correct format for the model, and then used to populate the datasets via SAS code. The final and best solution will often be a combination of multiple methods.

Batch Control Usage

The INPUT library includes three "batch processing" datasets that describe how various datasets (input scenarios, or the "**_xx**" suffix) are jointly processed within End Use Forecaster forecast output scenarios. These datasets are:

- **usageBatchControl**: selects input scenarios for each set of input files for forecasting equipment purchase choices
- **choiceBatchControl**: "packages" sets of expected market shares as a result of customer service programs with those segments that are unaffected by these activities into one cohesive group
- **forecastBatchControl**: combines chosen product usage equations, usage drivers, and historical vintage adjustment scenarios

End Use Forecaster automatically creates the base case scenario, denoted by "_10," for each of these datasets. Additional scenarios can be designated in each batch dataset by:

- Adding a new row worksheet in each dataset through SAS/FSP and changing the relevant scenario indicators
- Writing SAS code to create the datasets with the desired scenario inputs
- Managing the batch controls in an Excel workbook and importing them via SAS

Batch processing datasets allow the user to specify all the input datasets for a given scenario. The strength of this approach is that it allows the analyst to mix and match datasets from different scenarios, which avoids having to keep identical datasets for different scenarios. Figure 14 presents a hypothetical **choiceBatchControl** dataset. In the example, the user has set up three different scenarios (10, 20, and 30), which pull mostly the same datasets, with a couple of exceptions. First, Scenario 20 pulls an alternate price forecast, ostensibly one with high gas prices. Second, Scenario 30 utilizes the price forecast produced for Scenario 20 and also pulls in an alternate usage forecast.

Figure 14. Example choiceBatchControl Dataset

scenario	choiceDrivers	priceForecast	choiceParameters	usageAnnual	eSharesInitial	fSharesInitial	eChoiceStatus	fChoiceStatus	scenarioName
10	10	10	10	10	10	10	10	10	Base Case
20	10	20	10	10	10	10	10	10	High Gas Price Forecast
30	10	20	10	30	10	10	10	10	Low Usage

Scenario 20 pulls a different price scenario.

Scenario 30 pulls different usage and price forecasts, but utilizes the same dataset used for Scenario20.

IV. Product Usage Module

End Use Forecaster tracks consumption of resources (natural gas, electricity, etc.) through the Product Usage module. The module provides a forecast of the predicted consumption by combining (1) a monthly forecast of consumption factors or drivers (i.e., independent or exogenous variables), stored in the SAS dataset **usageDrivers_xx**, and (2) a set of coefficients associated with each exogenous variable, stored in **usageParameters_xx**.

The Product Usage module merges the **usageParameters_xx** dataset with the usage forecast drivers (**usageDrivers_xx**) and sums the results over all variables in order to obtain usage forecasts at the unit level (e.g., per customer, per square foot). The results then become inputs into the Provider Choice and Forecast modules.

If the *usageEquationStatus* variable in **usageParameters_xx** equals 1, usage is a linear combination of the coefficients and forecast drivers:

$$\text{(1)} \qquad usageMonthly\_xx_m = \Sigma_c\ usageParameters\_xx_{\,c} * usageDrivers\_xx_{\,cm}$$

where:

- **usageParameters_xx** $_c$ = usage coefficients c, where the default has 21 slots (B0 through B20)
- **usageDrivers_xx** $_{cm}$ is the monthly forecast (m) of each forecast driver (independent variable) associated with coefficient c (X0 through X20)

If *usageEquationStatus* is set equal to 2, then the Product Usage Module assigns a log-log function:

$$\text{(2)} \qquad usageMonthly\_xx_m = exp(\Sigma_c\ usageParameters\_xx_{\,c} * log(usageDrivers\_xx_{\,cm}))$$

The default structure is a linear model with *usageEquationStatus* equal to 1.[2]

The final step in this module is to aggregate usage to an annual figure (usageAnnual_xx). Both monthly and annual forecasts for a given scenario are stored in the INTER library.

The **usageBatchControl** dataset in the INPUT library has the following variables that define the input datasets associated with each output scenario:

- *scenario*: The Product Usage module output scenario
- *usageParameters*: The input scenario associated with the product usage equations (**usageParameters_xx**)

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[2] As discussed further below under Calibration, End Use Forecaster's automatic sales calibration routine is designed to work with the linear model where *usageEquationStatus* is set equal to 1. Calibration routines for more complex usage equation structures defined by the log-log or other status indicators (3, 4, etc.) can be developed by The Cadmus Group (Quantec) on request.

- *usageDrivers*: The input scenario associated with the product usage drivers (**usageDrivers_xx**)

Figure 15 shows the program flow, including input and output datasets. Table 5 describes the data sets and their key attributes in more detail.

Figure 15. Product Usage Module Program Flow for "usageBatch.sas"

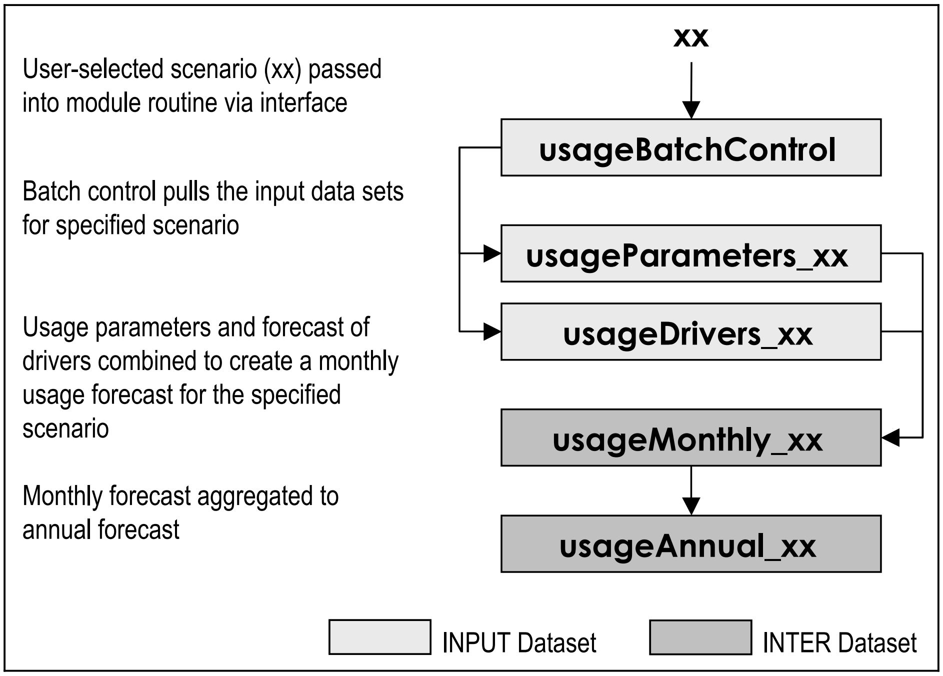


Table 5. Product Usage Module Data Library

Library	Dataset	Description	File/Record Dimensions	Variables/Attributes
INPUT	**usageBatchControls**	Usage forecast input scenarios	1 record per Output scenario	Usage equation input scenario, forecast driver input scenario, vintage adjustment input scenario, output scenario
INPUT	**UsageParameters_xx**	Usage forecast equation parameters	Dimensions 1, 2, 3, 4, 5, and vintage	Usage equation parameters B0 through B0 for input scenario Sxx
INPUT	**usageDrivers_xx**	Usage forecast drivers	Dimensions 1, 2, 3, 4, and 5, year, month	Usage forecast drivers X0 through X0 for input scenario Sxx

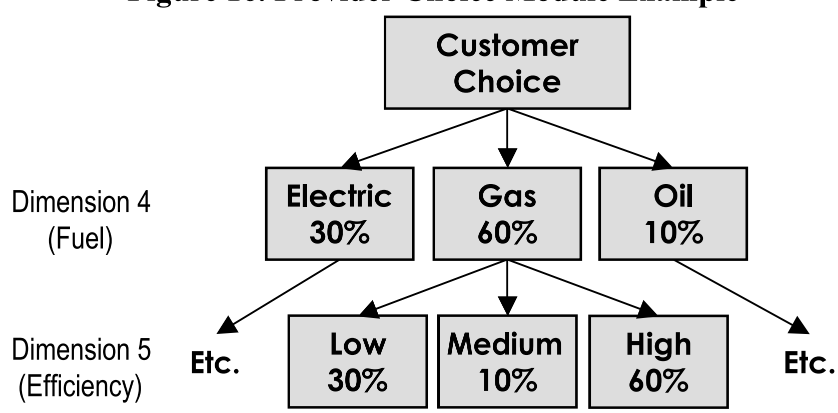
V. Provider Choice Module

The Provider Choice module analyzes customer choice decisions among competitors and product options. For example, customers choose their end-use equipment from various fuel types and efficiency levels. Purchase decisions are represented by a nested structure of provider (fuel) and product (efficiency) option choices.

The nested structure of the Provider Choice module is illustrated in Figure 16 below. This figure represents fourth and fifth dimension choices. The customer in this example faces a choice of gas vs. electricity vs. oil at the fourth dimension, and low vs. medium vs. high efficiency at the fifth dimension. Analysts often think of this problem as "efficiency choice conditional on fuel choice," hence the downward arrows in the figure. But customer choice theory and the Provider Choice Module actually work in the opposite direction, with the fourth dimension conditional upon fifth dimension choices. In reality, the customer makes a simultaneous choice across these dimensions, and the model structure shown in Figure 16 is just a convenient way of modeling this behavior.

The Provider Choice module first estimates the fifth dimension (efficiency) parameters and forecasts its market shares. The model then calculates the weighted average operating and capital costs for each fourth dimension (fuel) alternative, estimates the choice equation coefficients, and then produces a forecast for the fourth dimension.

Figure 16. Provider Choice Module Example



Note that the structure of the tree need not be symmetric. For example, single fuel energy companies and water utilities may want to focus on multiple efficiency levels for customers using their products. A single efficiency level can be specified for the remaining fuels.

The application of choice coefficients and forecast drivers form a discrete choice-type model that is applied to individual customer data. These models are analogous to regression models for equipment usage. The estimated discrete choice model parameters describe how equipment costs, operating costs, equipment characteristics, and customer characteristics affect equipment choices. For each choice level there are capital and operating cost parameters (called betas) and alternative-specific intercepts (called alphas).

The alphas and betas are developed through one or more of the available Provider Choice algorithms in End Use Forecaster:

1. Using individual customer level survey and equipment usage data, discrete choice models consistent with the segmentation design are estimated. Note that like usage equation modeling, this estimation is conducted outside of End Use Forecaster, but may be conducted using the same SAS procedures as those used by End Use Forecaster.
2. If individual customer data are not available for discrete choice modeling, End Use Forecaster can use aggregate market data to simulate a simple choice model from equipment capital costs and operating costs.
3. If individual customer data are not available for discrete choice modeling, End Use Forecaster can calculated use apply approximate, solutions calculated using Mathematica. [Note: this feature is not currently available, but will be added by May 2006]

These alternatives are summarized in Table 6.

Table 6. Provider Choice Equation Status Variable Definitions

Status Variable	Description	Beta Parameters	Alpha (Intercept) Parameters	Potential Applicability to Choice Model
1	Exogenous Market Shares Specified	N/A	N/A	Yes
2	Logit: estimated	Estimated Outside End Use Forecaster	Estimated Outside End Use Forecaster	Yes
3	Logit: estimated	Estimated	Starting values: to be calibrated	Yes
4	Logit: simulated	Starting values: to be estimated & calibrated	Starting values: to be estimated & calibrated	Yes
5	Logit: calculated	Calculated	Calculated	Yes

Model Parameterization

Estimation Mode (Status 2 and 3)

Customer choice parameters can be estimated when sufficient micro-level customer choice data are available to estimate regression coefficients for actual consumer decisions. The Cadmux Group (Quantec) customizes and estimates choice equations for companies who request this approach or uses choice model parameters from previous research conduct by the company.

The choice equation status variables are set equal to 2 or 3 if this approach is used. If status equals 2, all parameters have been estimated outside the model, and no further calibration is necessary. If status equals 3, a logit functional form has been used to estimate operating and capital cost parameters and the model is being calibrated to base year market shares by adjusting the intercept terms.

Simulation Mode (Status 4)

The simulation of consumer choice is useful when customer-level data are not available. Most users of End Use Forecaster find themselves in this position before they can conduct primary market research. In simulation mode, this module estimates parameters of the choice function based on available data for:

- Operating and capital costs
- Marginal (most recent) equipment market shares
- Customer discount rates
- An estimate of the proportion of customer preferences or "utility" that is related to non-price factors

Provider Choice module coefficients are developed by solving a system of equations within the SAS Model procedure.

Exogenous Mode (Status 1)

If neither micro-level customer choice data nor aggregate data are available, or if poor data quality prevents choice equations from being estimated (simulated), the status variable can be set equal to 1 in order to bypass the Provider Choice Module. In such a cases, market shares are set equal to the values in **fSharesInitial_xx** and **eSharesInitial_xx**.

Forecasting

The Provider Choice model produces forecasts over the planning horizon by applying a forecast of equipment capital costs, equipment energy consumption (from the Product Usage module), and fuel price forecasts to the estimated (simulated) choice parameters.

If modes 2 through 4 are used, these variables will affect market shares over the forecast horizon. If the exogenous mode (status 1) is used, market shares are held constant at their base year values over the forecasting horizon. Exogenous forecasts can also be modified via alternative market share forecast scenarios that are specified in the Intervention Strategies module (see Chapter VI).

Market Availability

End Use Forecaster can adjust forecasted efficiency market shares to reflect changes in regulations by removing the market availability of specified alternatives in the future. In this adjustment procedure, End Use Forecaster shifts any market shares designated for efficiency alternatives to be removed from the market to the remaining alternatives, proportional to their *a priori* market shares. This approach to market availability can also be adapted to situations where an efficiency level has become obsolescent in the market, such as the market availability of alternatives of superior consumer value at lower cost.

End Use Forecaster includes a variable called *available* that is entered in the **choiceDrivers_xx** dataset. *Available* is equal to 1 when the configuration is available on the market and zero when it is no longer available. When the choice model finds an unavailable configuration, it will reassign that configuration's shares (at the efficiency level) to the remaining configurations.

Provider Choice Module Analysis and Data Flow

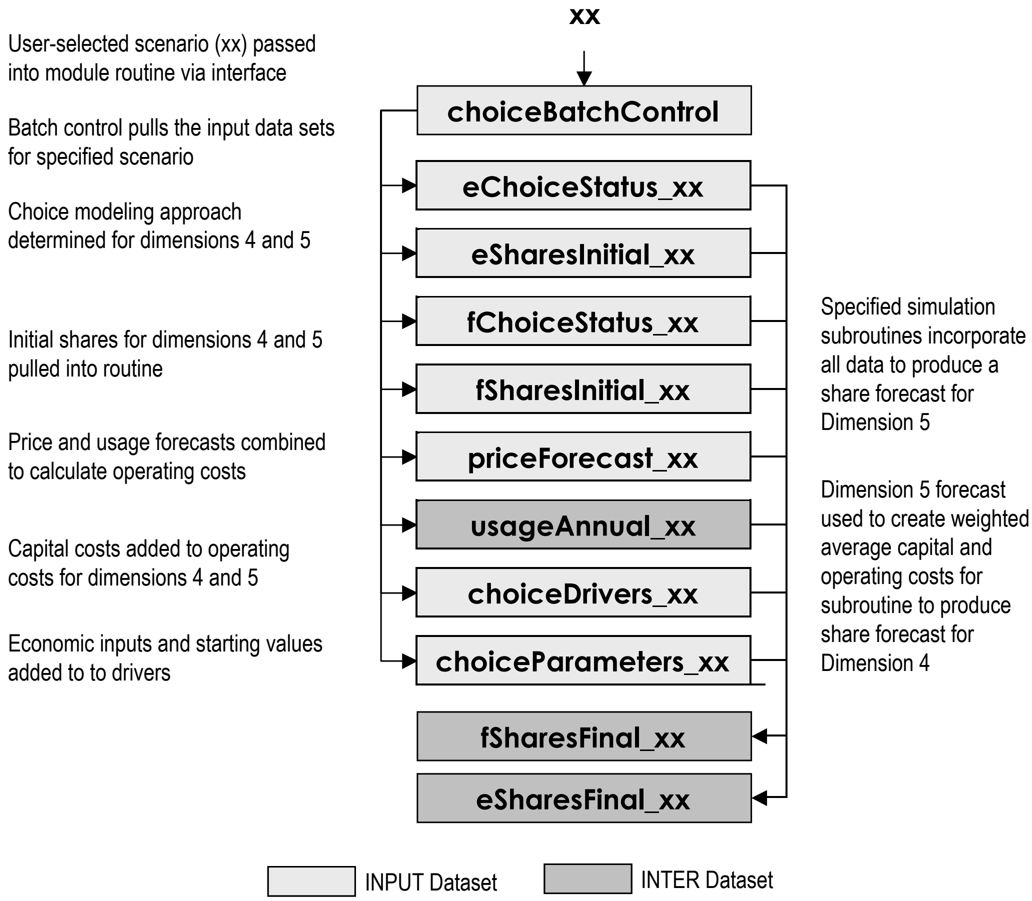
Figure 17 shows the data and analysis flow through the Provider Choice Module.

The dataset **choiceBatchControl** in the input library describes any scenario in terms of the following:

- Equipment capital costs and future availability (**choiceDrivers_xx**)
- Initial simulation (or estimation) parameters (**choiceParameters_xx**)
- Forecasted energy prices (**priceForecast_xx**)
- Product Usage output forecast scenario (**usageAnnual_xx**)
- Initial base-year efficiency (dimension 5) shares (**eSharesInitial_xx**)
- Initial base-year fuel (dimension 4) shares (**fSharesInitial_xx**)
- Indicator for efficiency (dimension 5) choice simulation (**eChoiceStatus_xx**)
- Indicator for fuel (dimension 4) choice simulation (**fChoiceStatus_xx**)

The simulation subroutines in choiceBatch.sas calibrate Provider Choice module coefficients to the baseline market shares in **fSharesInitial_xx** and **eSharesInitial_xx**. The program derives a simultaneous solution for all the qualitative choice coefficients using PROC MODEL from SAS/ETS. The first step in this subroutine is to integrate usage module information (consumption per configuration) with forecasted prices per unit of use to generate forecasted operating costs. Along with forecasted capital costs and other variables used in the qualitative choice models, this information serves as the forecast dataset for choice for each market segment. End Use Forecaster's default choice structure considers up to four alternatives at each level of the nest. The Cadmus Group (Quantec) can customize and modify the code if more than four alternatives are needed.

Figure 17. Provider Choice Module Program Flow for "choiceBatch.sas"



Initial Values

The initial value datasets from **choiceParameters_xx** are merged with the other datasets described above. Initial values and other parameters include:

- Equipment life
- Customer discount rate
- Share of customer preferences ("utility") associated with non-price attributes
- Initial values for alternative-specific constants and model coefficients

In some cases, the subroutine can be sensitive to the initial values, particularly for capital and operating cost coefficients. This problem can generally be mitigated by using initial values that are very small numbers, such as $1E^{-8}$.

Single-Alternative Choices

Choice estimation is not required for one-alternative situations; the choice forecasting routine assigns a 100% market share to these single alternative situations in the choice nest.

Confirming Calibration Results (Status 3 or 4)

A final step in the choice calibration process is to confirm that all equation coefficients have been solved correctly and that the coefficient values are reasonable. The nature of "solving" each choice equation for the appropriate coefficients requires an iterative process, where PROC MODEL begins with user-specified starting values of each coefficient and iterates toward a solution based on the input assumptions.

If the coefficient starting values are inappropriate, the calibration process may not reach a solution or it may reach one that is not in an economically feasible region. For example, starting values of coefficients need to be sufficiently low, such that, when they are multiplied by the independent variables, the result is not "out of the ballpark." Additionally, if the relative comparison of operating costs and capital costs are contrary to the user-specified discount rate, the calibration routine may find a solution where one of the coefficients may be positive (i.e., indicating that as costs rise, so do purchases, which is a clearly non-economic decision).

To check calibration results:

Certain files require inspecting as part of the forecasting process. Missing values in these forecasted market shares indicate a calibration problem.

(n) Look for the problem segment(s) in the EUFORECASTER\MODELLOGS directory. The choiceBatch.log file will let you know whether the model was ever "in the ballpark" by noting at what point in the solution-seeking process the SAS/ETS MODEL procedure failed.

(o) If there is a problem with the scale of a variable, the model will fail at iteration zero and the "hill climbing" optimization never begins.

(p) If the model fails during subsequent iterations, a systematic change in the initial parameters in **choiceDrivers_xx** is recommended until convergence is achieved. Using the final parameter values from another, similar, segment can help in the calibration process.

Table 7 summarizes the Provider Choice Module along with a description of the data and libraries.

Table 7. Provider Choice Module Data Libraries and Files

Library	Dataset	Description
INPUT	**choiceBatchControl**	Choice parameter input scenario, choice forecast driver input scenario, fuel price input scenario, output scenario
INPUT	**choiceDrivers_xx**	Capital cost equipment replacement, capital cost equipment conversion, capital cost new construction equipment, availability
INPUT	**priceForecast_xx**	Price forecast
INPUT	**choiceParameters_xx**	Description, NumAlternatives, Lifetime, Discount Rate, PriceShare, Alpha, A1-A4, B1-B2
INTER	**usageAnnual_xx**	Usage forecast
INPUT	**eSharesInitial_xx**	Dimension 5 base year average stock share, base year marginal share existing/replacement, base year marginal share conversion, base year marginal share new construction
INPUT	**fSharesInitial_xx**	Dimension 4 base year average stock share, base year marginal share existing/replacement, base year marginal share conversion, base year marginal share new construction
INPUT	**fChoiceStatus_xx**	Indicator for method of estimation/simulation for dimension 4 (fuel).
INPUT	**eChoiceStatus_xx**	Indicator for method of estimation/simulation for dimension 5 (efficiency)
INTER	**fSharesFinal_xx**	Shares forecast for dimension 4 (fuel) for existing, conversion, and new customers
INTER	**eSharesFinal_xx**	Shares forecast for dimension 5 (efficiency) for existing, conversion, and new customers

VI. Intervention Strategies Module

The Intervention Strategies module is intended to capture the impacts of a customer rebate or marketing program. These strategies are modeled as "what-if" scenarios. Depending upon the design of the service or program, these impacts combine specified market acceptance patterns with equipment characteristics to estimate impacts on forecasted choices and per-unit usage.

Substitution Programs

Provider (fuel) substitution strategies encourage consumers to purchase equipment from one provider over other providers. For existing equipment, this change can be done either immediately (early replacement) or at the point of existing equipment retirement (normal replacement). The **dsmFChoice_xx** dataset in the input directory controls how a market intervention will affect shares for a given scenario. The inputs in this dataset, summarized in Table 8, vary by the first, second, and third dimensions and can apply differently to existing, conversion, and new customers.

Table 8. Provider (Fuel) Substitution Program Drivers

Variable	Description	Minimum Value	Maximum Value
yearIntroduced	Year of program introduction activity	1	Last year of forecast horizon
programLife	Duration of program (years)	1	Years in forecast horizon
adoptionPath	Years to Full Adoption	1	7
applicability	Percent of customers to which the program applies	0*	1
marketShare	Percent of market share (%)	0*	1
earlyReplacement	Binary flag for whether early adoption applies to program	0	1
description	Program Description	{text}	{text}

* A zero value implies that the program will have no market impact, so the smallest practical value is 0.01 (1%).

** Early adoption applies to existing buildings only. A value of 1 implies that all applicable consumers (applicability * market share * adoption path %) switch immediately, whether or not the equipment fails. A zero implies that all adoption follows the normal equipment and/or building retirement schedule.

Equipment Efficiency Programs

Product (efficiency) option strategies encourage consumers to purchase a particular option (e.g., equipment with a certain efficiency rating). Either early or normal replacement may apply to existing equipment. Table 9 presents the drivers of purchasing programs and their usage.

Table 9. Product (Efficiency) Program Drivers

Variable	Description	Minimum Value	Maximum Value
yearIntroduced	Year of program introduction activity	1	Last year of forecast horizon
programLife	Duration of program (years)	1	Years in forecast horizon
adoptionPath	Years to Full Adoption	1	7
applicability	Percent of customers to which the program applies	0*	1
eLevel	Efficiency level to which program applies	1	4
marketShare	Percent of market share (%)	0*	1
earlyReplacement	Binary flag for whether early adoption applies to program	0	1
description	Program Description	{text}	{text}

* A zero value implies that the program will have no market impact, so the smallest practical value is 0.01 (1%).

** This represents the maximum efficiency level affected by the program for each end use, and is a supplementary type of applicability factor. The variable EL should be specified to be less than or equal to the maximum number of efficiency levels available for that market sector.

*** This represents the maximum vintage level affected by the program for each end use, and is a supplementary type of applicability factor. The variable V should be specified to be less than or equal to the maximum number of vintages for that market sector. Usually it is set equal to zero to denote an existing building or equipment retrofit strategy.

Equipment Retrofit and Operating & Maintenance (O&M) Service Programs

Usage retrofit strategies encourage consumers to change their product usage given the equipment they already have (e.g., improve the efficiency of existing equipment by installing measures such as weatherization or water heater retrofit kits). Table 10 presents the drivers of these programs.

Table 10. Equipment Efficiency Retrofit and O&M Program Drivers

Variable Name	Description	Minimum Value	Maximum Value
yearIntroduced	Year of program introduction activity	1	Last year of forecast horizon
programLife	Duration of program (years)	1	Years in forecast horizon
adoptionPath	Years to full adoption	1	7
applicability	Percent of customers to which the program applies	0*	1
eLevel	Lowest efficiency level to which program applies	1	4
marketShare	Percent of market share (%)	0*	1
eImprovement	Efficiency improvement (%)	0*	1
MeasureLife	Measure life (years)	1	Years in forecast horizon
vintageApplicability	Applicable vintages***	Lowest vintage	Years (vintages) in forecast horizon
description	Program Description	{text}	{text}

* A zero value implies that the program will have no market impact, so the smallest practical value is 0.01 (1%).

** This represents the maximum efficiency level affected by the program for each end use, and is a supplementary type of applicability factor. The variable EL should be specified to be less than or equal to the maximum number of efficiency levels available for that market sector.

*** This represents the maximum vintage level affected by the program for each end use, and is a supplementary type of applicability factor. The variable V should be specified to be less than or equal to the maximum number of vintages for that market sector. Usually it is set equal to zero to denote an existing building or equipment retrofit strategy.

Intervention Strategies Module Operations

You can create many types of Intervention Strategies programs for all market sectors sequentially and automatically, rather than creating each one manually. This batch processing is done via the following datasets, where the scenario indicator "yy" denotes a scenario that differs from "xx."

- **dsmFChoice_yy** – Dimension 4 (fuel) choice substitution for existing, conversion, and/or new customers, based on user specifications
- **dsmEChoice_yy** – Dimension 5 (efficiency) choice substitution for existing, conversion, and/or new customers, based on user specifications
- **dsmRetrofit_yy** – Equipment retrofit or O&M programs

Each of these files contains a row for each Dimension 1 – 3 combination and data inputs associated with Table 24 (**dsmFChoice_xx**), Table 23 (**dsmEChoice_xx**), or Table 25 (**dsmRetrofit_xx**).

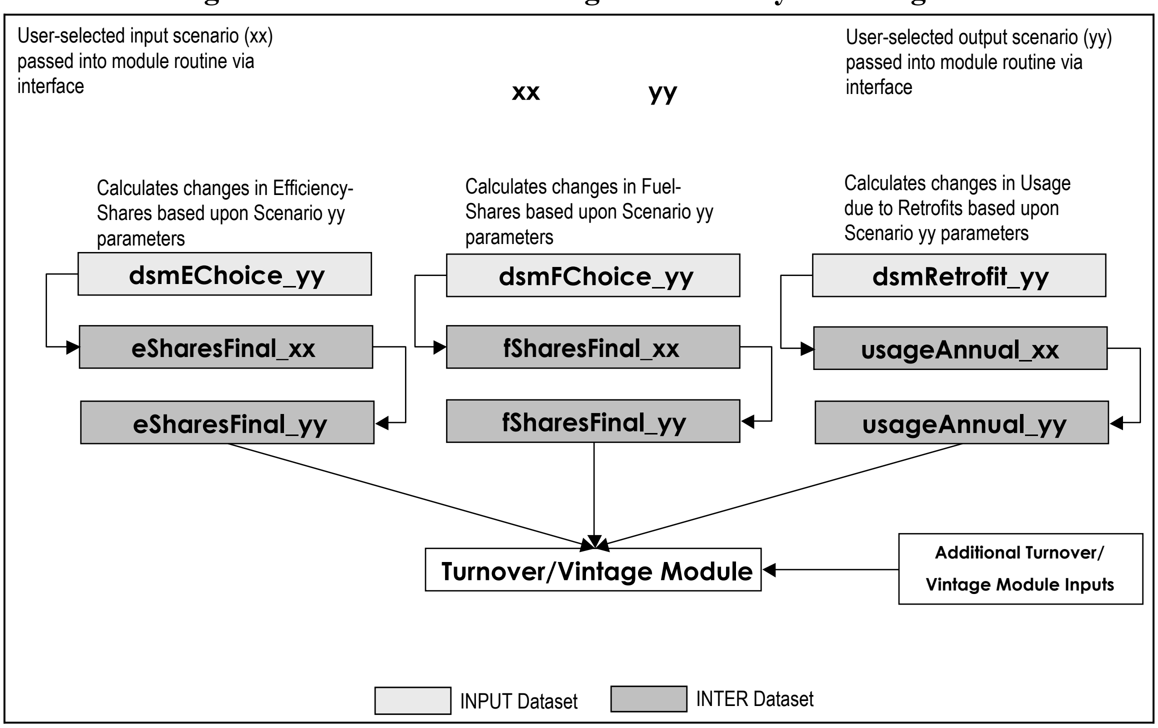
The Market Segmentation module creates base case files ("_10" files) where there is no intervention for each of these program categories. These files serve as templates that allow the user to create different scenarios of interest. To create strategies, you must copy these files to another scenario number and then make changes consistent with the desired intervention strategy over the forecast horizon. It is recommended that these designs be completed by individuals with marketing or demand-side management experience. Alternatively, The Cadmus Group (Quantec) can assist with the development of the first set of intervention strategies.

Figure 18 illustrates how the Intervention Strategies module modifies the Product Usage and/or Provider Choice output files and how these outputs are then used to develop an alternative forecast. Table 11 summarizes the data files used by this module.

Table 11. Intervention Strategies Module Data Library and Files

Directory	File Name	Description	File/Record Dimensions	Variables/Attributes
INPUT	dsmEChoice_xx	Existing/New Dimension 5 (efficiency) program parameters	Dimensions 1-4	Year introduced, program life, applicability, market share, adoption path, early adoption
INPUT	dsmFChoice_xx	Existing/New Dimension 4 (fuel choice) program parameters	Dimensions 1-4	Year introduced, program life, applicability, market share, adoption path, early adoption
INPUT	dsmRetrofit_xx	Product Usage retrofit parameters	Dimensions 1-4	Year introduced, program life, applicability, market share, adoption path, measure life, efficiency improvement, efficiency levels affected, vintages affected

Figure 18. Intervention Strategies Module System Diagram



VII. Forecast Module

The Forecast module serves several analytical and system functions, including forecasts of new construction and conversion accounts, decay or turnover of buildings and equipment, integration of Product Usage, Provider Choice and Intervention Strategies module results, and “internal” forecast reports.

The analytical portion of this module uses information on equipment saturation, average and marginal market shares, building and equipment decay, building account stocks and decay, customer conversions, and new construction to determine changes in the usage mix over time. The final forecast is equal to the number of units [indexed by year, building vintage, equipment age, fuel (provider), and efficiency (product)] multiplied by the consumption per the indexed equipment configuration.

Forecast Inputs

There are several sets of inputs in each Turnover/Vintage module forecast, which are described in Table 12 below. Alternative forecast scenarios using new estimates (scenarios) for new construction, account conversion, usage, choice, account decay, building decay, and any combinations of these can be conducted using the Turnover/Vintage module.

Table 12. Turnover/Vintage Forecast Inputs

Input Type	Dataset
Account Decay Parameters	**accountDecay_xx**
Equipment Decay Parameters	**equipmentDecay_xx**
Existing Equipment Age	**equipmentAge_xx**
Dimension 3 (End Use) Saturation	**saturations_xx**
Historical Accounts	**customerCountsActual_xx**
Account Forecast	**customerCountsForecast_xx**
Product Usage Forecast	**usageAnnual_xx**
Dimension 4 (Fuel) Shares Forecast	**fSharesFinal_xx**
Dimension 5 (Efficiency) Shares Forecast	**eSharesFinal_xx**

Historical and New Construction Building Stocks

Historical accounts are segmented into the number of total accounts in the base year and their distribution among the historical vintages as determined by the user in the segmentation design. Accounts are defined in terms of both buildings and building units (i.e., accounts, apartments, square feet, etc.). Building units are the level of measurement at which the Product Usage module estimates are rendered.

The total building stock in any forecast year is not the simple difference between the total building stock in the current year and the previous year because some buildings will have been destroyed, completely gutted, or removed from the system in the course of a year. The number of existing buildings replaced each year is dependent on the stock of vintages and the overall decay rate.

Forecasting Equipment Stocks

Dimension 3 (i.e., end use) equipment stocks are forecasted through similar methods as buildings. Initial base year equipment stock levels are estimated utilizing equipment saturation estimates for existing and new construction building vintages in the **saturations_xx** dataset. Market shares of new equipment over the forecast horizon are generated in the Provider Choice or Intervention Strategies module and passed to the Turnover/Vintage module via the series of market share forecasts in the **eSharesInitial_xx** and **fSharesInitial_xx** datasets. You may provide the average age of equipment in existing buildings in the base year in order to initialize the equipment age dimension (**equipmentAge_xx**). Generally, this average age is specified as the mean technical lifetime of the equipment.

The forecast simulation then estimates equipment stocks for Dimensions 3-5 (i.e., end use, fuel, and efficiency level) for each Dimension 1-2 combination. The new equipment stock installed each year is dependent on the growth and decay of building stocks, the natural replacement cycle of the equipment, the saturation rates of the end use in new construction, and the market shares of technology types.

End Use Forecaster contains a vintage hierarchy where Dimension 2 (buildings) dominates Dimension 3 (end uses). For example, an older dwelling may have a relatively new furnace and water heater, but these end uses effectively "disappear" if the building is demolished or undergoes a major renovation.

Building and Equipment Decay Functions

The user may specify decay rates of existing stocks of buildings and equipment, as well as new stock constructed or installed in subsequent years. Decay functions and parameters can differ for the existing and new stocks. Some analysts specify different decay functions for existing and new building stocks as the existing base year building stock is an amalgam of unknown vintages and new building stock is tracked as discreet homogenous annual blocks.

There are two datasets with decay rate data for each market segmentation design (**accountDecay_xx** and **equipmentDecay_xx**). In each of these decay data files, there are two sets of information to be entered: decay functions and decay parameters.

A numeric indicator ranging from 1 to 3 indicates the selected function. Available functions include exponential (1), logistic (2), and Weibull (3). Exponential functions have one parameter, logistic functions have four, and Weibull functions have two.[3] The logistic and exponential functions tend to be the most popular and are described in more detail below. The

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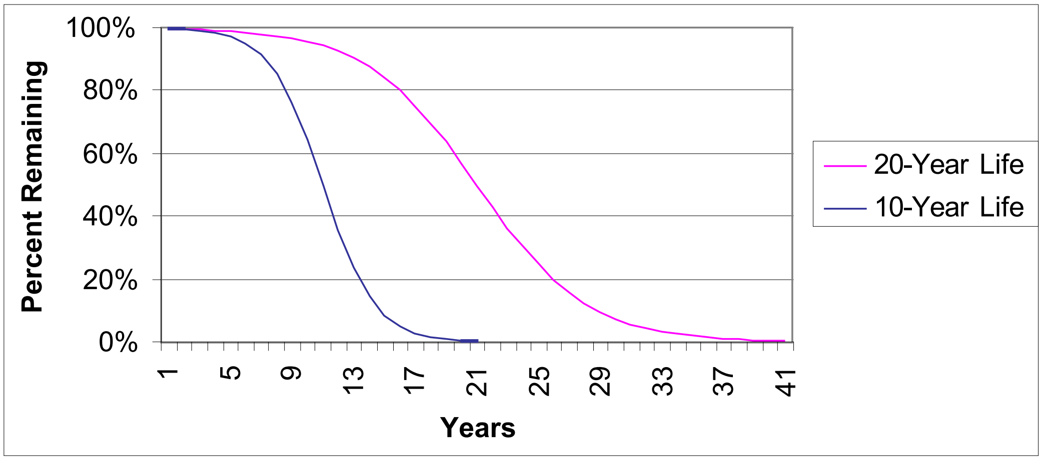
[3] These are discrete analogs to the continuous time distributions.

equipmentAge_xx dataset describes the average age of existing equipment in existing facilities. It tells the model where to start the equipment decay function.

Logistic Decay Function

End Use Forecaster uses the logistic function as the recommended decay mechanism for equipment decay construction, as shown in Figure 19. The logistic function is an S-shaped curve that results in a small decay rate for the first years, then increases over time before tapering off.

Figure 19. End Use Forecaster End Use Decay Functions



You may specify the periods and percentages of stock remaining for any two years in the appropriate SAS dataset. For example, to specify that 99% of the building stock remains 20 years after construction and that, 100 years after construction, only 50% of the buildings remain:

- In the SAS dataset, set the functional form indicator to 2
- Set the first parameter to the percent remaining after year X (0.99)
- Set the second parameter to year X (20)
- Set the third parameter to the percent remaining after year Y (0.50)
- Set the fourth parameter to year Y (100)

Exponential Decay Function

An exponential decay function can be used to represent a constant percentage decline for customers, buildings, or equipment. For example, a decay rate of 0.05 would cause 5% of the remaining stock to be removed each year. Since the base becomes progressively smaller, so does the absolute level of decay. If you choose an exponential decay rate:

- Set the functional form indicator equal to 1
- Set the first parameter equal to the specified decay rate
- Set the remaining three parameters equal to zero

Zero Decay

In some cases, decay rates may not be relevant information. This can occur in non end-use End Use Forecaster representations or in certain markets such as "miscellaneous consumption." In these instances, choose the exponential function and set all parameters to zero.

Early Replacement

In some instances, you may specify the "early replacement" of existing equipment within an Intervention Strategies scenario. In these situations, the variable *earadop*, contained in **eChoiceFinal_xx** dataset, will effectively override the equipment decay functions if it is set equal to 1. The default value for *earadop* is zero (no early adoption).

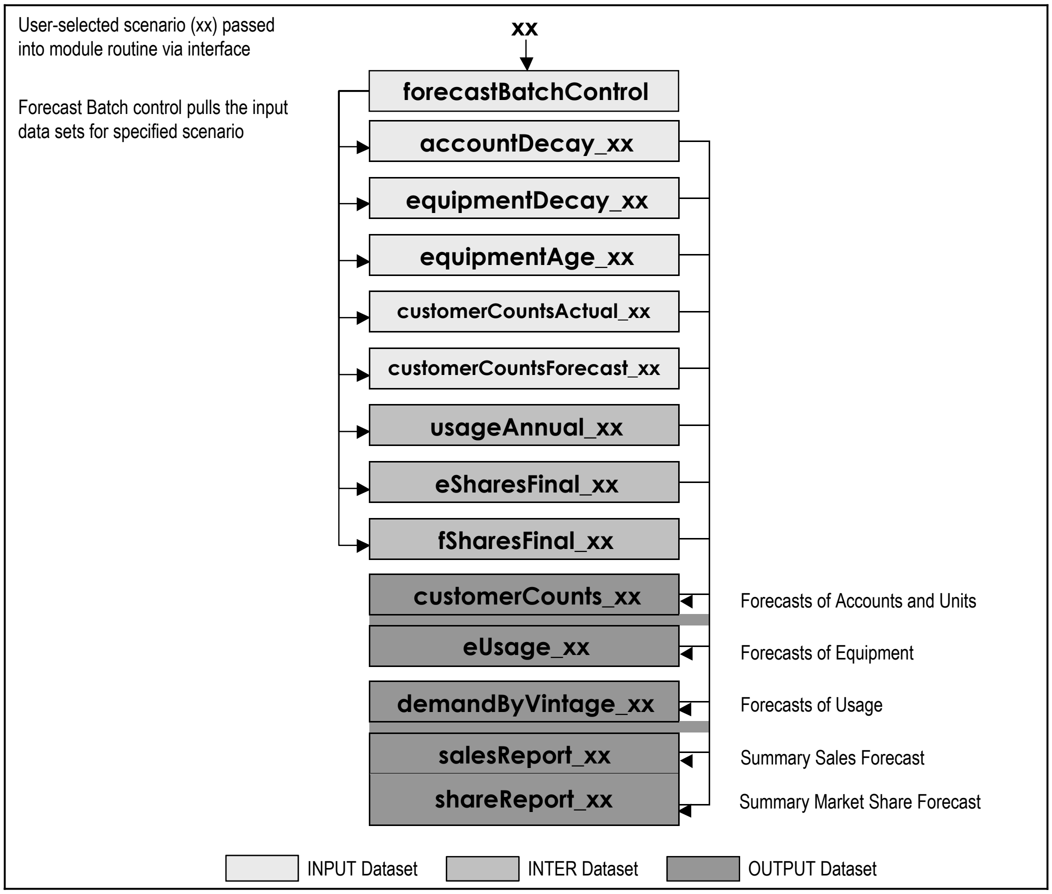
Forecast Operations

The heart of this module is a SAS program called forecastBatch.sas, which completes the following tasks:

1. Merges all input data across Dimensions 1-3, including:
   - Existing accounts, plus a distribution of accounts across historical building vintages
   - New construction forecast, plus capture rates for new and conversion buildings
   - Dimension 3 saturation, equal to the number of Dimension 2 customers with Dimension 3 divided by total Dimension 2 customers
   - Decay rates for buildings (indexed by year and building vintage) and equipment (indexed by Dimension 4 and equipment age)
   - Product usage forecast (potentially modified by an intervention strategies scenario)
   - Provider choice forecast (potentially modified by an intervention strategies scenario)
2. Solves for output arrays that contain information on number of market segments units per year, indexed by the specified dimensions (e.g., building vintage, equipment age, fuel, and efficiency)
3. Stores the results in datasets of varying dimensions
4. Multiplies the number of units by the respective consumption estimate per unit, again indexed by the appropriate dimension.
5. Summarizes these results in standard report formats

Figure 20 illustrates how the operation of the Turnover module. Table 13 summarizes the programs developed for the Turnover/Vintage module, and Table 13 summarizes the data files used in this module.

Library	Dataset Name	Description	Record Dimensions	Attributes/Variables
INPUT	**ForecastBatchControl**	Forecast module input control	One record per output scenario	Account history, distribution and new construction scenarios; decay scenarios; usage scenario, saturation scenarios, and equipment mean age scenario.
INPUT	**accountDecay_xx**	Decay parameters for Dimension 2	Dimensions 1 and 2, forecast vintages	Decay Function, Decay Parameters 1-4
INPUT	**equipmentDecay_xx**	New construction Dimension 3 (end use) decay	Dimensions 1, 2, 3 and 4	Decay Function, Decay Parameters 1-4
INPUT	**saturations_xx**	Existing Dimension 3 (end use) saturation	Dimensions 1, 2, and 3 Year, historical vintages	Saturation
INPUT	**customerCountsActual_xx**	Base year accounts and non-accounts (potential customers)	Dimensions 1 and 2	Accounts, non accounts
INPUT	**equipmentAge_xx**	Dimension 3 (end use) mean age in base year	Dimensions 1, 2, and 3, historical vintage	Dimension 3 (end use) mean age in base year
INPUT	**customerCountsForecast_xx**	New construction / economic driver forecast	Dimensions 1 and 2, Year	Forecasted new construction, capture rate, conversion rate, units per account,
INTER	**usageAnnual_xx**	Product Usage module output	Dimensions 1, 2, 3, 4 and 5, year, vintage	Annual usage
INTER	**eSharesFinal_xx**	Provider Choice module output – existing Dimension 5 market share forecast	Dimensions 1, 2, 3, 4 and 5, year	Market share for replacement, early replacement indicator
INTER	**fSharesFinal_xx**	Provider Choice module output – existing Dimension 4 market share forecast	Dimensions 1, 2, 3 and 4, year	Market share for replacement, early replacement indicator
OUTPUT	**customerCounts_xx**	Forecast of accounts and units (square footage)	Dimensions 1 and 2, year, vintage	(E/C/N) Accounts, (E/C/N) units, units per account, remaining nonconversion potential
OUTPUT	**eUsage_xx**	Forecast of equipment (end-uses)	Dimensions 1, 2, 3, 4 and 5, year, vintage	Total number of Dimension 3 (end uses)
OUTPUT	**demandByVintage_xx**	Forecast of usage (e.g., kWh, therms)	Dimensions 1, 2, 3, 4 and 5, year, vintage	(E/C/N) Accounts, (E/C/N) units, units per account, remaining nonconversion potential; Total number of Dimension 3 (end uses); Break out of dimension 3 by replacement, conversion, and new construction.
OUTPUT	**salesReport_xx**	Summary Sales Forecast	Dimensions 1, 2, 3 and 4, year	Total usage and equipment sales by Dimension 5
OUTPUT	**shareReport_xx**	Summary Market Share Forecast	Dimensions 1, 2, 3 and 4, year	Market shares for Dimensions 4 and 5, by existing, conversion, and new construction


User-selected scenario (xx) passed into module routine via interface
Forecast Batch control pulls the input data sets for specified scenario
xx
forecastBatchControl
accountDecay_xx
equipmentDecay_xx
equipmentAge_xx
customerCountsActual_xx
customerCountsForecast_xx
usageAnnual_xx
eSharesFinal_xx
fSharesFinal_xx
customerCounts_xx
eUsage_xx
demandByVintage_xx
salesReport_xx
shareReport_xx
Forecasts of Accounts and Units
Forecasts of Equipment
Forecasts of Usage
Summary Sales Forecast
Summary Market Share Forecast
INPUT Dataset
INTER Dataset
OUTPUT Dataset

VIII. End Use Forecaster Utilities

The main End Use Forecaster analysis modules – Product Usage, Provider Choice, Intervention Strategies, and Forecast – are typically run separately during the calibration and testing phase of any market segmentation and forecasting process. Once this process is complete, however, you can run these modules jointly and generate all relevant analyses with a single click of the mouse (after data are prepared, of course).

This chapter describes the various utilties available in End Use Forecaster: Super Batch, Calibration, Analysis of Data Files, and Reporting.

Super Batch Processing

Some forecasting scenarios lend themselves to super batch processing. When the Product Usage, Provider Choice, and Forecast modules all have the same scenario indicator value, the that scenario can be run across all modules by selecting it in the Super Batch frame.

Calibration

End Use Forecaster can be calibrated to base year energy usage data for the "primary" fuel of interest in the model (f='1'). Calibration may proceed at the Z-Level, or at the Z-B-Level. Base year sales data must be available in the \INPUT**calibrationZ_xx or calibrationZB_xx** datasets. To calibrate the model apply the following procedure:

- Select the level at which the forecasts will be calibrated (the Z-Level vs. the Z-B-Level) from the Calibration Utility
- Select the scenario to be calibrated and the percent of usage to be assigned to the miscellaneous usage category.

The calibration routine works as follows:

1. Residual energy is attributed to the miscellaneous end use. This value should be greater than or equal to zero but generally does not exceed 10% of forecasted energy sales. In fact, the upper limit available through the model interface is 10%. Errors larger than this generally indicate a more fundamental data problem where an investigation of data inputs is required rather than this automated calibration process
2. When non-calibrated total usage is on the high side (miscellaneous would then be negative), the next step is to reduce the per-unit energy usage (i.e., customer or square foot) for each market segment, end use, and efficiency combination. Note that the *relative* energy usage across efficiency levels is unchanged. Conversely, when non-calibrated total usage is on the low side, simply let miscellaneous equal zero (the default value). All other end uses will be adjusted proportionately. Again, we recommend avoiding this procedure if the adjustment is larger than 10%.

The relative size of the calibration adjustment which is ultimately applied to the \INPUT**usageParameters_xx** datasetc can be found in \INTER**initialCalibrationRatio**.[4] The variable (*Zfratio* (*ZBfratio*) shows the percent error results, and how much End Use Forecaster had to change parameters through the calibration routine to match base year sales.

If additional calibration is needed beyond the base year to, for example, match an external econometric forecast over the duration of the forecast horizon, a post-processing adjustment using either SAS or Excel can be applied.[5]

After running the calibration routine, it is necessary to run the Usage, Choice, and Forecast modules (or Super Batch) and produce a new forecast. One can then click on the appropriate "Calibration: Calibration Check" routine to make sure the calibration worked as intended.

Analysis of Data Files

All SAS datasets in across End Use Forecaster libraries can be accessed directly from End Use Forecaster for further analysis in real time by following these steps:

- Click on "File: Analyze" to access SAS/INSIGHT
- Select the library and dataset of interest and perform desired analysis

  OR
- SAS/FSP software tools can also be used to browse the SAS datasets via the pull-down menu item "File: Library Map"

Reporting

Five default SAS output dataset reports are created in the OUTPUT directory by the Forecast module:

- A summary sales report (**salesReport_xx**)
- A summary market share report (**shareReport_xx**)
- Detailed account stock forecast (**customerCounts_xx**)
- Detailed market segment/end use equipment sales forecast (**eUsage_xx**)
- Detailed sales projections (**demandByVintage_xx**)

These reports can be browsed directly as described above, or exported to Excel. To accomplish the latter simply click on "Reports: Export Basic Reports to Excel" and select the Forecast module scenario to export.

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4 Notice that there is no scenario indicator on the **initialCalibrationRatio** dataset. This is because only one scenario per Model should be calibrated; all other scenarios within that model can then be developed from the calibrated **usageParameters_xx** or successor datasets.

5 Please contact The Cadmus Group (Quantec) for more information or to obtain a customized calibration routine

End Use Forecaster also produces reports that can be customized based upon the user's choice of segmentation combinations to analyze. These reports summarize and/or compare forecasts for two forecast scenarios specified by clicking on "Reports: Scenario Comparison Reports." The user specifies the Report Category (sales, market share, customer counts or demand by vintage) and, based on the category selection, is given the option of selecting different combinations of segments to summarize and/or compare.

Appendix: Variable Glossary

This glossary provides definitions for each End Use Forecaster SAS variable, and is organized by the model's libraries and datasets as defined in Chapter III.

Table 14. INPUT\accountDecay_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
vintage	Building vintage
accountDecayIndicator	Account decay indicator
accountDecayParm1	Account decay parameter 1
accountDecayParm2	Account decay parameter 2
accountDecayParm3	Account decay parameter 3
accountDecayParm4	Account decay parameter 4

Table 15. INPUT\calibrationZ

Variable Name	Description
z	The indicator for Dimension 1
year	Year of forecast (0 to rorecast horizon)
actualSales	Actual sales in base year

Table 16. INPUT\calibrationZB

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
year	Year
actualSales	Actual sales in base year

Table 17. INPUT\choiceBatchControl

Variable Name	Description
scenarioName	Descriptive name of the scenario
scenario	Output scenario number
choiceDrivers	Scenario to select for the choiceDrivers_xx dataset
priceForecast	Scenario to select for the priceForecast_xx dataset
choiceParameters	Scenario to select for the choiceParameters_xx dataset
usageAnnual	Scenario to select for the usageAnnual_xx dataset
eSharesInitial	Scenario to select for the eSharesInitial_xx dataset
fSharesInitial	Scenario to select for the fSharesInitial_xx dataset
eChoiceStatus	Scenario to select for the eChoiceStatus_xx dataset
fChoiceStatus	Scenario to select for the fChoiceStatus_xx dataset

Table 18. INPUT\choiceDrivers_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
e	The indicator for Dimension 5
year	Year
available	Binary switch to indicate availability of the alternative in any given year of the forecast
capitalCostExisting	Capitial cost for equipment in existing (replacement) construction
capitalCostConversion	Capital cost for equipment for conversion customers
capitalCostNew	Capital costs for equipment for new construction

Table 19. INPUT\choiceParameters_xx

Variable Name	Description
Z	The indicator for Dimension 1
B	The indicator for Dimension 2
N	The indicator for Dimension 3
f	The indicator for Dimension 4
eIndicator	Binary switch for choice modeling to indicate the dimension modeled (0 = Dimension 4 and 1 = Dimension 5)
conType	Type of construction or customer (new, existing, or conversion)
lifetime	Equipment or measure lifetime (years)
alpha	Constant
description	Description of Choice
discountRate	Implicit discount rate
priceShare	Price share of customer utility function
a1	Intercept for alternative 1
a2	Intercept for alternative 2
a3	Intercept for alternative 3
a4	Intercept for alternative 4
b1	Operating cost coefficient
b2	Capital cost coefficient

Table 20. INPUT\customerAccountsActual_xx

Variable Name	Description
Z	The indicator for Dimension 1
B	The indicator for Dimension 2
vintage	Building vintage
unitsPerAccount	Units per Dimension 1-2 and vintage combination (square footage, number of apartments, etc.). This should be set to 1 if the unit is the customer
accounts	Number of accounts.
onMainAccounts	Number of accounts on main.
offMainAccounts	Number of accounts off main.

Table 21. INPUT\customerAccountsForecast_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
year	Year
unitsPerAccount	Units per Dimension 1-2 and vintage combination (square footage, number of apartments, etc.). This should be set to 1 if the unit is the customer
newConstructionAccounts	New Construction accounts.
newConstructionCaptureRate	The “capture” rate of NEWCONST = the share of new buildings that are customers
conversionCaptureRate	The share (%) of existing non-customers converting or becoming a customer each year

Table 22. INPUT\dimens

Variable Name	Description
DIM	Dimension
DIMNAME	Dimension Name
DIMNUM	Starting Levels

Table 23. INPUT\dsmEChoice_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
conType	Type of construction or customer (new, existing, or conversion)
yearIntroduced	Year of Program Introduction
programLife	Duration of Program (Years)
adoptionPath	Years to Full Adoption
applicability	Percent of Customers Applicable
eLevel	e Level to Which Program Applies
marketShare	Market Share Percent
earlyReplacement	Early Replacement (binary)
description	Program Description

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
conType	Type of construction or customer (new, existing, or conversion)
yearIntroduced	Year of Program Introduction
programLife	Duration of Program (Years)
adoptionPath	Years to Full Adoption
applicability	Percent of Customers Applicable
marketShare	Market Share Percent
earlyReplacement	Early Replacement (binary)
description	Program Description

Table 25. INPUT\dsmRetrofit_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
yearIntroduced	Year of Program Introduction
programLife	Duration of Program (Years)
measureLife	The average life of Dimension 3 equipment
eImprovement	The efficiency improvement (%) as reflected by the reduction in equipment energy usage.
adoptionPath	Years to Full Adoption
vintageApplicability	Vintages to Which Programs Apply
applicability	Percent of Customers Applicable
marketShare	Market Share Percent
earlyReplacement	Early Replacement (binary)
eLevel	Lowest e Level to Which Program Applies
description	Program Description

Table 26. INPUT\eChoiceStatus_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
eChoiceStatus	This is a “status” variable for Dimension 5. It tells the Provider Choice module which of several possible equation/modeling processing should be followed.
eAlternatives	The number of choice alternatives for Dimension 5, which ranges from 1-4

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
e	The indicator for Dimension 5
baseAvgEShare	The average market share in the historical stock at Dimension 5
baseMargEShareExisting	The marginal (i.e., most recent) market share associated with the replacement of the product or service option by existing customers
baseMargEShareConversion	The marginal market share associated with conversion customers
baseMargEShareNew	The marginal market share associated with the new construction customers
peakDayLoadFactor	The peak demand or peak day load factor associated with annual usage for each Dimension 1-5 combination.

Table 28. INPUT\equipmentAge_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
equipmentMaxAge	The maximum age of existing equipment for each Dimension 1-3 combination regardless of the historical vintage
equipmentMeanAge	The average age of existing equipment for each Dimension 1-3 combination and each historical vintage
vintage	Building vintage

Table 29. INPUT\equipmentDecay_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
conType	Type of construction or customer (new, existing, or conversion)
equipmentDecayIndicator	Equipment decay indicator
equipmentDecayParm1	Equipment decay paramater 1
equipmentDecayParm2	Equipment decay paramater 2
equipmentDecayParm3	Equipment decay paramater 3
equipmentDecayParm4	Equipment decay paramater 4

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
fChoiceStatus	This is a "status" variable for Dimension 4. It tells the Provider Choice module which of several possible equation/modeling processing should be followed.
fAlternatives	The number of choice alternatives for Dimension 4, which ranges from 1-4

Table 31. INPUT\forecastBatchControl

Variable Name	Description
scenarioName	Descriptive name of the output scenario
scenario	Output scenario number
accountDecay	Scenario to select for the accountDecay_xx dataset
equipmentDecay	Scenario to select for the equipmentDecay_xx dataset
equipmentAge	Scenario to select for the equipmentAge_xx dataset
saturations	Scenario to select for the saturations_xx dataset
customerCountsActual	Scenario to select for the customerCountsActual_xx dataset
customerCountsForecast	Scenario to select for the customerCountsForecast_xx dataset
usageAnnual	Scenario to select for the usageAnnual_xx dataset
eSharesFinal	Scenario to select for the eSharesFinal_xx dataset
fSharesFinal	Scenario to select for the fSharesFinal_xx dataset

Table 32. INPUT\fsharesInitial_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
baseAvgFShare	The average market share in the historical stock at Dimension 4.
baseMargFShareExisting	The marginal (i.e., most recent) market share associated with the replacement of the product or service by existing customers
baseMargFShareConversion	The marginal market share associated with the conversion customers
baseMargFShareNew	The marginal market share associated with the new construction customers

Table 33. INPUT\initParm

Variable Name	Description
BASEYR	Base Year
FCSTYRS	Forecast Years

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
year	Year
price	Price (Native Units)

Table 35. INPUT\saturations_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
year	Year
vintage	Building vintage
saturation	Presence of End Use (Percent)

Table 36. INPUT\scenarioDescriptions

Variable Name	Description
scenario	Output scenario number
scenarioName	Descriptive name of the scenario

Table 37INPUT\usageBatchControl

Variable Name	Description
scenarioName	Descriptive name of the scenario
scenario	Output scenario number
usageParameters	Scenario to select for the usageParameters_xx dataset
usageDrivers	Scenario to select for the usageDrivers_xx dataset

Table 38. INPUT\usageDrivers_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
e	The indicator for Dimension 5
year	Year
month	Month
X0 - X20	Product Usage module forecast drivers

Variable Name	Description
Z	The indicator for Dimension 1
B	The indicator for Dimension 2
N	The indicator for Dimension 3
F	The indicator for Dimension 4
E	The indicator for Dimension 5
Vintage	Building vintage
B0 - B20	Product Usage module coefficients
usageEquationStatus	This is a “status” variable for the Product Usage module.

Table 40. INTER\eSharesFinal_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
e	The indicator for Dimension 5
year	Year
eshare	Share for Dimension 5
earadop	A 0/1 binary variable where a value of 1 indicates that the marginal market shares apply to all existing customers, not just those who need to replace retired equipment. The default value is 0; a one will be used if specified in the Intervention Strategies CSFUELE\Sxx dataset.
conType	Type of construction or customer (new, existing, or conversion)

Table 41. INTER\fSharesFinal_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
year	Year
fshare	Fuel Share
earadop	A 0/1 binary variable where a value of 1 indicates that the marginal market shares apply to all existing customers, not just those who need to replace retired equipment. The default value is 0; a one will be used if specified in the Intervention Strategies CSFUELE\Sxx dataset.
conType	Type of construction or customer (new, existing, or conversion)

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
year	Year
vintage	Building vintage
f	The indicator for Dimension 4
e	The indicator for Dimension 5
use	Annual usage from the usage module for each Dimension 1-5 combination by year and vintage

Table 43. INTER\usageMonthly_xx

Variable Name	Description
vintage	Building vintage
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
e	The indicator for Dimension 5
year	Year
month	Month
use	Monthly usage from the usage module for each Dimension 1-5 combination by year and vintage

Table 44. OUTPUT\customerCounts_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
year	Year
unitsPerAccount	Units per Dimension 1-2 and vintage combination (square footage, number of apartments, etc.). This should be set to 1 if the unit is the customer
vintage	Building vintage
remain	All customers and non-customers remaining for each vintage
totalAccounts	The sum of existing, conversion, and new construction customers
cAccounts	Conversion customers
nAccounts	New construction customers
totalUnits	totalAccounts * units per account
cUnits	cAccounts * units per account
nUnits	nAccounts * units per account

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
vintage	Building vintage
year	Year
n	The indicator for Dimension 3
f	The indicator for Dimension 4
e	The indicator for Dimension 5
fuelSpecificUnits	The energy usage associated with a single unit at the full dimension 1 through 5 (zbnfe) level.
unitsPerAccount	Units per Dimension 1-2 and vintage combination (square footage, number of apartments, etc.). This should be set to 1 if the unit is the customer
use	Annual usage from the usage module for each Dimension 1-5 combination by year and vintage
peakDayLoadFactor	The peak demand or peak day load factor associated with annual usage for each Dimension 1-5 combination.
ereplcs	The total number of new Dimension 3 equipment sales from existing customers (who are replacing retired equipment) by year and vintage for each Dimension 1-5 combination
ceus	The total number of new Dimension 3 equipment sales from conversion customers by year and vintage for each Dimension 1-5 combination
neus	The total number of new Dimension 3 equipment sales from new construction customers by year and vintage for each Dimension 1-5 combination
totalUsage	Annual usage from the usage module for each Dimension 1-5 combination by year and vintage
cUsage	The total number of new Dimension 3 equipment sales from conversion customers by year and vintage for each Dimension 1-5 combination
nUsage	The total number of new Dimension 3 equipment sales from new construction customers by year and vintage for each Dimension 1-5 combination
usagePerUnit	Total usage per unit (e.g., square foot, customer, apartment, etc.) for each Dimension 1-5 combination by year and vintage = USE * EEUS
cuseunit	Total conversion usage per unit (e.g., square foot, customer, apartment, etc.) for each Dimension 1-5 combination by year and vintage = USE * CEUS
nuseunit	Total new construction usage per unit (e.g., square foot, customer, apartment, etc.) for each Dimension 1-5 combination by year and vintage = USE * NEUS

Table 46. OUTPUT\eUsage_xx

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
vintage	Building vintage
year	Year
n	The indicator for Dimension 3
f	The indicator for Dimension 4
e	The indicator for Dimension 5
fuelSpecificUnits	The energy usage associated with a single unit at the full dimension 1 through 5 (zbnfe) level.

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
year	Year
totalAccounts	The sum of existing, conversion, and new construction customers
totalUnits	totalAccounts * units per account
fuelSpecificUnits	The energy usage associated with a single unit at the full dimension 1 through 5 (zbnfe) level.
totalUsage	Annual usage from the usage module for each Dimension 1-5 combination by year and vintage
peakUsage	Annual peak usage from the usage module for each Dimension 1-5 combination by year and vintage
effeeus1 - effeeus4	This is the average number of fuel specific end-uses (FEUS) across the possible Dimension 5 (efficiency) levels, and is identical to AVGEU(1-4) in VNTFMKSH\Sxx
effuec1 - effuec4	The annual usage for each Dimension 5 level associated with each Dimension 1-4 combination. These estimates come directly from USE is USEANN\Sxx
effuse1 - effuse4	The total usage for each Dimension 1-5 combination by year and vintage. These estimates come directly from EUSE in VNTFDEMD\\Sxx
unitsPerAccount	Units per Dimension 1-2 and vintage combination (square footage, number of apartments, etc.). This should be set to 1 if the unit is the customer
uec	Sales per End Use Unit
fuelSpecificUnitsPerAccount	Fuel-Specific End-Use Units per Account
totalUsagePerAccount	Sales per Account

Variable Name	Description
z	The indicator for Dimension 1
b	The indicator for Dimension 2
n	The indicator for Dimension 3
f	The indicator for Dimension 4
year	Year
totalAccounts	The sum of existing, conversion, and new construction customers
totalUnits	totalAccounts * units per account
fuelSpecificUnits	The energy usage associated with a single unit at the full dimension 1 through 5 (zbnfe) level.
effeeus1 - effeeus4	This is the average number of fuel specific end-uses (FEUS) across the possible Dimension 5 (efficiency) levels, and is identical to AVGEU(1-4) in VNTFMKSH\Sxx
averageShareEff1 - averageShareEff4	The average stock share of Dimension 5 for each Dimension 1-4 combination
fshareExisting	The fourth dimension (fuel) market share for existing (replacement equipment) customers
fshareNew	The fourth dimension (fuel) market share for new construction customers
fshareConversion	The fourth dimension (fuel) market share for conversion customers
marginalShareExisting1 - marginalShareExisting4	The marginal (existing equipment) share of Dimension 5 for each Dimension 1-4 combination
marginalShareNew1 - marginalShareNew4	The marginal (new equipment) share of Dimension 5 for each Dimension 1-4 combination
marginalShareConversion1 - marginalShareConversion4	The marginal (conversion equipment) share of Dimension 5 for each Dimension 1-4 combination

The End Use Forecaster's data requirements are extensive and diverse; in practically every case, the set of sources necessary to fulfill them are equally varied. For the five Gas Company models, the data sources fell into four categories.

(n) Company-specific primary research – Studies conducted by or for the Gas Company help to characterize the market for different segments.

(o) Company databases – The Gas Company's MAS, for example, and other internal data sources have indispensable historical data on the customer counts and consumption patterns.

(p) Secondary data sources – Recent state projects by CALMAC, for example, have information on baseline end-use consumption and equipment costs.

(q) Assumptions – Professional judgment or assumptions based on previous model inputs are necessary to fill in those areas where other data sources are insufficient.

For nearly every input, more than one source was considered during the process of populating the model. The principal criterion for selection of the final source was the "reasonableness" of the results. In cases where alternative source produced similar results, preference was given to more recent and company-specific data. In some cases, multiple sources were used where one complemented another. The specific sources for each individual input are documented in Excel workbooks used during data development or in the SAS code used to populate the model. The final values used in the model are available in the SAS data sets for the various modules.

Residential Model

The residential model had the most consistent and robust set of sources. An analysis of raw data from the Gas Company's most recent RASS provided customized inputs for many of the customer characteristics. Data from CALMAC were available for unit energy consumption and equipment costs for the primary end uses. Gas Company data on customer counts, consumption, and meter forecasts were easily produced in a format consistent with the chosen segmentation design.

Data Set	Variable	Source	Notes
Input.UsageParameters_10	B0 (UEC)	CALMAC California Statewide Residential Sector Energy Efficiency Potential Study, Volume II: Appendices	Stock or standard efficiency UECs taken from "Base Tech UEC" inputs. UECs for higher efficiencies based on "Energy Savings" inputs.
	B1 (Price Elasticity)	SoCal Gas econometric model outputs	
Input.UsageDrivers_10	X0 (UEC)	Default values.	Forecast drivers
	X1 (Price)	SoCal Gas price forecasts	Marginal price forecast applied in usage module.
Input.UsageParameters_10	ADJUST	SoCal Gas historical customer data	Adjustment to UECs by vintage based on SoCal Gas historical use per customer.

Choice Module - Residential

Data Set	Variable	Source	Notes
Input.ChoiceParameters_10	Lifetime	SoCal Gas RASS	
	DiscountRate	Default	
	PriceShare	Default	
	A1, A2, A3, B1, B2	Default Starting Values	Some initial parameters changed during operation of choice module to allow calibration.
Input.ChoiceDrivers_10	CapitalCostExisting, CapitalCostNew, CapitalCostConversion	CALMAC California Statewide Residential Sector Energy Efficiency Potential Study, Volume II: Appendices	Where costs were not available from CALMAC, values from previous SoCal Gas residential model were adapted to accommodate additional efficiency level in current version
	Available	Assumptions	Stock efficiency level assumed unavailable after base year.
Input.FSharesInitial_10	BaseAvgFShare, BaseMargFShareExisting, BaseMargFShareConversion, BaseMargFShareNew	SoCal Gas RASS	
Input.ESharesInitial_10	BaseAvgEShare, BaseMargEShareExisting, BaseMargEShareConversion, BaseMargEShareNew	Assumptions, previous residential model, and CALMAC *California Statewide Residential Sector Energy Efficiency Potential Study, Volume II: Appendices*	

Data Set	Variable	Source	Notes
Input.CustomerCountsActual_10	ACCTSY0	SoCal Gas historical customer data	
Input.CustomerCountsForecast_10	NEWCONST	SoCal Gas residential meter forecasts	
	UPA	Default	Units Per Account: set to one for single- and multi-family dwellings. Master- and sub-metered adjusted to account for customer counts per meter.
Input.AccountDecay_10	AccountDecayIndicator, AccountDecayParm1-4	SoCal Gas	No decay applied to new construction.
Input.EquipmentDecay_10	EquipmentDecayIndicator, EquipmentDecayParm1-4	Assumptions	Exponential decay function applied based on measure life assumptions. Logistic decay function applied based on measure life assumptions.
Input.EquipmentAge_10	EquipmentMeanAge, EquipmentMaxAge	SoCal Gas RASS	
Input.Saturations_10	SAT	SoCal Gas RASS	

Commercial Core and Non-Core Models

The Core and Non-Core Commercial models share the same sources for data. For most of the inputs, these sources provide identical values for both models. That is the sources for data do not show any distinction in the end use intensity (EUI) values, end-use saturations, and fuel and efficiency shares for the two models. The fundamental difference in the models is the Gas Company's customer counts for the different building types. Less significantly, price forecasts, which have an influence on both usage and choice modules, are also different for the two models.

End Use Forecaster's Library and Data Set	End Use Forecaster Variable(s)	Source	Notes
Input.UsageParameters_10	B0 (EUI)	SDG&E 2000 Commercial EUI Study, CALMAC *California Statewide Commercial Sector Natural Gas Energy Efficiency Potential Study, Volume II: Appendices*	Stock efficiency EUIs taken from SDG&E study. EUIs for higher efficiencies based on "Energy Savings" inputs from CALMAC.
	B1 (Price Elasticity)	SoCal Gas econometric model outputs	
Input.UsageDrivers_10	X0 (EUI)	Default values	Forecast drivers
	X1 (Price)	SoCal Gas price forecasts	Marginal price forecast applied in usage module.

Choice Module – Commercial Core and Noncore

Data Set	Variable	Source	Notes
Input. ChoiceParameters_10	Lifetime	So Cal Gas MAS, Assumptions	
	DiscountRate	Default Assumptions – 25%	The 25% customer discount rate stems from the implicit discount rate literature.
	PriceShare	Default Assumptions – 50%	The 50% price share assumption on previous Cadmus Group (formerly Quantec) research on how customers trade off price vs. non price attributes
	A1, A2, A3, B1, B2	Default Starting Values	Some initial parameters changed during operation of choice module to allow calibration.
Input. ChoiceDrivers_10	CapitalCostExisting, CapitalCostConversion, CapitalCostNew	So Cal Gas Average Price Forecast, Assumptions	Operating costs based on equipment usage data and SoCal Gas price forecast, with capital costs calculated based on assumed ratios of operating to capital costs.
	Available	Assumptions	Stock efficiency level assumed unavailable after base year.
Input. FSharesInitial_10	BaseAvgFShare, BaseMargFShareExisting, BaseMargFShareConversion, BaseMargFShareNew	SDG&E 2000 Commercial EUI Study, 1996 SoCal Gas Commercial & Industrial Energy Equipment Market Share Study	
Input. ESharesInitial_10	BaseAvgEShare, BaseMargEShareExisting, BaseMargEShareConversion, BaseMargEShareNew	Assumptions	10% high efficiency share(s) based on professional judgment and DSM free ridership literature.

Data Set	Variable	Source	Notes
Input.CustomerCountsActual_10	ACCTSY0	SoCal Gas historical customer data	Base year accounts data.
Input.CustomerCountsForecast_10	NEWCONST	SoCal Gas historical customer data, SoCal Gas employment forecasts, and SoCal Gas employment elasticity from econometric model	New Construction.
	UPA	MAS	Units Per Account.
Input.AccountDecay_10	AccountDecayIndicator, AccountDecayParm1-4	Assumptions	No decay applied to existing accounts. No decay applied to new construction.
Input.EquipmentDecay_10	EquipmentDecayIndicator, EquipmentDecayParm1-4	Assumptions	Exponential decay function applied based on measure life assumptions. Logistic decay function applied based on measure life assumptions
Input.EquipmentAge_10	EquipmentMaxAge, EquipmentMeanAge	SoCal Gas MAS	
Input.Saturations_10	SAT	SDG&E 2000 Commercial EUI Study	

Industrial Core and Non-Core Models

The Core and Non-Core Industrial models also share the same data sources. Unlike the sources for the commercial models, the data from the Gas Company's MAS – one of the primary inputs into to calculation of the UECs – are different for core and non-core sectors. Consequently, the final UEC for a given building's end use can vary significantly between the models. As with the commercial models, the Gas Company's historical customer counts also drive differences in the forecasts.

Data Set	Variable	Source	Notes
Input.UsageParameters_10	B0 (EUI)	SoCal Gas MAS, SoCal Gas Commercial & Industrial Energy Equipment Market Share Study	UECs based on a top-down calculation based on historical use per customer, end-use saturations, and fuel shares.
	B1 (Price Elasticity)	SoCal Gas econometric model outputs	
Input.UsageDrivers_10	X0 (EUI)	Default values.	Forecast drivers
	X1 (Price)	SoCal Gas price forecasts	Marginal price forecast applied in usage module.

Choice Module – Industrial Core and Noncore

Data Set	Variable	Source	Notes
Input.ChoiceParameters_10	Lifetime	So Cal Gas MAS, Assumptions	
	DiscountRate	Default	
	PriceShare	Default	
	A1, A2, A3, B1, B2	Default Starting Values	Some initial parameters changed during operation of choice module to allow calibration.
Input.ChoiceDrivers_10	CapitalCostExisting, CapitalCostNew, CapitalCostConversion	So Cal Gas Average Price Forecast, Assumptions	Operating costs based on equipment usage data and SoCal Gas price forecast, with capital costs calculated based on assumed ratios of operating to capital costs.
	Available	Assumptions	Stock efficiency level assumed unavailable after base year.
Input.FSharesInitial_10	BaseAvgFShare, BaseMargFShareExisting, BaseMargFShareConversion, BaseMargFShareNew	SoCal Gas Commercial & Industrial Energy Equipment Market Share Study	
Input.ESharesInitial_10	BaseAvgEShare, BaseMargEShareExisting, BaseMargEShareConversion, BaseMargEShareNew	Assumptions.	

Data Set	Variable	Source	Notes
Input.CustomerCountsActual_10	ACCTSY0	SoCal Gas historical customer data	
Input.CustomerCountsForecast_10	NEWCONST	SoCal Gas historical customer data, SoCal Gas employment forecasts, and SoCal Gas employment elasticity from econometric model	
	UPA	MAS	Units Per Account
Input.AccountDecay_10	AccountDecayIndicator, AccountDecayParm1-4	Assumptions	No decay applied to existing accounts.
Input.EquipmentDecay_10	EquipmentDecayIndicator, EquipmentDecayParm1-4	Assumptions	Exponential decay function applied based on measure life assumptions. Logistic decay function applied based on measure life assumptions.
Input.EquipmentAge_10	EquipmentMaxAge, EquipmentMeanAge	SoCal Gas MAS	
Input.Saturations_10	SAT	SoCalGas RASS	

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RESIDENTIAL

Southern California Gas Residential End-Use Model

I. Residential End-Use Model Description

Introduction:

SoCalGas used the End Use Forecaster model to generate annual gas demand forecasts for the residential market. The software's market segmentation and end-use modeling framework analyzes the impacts of competitive strategies (gas vs. electricity) and market scenarios on gas demand and market shares. The model separates the residential market into five building types (B-level).

These groups are identified by the premise code classification found in the company billing files. The five residential groups are:

- Single-Family (SF);
- Multi-Family <= 4 units (MF2);
- Multi-Family > 4 units (MF3);
- Master Metered (MM); and
- Sub-Metered (SM).

The residential model identifies eight end-uses (N-level) that are the primary drivers of natural gas demand:

- Space heating;
- Water heating;
- Cooking;
- Drying;
- Pool heating;
- Spa heating;
- Fireplace; and
- Barbeque.

The model assumes two fuel choices (F-level) for end-uses:

- Natural gas; and
- Electricity.

The model assumes up to four efficiency levels (E-level) for the various end-uses. In general, the efficiency levels are:

- Stock;
- Standard;
- High efficiency; and
- Premium efficiency.

A set of post-model adjustments were applied to the model's annual demand forecast. The first adjustment calibrates to the recorded 2021 weather-adjusted demand. Next, the annual forecast was parceled out to a series of monthly forecasts by a process which involves two steps. These two steps consist of (1) using the fitted equation for customer demand to generate a forecast of use per customer that varies with the number of calendar days and heating degree days in a given month and (2) calculating a series of weights based on the customer's predicted monthly usage share in total annual consumption. The shares obtained from the latter step were then applied to annual totals to derive the stream of monthly forecasts which are conditional on the particular weather design specification for the entire year. An adjustment to the forecast offsets the throughput by the energy efficiency savings. The forecast was also reduced by AAFS Scenario 2. The AAFS was obtained from the CEC's "California Energy Demand Forecast", IEPR Volume IV, pp 33-49 and Appendix A.

The final adjustment to the forecast was for climate change. To account for anticipated weather that is less cold, the average year weather design was reduced by 6 fewer heating degree days each year over the forecast period.

Tables 1-4 illustrate the residential monthly forecast under each of the weather scenarios. Table 5 shows the fuel substitution forecast used to prepare the out of model adjustment and the final forecast.

Data Sources:

The information used to perform the modeling and to generate the forecast includes historical 2021 consumption and customer counts; meter counts, growth, and decay; use per customer by vintage and unit energy consumption (UEC) values; fuel costs and price elasticity; equipment capital costs and availability; building and equipment lives and decay. The historical 2021 data is in Figure 6.

Meter Counts, Growth and Decay:

Regression equations were developed for each of the 5 building types. The meter count forecast is a company-specific forecast based on actual meter counts within the SoCalGas service territory. Data on meter decay rates were obtained from the Energy Information Administration (EIA). See Figure 7 for the meter forecast used as an input to the End-Use Model.

Use Per Customer by Vintage and UEC:

Use per customer and Unit Energy Consumption (UEC) data were based on company marketing data and the California Measurement Advisory Council. See Figure 8 for the appliance UEC's.

Fuel Costs and Price Elasticity:

Average and marginal gas prices ($/therm) were calculated from forecasts of the residential rate components. Residential rates have two consumption tiers. We used the simple average of the second tiers' projected monthly prices for each forecast year as the marginal rate. The marginal rate was used for each housing segment type.

For a given housing segment type, the average gas commodity rate was calculated using a pair of weights for the two consumption tiers applied to the simple average of each tier's monthly rate. The average commodity rate in each forecast year was developed using the same consumption tier weights, but with the forecasts of rates for each residential rate tier. The average gas price each year was then calculated by including the non-volumetric customer charges with the year's average gas commodity price. Figure 9 illustrates the gas price forecasts.

Electric Price Data:

Both average prices (cents/kWh) and marginal prices (cents/kWh) were developed as electricity price inputs. Forecasts for the SCE residential customer class were developed based on the California Energy Commission's December 2021 updated forecast rates for California energy demand (forecast for the SCE planning area, under "Mid-Case" demand for electricity) for the SCE service area through our forecast time horizon.

To impute average electricity prices to each residential housing type, we simply calculated the ratio of the housing type's average gas price to the overall residential gas price for each housing type, then multiplied by the overall average electricity price.

The marginal prices for each residential housing type were calculated by multiplying each year's respective average price by a ratio. These ratios were 1.513 for the SF, MF2 and MF3 housing types, 1.34 for the MM housing type and 1.125 for the SM housing type. These various ratios ware estimated from analyses of SCE Schedule D rate schedule for housing types SF, MF2 and MF3; SCE Schedule DM for housing type MM; and SCE Schedule D as applied to sub-metered buildings for housing type SM. Copies of these rate schedules were obtained from the SCE web-site. The electric average and marginal prices are included in table 10.

Building and Equipment Lives and Decay:

Building decay rates are based on the building shell lifetimes, where the lifetime is defined as the length of time it takes for either a demolition or a major renovation to occur. For single-family residential buildings, an exponential rate of decay of 0.3% per year was assumed. See Figure 11 for the building decay rates.

Data on equipment lives and decay rates are based on EIA, RASS, Energy Star, and SoCalGas company data. See Figure 12 for the average lifetimes of gas appliances.

Saturations, Fuel and Efficiency Shares:

Saturation values, fuel shares, and efficiency shares were extracted from SoCalGas company data files and the most recent the RASS survey. Please see Figures 13, 14 and 15 for saturations, fuel, and efficiency shares.

AAFS:
Notation from the CEC supporting the construction of the fuel substitution scenarios is included at the end of the section. For more detailed explanation, please refer to the IEPR Volume IV, pp. 33-49 and Appendix A of the *California Energy Demand Forecast.*

Table 6: SOUTHERN CALIFORNIA GAS COMPANY
HISTORICAL DATA AT AVERAGE YEAR WEATHER (1,248 HDD'S)

Segment	2021 Therm Sales	2021 Meter Count	2021 Meter Count pre-78 customers	2021 Meter Count post-78 till "new" customers	2021 Meter Count New Customers	Average Annual Consumption pre-78 customers	Average Annual Consumption post-78 till "new" customers	Average Annual Consumption New Customers	Price Elasticity
Single_Family	1,659,124,262	3,812,505	2,392,473	1,399,758	20,274	434	439	309	**-0.1053**
MF2_2_TO_4_Units	163,940,003	563,130	402,740	157,381	3,009	294	285	226	**-0.1117**
MF3_GE_5_Units	321,605,817	1,232,380	696,133	530,307	5,940	267	255	163	**-0.0715**
MM_Master_Meter	127,948,916	36,425	31,920	4,359	146	3,003	7,059	9,017	**-0.0688**
SM_Sub_Meter	37,920,003	1,512	1,407	104	1	24,778	29,398	1	**-0.1053**

SOUTHERN CALIFORNIA GAS COMPANY
TABLE 1: AVERAGE YEAR WEATHER DESIGN FORECAST (UNITS = MDTH)
RESIDENTIAL

YEAR	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12	TOTAL
2021	32113.96	27965.00	24412.98	20195.60	14594.23	11247.22	10799.89	10775.83	10653.61	13286.67	21282.56	33726.35	**231,053.90**
2022	31904.22	27783.78	24264.40	20086.48	14526.12	11205.31	10762.51	10738.65	10615.76	13229.65	21161.54	33500.09	**229,778.49**
2023	31565.58	27490.25	24017.44	19895.49	14398.49	11117.16	10680.64	10657.07	10534.05	13118.26	20954.45	33138.65	**227,567.52**
2024	31089.79	27077.25	23665.86	19617.50	14207.62	10979.91	10551.53	10528.35	10405.77	12949.13	20655.88	32633.39	**224,361.96**
2025	30516.19	26579.03	23239.57	19277.25	13971.40	10807.38	10388.44	10365.73	10244.01	12738.57	20291.90	32025.60	**220,445.07**
2026	29976.77	26110.53	22838.92	18957.77	13749.85	10645.81	10235.78	10213.52	10092.57	12541.19	19949.99	31453.90	**216,766.61**
2027	29401.03	25610.36	22410.32	18614.73	13510.95	10470.53	10069.88	10048.08	9928.10	12327.86	19583.46	30844.24	**212,819.56**
2028	28792.07	25081.22	21956.14	18250.12	13256.13	10282.67	9891.80	9870.50	9751.65	12099.89	19194.37	30199.88	**208,626.44**
2029	28161.95	24533.60	21485.55	17871.53	12990.89	10086.47	9705.63	9684.83	9567.24	11862.28	18790.72	29533.46	**204,274.16**
2030	27490.62	23950.06	20983.32	17466.37	12706.14	9874.93	9504.65	9484.39	9368.24	11606.77	18359.25	28823.95	**199,618.69**
2031	26785.44	23337.01	20455.06	17039.28	12405.25	9650.65	9291.36	9271.65	9157.14	11336.42	17904.84	28079.05	**194,713.14**
2032	26070.32	22715.26	19918.94	16605.33	12099.10	9422.03	9073.82	9054.68	8941.87	11061.15	17443.35	27323.87	**189,729.73**
2033	25371.11	22107.33	19394.63	16180.78	11799.46	9198.15	8860.76	8842.17	8731.04	10791.68	16991.94	26585.56	**184,854.60**
2034	24688.05	21513.42	18882.32	15765.79	11506.46	8979.11	8652.27	8634.22	8524.75	10528.12	16550.76	25864.37	**180,089.64**
2035	24033.78	20944.55	18391.63	15368.35	11225.86	8769.37	8452.64	8435.10	8327.21	10275.73	16128.22	25173.56	**175,526.00**

SOUTHERN CALIFORNIA GAS COMPANY
TABLE 2: COLD YEAR WEATHER DESIGN FORECAST (UNITS = MDTH)
RESIDENTIAL

YEAR	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12	TOTAL
2021	36019.65	31311.31	26962.26	21771.33	15317.14	11395.47	10831.22	10802.57	10722.38	13752.05	23176.18	38059.98	**250,121.54**
2022	35742.43	31072.28	26769.63	21634.98	15236.54	11351.00	10793.30	10764.93	10683.34	13686.99	23022.44	37758.84	**248,516.71**
2023	35337.47	30721.93	26479.39	21417.24	15096.63	11260.33	10710.90	10682.90	10600.47	13567.70	22783.21	37323.83	**245,982.00**
2024	34796.52	30253.10	26085.28	21112.95	14893.70	11120.61	10581.26	10553.74	10471.04	13390.81	22453.04	36746.25	**242,458.30**
2025	34158.88	29700.01	25617.19	20746.87	14645.63	10945.64	10417.66	10390.68	10308.15	13172.61	22058.01	36067.41	**238,228.76**
2026	33556.53	29177.59	25175.46	20402.00	14412.44	10781.68	10264.50	10238.03	10155.61	12967.74	21685.59	35425.88	**234,243.05**
2027	32918.94	28624.43	24706.50	20034.01	14162.09	10604.06	10098.10	10072.17	9990.05	12747.04	21289.07	34747.60	**229,994.07**
2028	32249.21	28043.22	24212.65	19644.88	13896.02	10413.90	9919.54	9894.17	9812.52	12511.82	20870.51	34035.80	**225,504.23**
2029	31559.36	27444.43	23703.07	19242.19	13619.72	10215.42	9732.89	9708.10	9627.06	12267.10	20437.91	33303.12	**220,860.35**
2030	30829.33	26810.60	23162.53	18813.35	13324.11	10001.65	9531.43	9507.25	9427.04	12004.59	19977.97	32528.47	**215,918.33**
2031	30066.47	26148.12	22596.62	18362.99	13012.54	9775.19	9317.68	9294.12	9214.91	11727.37	19495.60	31719.57	**210,731.18**
2032	29294.66	25477.81	22023.50	17906.17	12695.90	9544.42	9099.69	9076.76	8998.65	11445.35	19006.63	30901.49	**205,471.02**
2033	28539.75	24822.15	21462.83	17459.14	12385.95	9318.42	8886.18	8863.87	8786.83	11169.24	18528.21	30101.37	**200,323.94**
2034	27801.94	24181.34	20914.79	17022.07	12082.81	9097.31	8677.25	8655.55	8579.58	10899.15	18060.49	29319.44	**195,291.72**
2035	27093.88	23566.38	20388.98	16602.92	11792.26	8885.52	8477.18	8456.06	8381.10	10640.35	17611.86	28568.94	**190,465.44**

SOUTHERN CALIFORNIA GAS COMPANY
TABLE 3: HOT YEAR WEATHER DESIGN FORECAST (UNITS = MDTH)
RESIDENTIAL

YEAR	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12	TOTAL
2021	28208.27	24618.69	21863.70	18619.88	13871.32	11098.97	10768.56	10749.08	10584.83	12821.28	19388.94	29392.73	**211,986.26**
2022	28066.01	24495.28	21759.16	18537.97	13815.70	11059.62	10731.72	10712.37	10548.17	12772.30	19300.63	29241.34	**211,040.28**
2023	27793.68	24258.56	21555.48	18373.74	13700.34	10973.99	10650.38	10631.24	10467.63	12668.82	19125.70	28953.48	**209,153.04**
2024	27383.05	23901.39	21246.44	18122.04	13521.53	10839.21	10521.79	10502.97	10340.50	12507.46	18858.72	28520.52	**206,265.63**
2025	26873.50	23458.05	20861.95	17807.63	13297.17	10669.11	10359.22	10340.79	10179.86	12304.52	18525.79	27983.79	**202,661.38**
2026	26397.01	23043.47	20502.38	17513.54	13087.27	10509.93	10207.07	10189.00	10029.54	12114.64	18214.40	27481.92	**199,290.16**
2027	25883.12	22596.28	20114.15	17195.45	12859.82	10337.00	10041.66	10023.99	9866.15	11908.68	17877.85	26940.88	**195,645.05**
2028	25334.94	22119.22	19699.64	16855.36	12616.25	10151.45	9864.07	9846.82	9690.77	11687.95	17518.22	26363.96	**191,748.65**
2029	24764.55	21622.77	19268.03	16500.87	12362.06	9957.51	9678.38	9661.57	9507.41	11457.46	17143.53	25763.81	**187,687.96**
2030	24151.91	21089.53	18804.11	16119.39	12088.18	9748.20	9477.87	9461.52	9309.45	11208.94	16740.52	25119.42	**183,319.04**
2031	23504.41	20525.89	18313.50	15715.57	11797.96	9526.11	9265.04	9249.19	9099.36	10945.47	16314.08	24438.52	**178,695.10**
2032	22845.98	19952.71	17814.38	15304.49	11502.30	9299.64	9047.96	9032.60	8885.09	10676.96	15880.07	23746.24	**173,988.43**
2033	22202.48	19392.50	17326.43	14902.41	11212.97	9077.88	8835.34	8820.47	8675.24	10414.12	15455.67	23069.74	**169,385.26**
2034	21574.16	18845.50	16849.85	14509.51	10930.10	8860.92	8627.29	8612.90	8469.92	10157.08	15041.03	22409.29	**164,887.56**
2035	20973.69	18322.73	16394.27	14133.77	10659.46	8653.22	8428.09	8414.15	8273.33	9911.10	14644.57	21778.18	**160,586.56**

SOUTHERN CALIFORNIA GAS COMPANY
TABLE 4: BASE YEAR WEATHER DESIGN FORECAST (UNITS = MDTH)
RESIDENTIAL

YEAR	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12	TOTAL
2021	10730.04	10037.78	10730.04	10383.91	10730.04	10383.91	10730.04	10730.04	10383.91	10730.04	10383.91	10730.04	**126,683.66**
2022	10858.27	10157.74	10858.27	10508.00	10858.27	10508.00	10858.27	10858.27	10508.00	10858.27	10508.00	10858.27	**128,197.65**
2023	10901.74	10198.40	10901.74	10550.07	10901.74	10550.07	10901.74	10901.74	10550.07	10901.74	10550.07	10901.74	**128,710.85**
2024	10855.56	10155.20	10855.56	10505.38	10855.56	10505.38	10855.56	10855.56	10505.38	10855.56	10505.38	10855.56	**128,165.65**
2025	10743.85	10050.69	10743.85	10397.27	10743.85	10397.27	10743.85	10743.85	10397.27	10743.85	10397.27	10743.85	**126,846.70**
2026	10647.16	9960.24	10647.16	10303.70	10647.16	10303.70	10647.16	10647.16	10303.70	10647.16	10303.70	10647.16	**125,705.13**
2027	10522.66	9843.78	10522.66	10183.22	10522.66	10183.22	10522.66	10522.66	10183.22	10522.66	10183.22	10522.66	**124,235.25**
2028	10372.37	9703.18	10372.37	10037.78	10372.37	10037.78	10372.37	10372.37	10037.78	10372.37	10037.78	10372.37	**122,460.88**
2029	10203.76	9545.45	10203.76	9874.61	10203.76	9874.61	10203.76	10203.76	9874.61	10203.76	9874.61	10203.76	**120,470.22**
2030	10004.74	9359.27	10004.74	9682.01	10004.74	9682.01	10004.74	10004.74	9682.01	10004.74	9682.01	10004.74	**118,120.48**
2031	9779.91	9148.95	9779.91	9464.43	9779.91	9464.43	9779.91	9779.91	9464.43	9779.91	9464.43	9779.91	**115,466.01**
2032	9543.95	8928.21	9543.95	9236.08	9543.95	9236.08	9543.95	9543.95	9236.08	9543.95	9236.08	9543.95	**112,680.22**
2033	9312.74	8711.92	9312.74	9012.33	9312.74	9012.33	9312.74	9312.74	9012.33	9312.74	9012.33	9312.74	**109,950.43**
2034	9086.53	8500.30	9086.53	8793.42	9086.53	8793.42	9086.53	9086.53	8793.42	9086.53	8793.42	9086.53	**107,279.69**
2035	8873.14	8300.68	8873.14	8586.91	8873.14	8586.91	8873.14	8873.14	8586.91	8873.14	8586.91	8873.14	**104,760.25**

SOUTHERN CALIFORNIA GAS COMPANY
TABLE 5: FUEL SUBSTITUTION FORECAST (UNITS
RESIDENTIAL

SOURCE	YEAR	AAFS (Mdth)
Residential	**2021**	0.00
Residential	2022	218.26
Residential	2023	826.23
Residential	2024	2287.67
Residential	2025	4078.26
Residential	2026	6068.86
Residential	2027	8230.60
Residential	2028	10584.41
Residential	2029	13092.29
Residential	2030	15752.26
Residential	2031	18581.39
Residential	2032	21514.72
Residential	2033	24361.62
Residential	2034	27112.75
Residential	2035	29640.68

SOUTHERN CALIFORNIA GAS COMPANY
TABLE 7: INCREMENTAL METER GROWTH
RESIDENTIAL MARKET, BY SEGMENT

Year	SF Meters	MF2 Meters	MF3 Meters	MM Meters	SM Meters
2022	23,881	18,415	5,795	3,972	0
2023	24,789	17,779	5,595	3,834	0
2024	23,926	17,471	5,498	3,768	0
2025	23,409	16,920	5,325	3,649	0
2026	23,185	16,634	5,235	3,587	0
2027	22,748	16,632	5,234	3,587	0
2028	21,843	16,242	5,112	3,503	0
2029	21,228	15,843	4,986	3,417	0
2030	20,897	15,675	4,933	3,381	0
2031	20,471	15,602	4,910	3,365	0
2032	20,093	15,328	4,824	3,306	0
2033	19,989	15,094	4,750	3,255	0
2034	19,612	15,042	4,734	3,244	0
2035	19,232	14,835	4,669	3,199	0
2036	19,232	14,835	4,669	3,199	0
2037	19,232	14,835	4,669	3,199	0

SOUTHERN CALIFORNIA GAS COMPANY
TABLE 8: UNIT ENERGY CONSUMPTION BY SEGMENT AND END USE

		2019 Residential Appliance Saturation Survey								
		Conditional Demand Study 2021								
SoCalGas		Single Family Unit Energy Consumption (UEC)	Single Family Saturation (%)	Single Family Intensity	Single Family Use Proportion		Multi Family Unit Energy Consumption	Multi Family Saturation	Multi Family Intensity	Multi Family Use Proportion
	Space Heat	227	98.62%	224	51.75%		107	89.98%	96	46.67%
	Water Heat	141	95.98%	135	31.28%		94	81.33%	76	37.05%
	Cooking	30	82.37%	25	5.71%		28	77.80%	22	10.56%
	Clothes Drying	33	69.36%	23	5.29%		29	35.19%	10	4.95%
	Pool Heat	151	8.37%	13	2.92%		N/A			
	Spa Heat	102	9.68%	10	2.28%		47	1.19%	1	0.27%
	Gas Fireplace	11	7.33%	1	0.19%		7	4.58%	0	0.16%
	Gas Barbecue	16	15.56%	2	0.58%		14	5.17%	1	0.35%
	Total Household SF			433 Therms/Year	100%				206 Therms/Year	100%

SOUTHERN CALIFORNIA GAS COMPANY
TABLE 10: AVERAGE AND MARGINAL GAS PRICES
UNITS = $/THERM

Year	R SF Average Price	R SF Marginal Price	R MF2 Average Price	R MF2 Marginal Price	R MF3 Average Price	R MF3 Marginal Price	R MM Average Price	R MM Marginal Price	R SM Average Price	R SM Marginal Price
2021	1.2359	1.2138	1.2417	1.2138	1.2412	1.2138	1.2453	1.2138	1.2432	1.2138
2022	1.3469	1.2388	1.3756	1.2388	1.3728	1.2388	1.3931	1.2388	1.3829	1.2388
2023	1.3125	1.2411	1.3314	1.2411	1.3296	1.2411	1.3430	1.2411	1.3362	1.2411
2024	1.3253	1.2550	1.3440	1.2550	1.3422	1.2550	1.3554	1.2550	1.3488	1.2550
2025	1.3292	1.2808	1.3420	1.2808	1.3408	1.2808	1.3499	1.2808	1.3453	1.2808
2026	1.3613	1.3126	1.3742	1.3126	1.3730	1.3126	1.3821	1.3126	1.3775	1.3126
2027	1.3941	1.3454	1.4071	1.3454	1.4058	1.3454	1.4150	1.3454	1.4103	1.3454
2028	1.4306	1.3802	1.4440	1.3802	1.4427	1.3802	1.4521	1.3802	1.4474	1.3802
2029	1.4732	1.4177	1.4879	1.4177	1.4865	1.4177	1.4969	1.4177	1.4917	1.4177
2030	1.5197	1.4570	1.5363	1.4570	1.5347	1.4570	1.5465	1.4570	1.5405	1.4570
2031	1.5690	1.4976	1.5880	1.4976	1.5861	1.4976	1.5995	1.4976	1.5928	1.4976
2032	1.6216	1.5396	1.6434	1.5396	1.6413	1.5396	1.6567	1.5396	1.6489	1.5396
2033	1.6696	1.5816	1.6930	1.5816	1.6907	1.5816	1.7072	1.5816	1.6989	1.5816
2034	1.7188	1.6247	1.7438	1.6247	1.7414	1.6247	1.7591	1.6247	1.7501	1.6247
2035	1.7735	1.6696	1.8010	1.6696	1.7983	1.6696	1.8178	1.6696	1.8080	1.6696

SOUTHERN CALIFORNIA GAS COMPANY
TABLE 10: AVERAGE AND MARGINAL ELECTRIC PRICES (CENTS/KWH)

Year	R SF Average Price	R SF Marginal Price	R MF2 Average Price	R MF2 Marginal Price	R MF3 Average Price	R MF3 Marginal	R MM Average Price	R MM Marginal Price	R SM Average Price	R SM Marginal Price
2021	22.33	33.79	22.43	33.95	22.42	33.93	22.50	23.26	22.46	25.28
2022	23.48	35.53	23.98	36.28	23.93	36.21	24.28	25.11	24.10	27.13
2023	24.15	36.55	24.50	37.08	24.47	37.03	24.71	25.56	24.59	27.67
2024	24.62	37.26	24.97	37.79	24.94	37.73	25.18	26.04	25.06	28.20
2025	25.77	38.99	26.02	39.37	25.99	39.33	26.17	27.06	26.08	29.35
2026	26.75	40.48	27.01	40.87	26.98	40.83	27.16	28.09	27.07	30.47
2027	27.28	41.28	27.53	41.66	27.51	41.62	27.69	28.63	27.60	31.06
2028	28.50	43.12	28.76	43.52	28.74	43.48	28.92	29.91	28.83	32.44
2029	29.71	44.96	30.01	45.40	29.98	45.36	30.19	31.21	30.08	33.85
2030	30.92	46.79	31.26	47.31	31.23	47.26	31.47	32.54	31.35	35.28
2031	32.13	48.62	32.52	49.21	32.48	49.15	32.75	33.87	32.62	36.70
2032	33.40	50.54	33.85	51.22	33.80	51.15	34.12	35.28	33.96	38.22
2033	34.72	52.53	35.20	53.27	35.16	53.20	35.50	36.71	35.33	39.75
2034	36.06	54.57	36.59	55.37	36.54	55.29	36.91	38.16	36.72	41.32
2035	37.39	56.58	37.97	57.46	37.91	57.37	38.32	39.63	38.12	42.89

Residential	Single_Family	Space_Heat	Natural_Gas	Existing	1	0.033333333	0
Residential	Single_Family	Space_Heat	Natural_Gas	New	2	0.995	1
Residential	Single_Family	Space_Heat	Electric	Existing	1	0.033333333	0
Residential	Single_Family	Space_Heat	Electric	New	2	0.995	1
Residential	Single_Family	Water_Heat	Natural_Gas	Existing	1	0.066666667	0
Residential	Single_Family	Water_Heat	Natural_Gas	New	2	0.995	1
Residential	Single_Family	Water_Heat	Electric	Existing	1	0.066666667	0
Residential	Single_Family	Water_Heat	Electric	New	2	0.995	1
Residential	Single_Family	Cooking	Natural_Gas	Existing	1	0.05	0
Residential	Single_Family	Cooking	Natural_Gas	New	2	0.995	1
Residential	Single_Family	Cooking	Electric	Existing	1	0.05	0
Residential	Single_Family	Cooking	Electric	New	2	0.995	1
Residential	Single_Family	Drying	Natural_Gas	Existing	1	0.066666667	0
Residential	Single_Family	Drying	Natural_Gas	New	2	0.995	1
Residential	Single_Family	Drying	Electric	Existing	1	0.066666667	0
Residential	Single_Family	Drying	Electric	New	2	0.995	1
Residential	Single_Family	Pool	Natural_Gas	Existing	1	0.04	0
Residential	Single_Family	Pool	Natural_Gas	New	2	0.995	1
Residential	Single_Family	Pool	Electric	Existing	1	0.04	0
Residential	Single_Family	Pool	Electric	New	2	0.995	1
Residential	Single_Family	Spa	Natural_Gas	Existing	1	0.05	0
Residential	Single_Family	Spa	Natural_Gas	New	2	0.995	1
Residential	Single_Family	Spa	Electric	Existing	1	0.05	0
Residential	Single_Family	Spa	Electric	New	2	0.995	1
Residential	Single_Family	Fireplace	Natural_Gas	Existing	1	0.033333333	0
Residential	Single_Family	Fireplace	Natural_Gas	New	2	0.995	1
Residential	Single_Family	Fireplace	Electric	Existing	1	0.033333333	0
Residential	Single_Family	Fireplace	Electric	New	2	0.995	1
Residential	Single_Family	Barbecue	Natural_Gas	Existing	1	0.066666667	0

Residential	Single_Family	Barbecue	Natural_Gas	New	2	0.995	1
Residential	Single_Family	Barbecue	Electric	Existing	1	0.066666667	0
Residential	Single_Family	Barbecue	Electric	New	2	0.995	1
Residential	Single_Family	Other	Natural_Gas	Existing	1	0.066666667	0
Residential	Single_Family	Other	Natural_Gas	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Existing	1	0.033333333	0
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Space_Heat	Electric	Existing	1	0.033333333	0
Residential	MF2_2_TO_4_Units	Space_Heat	Electric	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Existing	1	0.066666667	0
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Existing	1	0.066666667	0
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	Existing	1	0.05	0
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Cooking	Electric	Existing	1	0.05	0
Residential	MF2_2_TO_4_Units	Cooking	Electric	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	Existing	1	0.066666667	0
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Drying	Electric	Existing	1	0.066666667	0
Residential	MF2_2_TO_4_Units	Drying	Electric	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Barbecue	Natural_Gas	Existing	1	0.066666667	0
Residential	MF2_2_TO_4_Units	Barbecue	Natural_Gas	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Barbecue	Electric	Existing	1	0.066666667	0
Residential	MF2_2_TO_4_Units	Barbecue	Electric	New	2	0.995	1
Residential	MF2_2_TO_4_Units	Other	Natural_Gas	Existing	1	0.066666667	0
Residential	MF2_2_TO_4_Units	Other	Natural_Gas	New	2	0.995	1
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Existing	1	0.033333333	0
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	New	2	0.995	1

Residential	MF3_GE_5_Units	Space_Heat	Electric	Existing	1	0.033333333	0
Residential	MF3_GE_5_Units	Space_Heat	Electric	New	2	0.995	1
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Existing	1	0.066666667	0
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	New	2	0.995	1
Residential	MF3_GE_5_Units	Water_Heat	Electric	Existing	1	0.066666667	0
Residential	MF3_GE_5_Units	Water_Heat	Electric	New	2	0.995	1
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	Existing	1	0.05	0
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	New	2	0.995	1
Residential	MF3_GE_5_Units	Cooking	Electric	Existing	1	0.05	0
Residential	MF3_GE_5_Units	Cooking	Electric	New	2	0.995	1
Residential	MF3_GE_5_Units	Drying	Natural_Gas	Existing	1	0.066666667	0
Residential	MF3_GE_5_Units	Drying	Natural_Gas	New	2	0.995	1
Residential	MF3_GE_5_Units	Drying	Electric	Existing	1	0.066666667	0
Residential	MF3_GE_5_Units	Drying	Electric	New	2	0.995	1
Residential	MF3_GE_5_Units	Barbecue	Natural_Gas	Existing	1	0.066666667	0
Residential	MF3_GE_5_Units	Barbecue	Natural_Gas	New	2	0.995	1
Residential	MF3_GE_5_Units	Barbecue	Electric	Existing	1	0.066666667	0
Residential	MF3_GE_5_Units	Barbecue	Electric	New	2	0.995	1
Residential	MF3_GE_5_Units	Other	Natural_Gas	Existing	1	0.066666667	0
Residential	MF3_GE_5_Units	Other	Natural_Gas	New	2	0.995	1
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Existing	1	0.033333333	0
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	New	2	0.995	1
Residential	MM_Master_Meter	Space_Heat	Electric	Existing	1	0.033333333	0
Residential	MM_Master_Meter	Space_Heat	Electric	New	2	0.995	1
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Existing	1	0.066666667	0
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	New	2	0.995	1
Residential	MM_Master_Meter	Water_Heat	Electric	Existing	1	0.066666667	0
Residential	MM_Master_Meter	Water_Heat	Electric	New	2	0.995	1
Residential	MM_Master_Meter	Cooking	Natural_Gas	Existing	1	0.05	0

Residential	MM_Master_Meter	Cooking	Natural_Gas	New	2	0.995	1
Residential	MM_Master_Meter	Cooking	Electric	Existing	1	0.05	0
Residential	MM_Master_Meter	Cooking	Electric	New	2	0.995	1
Residential	MM_Master_Meter	Drying	Natural_Gas	Existing	1	0.066666667	0
Residential	MM_Master_Meter	Drying	Natural_Gas	New	2	0.995	1
Residential	MM_Master_Meter	Drying	Electric	Existing	1	0.066666667	0
Residential	MM_Master_Meter	Drying	Electric	New	2	0.995	1
Residential	MM_Master_Meter	Barbecue	Natural_Gas	Existing	1	0.066666667	0
Residential	MM_Master_Meter	Barbecue	Natural_Gas	New	2	0.995	1
Residential	MM_Master_Meter	Barbecue	Electric	Existing	1	0.066666667	0
Residential	MM_Master_Meter	Barbecue	Electric	New	2	0.995	1
Residential	MM_Master_Meter	Other	Natural_Gas	Existing	1	0.066666667	0
Residential	MM_Master_Meter	Other	Natural_Gas	New	2	0.995	1
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Existing	1	0.033333333	0
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	New	2	0.995	1
Residential	SM_Sub_Meter	Space_Heat	Electric	Existing	1	0.033333333	0
Residential	SM_Sub_Meter	Space_Heat	Electric	New	2	0.995	1
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Existing	1	0.066666667	0
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	New	2	0.995	1
Residential	SM_Sub_Meter	Water_Heat	Electric	Existing	1	0.066666667	0
Residential	SM_Sub_Meter	Water_Heat	Electric	New	2	0.995	1
Residential	SM_Sub_Meter	Cooking	Natural_Gas	Existing	1	0.05	0
Residential	SM_Sub_Meter	Cooking	Natural_Gas	New	2	0.995	1
Residential	SM_Sub_Meter	Cooking	Electric	Existing	1	0.05	0
Residential	SM_Sub_Meter	Cooking	Electric	New	2	0.995	1
Residential	SM_Sub_Meter	Drying	Natural_Gas	Existing	1	0.066666667	0
Residential	SM_Sub_Meter	Drying	Natural_Gas	New	2	0.995	1
Residential	SM_Sub_Meter	Drying	Electric	Existing	1	0.066666667	0
Residential	SM_Sub_Meter	Drying	Electric	New	2	0.995	1

Residential	SM_Sub_Meter	Barbecue	Natural_Gas	Existing	1	0.066666667	0
Residential	SM_Sub_Meter	Barbecue	Natural_Gas	New	2	0.995	1
Residential	SM_Sub_Meter	Barbecue	Electric	Existing	1	0.066666667	0
Residential	SM_Sub_Meter	Barbecue	Electric	New	2	0.995	1
Residential	SM_Sub_Meter	Other	Natural_Gas	Existing	1	0.066666667	0
Residential	SM_Sub_Meter	Other	Natural_Gas	New	2	0.995	1

zName	bName	nName	fName	conType	equipmentDecayParm3	equipmentDecayParm4	z	b	n	f
Residential	Single_Family	Space_Heat	Natural_Gas	Existing	0	0	001	001	001	1
Residential	Single_Family	Space_Heat	Natural_Gas	New	0.5	30	001	001	001	1
Residential	Single_Family	Space_Heat	Electric	Existing	0	0	001	001	001	2
Residential	Single_Family	Space_Heat	Electric	New	0.5	30	001	001	001	2
Residential	Single_Family	Water_Heat	Natural_Gas	Existing	0	0	001	001	002	1
Residential	Single_Family	Water_Heat	Natural_Gas	New	0.5	15	001	001	002	1
Residential	Single_Family	Water_Heat	Electric	Existing	0	0	001	001	002	2
Residential	Single_Family	Water_Heat	Electric	New	0.5	15	001	001	002	2
Residential	Single_Family	Cooking	Natural_Gas	Existing	0	0	001	001	003	1
Residential	Single_Family	Cooking	Natural_Gas	New	0.5	20	001	001	003	1
Residential	Single_Family	Cooking	Electric	Existing	0	0	001	001	003	2
Residential	Single_Family	Cooking	Electric	New	0.5	20	001	001	003	2
Residential	Single_Family	Drying	Natural_Gas	Existing	0	0	001	001	004	1
Residential	Single_Family	Drying	Natural_Gas	New	0.5	15	001	001	004	1
Residential	Single_Family	Drying	Electric	Existing	0	0	001	001	004	2
Residential	Single_Family	Drying	Electric	New	0.5	15	001	001	004	2
Residential	Single_Family	Pool	Natural_Gas	Existing	0	0	001	001	005	1
Residential	Single_Family	Pool	Natural_Gas	New	0.5	25	001	001	005	1
Residential	Single_Family	Pool	Electric	Existing	0	0	001	001	005	2
Residential	Single_Family	Pool	Electric	New	0.5	25	001	001	005	2
Residential	Single_Family	Spa	Natural_Gas	Existing	0	0	001	001	006	1
Residential	Single_Family	Spa	Natural_Gas	New	0.5	20	001	001	006	1
Residential	Single_Family	Spa	Electric	Existing	0	0	001	001	006	2
Residential	Single_Family	Spa	Electric	New	0.5	20	001	001	006	2
Residential	Single_Family	Fireplace	Natural_Gas	Existing	0	0	001	001	007	1
Residential	Single_Family	Fireplace	Natural_Gas	New	0.5	30	001	001	007	1
Residential	Single_Family	Fireplace	Electric	Existing	0	0	001	001	007	2
Residential	Single_Family	Fireplace	Electric	New	0.5	30	001	001	007	2
Residential	Single_Family	Barbecue	Natural_Gas	Existing	0	0	001	001	008	1

zName	bName	nName	fName	conType	equipmentDecayParm3	equipmentDecayParm4	z	b	n	f
Residential	Single_Family	Barbecue	Natural_Gas	New	0.5	15	001	001	008	1
Residential	Single_Family	Barbecue	Electric	Existing	0	0	001	001	008	2
Residential	Single_Family	Barbecue	Electric	New	0.5	15	001	001	008	2
Residential	Single_Family	Other	Natural_Gas	Existing	0	0	001	001	009	1
Residential	Single_Family	Other	Natural_Gas	New	0.5	15	001	001	009	1
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Existing	0	0	001	002	001	1
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	New	0.5	30	001	002	001	1
Residential	MF2_2_TO_4_Units	Space_Heat	Electric	Existing	0	0	001	002	001	2
Residential	MF2_2_TO_4_Units	Space_Heat	Electric	New	0.5	30	001	002	001	2
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Existing	0	0	001	002	002	1
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	New	0.5	15	001	002	002	1
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Existing	0	0	001	002	002	2
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	New	0.5	15	001	002	002	2
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	Existing	0	0	001	002	003	1
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	New	0.5	20	001	002	003	1
Residential	MF2_2_TO_4_Units	Cooking	Electric	Existing	0	0	001	002	003	2
Residential	MF2_2_TO_4_Units	Cooking	Electric	New	0.5	20	001	002	003	2
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	Existing	0	0	001	002	004	1
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	New	0.5	15	001	002	004	1
Residential	MF2_2_TO_4_Units	Drying	Electric	Existing	0	0	001	002	004	2
Residential	MF2_2_TO_4_Units	Drying	Electric	New	0.5	15	001	002	004	2
Residential	MF2_2_TO_4_Units	Barbecue	Natural_Gas	Existing	0	0	001	002	008	1
Residential	MF2_2_TO_4_Units	Barbecue	Natural_Gas	New	0.5	15	001	002	008	1
Residential	MF2_2_TO_4_Units	Barbecue	Electric	Existing	0	0	001	002	008	2
Residential	MF2_2_TO_4_Units	Barbecue	Electric	New	0.5	15	001	002	008	2
Residential	MF2_2_TO_4_Units	Other	Natural_Gas	Existing	0	0	001	002	009	1
Residential	MF2_2_TO_4_Units	Other	Natural_Gas	New	0.5	15	001	002	009	1
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Existing	0	0	001	003	001	1
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	New	0.5	30	001	003	001	1

zName	bName	nName	fName	conType	equipmentDecayParm3	equipmentDecayParm4	z	b	n	f
Residential	MF3_GE_5_Units	Space_Heat	Electric	Existing	0	0	001	003	001	2
Residential	MF3_GE_5_Units	Space_Heat	Electric	New	0.5	30	001	003	001	2
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Existing	0	0	001	003	002	1
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	New	0.5	15	001	003	002	1
Residential	MF3_GE_5_Units	Water_Heat	Electric	Existing	0	0	001	003	002	2
Residential	MF3_GE_5_Units	Water_Heat	Electric	New	0.5	15	001	003	002	2
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	Existing	0	0	001	003	003	1
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	New	0.5	20	001	003	003	1
Residential	MF3_GE_5_Units	Cooking	Electric	Existing	0	0	001	003	003	2
Residential	MF3_GE_5_Units	Cooking	Electric	New	0.5	20	001	003	003	2
Residential	MF3_GE_5_Units	Drying	Natural_Gas	Existing	0	0	001	003	004	1
Residential	MF3_GE_5_Units	Drying	Natural_Gas	New	0.5	15	001	003	004	1
Residential	MF3_GE_5_Units	Drying	Electric	Existing	0	0	001	003	004	2
Residential	MF3_GE_5_Units	Drying	Electric	New	0.5	15	001	003	004	2
Residential	MF3_GE_5_Units	Barbecue	Natural_Gas	Existing	0	0	001	003	008	1
Residential	MF3_GE_5_Units	Barbecue	Natural_Gas	New	0.5	15	001	003	008	1
Residential	MF3_GE_5_Units	Barbecue	Electric	Existing	0	0	001	003	008	2
Residential	MF3_GE_5_Units	Barbecue	Electric	New	0.5	15	001	003	008	2
Residential	MF3_GE_5_Units	Other	Natural_Gas	Existing	0	0	001	003	009	1
Residential	MF3_GE_5_Units	Other	Natural_Gas	New	0.5	15	001	003	009	1
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Existing	0	0	001	004	001	1
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	New	0.5	30	001	004	001	1
Residential	MM_Master_Meter	Space_Heat	Electric	Existing	0	0	001	004	001	2
Residential	MM_Master_Meter	Space_Heat	Electric	New	0.5	30	001	004	001	2
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Existing	0	0	001	004	002	1
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	New	0.5	15	001	004	002	1
Residential	MM_Master_Meter	Water_Heat	Electric	Existing	0	0	001	004	002	2
Residential	MM_Master_Meter	Water_Heat	Electric	New	0.5	15	001	004	002	2
Residential	MM_Master_Meter	Cooking	Natural_Gas	Existing	0	0	001	004	003	1

zName	bName	nName	fName	conType	equipmentDecayParm3	equipmentDecayParm4	z	b	n	f
Residential	MM_Master_Meter	Cooking	Natural_Gas	New	0.5	20	001	004	003	1
Residential	MM_Master_Meter	Cooking	Electric	Existing	0	0	001	004	003	2
Residential	MM_Master_Meter	Cooking	Electric	New	0.5	20	001	004	003	2
Residential	MM_Master_Meter	Drying	Natural_Gas	Existing	0	0	001	004	004	1
Residential	MM_Master_Meter	Drying	Natural_Gas	New	0.5	15	001	004	004	1
Residential	MM_Master_Meter	Drying	Electric	Existing	0	0	001	004	004	2
Residential	MM_Master_Meter	Drying	Electric	New	0.5	15	001	004	004	2
Residential	MM_Master_Meter	Barbecue	Natural_Gas	Existing	0	0	001	004	008	1
Residential	MM_Master_Meter	Barbecue	Natural_Gas	New	0.5	15	001	004	008	1
Residential	MM_Master_Meter	Barbecue	Electric	Existing	0	0	001	004	008	2
Residential	MM_Master_Meter	Barbecue	Electric	New	0.5	15	001	004	008	2
Residential	MM_Master_Meter	Other	Natural_Gas	Existing	0	0	001	004	009	1
Residential	MM_Master_Meter	Other	Natural_Gas	New	0.5	15	001	004	009	1
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Existing	0	0	001	005	001	1
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	New	0.5	30	001	005	001	1
Residential	SM_Sub_Meter	Space_Heat	Electric	Existing	0	0	001	005	001	2
Residential	SM_Sub_Meter	Space_Heat	Electric	New	0.5	30	001	005	001	2
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Existing	0	0	001	005	002	1
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	New	0.5	15	001	005	002	1
Residential	SM_Sub_Meter	Water_Heat	Electric	Existing	0	0	001	005	002	2
Residential	SM_Sub_Meter	Water_Heat	Electric	New	0.5	15	001	005	002	2
Residential	SM_Sub_Meter	Cooking	Natural_Gas	Existing	0	0	001	005	003	1
Residential	SM_Sub_Meter	Cooking	Natural_Gas	New	0.5	20	001	005	003	1
Residential	SM_Sub_Meter	Cooking	Electric	Existing	0	0	001	005	003	2
Residential	SM_Sub_Meter	Cooking	Electric	New	0.5	20	001	005	003	2
Residential	SM_Sub_Meter	Drying	Natural_Gas	Existing	0	0	001	005	004	1
Residential	SM_Sub_Meter	Drying	Natural_Gas	New	0.5	15	001	005	004	1
Residential	SM_Sub_Meter	Drying	Electric	Existing	0	0	001	005	004	2
Residential	SM_Sub_Meter	Drying	Electric	New	0.5	15	001	005	004	2

zName	bName	nName	fName	conType	equipmentDecayParm3	equipmentDecayParm4	z	b	n	f
Residential	SM_Sub_Meter	Barbecue	Natural_Gas	Existing	0	0	001	005	008	1
Residential	SM_Sub_Meter	Barbecue	Natural_Gas	New	0.5	15	001	005	008	1
Residential	SM_Sub_Meter	Barbecue	Electric	Existing	0	0	001	005	008	2
Residential	SM_Sub_Meter	Barbecue	Electric	New	0.5	15	001	005	008	2
Residential	SM_Sub_Meter	Other	Natural_Gas	Existing	0	0	001	005	009	1
Residential	SM_Sub_Meter	Other	Natural_Gas	New	0.5	15	001	005	009	1

zName	bName	nName	vintage	equipmentMaxAge	equipmentMeanAge	z	b	n	hvints
Residential	Single_Family	Space_Heat	-2	17	17	001	001	001	3
Residential	Single_Family	Space_Heat	-1	17	10	001	001	001	3
Residential	Single_Family	Space_Heat	0	17	3	001	001	001	3
Residential	Single_Family	Water_Heat	-2	7	7	001	001	002	3
Residential	Single_Family	Water_Heat	-1	7	7	001	001	002	3
Residential	Single_Family	Water_Heat	0	7	3	001	001	002	3
Residential	Single_Family	Cooking	-2	12	12	001	001	003	3
Residential	Single_Family	Cooking	-1	12	10	001	001	003	3
Residential	Single_Family	Cooking	0	12	2	001	001	003	3
Residential	Single_Family	Drying	-2	8	8	001	001	004	3
Residential	Single_Family	Drying	-1	8	8	001	001	004	3
Residential	Single_Family	Drying	0	8	6	001	001	004	3
Residential	Single_Family	Pool	-2	13	13	001	001	005	3
Residential	Single_Family	Pool	-1	13	9	001	001	005	3
Residential	Single_Family	Pool	0	13	3	001	001	005	3
Residential	Single_Family	Spa	-2	11	11	001	001	006	3
Residential	Single_Family	Spa	-1	11	8	001	001	006	3
Residential	Single_Family	Spa	0	11	3	001	001	006	3
Residential	Single_Family	Fireplace	-2	15	15	001	001	007	3
Residential	Single_Family	Fireplace	-1	15	15	001	001	007	3
Residential	Single_Family	Fireplace	0	15	15	001	001	007	3
Residential	Single_Family	Barbecue	-2	7	7	001	001	008	3
Residential	Single_Family	Barbecue	-1	7	7	001	001	008	3
Residential	Single_Family	Barbecue	0	7	5	001	001	008	3
Residential	Single_Family	Other	-2	15	15	001	001	009	3
Residential	Single_Family	Other	-1	15	15	001	001	009	3
Residential	Single_Family	Other	0	15	15	001	001	009	3
Residential	MF2_2_TO_4_Units	Space_Heat	-2	15	15	001	002	001	3
Residential	MF2_2_TO_4_Units	Space_Heat	-1	15	12	001	002	001	3

zName	bName	nName	vintage	equipmentMaxAge	equipmentMeanAge	z	b	n	hvints
Residential	MF2_2_TO_4_Units	Space_Heat	0	15	4	001	002	001	3
Residential	MF2_2_TO_4_Units	Water_Heat	-2	8	7	001	002	002	3
Residential	MF2_2_TO_4_Units	Water_Heat	-1	8	8	001	002	002	3
Residential	MF2_2_TO_4_Units	Water_Heat	0	8	2	001	002	002	3
Residential	MF2_2_TO_4_Units	Cooking	-2	10	10	001	002	003	3
Residential	MF2_2_TO_4_Units	Cooking	-1	10	9	001	002	003	3
Residential	MF2_2_TO_4_Units	Cooking	0	10	2	001	002	003	3
Residential	MF2_2_TO_4_Units	Drying	-2	9	7	001	002	004	3
Residential	MF2_2_TO_4_Units	Drying	-1	9	9	001	002	004	3
Residential	MF2_2_TO_4_Units	Drying	0	9	3	001	002	004	3
Residential	MF2_2_TO_4_Units	Barbecue	-2	6	5	001	002	008	3
Residential	MF2_2_TO_4_Units	Barbecue	-1	6	6	001	002	008	3
Residential	MF2_2_TO_4_Units	Barbecue	0	6	3	001	002	008	3
Residential	MF2_2_TO_4_Units	Other	-2	15	15	001	002	009	3
Residential	MF2_2_TO_4_Units	Other	-1	15	15	001	002	009	3
Residential	MF2_2_TO_4_Units	Other	0	15	15	001	002	009	3
Residential	MF3_GE_5_Units	Space_Heat	-2	15	15	001	003	001	3
Residential	MF3_GE_5_Units	Space_Heat	-1	15	11	001	003	001	3
Residential	MF3_GE_5_Units	Space_Heat	0	15	4	001	003	001	3
Residential	MF3_GE_5_Units	Water_Heat	-2	8	6	001	003	002	3
Residential	MF3_GE_5_Units	Water_Heat	-1	8	8	001	003	002	3
Residential	MF3_GE_5_Units	Water_Heat	0	8	4	001	003	002	3
Residential	MF3_GE_5_Units	Cooking	-2	11	10	001	003	003	3
Residential	MF3_GE_5_Units	Cooking	-1	11	11	001	003	003	3
Residential	MF3_GE_5_Units	Cooking	0	11	4	001	003	003	3
Residential	MF3_GE_5_Units	Drying	-2	8	6	001	003	004	3
Residential	MF3_GE_5_Units	Drying	-1	8	8	001	003	004	3
Residential	MF3_GE_5_Units	Drying	0	8	3	001	003	004	3
Residential	MF3_GE_5_Units	Barbecue	-2	5	5	001	003	008	3

zName	bName	nName	vintage	equipmentMaxAge	equipmentMeanAge	z	b	n	hvints
Residential	MF3_GE_5_Units	Barbecue	-1	5	5	001	003	008	3
Residential	MF3_GE_5_Units	Barbecue	0	5	5	001	003	008	3
Residential	MF3_GE_5_Units	Other	-2	15	15	001	003	009	3
Residential	MF3_GE_5_Units	Other	-1	15	15	001	003	009	3
Residential	MF3_GE_5_Units	Other	0	15	15	001	003	009	3
Residential	MM_Master_Meter	Space_Heat	-2	16	16	001	004	001	3
Residential	MM_Master_Meter	Space_Heat	-1	16	11	001	004	001	3
Residential	MM_Master_Meter	Space_Heat	0	16	4	001	004	001	3
Residential	MM_Master_Meter	Water_Heat	-2	8	6	001	004	002	3
Residential	MM_Master_Meter	Water_Heat	-1	8	8	001	004	002	3
Residential	MM_Master_Meter	Water_Heat	0	8	4	001	004	002	3
Residential	MM_Master_Meter	Cooking	-2	14	14	001	004	003	3
Residential	MM_Master_Meter	Cooking	-1	14	11	001	004	003	3
Residential	MM_Master_Meter	Cooking	0	14	3	001	004	003	3
Residential	MM_Master_Meter	Drying	-2	8	8	001	004	004	3
Residential	MM_Master_Meter	Drying	-1	8	8	001	004	004	3
Residential	MM_Master_Meter	Drying	0	8	4	001	004	004	3
Residential	MM_Master_Meter	Barbecue	-2	9	5	001	004	008	3
Residential	MM_Master_Meter	Barbecue	-1	9	9	001	004	008	3
Residential	MM_Master_Meter	Barbecue	0	9	2	001	004	008	3
Residential	MM_Master_Meter	Other	-2	15	15	001	004	009	3
Residential	MM_Master_Meter	Other	-1	15	15	001	004	009	3
Residential	MM_Master_Meter	Other	0	15	15	001	004	009	3
Residential	SM_Sub_Meter	Space_Heat	-2	16	16	001	005	001	3
Residential	SM_Sub_Meter	Space_Heat	-1	16	11	001	005	001	3
Residential	SM_Sub_Meter	Space_Heat	0	16	4	001	005	001	3
Residential	SM_Sub_Meter	Water_Heat	-2	8	6	001	005	002	3
Residential	SM_Sub_Meter	Water_Heat	-1	8	8	001	005	002	3
Residential	SM_Sub_Meter	Water_Heat	0	8	4	001	005	002	3

zName	bName	nName	vintage	equipmentMaxAge	equipmentMeanAge	z	b	n	hvints
Residential	SM_Sub_Meter	Cooking	-2	14	14	001	005	003	3
Residential	SM_Sub_Meter	Cooking	-1	14	11	001	005	003	3
Residential	SM_Sub_Meter	Cooking	0	14	3	001	005	003	3
Residential	SM_Sub_Meter	Drying	-2	8	8	001	005	004	3
Residential	SM_Sub_Meter	Drying	-1	8	8	001	005	004	3
Residential	SM_Sub_Meter	Drying	0	8	4	001	005	004	3
Residential	SM_Sub_Meter	Barbecue	-2	9	5	001	005	008	3
Residential	SM_Sub_Meter	Barbecue	-1	9	9	001	005	008	3
Residential	SM_Sub_Meter	Barbecue	0	9	2	001	005	008	3
Residential	SM_Sub_Meter	Other	-2	15	15	001	005	009	3
Residential	SM_Sub_Meter	Other	-1	15	15	001	005	009	3
Residential	SM_Sub_Meter	Other	0	15	15	001	005	009	3

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Space_Heat	0	-2	1	001	001	001
Residential	Single_Family	Space_Heat	0	-1	1	001	001	001
Residential	Single_Family	Space_Heat	0	0	1	001	001	001
Residential	Single_Family	Space_Heat	1	-2	1	001	001	001
Residential	Single_Family	Space_Heat	1	-1	1	001	001	001
Residential	Single_Family	Space_Heat	1	0	1	001	001	001
Residential	Single_Family	Space_Heat	1	1	1	001	001	001
Residential	Single_Family	Space_Heat	2	-2	1	001	001	001
Residential	Single_Family	Space_Heat	2	-1	1	001	001	001
Residential	Single_Family	Space_Heat	2	0	1	001	001	001
Residential	Single_Family	Space_Heat	2	1	1	001	001	001
Residential	Single_Family	Space_Heat	2	2	1	001	001	001
Residential	Single_Family	Space_Heat	3	-2	1	001	001	001
Residential	Single_Family	Space_Heat	3	-1	1	001	001	001
Residential	Single_Family	Space_Heat	3	0	1	001	001	001
Residential	Single_Family	Space_Heat	3	1	1	001	001	001
Residential	Single_Family	Space_Heat	3	2	1	001	001	001
Residential	Single_Family	Space_Heat	3	3	1	001	001	001
Residential	Single_Family	Space_Heat	4	-2	1	001	001	001
Residential	Single_Family	Space_Heat	4	-1	1	001	001	001
Residential	Single_Family	Space_Heat	4	0	1	001	001	001
Residential	Single_Family	Space_Heat	4	1	1	001	001	001
Residential	Single_Family	Space_Heat	4	2	1	001	001	001
Residential	Single_Family	Space_Heat	4	3	1	001	001	001
Residential	Single_Family	Space_Heat	4	4	1	001	001	001
Residential	Single_Family	Space_Heat	5	-2	1	001	001	001
Residential	Single_Family	Space_Heat	5	-1	1	001	001	001
Residential	Single_Family	Space_Heat	5	0	1	001	001	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Space_Heat	5	1	1	001	001	001
Residential	Single_Family	Space_Heat	5	2	1	001	001	001
Residential	Single_Family	Space_Heat	5	3	1	001	001	001
Residential	Single_Family	Space_Heat	5	4	1	001	001	001
Residential	Single_Family	Space_Heat	5	5	1	001	001	001
Residential	Single_Family	Space_Heat	6	-2	1	001	001	001
Residential	Single_Family	Space_Heat	6	-1	1	001	001	001
Residential	Single_Family	Space_Heat	6	0	1	001	001	001
Residential	Single_Family	Space_Heat	6	1	1	001	001	001
Residential	Single_Family	Space_Heat	6	2	1	001	001	001
Residential	Single_Family	Space_Heat	6	3	1	001	001	001
Residential	Single_Family	Space_Heat	6	4	1	001	001	001
Residential	Single_Family	Space_Heat	6	5	1	001	001	001
Residential	Single_Family	Space_Heat	6	6	1	001	001	001
Residential	Single_Family	Space_Heat	7	-2	1	001	001	001
Residential	Single_Family	Space_Heat	7	-1	1	001	001	001
Residential	Single_Family	Space_Heat	7	0	1	001	001	001
Residential	Single_Family	Space_Heat	7	1	1	001	001	001
Residential	Single_Family	Space_Heat	7	2	1	001	001	001
Residential	Single_Family	Space_Heat	7	3	1	001	001	001
Residential	Single_Family	Space_Heat	7	4	1	001	001	001
Residential	Single_Family	Space_Heat	7	5	1	001	001	001
Residential	Single_Family	Space_Heat	7	6	1	001	001	001
Residential	Single_Family	Space_Heat	7	7	1	001	001	001
Residential	Single_Family	Space_Heat	8	-2	1	001	001	001
Residential	Single_Family	Space_Heat	8	-1	1	001	001	001
Residential	Single_Family	Space_Heat	8	0	1	001	001	001
Residential	Single_Family	Space_Heat	8	1	1	001	001	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Space_Heat	8	2	1	001	001	001
Residential	Single_Family	Space_Heat	8	3	1	001	001	001
Residential	Single_Family	Space_Heat	8	4	1	001	001	001
Residential	Single_Family	Space_Heat	8	5	1	001	001	001
Residential	Single_Family	Space_Heat	8	6	1	001	001	001
Residential	Single_Family	Space_Heat	8	7	1	001	001	001
Residential	Single_Family	Space_Heat	8	8	1	001	001	001
Residential	Single_Family	Space_Heat	9	-2	1	001	001	001
Residential	Single_Family	Space_Heat	9	-1	1	001	001	001
Residential	Single_Family	Space_Heat	9	0	1	001	001	001
Residential	Single_Family	Space_Heat	9	1	1	001	001	001
Residential	Single_Family	Space_Heat	9	2	1	001	001	001
Residential	Single_Family	Space_Heat	9	3	1	001	001	001
Residential	Single_Family	Space_Heat	9	4	1	001	001	001
Residential	Single_Family	Space_Heat	9	5	1	001	001	001
Residential	Single_Family	Space_Heat	9	6	1	001	001	001
Residential	Single_Family	Space_Heat	9	7	1	001	001	001
Residential	Single_Family	Space_Heat	9	8	1	001	001	001
Residential	Single_Family	Space_Heat	9	9	1	001	001	001
Residential	Single_Family	Space_Heat	10	-2	1	001	001	001
Residential	Single_Family	Space_Heat	10	-1	1	001	001	001
Residential	Single_Family	Space_Heat	10	0	1	001	001	001
Residential	Single_Family	Space_Heat	10	1	1	001	001	001
Residential	Single_Family	Space_Heat	10	2	1	001	001	001
Residential	Single_Family	Space_Heat	10	3	1	001	001	001
Residential	Single_Family	Space_Heat	10	4	1	001	001	001
Residential	Single_Family	Space_Heat	10	5	1	001	001	001
Residential	Single_Family	Space_Heat	10	6	1	001	001	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Space_Heat	10	7	1	001	001	001
Residential	Single_Family	Space_Heat	10	8	1	001	001	001
Residential	Single_Family	Space_Heat	10	9	1	001	001	001
Residential	Single_Family	Space_Heat	10	10	1	001	001	001
Residential	Single_Family	Space_Heat	11	-2	1	001	001	001
Residential	Single_Family	Space_Heat	11	-1	1	001	001	001
Residential	Single_Family	Space_Heat	11	0	1	001	001	001
Residential	Single_Family	Space_Heat	11	1	1	001	001	001
Residential	Single_Family	Space_Heat	11	2	1	001	001	001
Residential	Single_Family	Space_Heat	11	3	1	001	001	001
Residential	Single_Family	Space_Heat	11	4	1	001	001	001
Residential	Single_Family	Space_Heat	11	5	1	001	001	001
Residential	Single_Family	Space_Heat	11	6	1	001	001	001
Residential	Single_Family	Space_Heat	11	7	1	001	001	001
Residential	Single_Family	Space_Heat	11	8	1	001	001	001
Residential	Single_Family	Space_Heat	11	9	1	001	001	001
Residential	Single_Family	Space_Heat	11	10	1	001	001	001
Residential	Single_Family	Space_Heat	11	11	1	001	001	001
Residential	Single_Family	Space_Heat	12	-2	1	001	001	001
Residential	Single_Family	Space_Heat	12	-1	1	001	001	001
Residential	Single_Family	Space_Heat	12	0	1	001	001	001
Residential	Single_Family	Space_Heat	12	1	1	001	001	001
Residential	Single_Family	Space_Heat	12	2	1	001	001	001
Residential	Single_Family	Space_Heat	12	3	1	001	001	001
Residential	Single_Family	Space_Heat	12	4	1	001	001	001
Residential	Single_Family	Space_Heat	12	5	1	001	001	001
Residential	Single_Family	Space_Heat	12	6	1	001	001	001
Residential	Single_Family	Space_Heat	12	7	1	001	001	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Space_Heat	12	8	1	001	001	001
Residential	Single_Family	Space_Heat	12	9	1	001	001	001
Residential	Single_Family	Space_Heat	12	10	1	001	001	001
Residential	Single_Family	Space_Heat	12	11	1	001	001	001
Residential	Single_Family	Space_Heat	12	12	1	001	001	001
Residential	Single_Family	Space_Heat	13	-2	1	001	001	001
Residential	Single_Family	Space_Heat	13	-1	1	001	001	001
Residential	Single_Family	Space_Heat	13	0	1	001	001	001
Residential	Single_Family	Space_Heat	13	1	1	001	001	001
Residential	Single_Family	Space_Heat	13	2	1	001	001	001
Residential	Single_Family	Space_Heat	13	3	1	001	001	001
Residential	Single_Family	Space_Heat	13	4	1	001	001	001
Residential	Single_Family	Space_Heat	13	5	1	001	001	001
Residential	Single_Family	Space_Heat	13	6	1	001	001	001
Residential	Single_Family	Space_Heat	13	7	1	001	001	001
Residential	Single_Family	Space_Heat	13	8	1	001	001	001
Residential	Single_Family	Space_Heat	13	9	1	001	001	001
Residential	Single_Family	Space_Heat	13	10	1	001	001	001
Residential	Single_Family	Space_Heat	13	11	1	001	001	001
Residential	Single_Family	Space_Heat	13	12	1	001	001	001
Residential	Single_Family	Space_Heat	13	13	1	001	001	001
Residential	Single_Family	Space_Heat	14	-2	1	001	001	001
Residential	Single_Family	Space_Heat	14	-1	1	001	001	001
Residential	Single_Family	Space_Heat	14	0	1	001	001	001
Residential	Single_Family	Space_Heat	14	1	1	001	001	001
Residential	Single_Family	Space_Heat	14	2	1	001	001	001
Residential	Single_Family	Space_Heat	14	3	1	001	001	001
Residential	Single_Family	Space_Heat	14	4	1	001	001	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Space_Heat	14	5	1	001	001	001
Residential	Single_Family	Space_Heat	14	6	1	001	001	001
Residential	Single_Family	Space_Heat	14	7	1	001	001	001
Residential	Single_Family	Space_Heat	14	8	1	001	001	001
Residential	Single_Family	Space_Heat	14	9	1	001	001	001
Residential	Single_Family	Space_Heat	14	10	1	001	001	001
Residential	Single_Family	Space_Heat	14	11	1	001	001	001
Residential	Single_Family	Space_Heat	14	12	1	001	001	001
Residential	Single_Family	Space_Heat	14	13	1	001	001	001
Residential	Single_Family	Space_Heat	14	14	1	001	001	001
Residential	Single_Family	Space_Heat	15	-2	1	001	001	001
Residential	Single_Family	Space_Heat	15	-1	1	001	001	001
Residential	Single_Family	Space_Heat	15	0	1	001	001	001
Residential	Single_Family	Space_Heat	15	1	1	001	001	001
Residential	Single_Family	Space_Heat	15	2	1	001	001	001
Residential	Single_Family	Space_Heat	15	3	1	001	001	001
Residential	Single_Family	Space_Heat	15	4	1	001	001	001
Residential	Single_Family	Space_Heat	15	5	1	001	001	001
Residential	Single_Family	Space_Heat	15	6	1	001	001	001
Residential	Single_Family	Space_Heat	15	7	1	001	001	001
Residential	Single_Family	Space_Heat	15	8	1	001	001	001
Residential	Single_Family	Space_Heat	15	9	1	001	001	001
Residential	Single_Family	Space_Heat	15	10	1	001	001	001
Residential	Single_Family	Space_Heat	15	11	1	001	001	001
Residential	Single_Family	Space_Heat	15	12	1	001	001	001
Residential	Single_Family	Space_Heat	15	13	1	001	001	001
Residential	Single_Family	Space_Heat	15	14	1	001	001	001
Residential	Single_Family	Space_Heat	15	15	1	001	001	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Water_Heat	0	-2	1	001	001	002
Residential	Single_Family	Water_Heat	0	-1	1	001	001	002
Residential	Single_Family	Water_Heat	0	0	1	001	001	002
Residential	Single_Family	Water_Heat	1	-2	1	001	001	002
Residential	Single_Family	Water_Heat	1	-1	1	001	001	002
Residential	Single_Family	Water_Heat	1	0	1	001	001	002
Residential	Single_Family	Water_Heat	1	1	1	001	001	002
Residential	Single_Family	Water_Heat	2	-2	1	001	001	002
Residential	Single_Family	Water_Heat	2	-1	1	001	001	002
Residential	Single_Family	Water_Heat	2	0	1	001	001	002
Residential	Single_Family	Water_Heat	2	1	1	001	001	002
Residential	Single_Family	Water_Heat	2	2	1	001	001	002
Residential	Single_Family	Water_Heat	3	-2	1	001	001	002
Residential	Single_Family	Water_Heat	3	-1	1	001	001	002
Residential	Single_Family	Water_Heat	3	0	1	001	001	002
Residential	Single_Family	Water_Heat	3	1	1	001	001	002
Residential	Single_Family	Water_Heat	3	2	1	001	001	002
Residential	Single_Family	Water_Heat	3	3	1	001	001	002
Residential	Single_Family	Water_Heat	4	-2	1	001	001	002
Residential	Single_Family	Water_Heat	4	-1	1	001	001	002
Residential	Single_Family	Water_Heat	4	0	1	001	001	002
Residential	Single_Family	Water_Heat	4	1	1	001	001	002
Residential	Single_Family	Water_Heat	4	2	1	001	001	002
Residential	Single_Family	Water_Heat	4	3	1	001	001	002
Residential	Single_Family	Water_Heat	4	4	1	001	001	002
Residential	Single_Family	Water_Heat	5	-2	1	001	001	002
Residential	Single_Family	Water_Heat	5	-1	1	001	001	002
Residential	Single_Family	Water_Heat	5	0	1	001	001	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Water_Heat	5	1	1	001	001	002
Residential	Single_Family	Water_Heat	5	2	1	001	001	002
Residential	Single_Family	Water_Heat	5	3	1	001	001	002
Residential	Single_Family	Water_Heat	5	4	1	001	001	002
Residential	Single_Family	Water_Heat	5	5	1	001	001	002
Residential	Single_Family	Water_Heat	6	-2	1	001	001	002
Residential	Single_Family	Water_Heat	6	-1	1	001	001	002
Residential	Single_Family	Water_Heat	6	0	1	001	001	002
Residential	Single_Family	Water_Heat	6	1	1	001	001	002
Residential	Single_Family	Water_Heat	6	2	1	001	001	002
Residential	Single_Family	Water_Heat	6	3	1	001	001	002
Residential	Single_Family	Water_Heat	6	4	1	001	001	002
Residential	Single_Family	Water_Heat	6	5	1	001	001	002
Residential	Single_Family	Water_Heat	6	6	1	001	001	002
Residential	Single_Family	Water_Heat	7	-2	1	001	001	002
Residential	Single_Family	Water_Heat	7	-1	1	001	001	002
Residential	Single_Family	Water_Heat	7	0	1	001	001	002
Residential	Single_Family	Water_Heat	7	1	1	001	001	002
Residential	Single_Family	Water_Heat	7	2	1	001	001	002
Residential	Single_Family	Water_Heat	7	3	1	001	001	002
Residential	Single_Family	Water_Heat	7	4	1	001	001	002
Residential	Single_Family	Water_Heat	7	5	1	001	001	002
Residential	Single_Family	Water_Heat	7	6	1	001	001	002
Residential	Single_Family	Water_Heat	7	7	1	001	001	002
Residential	Single_Family	Water_Heat	8	-2	1	001	001	002
Residential	Single_Family	Water_Heat	8	-1	1	001	001	002
Residential	Single_Family	Water_Heat	8	0	1	001	001	002
Residential	Single_Family	Water_Heat	8	1	1	001	001	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Water_Heat	8	2	1	001	001	002
Residential	Single_Family	Water_Heat	8	3	1	001	001	002
Residential	Single_Family	Water_Heat	8	4	1	001	001	002
Residential	Single_Family	Water_Heat	8	5	1	001	001	002
Residential	Single_Family	Water_Heat	8	6	1	001	001	002
Residential	Single_Family	Water_Heat	8	7	1	001	001	002
Residential	Single_Family	Water_Heat	8	8	1	001	001	002
Residential	Single_Family	Water_Heat	9	-2	1	001	001	002
Residential	Single_Family	Water_Heat	9	-1	1	001	001	002
Residential	Single_Family	Water_Heat	9	0	1	001	001	002
Residential	Single_Family	Water_Heat	9	1	1	001	001	002
Residential	Single_Family	Water_Heat	9	2	1	001	001	002
Residential	Single_Family	Water_Heat	9	3	1	001	001	002
Residential	Single_Family	Water_Heat	9	4	1	001	001	002
Residential	Single_Family	Water_Heat	9	5	1	001	001	002
Residential	Single_Family	Water_Heat	9	6	1	001	001	002
Residential	Single_Family	Water_Heat	9	7	1	001	001	002
Residential	Single_Family	Water_Heat	9	8	1	001	001	002
Residential	Single_Family	Water_Heat	9	9	1	001	001	002
Residential	Single_Family	Water_Heat	10	-2	1	001	001	002
Residential	Single_Family	Water_Heat	10	-1	1	001	001	002
Residential	Single_Family	Water_Heat	10	0	1	001	001	002
Residential	Single_Family	Water_Heat	10	1	1	001	001	002
Residential	Single_Family	Water_Heat	10	2	1	001	001	002
Residential	Single_Family	Water_Heat	10	3	1	001	001	002
Residential	Single_Family	Water_Heat	10	4	1	001	001	002
Residential	Single_Family	Water_Heat	10	5	1	001	001	002
Residential	Single_Family	Water_Heat	10	6	1	001	001	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Water_Heat	10	7	1	001	001	002
Residential	Single_Family	Water_Heat	10	8	1	001	001	002
Residential	Single_Family	Water_Heat	10	9	1	001	001	002
Residential	Single_Family	Water_Heat	10	10	1	001	001	002
Residential	Single_Family	Water_Heat	11	-2	1	001	001	002
Residential	Single_Family	Water_Heat	11	-1	1	001	001	002
Residential	Single_Family	Water_Heat	11	0	1	001	001	002
Residential	Single_Family	Water_Heat	11	1	1	001	001	002
Residential	Single_Family	Water_Heat	11	2	1	001	001	002
Residential	Single_Family	Water_Heat	11	3	1	001	001	002
Residential	Single_Family	Water_Heat	11	4	1	001	001	002
Residential	Single_Family	Water_Heat	11	5	1	001	001	002
Residential	Single_Family	Water_Heat	11	6	1	001	001	002
Residential	Single_Family	Water_Heat	11	7	1	001	001	002
Residential	Single_Family	Water_Heat	11	8	1	001	001	002
Residential	Single_Family	Water_Heat	11	9	1	001	001	002
Residential	Single_Family	Water_Heat	11	10	1	001	001	002
Residential	Single_Family	Water_Heat	11	11	1	001	001	002
Residential	Single_Family	Water_Heat	12	-2	1	001	001	002
Residential	Single_Family	Water_Heat	12	-1	1	001	001	002
Residential	Single_Family	Water_Heat	12	0	1	001	001	002
Residential	Single_Family	Water_Heat	12	1	1	001	001	002
Residential	Single_Family	Water_Heat	12	2	1	001	001	002
Residential	Single_Family	Water_Heat	12	3	1	001	001	002
Residential	Single_Family	Water_Heat	12	4	1	001	001	002
Residential	Single_Family	Water_Heat	12	5	1	001	001	002
Residential	Single_Family	Water_Heat	12	6	1	001	001	002
Residential	Single_Family	Water_Heat	12	7	1	001	001	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Water_Heat	12	8	1	001	001	002
Residential	Single_Family	Water_Heat	12	9	1	001	001	002
Residential	Single_Family	Water_Heat	12	10	1	001	001	002
Residential	Single_Family	Water_Heat	12	11	1	001	001	002
Residential	Single_Family	Water_Heat	12	12	1	001	001	002
Residential	Single_Family	Water_Heat	13	-2	1	001	001	002
Residential	Single_Family	Water_Heat	13	-1	1	001	001	002
Residential	Single_Family	Water_Heat	13	0	1	001	001	002
Residential	Single_Family	Water_Heat	13	1	1	001	001	002
Residential	Single_Family	Water_Heat	13	2	1	001	001	002
Residential	Single_Family	Water_Heat	13	3	1	001	001	002
Residential	Single_Family	Water_Heat	13	4	1	001	001	002
Residential	Single_Family	Water_Heat	13	5	1	001	001	002
Residential	Single_Family	Water_Heat	13	6	1	001	001	002
Residential	Single_Family	Water_Heat	13	7	1	001	001	002
Residential	Single_Family	Water_Heat	13	8	1	001	001	002
Residential	Single_Family	Water_Heat	13	9	1	001	001	002
Residential	Single_Family	Water_Heat	13	10	1	001	001	002
Residential	Single_Family	Water_Heat	13	11	1	001	001	002
Residential	Single_Family	Water_Heat	13	12	1	001	001	002
Residential	Single_Family	Water_Heat	13	13	1	001	001	002
Residential	Single_Family	Water_Heat	14	-2	1	001	001	002
Residential	Single_Family	Water_Heat	14	-1	1	001	001	002
Residential	Single_Family	Water_Heat	14	0	1	001	001	002
Residential	Single_Family	Water_Heat	14	1	1	001	001	002
Residential	Single_Family	Water_Heat	14	2	1	001	001	002
Residential	Single_Family	Water_Heat	14	3	1	001	001	002
Residential	Single_Family	Water_Heat	14	4	1	001	001	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Water_Heat	14	5	1	001	001	002
Residential	Single_Family	Water_Heat	14	6	1	001	001	002
Residential	Single_Family	Water_Heat	14	7	1	001	001	002
Residential	Single_Family	Water_Heat	14	8	1	001	001	002
Residential	Single_Family	Water_Heat	14	9	1	001	001	002
Residential	Single_Family	Water_Heat	14	10	1	001	001	002
Residential	Single_Family	Water_Heat	14	11	1	001	001	002
Residential	Single_Family	Water_Heat	14	12	1	001	001	002
Residential	Single_Family	Water_Heat	14	13	1	001	001	002
Residential	Single_Family	Water_Heat	14	14	1	001	001	002
Residential	Single_Family	Water_Heat	15	-2	1	001	001	002
Residential	Single_Family	Water_Heat	15	-1	1	001	001	002
Residential	Single_Family	Water_Heat	15	0	1	001	001	002
Residential	Single_Family	Water_Heat	15	1	1	001	001	002
Residential	Single_Family	Water_Heat	15	2	1	001	001	002
Residential	Single_Family	Water_Heat	15	3	1	001	001	002
Residential	Single_Family	Water_Heat	15	4	1	001	001	002
Residential	Single_Family	Water_Heat	15	5	1	001	001	002
Residential	Single_Family	Water_Heat	15	6	1	001	001	002
Residential	Single_Family	Water_Heat	15	7	1	001	001	002
Residential	Single_Family	Water_Heat	15	8	1	001	001	002
Residential	Single_Family	Water_Heat	15	9	1	001	001	002
Residential	Single_Family	Water_Heat	15	10	1	001	001	002
Residential	Single_Family	Water_Heat	15	11	1	001	001	002
Residential	Single_Family	Water_Heat	15	12	1	001	001	002
Residential	Single_Family	Water_Heat	15	13	1	001	001	002
Residential	Single_Family	Water_Heat	15	14	1	001	001	002
Residential	Single_Family	Water_Heat	15	15	1	001	001	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Cooking	0	-2	1	001	001	003
Residential	Single_Family	Cooking	0	-1	1	001	001	003
Residential	Single_Family	Cooking	0	0	1	001	001	003
Residential	Single_Family	Cooking	1	-2	1	001	001	003
Residential	Single_Family	Cooking	1	-1	1	001	001	003
Residential	Single_Family	Cooking	1	0	1	001	001	003
Residential	Single_Family	Cooking	1	1	1	001	001	003
Residential	Single_Family	Cooking	2	-2	1	001	001	003
Residential	Single_Family	Cooking	2	-1	1	001	001	003
Residential	Single_Family	Cooking	2	0	1	001	001	003
Residential	Single_Family	Cooking	2	1	1	001	001	003
Residential	Single_Family	Cooking	2	2	1	001	001	003
Residential	Single_Family	Cooking	3	-2	1	001	001	003
Residential	Single_Family	Cooking	3	-1	1	001	001	003
Residential	Single_Family	Cooking	3	0	1	001	001	003
Residential	Single_Family	Cooking	3	1	1	001	001	003
Residential	Single_Family	Cooking	3	2	1	001	001	003
Residential	Single_Family	Cooking	3	3	1	001	001	003
Residential	Single_Family	Cooking	4	-2	1	001	001	003
Residential	Single_Family	Cooking	4	-1	1	001	001	003
Residential	Single_Family	Cooking	4	0	1	001	001	003
Residential	Single_Family	Cooking	4	1	1	001	001	003
Residential	Single_Family	Cooking	4	2	1	001	001	003
Residential	Single_Family	Cooking	4	3	1	001	001	003
Residential	Single_Family	Cooking	4	4	1	001	001	003
Residential	Single_Family	Cooking	5	-2	1	001	001	003
Residential	Single_Family	Cooking	5	-1	1	001	001	003
Residential	Single_Family	Cooking	5	0	1	001	001	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Cooking	5	1	1	001	001	003
Residential	Single_Family	Cooking	5	2	1	001	001	003
Residential	Single_Family	Cooking	5	3	1	001	001	003
Residential	Single_Family	Cooking	5	4	1	001	001	003
Residential	Single_Family	Cooking	5	5	1	001	001	003
Residential	Single_Family	Cooking	6	-2	1	001	001	003
Residential	Single_Family	Cooking	6	-1	1	001	001	003
Residential	Single_Family	Cooking	6	0	1	001	001	003
Residential	Single_Family	Cooking	6	1	1	001	001	003
Residential	Single_Family	Cooking	6	2	1	001	001	003
Residential	Single_Family	Cooking	6	3	1	001	001	003
Residential	Single_Family	Cooking	6	4	1	001	001	003
Residential	Single_Family	Cooking	6	5	1	001	001	003
Residential	Single_Family	Cooking	6	6	1	001	001	003
Residential	Single_Family	Cooking	7	-2	1	001	001	003
Residential	Single_Family	Cooking	7	-1	1	001	001	003
Residential	Single_Family	Cooking	7	0	1	001	001	003
Residential	Single_Family	Cooking	7	1	1	001	001	003
Residential	Single_Family	Cooking	7	2	1	001	001	003
Residential	Single_Family	Cooking	7	3	1	001	001	003
Residential	Single_Family	Cooking	7	4	1	001	001	003
Residential	Single_Family	Cooking	7	5	1	001	001	003
Residential	Single_Family	Cooking	7	6	1	001	001	003
Residential	Single_Family	Cooking	7	7	1	001	001	003
Residential	Single_Family	Cooking	8	-2	1	001	001	003
Residential	Single_Family	Cooking	8	-1	1	001	001	003
Residential	Single_Family	Cooking	8	0	1	001	001	003
Residential	Single_Family	Cooking	8	1	1	001	001	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Cooking	8	2	1	001	001	003
Residential	Single_Family	Cooking	8	3	1	001	001	003
Residential	Single_Family	Cooking	8	4	1	001	001	003
Residential	Single_Family	Cooking	8	5	1	001	001	003
Residential	Single_Family	Cooking	8	6	1	001	001	003
Residential	Single_Family	Cooking	8	7	1	001	001	003
Residential	Single_Family	Cooking	8	8	1	001	001	003
Residential	Single_Family	Cooking	9	-2	1	001	001	003
Residential	Single_Family	Cooking	9	-1	1	001	001	003
Residential	Single_Family	Cooking	9	0	1	001	001	003
Residential	Single_Family	Cooking	9	1	1	001	001	003
Residential	Single_Family	Cooking	9	2	1	001	001	003
Residential	Single_Family	Cooking	9	3	1	001	001	003
Residential	Single_Family	Cooking	9	4	1	001	001	003
Residential	Single_Family	Cooking	9	5	1	001	001	003
Residential	Single_Family	Cooking	9	6	1	001	001	003
Residential	Single_Family	Cooking	9	7	1	001	001	003
Residential	Single_Family	Cooking	9	8	1	001	001	003
Residential	Single_Family	Cooking	9	9	1	001	001	003
Residential	Single_Family	Cooking	10	-2	1	001	001	003
Residential	Single_Family	Cooking	10	-1	1	001	001	003
Residential	Single_Family	Cooking	10	0	1	001	001	003
Residential	Single_Family	Cooking	10	1	1	001	001	003
Residential	Single_Family	Cooking	10	2	1	001	001	003
Residential	Single_Family	Cooking	10	3	1	001	001	003
Residential	Single_Family	Cooking	10	4	1	001	001	003
Residential	Single_Family	Cooking	10	5	1	001	001	003
Residential	Single_Family	Cooking	10	6	1	001	001	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Cooking	10	7	1	001	001	003
Residential	Single_Family	Cooking	10	8	1	001	001	003
Residential	Single_Family	Cooking	10	9	1	001	001	003
Residential	Single_Family	Cooking	10	10	1	001	001	003
Residential	Single_Family	Cooking	11	-2	1	001	001	003
Residential	Single_Family	Cooking	11	-1	1	001	001	003
Residential	Single_Family	Cooking	11	0	1	001	001	003
Residential	Single_Family	Cooking	11	1	1	001	001	003
Residential	Single_Family	Cooking	11	2	1	001	001	003
Residential	Single_Family	Cooking	11	3	1	001	001	003
Residential	Single_Family	Cooking	11	4	1	001	001	003
Residential	Single_Family	Cooking	11	5	1	001	001	003
Residential	Single_Family	Cooking	11	6	1	001	001	003
Residential	Single_Family	Cooking	11	7	1	001	001	003
Residential	Single_Family	Cooking	11	8	1	001	001	003
Residential	Single_Family	Cooking	11	9	1	001	001	003
Residential	Single_Family	Cooking	11	10	1	001	001	003
Residential	Single_Family	Cooking	11	11	1	001	001	003
Residential	Single_Family	Cooking	12	-2	1	001	001	003
Residential	Single_Family	Cooking	12	-1	1	001	001	003
Residential	Single_Family	Cooking	12	0	1	001	001	003
Residential	Single_Family	Cooking	12	1	1	001	001	003
Residential	Single_Family	Cooking	12	2	1	001	001	003
Residential	Single_Family	Cooking	12	3	1	001	001	003
Residential	Single_Family	Cooking	12	4	1	001	001	003
Residential	Single_Family	Cooking	12	5	1	001	001	003
Residential	Single_Family	Cooking	12	6	1	001	001	003
Residential	Single_Family	Cooking	12	7	1	001	001	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Cooking	12	8	1	001	001	003
Residential	Single_Family	Cooking	12	9	1	001	001	003
Residential	Single_Family	Cooking	12	10	1	001	001	003
Residential	Single_Family	Cooking	12	11	1	001	001	003
Residential	Single_Family	Cooking	12	12	1	001	001	003
Residential	Single_Family	Cooking	13	-2	1	001	001	003
Residential	Single_Family	Cooking	13	-1	1	001	001	003
Residential	Single_Family	Cooking	13	0	1	001	001	003
Residential	Single_Family	Cooking	13	1	1	001	001	003
Residential	Single_Family	Cooking	13	2	1	001	001	003
Residential	Single_Family	Cooking	13	3	1	001	001	003
Residential	Single_Family	Cooking	13	4	1	001	001	003
Residential	Single_Family	Cooking	13	5	1	001	001	003
Residential	Single_Family	Cooking	13	6	1	001	001	003
Residential	Single_Family	Cooking	13	7	1	001	001	003
Residential	Single_Family	Cooking	13	8	1	001	001	003
Residential	Single_Family	Cooking	13	9	1	001	001	003
Residential	Single_Family	Cooking	13	10	1	001	001	003
Residential	Single_Family	Cooking	13	11	1	001	001	003
Residential	Single_Family	Cooking	13	12	1	001	001	003
Residential	Single_Family	Cooking	13	13	1	001	001	003
Residential	Single_Family	Cooking	14	-2	1	001	001	003
Residential	Single_Family	Cooking	14	-1	1	001	001	003
Residential	Single_Family	Cooking	14	0	1	001	001	003
Residential	Single_Family	Cooking	14	1	1	001	001	003
Residential	Single_Family	Cooking	14	2	1	001	001	003
Residential	Single_Family	Cooking	14	3	1	001	001	003
Residential	Single_Family	Cooking	14	4	1	001	001	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Cooking	14	5	1	001	001	003
Residential	Single_Family	Cooking	14	6	1	001	001	003
Residential	Single_Family	Cooking	14	7	1	001	001	003
Residential	Single_Family	Cooking	14	8	1	001	001	003
Residential	Single_Family	Cooking	14	9	1	001	001	003
Residential	Single_Family	Cooking	14	10	1	001	001	003
Residential	Single_Family	Cooking	14	11	1	001	001	003
Residential	Single_Family	Cooking	14	12	1	001	001	003
Residential	Single_Family	Cooking	14	13	1	001	001	003
Residential	Single_Family	Cooking	14	14	1	001	001	003
Residential	Single_Family	Cooking	15	-2	1	001	001	003
Residential	Single_Family	Cooking	15	-1	1	001	001	003
Residential	Single_Family	Cooking	15	0	1	001	001	003
Residential	Single_Family	Cooking	15	1	1	001	001	003
Residential	Single_Family	Cooking	15	2	1	001	001	003
Residential	Single_Family	Cooking	15	3	1	001	001	003
Residential	Single_Family	Cooking	15	4	1	001	001	003
Residential	Single_Family	Cooking	15	5	1	001	001	003
Residential	Single_Family	Cooking	15	6	1	001	001	003
Residential	Single_Family	Cooking	15	7	1	001	001	003
Residential	Single_Family	Cooking	15	8	1	001	001	003
Residential	Single_Family	Cooking	15	9	1	001	001	003
Residential	Single_Family	Cooking	15	10	1	001	001	003
Residential	Single_Family	Cooking	15	11	1	001	001	003
Residential	Single_Family	Cooking	15	12	1	001	001	003
Residential	Single_Family	Cooking	15	13	1	001	001	003
Residential	Single_Family	Cooking	15	14	1	001	001	003
Residential	Single_Family	Cooking	15	15	1	001	001	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Drying	0	-2	0.86025	001	001	004
Residential	Single_Family	Drying	0	-1	0.87141	001	001	004
Residential	Single_Family	Drying	0	0	0.87141	001	001	004
Residential	Single_Family	Drying	1	-2	0.86025	001	001	004
Residential	Single_Family	Drying	1	-1	0.87141	001	001	004
Residential	Single_Family	Drying	1	0	0.87141	001	001	004
Residential	Single_Family	Drying	1	1	0.87141	001	001	004
Residential	Single_Family	Drying	2	-2	0.86025	001	001	004
Residential	Single_Family	Drying	2	-1	0.87141	001	001	004
Residential	Single_Family	Drying	2	0	0.87141	001	001	004
Residential	Single_Family	Drying	2	1	0.87141	001	001	004
Residential	Single_Family	Drying	2	2	0.87141	001	001	004
Residential	Single_Family	Drying	3	-2	0.86025	001	001	004
Residential	Single_Family	Drying	3	-1	0.87141	001	001	004
Residential	Single_Family	Drying	3	0	0.87141	001	001	004
Residential	Single_Family	Drying	3	1	0.87141	001	001	004
Residential	Single_Family	Drying	3	2	0.87141	001	001	004
Residential	Single_Family	Drying	3	3	0.87141	001	001	004
Residential	Single_Family	Drying	4	-2	0.86025	001	001	004
Residential	Single_Family	Drying	4	-1	0.87141	001	001	004
Residential	Single_Family	Drying	4	0	0.87141	001	001	004
Residential	Single_Family	Drying	4	1	0.87141	001	001	004
Residential	Single_Family	Drying	4	2	0.87141	001	001	004
Residential	Single_Family	Drying	4	3	0.87141	001	001	004
Residential	Single_Family	Drying	4	4	0.87141	001	001	004
Residential	Single_Family	Drying	5	-2	0.86025	001	001	004
Residential	Single_Family	Drying	5	-1	0.87141	001	001	004
Residential	Single_Family	Drying	5	0	0.87141	001	001	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Drying	5	1	0.87141	001	001	004
Residential	Single_Family	Drying	5	2	0.87141	001	001	004
Residential	Single_Family	Drying	5	3	0.87141	001	001	004
Residential	Single_Family	Drying	5	4	0.87141	001	001	004
Residential	Single_Family	Drying	5	5	0.87141	001	001	004
Residential	Single_Family	Drying	6	-2	0.86025	001	001	004
Residential	Single_Family	Drying	6	-1	0.87141	001	001	004
Residential	Single_Family	Drying	6	0	0.87141	001	001	004
Residential	Single_Family	Drying	6	1	0.87141	001	001	004
Residential	Single_Family	Drying	6	2	0.87141	001	001	004
Residential	Single_Family	Drying	6	3	0.87141	001	001	004
Residential	Single_Family	Drying	6	4	0.87141	001	001	004
Residential	Single_Family	Drying	6	5	0.87141	001	001	004
Residential	Single_Family	Drying	6	6	0.87141	001	001	004
Residential	Single_Family	Drying	7	-2	0.86025	001	001	004
Residential	Single_Family	Drying	7	-1	0.87141	001	001	004
Residential	Single_Family	Drying	7	0	0.87141	001	001	004
Residential	Single_Family	Drying	7	1	0.87141	001	001	004
Residential	Single_Family	Drying	7	2	0.87141	001	001	004
Residential	Single_Family	Drying	7	3	0.87141	001	001	004
Residential	Single_Family	Drying	7	4	0.87141	001	001	004
Residential	Single_Family	Drying	7	5	0.87141	001	001	004
Residential	Single_Family	Drying	7	6	0.87141	001	001	004
Residential	Single_Family	Drying	7	7	0.87141	001	001	004
Residential	Single_Family	Drying	8	-2	0.86025	001	001	004
Residential	Single_Family	Drying	8	-1	0.87141	001	001	004
Residential	Single_Family	Drying	8	0	0.87141	001	001	004
Residential	Single_Family	Drying	8	1	0.87141	001	001	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Drying	8	2	0.87141	001	001	004
Residential	Single_Family	Drying	8	3	0.87141	001	001	004
Residential	Single_Family	Drying	8	4	0.87141	001	001	004
Residential	Single_Family	Drying	8	5	0.87141	001	001	004
Residential	Single_Family	Drying	8	6	0.87141	001	001	004
Residential	Single_Family	Drying	8	7	0.87141	001	001	004
Residential	Single_Family	Drying	8	8	0.87141	001	001	004
Residential	Single_Family	Drying	9	-2	0.86025	001	001	004
Residential	Single_Family	Drying	9	-1	0.87141	001	001	004
Residential	Single_Family	Drying	9	0	0.87141	001	001	004
Residential	Single_Family	Drying	9	1	0.87141	001	001	004
Residential	Single_Family	Drying	9	2	0.87141	001	001	004
Residential	Single_Family	Drying	9	3	0.87141	001	001	004
Residential	Single_Family	Drying	9	4	0.87141	001	001	004
Residential	Single_Family	Drying	9	5	0.87141	001	001	004
Residential	Single_Family	Drying	9	6	0.87141	001	001	004
Residential	Single_Family	Drying	9	7	0.87141	001	001	004
Residential	Single_Family	Drying	9	8	0.87141	001	001	004
Residential	Single_Family	Drying	9	9	0.87141	001	001	004
Residential	Single_Family	Drying	10	-2	0.86025	001	001	004
Residential	Single_Family	Drying	10	-1	0.87141	001	001	004
Residential	Single_Family	Drying	10	0	0.87141	001	001	004
Residential	Single_Family	Drying	10	1	0.87141	001	001	004
Residential	Single_Family	Drying	10	2	0.87141	001	001	004
Residential	Single_Family	Drying	10	3	0.87141	001	001	004
Residential	Single_Family	Drying	10	4	0.87141	001	001	004
Residential	Single_Family	Drying	10	5	0.87141	001	001	004
Residential	Single_Family	Drying	10	6	0.87141	001	001	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Drying	10	7	0.87141	001	001	004
Residential	Single_Family	Drying	10	8	0.87141	001	001	004
Residential	Single_Family	Drying	10	9	0.87141	001	001	004
Residential	Single_Family	Drying	10	10	0.87141	001	001	004
Residential	Single_Family	Drying	11	-2	0.86025	001	001	004
Residential	Single_Family	Drying	11	-1	0.87141	001	001	004
Residential	Single_Family	Drying	11	0	0.87141	001	001	004
Residential	Single_Family	Drying	11	1	0.87141	001	001	004
Residential	Single_Family	Drying	11	2	0.87141	001	001	004
Residential	Single_Family	Drying	11	3	0.87141	001	001	004
Residential	Single_Family	Drying	11	4	0.87141	001	001	004
Residential	Single_Family	Drying	11	5	0.87141	001	001	004
Residential	Single_Family	Drying	11	6	0.87141	001	001	004
Residential	Single_Family	Drying	11	7	0.87141	001	001	004
Residential	Single_Family	Drying	11	8	0.87141	001	001	004
Residential	Single_Family	Drying	11	9	0.87141	001	001	004
Residential	Single_Family	Drying	11	10	0.87141	001	001	004
Residential	Single_Family	Drying	11	11	0.87141	001	001	004
Residential	Single_Family	Drying	12	-2	0.86025	001	001	004
Residential	Single_Family	Drying	12	-1	0.87141	001	001	004
Residential	Single_Family	Drying	12	0	0.87141	001	001	004
Residential	Single_Family	Drying	12	1	0.87141	001	001	004
Residential	Single_Family	Drying	12	2	0.87141	001	001	004
Residential	Single_Family	Drying	12	3	0.87141	001	001	004
Residential	Single_Family	Drying	12	4	0.87141	001	001	004
Residential	Single_Family	Drying	12	5	0.87141	001	001	004
Residential	Single_Family	Drying	12	6	0.87141	001	001	004
Residential	Single_Family	Drying	12	7	0.87141	001	001	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Drying	12	8	0.87141	001	001	004
Residential	Single_Family	Drying	12	9	0.87141	001	001	004
Residential	Single_Family	Drying	12	10	0.87141	001	001	004
Residential	Single_Family	Drying	12	11	0.87141	001	001	004
Residential	Single_Family	Drying	12	12	0.87141	001	001	004
Residential	Single_Family	Drying	13	-2	0.86025	001	001	004
Residential	Single_Family	Drying	13	-1	0.87141	001	001	004
Residential	Single_Family	Drying	13	0	0.87141	001	001	004
Residential	Single_Family	Drying	13	1	0.87141	001	001	004
Residential	Single_Family	Drying	13	2	0.87141	001	001	004
Residential	Single_Family	Drying	13	3	0.87141	001	001	004
Residential	Single_Family	Drying	13	4	0.87141	001	001	004
Residential	Single_Family	Drying	13	5	0.87141	001	001	004
Residential	Single_Family	Drying	13	6	0.87141	001	001	004
Residential	Single_Family	Drying	13	7	0.87141	001	001	004
Residential	Single_Family	Drying	13	8	0.87141	001	001	004
Residential	Single_Family	Drying	13	9	0.87141	001	001	004
Residential	Single_Family	Drying	13	10	0.87141	001	001	004
Residential	Single_Family	Drying	13	11	0.87141	001	001	004
Residential	Single_Family	Drying	13	12	0.87141	001	001	004
Residential	Single_Family	Drying	13	13	0.87141	001	001	004
Residential	Single_Family	Drying	14	-2	0.86025	001	001	004
Residential	Single_Family	Drying	14	-1	0.87141	001	001	004
Residential	Single_Family	Drying	14	0	0.87141	001	001	004
Residential	Single_Family	Drying	14	1	0.87141	001	001	004
Residential	Single_Family	Drying	14	2	0.87141	001	001	004
Residential	Single_Family	Drying	14	3	0.87141	001	001	004
Residential	Single_Family	Drying	14	4	0.87141	001	001	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Drying	14	5	0.87141	001	001	004
Residential	Single_Family	Drying	14	6	0.87141	001	001	004
Residential	Single_Family	Drying	14	7	0.87141	001	001	004
Residential	Single_Family	Drying	14	8	0.87141	001	001	004
Residential	Single_Family	Drying	14	9	0.87141	001	001	004
Residential	Single_Family	Drying	14	10	0.87141	001	001	004
Residential	Single_Family	Drying	14	11	0.87141	001	001	004
Residential	Single_Family	Drying	14	12	0.87141	001	001	004
Residential	Single_Family	Drying	14	13	0.87141	001	001	004
Residential	Single_Family	Drying	14	14	0.87141	001	001	004
Residential	Single_Family	Drying	15	-2	0.86025	001	001	004
Residential	Single_Family	Drying	15	-1	0.87141	001	001	004
Residential	Single_Family	Drying	15	0	0.87141	001	001	004
Residential	Single_Family	Drying	15	1	0.87141	001	001	004
Residential	Single_Family	Drying	15	2	0.87141	001	001	004
Residential	Single_Family	Drying	15	3	0.87141	001	001	004
Residential	Single_Family	Drying	15	4	0.87141	001	001	004
Residential	Single_Family	Drying	15	5	0.87141	001	001	004
Residential	Single_Family	Drying	15	6	0.87141	001	001	004
Residential	Single_Family	Drying	15	7	0.87141	001	001	004
Residential	Single_Family	Drying	15	8	0.87141	001	001	004
Residential	Single_Family	Drying	15	9	0.87141	001	001	004
Residential	Single_Family	Drying	15	10	0.87141	001	001	004
Residential	Single_Family	Drying	15	11	0.87141	001	001	004
Residential	Single_Family	Drying	15	12	0.87141	001	001	004
Residential	Single_Family	Drying	15	13	0.87141	001	001	004
Residential	Single_Family	Drying	15	14	0.87141	001	001	004
Residential	Single_Family	Drying	15	15	0.87141	001	001	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Pool	0	-2	0.18082	001	001	005
Residential	Single_Family	Pool	0	-1	0.2102	001	001	005
Residential	Single_Family	Pool	0	0	0.2102	001	001	005
Residential	Single_Family	Pool	1	-2	0.18082	001	001	005
Residential	Single_Family	Pool	1	-1	0.2102	001	001	005
Residential	Single_Family	Pool	1	0	0.2102	001	001	005
Residential	Single_Family	Pool	1	1	0.2102	001	001	005
Residential	Single_Family	Pool	2	-2	0.18082	001	001	005
Residential	Single_Family	Pool	2	-1	0.2102	001	001	005
Residential	Single_Family	Pool	2	0	0.2102	001	001	005
Residential	Single_Family	Pool	2	1	0.2102	001	001	005
Residential	Single_Family	Pool	2	2	0.2102	001	001	005
Residential	Single_Family	Pool	3	-2	0.18082	001	001	005
Residential	Single_Family	Pool	3	-1	0.2102	001	001	005
Residential	Single_Family	Pool	3	0	0.2102	001	001	005
Residential	Single_Family	Pool	3	1	0.2102	001	001	005
Residential	Single_Family	Pool	3	2	0.2102	001	001	005
Residential	Single_Family	Pool	3	3	0.2102	001	001	005
Residential	Single_Family	Pool	4	-2	0.18082	001	001	005
Residential	Single_Family	Pool	4	-1	0.2102	001	001	005
Residential	Single_Family	Pool	4	0	0.2102	001	001	005
Residential	Single_Family	Pool	4	1	0.2102	001	001	005
Residential	Single_Family	Pool	4	2	0.2102	001	001	005
Residential	Single_Family	Pool	4	3	0.2102	001	001	005
Residential	Single_Family	Pool	4	4	0.2102	001	001	005
Residential	Single_Family	Pool	5	-2	0.18082	001	001	005
Residential	Single_Family	Pool	5	-1	0.2102	001	001	005
Residential	Single_Family	Pool	5	0	0.2102	001	001	005

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Pool	5	1	0.2102	001	001	005
Residential	Single_Family	Pool	5	2	0.2102	001	001	005
Residential	Single_Family	Pool	5	3	0.2102	001	001	005
Residential	Single_Family	Pool	5	4	0.2102	001	001	005
Residential	Single_Family	Pool	5	5	0.2102	001	001	005
Residential	Single_Family	Pool	6	-2	0.18082	001	001	005
Residential	Single_Family	Pool	6	-1	0.2102	001	001	005
Residential	Single_Family	Pool	6	0	0.2102	001	001	005
Residential	Single_Family	Pool	6	1	0.2102	001	001	005
Residential	Single_Family	Pool	6	2	0.2102	001	001	005
Residential	Single_Family	Pool	6	3	0.2102	001	001	005
Residential	Single_Family	Pool	6	4	0.2102	001	001	005
Residential	Single_Family	Pool	6	5	0.2102	001	001	005
Residential	Single_Family	Pool	6	6	0.2102	001	001	005
Residential	Single_Family	Pool	7	-2	0.18082	001	001	005
Residential	Single_Family	Pool	7	-1	0.2102	001	001	005
Residential	Single_Family	Pool	7	0	0.2102	001	001	005
Residential	Single_Family	Pool	7	1	0.2102	001	001	005
Residential	Single_Family	Pool	7	2	0.2102	001	001	005
Residential	Single_Family	Pool	7	3	0.2102	001	001	005
Residential	Single_Family	Pool	7	4	0.2102	001	001	005
Residential	Single_Family	Pool	7	5	0.2102	001	001	005
Residential	Single_Family	Pool	7	6	0.2102	001	001	005
Residential	Single_Family	Pool	7	7	0.2102	001	001	005
Residential	Single_Family	Pool	8	-2	0.18082	001	001	005
Residential	Single_Family	Pool	8	-1	0.2102	001	001	005
Residential	Single_Family	Pool	8	0	0.2102	001	001	005
Residential	Single_Family	Pool	8	1	0.2102	001	001	005

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Pool	8	2	0.2102	001	001	005
Residential	Single_Family	Pool	8	3	0.2102	001	001	005
Residential	Single_Family	Pool	8	4	0.2102	001	001	005
Residential	Single_Family	Pool	8	5	0.2102	001	001	005
Residential	Single_Family	Pool	8	6	0.2102	001	001	005
Residential	Single_Family	Pool	8	7	0.2102	001	001	005
Residential	Single_Family	Pool	8	8	0.2102	001	001	005
Residential	Single_Family	Pool	9	-2	0.18082	001	001	005
Residential	Single_Family	Pool	9	-1	0.2102	001	001	005
Residential	Single_Family	Pool	9	0	0.2102	001	001	005
Residential	Single_Family	Pool	9	1	0.2102	001	001	005
Residential	Single_Family	Pool	9	2	0.2102	001	001	005
Residential	Single_Family	Pool	9	3	0.2102	001	001	005
Residential	Single_Family	Pool	9	4	0.2102	001	001	005
Residential	Single_Family	Pool	9	5	0.2102	001	001	005
Residential	Single_Family	Pool	9	6	0.2102	001	001	005
Residential	Single_Family	Pool	9	7	0.2102	001	001	005
Residential	Single_Family	Pool	9	8	0.2102	001	001	005
Residential	Single_Family	Pool	9	9	0.2102	001	001	005
Residential	Single_Family	Pool	10	-2	0.18082	001	001	005
Residential	Single_Family	Pool	10	-1	0.2102	001	001	005
Residential	Single_Family	Pool	10	0	0.2102	001	001	005
Residential	Single_Family	Pool	10	1	0.2102	001	001	005
Residential	Single_Family	Pool	10	2	0.2102	001	001	005
Residential	Single_Family	Pool	10	3	0.2102	001	001	005
Residential	Single_Family	Pool	10	4	0.2102	001	001	005
Residential	Single_Family	Pool	10	5	0.2102	001	001	005
Residential	Single_Family	Pool	10	6	0.2102	001	001	005

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Pool	10	7	0.2102	001	001	005
Residential	Single_Family	Pool	10	8	0.2102	001	001	005
Residential	Single_Family	Pool	10	9	0.2102	001	001	005
Residential	Single_Family	Pool	10	10	0.2102	001	001	005
Residential	Single_Family	Pool	11	-2	0.18082	001	001	005
Residential	Single_Family	Pool	11	-1	0.2102	001	001	005
Residential	Single_Family	Pool	11	0	0.2102	001	001	005
Residential	Single_Family	Pool	11	1	0.2102	001	001	005
Residential	Single_Family	Pool	11	2	0.2102	001	001	005
Residential	Single_Family	Pool	11	3	0.2102	001	001	005
Residential	Single_Family	Pool	11	4	0.2102	001	001	005
Residential	Single_Family	Pool	11	5	0.2102	001	001	005
Residential	Single_Family	Pool	11	6	0.2102	001	001	005
Residential	Single_Family	Pool	11	7	0.2102	001	001	005
Residential	Single_Family	Pool	11	8	0.2102	001	001	005
Residential	Single_Family	Pool	11	9	0.2102	001	001	005
Residential	Single_Family	Pool	11	10	0.2102	001	001	005
Residential	Single_Family	Pool	11	11	0.2102	001	001	005
Residential	Single_Family	Pool	12	-2	0.18082	001	001	005
Residential	Single_Family	Pool	12	-1	0.2102	001	001	005
Residential	Single_Family	Pool	12	0	0.2102	001	001	005
Residential	Single_Family	Pool	12	1	0.2102	001	001	005
Residential	Single_Family	Pool	12	2	0.2102	001	001	005
Residential	Single_Family	Pool	12	3	0.2102	001	001	005
Residential	Single_Family	Pool	12	4	0.2102	001	001	005
Residential	Single_Family	Pool	12	5	0.2102	001	001	005
Residential	Single_Family	Pool	12	6	0.2102	001	001	005
Residential	Single_Family	Pool	12	7	0.2102	001	001	005

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Pool	12	8	0.2102	001	001	005
Residential	Single_Family	Pool	12	9	0.2102	001	001	005
Residential	Single_Family	Pool	12	10	0.2102	001	001	005
Residential	Single_Family	Pool	12	11	0.2102	001	001	005
Residential	Single_Family	Pool	12	12	0.2102	001	001	005
Residential	Single_Family	Pool	13	-2	0.18082	001	001	005
Residential	Single_Family	Pool	13	-1	0.2102	001	001	005
Residential	Single_Family	Pool	13	0	0.2102	001	001	005
Residential	Single_Family	Pool	13	1	0.2102	001	001	005
Residential	Single_Family	Pool	13	2	0.2102	001	001	005
Residential	Single_Family	Pool	13	3	0.2102	001	001	005
Residential	Single_Family	Pool	13	4	0.2102	001	001	005
Residential	Single_Family	Pool	13	5	0.2102	001	001	005
Residential	Single_Family	Pool	13	6	0.2102	001	001	005
Residential	Single_Family	Pool	13	7	0.2102	001	001	005
Residential	Single_Family	Pool	13	8	0.2102	001	001	005
Residential	Single_Family	Pool	13	9	0.2102	001	001	005
Residential	Single_Family	Pool	13	10	0.2102	001	001	005
Residential	Single_Family	Pool	13	11	0.2102	001	001	005
Residential	Single_Family	Pool	13	12	0.2102	001	001	005
Residential	Single_Family	Pool	13	13	0.2102	001	001	005
Residential	Single_Family	Pool	14	-2	0.18082	001	001	005
Residential	Single_Family	Pool	14	-1	0.2102	001	001	005
Residential	Single_Family	Pool	14	0	0.2102	001	001	005
Residential	Single_Family	Pool	14	1	0.2102	001	001	005
Residential	Single_Family	Pool	14	2	0.2102	001	001	005
Residential	Single_Family	Pool	14	3	0.2102	001	001	005
Residential	Single_Family	Pool	14	4	0.2102	001	001	005

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Pool	14	5	0.2102	001	001	005
Residential	Single_Family	Pool	14	6	0.2102	001	001	005
Residential	Single_Family	Pool	14	7	0.2102	001	001	005
Residential	Single_Family	Pool	14	8	0.2102	001	001	005
Residential	Single_Family	Pool	14	9	0.2102	001	001	005
Residential	Single_Family	Pool	14	10	0.2102	001	001	005
Residential	Single_Family	Pool	14	11	0.2102	001	001	005
Residential	Single_Family	Pool	14	12	0.2102	001	001	005
Residential	Single_Family	Pool	14	13	0.2102	001	001	005
Residential	Single_Family	Pool	14	14	0.2102	001	001	005
Residential	Single_Family	Pool	15	-2	0.18082	001	001	005
Residential	Single_Family	Pool	15	-1	0.2102	001	001	005
Residential	Single_Family	Pool	15	0	0.2102	001	001	005
Residential	Single_Family	Pool	15	1	0.2102	001	001	005
Residential	Single_Family	Pool	15	2	0.2102	001	001	005
Residential	Single_Family	Pool	15	3	0.2102	001	001	005
Residential	Single_Family	Pool	15	4	0.2102	001	001	005
Residential	Single_Family	Pool	15	5	0.2102	001	001	005
Residential	Single_Family	Pool	15	6	0.2102	001	001	005
Residential	Single_Family	Pool	15	7	0.2102	001	001	005
Residential	Single_Family	Pool	15	8	0.2102	001	001	005
Residential	Single_Family	Pool	15	9	0.2102	001	001	005
Residential	Single_Family	Pool	15	10	0.2102	001	001	005
Residential	Single_Family	Pool	15	11	0.2102	001	001	005
Residential	Single_Family	Pool	15	12	0.2102	001	001	005
Residential	Single_Family	Pool	15	13	0.2102	001	001	005
Residential	Single_Family	Pool	15	14	0.2102	001	001	005
Residential	Single_Family	Pool	15	15	0.2102	001	001	005

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Spa	0	-2	0.12932	001	001	006
Residential	Single_Family	Spa	0	-1	0.21799	001	001	006
Residential	Single_Family	Spa	0	0	0.21799	001	001	006
Residential	Single_Family	Spa	1	-2	0.12932	001	001	006
Residential	Single_Family	Spa	1	-1	0.21799	001	001	006
Residential	Single_Family	Spa	1	0	0.21799	001	001	006
Residential	Single_Family	Spa	1	1	0.21799	001	001	006
Residential	Single_Family	Spa	2	-2	0.12932	001	001	006
Residential	Single_Family	Spa	2	-1	0.21799	001	001	006
Residential	Single_Family	Spa	2	0	0.21799	001	001	006
Residential	Single_Family	Spa	2	1	0.21799	001	001	006
Residential	Single_Family	Spa	2	2	0.21799	001	001	006
Residential	Single_Family	Spa	3	-2	0.12932	001	001	006
Residential	Single_Family	Spa	3	-1	0.21799	001	001	006
Residential	Single_Family	Spa	3	0	0.21799	001	001	006
Residential	Single_Family	Spa	3	1	0.21799	001	001	006
Residential	Single_Family	Spa	3	2	0.21799	001	001	006
Residential	Single_Family	Spa	3	3	0.21799	001	001	006
Residential	Single_Family	Spa	4	-2	0.12932	001	001	006
Residential	Single_Family	Spa	4	-1	0.21799	001	001	006
Residential	Single_Family	Spa	4	0	0.21799	001	001	006
Residential	Single_Family	Spa	4	1	0.21799	001	001	006
Residential	Single_Family	Spa	4	2	0.21799	001	001	006
Residential	Single_Family	Spa	4	3	0.21799	001	001	006
Residential	Single_Family	Spa	4	4	0.21799	001	001	006
Residential	Single_Family	Spa	5	-2	0.12932	001	001	006
Residential	Single_Family	Spa	5	-1	0.21799	001	001	006
Residential	Single_Family	Spa	5	0	0.21799	001	001	006

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Spa	5	1	0.21799	001	001	006
Residential	Single_Family	Spa	5	2	0.21799	001	001	006
Residential	Single_Family	Spa	5	3	0.21799	001	001	006
Residential	Single_Family	Spa	5	4	0.21799	001	001	006
Residential	Single_Family	Spa	5	5	0.21799	001	001	006
Residential	Single_Family	Spa	6	-2	0.12932	001	001	006
Residential	Single_Family	Spa	6	-1	0.21799	001	001	006
Residential	Single_Family	Spa	6	0	0.21799	001	001	006
Residential	Single_Family	Spa	6	1	0.21799	001	001	006
Residential	Single_Family	Spa	6	2	0.21799	001	001	006
Residential	Single_Family	Spa	6	3	0.21799	001	001	006
Residential	Single_Family	Spa	6	4	0.21799	001	001	006
Residential	Single_Family	Spa	6	5	0.21799	001	001	006
Residential	Single_Family	Spa	6	6	0.21799	001	001	006
Residential	Single_Family	Spa	7	-2	0.12932	001	001	006
Residential	Single_Family	Spa	7	-1	0.21799	001	001	006
Residential	Single_Family	Spa	7	0	0.21799	001	001	006
Residential	Single_Family	Spa	7	1	0.21799	001	001	006
Residential	Single_Family	Spa	7	2	0.21799	001	001	006
Residential	Single_Family	Spa	7	3	0.21799	001	001	006
Residential	Single_Family	Spa	7	4	0.21799	001	001	006
Residential	Single_Family	Spa	7	5	0.21799	001	001	006
Residential	Single_Family	Spa	7	6	0.21799	001	001	006
Residential	Single_Family	Spa	7	7	0.21799	001	001	006
Residential	Single_Family	Spa	8	-2	0.12932	001	001	006
Residential	Single_Family	Spa	8	-1	0.21799	001	001	006
Residential	Single_Family	Spa	8	0	0.21799	001	001	006
Residential	Single_Family	Spa	8	1	0.21799	001	001	006

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Spa	8	2	0.21799	001	001	006
Residential	Single_Family	Spa	8	3	0.21799	001	001	006
Residential	Single_Family	Spa	8	4	0.21799	001	001	006
Residential	Single_Family	Spa	8	5	0.21799	001	001	006
Residential	Single_Family	Spa	8	6	0.21799	001	001	006
Residential	Single_Family	Spa	8	7	0.21799	001	001	006
Residential	Single_Family	Spa	8	8	0.21799	001	001	006
Residential	Single_Family	Spa	9	-2	0.12932	001	001	006
Residential	Single_Family	Spa	9	-1	0.21799	001	001	006
Residential	Single_Family	Spa	9	0	0.21799	001	001	006
Residential	Single_Family	Spa	9	1	0.21799	001	001	006
Residential	Single_Family	Spa	9	2	0.21799	001	001	006
Residential	Single_Family	Spa	9	3	0.21799	001	001	006
Residential	Single_Family	Spa	9	4	0.21799	001	001	006
Residential	Single_Family	Spa	9	5	0.21799	001	001	006
Residential	Single_Family	Spa	9	6	0.21799	001	001	006
Residential	Single_Family	Spa	9	7	0.21799	001	001	006
Residential	Single_Family	Spa	9	8	0.21799	001	001	006
Residential	Single_Family	Spa	9	9	0.21799	001	001	006
Residential	Single_Family	Spa	10	-2	0.12932	001	001	006
Residential	Single_Family	Spa	10	-1	0.21799	001	001	006
Residential	Single_Family	Spa	10	0	0.21799	001	001	006
Residential	Single_Family	Spa	10	1	0.21799	001	001	006
Residential	Single_Family	Spa	10	2	0.21799	001	001	006
Residential	Single_Family	Spa	10	3	0.21799	001	001	006
Residential	Single_Family	Spa	10	4	0.21799	001	001	006
Residential	Single_Family	Spa	10	5	0.21799	001	001	006
Residential	Single_Family	Spa	10	6	0.21799	001	001	006

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Spa	10	7	0.21799	001	001	006
Residential	Single_Family	Spa	10	8	0.21799	001	001	006
Residential	Single_Family	Spa	10	9	0.21799	001	001	006
Residential	Single_Family	Spa	10	10	0.21799	001	001	006
Residential	Single_Family	Spa	11	-2	0.12932	001	001	006
Residential	Single_Family	Spa	11	-1	0.21799	001	001	006
Residential	Single_Family	Spa	11	0	0.21799	001	001	006
Residential	Single_Family	Spa	11	1	0.21799	001	001	006
Residential	Single_Family	Spa	11	2	0.21799	001	001	006
Residential	Single_Family	Spa	11	3	0.21799	001	001	006
Residential	Single_Family	Spa	11	4	0.21799	001	001	006
Residential	Single_Family	Spa	11	5	0.21799	001	001	006
Residential	Single_Family	Spa	11	6	0.21799	001	001	006
Residential	Single_Family	Spa	11	7	0.21799	001	001	006
Residential	Single_Family	Spa	11	8	0.21799	001	001	006
Residential	Single_Family	Spa	11	9	0.21799	001	001	006
Residential	Single_Family	Spa	11	10	0.21799	001	001	006
Residential	Single_Family	Spa	11	11	0.21799	001	001	006
Residential	Single_Family	Spa	12	-2	0.12932	001	001	006
Residential	Single_Family	Spa	12	-1	0.21799	001	001	006
Residential	Single_Family	Spa	12	0	0.21799	001	001	006
Residential	Single_Family	Spa	12	1	0.21799	001	001	006
Residential	Single_Family	Spa	12	2	0.21799	001	001	006
Residential	Single_Family	Spa	12	3	0.21799	001	001	006
Residential	Single_Family	Spa	12	4	0.21799	001	001	006
Residential	Single_Family	Spa	12	5	0.21799	001	001	006
Residential	Single_Family	Spa	12	6	0.21799	001	001	006
Residential	Single_Family	Spa	12	7	0.21799	001	001	006

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Spa	12	8	0.21799	001	001	006
Residential	Single_Family	Spa	12	9	0.21799	001	001	006
Residential	Single_Family	Spa	12	10	0.21799	001	001	006
Residential	Single_Family	Spa	12	11	0.21799	001	001	006
Residential	Single_Family	Spa	12	12	0.21799	001	001	006
Residential	Single_Family	Spa	13	-2	0.12932	001	001	006
Residential	Single_Family	Spa	13	-1	0.21799	001	001	006
Residential	Single_Family	Spa	13	0	0.21799	001	001	006
Residential	Single_Family	Spa	13	1	0.21799	001	001	006
Residential	Single_Family	Spa	13	2	0.21799	001	001	006
Residential	Single_Family	Spa	13	3	0.21799	001	001	006
Residential	Single_Family	Spa	13	4	0.21799	001	001	006
Residential	Single_Family	Spa	13	5	0.21799	001	001	006
Residential	Single_Family	Spa	13	6	0.21799	001	001	006
Residential	Single_Family	Spa	13	7	0.21799	001	001	006
Residential	Single_Family	Spa	13	8	0.21799	001	001	006
Residential	Single_Family	Spa	13	9	0.21799	001	001	006
Residential	Single_Family	Spa	13	10	0.21799	001	001	006
Residential	Single_Family	Spa	13	11	0.21799	001	001	006
Residential	Single_Family	Spa	13	12	0.21799	001	001	006
Residential	Single_Family	Spa	13	13	0.21799	001	001	006
Residential	Single_Family	Spa	14	-2	0.12932	001	001	006
Residential	Single_Family	Spa	14	-1	0.21799	001	001	006
Residential	Single_Family	Spa	14	0	0.21799	001	001	006
Residential	Single_Family	Spa	14	1	0.21799	001	001	006
Residential	Single_Family	Spa	14	2	0.21799	001	001	006
Residential	Single_Family	Spa	14	3	0.21799	001	001	006
Residential	Single_Family	Spa	14	4	0.21799	001	001	006

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Spa	14	5	0.21799	001	001	006
Residential	Single_Family	Spa	14	6	0.21799	001	001	006
Residential	Single_Family	Spa	14	7	0.21799	001	001	006
Residential	Single_Family	Spa	14	8	0.21799	001	001	006
Residential	Single_Family	Spa	14	9	0.21799	001	001	006
Residential	Single_Family	Spa	14	10	0.21799	001	001	006
Residential	Single_Family	Spa	14	11	0.21799	001	001	006
Residential	Single_Family	Spa	14	12	0.21799	001	001	006
Residential	Single_Family	Spa	14	13	0.21799	001	001	006
Residential	Single_Family	Spa	14	14	0.21799	001	001	006
Residential	Single_Family	Spa	15	-2	0.12932	001	001	006
Residential	Single_Family	Spa	15	-1	0.21799	001	001	006
Residential	Single_Family	Spa	15	0	0.21799	001	001	006
Residential	Single_Family	Spa	15	1	0.21799	001	001	006
Residential	Single_Family	Spa	15	2	0.21799	001	001	006
Residential	Single_Family	Spa	15	3	0.21799	001	001	006
Residential	Single_Family	Spa	15	4	0.21799	001	001	006
Residential	Single_Family	Spa	15	5	0.21799	001	001	006
Residential	Single_Family	Spa	15	6	0.21799	001	001	006
Residential	Single_Family	Spa	15	7	0.21799	001	001	006
Residential	Single_Family	Spa	15	8	0.21799	001	001	006
Residential	Single_Family	Spa	15	9	0.21799	001	001	006
Residential	Single_Family	Spa	15	10	0.21799	001	001	006
Residential	Single_Family	Spa	15	11	0.21799	001	001	006
Residential	Single_Family	Spa	15	12	0.21799	001	001	006
Residential	Single_Family	Spa	15	13	0.21799	001	001	006
Residential	Single_Family	Spa	15	14	0.21799	001	001	006
Residential	Single_Family	Spa	15	15	0.21799	001	001	006

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Fireplace	0	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	0	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	0	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	1	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	1	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	1	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	1	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	2	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	2	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	2	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	2	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	2	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	3	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	3	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	3	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	3	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	3	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	3	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	4	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	4	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	4	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	4	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	4	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	4	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	4	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	5	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	5	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	5	0	0.16112	001	001	007

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Fireplace	5	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	5	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	5	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	5	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	5	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	6	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	6	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	6	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	6	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	6	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	6	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	6	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	6	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	6	6	0.16112	001	001	007
Residential	Single_Family	Fireplace	7	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	7	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	7	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	7	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	7	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	7	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	7	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	7	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	7	6	0.16112	001	001	007
Residential	Single_Family	Fireplace	7	7	0.16112	001	001	007
Residential	Single_Family	Fireplace	8	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	8	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	8	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	8	1	0.16112	001	001	007

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Fireplace	8	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	8	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	8	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	8	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	8	6	0.16112	001	001	007
Residential	Single_Family	Fireplace	8	7	0.16112	001	001	007
Residential	Single_Family	Fireplace	8	8	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	9	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	6	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	7	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	8	0.16112	001	001	007
Residential	Single_Family	Fireplace	9	9	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	10	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	6	0.16112	001	001	007

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Fireplace	10	7	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	8	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	9	0.16112	001	001	007
Residential	Single_Family	Fireplace	10	10	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	11	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	6	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	7	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	8	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	9	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	10	0.16112	001	001	007
Residential	Single_Family	Fireplace	11	11	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	12	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	6	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	7	0.16112	001	001	007

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Fireplace	12	8	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	9	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	10	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	11	0.16112	001	001	007
Residential	Single_Family	Fireplace	12	12	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	13	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	6	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	7	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	8	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	9	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	10	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	11	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	12	0.16112	001	001	007
Residential	Single_Family	Fireplace	13	13	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	14	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	4	0.16112	001	001	007

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Fireplace	14	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	6	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	7	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	8	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	9	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	10	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	11	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	12	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	13	0.16112	001	001	007
Residential	Single_Family	Fireplace	14	14	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	-2	0.1191	001	001	007
Residential	Single_Family	Fireplace	15	-1	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	0	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	1	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	2	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	3	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	4	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	5	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	6	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	7	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	8	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	9	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	10	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	11	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	12	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	13	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	14	0.16112	001	001	007
Residential	Single_Family	Fireplace	15	15	0.16112	001	001	007

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Barbecue	0	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	0	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	0	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	1	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	1	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	1	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	1	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	2	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	2	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	2	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	2	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	2	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	3	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	3	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	3	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	3	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	3	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	3	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	4	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	4	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	4	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	4	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	4	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	4	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	4	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	5	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	5	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	5	0	0.46785	001	001	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Barbecue	5	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	5	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	5	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	5	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	5	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	6	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	6	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	6	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	6	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	6	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	6	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	6	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	6	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	6	6	0.46785	001	001	008
Residential	Single_Family	Barbecue	7	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	7	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	7	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	7	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	7	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	7	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	7	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	7	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	7	6	0.46785	001	001	008
Residential	Single_Family	Barbecue	7	7	0.46785	001	001	008
Residential	Single_Family	Barbecue	8	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	8	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	8	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	8	1	0.46785	001	001	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Barbecue	8	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	8	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	8	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	8	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	8	6	0.46785	001	001	008
Residential	Single_Family	Barbecue	8	7	0.46785	001	001	008
Residential	Single_Family	Barbecue	8	8	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	9	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	6	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	7	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	8	0.46785	001	001	008
Residential	Single_Family	Barbecue	9	9	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	10	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	6	0.46785	001	001	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Barbecue	10	7	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	8	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	9	0.46785	001	001	008
Residential	Single_Family	Barbecue	10	10	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	11	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	6	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	7	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	8	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	9	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	10	0.46785	001	001	008
Residential	Single_Family	Barbecue	11	11	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	12	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	6	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	7	0.46785	001	001	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Barbecue	12	8	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	9	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	10	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	11	0.46785	001	001	008
Residential	Single_Family	Barbecue	12	12	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	13	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	6	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	7	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	8	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	9	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	10	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	11	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	12	0.46785	001	001	008
Residential	Single_Family	Barbecue	13	13	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	14	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	4	0.46785	001	001	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Barbecue	14	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	6	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	7	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	8	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	9	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	10	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	11	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	12	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	13	0.46785	001	001	008
Residential	Single_Family	Barbecue	14	14	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	-2	0.37085	001	001	008
Residential	Single_Family	Barbecue	15	-1	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	0	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	1	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	2	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	3	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	4	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	5	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	6	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	7	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	8	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	9	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	10	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	11	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	12	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	13	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	14	0.46785	001	001	008
Residential	Single_Family	Barbecue	15	15	0.46785	001	001	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Other	0	-2	1	001	001	009
Residential	Single_Family	Other	0	-1	1	001	001	009
Residential	Single_Family	Other	0	0	1	001	001	009
Residential	Single_Family	Other	1	-2	1	001	001	009
Residential	Single_Family	Other	1	-1	1	001	001	009
Residential	Single_Family	Other	1	0	1	001	001	009
Residential	Single_Family	Other	1	1	1	001	001	009
Residential	Single_Family	Other	2	-2	1	001	001	009
Residential	Single_Family	Other	2	-1	1	001	001	009
Residential	Single_Family	Other	2	0	1	001	001	009
Residential	Single_Family	Other	2	1	1	001	001	009
Residential	Single_Family	Other	2	2	1	001	001	009
Residential	Single_Family	Other	3	-2	1	001	001	009
Residential	Single_Family	Other	3	-1	1	001	001	009
Residential	Single_Family	Other	3	0	1	001	001	009
Residential	Single_Family	Other	3	1	1	001	001	009
Residential	Single_Family	Other	3	2	1	001	001	009
Residential	Single_Family	Other	3	3	1	001	001	009
Residential	Single_Family	Other	4	-2	1	001	001	009
Residential	Single_Family	Other	4	-1	1	001	001	009
Residential	Single_Family	Other	4	0	1	001	001	009
Residential	Single_Family	Other	4	1	1	001	001	009
Residential	Single_Family	Other	4	2	1	001	001	009
Residential	Single_Family	Other	4	3	1	001	001	009
Residential	Single_Family	Other	4	4	1	001	001	009
Residential	Single_Family	Other	5	-2	1	001	001	009
Residential	Single_Family	Other	5	-1	1	001	001	009
Residential	Single_Family	Other	5	0	1	001	001	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Other	5	1	1	001	001	009
Residential	Single_Family	Other	5	2	1	001	001	009
Residential	Single_Family	Other	5	3	1	001	001	009
Residential	Single_Family	Other	5	4	1	001	001	009
Residential	Single_Family	Other	5	5	1	001	001	009
Residential	Single_Family	Other	6	-2	1	001	001	009
Residential	Single_Family	Other	6	-1	1	001	001	009
Residential	Single_Family	Other	6	0	1	001	001	009
Residential	Single_Family	Other	6	1	1	001	001	009
Residential	Single_Family	Other	6	2	1	001	001	009
Residential	Single_Family	Other	6	3	1	001	001	009
Residential	Single_Family	Other	6	4	1	001	001	009
Residential	Single_Family	Other	6	5	1	001	001	009
Residential	Single_Family	Other	6	6	1	001	001	009
Residential	Single_Family	Other	7	-2	1	001	001	009
Residential	Single_Family	Other	7	-1	1	001	001	009
Residential	Single_Family	Other	7	0	1	001	001	009
Residential	Single_Family	Other	7	1	1	001	001	009
Residential	Single_Family	Other	7	2	1	001	001	009
Residential	Single_Family	Other	7	3	1	001	001	009
Residential	Single_Family	Other	7	4	1	001	001	009
Residential	Single_Family	Other	7	5	1	001	001	009
Residential	Single_Family	Other	7	6	1	001	001	009
Residential	Single_Family	Other	7	7	1	001	001	009
Residential	Single_Family	Other	8	-2	1	001	001	009
Residential	Single_Family	Other	8	-1	1	001	001	009
Residential	Single_Family	Other	8	0	1	001	001	009
Residential	Single_Family	Other	8	1	1	001	001	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Other	8	2	1	001	001	009
Residential	Single_Family	Other	8	3	1	001	001	009
Residential	Single_Family	Other	8	4	1	001	001	009
Residential	Single_Family	Other	8	5	1	001	001	009
Residential	Single_Family	Other	8	6	1	001	001	009
Residential	Single_Family	Other	8	7	1	001	001	009
Residential	Single_Family	Other	8	8	1	001	001	009
Residential	Single_Family	Other	9	-2	1	001	001	009
Residential	Single_Family	Other	9	-1	1	001	001	009
Residential	Single_Family	Other	9	0	1	001	001	009
Residential	Single_Family	Other	9	1	1	001	001	009
Residential	Single_Family	Other	9	2	1	001	001	009
Residential	Single_Family	Other	9	3	1	001	001	009
Residential	Single_Family	Other	9	4	1	001	001	009
Residential	Single_Family	Other	9	5	1	001	001	009
Residential	Single_Family	Other	9	6	1	001	001	009
Residential	Single_Family	Other	9	7	1	001	001	009
Residential	Single_Family	Other	9	8	1	001	001	009
Residential	Single_Family	Other	9	9	1	001	001	009
Residential	Single_Family	Other	10	-2	1	001	001	009
Residential	Single_Family	Other	10	-1	1	001	001	009
Residential	Single_Family	Other	10	0	1	001	001	009
Residential	Single_Family	Other	10	1	1	001	001	009
Residential	Single_Family	Other	10	2	1	001	001	009
Residential	Single_Family	Other	10	3	1	001	001	009
Residential	Single_Family	Other	10	4	1	001	001	009
Residential	Single_Family	Other	10	5	1	001	001	009
Residential	Single_Family	Other	10	6	1	001	001	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Other	10	7	1	001	001	009
Residential	Single_Family	Other	10	8	1	001	001	009
Residential	Single_Family	Other	10	9	1	001	001	009
Residential	Single_Family	Other	10	10	1	001	001	009
Residential	Single_Family	Other	11	-2	1	001	001	009
Residential	Single_Family	Other	11	-1	1	001	001	009
Residential	Single_Family	Other	11	0	1	001	001	009
Residential	Single_Family	Other	11	1	1	001	001	009
Residential	Single_Family	Other	11	2	1	001	001	009
Residential	Single_Family	Other	11	3	1	001	001	009
Residential	Single_Family	Other	11	4	1	001	001	009
Residential	Single_Family	Other	11	5	1	001	001	009
Residential	Single_Family	Other	11	6	1	001	001	009
Residential	Single_Family	Other	11	7	1	001	001	009
Residential	Single_Family	Other	11	8	1	001	001	009
Residential	Single_Family	Other	11	9	1	001	001	009
Residential	Single_Family	Other	11	10	1	001	001	009
Residential	Single_Family	Other	11	11	1	001	001	009
Residential	Single_Family	Other	12	-2	1	001	001	009
Residential	Single_Family	Other	12	-1	1	001	001	009
Residential	Single_Family	Other	12	0	1	001	001	009
Residential	Single_Family	Other	12	1	1	001	001	009
Residential	Single_Family	Other	12	2	1	001	001	009
Residential	Single_Family	Other	12	3	1	001	001	009
Residential	Single_Family	Other	12	4	1	001	001	009
Residential	Single_Family	Other	12	5	1	001	001	009
Residential	Single_Family	Other	12	6	1	001	001	009
Residential	Single_Family	Other	12	7	1	001	001	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Other	12	8	1	001	001	009
Residential	Single_Family	Other	12	9	1	001	001	009
Residential	Single_Family	Other	12	10	1	001	001	009
Residential	Single_Family	Other	12	11	1	001	001	009
Residential	Single_Family	Other	12	12	1	001	001	009
Residential	Single_Family	Other	13	-2	1	001	001	009
Residential	Single_Family	Other	13	-1	1	001	001	009
Residential	Single_Family	Other	13	0	1	001	001	009
Residential	Single_Family	Other	13	1	1	001	001	009
Residential	Single_Family	Other	13	2	1	001	001	009
Residential	Single_Family	Other	13	3	1	001	001	009
Residential	Single_Family	Other	13	4	1	001	001	009
Residential	Single_Family	Other	13	5	1	001	001	009
Residential	Single_Family	Other	13	6	1	001	001	009
Residential	Single_Family	Other	13	7	1	001	001	009
Residential	Single_Family	Other	13	8	1	001	001	009
Residential	Single_Family	Other	13	9	1	001	001	009
Residential	Single_Family	Other	13	10	1	001	001	009
Residential	Single_Family	Other	13	11	1	001	001	009
Residential	Single_Family	Other	13	12	1	001	001	009
Residential	Single_Family	Other	13	13	1	001	001	009
Residential	Single_Family	Other	14	-2	1	001	001	009
Residential	Single_Family	Other	14	-1	1	001	001	009
Residential	Single_Family	Other	14	0	1	001	001	009
Residential	Single_Family	Other	14	1	1	001	001	009
Residential	Single_Family	Other	14	2	1	001	001	009
Residential	Single_Family	Other	14	3	1	001	001	009
Residential	Single_Family	Other	14	4	1	001	001	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	Single_Family	Other	14	5	1	001	001	009
Residential	Single_Family	Other	14	6	1	001	001	009
Residential	Single_Family	Other	14	7	1	001	001	009
Residential	Single_Family	Other	14	8	1	001	001	009
Residential	Single_Family	Other	14	9	1	001	001	009
Residential	Single_Family	Other	14	10	1	001	001	009
Residential	Single_Family	Other	14	11	1	001	001	009
Residential	Single_Family	Other	14	12	1	001	001	009
Residential	Single_Family	Other	14	13	1	001	001	009
Residential	Single_Family	Other	14	14	1	001	001	009
Residential	Single_Family	Other	15	-2	1	001	001	009
Residential	Single_Family	Other	15	-1	1	001	001	009
Residential	Single_Family	Other	15	0	1	001	001	009
Residential	Single_Family	Other	15	1	1	001	001	009
Residential	Single_Family	Other	15	2	1	001	001	009
Residential	Single_Family	Other	15	3	1	001	001	009
Residential	Single_Family	Other	15	4	1	001	001	009
Residential	Single_Family	Other	15	5	1	001	001	009
Residential	Single_Family	Other	15	6	1	001	001	009
Residential	Single_Family	Other	15	7	1	001	001	009
Residential	Single_Family	Other	15	8	1	001	001	009
Residential	Single_Family	Other	15	9	1	001	001	009
Residential	Single_Family	Other	15	10	1	001	001	009
Residential	Single_Family	Other	15	11	1	001	001	009
Residential	Single_Family	Other	15	12	1	001	001	009
Residential	Single_Family	Other	15	13	1	001	001	009
Residential	Single_Family	Other	15	14	1	001	001	009
Residential	Single_Family	Other	15	15	1	001	001	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Space_Heat	0	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	0	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	0	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	1	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	1	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	1	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	1	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	2	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	2	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	2	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	2	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	2	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	3	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	3	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	3	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	3	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	3	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	3	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	4	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	4	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	4	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	4	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	4	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	4	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	4	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	5	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	5	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	5	0	1	001	002	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Space_Heat	5	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	5	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	5	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	5	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	5	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	6	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	6	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	6	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	6	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	6	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	6	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	6	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	6	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	6	6	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	7	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	7	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	7	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	7	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	7	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	7	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	7	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	7	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	7	6	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	7	7	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	8	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	8	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	8	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	8	1	1	001	002	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Space_Heat	8	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	8	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	8	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	8	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	8	6	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	8	7	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	8	8	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	6	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	7	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	8	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	9	9	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	6	1	001	002	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Space_Heat	10	7	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	8	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	9	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	10	10	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	6	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	7	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	8	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	9	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	10	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	11	11	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	6	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	7	1	001	002	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Space_Heat	12	8	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	9	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	10	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	11	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	12	12	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	6	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	7	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	8	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	9	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	10	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	11	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	12	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	13	13	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	4	1	001	002	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Space_Heat	14	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	6	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	7	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	8	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	9	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	10	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	11	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	12	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	13	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	14	14	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	-2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	-1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	0	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	1	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	2	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	3	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	4	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	5	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	6	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	7	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	8	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	9	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	10	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	11	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	12	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	13	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	14	1	001	002	001
Residential	MF2_2_TO_4_Units	Space_Heat	15	15	1	001	002	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Water_Heat	0	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	0	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	0	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	1	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	1	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	1	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	1	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	2	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	2	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	2	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	2	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	2	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	3	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	3	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	3	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	3	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	3	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	3	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	4	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	4	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	4	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	4	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	4	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	4	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	4	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	5	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	5	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	5	0	1	001	002	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Water_Heat	5	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	5	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	5	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	5	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	5	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	6	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	6	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	6	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	6	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	6	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	6	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	6	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	6	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	6	6	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	7	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	7	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	7	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	7	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	7	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	7	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	7	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	7	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	7	6	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	7	7	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	8	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	8	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	8	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	8	1	1	001	002	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Water_Heat	8	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	8	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	8	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	8	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	8	6	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	8	7	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	8	8	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	6	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	7	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	8	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	9	9	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	6	1	001	002	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Water_Heat	10	7	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	8	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	9	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	10	10	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	6	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	7	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	8	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	9	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	10	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	11	11	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	6	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	7	1	001	002	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Water_Heat	12	8	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	9	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	10	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	11	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	12	12	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	6	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	7	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	8	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	9	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	10	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	11	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	12	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	13	13	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	4	1	001	002	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Water_Heat	14	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	6	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	7	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	8	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	9	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	10	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	11	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	12	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	13	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	14	14	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	-2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	-1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	0	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	1	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	2	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	3	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	4	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	5	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	6	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	7	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	8	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	9	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	10	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	11	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	12	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	13	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	14	1	001	002	002
Residential	MF2_2_TO_4_Units	Water_Heat	15	15	1	001	002	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Cooking	0	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	0	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	0	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	1	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	1	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	1	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	1	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	2	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	2	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	2	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	2	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	2	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	3	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	3	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	3	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	3	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	3	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	3	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	4	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	4	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	4	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	4	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	4	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	4	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	4	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	5	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	5	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	5	0	1	001	002	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Cooking	5	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	5	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	5	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	5	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	5	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	6	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	6	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	6	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	6	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	6	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	6	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	6	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	6	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	6	6	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	7	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	7	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	7	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	7	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	7	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	7	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	7	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	7	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	7	6	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	7	7	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	8	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	8	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	8	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	8	1	1	001	002	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Cooking	8	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	8	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	8	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	8	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	8	6	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	8	7	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	8	8	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	6	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	7	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	8	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	9	9	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	6	1	001	002	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Cooking	10	7	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	8	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	9	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	10	10	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	6	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	7	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	8	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	9	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	10	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	11	11	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	6	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	7	1	001	002	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Cooking	12	8	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	9	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	10	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	11	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	12	12	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	6	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	7	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	8	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	9	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	10	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	11	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	12	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	13	13	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	4	1	001	002	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Cooking	14	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	6	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	7	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	8	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	9	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	10	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	11	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	12	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	13	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	14	14	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	-2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	-1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	0	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	1	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	2	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	3	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	4	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	5	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	6	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	7	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	8	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	9	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	10	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	11	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	12	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	13	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	14	1	001	002	003
Residential	MF2_2_TO_4_Units	Cooking	15	15	1	001	002	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Drying	0	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	0	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	0	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	1	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	1	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	1	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	1	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	2	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	2	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	2	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	2	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	2	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	3	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	3	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	3	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	3	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	3	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	3	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	4	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	4	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	4	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	4	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	4	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	4	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	4	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	5	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	5	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	5	0	0.72167	001	002	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Drying	5	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	5	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	5	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	5	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	5	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	6	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	6	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	6	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	6	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	6	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	6	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	6	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	6	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	6	6	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	7	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	7	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	7	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	7	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	7	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	7	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	7	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	7	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	7	6	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	7	7	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	8	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	8	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	8	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	8	1	0.72167	001	002	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Drying	8	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	8	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	8	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	8	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	8	6	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	8	7	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	8	8	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	6	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	7	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	8	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	9	9	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	6	0.72167	001	002	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Drying	10	7	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	8	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	9	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	10	10	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	6	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	7	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	8	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	9	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	10	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	11	11	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	6	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	7	0.72167	001	002	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Drying	12	8	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	9	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	10	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	11	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	12	12	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	6	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	7	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	8	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	9	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	10	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	11	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	12	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	13	13	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	4	0.72167	001	002	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Drying	14	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	6	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	7	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	8	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	9	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	10	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	11	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	12	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	13	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	14	14	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	-2	0.655	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	-1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	0	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	1	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	2	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	3	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	4	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	5	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	6	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	7	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	8	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	9	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	10	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	11	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	12	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	13	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	14	0.72167	001	002	004
Residential	MF2_2_TO_4_Units	Drying	15	15	0.72167	001	002	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Barbecue	0	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	0	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	0	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	1	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	1	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	1	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	1	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	2	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	2	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	2	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	2	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	2	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	3	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	3	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	3	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	3	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	3	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	3	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	4	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	4	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	4	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	4	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	4	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	4	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	4	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	5	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	5	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	5	0	0.23758	001	002	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Barbecue	5	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	5	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	5	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	5	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	5	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	6	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	6	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	6	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	6	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	6	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	6	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	6	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	6	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	6	6	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	7	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	7	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	7	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	7	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	7	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	7	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	7	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	7	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	7	6	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	7	7	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	8	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	8	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	8	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	8	1	0.23758	001	002	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Barbecue	8	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	8	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	8	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	8	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	8	6	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	8	7	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	8	8	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	6	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	7	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	8	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	9	9	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	6	0.23758	001	002	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Barbecue	10	7	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	8	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	9	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	10	10	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	6	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	7	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	8	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	9	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	10	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	11	11	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	6	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	7	0.23758	001	002	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Barbecue	12	8	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	9	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	10	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	11	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	12	12	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	6	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	7	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	8	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	9	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	10	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	11	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	12	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	13	13	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	4	0.23758	001	002	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Barbecue	14	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	6	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	7	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	8	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	9	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	10	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	11	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	12	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	13	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	14	14	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	-2	0.18312	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	-1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	0	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	1	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	2	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	3	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	4	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	5	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	6	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	7	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	8	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	9	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	10	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	11	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	12	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	13	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	14	0.23758	001	002	008
Residential	MF2_2_TO_4_Units	Barbecue	15	15	0.23758	001	002	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Other	0	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	0	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	0	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	1	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	1	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	1	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	1	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	2	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	2	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	2	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	2	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	2	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	3	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	3	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	3	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	3	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	3	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	3	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	4	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	4	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	4	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	4	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	4	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	4	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	4	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	5	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	5	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	5	0	1	001	002	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Other	5	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	5	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	5	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	5	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	5	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	6	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	6	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	6	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	6	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	6	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	6	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	6	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	6	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	6	6	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	7	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	7	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	7	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	7	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	7	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	7	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	7	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	7	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	7	6	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	7	7	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	8	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	8	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	8	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	8	1	1	001	002	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Other	8	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	8	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	8	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	8	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	8	6	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	8	7	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	8	8	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	6	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	7	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	8	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	9	9	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	6	1	001	002	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Other	10	7	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	8	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	9	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	10	10	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	6	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	7	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	8	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	9	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	10	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	11	11	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	6	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	7	1	001	002	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Other	12	8	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	9	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	10	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	11	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	12	12	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	6	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	7	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	8	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	9	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	10	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	11	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	12	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	13	13	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	4	1	001	002	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF2_2_TO_4_Units	Other	14	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	6	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	7	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	8	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	9	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	10	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	11	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	12	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	13	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	14	14	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	-2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	-1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	0	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	1	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	2	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	3	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	4	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	5	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	6	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	7	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	8	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	9	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	10	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	11	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	12	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	13	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	14	1	001	002	009
Residential	MF2_2_TO_4_Units	Other	15	15	1	001	002	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Space_Heat	0	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	0	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	0	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	1	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	1	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	1	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	1	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	2	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	2	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	2	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	2	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	2	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	3	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	3	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	3	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	3	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	3	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	3	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	4	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	4	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	4	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	4	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	4	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	4	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	4	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	5	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	5	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	5	0	1	001	003	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Space_Heat	5	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	5	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	5	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	5	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	5	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	6	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	6	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	6	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	6	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	6	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	6	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	6	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	6	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	6	6	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	7	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	7	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	7	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	7	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	7	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	7	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	7	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	7	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	7	6	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	7	7	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	8	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	8	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	8	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	8	1	1	001	003	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Space_Heat	8	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	8	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	8	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	8	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	8	6	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	8	7	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	8	8	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	6	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	7	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	8	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	9	9	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	6	1	001	003	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Space_Heat	10	7	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	8	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	9	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	10	10	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	6	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	7	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	8	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	9	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	10	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	11	11	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	6	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	7	1	001	003	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Space_Heat	12	8	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	9	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	10	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	11	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	12	12	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	6	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	7	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	8	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	9	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	10	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	11	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	12	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	13	13	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	4	1	001	003	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Space_Heat	14	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	6	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	7	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	8	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	9	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	10	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	11	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	12	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	13	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	14	14	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	-2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	-1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	0	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	1	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	2	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	3	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	4	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	5	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	6	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	7	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	8	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	9	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	10	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	11	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	12	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	13	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	14	1	001	003	001
Residential	MF3_GE_5_Units	Space_Heat	15	15	1	001	003	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Water_Heat	0	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	0	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	0	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	1	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	1	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	1	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	1	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	2	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	2	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	2	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	2	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	2	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	3	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	3	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	3	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	3	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	3	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	3	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	4	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	4	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	4	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	4	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	4	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	4	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	4	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	5	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	5	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	5	0	1	001	003	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Water_Heat	5	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	5	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	5	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	5	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	5	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	6	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	6	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	6	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	6	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	6	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	6	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	6	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	6	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	6	6	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	7	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	7	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	7	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	7	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	7	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	7	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	7	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	7	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	7	6	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	7	7	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	8	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	8	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	8	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	8	1	1	001	003	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Water_Heat	8	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	8	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	8	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	8	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	8	6	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	8	7	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	8	8	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	6	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	7	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	8	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	9	9	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	6	1	001	003	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Water_Heat	10	7	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	8	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	9	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	10	10	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	6	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	7	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	8	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	9	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	10	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	11	11	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	6	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	7	1	001	003	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Water_Heat	12	8	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	9	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	10	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	11	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	12	12	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	6	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	7	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	8	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	9	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	10	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	11	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	12	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	13	13	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	4	1	001	003	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Water_Heat	14	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	6	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	7	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	8	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	9	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	10	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	11	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	12	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	13	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	14	14	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	-2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	-1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	0	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	1	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	2	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	3	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	4	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	5	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	6	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	7	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	8	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	9	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	10	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	11	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	12	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	13	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	14	1	001	003	002
Residential	MF3_GE_5_Units	Water_Heat	15	15	1	001	003	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Cooking	0	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	0	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	0	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	1	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	1	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	1	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	1	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	2	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	2	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	2	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	2	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	2	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	3	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	3	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	3	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	3	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	3	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	3	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	4	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	4	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	4	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	4	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	4	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	4	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	4	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	5	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	5	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	5	0	1	001	003	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Cooking	5	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	5	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	5	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	5	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	5	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	6	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	6	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	6	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	6	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	6	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	6	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	6	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	6	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	6	6	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	7	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	7	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	7	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	7	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	7	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	7	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	7	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	7	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	7	6	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	7	7	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	8	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	8	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	8	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	8	1	1	001	003	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Cooking	8	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	8	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	8	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	8	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	8	6	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	8	7	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	8	8	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	6	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	7	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	8	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	9	9	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	6	1	001	003	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Cooking	10	7	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	8	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	9	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	10	10	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	6	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	7	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	8	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	9	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	10	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	11	11	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	6	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	7	1	001	003	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Cooking	12	8	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	9	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	10	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	11	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	12	12	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	6	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	7	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	8	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	9	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	10	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	11	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	12	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	13	13	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	4	1	001	003	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Cooking	14	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	6	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	7	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	8	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	9	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	10	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	11	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	12	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	13	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	14	14	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	-2	0.99633	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	-1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	0	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	1	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	2	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	3	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	4	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	5	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	6	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	7	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	8	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	9	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	10	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	11	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	12	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	13	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	14	1	001	003	003
Residential	MF3_GE_5_Units	Cooking	15	15	1	001	003	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Drying	0	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	0	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	0	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	1	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	1	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	1	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	1	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	2	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	2	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	2	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	2	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	2	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	3	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	3	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	3	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	3	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	3	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	3	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	4	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	4	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	4	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	4	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	4	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	4	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	4	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	5	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	5	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	5	0	0.47509	001	003	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Drying	5	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	5	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	5	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	5	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	5	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	6	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	6	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	6	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	6	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	6	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	6	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	6	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	6	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	6	6	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	7	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	7	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	7	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	7	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	7	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	7	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	7	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	7	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	7	6	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	7	7	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	8	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	8	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	8	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	8	1	0.47509	001	003	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Drying	8	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	8	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	8	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	8	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	8	6	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	8	7	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	8	8	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	9	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	6	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	7	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	8	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	9	9	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	10	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	6	0.47509	001	003	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Drying	10	7	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	8	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	9	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	10	10	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	11	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	6	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	7	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	8	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	9	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	10	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	11	11	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	12	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	6	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	7	0.47509	001	003	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Drying	12	8	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	9	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	10	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	11	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	12	12	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	13	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	6	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	7	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	8	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	9	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	10	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	11	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	12	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	13	13	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	14	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	4	0.47509	001	003	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Drying	14	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	6	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	7	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	8	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	9	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	10	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	11	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	12	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	13	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	14	14	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	-2	0.34537	001	003	004
Residential	MF3_GE_5_Units	Drying	15	-1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	0	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	1	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	2	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	3	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	4	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	5	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	6	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	7	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	8	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	9	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	10	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	11	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	12	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	13	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	14	0.47509	001	003	004
Residential	MF3_GE_5_Units	Drying	15	15	0.47509	001	003	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Barbecue	0	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	0	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	0	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	1	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	1	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	1	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	1	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	2	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	2	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	2	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	2	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	2	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	3	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	3	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	3	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	3	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	3	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	3	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	4	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	4	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	4	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	4	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	4	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	4	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	4	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	5	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	5	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	5	0	0.13616	001	003	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Barbecue	5	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	5	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	5	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	5	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	5	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	6	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	6	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	6	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	6	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	6	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	6	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	6	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	6	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	6	6	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	7	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	7	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	7	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	7	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	7	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	7	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	7	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	7	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	7	6	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	7	7	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	8	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	8	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	8	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	8	1	0.13616	001	003	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Barbecue	8	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	8	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	8	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	8	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	8	6	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	8	7	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	8	8	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	6	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	7	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	8	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	9	9	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	6	0.13616	001	003	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Barbecue	10	7	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	8	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	9	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	10	10	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	6	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	7	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	8	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	9	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	10	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	11	11	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	6	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	7	0.13616	001	003	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Barbecue	12	8	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	9	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	10	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	11	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	12	12	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	6	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	7	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	8	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	9	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	10	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	11	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	12	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	13	13	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	4	0.13616	001	003	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Barbecue	14	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	6	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	7	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	8	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	9	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	10	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	11	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	12	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	13	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	14	14	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	-2	0.10879	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	-1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	0	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	1	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	2	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	3	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	4	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	5	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	6	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	7	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	8	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	9	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	10	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	11	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	12	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	13	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	14	0.13616	001	003	008
Residential	MF3_GE_5_Units	Barbecue	15	15	0.13616	001	003	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Other	0	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	0	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	0	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	1	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	1	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	1	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	1	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	2	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	2	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	2	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	2	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	2	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	3	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	3	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	3	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	3	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	3	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	3	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	4	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	4	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	4	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	4	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	4	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	4	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	4	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	5	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	5	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	5	0	1	001	003	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Other	5	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	5	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	5	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	5	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	5	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	6	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	6	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	6	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	6	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	6	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	6	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	6	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	6	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	6	6	1	001	003	009
Residential	MF3_GE_5_Units	Other	7	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	7	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	7	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	7	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	7	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	7	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	7	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	7	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	7	6	1	001	003	009
Residential	MF3_GE_5_Units	Other	7	7	1	001	003	009
Residential	MF3_GE_5_Units	Other	8	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	8	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	8	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	8	1	1	001	003	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Other	8	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	8	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	8	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	8	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	8	6	1	001	003	009
Residential	MF3_GE_5_Units	Other	8	7	1	001	003	009
Residential	MF3_GE_5_Units	Other	8	8	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	6	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	7	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	8	1	001	003	009
Residential	MF3_GE_5_Units	Other	9	9	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	6	1	001	003	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Other	10	7	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	8	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	9	1	001	003	009
Residential	MF3_GE_5_Units	Other	10	10	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	6	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	7	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	8	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	9	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	10	1	001	003	009
Residential	MF3_GE_5_Units	Other	11	11	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	6	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	7	1	001	003	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Other	12	8	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	9	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	10	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	11	1	001	003	009
Residential	MF3_GE_5_Units	Other	12	12	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	6	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	7	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	8	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	9	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	10	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	11	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	12	1	001	003	009
Residential	MF3_GE_5_Units	Other	13	13	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	4	1	001	003	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MF3_GE_5_Units	Other	14	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	6	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	7	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	8	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	9	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	10	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	11	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	12	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	13	1	001	003	009
Residential	MF3_GE_5_Units	Other	14	14	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	-2	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	-1	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	0	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	1	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	2	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	3	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	4	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	5	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	6	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	7	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	8	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	9	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	10	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	11	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	12	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	13	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	14	1	001	003	009
Residential	MF3_GE_5_Units	Other	15	15	1	001	003	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Space_Heat	0	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	0	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	0	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	1	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	1	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	1	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	1	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	2	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	2	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	2	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	2	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	2	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	3	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	3	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	3	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	3	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	3	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	3	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	4	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	4	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	4	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	4	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	4	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	4	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	4	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	5	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	5	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	5	0	1	001	004	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Space_Heat	5	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	5	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	5	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	5	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	5	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	6	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	6	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	6	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	6	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	6	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	6	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	6	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	6	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	6	6	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	7	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	7	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	7	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	7	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	7	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	7	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	7	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	7	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	7	6	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	7	7	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	8	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	8	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	8	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	8	1	1	001	004	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Space_Heat	8	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	8	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	8	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	8	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	8	6	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	8	7	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	8	8	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	6	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	7	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	8	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	9	9	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	6	1	001	004	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Space_Heat	10	7	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	8	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	9	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	10	10	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	6	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	7	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	8	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	9	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	10	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	11	11	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	6	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	7	1	001	004	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Space_Heat	12	8	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	9	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	10	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	11	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	12	12	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	6	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	7	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	8	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	9	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	10	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	11	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	12	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	13	13	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	4	1	001	004	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Space_Heat	14	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	6	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	7	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	8	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	9	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	10	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	11	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	12	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	13	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	14	14	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	-2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	-1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	0	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	1	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	2	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	3	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	4	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	5	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	6	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	7	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	8	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	9	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	10	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	11	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	12	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	13	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	14	1	001	004	001
Residential	MM_Master_Meter	Space_Heat	15	15	1	001	004	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Water_Heat	0	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	0	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	0	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	1	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	1	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	1	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	1	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	2	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	2	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	2	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	2	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	2	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	3	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	3	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	3	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	3	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	3	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	3	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	4	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	4	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	4	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	4	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	4	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	4	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	4	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	5	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	5	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	5	0	1	001	004	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Water_Heat	5	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	5	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	5	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	5	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	5	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	6	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	6	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	6	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	6	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	6	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	6	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	6	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	6	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	6	6	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	7	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	7	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	7	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	7	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	7	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	7	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	7	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	7	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	7	6	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	7	7	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	8	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	8	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	8	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	8	1	1	001	004	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Water_Heat	8	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	8	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	8	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	8	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	8	6	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	8	7	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	8	8	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	6	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	7	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	8	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	9	9	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	6	1	001	004	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Water_Heat	10	7	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	8	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	9	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	10	10	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	6	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	7	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	8	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	9	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	10	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	11	11	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	6	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	7	1	001	004	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Water_Heat	12	8	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	9	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	10	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	11	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	12	12	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	6	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	7	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	8	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	9	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	10	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	11	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	12	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	13	13	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	4	1	001	004	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Water_Heat	14	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	6	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	7	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	8	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	9	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	10	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	11	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	12	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	13	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	14	14	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	-2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	-1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	0	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	1	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	2	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	3	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	4	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	5	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	6	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	7	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	8	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	9	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	10	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	11	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	12	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	13	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	14	1	001	004	002
Residential	MM_Master_Meter	Water_Heat	15	15	1	001	004	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Cooking	0	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	0	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	0	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	1	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	1	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	1	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	1	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	2	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	2	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	2	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	2	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	2	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	3	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	3	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	3	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	3	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	3	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	3	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	4	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	4	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	4	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	4	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	4	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	4	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	4	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	5	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	5	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	5	0	1	001	004	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Cooking	5	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	5	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	5	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	5	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	5	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	6	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	6	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	6	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	6	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	6	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	6	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	6	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	6	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	6	6	1	001	004	003
Residential	MM_Master_Meter	Cooking	7	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	7	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	7	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	7	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	7	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	7	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	7	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	7	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	7	6	1	001	004	003
Residential	MM_Master_Meter	Cooking	7	7	1	001	004	003
Residential	MM_Master_Meter	Cooking	8	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	8	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	8	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	8	1	1	001	004	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Cooking	8	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	8	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	8	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	8	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	8	6	1	001	004	003
Residential	MM_Master_Meter	Cooking	8	7	1	001	004	003
Residential	MM_Master_Meter	Cooking	8	8	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	6	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	7	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	8	1	001	004	003
Residential	MM_Master_Meter	Cooking	9	9	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	6	1	001	004	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Cooking	10	7	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	8	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	9	1	001	004	003
Residential	MM_Master_Meter	Cooking	10	10	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	6	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	7	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	8	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	9	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	10	1	001	004	003
Residential	MM_Master_Meter	Cooking	11	11	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	6	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	7	1	001	004	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Cooking	12	8	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	9	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	10	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	11	1	001	004	003
Residential	MM_Master_Meter	Cooking	12	12	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	6	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	7	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	8	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	9	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	10	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	11	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	12	1	001	004	003
Residential	MM_Master_Meter	Cooking	13	13	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	4	1	001	004	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Cooking	14	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	6	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	7	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	8	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	9	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	10	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	11	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	12	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	13	1	001	004	003
Residential	MM_Master_Meter	Cooking	14	14	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	-2	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	-1	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	0	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	1	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	2	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	3	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	4	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	5	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	6	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	7	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	8	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	9	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	10	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	11	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	12	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	13	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	14	1	001	004	003
Residential	MM_Master_Meter	Cooking	15	15	1	001	004	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Drying	0	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	0	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	0	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	1	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	1	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	1	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	1	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	2	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	2	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	2	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	2	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	2	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	3	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	3	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	3	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	3	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	3	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	3	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	4	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	4	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	4	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	4	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	4	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	4	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	4	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	5	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	5	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	5	0	0.57182	001	004	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Drying	5	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	5	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	5	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	5	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	5	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	6	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	6	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	6	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	6	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	6	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	6	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	6	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	6	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	6	6	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	7	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	7	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	7	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	7	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	7	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	7	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	7	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	7	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	7	6	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	7	7	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	8	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	8	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	8	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	8	1	0.57182	001	004	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Drying	8	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	8	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	8	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	8	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	8	6	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	8	7	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	8	8	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	9	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	6	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	7	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	8	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	9	9	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	10	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	6	0.57182	001	004	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Drying	10	7	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	8	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	9	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	10	10	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	11	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	6	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	7	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	8	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	9	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	10	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	11	11	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	12	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	6	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	7	0.57182	001	004	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Drying	12	8	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	9	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	10	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	11	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	12	12	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	13	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	6	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	7	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	8	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	9	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	10	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	11	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	12	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	13	13	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	14	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	4	0.57182	001	004	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Drying	14	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	6	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	7	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	8	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	9	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	10	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	11	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	12	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	13	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	14	14	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	-2	0.47158	001	004	004
Residential	MM_Master_Meter	Drying	15	-1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	0	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	1	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	2	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	3	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	4	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	5	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	6	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	7	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	8	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	9	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	10	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	11	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	12	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	13	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	14	0.57182	001	004	004
Residential	MM_Master_Meter	Drying	15	15	0.57182	001	004	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Barbecue	0	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	0	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	0	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	1	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	1	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	1	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	1	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	2	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	2	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	2	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	2	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	2	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	3	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	3	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	3	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	3	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	3	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	3	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	4	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	4	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	4	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	4	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	4	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	4	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	4	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	5	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	5	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	5	0	0.10179	001	004	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Barbecue	5	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	5	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	5	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	5	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	5	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	6	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	6	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	6	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	6	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	6	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	6	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	6	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	6	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	6	6	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	7	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	7	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	7	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	7	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	7	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	7	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	7	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	7	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	7	6	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	7	7	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	8	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	8	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	8	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	8	1	0.10179	001	004	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Barbecue	8	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	8	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	8	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	8	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	8	6	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	8	7	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	8	8	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	9	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	6	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	7	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	8	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	9	9	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	10	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	6	0.10179	001	004	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Barbecue	10	7	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	8	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	9	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	10	10	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	11	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	6	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	7	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	8	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	9	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	10	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	11	11	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	12	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	6	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	7	0.10179	001	004	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Barbecue	12	8	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	9	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	10	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	11	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	12	12	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	13	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	6	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	7	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	8	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	9	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	10	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	11	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	12	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	13	13	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	14	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	4	0.10179	001	004	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Barbecue	14	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	6	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	7	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	8	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	9	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	10	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	11	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	12	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	13	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	14	14	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	-2	0.07424	001	004	008
Residential	MM_Master_Meter	Barbecue	15	-1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	0	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	1	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	2	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	3	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	4	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	5	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	6	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	7	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	8	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	9	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	10	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	11	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	12	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	13	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	14	0.10179	001	004	008
Residential	MM_Master_Meter	Barbecue	15	15	0.10179	001	004	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Other	0	-2	1	001	004	009
Residential	MM_Master_Meter	Other	0	-1	1	001	004	009
Residential	MM_Master_Meter	Other	0	0	1	001	004	009
Residential	MM_Master_Meter	Other	1	-2	1	001	004	009
Residential	MM_Master_Meter	Other	1	-1	1	001	004	009
Residential	MM_Master_Meter	Other	1	0	1	001	004	009
Residential	MM_Master_Meter	Other	1	1	1	001	004	009
Residential	MM_Master_Meter	Other	2	-2	1	001	004	009
Residential	MM_Master_Meter	Other	2	-1	1	001	004	009
Residential	MM_Master_Meter	Other	2	0	1	001	004	009
Residential	MM_Master_Meter	Other	2	1	1	001	004	009
Residential	MM_Master_Meter	Other	2	2	1	001	004	009
Residential	MM_Master_Meter	Other	3	-2	1	001	004	009
Residential	MM_Master_Meter	Other	3	-1	1	001	004	009
Residential	MM_Master_Meter	Other	3	0	1	001	004	009
Residential	MM_Master_Meter	Other	3	1	1	001	004	009
Residential	MM_Master_Meter	Other	3	2	1	001	004	009
Residential	MM_Master_Meter	Other	3	3	1	001	004	009
Residential	MM_Master_Meter	Other	4	-2	1	001	004	009
Residential	MM_Master_Meter	Other	4	-1	1	001	004	009
Residential	MM_Master_Meter	Other	4	0	1	001	004	009
Residential	MM_Master_Meter	Other	4	1	1	001	004	009
Residential	MM_Master_Meter	Other	4	2	1	001	004	009
Residential	MM_Master_Meter	Other	4	3	1	001	004	009
Residential	MM_Master_Meter	Other	4	4	1	001	004	009
Residential	MM_Master_Meter	Other	5	-2	1	001	004	009
Residential	MM_Master_Meter	Other	5	-1	1	001	004	009
Residential	MM_Master_Meter	Other	5	0	1	001	004	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Other	5	1	1	001	004	009
Residential	MM_Master_Meter	Other	5	2	1	001	004	009
Residential	MM_Master_Meter	Other	5	3	1	001	004	009
Residential	MM_Master_Meter	Other	5	4	1	001	004	009
Residential	MM_Master_Meter	Other	5	5	1	001	004	009
Residential	MM_Master_Meter	Other	6	-2	1	001	004	009
Residential	MM_Master_Meter	Other	6	-1	1	001	004	009
Residential	MM_Master_Meter	Other	6	0	1	001	004	009
Residential	MM_Master_Meter	Other	6	1	1	001	004	009
Residential	MM_Master_Meter	Other	6	2	1	001	004	009
Residential	MM_Master_Meter	Other	6	3	1	001	004	009
Residential	MM_Master_Meter	Other	6	4	1	001	004	009
Residential	MM_Master_Meter	Other	6	5	1	001	004	009
Residential	MM_Master_Meter	Other	6	6	1	001	004	009
Residential	MM_Master_Meter	Other	7	-2	1	001	004	009
Residential	MM_Master_Meter	Other	7	-1	1	001	004	009
Residential	MM_Master_Meter	Other	7	0	1	001	004	009
Residential	MM_Master_Meter	Other	7	1	1	001	004	009
Residential	MM_Master_Meter	Other	7	2	1	001	004	009
Residential	MM_Master_Meter	Other	7	3	1	001	004	009
Residential	MM_Master_Meter	Other	7	4	1	001	004	009
Residential	MM_Master_Meter	Other	7	5	1	001	004	009
Residential	MM_Master_Meter	Other	7	6	1	001	004	009
Residential	MM_Master_Meter	Other	7	7	1	001	004	009
Residential	MM_Master_Meter	Other	8	-2	1	001	004	009
Residential	MM_Master_Meter	Other	8	-1	1	001	004	009
Residential	MM_Master_Meter	Other	8	0	1	001	004	009
Residential	MM_Master_Meter	Other	8	1	1	001	004	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Other	8	2	1	001	004	009
Residential	MM_Master_Meter	Other	8	3	1	001	004	009
Residential	MM_Master_Meter	Other	8	4	1	001	004	009
Residential	MM_Master_Meter	Other	8	5	1	001	004	009
Residential	MM_Master_Meter	Other	8	6	1	001	004	009
Residential	MM_Master_Meter	Other	8	7	1	001	004	009
Residential	MM_Master_Meter	Other	8	8	1	001	004	009
Residential	MM_Master_Meter	Other	9	-2	1	001	004	009
Residential	MM_Master_Meter	Other	9	-1	1	001	004	009
Residential	MM_Master_Meter	Other	9	0	1	001	004	009
Residential	MM_Master_Meter	Other	9	1	1	001	004	009
Residential	MM_Master_Meter	Other	9	2	1	001	004	009
Residential	MM_Master_Meter	Other	9	3	1	001	004	009
Residential	MM_Master_Meter	Other	9	4	1	001	004	009
Residential	MM_Master_Meter	Other	9	5	1	001	004	009
Residential	MM_Master_Meter	Other	9	6	1	001	004	009
Residential	MM_Master_Meter	Other	9	7	1	001	004	009
Residential	MM_Master_Meter	Other	9	8	1	001	004	009
Residential	MM_Master_Meter	Other	9	9	1	001	004	009
Residential	MM_Master_Meter	Other	10	-2	1	001	004	009
Residential	MM_Master_Meter	Other	10	-1	1	001	004	009
Residential	MM_Master_Meter	Other	10	0	1	001	004	009
Residential	MM_Master_Meter	Other	10	1	1	001	004	009
Residential	MM_Master_Meter	Other	10	2	1	001	004	009
Residential	MM_Master_Meter	Other	10	3	1	001	004	009
Residential	MM_Master_Meter	Other	10	4	1	001	004	009
Residential	MM_Master_Meter	Other	10	5	1	001	004	009
Residential	MM_Master_Meter	Other	10	6	1	001	004	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Other	10	7	1	001	004	009
Residential	MM_Master_Meter	Other	10	8	1	001	004	009
Residential	MM_Master_Meter	Other	10	9	1	001	004	009
Residential	MM_Master_Meter	Other	10	10	1	001	004	009
Residential	MM_Master_Meter	Other	11	-2	1	001	004	009
Residential	MM_Master_Meter	Other	11	-1	1	001	004	009
Residential	MM_Master_Meter	Other	11	0	1	001	004	009
Residential	MM_Master_Meter	Other	11	1	1	001	004	009
Residential	MM_Master_Meter	Other	11	2	1	001	004	009
Residential	MM_Master_Meter	Other	11	3	1	001	004	009
Residential	MM_Master_Meter	Other	11	4	1	001	004	009
Residential	MM_Master_Meter	Other	11	5	1	001	004	009
Residential	MM_Master_Meter	Other	11	6	1	001	004	009
Residential	MM_Master_Meter	Other	11	7	1	001	004	009
Residential	MM_Master_Meter	Other	11	8	1	001	004	009
Residential	MM_Master_Meter	Other	11	9	1	001	004	009
Residential	MM_Master_Meter	Other	11	10	1	001	004	009
Residential	MM_Master_Meter	Other	11	11	1	001	004	009
Residential	MM_Master_Meter	Other	12	-2	1	001	004	009
Residential	MM_Master_Meter	Other	12	-1	1	001	004	009
Residential	MM_Master_Meter	Other	12	0	1	001	004	009
Residential	MM_Master_Meter	Other	12	1	1	001	004	009
Residential	MM_Master_Meter	Other	12	2	1	001	004	009
Residential	MM_Master_Meter	Other	12	3	1	001	004	009
Residential	MM_Master_Meter	Other	12	4	1	001	004	009
Residential	MM_Master_Meter	Other	12	5	1	001	004	009
Residential	MM_Master_Meter	Other	12	6	1	001	004	009
Residential	MM_Master_Meter	Other	12	7	1	001	004	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Other	12	8	1	001	004	009
Residential	MM_Master_Meter	Other	12	9	1	001	004	009
Residential	MM_Master_Meter	Other	12	10	1	001	004	009
Residential	MM_Master_Meter	Other	12	11	1	001	004	009
Residential	MM_Master_Meter	Other	12	12	1	001	004	009
Residential	MM_Master_Meter	Other	13	-2	1	001	004	009
Residential	MM_Master_Meter	Other	13	-1	1	001	004	009
Residential	MM_Master_Meter	Other	13	0	1	001	004	009
Residential	MM_Master_Meter	Other	13	1	1	001	004	009
Residential	MM_Master_Meter	Other	13	2	1	001	004	009
Residential	MM_Master_Meter	Other	13	3	1	001	004	009
Residential	MM_Master_Meter	Other	13	4	1	001	004	009
Residential	MM_Master_Meter	Other	13	5	1	001	004	009
Residential	MM_Master_Meter	Other	13	6	1	001	004	009
Residential	MM_Master_Meter	Other	13	7	1	001	004	009
Residential	MM_Master_Meter	Other	13	8	1	001	004	009
Residential	MM_Master_Meter	Other	13	9	1	001	004	009
Residential	MM_Master_Meter	Other	13	10	1	001	004	009
Residential	MM_Master_Meter	Other	13	11	1	001	004	009
Residential	MM_Master_Meter	Other	13	12	1	001	004	009
Residential	MM_Master_Meter	Other	13	13	1	001	004	009
Residential	MM_Master_Meter	Other	14	-2	1	001	004	009
Residential	MM_Master_Meter	Other	14	-1	1	001	004	009
Residential	MM_Master_Meter	Other	14	0	1	001	004	009
Residential	MM_Master_Meter	Other	14	1	1	001	004	009
Residential	MM_Master_Meter	Other	14	2	1	001	004	009
Residential	MM_Master_Meter	Other	14	3	1	001	004	009
Residential	MM_Master_Meter	Other	14	4	1	001	004	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	MM_Master_Meter	Other	14	5	1	001	004	009
Residential	MM_Master_Meter	Other	14	6	1	001	004	009
Residential	MM_Master_Meter	Other	14	7	1	001	004	009
Residential	MM_Master_Meter	Other	14	8	1	001	004	009
Residential	MM_Master_Meter	Other	14	9	1	001	004	009
Residential	MM_Master_Meter	Other	14	10	1	001	004	009
Residential	MM_Master_Meter	Other	14	11	1	001	004	009
Residential	MM_Master_Meter	Other	14	12	1	001	004	009
Residential	MM_Master_Meter	Other	14	13	1	001	004	009
Residential	MM_Master_Meter	Other	14	14	1	001	004	009
Residential	MM_Master_Meter	Other	15	-2	1	001	004	009
Residential	MM_Master_Meter	Other	15	-1	1	001	004	009
Residential	MM_Master_Meter	Other	15	0	1	001	004	009
Residential	MM_Master_Meter	Other	15	1	1	001	004	009
Residential	MM_Master_Meter	Other	15	2	1	001	004	009
Residential	MM_Master_Meter	Other	15	3	1	001	004	009
Residential	MM_Master_Meter	Other	15	4	1	001	004	009
Residential	MM_Master_Meter	Other	15	5	1	001	004	009
Residential	MM_Master_Meter	Other	15	6	1	001	004	009
Residential	MM_Master_Meter	Other	15	7	1	001	004	009
Residential	MM_Master_Meter	Other	15	8	1	001	004	009
Residential	MM_Master_Meter	Other	15	9	1	001	004	009
Residential	MM_Master_Meter	Other	15	10	1	001	004	009
Residential	MM_Master_Meter	Other	15	11	1	001	004	009
Residential	MM_Master_Meter	Other	15	12	1	001	004	009
Residential	MM_Master_Meter	Other	15	13	1	001	004	009
Residential	MM_Master_Meter	Other	15	14	1	001	004	009
Residential	MM_Master_Meter	Other	15	15	1	001	004	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Space_Heat	0	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	0	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	0	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	1	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	1	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	1	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	1	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	2	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	2	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	2	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	2	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	2	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	3	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	3	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	3	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	3	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	3	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	3	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	4	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	4	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	4	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	4	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	4	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	4	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	4	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	5	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	5	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	5	0	1	001	005	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Space_Heat	5	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	5	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	5	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	5	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	5	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	6	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	6	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	6	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	6	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	6	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	6	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	6	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	6	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	6	6	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	7	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	7	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	7	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	7	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	7	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	7	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	7	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	7	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	7	6	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	7	7	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	8	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	8	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	8	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	8	1	1	001	005	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Space_Heat	8	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	8	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	8	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	8	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	8	6	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	8	7	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	8	8	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	6	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	7	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	8	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	9	9	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	6	1	001	005	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Space_Heat	10	7	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	8	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	9	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	10	10	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	6	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	7	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	8	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	9	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	10	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	11	11	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	6	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	7	1	001	005	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Space_Heat	12	8	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	9	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	10	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	11	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	12	12	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	6	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	7	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	8	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	9	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	10	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	11	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	12	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	13	13	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	4	1	001	005	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Space_Heat	14	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	6	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	7	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	8	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	9	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	10	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	11	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	12	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	13	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	14	14	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	-2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	-1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	0	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	1	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	2	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	3	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	4	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	5	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	6	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	7	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	8	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	9	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	10	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	11	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	12	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	13	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	14	1	001	005	001
Residential	SM_Sub_Meter	Space_Heat	15	15	1	001	005	001

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Water_Heat	0	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	0	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	0	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	1	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	1	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	1	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	1	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	2	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	2	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	2	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	2	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	2	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	3	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	3	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	3	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	3	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	3	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	3	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	4	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	4	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	4	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	4	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	4	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	4	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	4	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	5	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	5	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	5	0	1	001	005	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Water_Heat	5	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	5	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	5	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	5	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	5	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	6	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	6	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	6	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	6	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	6	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	6	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	6	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	6	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	6	6	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	7	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	7	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	7	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	7	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	7	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	7	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	7	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	7	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	7	6	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	7	7	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	8	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	8	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	8	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	8	1	1	001	005	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Water_Heat	8	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	8	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	8	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	8	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	8	6	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	8	7	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	8	8	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	6	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	7	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	8	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	9	9	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	6	1	001	005	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Water_Heat	10	7	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	8	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	9	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	10	10	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	6	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	7	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	8	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	9	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	10	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	11	11	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	6	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	7	1	001	005	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Water_Heat	12	8	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	9	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	10	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	11	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	12	12	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	6	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	7	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	8	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	9	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	10	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	11	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	12	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	13	13	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	4	1	001	005	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Water_Heat	14	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	6	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	7	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	8	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	9	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	10	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	11	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	12	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	13	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	14	14	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	-2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	-1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	0	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	1	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	2	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	3	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	4	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	5	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	6	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	7	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	8	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	9	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	10	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	11	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	12	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	13	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	14	1	001	005	002
Residential	SM_Sub_Meter	Water_Heat	15	15	1	001	005	002

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Cooking	0	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	0	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	0	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	1	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	1	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	1	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	1	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	2	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	2	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	2	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	2	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	2	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	3	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	3	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	3	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	3	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	3	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	3	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	4	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	4	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	4	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	4	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	4	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	4	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	4	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	5	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	5	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	5	0	1	001	005	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Cooking	5	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	5	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	5	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	5	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	5	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	6	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	6	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	6	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	6	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	6	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	6	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	6	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	6	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	6	6	1	001	005	003
Residential	SM_Sub_Meter	Cooking	7	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	7	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	7	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	7	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	7	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	7	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	7	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	7	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	7	6	1	001	005	003
Residential	SM_Sub_Meter	Cooking	7	7	1	001	005	003
Residential	SM_Sub_Meter	Cooking	8	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	8	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	8	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	8	1	1	001	005	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Cooking	8	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	8	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	8	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	8	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	8	6	1	001	005	003
Residential	SM_Sub_Meter	Cooking	8	7	1	001	005	003
Residential	SM_Sub_Meter	Cooking	8	8	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	6	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	7	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	8	1	001	005	003
Residential	SM_Sub_Meter	Cooking	9	9	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	6	1	001	005	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Cooking	10	7	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	8	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	9	1	001	005	003
Residential	SM_Sub_Meter	Cooking	10	10	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	6	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	7	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	8	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	9	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	10	1	001	005	003
Residential	SM_Sub_Meter	Cooking	11	11	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	6	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	7	1	001	005	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Cooking	12	8	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	9	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	10	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	11	1	001	005	003
Residential	SM_Sub_Meter	Cooking	12	12	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	6	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	7	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	8	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	9	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	10	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	11	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	12	1	001	005	003
Residential	SM_Sub_Meter	Cooking	13	13	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	4	1	001	005	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Cooking	14	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	6	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	7	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	8	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	9	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	10	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	11	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	12	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	13	1	001	005	003
Residential	SM_Sub_Meter	Cooking	14	14	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	-2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	-1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	0	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	1	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	2	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	3	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	4	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	5	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	6	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	7	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	8	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	9	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	10	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	11	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	12	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	13	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	14	1	001	005	003
Residential	SM_Sub_Meter	Cooking	15	15	1	001	005	003

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Drying	0	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	0	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	0	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	1	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	1	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	1	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	1	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	2	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	2	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	2	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	2	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	2	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	3	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	3	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	3	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	3	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	3	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	3	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	4	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	4	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	4	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	4	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	4	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	4	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	4	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	5	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	5	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	5	0	0.57182	001	005	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Drying	5	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	5	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	5	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	5	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	5	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	6	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	6	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	6	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	6	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	6	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	6	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	6	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	6	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	6	6	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	7	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	7	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	7	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	7	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	7	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	7	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	7	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	7	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	7	6	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	7	7	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	8	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	8	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	8	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	8	1	0.57182	001	005	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Drying	8	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	8	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	8	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	8	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	8	6	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	8	7	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	8	8	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	9	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	6	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	7	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	8	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	9	9	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	10	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	6	0.57182	001	005	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Drying	10	7	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	8	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	9	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	10	10	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	11	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	6	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	7	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	8	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	9	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	10	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	11	11	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	12	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	6	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	7	0.57182	001	005	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Drying	12	8	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	9	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	10	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	11	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	12	12	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	13	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	6	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	7	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	8	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	9	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	10	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	11	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	12	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	13	13	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	14	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	4	0.57182	001	005	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Drying	14	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	6	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	7	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	8	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	9	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	10	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	11	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	12	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	13	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	14	14	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	-2	0.47158	001	005	004
Residential	SM_Sub_Meter	Drying	15	-1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	0	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	1	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	2	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	3	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	4	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	5	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	6	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	7	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	8	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	9	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	10	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	11	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	12	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	13	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	14	0.57182	001	005	004
Residential	SM_Sub_Meter	Drying	15	15	0.57182	001	005	004

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Barbecue	0	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	0	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	0	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	1	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	1	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	1	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	1	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	2	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	2	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	2	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	2	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	2	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	3	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	3	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	3	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	3	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	3	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	3	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	4	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	4	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	4	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	4	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	4	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	4	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	4	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	5	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	5	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	5	0	0.10179	001	005	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Barbecue	5	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	5	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	5	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	5	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	5	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	6	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	6	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	6	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	6	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	6	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	6	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	6	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	6	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	6	6	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	7	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	7	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	7	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	7	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	7	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	7	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	7	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	7	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	7	6	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	7	7	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	8	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	8	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	8	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	8	1	0.10179	001	005	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Barbecue	8	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	8	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	8	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	8	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	8	6	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	8	7	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	8	8	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	6	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	7	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	8	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	9	9	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	6	0.10179	001	005	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Barbecue	10	7	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	8	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	9	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	10	10	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	6	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	7	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	8	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	9	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	10	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	11	11	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	6	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	7	0.10179	001	005	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Barbecue	12	8	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	9	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	10	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	11	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	12	12	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	6	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	7	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	8	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	9	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	10	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	11	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	12	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	13	13	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	4	0.10179	001	005	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Barbecue	14	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	6	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	7	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	8	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	9	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	10	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	11	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	12	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	13	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	14	14	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	-2	0.07424	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	-1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	0	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	1	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	2	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	3	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	4	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	5	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	6	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	7	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	8	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	9	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	10	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	11	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	12	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	13	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	14	0.10179	001	005	008
Residential	SM_Sub_Meter	Barbecue	15	15	0.10179	001	005	008

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Other	0	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	0	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	0	0	1	001	005	009
Residential	SM_Sub_Meter	Other	1	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	1	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	1	0	1	001	005	009
Residential	SM_Sub_Meter	Other	1	1	1	001	005	009
Residential	SM_Sub_Meter	Other	2	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	2	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	2	0	1	001	005	009
Residential	SM_Sub_Meter	Other	2	1	1	001	005	009
Residential	SM_Sub_Meter	Other	2	2	1	001	005	009
Residential	SM_Sub_Meter	Other	3	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	3	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	3	0	1	001	005	009
Residential	SM_Sub_Meter	Other	3	1	1	001	005	009
Residential	SM_Sub_Meter	Other	3	2	1	001	005	009
Residential	SM_Sub_Meter	Other	3	3	1	001	005	009
Residential	SM_Sub_Meter	Other	4	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	4	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	4	0	1	001	005	009
Residential	SM_Sub_Meter	Other	4	1	1	001	005	009
Residential	SM_Sub_Meter	Other	4	2	1	001	005	009
Residential	SM_Sub_Meter	Other	4	3	1	001	005	009
Residential	SM_Sub_Meter	Other	4	4	1	001	005	009
Residential	SM_Sub_Meter	Other	5	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	5	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	5	0	1	001	005	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Other	5	1	1	001	005	009
Residential	SM_Sub_Meter	Other	5	2	1	001	005	009
Residential	SM_Sub_Meter	Other	5	3	1	001	005	009
Residential	SM_Sub_Meter	Other	5	4	1	001	005	009
Residential	SM_Sub_Meter	Other	5	5	1	001	005	009
Residential	SM_Sub_Meter	Other	6	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	6	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	6	0	1	001	005	009
Residential	SM_Sub_Meter	Other	6	1	1	001	005	009
Residential	SM_Sub_Meter	Other	6	2	1	001	005	009
Residential	SM_Sub_Meter	Other	6	3	1	001	005	009
Residential	SM_Sub_Meter	Other	6	4	1	001	005	009
Residential	SM_Sub_Meter	Other	6	5	1	001	005	009
Residential	SM_Sub_Meter	Other	6	6	1	001	005	009
Residential	SM_Sub_Meter	Other	7	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	7	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	7	0	1	001	005	009
Residential	SM_Sub_Meter	Other	7	1	1	001	005	009
Residential	SM_Sub_Meter	Other	7	2	1	001	005	009
Residential	SM_Sub_Meter	Other	7	3	1	001	005	009
Residential	SM_Sub_Meter	Other	7	4	1	001	005	009
Residential	SM_Sub_Meter	Other	7	5	1	001	005	009
Residential	SM_Sub_Meter	Other	7	6	1	001	005	009
Residential	SM_Sub_Meter	Other	7	7	1	001	005	009
Residential	SM_Sub_Meter	Other	8	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	8	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	8	0	1	001	005	009
Residential	SM_Sub_Meter	Other	8	1	1	001	005	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Other	8	2	1	001	005	009
Residential	SM_Sub_Meter	Other	8	3	1	001	005	009
Residential	SM_Sub_Meter	Other	8	4	1	001	005	009
Residential	SM_Sub_Meter	Other	8	5	1	001	005	009
Residential	SM_Sub_Meter	Other	8	6	1	001	005	009
Residential	SM_Sub_Meter	Other	8	7	1	001	005	009
Residential	SM_Sub_Meter	Other	8	8	1	001	005	009
Residential	SM_Sub_Meter	Other	9	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	9	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	9	0	1	001	005	009
Residential	SM_Sub_Meter	Other	9	1	1	001	005	009
Residential	SM_Sub_Meter	Other	9	2	1	001	005	009
Residential	SM_Sub_Meter	Other	9	3	1	001	005	009
Residential	SM_Sub_Meter	Other	9	4	1	001	005	009
Residential	SM_Sub_Meter	Other	9	5	1	001	005	009
Residential	SM_Sub_Meter	Other	9	6	1	001	005	009
Residential	SM_Sub_Meter	Other	9	7	1	001	005	009
Residential	SM_Sub_Meter	Other	9	8	1	001	005	009
Residential	SM_Sub_Meter	Other	9	9	1	001	005	009
Residential	SM_Sub_Meter	Other	10	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	10	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	10	0	1	001	005	009
Residential	SM_Sub_Meter	Other	10	1	1	001	005	009
Residential	SM_Sub_Meter	Other	10	2	1	001	005	009
Residential	SM_Sub_Meter	Other	10	3	1	001	005	009
Residential	SM_Sub_Meter	Other	10	4	1	001	005	009
Residential	SM_Sub_Meter	Other	10	5	1	001	005	009
Residential	SM_Sub_Meter	Other	10	6	1	001	005	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Other	10	7	1	001	005	009
Residential	SM_Sub_Meter	Other	10	8	1	001	005	009
Residential	SM_Sub_Meter	Other	10	9	1	001	005	009
Residential	SM_Sub_Meter	Other	10	10	1	001	005	009
Residential	SM_Sub_Meter	Other	11	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	11	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	11	0	1	001	005	009
Residential	SM_Sub_Meter	Other	11	1	1	001	005	009
Residential	SM_Sub_Meter	Other	11	2	1	001	005	009
Residential	SM_Sub_Meter	Other	11	3	1	001	005	009
Residential	SM_Sub_Meter	Other	11	4	1	001	005	009
Residential	SM_Sub_Meter	Other	11	5	1	001	005	009
Residential	SM_Sub_Meter	Other	11	6	1	001	005	009
Residential	SM_Sub_Meter	Other	11	7	1	001	005	009
Residential	SM_Sub_Meter	Other	11	8	1	001	005	009
Residential	SM_Sub_Meter	Other	11	9	1	001	005	009
Residential	SM_Sub_Meter	Other	11	10	1	001	005	009
Residential	SM_Sub_Meter	Other	11	11	1	001	005	009
Residential	SM_Sub_Meter	Other	12	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	12	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	12	0	1	001	005	009
Residential	SM_Sub_Meter	Other	12	1	1	001	005	009
Residential	SM_Sub_Meter	Other	12	2	1	001	005	009
Residential	SM_Sub_Meter	Other	12	3	1	001	005	009
Residential	SM_Sub_Meter	Other	12	4	1	001	005	009
Residential	SM_Sub_Meter	Other	12	5	1	001	005	009
Residential	SM_Sub_Meter	Other	12	6	1	001	005	009
Residential	SM_Sub_Meter	Other	12	7	1	001	005	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Other	12	8	1	001	005	009
Residential	SM_Sub_Meter	Other	12	9	1	001	005	009
Residential	SM_Sub_Meter	Other	12	10	1	001	005	009
Residential	SM_Sub_Meter	Other	12	11	1	001	005	009
Residential	SM_Sub_Meter	Other	12	12	1	001	005	009
Residential	SM_Sub_Meter	Other	13	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	13	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	13	0	1	001	005	009
Residential	SM_Sub_Meter	Other	13	1	1	001	005	009
Residential	SM_Sub_Meter	Other	13	2	1	001	005	009
Residential	SM_Sub_Meter	Other	13	3	1	001	005	009
Residential	SM_Sub_Meter	Other	13	4	1	001	005	009
Residential	SM_Sub_Meter	Other	13	5	1	001	005	009
Residential	SM_Sub_Meter	Other	13	6	1	001	005	009
Residential	SM_Sub_Meter	Other	13	7	1	001	005	009
Residential	SM_Sub_Meter	Other	13	8	1	001	005	009
Residential	SM_Sub_Meter	Other	13	9	1	001	005	009
Residential	SM_Sub_Meter	Other	13	10	1	001	005	009
Residential	SM_Sub_Meter	Other	13	11	1	001	005	009
Residential	SM_Sub_Meter	Other	13	12	1	001	005	009
Residential	SM_Sub_Meter	Other	13	13	1	001	005	009
Residential	SM_Sub_Meter	Other	14	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	14	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	14	0	1	001	005	009
Residential	SM_Sub_Meter	Other	14	1	1	001	005	009
Residential	SM_Sub_Meter	Other	14	2	1	001	005	009
Residential	SM_Sub_Meter	Other	14	3	1	001	005	009
Residential	SM_Sub_Meter	Other	14	4	1	001	005	009

zName	bName	nName	year	vintage	saturation	z	b	n
Residential	SM_Sub_Meter	Other	14	5	1	001	005	009
Residential	SM_Sub_Meter	Other	14	6	1	001	005	009
Residential	SM_Sub_Meter	Other	14	7	1	001	005	009
Residential	SM_Sub_Meter	Other	14	8	1	001	005	009
Residential	SM_Sub_Meter	Other	14	9	1	001	005	009
Residential	SM_Sub_Meter	Other	14	10	1	001	005	009
Residential	SM_Sub_Meter	Other	14	11	1	001	005	009
Residential	SM_Sub_Meter	Other	14	12	1	001	005	009
Residential	SM_Sub_Meter	Other	14	13	1	001	005	009
Residential	SM_Sub_Meter	Other	14	14	1	001	005	009
Residential	SM_Sub_Meter	Other	15	-2	1	001	005	009
Residential	SM_Sub_Meter	Other	15	-1	1	001	005	009
Residential	SM_Sub_Meter	Other	15	0	1	001	005	009
Residential	SM_Sub_Meter	Other	15	1	1	001	005	009
Residential	SM_Sub_Meter	Other	15	2	1	001	005	009
Residential	SM_Sub_Meter	Other	15	3	1	001	005	009
Residential	SM_Sub_Meter	Other	15	4	1	001	005	009
Residential	SM_Sub_Meter	Other	15	5	1	001	005	009
Residential	SM_Sub_Meter	Other	15	6	1	001	005	009
Residential	SM_Sub_Meter	Other	15	7	1	001	005	009
Residential	SM_Sub_Meter	Other	15	8	1	001	005	009
Residential	SM_Sub_Meter	Other	15	9	1	001	005	009
Residential	SM_Sub_Meter	Other	15	10	1	001	005	009
Residential	SM_Sub_Meter	Other	15	11	1	001	005	009
Residential	SM_Sub_Meter	Other	15	12	1	001	005	009
Residential	SM_Sub_Meter	Other	15	13	1	001	005	009
Residential	SM_Sub_Meter	Other	15	14	1	001	005	009
Residential	SM_Sub_Meter	Other	15	15	1	001	005	009

zName	bName	nName	year	vintage	saturation	z	b	n

zName	bName	nName	fName	z	b	n	f	baseAvgFShare	baseMargFShareExisting	baseMargFShareConversion
Residential	Single_Family	Space_Heat	Natural_Gas	001	001	001	1	0.97971	0.922753357	0.922753357
Residential	Single_Family	Space_Heat	Electric	001	001	001	2	0.02029	0.077246643	0.077246643
Residential	Single_Family	Water_Heat	Natural_Gas	001	001	002	1	0.97278	0.958312924	1
Residential	Single_Family	Water_Heat	Electric	001	001	002	2	0.02722	0.041687076	0
Residential	Single_Family	Cooking	Natural_Gas	001	001	003	1	0.81052	0.723421156	0.723421156
Residential	Single_Family	Cooking	Electric	001	001	003	2	0.18948	0.276578844	0.276578844
Residential	Single_Family	Drying	Natural_Gas	001	001	004	1	0.80524	0.760039071	0.760039071
Residential	Single_Family	Drying	Electric	001	001	004	2	0.19476	0.239960929	0.239960929
Residential	Single_Family	Pool	Natural_Gas	001	001	005	1	0.40874	0.808709672	0.808709672
Residential	Single_Family	Pool	Electric	001	001	005	2	0.59126	0.191290328	0.191290328
Residential	Single_Family	Spa	Natural_Gas	001	001	006	1	0.55756	0.535153293	0.535153293
Residential	Single_Family	Spa	Electric	001	001	006	2	0.44244	0.464846707	0.464846707
Residential	Single_Family	Fireplace	Natural_Gas	001	001	007	1	0.43101	0.581563136	0.581563136
Residential	Single_Family	Fireplace	Electric	001	001	007	2	0.56899	0.418436864	0.418436864
Residential	Single_Family	Barbecue	Natural_Gas	001	001	008	1	0.32633	0.233711209	0.233711209
Residential	Single_Family	Barbecue	Electric	001	001	008	2	0.67367	0.766288791	0.766288791
Residential	Single_Family	Other	Natural_Gas	001	001	009	1	1	1	1
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	001	002	001	1	0.94706	0.916761865	0.916761865
Residential	MF2_2_TO_4_Units	Space_Heat	Electric	001	002	001	2	0.05294	0.083238135	0.083238135
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	001	002	002	1	0.83919	0.963744862	1
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	001	002	002	2	0.16081	0.036255138	0
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	001	002	003	1	0.70497	0.768358086	0.768358086
Residential	MF2_2_TO_4_Units	Cooking	Electric	001	002	003	2	0.29503	0.231641914	0.231641914
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	001	002	004	1	0.68598	0.722859745	0.722859745
Residential	MF2_2_TO_4_Units	Drying	Electric	001	002	004	2	0.31402	0.277140255	0.277140255
Residential	MF2_2_TO_4_Units	Barbecue	Natural_Gas	001	002	008	1	0.27999	0.20207569	0.20207569
Residential	MF2_2_TO_4_Units	Barbecue	Electric	001	002	008	2	0.72001	0.79792431	0.79792431
Residential	MF2_2_TO_4_Units	Other	Natural_Gas	001	002	009	1	1	1	1

zName	bName	nName	fName	z	b	n	f	baseAvgFShare	baseMargFShareExisting	baseMargFShareConversion
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	001	003	001	1	0.84323	0.850991428	0.850991428
Residential	MF3_GE_5_Units	Space_Heat	Electric	001	003	001	2	0.15677	0.149008572	0.149008572
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	001	003	002	1	0.70918	0.902447158	1
Residential	MF3_GE_5_Units	Water_Heat	Electric	001	003	002	2	0.29082	0.097552842	0
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	001	003	003	1	0.81593	0.860093177	0.860093177
Residential	MF3_GE_5_Units	Cooking	Electric	001	003	003	2	0.18407	0.139906823	0.139906823
Residential	MF3_GE_5_Units	Drying	Natural_Gas	001	003	004	1	0.44673	0.664849831	0.664849831
Residential	MF3_GE_5_Units	Drying	Electric	001	003	004	2	0.55327	0.335150169	0.335150169
Residential	MF3_GE_5_Units	Barbecue	Natural_Gas	001	003	008	1	0.37609	0.141486694	0.141486694
Residential	MF3_GE_5_Units	Barbecue	Electric	001	003	008	2	0.62391	0.858513306	0.858513306
Residential	MF3_GE_5_Units	Other	Natural_Gas	001	003	009	1	1	1	1
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	001	004	001	1	0.92461	0.96097894	0.96097894
Residential	MM_Master_Meter	Space_Heat	Electric	001	004	001	2	0.07539	0.03902106	0.03902106
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	001	004	002	1	0.92997	0.961358896	1
Residential	MM_Master_Meter	Water_Heat	Electric	001	004	002	2	0.07003	0.038641104	0
Residential	MM_Master_Meter	Cooking	Natural_Gas	001	004	003	1	0.81058	0.874390507	0.874390507
Residential	MM_Master_Meter	Cooking	Electric	001	004	003	2	0.18942	0.125609493	0.125609493
Residential	MM_Master_Meter	Drying	Natural_Gas	001	004	004	1	0.703062484	0.718982088	0.718982088
Residential	MM_Master_Meter	Drying	Electric	001	004	004	2	0.296937516	0.281017912	0.281017912
Residential	MM_Master_Meter	Barbecue	Natural_Gas	001	004	008	1	0.892335374	0.022999709	0.022999709
Residential	MM_Master_Meter	Barbecue	Electric	001	004	008	2	0.107664626	0.977000291	0.977000291
Residential	MM_Master_Meter	Other	Natural_Gas	001	004	009	1	1	1	1
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	001	005	001	1	0.92461	0.96097894	0.96097894
Residential	SM_Sub_Meter	Space_Heat	Electric	001	005	001	2	0.07539	0.03902106	0.03902106
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	001	005	002	1	0.92997	0.961358896	1
Residential	SM_Sub_Meter	Water_Heat	Electric	001	005	002	2	0.07003	0.038641104	0
Residential	SM_Sub_Meter	Cooking	Natural_Gas	001	005	003	1	0.81058	0.874390507	0.874390507
Residential	SM_Sub_Meter	Cooking	Electric	001	005	003	2	0.18942	0.125609493	0.125609493

zName	bName	nName	fName	z	b	n	f	baseAvgFShare	baseMargFShareExisting	baseMargFShareConversion
Residential	SM_Sub_Meter	Drying	Natural_Gas	001	005	004	1	0.703062484	0.718982088	0.718982088
Residential	SM_Sub_Meter	Drying	Electric	001	005	004	2	0.296937516	0.281017912	0.281017912
Residential	SM_Sub_Meter	Barbecue	Natural_Gas	001	005	008	1	0.892335374	0.022999709	0.022999709
Residential	SM_Sub_Meter	Barbecue	Electric	001	005	008	2	0.107664626	0.977000291	0.977000291
Residential	SM_Sub_Meter	Other	Natural_Gas	001	005	009	1	1	1	1

zName	bName	nName	fName	z	b	n	f	baseMargFShareNew
Residential	Single_Family	Space_Heat	Natural_Gas	001	001	001	1	0.9922
Residential	Single_Family	Space_Heat	Electric	001	001	001	2	0.0078
Residential	Single_Family	Water_Heat	Natural_Gas	001	001	002	1	0.95397
Residential	Single_Family	Water_Heat	Electric	001	001	002	2	0.04603
Residential	Single_Family	Cooking	Natural_Gas	001	001	003	1	0.89682
Residential	Single_Family	Cooking	Electric	001	001	003	2	0.10318
Residential	Single_Family	Drying	Natural_Gas	001	001	004	1	0.84902
Residential	Single_Family	Drying	Electric	001	001	004	2	0.15098
Residential	Single_Family	Pool	Natural_Gas	001	001	005	1	0.56185
Residential	Single_Family	Pool	Electric	001	001	005	2	0.43815
Residential	Single_Family	Spa	Natural_Gas	001	001	006	1	0.66065
Residential	Single_Family	Spa	Electric	001	001	006	2	0.33935
Residential	Single_Family	Fireplace	Natural_Gas	001	001	007	1	0.81146
Residential	Single_Family	Fireplace	Electric	001	001	007	2	0.18854
Residential	Single_Family	Barbecue	Natural_Gas	001	001	008	1	0.50768
Residential	Single_Family	Barbecue	Electric	001	001	008	2	0.49232
Residential	Single_Family	Other	Natural_Gas	001	001	009	1	1
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	001	002	001	1	0.94963
Residential	MF2_2_TO_4_Units	Space_Heat	Electric	001	002	001	2	0.05037
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	001	002	002	1	0.89645
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	001	002	002	2	0.10355
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	001	002	003	1	0.83544
Residential	MF2_2_TO_4_Units	Cooking	Electric	001	002	003	2	0.16456
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	001	002	004	1	0.71177
Residential	MF2_2_TO_4_Units	Drying	Electric	001	002	004	2	0.28823
Residential	MF2_2_TO_4_Units	Barbecue	Natural_Gas	001	002	008	1	0.36225
Residential	MF2_2_TO_4_Units	Barbecue	Electric	001	002	008	2	0.63775
Residential	MF2_2_TO_4_Units	Other	Natural_Gas	001	002	009	1	1

zName	bName	nName	fName	z	b	n	f	baseMargFShareNew
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	001	003	001	1	0.80694
Residential	MF3_GE_5_Units	Space_Heat	Electric	001	003	001	2	0.19306
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	001	003	002	1	0.75825
Residential	MF3_GE_5_Units	Water_Heat	Electric	001	003	002	2	0.24175
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	001	003	003	1	0.79414
Residential	MF3_GE_5_Units	Cooking	Electric	001	003	003	2	0.20586
Residential	MF3_GE_5_Units	Drying	Natural_Gas	001	003	004	1	0.5325
Residential	MF3_GE_5_Units	Drying	Electric	001	003	004	2	0.4675
Residential	MF3_GE_5_Units	Barbecue	Natural_Gas	001	003	008	1	0.35434
Residential	MF3_GE_5_Units	Barbecue	Electric	001	003	008	2	0.64566
Residential	MF3_GE_5_Units	Other	Natural_Gas	001	003	009	1	1
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	001	004	001	1	0.6
Residential	MM_Master_Meter	Space_Heat	Electric	001	004	001	2	0.4
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	001	004	002	1	1
Residential	MM_Master_Meter	Water_Heat	Electric	001	004	002	2	0
Residential	MM_Master_Meter	Cooking	Natural_Gas	001	004	003	1	0.6
Residential	MM_Master_Meter	Cooking	Electric	001	004	003	2	0.4
Residential	MM_Master_Meter	Drying	Natural_Gas	001	004	004	1	0.6
Residential	MM_Master_Meter	Drying	Electric	001	004	004	2	0.4
Residential	MM_Master_Meter	Barbecue	Natural_Gas	001	004	008	1	0
Residential	MM_Master_Meter	Barbecue	Electric	001	004	008	2	1
Residential	MM_Master_Meter	Other	Natural_Gas	001	004	009	1	1
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	001	005	001	1	1
Residential	SM_Sub_Meter	Space_Heat	Electric	001	005	001	2	0
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	001	005	002	1	1
Residential	SM_Sub_Meter	Water_Heat	Electric	001	005	002	2	0
Residential	SM_Sub_Meter	Cooking	Natural_Gas	001	005	003	1	1
Residential	SM_Sub_Meter	Cooking	Electric	001	005	003	2	0

zName	bName	nName	fName	z	b	n	f	baseMargFShareNew
Residential	SM_Sub_Meter	Drying	Natural_Gas	001	005	004	1	0
Residential	SM_Sub_Meter	Drying	Electric	001	005	004	2	1
Residential	SM_Sub_Meter	Barbecue	Natural_Gas	001	005	008	1	0
Residential	SM_Sub_Meter	Barbecue	Electric	001	005	008	2	1
Residential	SM_Sub_Meter	Other	Natural_Gas	001	005	009	1	1

zName	bName	nName	fName	eName	z	b	n	f	e	baseAvgEShare	baseMargEShareExisting
Residential	Single_Family	Space_Heat	Natural_Gas	Stock	001	001	001	1	1	0.49	0.49
Residential	Single_Family	Space_Heat	Natural_Gas	Standard	001	001	001	1	2	0.39	0.39
Residential	Single_Family	Space_Heat	Natural_Gas	High	001	001	001	1	3	0.11	0.11
Residential	Single_Family	Space_Heat	Natural_Gas	Premium	001	001	001	1	4	0.01	0.01
Residential	Single_Family	Space_Heat	Electric	Stock	001	001	001	2	1	1	1
Residential	Single_Family	Water_Heat	Natural_Gas	Stock	001	001	002	1	1	0.1	0.1
Residential	Single_Family	Water_Heat	Natural_Gas	Standard	001	001	002	1	2	0.58	0.58
Residential	Single_Family	Water_Heat	Natural_Gas	High	001	001	002	1	3	0.31	0.31
Residential	Single_Family	Water_Heat	Natural_Gas	Premium	001	001	002	1	4	0.01	0.01
Residential	Single_Family	Water_Heat	Electric	Stock	001	001	002	2	1	0.1	0.1
Residential	Single_Family	Water_Heat	Electric	Standard	001	001	002	2	2	0.58	0.58
Residential	Single_Family	Water_Heat	Electric	High	001	001	002	2	3	0.31	0.31
Residential	Single_Family	Water_Heat	Electric	Premium	001	001	002	2	4	0.01	0.01
Residential	Single_Family	Cooking	Natural_Gas	Stock	001	001	003	1	1	0.9	0.9
Residential	Single_Family	Cooking	Natural_Gas	Standard	001	001	003	1	2	0.1	0.1
Residential	Single_Family	Cooking	Electric	Stock	001	001	003	2	1	0.9	0.9
Residential	Single_Family	Cooking	Electric	Standard	001	001	003	2	2	0.1	0.1
Residential	Single_Family	Drying	Natural_Gas	Stock	001	001	004	1	1	0.75	0.75
Residential	Single_Family	Drying	Natural_Gas	Standard	001	001	004	1	2	0.25	0.25
Residential	Single_Family	Drying	Electric	Stock	001	001	004	2	1	0.75	0.75
Residential	Single_Family	Drying	Electric	Standard	001	001	004	2	2	0.25	0.25
Residential	Single_Family	Pool	Natural_Gas	Stock	001	001	005	1	1	1	1
Residential	Single_Family	Pool	Electric	Stock	001	001	005	2	1	1	1
Residential	Single_Family	Spa	Natural_Gas	Stock	001	001	006	1	1	1	1
Residential	Single_Family	Spa	Electric	Stock	001	001	006	2	1	1	1
Residential	Single_Family	Fireplace	Natural_Gas	Stock	001	001	007	1	1	1	1
Residential	Single_Family	Fireplace	Electric	Stock	001	001	007	2	1	1	1

zName	bName	nName	fName	eName	z	b	n	f	e	baseAvgEShare	baseMargEShareExisting
Residential	Single_Family	Barbecue	Natural_Gas	Stock	001	001	008	1	1	1	1
Residential	Single_Family	Barbecue	Electric	Stock	001	001	008	2	1	1	1
Residential	Single_Family	Other	Natural_Gas	Stock	001	001	009	1	1	1	1
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Stock	001	002	001	1	1	0.6	0.6
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Standard	001	002	001	1	2	0.38	0.38
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	High	001	002	001	1	3	0.01	0.01
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Premium	001	002	001	1	4	0.01	0.01
Residential	MF2_2_TO_4_Units	Space_Heat	Electric	Stock	001	002	001	2	1	1	1
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Stock	001	002	002	1	1	0.18	0.18
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Standard	001	002	002	1	2	0.65	0.65
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	High	001	002	002	1	3	0.16	0.16
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Premium	001	002	002	1	4	0.01	0.01
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Stock	001	002	002	2	1	0.18	0.18
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Standard	001	002	002	2	2	0.65	0.65
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	High	001	002	002	2	3	0.16	0.16
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Premium	001	002	002	2	4	0.01	0.01
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	Stock	001	002	003	1	1	0.95	0.95
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	Standard	001	002	003	1	2	0.05	0.05
Residential	MF2_2_TO_4_Units	Cooking	Electric	Stock	001	002	003	2	1	0.95	0.95
Residential	MF2_2_TO_4_Units	Cooking	Electric	Standard	001	002	003	2	2	0.05	0.05
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	Stock	001	002	004	1	1	0.75	0.75
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	Standard	001	002	004	1	2	0.25	0.25
Residential	MF2_2_TO_4_Units	Drying	Electric	Stock	001	002	004	2	1	0.75	0.75
Residential	MF2_2_TO_4_Units	Drying	Electric	Standard	001	002	004	2	2	0.25	0.25
Residential	MF2_2_TO_4_Units	Barbecue	Natural_Gas	Stock	001	002	008	1	1	1	1
Residential	MF2_2_TO_4_Units	Barbecue	Electric	Stock	001	002	008	2	1	1	1
Residential	MF2_2_TO_4_Units	Other	Natural_Gas	Stock	001	002	009	1	1	1	1

zName	bName	nName	fName	eName	z	b	n	f	e	baseAvgEShare	baseMargEShareExisting
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Stock	001	003	001	1	1	0.4	0.4
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Standard	001	003	001	1	2	0.58	0.58
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	High	001	003	001	1	3	0.01	0.01
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Premium	001	003	001	1	4	0.01	0.01
Residential	MF3_GE_5_Units	Space_Heat	Electric	Stock	001	003	001	2	1	1	1
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Stock	001	003	002	1	1	0.13	0.13
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Standard	001	003	002	1	2	0.1	0.1
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	High	001	003	002	1	3	0.86	0.86
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Premium	001	003	002	1	4	0.01	0.01
Residential	MF3_GE_5_Units	Water_Heat	Electric	Stock	001	003	002	2	1	0.13	0.13
Residential	MF3_GE_5_Units	Water_Heat	Electric	Standard	001	003	002	2	2	0.1	0.1
Residential	MF3_GE_5_Units	Water_Heat	Electric	High	001	003	002	2	3	0.86	0.86
Residential	MF3_GE_5_Units	Water_Heat	Electric	Premium	001	003	002	2	4	0.01	0.01
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	Stock	001	003	003	1	1	0.95	0.95
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	Standard	001	003	003	1	2	0.05	0.05
Residential	MF3_GE_5_Units	Cooking	Electric	Stock	001	003	003	2	1	0.95	0.95
Residential	MF3_GE_5_Units	Cooking	Electric	Standard	001	003	003	2	2	0.05	0.05
Residential	MF3_GE_5_Units	Drying	Natural_Gas	Stock	001	003	004	1	1	0.75	0.75
Residential	MF3_GE_5_Units	Drying	Natural_Gas	Standard	001	003	004	1	2	0.25	0.25
Residential	MF3_GE_5_Units	Drying	Electric	Stock	001	003	004	2	1	0.75	0.75
Residential	MF3_GE_5_Units	Drying	Electric	Standard	001	003	004	2	2	0.25	0.25
Residential	MF3_GE_5_Units	Barbecue	Natural_Gas	Stock	001	003	008	1	1	1	1
Residential	MF3_GE_5_Units	Barbecue	Electric	Stock	001	003	008	2	1	1	1
Residential	MF3_GE_5_Units	Other	Natural_Gas	Stock	001	003	009	1	1	1	1
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Stock	001	004	001	1	1	0.4	0.4
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Standard	001	004	001	1	2	0.58	0.58
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	High	001	004	001	1	3	0.01	0.01

zName	bName	nName	fName	eName	z	b	n	f	e	baseAvgEShare	baseMargEShareExisting
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Premium	001	004	001	1	4	0.01	0.01
Residential	MM_Master_Meter	Space_Heat	Electric	Stock	001	004	001	2	1	1	1
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Stock	001	004	002	1	1	0.13	0.13
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Standard	001	004	002	1	2	0.1	0.1
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	High	001	004	002	1	3	0.86	0.86
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Premium	001	004	002	1	4	0.01	0.01
Residential	MM_Master_Meter	Water_Heat	Electric	Stock	001	004	002	2	1	0.13	0.13
Residential	MM_Master_Meter	Water_Heat	Electric	Standard	001	004	002	2	2	0.1	0.1
Residential	MM_Master_Meter	Water_Heat	Electric	High	001	004	002	2	3	0.86	0.86
Residential	MM_Master_Meter	Water_Heat	Electric	Premium	001	004	002	2	4	0.01	0.01
Residential	MM_Master_Meter	Cooking	Natural_Gas	Stock	001	004	003	1	1	0.95	0.95
Residential	MM_Master_Meter	Cooking	Natural_Gas	Standard	001	004	003	1	2	0.05	0.05
Residential	MM_Master_Meter	Cooking	Electric	Stock	001	004	003	2	1	0.95	0.95
Residential	MM_Master_Meter	Cooking	Electric	Standard	001	004	003	2	2	0.05	0.05
Residential	MM_Master_Meter	Drying	Natural_Gas	Stock	001	004	004	1	1	0.75	0.75
Residential	MM_Master_Meter	Drying	Natural_Gas	Standard	001	004	004	1	2	0.25	0.25
Residential	MM_Master_Meter	Drying	Electric	Stock	001	004	004	2	1	0.75	0.75
Residential	MM_Master_Meter	Drying	Electric	Standard	001	004	004	2	2	0.25	0.25
Residential	MM_Master_Meter	Barbecue	Natural_Gas	Stock	001	004	008	1	1	1	1
Residential	MM_Master_Meter	Barbecue	Electric	Stock	001	004	008	2	1	1	1
Residential	MM_Master_Meter	Other	Natural_Gas	Stock	001	004	009	1	1	1	1
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Stock	001	005	001	1	1	0.49	0.49
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Standard	001	005	001	1	2	0.39	0.39
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	High	001	005	001	1	3	0.11	0.11
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Premium	001	005	001	1	4	0.01	0.01
Residential	SM_Sub_Meter	Space_Heat	Electric	Stock	001	005	001	2	1	1	1
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Stock	001	005	002	1	1	0.1	0.1

zName	bName	nName	fName	eName	z	b	n	f	e	baseAvgEShare	baseMargEShareExisting
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Standard	001	005	002	1	2	0.58	0.58
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	High	001	005	002	1	3	0.31	0.31
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Premium	001	005	002	1	4	0.01	0.01
Residential	SM_Sub_Meter	Water_Heat	Electric	Stock	001	005	002	2	1	0.1	0.1
Residential	SM_Sub_Meter	Water_Heat	Electric	Standard	001	005	002	2	2	0.58	0.58
Residential	SM_Sub_Meter	Water_Heat	Electric	High	001	005	002	2	3	0.31	0.31
Residential	SM_Sub_Meter	Water_Heat	Electric	Premium	001	005	002	2	4	0.01	0.01
Residential	SM_Sub_Meter	Cooking	Natural_Gas	Stock	001	005	003	1	1	0.95	0.95
Residential	SM_Sub_Meter	Cooking	Natural_Gas	Standard	001	005	003	1	2	0.05	0.05
Residential	SM_Sub_Meter	Cooking	Electric	Stock	001	005	003	2	1	0.95	0.95
Residential	SM_Sub_Meter	Cooking	Electric	Standard	001	005	003	2	2	0.05	0.05
Residential	SM_Sub_Meter	Drying	Natural_Gas	Stock	001	005	004	1	1	0.75	0.75
Residential	SM_Sub_Meter	Drying	Natural_Gas	Standard	001	005	004	1	2	0.25	0.25
Residential	SM_Sub_Meter	Drying	Electric	Stock	001	005	004	2	1	0.75	0.75
Residential	SM_Sub_Meter	Drying	Electric	Standard	001	005	004	2	2	0.25	0.25
Residential	SM_Sub_Meter	Barbecue	Natural_Gas	Stock	001	005	008	1	1	1	1
Residential	SM_Sub_Meter	Barbecue	Electric	Stock	001	005	008	2	1	1	1
Residential	SM_Sub_Meter	Other	Natural_Gas	Stock	001	005	009	1	1	1	1

zName	bName	nName	fName	eName	z	b	n	f	e	baseMargEShareConversion	baseMargEShareNew
Residential	Single_Family	Space_Heat	Natural_Gas	Stock	001	001	001	1	1	0.49	0.49
Residential	Single_Family	Space_Heat	Natural_Gas	Standard	001	001	001	1	2	0.39	0.39
Residential	Single_Family	Space_Heat	Natural_Gas	High	001	001	001	1	3	0.11	0.11
Residential	Single_Family	Space_Heat	Natural_Gas	Premium	001	001	001	1	4	0.01	0.01
Residential	Single_Family	Space_Heat	Electric	Stock	001	001	001	2	1	1	1
Residential	Single_Family	Water_Heat	Natural_Gas	Stock	001	001	002	1	1	0.1	0.1
Residential	Single_Family	Water_Heat	Natural_Gas	Standard	001	001	002	1	2	0.58	0.58
Residential	Single_Family	Water_Heat	Natural_Gas	High	001	001	002	1	3	0.31	0.31
Residential	Single_Family	Water_Heat	Natural_Gas	Premium	001	001	002	1	4	0.01	0.01
Residential	Single_Family	Water_Heat	Electric	Stock	001	001	002	2	1	0.1	0.1
Residential	Single_Family	Water_Heat	Electric	Standard	001	001	002	2	2	0.58	0.58
Residential	Single_Family	Water_Heat	Electric	High	001	001	002	2	3	0.31	0.31
Residential	Single_Family	Water_Heat	Electric	Premium	001	001	002	2	4	0.01	0.01
Residential	Single_Family	Cooking	Natural_Gas	Stock	001	001	003	1	1	0.9	0.9
Residential	Single_Family	Cooking	Natural_Gas	Standard	001	001	003	1	2	0.1	0.1
Residential	Single_Family	Cooking	Electric	Stock	001	001	003	2	1	0.9	0.9
Residential	Single_Family	Cooking	Electric	Standard	001	001	003	2	2	0.1	0.1
Residential	Single_Family	Drying	Natural_Gas	Stock	001	001	004	1	1	0.75	0.75
Residential	Single_Family	Drying	Natural_Gas	Standard	001	001	004	1	2	0.25	0.25
Residential	Single_Family	Drying	Electric	Stock	001	001	004	2	1	0.75	0.75
Residential	Single_Family	Drying	Electric	Standard	001	001	004	2	2	0.25	0.25
Residential	Single_Family	Pool	Natural_Gas	Stock	001	001	005	1	1	1	1
Residential	Single_Family	Pool	Electric	Stock	001	001	005	2	1	1	1
Residential	Single_Family	Spa	Natural_Gas	Stock	001	001	006	1	1	1	1
Residential	Single_Family	Spa	Electric	Stock	001	001	006	2	1	1	1
Residential	Single_Family	Fireplace	Natural_Gas	Stock	001	001	007	1	1	1	1
Residential	Single_Family	Fireplace	Electric	Stock	001	001	007	2	1	1	1

zName	bName	nName	fName	eName	z	b	n	f	e	baseMargEShareConversion	baseMargEShareNew
Residential	Single_Family	Barbecue	Natural_Gas	Stock	001	001	008	1	1	1	1
Residential	Single_Family	Barbecue	Electric	Stock	001	001	008	2	1	1	1
Residential	Single_Family	Other	Natural_Gas	Stock	001	001	009	1	1	1	1
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Stock	001	002	001	1	1	0.6	0.6
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Standard	001	002	001	1	2	0.38	0.38
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	High	001	002	001	1	3	0.01	0.01
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Premium	001	002	001	1	4	0.01	0.01
Residential	MF2_2_TO_4_Units	Space_Heat	Electric	Stock	001	002	001	2	1	1	1
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Stock	001	002	002	1	1	0.18	0.18
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Standard	001	002	002	1	2	0.65	0.65
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	High	001	002	002	1	3	0.16	0.16
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Premium	001	002	002	1	4	0.01	0.01
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Stock	001	002	002	2	1	0.18	0.18
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Standard	001	002	002	2	2	0.65	0.65
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	High	001	002	002	2	3	0.16	0.16
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Premium	001	002	002	2	4	0.01	0.01
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	Stock	001	002	003	1	1	0.95	0.95
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	Standard	001	002	003	1	2	0.05	0.05
Residential	MF2_2_TO_4_Units	Cooking	Electric	Stock	001	002	003	2	1	0.95	0.95
Residential	MF2_2_TO_4_Units	Cooking	Electric	Standard	001	002	003	2	2	0.05	0.05
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	Stock	001	002	004	1	1	0.75	0.75
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	Standard	001	002	004	1	2	0.25	0.25
Residential	MF2_2_TO_4_Units	Drying	Electric	Stock	001	002	004	2	1	0.75	0.75
Residential	MF2_2_TO_4_Units	Drying	Electric	Standard	001	002	004	2	2	0.25	0.25
Residential	MF2_2_TO_4_Units	Barbecue	Natural_Gas	Stock	001	002	008	1	1	1	1
Residential	MF2_2_TO_4_Units	Barbecue	Electric	Stock	001	002	008	2	1	1	1
Residential	MF2_2_TO_4_Units	Other	Natural_Gas	Stock	001	002	009	1	1	1	1

zName	bName	nName	fName	eName	z	b	n	f	e	baseMargEShareConversion	baseMargEShareNew
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Stock	001	003	001	1	1	0.4	0.4
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Standard	001	003	001	1	2	0.58	0.58
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	High	001	003	001	1	3	0.01	0.01
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Premium	001	003	001	1	4	0.01	0.01
Residential	MF3_GE_5_Units	Space_Heat	Electric	Stock	001	003	001	2	1	1	1
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Stock	001	003	002	1	1	0.13	0.13
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Standard	001	003	002	1	2	0.1	0.1
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	High	001	003	002	1	3	0.86	0.86
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Premium	001	003	002	1	4	0.01	0.01
Residential	MF3_GE_5_Units	Water_Heat	Electric	Stock	001	003	002	2	1	0.13	0.13
Residential	MF3_GE_5_Units	Water_Heat	Electric	Standard	001	003	002	2	2	0.1	0.1
Residential	MF3_GE_5_Units	Water_Heat	Electric	High	001	003	002	2	3	0.86	0.86
Residential	MF3_GE_5_Units	Water_Heat	Electric	Premium	001	003	002	2	4	0.01	0.01
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	Stock	001	003	003	1	1	0.95	0.95
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	Standard	001	003	003	1	2	0.05	0.05
Residential	MF3_GE_5_Units	Cooking	Electric	Stock	001	003	003	2	1	0.95	0.95
Residential	MF3_GE_5_Units	Cooking	Electric	Standard	001	003	003	2	2	0.05	0.05
Residential	MF3_GE_5_Units	Drying	Natural_Gas	Stock	001	003	004	1	1	0.75	0.75
Residential	MF3_GE_5_Units	Drying	Natural_Gas	Standard	001	003	004	1	2	0.25	0.25
Residential	MF3_GE_5_Units	Drying	Electric	Stock	001	003	004	2	1	0.75	0.75
Residential	MF3_GE_5_Units	Drying	Electric	Standard	001	003	004	2	2	0.25	0.25
Residential	MF3_GE_5_Units	Barbecue	Natural_Gas	Stock	001	003	008	1	1	1	1
Residential	MF3_GE_5_Units	Barbecue	Electric	Stock	001	003	008	2	1	1	1
Residential	MF3_GE_5_Units	Other	Natural_Gas	Stock	001	003	009	1	1	1	1
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Stock	001	004	001	1	1	0.4	0.4
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Standard	001	004	001	1	2	0.58	0.58
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	High	001	004	001	1	3	0.01	0.01

zName	bName	nName	fName	eName	z	b	n	f	e	baseMargEShareConversion	baseMargEShareNew
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Premium	001	004	001	1	4	0.01	0.01
Residential	MM_Master_Meter	Space_Heat	Electric	Stock	001	004	001	2	1	1	1
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Stock	001	004	002	1	1	0.13	0.13
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Standard	001	004	002	1	2	0.1	0.1
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	High	001	004	002	1	3	0.86	0.86
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Premium	001	004	002	1	4	0.01	0.01
Residential	MM_Master_Meter	Water_Heat	Electric	Stock	001	004	002	2	1	0.13	0.13
Residential	MM_Master_Meter	Water_Heat	Electric	Standard	001	004	002	2	2	0.1	0.1
Residential	MM_Master_Meter	Water_Heat	Electric	High	001	004	002	2	3	0.86	0.86
Residential	MM_Master_Meter	Water_Heat	Electric	Premium	001	004	002	2	4	0.01	0.01
Residential	MM_Master_Meter	Cooking	Natural_Gas	Stock	001	004	003	1	1	0.95	0.95
Residential	MM_Master_Meter	Cooking	Natural_Gas	Standard	001	004	003	1	2	0.05	0.05
Residential	MM_Master_Meter	Cooking	Electric	Stock	001	004	003	2	1	0.95	0.95
Residential	MM_Master_Meter	Cooking	Electric	Standard	001	004	003	2	2	0.05	0.05
Residential	MM_Master_Meter	Drying	Natural_Gas	Stock	001	004	004	1	1	0.75	0.75
Residential	MM_Master_Meter	Drying	Natural_Gas	Standard	001	004	004	1	2	0.25	0.25
Residential	MM_Master_Meter	Drying	Electric	Stock	001	004	004	2	1	0.75	0.75
Residential	MM_Master_Meter	Drying	Electric	Standard	001	004	004	2	2	0.25	0.25
Residential	MM_Master_Meter	Barbecue	Natural_Gas	Stock	001	004	008	1	1	1	1
Residential	MM_Master_Meter	Barbecue	Electric	Stock	001	004	008	2	1	1	1
Residential	MM_Master_Meter	Other	Natural_Gas	Stock	001	004	009	1	1	1	1
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Stock	001	005	001	1	1	0.49	0.49
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Standard	001	005	001	1	2	0.39	0.39
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	High	001	005	001	1	3	0.11	0.11
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Premium	001	005	001	1	4	0.01	0.01
Residential	SM_Sub_Meter	Space_Heat	Electric	Stock	001	005	001	2	1	1	1
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Stock	001	005	002	1	1	0.1	0.1

zName	bName	nName	fName	eName	z	b	n	f	e	baseMargEShareConversion	baseMargEShareNew
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Standard	001	005	002	1	2	0.58	0.58
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	High	001	005	002	1	3	0.31	0.31
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Premium	001	005	002	1	4	0.01	0.01
Residential	SM_Sub_Meter	Water_Heat	Electric	Stock	001	005	002	2	1	0.1	0.1
Residential	SM_Sub_Meter	Water_Heat	Electric	Standard	001	005	002	2	2	0.58	0.58
Residential	SM_Sub_Meter	Water_Heat	Electric	High	001	005	002	2	3	0.31	0.31
Residential	SM_Sub_Meter	Water_Heat	Electric	Premium	001	005	002	2	4	0.01	0.01
Residential	SM_Sub_Meter	Cooking	Natural_Gas	Stock	001	005	003	1	1	0.95	0.95
Residential	SM_Sub_Meter	Cooking	Natural_Gas	Standard	001	005	003	1	2	0.05	0.05
Residential	SM_Sub_Meter	Cooking	Electric	Stock	001	005	003	2	1	0.95	0.95
Residential	SM_Sub_Meter	Cooking	Electric	Standard	001	005	003	2	2	0.05	0.05
Residential	SM_Sub_Meter	Drying	Natural_Gas	Stock	001	005	004	1	1	0.75	0.75
Residential	SM_Sub_Meter	Drying	Natural_Gas	Standard	001	005	004	1	2	0.25	0.25
Residential	SM_Sub_Meter	Drying	Electric	Stock	001	005	004	2	1	0.75	0.75
Residential	SM_Sub_Meter	Drying	Electric	Standard	001	005	004	2	2	0.25	0.25
Residential	SM_Sub_Meter	Barbecue	Natural_Gas	Stock	001	005	008	1	1	1	1
Residential	SM_Sub_Meter	Barbecue	Electric	Stock	001	005	008	2	1	1	1
Residential	SM_Sub_Meter	Other	Natural_Gas	Stock	001	005	009	1	1	1	1

zName	bName	nName	fName	eName	z	b	n	f	e	peakDayLoadFactor
Residential	Single_Family	Space_Heat	Natural_Gas	Stock	001	001	001	1	1	0.002739726
Residential	Single_Family	Space_Heat	Natural_Gas	Standard	001	001	001	1	2	0.002739726
Residential	Single_Family	Space_Heat	Natural_Gas	High	001	001	001	1	3	0.002739726
Residential	Single_Family	Space_Heat	Natural_Gas	Premium	001	001	001	1	4	0.002739726
Residential	Single_Family	Space_Heat	Electric	Stock	001	001	001	2	1	0.002739726
Residential	Single_Family	Water_Heat	Natural_Gas	Stock	001	001	002	1	1	0.002739726
Residential	Single_Family	Water_Heat	Natural_Gas	Standard	001	001	002	1	2	0.002739726
Residential	Single_Family	Water_Heat	Natural_Gas	High	001	001	002	1	3	0.002739726
Residential	Single_Family	Water_Heat	Natural_Gas	Premium	001	001	002	1	4	0.002739726
Residential	Single_Family	Water_Heat	Electric	Stock	001	001	002	2	1	0.002739726
Residential	Single_Family	Water_Heat	Electric	Standard	001	001	002	2	2	0.002739726
Residential	Single_Family	Water_Heat	Electric	High	001	001	002	2	3	0.002739726
Residential	Single_Family	Water_Heat	Electric	Premium	001	001	002	2	4	0.002739726
Residential	Single_Family	Cooking	Natural_Gas	Stock	001	001	003	1	1	0.002739726
Residential	Single_Family	Cooking	Natural_Gas	Standard	001	001	003	1	2	0.002739726
Residential	Single_Family	Cooking	Electric	Stock	001	001	003	2	1	0.002739726
Residential	Single_Family	Cooking	Electric	Standard	001	001	003	2	2	0.002739726
Residential	Single_Family	Drying	Natural_Gas	Stock	001	001	004	1	1	0.002739726
Residential	Single_Family	Drying	Natural_Gas	Standard	001	001	004	1	2	0.002739726
Residential	Single_Family	Drying	Electric	Stock	001	001	004	2	1	0.002739726
Residential	Single_Family	Drying	Electric	Standard	001	001	004	2	2	0.002739726
Residential	Single_Family	Pool	Natural_Gas	Stock	001	001	005	1	1	0.002739726
Residential	Single_Family	Pool	Electric	Stock	001	001	005	2	1	0.002739726
Residential	Single_Family	Spa	Natural_Gas	Stock	001	001	006	1	1	0.002739726
Residential	Single_Family	Spa	Electric	Stock	001	001	006	2	1	0.002739726
Residential	Single_Family	Fireplace	Natural_Gas	Stock	001	001	007	1	1	0.002739726
Residential	Single_Family	Fireplace	Electric	Stock	001	001	007	2	1	0.002739726

zName	bName	nName	fName	eName	z	b	n	f	e	peakDayLoadFactor
Residential	Single_Family	Barbecue	Natural_Gas	Stock	001	001	008	1	1	0.002739726
Residential	Single_Family	Barbecue	Electric	Stock	001	001	008	2	1	0.002739726
Residential	Single_Family	Other	Natural_Gas	Stock	001	001	009	1	1	0.002739726
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Stock	001	002	001	1	1	0.002739726
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Standard	001	002	001	1	2	0.002739726
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	High	001	002	001	1	3	0.002739726
Residential	MF2_2_TO_4_Units	Space_Heat	Natural_Gas	Premium	001	002	001	1	4	0.002739726
Residential	MF2_2_TO_4_Units	Space_Heat	Electric	Stock	001	002	001	2	1	0.002739726
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Stock	001	002	002	1	1	0.002739726
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Standard	001	002	002	1	2	0.002739726
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	High	001	002	002	1	3	0.002739726
Residential	MF2_2_TO_4_Units	Water_Heat	Natural_Gas	Premium	001	002	002	1	4	0.002739726
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Stock	001	002	002	2	1	0.002739726
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Standard	001	002	002	2	2	0.002739726
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	High	001	002	002	2	3	0.002739726
Residential	MF2_2_TO_4_Units	Water_Heat	Electric	Premium	001	002	002	2	4	0.002739726
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	Stock	001	002	003	1	1	0.002739726
Residential	MF2_2_TO_4_Units	Cooking	Natural_Gas	Standard	001	002	003	1	2	0.002739726
Residential	MF2_2_TO_4_Units	Cooking	Electric	Stock	001	002	003	2	1	0.002739726
Residential	MF2_2_TO_4_Units	Cooking	Electric	Standard	001	002	003	2	2	0.002739726
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	Stock	001	002	004	1	1	0.002739726
Residential	MF2_2_TO_4_Units	Drying	Natural_Gas	Standard	001	002	004	1	2	0.002739726
Residential	MF2_2_TO_4_Units	Drying	Electric	Stock	001	002	004	2	1	0.002739726
Residential	MF2_2_TO_4_Units	Drying	Electric	Standard	001	002	004	2	2	0.002739726
Residential	MF2_2_TO_4_Units	Barbecue	Natural_Gas	Stock	001	002	008	1	1	0.002739726
Residential	MF2_2_TO_4_Units	Barbecue	Electric	Stock	001	002	008	2	1	0.002739726
Residential	MF2_2_TO_4_Units	Other	Natural_Gas	Stock	001	002	009	1	1	0.002739726

zName	bName	nName	fName	eName	z	b	n	f	e	peakDayLoadFactor
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Stock	001	003	001	1	1	0.002739726
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Standard	001	003	001	1	2	0.002739726
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	High	001	003	001	1	3	0.002739726
Residential	MF3_GE_5_Units	Space_Heat	Natural_Gas	Premium	001	003	001	1	4	0.002739726
Residential	MF3_GE_5_Units	Space_Heat	Electric	Stock	001	003	001	2	1	0.002739726
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Stock	001	003	002	1	1	0.002739726
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Standard	001	003	002	1	2	0.002739726
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	High	001	003	002	1	3	0.002739726
Residential	MF3_GE_5_Units	Water_Heat	Natural_Gas	Premium	001	003	002	1	4	0.002739726
Residential	MF3_GE_5_Units	Water_Heat	Electric	Stock	001	003	002	2	1	0.002739726
Residential	MF3_GE_5_Units	Water_Heat	Electric	Standard	001	003	002	2	2	0.002739726
Residential	MF3_GE_5_Units	Water_Heat	Electric	High	001	003	002	2	3	0.002739726
Residential	MF3_GE_5_Units	Water_Heat	Electric	Premium	001	003	002	2	4	0.002739726
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	Stock	001	003	003	1	1	0.002739726
Residential	MF3_GE_5_Units	Cooking	Natural_Gas	Standard	001	003	003	1	2	0.002739726
Residential	MF3_GE_5_Units	Cooking	Electric	Stock	001	003	003	2	1	0.002739726
Residential	MF3_GE_5_Units	Cooking	Electric	Standard	001	003	003	2	2	0.002739726
Residential	MF3_GE_5_Units	Drying	Natural_Gas	Stock	001	003	004	1	1	0.002739726
Residential	MF3_GE_5_Units	Drying	Natural_Gas	Standard	001	003	004	1	2	0.002739726
Residential	MF3_GE_5_Units	Drying	Electric	Stock	001	003	004	2	1	0.002739726
Residential	MF3_GE_5_Units	Drying	Electric	Standard	001	003	004	2	2	0.002739726
Residential	MF3_GE_5_Units	Barbecue	Natural_Gas	Stock	001	003	008	1	1	0.002739726
Residential	MF3_GE_5_Units	Barbecue	Electric	Stock	001	003	008	2	1	0.002739726
Residential	MF3_GE_5_Units	Other	Natural_Gas	Stock	001	003	009	1	1	0.002739726
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Stock	001	004	001	1	1	0.002739726
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Standard	001	004	001	1	2	0.002739726
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	High	001	004	001	1	3	0.002739726

zName	bName	nName	fName	eName	z	b	n	f	e	peakDayLoadFactor
Residential	MM_Master_Meter	Space_Heat	Natural_Gas	Premium	001	004	001	1	4	0.002739726
Residential	MM_Master_Meter	Space_Heat	Electric	Stock	001	004	001	2	1	0.002739726
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Stock	001	004	002	1	1	0.002739726
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Standard	001	004	002	1	2	0.002739726
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	High	001	004	002	1	3	0.002739726
Residential	MM_Master_Meter	Water_Heat	Natural_Gas	Premium	001	004	002	1	4	0.002739726
Residential	MM_Master_Meter	Water_Heat	Electric	Stock	001	004	002	2	1	0.002739726
Residential	MM_Master_Meter	Water_Heat	Electric	Standard	001	004	002	2	2	0.002739726
Residential	MM_Master_Meter	Water_Heat	Electric	High	001	004	002	2	3	0.002739726
Residential	MM_Master_Meter	Water_Heat	Electric	Premium	001	004	002	2	4	0.002739726
Residential	MM_Master_Meter	Cooking	Natural_Gas	Stock	001	004	003	1	1	0.002739726
Residential	MM_Master_Meter	Cooking	Natural_Gas	Standard	001	004	003	1	2	0.002739726
Residential	MM_Master_Meter	Cooking	Electric	Stock	001	004	003	2	1	0.002739726
Residential	MM_Master_Meter	Cooking	Electric	Standard	001	004	003	2	2	0.002739726
Residential	MM_Master_Meter	Drying	Natural_Gas	Stock	001	004	004	1	1	0.002739726
Residential	MM_Master_Meter	Drying	Natural_Gas	Standard	001	004	004	1	2	0.002739726
Residential	MM_Master_Meter	Drying	Electric	Stock	001	004	004	2	1	0.002739726
Residential	MM_Master_Meter	Drying	Electric	Standard	001	004	004	2	2	0.002739726
Residential	MM_Master_Meter	Barbecue	Natural_Gas	Stock	001	004	008	1	1	0.002739726
Residential	MM_Master_Meter	Barbecue	Electric	Stock	001	004	008	2	1	0.002739726
Residential	MM_Master_Meter	Other	Natural_Gas	Stock	001	004	009	1	1	0.002739726
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Stock	001	005	001	1	1	0.002739726
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Standard	001	005	001	1	2	0.002739726
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	High	001	005	001	1	3	0.002739726
Residential	SM_Sub_Meter	Space_Heat	Natural_Gas	Premium	001	005	001	1	4	0.002739726
Residential	SM_Sub_Meter	Space_Heat	Electric	Stock	001	005	001	2	1	0.002739726
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Stock	001	005	002	1	1	0.002739726

zName	bName	nName	fName	eName	z	b	n	f	e	peakDayLoadFactor
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Standard	001	005	002	1	2	0.002739726
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	High	001	005	002	1	3	0.002739726
Residential	SM_Sub_Meter	Water_Heat	Natural_Gas	Premium	001	005	002	1	4	0.002739726
Residential	SM_Sub_Meter	Water_Heat	Electric	Stock	001	005	002	2	1	0.002739726
Residential	SM_Sub_Meter	Water_Heat	Electric	Standard	001	005	002	2	2	0.002739726
Residential	SM_Sub_Meter	Water_Heat	Electric	High	001	005	002	2	3	0.002739726
Residential	SM_Sub_Meter	Water_Heat	Electric	Premium	001	005	002	2	4	0.002739726
Residential	SM_Sub_Meter	Cooking	Natural_Gas	Stock	001	005	003	1	1	0.002739726
Residential	SM_Sub_Meter	Cooking	Natural_Gas	Standard	001	005	003	1	2	0.002739726
Residential	SM_Sub_Meter	Cooking	Electric	Stock	001	005	003	2	1	0.002739726
Residential	SM_Sub_Meter	Cooking	Electric	Standard	001	005	003	2	2	0.002739726
Residential	SM_Sub_Meter	Drying	Natural_Gas	Stock	001	005	004	1	1	0.002739726
Residential	SM_Sub_Meter	Drying	Natural_Gas	Standard	001	005	004	1	2	0.002739726
Residential	SM_Sub_Meter	Drying	Electric	Stock	001	005	004	2	1	0.002739726
Residential	SM_Sub_Meter	Drying	Electric	Standard	001	005	004	2	2	0.002739726
Residential	SM_Sub_Meter	Barbecue	Natural_Gas	Stock	001	005	008	1	1	0.002739726
Residential	SM_Sub_Meter	Barbecue	Electric	Stock	001	005	008	2	1	0.002739726
Residential	SM_Sub_Meter	Other	Natural_Gas	Stock	001	005	009	1	1	0.002739726

2022 CALIFORNIA GAS REPORT

CORE COMMERCIAL & INDUSTRIAL

Core Commercial and Industrial End Use Model
20*22* California Gas Report

Introduction

The G10 commercial and industrial gas demand forecast used the EUForecaster model to generate annual gas demand forecasts for the years 2022 through 2035.

The model segments the G-10 commercial and industrial markets into 14 sectors and 11 sectors by type of business activity, respectively. Business activity is determined by the NAICS code assigned to the customer and carried on the customer's billing record. A second segmentation within each specific business type involved further disaggregation into end-uses.

The gas demand forecast that results from the EUForecaster model is at the annual design HDD total of 1,248 for an Average Year. The gas demand forecasts under Cold, Hot and Base temperature were then constructed based on Cold Year (Hdd = 1,476, Hot Year (Hdd=1,020) and Base Year (Hdd=0) annual assumptions. The annual Hdd's were adjusted annually. The annual values used can be found under the weather section of the 2022 CGR workpapers.

This *end use* forecasts under the above four temperature scenarios are then adjusted for a set of *post-model* adjustments. These adjustments consist of *reductions* for the EE/DSM savings provided by the EE/DSM group. An addition to load associated with (existing) G10 commercial and industrial customers who install electric self-generation equipment was included. This program was established initially by the State of California through AB970 and is now known as SGIP. Other adjustments to the load consist of the anticipated core to noncore migration expected and a reduction in load for the City of Vernon customers. The final adjustment adds both the Gas AC and Gas Engine demand forecasts into commercial G10 forecast. All of these post-model adjustments are summarized in tables that follow.

Data Sources

The key set of information used to perform the modeling and to generate the forecast includes historical year 2021 consumption and customer counts, employment forecasts, gas and electric energy use intensity (EUI) values, end-use saturations, fuel and efficiency shares, gas and electric price forecasts, equipment age, use per meter for existing and new customers, and equipment cost. A description of each component follows.

A. Historical Year 2021 Sales:

The historical data are extracted from the billing tables in the Customer Information System (CIS). The gas consumption by business type was adjusted to our 1,248 average year HDD.

B. Employment Data:

The level of employment in each business type is used as a measure of economic activity in the G-10 commercial and industrial demand forecast models. The employment data series matches the NAICS categories used to develop the historical consumption data. The employment data were compiled and totaled for the 12 counties comprising SoCalGas' service territory. The Global Insight's 2022 Q1 forecast release was utilized to prepare the outlook.

Gas Price Data:

Average and marginal gas prices ($/therm) were calculated from forecasts of the G-10 rate components. We used detailed consumption data on our core commercial G-10 customers, to separate monthly consumption for customers by each business type into the respective G-10 consumption tiers.

For a given business type, the average gas commodity rate for the 12-month period was calculated for each year. The average commodity rate in each forecast year was developed using the same monthly consumption pattern, but with the forecasts of rates for each G-10 rate tier. The average gas price each year was then calculated by including the non-volumetric customer charges with the year's average gas commodity rate.

Each respective business type's marginal gas commodity rate (for each month) was calculated by "pricing" the entire month's consumption at the G-10 rate's tier that was the last tier with non-zero consumption, the marginal consumption tier, for the customers of the given business type. The marginal gas price was then calculated as the simple average of the 12 monthly marginal commodity rates. The forecasts for each year used the same monthly consumption pattern, but used the projected G-10 price of the marginal consumption tier.

Electric Price Data:

Both average prices (cents/kWh) and marginal prices (cents/kWh) were developed as electricity price inputs. Forecasts for the SCE *small commercial* customer class were developed based on the California Energy Commission's updated forecast rates for California energy demand (forecast for the SCE planning area, under "Mid-Case" demand for electricity) for the SCE service area through our forecast time horizon.

The resulting price projections for *small commercial* were set equal to 112% of the CEC's projections for the SCE commercial class. These were the average electricity prices for the G-10 core commercial market, overall.

The marginal prices were calculated by multiplying each year's respective average price by a ratio. This ratio, 1.000, was estimated from an analysis of the SCE GS-2 rate schedule posted on their web-site. (These customers were assumed to be small non-self-generation customers who also were not on time-of-use rates.)

To impute, in each year, average and marginal electricity prices to each core commercial business type, we simply calculated the ratio of the average (or marginal) gas price to the overall core commercial gas price for each business type, then multiplied by the overall average (or marginal) electricity price.

E. Building and Equipment Decay Rates:

Building decay rates are based on buildings' lifetimes, where the lifetime is defined as the length of time it takes for either a demolition or a major renovation in which major systems are replaced. For existing core buildings and facilities, an exponential rate of decay of 1% per year was assumed, consistent with an average remaining life for existing buildings of 100 years. (A building decay rate concept is not relevant to non-core large gas transport customers. In both the commercial and industrial non-core models the existing building decay rate was set equal to zero.)

All new construction decay rates were assumed to be zero over the forecast horizon. This assumption was required because the growth of new buildings and facilities was tied directly to the econometric models.

End-Use lifetimes were derived from a variety of sources.

Commercial:

Space heat: 25 years
Water heat: 15 years
AC/compressor: 20 years
All other commercial end-uses: 15 years

Industrial:

Fire-tube boiler: 25 years
Water-tube boiler: 25 years
Engine (motors): 25 years
All other industrial end-uses: 20 years

F. Equipment Saturations, Fuel Shares, and Efficiency Shares:

EUForecaster defines saturation as the percentage of customers in any segment that has a particular end use, independent of fuel shares. EUForecaster adjusted core commercial fuel shares according to a set of fuel-choice equations over the forecast horizon.

End-use saturations in the industrial model were initially set equal to 100%. Industrial end-use gas fuel shares were initially approximated. We then used an iterative procedure to further adjust industrial saturation and fuel shares such that the EUForecaster sales totals matched SoCalGas industrial sales figures, and our estimates of electric usage by SoCalGas customers. Finally, all commercial and industrial fuel shares were held constant over the forecast horizon.

Energy efficiency varied within the major gas end-uses/processes, including all boilers, space heat, and water heat. Four levels of efficiency were assigned to gas equipment: low, medium (standard) high, and premium for core commercial and three levels of efficiency were assigned to gas equipment: low, medium (standard), and high for core industrial market. California and federal standards have effectively eliminated the lowest efficiency alternatives for several gas end-uses from being purchased as new or replacement equipment. The lowest efficiency alternative for these end uses is, therefore, allowed to exist in the base year stock, but the customer must then purchase either medium (e.g., equipment that just meets Government standards), high or premium efficiency equipment as these units decay.

For existing equipment stock, the low efficiency share was set to 50%, whereas the medium efficiency share ranges from 40 to 45%, and the high efficiency share ranges from 5 to 10%.

EUForecaster's choice module prorates the low share to the medium, high and premium alternatives in proportion to their shares noted above. Therefore, replacement and new construction efficiency shares for medium range from 80% to 90%, and high ranges from 10% to 20%.

G. ENERGY EFFICIENCY Forecast:

The end-use gas demand forecast developed with EUForecaster does not capture the effects of SoCalGas' EE/DSM programs. Energy savings goals from the CPUC's mandated energy efficiency/energy conservation programs for the core commercial and industrial were provided by SoCalGas' DSM department. These savings are subtracted from the forecast generated by the core commercial and industrial forecasts generated by EUForecaster.

Gas Air Conditioning and Gas Engines

A special tariff for gas air-conditioning rates went into effect at the end of 1993, while a special tariff for gas engine rates started in early 1995. The forecasts of core gas air conditioning and gas engine demand are based on the latest information provided by customers. Both segments are forecasted based on the expected number of customers in each market times their usage per customer.

Fuel Substitution:

An adjustment was made to the baseline forecast to account for forecasted fuel substitution for the core commercial market. The fuel substitution scenario utilized was the AAFS 2 from the CEC's 2021 IEPR, Volume IV *California Energy Demand Forecast,* Appendix A.

Climate Change:

The weather design was reduced by 6 hdd per year over the forecast period to account for weather being less cold over the 20 year historical period. The effect of the hdd reduction is a dampening of the core commercial forecast.

CORE COMMERCIAL WORKPAPERS

SOUTHERN CALIFORNIA GAS COMPANY
G10 COMMERCIAL FORECAST (Mdth)
AVERAGE WEATHER

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2021	8,596.6	8,064.4	7,283.1	6,622.3	5,608.4	5,096.7	4,961.2	4,957.1	4,995.4	5,385.4	6,808.4	8,871.6	**77,250.7**
2022	8,403.8	7,884.9	7,123.0	6,479.9	5,490.5	5,017.4	4,859.5	4,855.5	4,892.9	5,273.1	6,660.8	8,671.4	**75,612.9**
2023	8,138.5	7,637.3	6,901.4	6,281.5	5,325.0	4,843.4	4,715.6	4,711.8	4,747.8	5,115.1	6,455.7	8,396.3	**73,269.5**
2024	7,908.5	7,422.8	6,709.6	6,110.0	5,182.2	4,715.6	4,591.7	4,588.0	4,622.9	4,978.9	6,278.3	8,157.8	**71,266.3**
2025	7,701.1	7,229.4	6,536.7	5,955.6	5,053.7	4,600.9	4,480.4	4,476.8	4,510.7	4,856.5	6,118.5	7,942.5	**69,462.8**
2026	7,516.8	7,057.7	6,383.4	5,818.9	4,940.1	4,499.5	4,382.1	4,378.6	4,411.6	4,748.2	5,977.0	7,751.3	**67,865.2**
2027	7,339.5	6,892.5	6,235.8	5,687.2	4,830.8	4,401.9	4,287.5	4,284.1	4,316.2	4,644.0	5,840.7	7,567.2	**66,327.4**
2028	7,161.8	6,726.9	6,087.8	5,555.1	4,720.9	4,303.8	4,192.4	4,189.0	4,220.3	4,539.3	5,704.0	7,382.9	**64,784.1**
2029	7,007.8	6,583.4	5,959.7	5,441.1	4,626.3	4,219.3	4,110.6	4,107.3	4,137.8	4,449.1	5,585.8	7,223.0	**63,451.2**
2030	6,852.1	6,438.3	5,830.1	5,325.4	4,530.2	4,133.6	4,027.4	4,024.2	4,054.0	4,357.6	5,466.1	7,061.3	**62,100.1**
2031	6,703.5	6,299.8	5,706.4	5,215.1	4,438.5	4,051.7	3,948.1	3,945.0	3,974.0	4,270.2	5,351.9	6,907.1	**60,811.1**
2032	6,575.9	6,181.0	5,600.4	5,120.8	4,360.4	3,982.1	3,880.6	3,877.6	3,905.9	4,195.8	5,254.2	6,774.7	**59,709.5**
2033	6,443.3	6,057.5	5,490.1	5,022.4	4,278.7	3,909.2	3,809.9	3,807.0	3,834.7	4,117.9	5,152.3	6,637.0	**58,560.0**
2034	6,312.5	5,935.6	5,381.2	4,925.3	4,197.9	3,837.1	3,740.0	3,737.1	3,764.2	4,040.9	5,051.7	6,501.3	**57,424.6**
2035	6,183.1	5,814.9	5,273.3	4,829.0	4,117.8	3,765.5	3,670.6	3,667.8	3,694.2	3,964.6	4,952.1	6,367.0	**56,300.1**

SOUTHERN CALIFORNIA GAS COMPANY
G10 COMMERCIAL FORECAST (Mdth)
COLD WEATHER

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2021	9,207.6	8,584.3	7,673.5	6,853.0	5,701.4	5,096.1	4,941.7	4,936.9	4,982.0	5,436.4	7,091.4	9,552.8	**80,057.2**
2022	9,044.2	8,433.6	7,541.1	6,738.3	5,609.1	5,016.1	4,864.8	4,860.0	4,904.2	5,349.5	6,971.4	9,381.9	**78,714.2**
2023	8,765.3	8,174.4	7,310.5	6,534.3	5,440.9	4,867.1	4,720.6	4,716.0	4,758.8	5,189.7	6,759.5	9,091.8	**76,328.9**
2024	8,522.0	7,948.4	7,109.9	6,357.3	5,295.5	4,738.6	4,596.3	4,591.9	4,633.4	5,051.8	6,575.6	8,838.5	**74,259.4**
2025	8,301.5	7,743.8	6,928.5	6,197.6	5,164.5	4,623.2	4,484.8	4,480.4	4,520.8	4,927.6	6,409.4	8,608.9	**72,390.9**
2026	8,105.7	7,562.2	6,767.7	6,056.4	5,049.1	4,521.8	4,386.9	4,382.6	4,422.0	4,818.4	6,262.4	8,404.6	**70,740.0**
2027	7,917.0	7,387.3	6,612.9	5,920.5	4,938.1	4,424.3	4,292.6	4,288.5	4,326.9	4,713.3	6,120.9	8,207.9	**69,150.2**
2028	7,728.2	7,212.3	6,457.8	5,784.3	4,826.6	4,326.2	4,197.9	4,193.9	4,231.2	4,607.6	5,979.1	8,011.2	**67,556.0**
2029	7,563.3	7,059.6	6,322.8	5,666.1	4,730.3	4,241.8	4,116.4	4,112.5	4,149.0	4,516.6	5,855.9	7,839.1	**66,173.5**
2030	7,396.1	6,904.6	6,185.7	5,545.8	4,632.1	4,155.6	4,033.2	4,029.4	4,064.9	4,423.7	5,730.6	7,664.8	**64,766.5**
2031	7,236.3	6,756.5	6,054.6	5,431.0	4,538.3	4,073.3	3,953.8	3,950.1	3,984.8	4,335.0	5,611.0	7,498.1	**63,422.7**
2032	7,097.8	6,628.3	5,941.5	5,332.3	4,458.1	4,003.3	3,886.2	3,882.6	3,916.5	4,259.2	5,508.0	7,353.5	**62,267.4**
2033	6,954.4	6,495.6	5,824.2	5,229.6	4,374.4	3,930.0	3,815.5	3,811.9	3,845.1	4,180.1	5,400.9	7,203.9	**61,065.4**
2034	6,813.1	6,364.6	5,708.4	5,128.1	4,291.7	3,857.4	3,745.5	3,742.0	3,774.4	4,101.9	5,295.2	7,056.4	**59,878.6**
2035	6,673.4	6,235.2	5,593.8	5,027.7	4,209.7	3,785.5	3,676.0	3,672.6	3,704.3	4,024.3	5,190.6	6,910.7	**58,703.7**

SOUTHERN CALIFORNIA GAS COMPANY
G10 COMMERCIAL FORECAST (Mdth)
HOT WEATHER

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2021	7,899.9	7,464.0	6,820.0	6,325.4	5,459.4	5,046.4	4,931.2	4,927.9	4,959.0	5,280.6	6,457.4	8,101.9	**73,673.2**
2022	7,763.7	7,336.4	6,705.2	6,221.7	5,372.1	4,967.5	4,854.5	4,851.2	4,881.7	5,196.9	6,350.5	7,961.0	**72,462.4**
2023	7,511.3	7,099.9	6,492.0	6,028.4	5,208.8	4,819.5	4,710.5	4,707.4	4,736.7	5,040.3	6,151.5	7,700.4	**70,206.7**
2024	7,294.0	6,896.3	6,308.4	5,861.9	5,068.2	4,692.0	4,586.5	4,583.5	4,611.8	4,905.4	5,980.2	7,475.9	**68,264.0**
2025	7,098.9	6,713.5	6,143.5	5,712.4	4,941.9	4,577.5	4,475.1	4,472.2	4,499.6	4,784.3	5,826.3	7,274.5	**66,519.8**
2026	6,928.0	6,553.2	5,999.0	5,581.3	4,831.2	4,477.1	4,377.4	4,374.6	4,401.3	4,678.1	5,691.5	7,097.9	**64,990.5**
2027	6,763.7	6,399.2	5,860.1	5,455.3	4,724.6	4,380.5	4,283.4	4,280.6	4,306.6	4,575.8	5,561.8	6,928.2	**63,519.7**
2028	6,598.8	6,244.6	5,720.6	5,328.6	4,617.5	4,283.3	4,188.8	4,186.1	4,211.3	4,473.1	5,431.5	6,758.0	**62,042.3**
2029	6,457.3	6,112.0	5,600.9	5,219.9	4,525.6	4,199.8	4,107.6	4,105.0	4,129.5	4,384.8	5,319.7	6,612.0	**60,773.9**
2030	6,313.0	5,976.6	5,478.7	5,108.9	4,431.6	4,114.5	4,024.5	4,022.0	4,045.9	4,294.6	5,205.5	6,463.0	**59,478.8**
2031	6,175.6	5,847.8	5,362.3	5,003.1	4,342.0	4,033.1	3,945.3	3,942.8	3,966.1	4,208.6	5,096.7	6,321.2	**58,244.6**
2032	6,059.1	5,738.4	5,263.6	4,913.2	4,265.9	3,963.9	3,877.9	3,875.5	3,898.3	4,135.5	5,004.4	6,201.0	**57,196.6**
2033	5,937.3	5,624.1	5,160.3	4,819.2	4,186.2	3,891.4	3,807.3	3,804.9	3,827.2	4,058.9	4,907.7	6,075.3	**56,099.7**
2034	5,817.0	5,511.2	5,058.2	4,726.3	4,107.3	3,819.6	3,737.5	3,735.1	3,756.9	3,983.2	4,812.2	5,951.2	**55,015.7**
2035	5,697.9	5,399.4	4,957.1	4,634.2	4,029.2	3,748.5	3,668.2	3,665.9	3,687.1	3,908.1	4,717.6	5,828.4	**53,941.6**

SOUTHERN CALIFORNIA GAS COMPANY
G10 COMMERCIAL FORECAST (Mdth)
BASE YEAR FORECAST

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2021	5,020.3	4,696.3	5,026.9	4,866.9	5,035.2	4,874.5	5,038.5	5,038.5	4,875.0	5,036.4	4,865.9	5,019.0	**59,393.2**
2022	4,956.5	4,636.6	4,963.2	4,805.3	4,971.8	4,813.1	4,975.1	4,975.1	4,813.6	4,972.9	4,804.3	4,955.1	**58,642.8**
2023	4,803.1	4,493.1	4,810.0	4,657.0	4,818.8	4,665.1	4,822.2	4,822.2	4,665.6	4,819.9	4,656.1	4,801.6	**56,834.5**
2024	4,675.1	4,373.3	4,682.1	4,533.4	4,691.2	4,541.6	4,694.7	4,694.7	4,542.2	4,692.4	4,532.4	4,673.6	**55,326.6**
2025	4,562.9	4,268.4	4,570.1	4,425.0	4,579.3	4,433.5	4,582.9	4,582.9	4,434.0	4,580.6	4,424.0	4,561.3	**54,004.9**
2026	4,468.1	4,179.7	4,475.4	4,333.3	4,484.6	4,341.8	4,488.2	4,488.2	4,342.3	4,485.8	4,332.3	4,466.6	**52,886.2**
2027	4,377.3	4,094.8	4,384.6	4,245.5	4,393.8	4,253.9	4,397.4	4,397.4	4,254.5	4,395.0	4,244.5	4,375.8	**51,814.4**
2028	4,285.0	4,008.4	4,292.3	4,156.2	4,301.5	4,164.6	4,305.1	4,305.1	4,165.1	4,302.7	4,155.1	4,283.5	**50,724.6**
2029	4,209.5	3,937.8	4,216.7	4,083.1	4,226.0	4,091.5	4,229.5	4,229.6	4,092.0	4,227.2	4,082.0	4,208.0	**49,832.8**
2030	4,130.8	3,864.2	4,138.0	4,006.9	4,147.3	4,015.3	4,150.8	4,150.8	4,015.9	4,148.5	4,005.9	4,129.3	**48,903.5**
2031	4,056.3	3,794.5	4,063.6	3,934.8	4,072.8	3,943.3	4,076.4	4,076.4	3,943.8	4,074.0	3,933.8	4,054.8	**48,024.7**
2032	3,996.8	3,738.8	4,004.1	3,877.2	4,013.3	3,885.6	4,016.8	4,016.9	3,886.2	4,014.5	3,876.2	3,995.3	**47,321.9**
2033	3,932.3	3,678.5	3,939.5	3,814.8	3,948.8	3,823.2	3,952.3	3,952.4	3,823.8	3,950.0	3,813.8	3,930.8	**46,560.2**
2034	3,868.1	3,618.4	3,875.3	3,752.7	3,884.5	3,761.1	3,888.1	3,888.1	3,761.6	3,885.8	3,751.6	3,866.6	**45,801.9**
2035	3,803.9	3,558.4	3,811.1	3,690.5	3,820.3	3,698.9	3,823.9	3,823.9	3,699.5	3,821.6	3,689.5	3,802.4	**45,043.9**

SOUTHERN CALIFORNIA GAS COMPANY
COMMERCIAL LOAD FUEL SUBSTITUTION FORECAST,
UNITS = Mdth)

SOURCE	YEAR	AAFS
G10Commercial	**2021**	0.00
G10Commercial	2022	5.66
G10Commercial	2023	60.61
G10Commercial	2024	148.97
G10Commercial	2025	232.27
G10Commercial	2026	322.71
G10Commercial	2027	416.86
G10Commercial	2028	510.43
G10Commercial	2029	603.42
G10Commercial	2030	696.70
G10Commercial	2031	789.95
G10Commercial	2032	882.14
G10Commercial	2033	969.41
G10Commercial	2034	1049.26
G10Commercial	2035	1119.69

SOUTHERN CALIFORNIA GAS COMPANY
G10 2021 BASE YEAR INPUT DATA

Segment	2021 Therm Sales	2021 Meter Count	2021 Meter Count, Existing/Old customers	2021 Meter Count New Customers	Avg Use Per Meter Existing Customers	Avg Use Per Meter New Customers	Price Elasticity
Office	74,497,623	44,310	44,164	146	**1,675**	3,642	-0.135376
Restaurant	220,315,759	40,162	40,113	49	**5,486**	5,528	-0.091877
Retail	56,566,385	23,409	23,271	138	**2,415**	2,739	-0.265060
Laundry	50,631,123	3,668	3,656	12	**13,799**	15,239	-0.122795
Warehouse	14,565,421	7,250	7,217	33	**1,985**	7,185	-0.043035
School	34,989,163	6,715	6,700	15	**5,209**	5,815	-0.000001
College	22,146,080	2,692	2,681	11	**8,230**	7,370	-0.037179
Health	58,103,035	6,526	6,502	24	**8,891**	12,313	-0.096826
Lodging	50,872,609	4,741	4,712	29	**10,608**	30,588	-0.105697
Misc	86,252,296	35,145	34,726	419	**2,437**	3,878	-0.000001
Government	24,465,041	3,712	3,695	17	**6,607**	3,059	-0.095709
TCU	22,452,204	5,772	5,748	24	**3,880**	6,164	-0.129301
Construction	7,828,624	5,724	5,692	32	**1,370**	1,023	-0.161076
Agriculture	48,821,882	1,321	1,316	5	**36,440**	173,250	-0.315282

SOUTHERN CALIFORNIA GAS COMPANY
G10 COMMERCIAL
EMPLOYMENT (IN MILLIONS)

YEAR	Office	Restaurant	Retail	Laundry	Warehouse	School	College	Health	Lodging	Misc
2022	1.3545	0.6552	0.9388	0.0849	0.5635	0.6639	0.2213	1.3809	0.1230	0.2487
2023	1.4079	0.6330	0.9060	0.0886	0.5842	0.6731	0.2244	1.3821	0.1370	0.2592
2024	1.4322	0.6064	0.8690	0.0896	0.5979	0.6766	0.2255	1.3994	0.1413	0.2622
2025	1.4567	0.5857	0.8387	0.0907	0.6131	0.6804	0.2268	1.4197	0.1423	0.2655
2026	1.4810	0.5773	0.8266	0.0917	0.6241	0.6840	0.2280	1.4405	0.1428	0.2685
2027	1.5096	0.5681	0.8135	0.0929	0.6306	0.6882	0.2294	1.4601	0.1435	0.2720
2028	1.5294	0.5628	0.8059	0.0940	0.6297	0.6920	0.2307	1.4794	0.1449	0.2752
2029	1.5468	0.5587	0.7999	0.0947	0.6279	0.6957	0.2319	1.4961	0.1467	0.2771
2030	1.5590	0.5599	0.8015	0.0951	0.6248	0.6991	0.2330	1.5088	0.1486	0.2783
2031	1.5560	0.5631	0.8060	0.0956	0.6241	0.7028	0.2343	1.5338	0.1493	0.2797
2032	1.5533	0.5690	0.8144	0.0958	0.6218	0.7064	0.2355	1.5614	0.1494	0.2803
2033	1.5577	0.5770	0.8259	0.0959	0.6192	0.7102	0.2367	1.5833	0.1497	0.2806
2034	1.5646	0.5838	0.8357	0.0961	0.6166	0.7139	0.2380	1.6052	0.1494	0.2813
2035	1.5717	0.5916	0.8468	0.0963	0.6144	0.7178	0.2393	1.6214	0.1493	0.2817

YEAR	Government	TCU	Construction	Agriculture	Total
2022	0.5366	0.6276	0.4425	0.2320	8.0734
2023	0.5441	0.6387	0.4478	0.2315	8.1573
2024	0.5470	0.6554	0.4482	0.2306	8.1813
2025	0.5500	0.6689	0.4513	0.2300	8.2197
2026	0.5529	0.6744	0.4542	0.2299	8.2759
2027	0.5563	0.6731	0.4559	0.2299	8.3232
2028	0.5594	0.6694	0.4581	0.2300	8.3609
2029	0.5624	0.6644	0.4630	0.2301	8.3954
2030	0.5651	0.6587	0.4673	0.2300	8.4291
2031	0.5681	0.6552	0.4691	0.2300	8.4670
2032	0.5711	0.6526	0.4728	0.2304	8.5141
2033	0.5741	0.6467	0.4802	0.2307	8.5678
2034	0.5771	0.6405	0.4881	0.2305	8.6207
2035	0.5803	0.6343	0.4972	0.2300	8.6721

SOUTHERN CALIFORNIA GAS COMPANY
USE PER METER (STOCK)

Sector	Space Heater	Water Heater	Cooktop	Griddle	Fryer	Other Cooking Equipment	Kitchen Equipment	AC	Dryer	Engine	Other	Total Building
Office	512	1,909	386	157	113	63	3	3	96	71	335	3,642
Restaurant	181	1,679	916	1,459	290	548	1	1	1	1	456	5,528
Retail	1,710	550	274	4	11	191	1	1	1	1	1	2,739
Laundry	1	5,940	1	1	1	1	1	1	9,299	1	1	15,239
Warehouse	5,906	1,255	2	25	2	2	2	2	2	2	2	7,185
School	684	5,024	21	53	3	28	1	1	2	1	1	5,815
College	509	5,473	3	3	3	3	3	3	3	3	1,388	7,370
Health	6,828	5,465	12	3	4	4	3	3	3	3	3	12,313
Lodging	5,150	24,399	2	17	1	2	2	2	703	2	319	30,588
Misc	386	2,635	151	232	43	84	1	1	34	91	222	3,878
Government	210	2,848	0	0	0	0	0	0	0	1	0	3,059
TCU	2	1	1	1	1	1	1	1	1	1,704	4,459	6,164
Construction	383	219	218	52	151	0	0	0	0	0	0	1,023
Agriculture	6	6	6	6	6	6	6	6	2,311	170,939	6	173,250

SOUTHERN CALIFORNIA GAS COMPANY
USE PER METER (NEW)

Sector	Space Heater	Water Heater	Cooktop	Griddle	Fryer	Other Cooking Equipment	Kitchen Equipment	AC	Dryer	Engine	Other	Total Building
Office	512	1,909	386	157	113	63	3	3	96	71	335	3,642
Restaurant	181	1,679	916	1,459	290	548	1	1	1	1	456	5,528
Retail	1,710	550	274	4	11	191	1	1	1	1	1	2,739
Laundry	1	5,940	1	1	1	1	1	1	9,299	1	1	15,239
Warehouse	5,906	1,255	2	25	2	2	2	2	2	2	2	7,185
School	684	5,024	21	53	3	28	1	1	2	1	1	5,815
College	509	5,473	3	3	3	3	3	3	3	3	1,388	7,370
Health	6,828	5,465	12	3	4	4	3	3	3	3	3	12,313
Lodging	5,150	24,399	2	17	1	2	2	2	703	2	319	30,588
Misc	386	2,635	151	232	43	84	1	1	34	91	222	3,878
Government	210	2,848	0	0	0	0	0	0	0	1	0	3,059
TCU	2	1	1	1	1	1	1	1	1	1,704	4,459	6,164
Construction	383	219	218	52	151	0	0	0	0	0	0	1,023
Agriculture	6	6	6	6	6	6	6	6	2,311	170,939	6	173,250

SOUTHERN CALIFORNIA GAS COMPANY
G10 COMMERCIAL
AVERAGE AND MARGINAL GAS PRICES ($/THERM)

Year	C Agriculture Average Price	C Agriculture Marginal Price	C College Average Price	C College Marginal Price	C Construction Average Price	C Construction Marginal Price	C Government Average Price	C Government Marginal Price	C Health Average Price	C Health Marginal Price	C Laundry Average Price	C Laundry Marginal Price	C Lodging Average Price	C Lodging Marginal Price	C Misc Average Price
2022	1.3799	1.2095	1.3791	1.2429	1.3747	1.2238	1.2551	1.1596	1.3077	1.1418	1.3081	1.1440	1.1596	1.0454	1.1754
2023	1.32706	1.15505	1.32709	1.18905	1.32218	1.16958	1.20124	1.10425	1.25389	1.08615	1.25483	1.08835	1.10395	0.98805	1.12002
2024	1.32678	1.15240	1.32796	1.18725	1.32231	1.16729	1.19943	1.10033	1.25211	1.08178	1.25387	1.08403	1.09961	0.98123	1.11607
2025	1.30657	1.12959	1.30899	1.16537	1.30255	1.14488	1.17755	1.07614	1.23027	1.05709	1.23292	1.05941	1.07496	0.95388	1.09184
2026	1.32902	1.14913	1.33286	1.18594	1.32551	1.16486	1.19812	1.09411	1.25089	1.07451	1.25454	1.07689	1.09242	0.96828	1.10977
2027	1.35104	1.16805	1.35637	1.20598	1.34807	1.18426	1.21814	1.11138	1.27096	1.09119	1.27567	1.09364	1.10914	0.98176	1.12699
2028	1.37745	1.19121	1.38435	1.23030	1.37504	1.20792	1.24245	1.13281	1.29533	1.11200	1.30115	1.11453	1.12999	0.99922	1.14837
2029	1.41191	1.22226	1.42046	1.26257	1.41010	1.23949	1.27471	1.16203	1.32764	1.14057	1.33464	1.14318	1.15860	1.02427	1.17754
2030	1.45140	1.25821	1.46166	1.29978	1.45020	1.27598	1.31192	1.19609	1.36491	1.17396	1.37312	1.17664	1.19204	1.05401	1.21155
2031	1.49457	1.29775	1.50658	1.34062	1.49400	1.31607	1.35275	1.23369	1.40580	1.21086	1.41525	1.21364	1.22899	1.08717	1.24909
2032	1.54210	1.34156	1.55591	1.38576	1.54218	1.36045	1.39788	1.27550	1.45098	1.25197	1.46172	1.25483	1.27014	1.12443	1.29085
2033	1.58122	1.37686	1.59688	1.42243	1.58197	1.39633	1.43453	1.30876	1.48770	1.28450	1.49975	1.28745	1.30272	1.15301	1.32405
2034	1.62134	1.41306	1.63890	1.46003	1.62277	1.43313	1.47212	1.34287	1.52536	1.31786	1.53875	1.32089	1.33613	1.18233	1.35810
2035	1.66916	1.45685	1.68865	1.50526	1.67128	1.47754	1.51734	1.38451	1.57064	1.35873	1.58542	1.36186	1.37706	1.21905	1.39968

Year	C Misc Marginal Price	C Office Average Price	C Office Marginal Price	C Restaurant Average Price	C Restaurant Marginal Price	C Retail Average Price	C Retail Marginal Price	C School Average Price	C School Marginal Price	C TCU Average Price	C TCU Marginal Price	C Warehouse Average Price	C Warehouse Marginal Price
2022	1.0789	1.2445	1.1282	1.3189	1.1621	1.2231	1.0942	1.2108	1.0830	1.3429	1.1620	1.0270	0.9666
2023	1.02213	1.19034	1.07226	1.26533	1.10675	1.16842	1.03770	1.15572	1.02631	1.28920	1.10671	0.96920	0.90790
2024	1.01617	1.18815	1.06754	1.26394	1.10290	1.16550	1.03213	1.15223	1.02045	1.28764	1.10285	0.96181	0.89908
2025	0.98974	1.16586	1.04248	1.24251	1.07878	1.14240	1.00612	1.12850	0.99413	1.26602	1.07872	0.93382	0.86954
2026	1.00519	1.18597	1.05947	1.26359	1.09682	1.16160	1.02205	1.14699	1.00971	1.28688	1.09677	0.94752	0.88148
2027	1.01978	1.20550	1.07569	1.28416	1.11418	1.18017	1.03715	1.16481	1.02444	1.30723	1.11412	0.96025	0.89235
2028	1.03841	1.22930	1.09603	1.30904	1.13569	1.20296	1.05631	1.18681	1.04321	1.33187	1.13563	0.97693	0.90708
2029	1.06468	1.26103	1.12410	1.34190	1.16500	1.23362	1.08314	1.21664	1.06963	1.36448	1.16494	1.00114	0.92924
2030	1.09568	1.29767	1.15697	1.37973	1.19915	1.26917	1.11472	1.25133	1.10079	1.40205	1.19909	1.03002	0.95600
2031	1.13015	1.33793	1.19335	1.42120	1.23685	1.30830	1.14978	1.28957	1.13541	1.44325	1.23679	1.06231	0.98610
2032	1.16874	1.38247	1.23391	1.46698	1.27876	1.35168	1.18898	1.33205	1.17417	1.48876	1.27870	1.09866	1.02021
2033	1.19870	1.41852	1.26588	1.50431	1.31212	1.38654	1.21957	1.36599	1.20430	1.52581	1.31205	1.12633	1.04558
2034	1.22942	1.45550	1.29866	1.54259	1.34633	1.42230	1.25093	1.40079	1.23519	1.56380	1.34626	1.15469	1.07159
2035	1.26758	1.50008	1.33895	1.58852	1.38808	1.46563	1.28976	1.44315	1.27353	1.60943	1.38801	1.19044	1.10492

SOUTHERN CALIFORNIA GAS COMPANY
G10 COMMERCIAL
AVERAGE AND MARGINAL ELECTRIC PRICES (CENTS/KWH)

Year	C Agriculture Average Price	C Agriculture Marginal Price	C College Average Price	C College Marginal Price	C Construction Average Price	C Construction Marginal Price	C Government Average Price	C Government Marginal Price	C Health Average Price	C Health Marginal Price	C Laundry Average Price	C Laundry Marginal Price	C Lodging Average Price	C Lodging Marginal Price
2022	22.84	22.38	22.83	23.00	22.76	22.64	20.78	21.46	21.65	21.13	21.65	21.17	19.20	19.34
2023	23.51	23.03	23.51	23.71	23.42	23.32	21.28	22.02	22.21	21.65	22.23	21.70	19.56	19.70
2024	23.98	23.50	24.00	24.21	23.90	23.80	21.68	22.44	22.63	22.06	22.66	22.11	19.88	20.01
2025	25.05	24.55	25.10	25.33	24.97	24.89	22.58	23.39	23.59	22.98	23.64	23.03	20.61	20.73
2026	25.89	25.39	25.96	26.21	25.82	25.74	23.34	24.18	24.37	23.74	24.44	23.80	21.28	21.40
2027	26.42	25.93	26.52	26.77	26.36	26.29	23.82	24.67	24.85	24.22	24.94	24.28	21.69	21.79
2028	27.55	27.06	27.69	27.95	27.51	27.44	24.85	25.74	25.91	25.26	26.03	25.32	22.60	22.70
2029	28.68	28.19	28.85	29.12	28.64	28.58	25.89	26.80	26.96	26.30	27.11	26.36	23.53	23.62
2030	29.78	29.29	29.99	30.26	29.76	29.71	26.92	27.85	28.01	27.33	28.17	27.39	24.46	24.54
2031	30.85	30.37	31.10	31.37	30.84	30.80	27.92	28.87	29.02	28.34	29.21	28.40	25.37	25.44
2032	31.97	31.49	32.25	32.53	31.97	31.93	28.98	29.94	30.08	29.39	30.30	29.46	26.33	26.39
2033	33.14	32.66	33.46	33.74	33.15	33.12	30.06	31.05	31.18	30.47	31.43	30.54	27.30	27.35
2034	34.34	33.87	34.71	35.00	34.37	34.35	31.18	32.19	32.31	31.59	32.59	31.66	28.30	28.34
2035	35.55	35.09	35.96	36.25	35.59	35.58	32.31	33.34	33.45	32.72	33.76	32.80	29.33	29.36

Year	C Misc Average Price	C Misc Marginal Price	C Office Average Price	C Office Marginal Price	C Restaurant Average Price	C Restaurant Marginal Price	C Retail Average Price	C Retail Marginal Price	C School Average Price	C School Marginal Price	C TCU Average Price	C TCU Marginal Price	C Warehouse Average Price	C Warehouse Marginal Price
2022	19.46	19.96	20.60	20.87	21.83	21.50	20.25	20.25	20.04	20.04	22.23	21.50	17.00	17.89
2023	19.84	20.38	21.09	21.38	22.42	22.07	20.70	20.69	20.47	20.46	22.84	22.06	17.17	18.10
2024	20.17	20.72	21.48	21.77	22.85	22.49	21.07	21.05	20.83	20.81	23.28	22.49	17.39	18.33
2025	20.93	21.51	22.35	22.66	23.82	23.45	21.90	21.87	21.64	21.61	24.27	23.45	17.90	18.90
2026	21.62	22.21	23.10	23.41	24.61	24.24	22.63	22.58	22.34	22.31	25.07	24.24	18.46	19.48
2027	22.03	22.64	23.57	23.88	25.11	24.73	23.07	23.02	22.77	22.74	25.56	24.73	18.77	19.81
2028	22.97	23.59	24.59	24.90	26.19	25.80	24.06	24.00	23.74	23.70	26.64	25.80	19.54	20.61
2029	23.92	24.55	25.61	25.92	27.25	26.87	25.05	24.98	24.71	24.67	27.71	26.86	20.33	21.43
2030	24.86	25.51	26.63	26.94	28.31	27.92	26.04	25.95	25.68	25.63	28.77	27.92	21.13	22.26
2031	25.78	26.45	27.62	27.93	29.34	28.94	27.01	26.91	26.62	26.57	29.79	28.94	21.93	23.08
2032	26.76	27.43	28.66	28.96	30.41	30.02	28.02	27.91	27.61	27.56	30.86	30.02	22.78	23.95
2033	27.75	28.44	29.73	30.03	31.52	31.13	29.06	28.93	28.63	28.57	31.97	31.13	23.60	24.80
2034	28.76	29.47	30.83	31.13	32.67	32.27	30.12	29.98	29.67	29.61	33.12	32.27	24.46	25.69
2035	29.81	30.53	31.95	32.25	33.83	33.43	31.21	31.06	30.73	30.67	34.28	33.43	25.35	26.61

Southern California Gas Company
Core Commercial Market
Saturations

zname	bname	nname	SAT	SOURCE
Commercial	Lodging	Cook_top	0.0840	CBECS
Commercial	Lodging	Drying	0.8200	CI_1996_STUDY
Commercial	Lodging	Fryer	0.0840	CBECS
Commercial	Lodging	Griddle	0.0840	CBECS
Commercial	Lodging	Other	1.0000	CI_1996_STUDY
Commercial	Lodging	Other_Cooking	0.0840	CBECS
Commercial	Lodging	Space_Heat	0.8950	SDGE_EUI_STUDY
Commercial	Lodging	Water_Heat	1.0000	CI_1996_STUDY
Commercial	Misc	AC_Compressor	0.7310	CBECS
Commercial	Misc	Cook_top	0.0210	CBECS
Commercial	Misc	Fryer	0.0210	CBECS
Commercial	Misc	Griddle	0.0210	CBECS
Commercial	Misc	Other	1.0000	CI_1996_STUDY
Commercial	Misc	Other_Cooking	0.0210	CBECS
Commercial	Misc	Space_Heat	0.6950	SDGE_EUI_STUDY
Commercial	Misc	Water_Heat	0.6900	CI_1996_STUDY
Commercial	Office	AC_Compressor	0.9310	CBECS
Commercial	Office	Cooking	0.0820	CBECS
Commercial	Office	Other	1.0000	CI_1996_STUDY
Commercial	Office	Space_Heat	0.8720	SDGE_EUI_STUDY
Commercial	Office	Water_Heat	0.7000	CI_1996_STUDY
Commercial	Restaurant	AC_Compressor	0.8710	CBECS
Commercial	Restaurant	Cook_top	0.7500	SCG_COOKING_STUDY
Commercial	Restaurant	Fryer	0.7290	SCG_COOKING_STUDY
Commercial	Restaurant	Griddle	0.5740	SCG_COOKING_STUDY
Commercial	Restaurant	Other	1.0000	CI_1996_STUDY
Commercial	Restaurant	Other_Cooking	0.9000	CI_1996_STUDY
Commercial	Restaurant	Space_Heat	0.8180	SDGE_EUI_STUDY
Commercial	Restaurant	Water_Heat	0.9600	CI_1996_STUDY
Commercial	Retail	Cooking	0.2450	CBECS
Commercial	Retail	Other	1.0000	CI_1996_STUDY
Commercial	Retail	Space_Heat	0.7710	SDGE_EUI_STUDY
Commercial	Retail	Water_Heat	0.6200	CI_1996_STUDY
Commercial	School	AC_Compressor	0.8850	CBECS
Commercial	School	Cook_top	0.1470	CBECS
Commercial	School	Fryer	0.1470	CBECS
Commercial	School	Griddle	0.1470	CBECS
Commercial	School	Other	1.0000	CI_1996_STUDY
Commercial	School	Other_Cooking	0.1470	CBECS
Commercial	School	Space_Heat	0.9670	SDGE_EUI_STUDY
Commercial	School	Water_Heat	0.9000	CI_1996_STUDY
Commercial	TCU	Engine	0.5000	Assumed
Commercial	TCU	Other	1.0000	CI_1996_STUDY
Commercial	TCU	Space_Heat	0.7200	CI_1996_STUDY
Commercial	TCU	Water_Heat	0.6900	CI_1996_STUDY
Commercial	Warehouse	Engine	0.2500	Assumed

Southern California Gas Company
Core Commercial Market
Saturations

zname	bname	nname	SAT	SOURCE
Commercial	Warehouse	Other	1.0000	DEFAULT
Commercial	Warehouse	Space_Heat	0.2310	SDGE_EUI_STUDY
Commercial	Warehouse	Water_Heat	0.8800	SDGE_EUI_STUDY

SAT_LOOKUP	SOURCE	FASHARE_ORIG	BNSUM_SAT	FASHARE_SDGE
OfficeSpace_Heat	SDGE_EUI_STUDY	0.7460000000000000	0.8720000000000000	0.8555045871559630
OfficeSpace_Heat	SDGE_EUI_STUDY	0.1260000000000000	0.8720000000000000	0.1444954128440370
OfficeWater_Heat	SDGE_EUI_STUDY	0.1620000000000000	0.9770000000000000	0.1658137154554760
OfficeWater_Heat	SDGE_EUI_STUDY	0.8150000000000000	0.9770000000000000	0.8341862845445240
OfficeCooking	SDGE_EUI_STUDY	0.0180000000000000	0.8700000000000000	0.0206896551724138
OfficeCooking	SDGE_EUI_STUDY	0.8520000000000000	0.8700000000000000	0.9793103448275860
OfficeAC_Compressor	CI_1996_STUDY	0.0600000000000000	1.0000000000000000	0.0600000000000000
OfficeAC_Compressor	CI_1996_STUDY	0.9400000000000000	1.0000000000000000	0.9400000000000000
OfficeOther	DEFAULT	0.1750000000000000	0.1750000000000000	1.0000000000000000
RestaurantSpace_Heat	SDGE_EUI_STUDY	0.4830000000000000	0.8180000000000000	0.5904645476772620
RestaurantSpace_Heat	SDGE_EUI_STUDY	0.3350000000000000	0.8180000000000000	0.4095354523227380
RestaurantWater_Heat	SDGE_EUI_STUDY	0.8840000000000000	0.9800000000000000	0.9020408163265310
RestaurantWater_Heat	SDGE_EUI_STUDY	0.0960000000000000	0.9800000000000000	0.0979591836734694
RestaurantCook_top	SCG_COOKING_STUDY	0.7330000000000000	0.7500000000000000	0.9773333333333330
RestaurantCook_top	SCG_COOKING_STUDY	0.0170000000000000	0.7500000000000000	0.0226666666666667
RestaurantFryer	SCG_COOKING_STUDY	0.6600000000000000	0.7290000000000000	0.9053497942386830
RestaurantFryer	SCG_COOKING_STUDY	0.0690000000000000	0.7290000000000000	0.0946502057613169
RestaurantGriddle	SCG_COOKING_STUDY	0.5570000000000000	0.5740000000000000	0.9703832752613240
RestaurantGriddle	SCG_COOKING_STUDY	0.0170000000000000	0.5740000000000000	0.0296167247386760
RestaurantOther_Cooking	SDGE_EUI_STUDY	0.6600000000000000	1.0000000000000000	0.6600000000000000
RestaurantOther_Cooking	SDGE_EUI_STUDY	0.3400000000000000	1.0000000000000000	0.3400000000000000
RestaurantAC_Compressor	CI_1996_STUDY	0.0600000000000000	1.0000000000000000	0.0600000000000000
RestaurantAC_Compressor	CI_1996_STUDY	0.9400000000000000	1.0000000000000000	0.9400000000000000
RestaurantOther	DEFAULT	0.0050000000000000	0.0050000000000000	1.0000000000000000
RetailSpace_Heat	SDGE_EUI_STUDY	0.3990000000000000	0.7710000000000000	0.5175097276264590
RetailSpace_Heat	SDGE_EUI_STUDY	0.3720000000000000	0.7710000000000000	0.4824902723735410
RetailWater_Heat	SDGE_EUI_STUDY	0.2800000000000000	0.9030000000000000	0.3100775193798450
RetailWater_Heat	SDGE_EUI_STUDY	0.6230000000000000	0.9030000000000000	0.6899224806201550
RetailCooking	SDGE_EUI_STUDY	0.0740000000000000	0.7900000000000000	0.0936708860759494
RetailCooking	SDGE_EUI_STUDY	0.7160000000000000	0.7900000000000000	0.9063291139240510
RetailOther	DEFAULT	1.0000000000000000	1.0000000000000000	1.0000000000000000
LaundrySpace_Heat	CI_1996_STUDY	0.6000000000000000	1.0400000000000000	0.5769230769230770
LaundrySpace_Heat	CI_1996_STUDY	0.4400000000000000	1.0400000000000000	0.4230769230769230
LaundryWater_Heat	CI_1996_STUDY	0.6900000000000000	1.0200000000000000	0.6764705882352940
LaundryWater_Heat	CI_1996_STUDY	0.3300000000000000	1.0200000000000000	0.3235294117647060
LaundryDrying	CI_1996_STUDY	0.6600000000000000	1.1000000000000000	0.6000000000000000
LaundryDrying	CI_1996_STUDY	0.4400000000000000	1.1000000000000000	0.4000000000000000
LaundryOther	DEFAULT	1.0000000000000000	1.0000000000000000	1.0000000000000000
WarehouseSpace_Heat	SDGE_EUI_STUDY	0.1010000000000000	0.2310000000000000	0.4372294372294370
WarehouseSpace_Heat	SDGE_EUI_STUDY	0.1300000000000000	0.2310000000000000	0.5627705627705630
WarehouseWater_Heat	SDGE_EUI_STUDY	0.0630000000000000	0.8800000000000000	0.0715909090909091
WarehouseWater_Heat	SDGE_EUI_STUDY	0.8170000000000000	0.8800000000000000	0.9284090909090910
WarehouseEngine	Assumed same as AC	0.0600000000000000	1.0000000000000000	0.0600000000000000
WarehouseEngine	Assumed same as AC	0.9400000000000000	1.0000000000000000	0.9400000000000000
WarehouseOther	DEFAULT	1.0000000000000000	1.0000000000000000	1.0000000000000000
SchoolSpace_Heat	SDGE_EUI_STUDY	0.7280000000000000	0.9670000000000000	0.7528438469493280
SchoolSpace_Heat	SDGE_EUI_STUDY	0.2390000000000000	0.9670000000000000	0.2471561530506720
SchoolWater_Heat	SDGE_EUI_STUDY	0.6970000000000000	0.9190000000000000	0.7584330794341680
SchoolWater_Heat	SDGE_EUI_STUDY	0.2220000000000000	0.9190000000000000	0.2415669205658320
SchoolCook_top	SDGE_EUI_STUDY	0.3900000000000000	0.9100000000000000	0.4285714285714290
SchoolCook_top	SDGE_EUI_STUDY	0.5200000000000000	0.9100000000000000	0.5714285714285710
SchoolFryer	SDGE_EUI_STUDY	0.3900000000000000	0.9100000000000000	0.4285714285714290
SchoolFryer	SDGE_EUI_STUDY	0.5200000000000000	0.9100000000000000	0.5714285714285710

SAT_LOOKUP	SOURCE	FASHARE_ORIG	BNSUM_SAT	FASHARE_SDGE
SchoolGriddle	SDGE_EUI_STUDY	0.3900000000000000	0.9100000000000000	0.4285714285714290
SchoolGriddle	SDGE_EUI_STUDY	0.5200000000000000	0.9100000000000000	0.5714285714285710
SchoolOther_Cooking	SDGE_EUI_STUDY	0.3900000000000000	0.9100000000000000	0.4285714285714290
SchoolOther_Cooking	SDGE_EUI_STUDY	0.5200000000000000	0.9100000000000000	0.5714285714285710
SchoolAC_Compressor	CI_1996_STUDY	0.0600000000000000	1.0000000000000000	0.0600000000000000
SchoolAC_Compressor	CI_1996_STUDY	0.9400000000000000	1.0000000000000000	0.9400000000000000
SchoolOther	DEFAULT	1.0000000000000000	1.0000000000000000	1.0000000000000000
CollegeSpace_Heat	SDGE_EUI_STUDY	0.2520000000000000	0.7630000000000000	0.3302752293577980
CollegeSpace_Heat	SDGE_EUI_STUDY	0.5110000000000000	0.7630000000000000	0.6697247706422020
CollegeWater_Heat	SDGE_EUI_STUDY	0.7800000000000000	0.9550000000000000	0.8167539267015710
CollegeWater_Heat	SDGE_EUI_STUDY	0.1750000000000000	0.9550000000000000	0.1832460732984290
CollegeCook_top	SDGE_EUI_STUDY	0.0350000000000000	0.7290000000000000	0.0480109739368999
CollegeCook_top	SDGE_EUI_STUDY	0.6940000000000000	0.7290000000000000	0.9519890260631000
CollegeFryer	SDGE_EUI_STUDY	0.0350000000000000	0.7290000000000000	0.0480109739368999
CollegeFryer	SDGE_EUI_STUDY	0.6940000000000000	0.7290000000000000	0.9519890260631000
CollegeGriddle	SDGE_EUI_STUDY	0.0350000000000000	0.7290000000000000	0.0480109739368999
CollegeGriddle	SDGE_EUI_STUDY	0.6940000000000000	0.7290000000000000	0.9519890260631000
CollegeOther_Cooking	SDGE_EUI_STUDY	0.0350000000000000	0.7290000000000000	0.0480109739368999
CollegeOther_Cooking	SDGE_EUI_STUDY	0.6940000000000000	0.7290000000000000	0.9519890260631000
CollegeAC_Compressor	CI_1996_STUDY	0.0600000000000000	1.0000000000000000	0.0600000000000000
CollegeAC_Compressor	CI_1996_STUDY	0.9400000000000000	1.0000000000000000	0.9400000000000000
CollegeOther	DEFAULT	0.0930000000000000	0.0930000000000000	1.0000000000000000
HealthSpace_Heat	SDGE_EUI_STUDY	0.6180000000000000	0.9360000000000000	0.6602564102564100
HealthSpace_Heat	SDGE_EUI_STUDY	0.3180000000000000	0.9360000000000000	0.3397435897435900
HealthWater_Heat	SDGE_EUI_STUDY	0.7220000000000000	0.8760000000000000	0.8242009132420090
HealthWater_Heat	SDGE_EUI_STUDY	0.1540000000000000	0.8760000000000000	0.1757990867579910
HealthCook_top	SDGE_EUI_STUDY	0.0870000000000000	0.9170000000000000	0.0948745910577972
HealthCook_top	SDGE_EUI_STUDY	0.8300000000000000	0.9170000000000000	0.9051254089422030
HealthFryer	SDGE_EUI_STUDY	0.0870000000000000	0.9170000000000000	0.0948745910577972
HealthFryer	SDGE_EUI_STUDY	0.8300000000000000	0.9170000000000000	0.9051254089422030
HealthGriddle	SDGE_EUI_STUDY	0.0870000000000000	0.9170000000000000	0.0948745910577972
HealthGriddle	SDGE_EUI_STUDY	0.8300000000000000	0.9170000000000000	0.9051254089422030
HealthOther_Cooking	SDGE_EUI_STUDY	0.6600000000000000	1.0000000000000000	0.6600000000000000
HealthOther_Cooking	SDGE_EUI_STUDY	0.3400000000000000	1.0000000000000000	0.3400000000000000
HealthDrying	CI_1996_STUDY	0.6600000000000000	1.1000000000000000	0.6000000000000000
HealthDrying	CI_1996_STUDY	0.4400000000000000	1.1000000000000000	0.4000000000000000
HealthAC_Compressor	CI_1996_STUDY	0.0600000000000000	1.0000000000000000	0.0600000000000000
HealthAC_Compressor	CI_1996_STUDY	0.9400000000000000	1.0000000000000000	0.9400000000000000
HealthOther	DEFAULT	0.2110000000000000	0.2110000000000000	1.0000000000000000
LodgingSpace_Heat	SDGE_EUI_STUDY	0.2430000000000000	0.8950000000000000	0.2715083798882680
LodgingSpace_Heat	SDGE_EUI_STUDY	0.6520000000000000	0.8950000000000000	0.7284916201117320
LodgingWater_Heat	SDGE_EUI_STUDY	0.9410000000000000	0.9510000000000000	0.9894847528916930
LodgingWater_Heat	SDGE_EUI_STUDY	0.0100000000000000	0.9510000000000000	0.0105152471083070
LodgingCook_top	SDGE_EUI_STUDY	0.3210000000000000	0.7140000000000000	0.4495798319327730
LodgingCook_top	SDGE_EUI_STUDY	0.3930000000000000	0.7140000000000000	0.5504201680672270
LodgingFryer	SDGE_EUI_STUDY	0.3210000000000000	0.7140000000000000	0.4495798319327730
LodgingFryer	SDGE_EUI_STUDY	0.3930000000000000	0.7140000000000000	0.5504201680672270
LodgingGriddle	SDGE_EUI_STUDY	0.3210000000000000	0.7140000000000000	0.4495798319327730
LodgingGriddle	SDGE_EUI_STUDY	0.3930000000000000	0.7140000000000000	0.5504201680672270
LodgingOther_Cooking	SDGE_EUI_STUDY	0.3210000000000000	0.7140000000000000	0.4495798319327730
LodgingOther_Cooking	SDGE_EUI_STUDY	0.3930000000000000	0.7140000000000000	0.5504201680672270
LodgingDrying	CI_1996_STUDY	0.6600000000000000	1.1000000000000000	0.6000000000000000
LodgingDrying	CI_1996_STUDY	0.4400000000000000	1.1000000000000000	0.4000000000000000

SAT_LOOKUP	SOURCE	FASHARE_ORIG	BNSUM_SAT	FASHARE_SDGE
LodgingAC_Compressor	CI_1996_STUDY	0.0600000000000000	1.0000000000000000	0.0600000000000000
LodgingAC_Compressor	CI_1996_STUDY	0.9400000000000000	1.0000000000000000	0.9400000000000000
LodgingOther	DEFAULT	0.4330000000000000	0.4330000000000000	1.0000000000000000
MiscSpace_Heat	SDGE_EUI_STUDY	0.3820000000000000	0.6950000000000000	0.5496402877697840
MiscSpace_Heat	SDGE_EUI_STUDY	0.3130000000000000	0.6950000000000000	0.4503597122302160
MiscWater_Heat	SDGE_EUI_STUDY	0.5040000000000000	0.9050000000000000	0.5569060773480660
MiscWater_Heat	SDGE_EUI_STUDY	0.4010000000000000	0.9050000000000000	0.4430939226519340
MiscCook_top	SCG_COOKING_STUDY	0.7330000000000000	0.7500000000000000	0.9773333333333330
MiscCook_top	SCG_COOKING_STUDY	0.0170000000000000	0.7500000000000000	0.0226666666666667
MiscFryer	SCG_COOKING_STUDY	0.6600000000000000	0.7290000000000000	0.9053497942386830
MiscFryer	SCG_COOKING_STUDY	0.0690000000000000	0.7290000000000000	0.0946502057613169
MiscGriddle	SCG_COOKING_STUDY	0.5570000000000000	0.5740000000000000	0.9703832752613240
MiscGriddle	SCG_COOKING_STUDY	0.0170000000000000	0.5740000000000000	0.0296167247386760
MiscOther_Cooking	SDGE_EUI_STUDY	0.6600000000000000	1.0000000000000000	0.6600000000000000
MiscOther_Cooking	SDGE_EUI_STUDY	0.3400000000000000	1.0000000000000000	0.3400000000000000
MiscAC_Compressor	CI_1996_STUDY	0.0600000000000000	1.0000000000000000	0.0600000000000000
MiscAC_Compressor	CI_1996_STUDY	0.9400000000000000	1.0000000000000000	0.9400000000000000
MiscOther	DEFAULT	0.0600000000000000	0.0600000000000000	1.0000000000000000
GovernmentSpace_Heat	SDGE_EUI_STUDY	0.7460000000000000	0.8720000000000000	0.8555045871559630
GovernmentSpace_Heat	SDGE_EUI_STUDY	0.1260000000000000	0.8720000000000000	0.1444954128440370
GovernmentWater_Heat	SDGE_EUI_STUDY	0.1620000000000000	0.9770000000000000	0.1658137154554760
GovernmentWater_Heat	SDGE_EUI_STUDY	0.8150000000000000	0.9770000000000000	0.8341862845445240
GovernmentCook_top	SCG_COOKING_STUDY	0.7330000000000000	0.7500000000000000	0.9773333333333330
GovernmentCook_top	SCG_COOKING_STUDY	0.0170000000000000	0.7500000000000000	0.0226666666666667
GovernmentFryer	SCG_COOKING_STUDY	0.6600000000000000	0.7290000000000000	0.9053497942386830
GovernmentFryer	SCG_COOKING_STUDY	0.0690000000000000	0.7290000000000000	0.0946502057613169
GovernmentGriddle	SCG_COOKING_STUDY	0.5570000000000000	0.5740000000000000	0.9703832752613240
GovernmentGriddle	SCG_COOKING_STUDY	0.0170000000000000	0.5740000000000000	0.0296167247386760
GovernmentOther_Cooking	SDGE_EUI_STUDY	0.6600000000000000	1.0000000000000000	0.6600000000000000
GovernmentOther_Cooking	SDGE_EUI_STUDY	0.3400000000000000	1.0000000000000000	0.3400000000000000
GovernmentAC_Compressor	CI_1996_STUDY	0.0600000000000000	1.0000000000000000	0.0600000000000000
GovernmentAC_Compressor	CI_1996_STUDY	0.9400000000000000	1.0000000000000000	0.9400000000000000
GovernmentOther	DEFAULT	0.1750000000000000	0.1750000000000000	1.0000000000000000
TCUSpace_Heat	CI_1996_STUDY	0.6000000000000000	1.0400000000000000	0.5769230769230770
TCUSpace_Heat	CI_1996_STUDY	0.4400000000000000	1.0400000000000000	0.4230769230769230
TCUWater_Heat	CI_1996_STUDY	0.6900000000000000	1.0200000000000000	0.6764705882352940
TCUWater_Heat	CI_1996_STUDY	0.3300000000000000	1.0200000000000000	0.3235294117647060
TCUEngine	Assumed same as AC	0.0600000000000000	1.0000000000000000	0.0600000000000000
TCUEngine	Assumed same as AC	0.9400000000000000	1.0000000000000000	0.9400000000000000
TCUOther	DEFAULT	1.0000000000000000	1.0000000000000000	1.0000000000000000
ConstructionSpace_Heat	CI_1996_STUDY	0.6000000000000000	1.0400000000000000	0.5769230769230770
ConstructionSpace_Heat	CI_1996_STUDY	0.4400000000000000	1.0400000000000000	0.4230769230769230
ConstructionWater_Heat	CI_1996_STUDY	0.6900000000000000	1.0200000000000000	0.6764705882352940
ConstructionWater_Heat	CI_1996_STUDY	0.3300000000000000	1.0200000000000000	0.3235294117647060
ConstructionOther	DEFAULT	1.0000000000000000	1.0000000000000000	1.0000000000000000
AgricultureSpace_Heat	CI_1996_STUDY	0.6000000000000000	1.0400000000000000	0.5769230769230770
AgricultureSpace_Heat	CI_1996_STUDY	0.4400000000000000	1.0400000000000000	0.4230769230769230
AgricultureWater_Heat	CI_1996_STUDY	0.6900000000000000	1.0200000000000000	0.6764705882352940
AgricultureWater_Heat	CI_1996_STUDY	0.3300000000000000	1.0200000000000000	0.3235294117647060
AgricultureDrying	NEED DATA	1.0000000000000000	1.0000000000000000	1.0000000000000000
AgricultureDrying	NEED DATA	0.0000000000000000	1.0000000000000000	0.0000000000000000
AgricultureEngine	Assumed same as AC	0.0600000000000000	1.0000000000000000	0.0600000000000000
AgricultureEngine	Assumed same as AC	0.9400000000000000	1.0000000000000000	0.9400000000000000

SAT_LOOKUP	SOURCE	FASHARE_ORIG	BNSUM_SAT	FASHARE_SDGE
AgricultureOther	DEFAULT	1.0000000000000000	1.0000000000000000	1.0000000000000000
GrocerySpace_Heat	SDGE_EUI_STUDY	0.4830000000000000	0.6470000000000000	0.7465224111282840
GrocerySpace_Heat	SDGE_EUI_STUDY	0.1640000000000000	0.6470000000000000	0.2534775888717160
GroceryWater_Heat	SDGE_EUI_STUDY	0.6950000000000000	0.9810000000000000	0.7084607543323140
GroceryWater_Heat	SDGE_EUI_STUDY	0.2860000000000000	0.9810000000000000	0.2915392456676860
GroceryCook_top	SDGE_EUI_STUDY	0.3210000000000000	0.9010000000000000	0.3562708102108770
GroceryCook_top	SDGE_EUI_STUDY	0.5800000000000000	0.9010000000000000	0.6437291897891230
GroceryFryer	SDGE_EUI_STUDY	0.3210000000000000	0.9010000000000000	0.3562708102108770
GroceryFryer	SDGE_EUI_STUDY	0.5800000000000000	0.9010000000000000	0.6437291897891230
GroceryGriddle	SDGE_EUI_STUDY	0.3210000000000000	0.9010000000000000	0.3562708102108770
GroceryGriddle	SDGE_EUI_STUDY	0.5800000000000000	0.9010000000000000	0.6437291897891230
GroceryOther_Cooking	SDGE_EUI_STUDY	0.3210000000000000	0.9010000000000000	0.3562708102108770
GroceryOther_Cooking	SDGE_EUI_STUDY	0.5800000000000000	0.9010000000000000	0.6437291897891230
GroceryAC_Compressor	CI_1996_STUDY	0.0600000000000000	1.0000000000000000	0.0600000000000000
GroceryAC_Compressor	CI_1996_STUDY	0.9400000000000000	1.0000000000000000	0.9400000000000000
GroceryOther	DEFAULT	1.0000000000000000	1.0000000000000000	1.0000000000000000

bname	nname	fname	_NAME_	Stock_Existing	Standard_Existing	High_Existing	Premium_Existing
Agriculture	Drying	Electric	B0	0.3120000	0.2808000	N/A	N/A
Agriculture	Drying	Natural_Gas	B0	0.2013300	0.1811970	N/A	N/A
Agriculture	Engine	Electric	B0	1.3416000	1.2074400	N/A	N/A
Agriculture	Engine	Natural_Gas	B0	0.8657190	0.7791471	N/A	N/A
Agriculture	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Agriculture	Space_Heat	Electric	B0	0.6010000	0.5409000	N/A	N/A
Agriculture	Space_Heat	Natural_Gas	B0	0.1468600	0.1321740	0.1202783	0.1083827
Agriculture	Water_Heat	Electric	B0	0.3120000	0.2808000	0.2732184	0.2656368
Agriculture	Water_Heat	Natural_Gas	B0	0.2013300	0.1811970	0.1585474	0.1358978
College	AC_Compresso	Electric	B0	3.4630000	3.1167000	N/A	N/A
College	AC_Compresso	Natural_Gas	B0	0.1181922	0.1063730	N/A	N/A
College	Cook_top	Electric	B0	0.7620000	0.6858000	N/A	N/A
College	Cook_top	Natural_Gas	B0	0.0486000	0.0437400	N/A	N/A
College	Fryer	Electric	B0	0.7620000	0.6858000	N/A	N/A
College	Fryer	Natural_Gas	B0	0.0485700	0.0437130	N/A	N/A
College	Griddle	Electric	B0	0.7620000	0.6858000	N/A	N/A
College	Griddle	Natural_Gas	B0	0.0485700	0.0437130	N/A	N/A
College	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
College	Other_Cooking	Electric	B0	0.7620000	0.6858000	N/A	N/A
College	Other_Cooking	Natural_Gas	B0	0.0486000	0.0437400	N/A	N/A
College	Space_Heat	Electric	B0	0.1990000	0.1791000	N/A	N/A
College	Space_Heat	Natural_Gas	B0	0.2664300	0.2397870	0.2182062	0.1966253
College	Water_Heat	Electric	B0	0.6400000	0.5760000	0.5604480	0.5448960
College	Water_Heat	Natural_Gas	B0	0.2871500	0.2584350	0.2261306	0.1938263
Construction	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Construction	Space_Heat	Electric	B0	0.6010000	0.5409000	N/A	N/A
Construction	Space_Heat	Natural_Gas	B0	0.1468600	0.1321740	0.1202783	0.1083827
Construction	Water_Heat	Electric	B0	0.3120000	0.2808000	0.2732184	0.2656368
Construction	Water_Heat	Natural_Gas	B0	0.2013300	0.1811970	0.1585474	0.1358978
Government	AC_Compresso	Electric	B0	3.0560000	2.7504000	N/A	N/A
Government	AC_Compresso	Natural_Gas	B0	0.1043013	0.0938712	N/A	N/A
Government	Cook_top	Electric	B0	0.4510000	0.4059000	N/A	N/A
Government	Cook_top	Natural_Gas	B0	0.0346000	0.0311400	N/A	N/A
Government	Fryer	Electric	B0	0.4510000	0.4059000	N/A	N/A
Government	Fryer	Natural_Gas	B0	0.0345900	0.0311310	N/A	N/A
Government	Griddle	Electric	B0	0.4510000	0.4059000	N/A	N/A
Government	Griddle	Natural_Gas	B0	0.0345900	0.0311310	N/A	N/A
Government	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Government	Other_Cooking	Electric	B0	0.4510000	0.4059000	N/A	N/A
Government	Other_Cooking	Natural_Gas	B0	0.0346000	0.0311400	N/A	N/A
Government	Space_Heat	Electric	B0	0.8450000	N/A	N/A	N/A
Government	Space_Heat	Natural_Gas	B0	0.3046400	0.2741760	0.2495002	0.2248243
Government	Water_Heat	Electric	B0	0.1790000	0.1611000	0.1567503	0.1524006
Government	Water_Heat	Natural_Gas	B0	0.0473900	0.0426510	0.0373196	0.0319883
Grocery	AC_Compresso	Electric	B0	5.5860000	5.0274000	N/A	N/A
Grocery	AC_Compresso	Natural_Gas	B0	0.1906502	0.1715852	N/A	N/A
Grocery	Cook_top	Electric	B0	5.2450000	4.7205000	N/A	N/A
Grocery	Cook_top	Natural_Gas	B0	0.0418300	0.0376470	N/A	N/A
Grocery	Fryer	Electric	B0	5.2450000	4.7205000	N/A	N/A
Grocery	Fryer	Natural_Gas	B0	0.4183200	0.3764880	N/A	N/A
Grocery	Griddle	Electric	B0	5.2450000	4.7205000	N/A	N/A
Grocery	Griddle	Natural_Gas	B0	0.4183200	0.3764880	N/A	N/A
Grocery	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Grocery	Other_Cooking	Electric	B0	5.2450000	4.7205000	N/A	N/A
Grocery	Other_Cooking	Natural_Gas	B0	0.0418300	0.0376470	N/A	N/A
Grocery	Space_Heat	Electric	B0	0.7350000	N/A	N/A	N/A
Grocery	Space_Heat	Natural_Gas	B0	0.0976200	0.0878580	0.0799508	0.0720436
Grocery	Water_Heat	Electric	B0	1.7630000	1.5867000	1.5438591	1.5010182

bname	nname	fname	_NAME_	Stock_Existing	Standard_Existing	High_Existing	Premium_Existing
Grocery	Water_Heat	Natural_Gas	B0	0.3182700	0.2864430	0.2506376	0.2148323
Health	AC_Compresso	Electric	B0	3.3360000	3.0024000	N/A	N/A
Health	AC_Compresso	Natural_Gas	B0	0.1138577	0.1024719	N/A	N/A
Health	Cook_top	Electric	B0	1.1540000	1.0386000	N/A	N/A
Health	Cook_top	Natural_Gas	B0	0.2635800	0.2372220	N/A	N/A
Health	Drying	Electric	B0	0.7619500	0.6857550	N/A	N/A
Health	Drying	Natural_Gas	B0	0.1459815	0.1313834	N/A	N/A
Health	Fryer	Electric	B0	1.1540000	1.0386000	N/A	N/A
Health	Fryer	Natural_Gas	B0	0.2635800	0.2372220	N/A	N/A
Health	Griddle	Electric	B0	1.1540000	1.0386000	N/A	N/A
Health	Griddle	Natural_Gas	B0	0.2635800	0.2372220	N/A	N/A
Health	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Health	Other_Cooking	Electric	B0	1.1540000	1.0386000	N/A	N/A
Health	Other_Cooking	Natural_Gas	B0	0.0263600	0.0237240	N/A	N/A
Health	Space_Heat	Electric	B0	0.4050000	0.3645000	N/A	N/A
Health	Space_Heat	Natural_Gas	B0	0.0689400	0.0620460	0.0564619	0.0508777
Health	Water_Heat	Electric	B0	2.1770000	1.9593000	1.9063989	1.8534978
Health	Water_Heat	Natural_Gas	B0	0.4170900	0.3753810	0.3284584	0.2815358
Laundry	Drying	Electric	B0	85.5136937	76.9623243	N/A	N/A
Laundry	Drying	Natural_Gas	B0	14.9366516	13.4429864	N/A	N/A
Laundry	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Laundry	Space_Heat	Electric	B0	0.6010000	0.5409000	N/A	N/A
Laundry	Space_Heat	Natural_Gas	B0	0.1468600	0.1321740	0.1202783	0.1083827
Laundry	Water_Heat	Electric	B0	15.8040000	14.2236000	13.8395628	13.4555256
Laundry	Water_Heat	Natural_Gas	B0	2.7604800	2.4844320	2.1738780	1.8633240
Lodging	AC_Compresso	Electric	B0	1.6700000	1.5030000	N/A	N/A
Lodging	AC_Compresso	Natural_Gas	B0	0.0569971	0.0512974	N/A	N/A
Lodging	Cook_top	Electric	B0	39.3000000	35.3700000	N/A	N/A
Lodging	Cook_top	Natural_Gas	B0	0.3210000	0.2889000	N/A	N/A
Lodging	Drying	Electric	B0	0.9877500	0.8889750	N/A	N/A
Lodging	Drying	Natural_Gas	B0	0.1725300	0.1552770	N/A	N/A
Lodging	Fryer	Electric	B0	5.2450000	4.7205000	N/A	N/A
Lodging	Fryer	Natural_Gas	B0	0.4183200	0.3764880	N/A	N/A
Lodging	Griddle	Electric	B0	5.2450000	4.7205000	N/A	N/A
Lodging	Griddle	Natural_Gas	B0	0.4183200	0.3764880	N/A	N/A
Lodging	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Lodging	Other_Cooking	Electric	B0	5.2450000	4.7205000	N/A	N/A
Lodging	Other_Cooking	Natural_Gas	B0	0.0410000	0.0369000	N/A	N/A
Lodging	Space_Heat	Electric	B0	0.5490000	0.4941000	N/A	N/A
Lodging	Space_Heat	Natural_Gas	B0	0.3869800	0.3482820	0.3169366	0.2855912
Lodging	Water_Heat	Electric	B0	3.9510000	3.5559000	3.4598907	3.3638814
Lodging	Water_Heat	Natural_Gas	B0	0.6901200	0.6211080	0.5434695	0.4658310
Misc	AC_Compresso	Electric	B0	3.8720000	3.4848000	N/A	N/A
Misc	AC_Compresso	Natural_Gas	B0	0.1321514	0.1189362	N/A	N/A
Misc	Cook_top	Electric	B0	0.5390000	0.4851000	N/A	N/A
Misc	Cook_top	Natural_Gas	B0	0.0430000	0.0387000	N/A	N/A
Misc	Fryer	Electric	B0	0.5390000	0.4851000	N/A	N/A
Misc	Fryer	Natural_Gas	B0	0.0430200	0.0387180	N/A	N/A
Misc	Griddle	Electric	B0	0.5390000	0.4851000	N/A	N/A
Misc	Griddle	Natural_Gas	B0	0.0430200	0.0387180	N/A	N/A
Misc	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Misc	Other_Cooking	Electric	B0	0.5390000	0.4851000	N/A	N/A
Misc	Other_Cooking	Natural_Gas	B0	0.0430000	0.0387000	N/A	N/A
Misc	Space_Heat	Electric	B0	0.6010000	0.5409000	N/A	N/A
Misc	Space_Heat	Natural_Gas	B0	0.1468600	0.1321740	0.1202783	0.1083827
Misc	Water_Heat	Electric	B0	0.3120000	0.2808000	0.2732184	0.2656368
Misc	Water_Heat	Natural_Gas	B0	0.2013300	0.1811970	0.1585474	0.1358978
Office	AC_Compresso	Electric	B0	3.0560000	2.7504000	N/A	N/A

bname	nname	fname	_NAME_	Stock_Existing	Standard_Existing	High_Existing	Premium_Existing
Office	AC_Compresso	Natural_Gas	B0	0.1043013	0.0938712	N/A	N/A
Office	Cooking	Electric	B0	0.4510000	0.4059000	N/A	N/A
Office	Cooking	Natural_Gas	B0	0.0345900	0.0311310	N/A	N/A
Office	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Office	Space_Heat	Electric	B0	0.8450000	0.7605000	N/A	N/A
Office	Space_Heat	Natural_Gas	B0	0.3046400	0.2741760	0.2495002	0.2248243
Office	Water_Heat	Electric	B0	0.1790000	0.1611000	0.1567503	0.1524006
Office	Water_Heat	Natural_Gas	B0	0.0473900	0.0426510	0.0373196	0.0319883
Restaurant	AC_Compresso	Electric	B0	5.9430000	5.3487000	N/A	N/A
Restaurant	AC_Compresso	Natural_Gas	B0	0.2028346	0.1825511	N/A	N/A
Restaurant	Cook_top	Electric	B0	1.5190269	1.3671242	N/A	N/A
Restaurant	Cook_top	Natural_Gas	B0	1.1985040	1.0786536	N/A	N/A
Restaurant	Fryer	Electric	B0	6.1654621	5.5489159	N/A	N/A
Restaurant	Fryer	Natural_Gas	B0	1.0791441	0.9712297	N/A	N/A
Restaurant	Griddle	Electric	B0	1.5190269	1.3671242	N/A	N/A
Restaurant	Griddle	Natural_Gas	B0	0.9107322	0.8196590	N/A	N/A
Restaurant	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Restaurant	Other_Cooking	Electric	B0	27.3424841	24.6082357	N/A	N/A
Restaurant	Other_Cooking	Natural_Gas	B0	0.9712297	0.8741067	N/A	N/A
Restaurant	Space_Heat	Electric	B0	0.3430000	0.3087000	N/A	N/A
Restaurant	Space_Heat	Natural_Gas	B0	0.1176700	0.1059030	0.0963717	0.0868405
Restaurant	Water_Heat	Electric	B0	4.2600000	3.8340000	3.7304820	3.6269640
Restaurant	Water_Heat	Natural_Gas	B0	0.8665900	0.7799310	0.6824396	0.5849483
Retail	Cooking	Electric	B0	0.6930000	0.6237000	N/A	N/A
Retail	Cooking	Natural_Gas	B0	0.3078600	0.2770740	N/A	N/A
Retail	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Retail	Space_Heat	Electric	B0	1.3560000	1.2204000	N/A	N/A
Retail	Space_Heat	Natural_Gas	B0	0.2455200	0.2209680	0.2010809	0.1811938
Retail	Water_Heat	Electric	B0	0.5280000	0.4752000	0.4623696	0.4495392
Retail	Water_Heat	Natural_Gas	B0	0.1092600	0.0983340	0.0860423	0.0737505
School	AC_Compresso	Electric	B0	1.9130000	1.7217000	N/A	N/A
School	AC_Compresso	Natural_Gas	B0	0.0652907	0.0587616	N/A	N/A
School	Cook_top	Electric	B0	0.5020000	0.4518000	N/A	N/A
School	Cook_top	Natural_Gas	B0	0.0460000	0.0414000	N/A	N/A
School	Fryer	Electric	B0	0.5020000	0.4518000	N/A	N/A
School	Fryer	Natural_Gas	B0	0.0461000	0.0414900	N/A	N/A
School	Griddle	Electric	B0	0.5020000	0.4518000	N/A	N/A
School	Griddle	Natural_Gas	B0	0.0461000	0.0414900	N/A	N/A
School	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
School	Other_Cooking	Electric	B0	0.5020000	0.4518000	N/A	N/A
School	Other_Cooking	Natural_Gas	B0	0.0460000	0.0414000	N/A	N/A
School	Space_Heat	Electric	B0	0.4840000	0.4356000	N/A	N/A
School	Space_Heat	Natural_Gas	B0	0.0923800	0.0831420	0.0756592	0.0681764
School	Water_Heat	Electric	B0	0.6880000	0.6192000	0.6024816	0.5857632
School	Water_Heat	Natural_Gas	B0	0.1232800	0.1109520	0.0970830	0.0832140
TCU	Engine	Electric	B0	3.7825983	3.4043385	N/A	N/A
TCU	Engine	Natural_Gas	B0	2.4408670	2.1967803	N/A	N/A
TCU	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
TCU	Space_Heat	Electric	B0	0.6010000	0.5409000	N/A	N/A
TCU	Space_Heat	Natural_Gas	B0	0.1468600	0.1321740	0.1202783	0.1083827
TCU	Water_Heat	Electric	B0	0.3120000	0.2808000	0.2732184	0.2656368
TCU	Water_Heat	Natural_Gas	B0	0.2013300	0.1811970	0.1585474	0.1358978
Warehouse	Engine	Electric	B0	33.4700769	30.1230692	N/A	N/A
Warehouse	Engine	Natural_Gas	B0	8.8838738	7.9954865	N/A	N/A
Warehouse	Other	Natural_Gas	B0	0.00	N/A	N/A	N/A
Warehouse	Space_Heat	Electric	B0	2.3400000	2.1060000	N/A	N/A
Warehouse	Space_Heat	Natural_Gas	B0	0.6211000	0.5589900	0.5086809	0.4583718
Warehouse	Water_Heat	Electric	B0	0.1300000	0.1170000	0.1138410	0.1106820

Southern California Gas Company
Core Commercial Market
EUI Data

bname	nname	fname	_NAME_	Stock_Existing	Standard_Existing	High_Existing	Premium_Existing
Warehouse	Water_Heat	Natural_Gas	B0	0.2048000	0.1843200	0.1612800	0.1382400

bname	nname	fname	_NAME_	SAT_LOOKUP	Stock_Qtec	Standard_Qtec	High_Qtec	Premium_Qtec
Agriculture	Drying	Electric	EASHARE	AgricultureDryingElectric	0.65	0.35	N/A	N/A
Agriculture	Drying	Natural_Gas	EASHARE	AgricultureDryingNatural_Gas	0.65	0.35	N/A	N/A
Agriculture	Engine	Electric	EASHARE	AgricultureEngineElectric	0.65	0.35	N/A	N/A
Agriculture	Engine	Natural_Gas	EASHARE	AgricultureEngineNatural_Gas	0.65	0.35	N/A	N/A
Agriculture	Other	Natural_Gas	EASHARE	AgricultureOtherNatural_Gas	1	N/A	N/A	N/A
Agriculture	Space_Heat	Electric	EASHARE	AgricultureSpace_HeatElectric	1	999	999	999
Agriculture	Space_Heat	Natural_Gas	EASHARE	AgricultureSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Agriculture	Water_Heat	Electric	EASHARE	AgricultureWater_HeatElectric	0.4	0.5	0.08	0.02
Agriculture	Water_Heat	Natural_Gas	EASHARE	AgricultureWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
College	AC_Compressor	Electric	EASHARE	CollegeAC_CompressorElectric	0.65	0.35	N/A	N/A
College	AC_Compressor	Natural_Gas	EASHARE	CollegeAC_CompressorNatural_Gas	0.65	0.35	N/A	N/A
College	Cook_top	Electric	EASHARE	CollegeCook_topElectric	0.65	0.35	N/A	N/A
College	Cook_top	Natural_Gas	EASHARE	CollegeCook_topNatural_Gas	0.65	0.35	N/A	N/A
College	Fryer	Electric	EASHARE	CollegeFryerElectric	0.65	0.35	N/A	N/A
College	Fryer	Natural_Gas	EASHARE	CollegeFryerNatural_Gas	0.65	0.35	N/A	N/A
College	Griddle	Electric	EASHARE	CollegeGriddleElectric	0.65	0.35	N/A	N/A
College	Griddle	Natural_Gas	EASHARE	CollegeGriddleNatural_Gas	0.65	0.35	N/A	N/A
College	Other	Natural_Gas	EASHARE	CollegeOtherNatural_Gas	1	N/A	N/A	N/A
College	Other_Cooking	Electric	EASHARE	CollegeOther_CookingElectric	0.65	0.35	N/A	N/A
College	Other_Cooking	Natural_Gas	EASHARE	CollegeOther_CookingNatural_Gas	0.65	0.35	N/A	N/A
College	Space_Heat	Electric	EASHARE	CollegeSpace_HeatElectric	1	999	999	999
College	Space_Heat	Natural_Gas	EASHARE	CollegeSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
College	Water_Heat	Electric	EASHARE	CollegeWater_HeatElectric	0.4	0.5	0.08	0.02
College	Water_Heat	Natural_Gas	EASHARE	CollegeWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Construction	Other	Natural_Gas	EASHARE	ConstructionOtherNatural_Gas	1	N/A	N/A	N/A
Construction	Space_Heat	Electric	EASHARE	ConstructionSpace_HeatElectric	1	999	999	999
Construction	Space_Heat	Natural_Gas	EASHARE	ConstructionSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Construction	Water_Heat	Electric	EASHARE	ConstructionWater_HeatElectric	0.4	0.5	0.08	0.02
Construction	Water_Heat	Natural_Gas	EASHARE	ConstructionWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Government	AC_Compressor	Electric	EASHARE	GovernmentAC_CompressorElectric	0.65	0.35	N/A	N/A
Government	AC_Compressor	Natural_Gas	EASHARE	GovernmentAC_CompressorNatural_Gas	0.65	0.35	N/A	N/A
Government	Cook_top	Electric	EASHARE	GovernmentCook_topElectric	0.65	0.35	N/A	N/A
Government	Cook_top	Natural_Gas	EASHARE	GovernmentCook_topNatural_Gas	0.65	0.35	N/A	N/A
Government	Fryer	Electric	EASHARE	GovernmentFryerElectric	0.65	0.35	N/A	N/A
Government	Fryer	Natural_Gas	EASHARE	GovernmentFryerNatural_Gas	0.65	0.35	N/A	N/A
Government	Griddle	Electric	EASHARE	GovernmentGriddleElectric	0.65	0.35	N/A	N/A
Government	Griddle	Natural_Gas	EASHARE	GovernmentGriddleNatural_Gas	0.65	0.35	N/A	N/A
Government	Other	Natural_Gas	EASHARE	GovernmentOtherNatural_Gas	1	N/A	N/A	N/A
Government	Other_Cooking	Electric	EASHARE	GovernmentOther_CookingElectric	0.65	0.35	N/A	N/A
Government	Other_Cooking	Natural_Gas	EASHARE	GovernmentOther_CookingNatural_Gas	0.65	0.35	N/A	N/A
Government	Space_Heat	Electric	EASHARE	GovernmentSpace_HeatElectric	1	999	999	999
Government	Space_Heat	Natural_Gas	EASHARE	GovernmentSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Government	Water_Heat	Electric	EASHARE	GovernmentWater_HeatElectric	0.4	0.5	0.08	0.02
Government	Water_Heat	Natural_Gas	EASHARE	GovernmentWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Grocery	AC_Compressor	Electric	EASHARE	GroceryAC_CompressorElectric	0.65	0.35	N/A	N/A
Grocery	AC_Compressor	Natural_Gas	EASHARE	GroceryAC_CompressorNatural_Gas	0.65	0.35	N/A	N/A
Grocery	Cook_top	Electric	EASHARE	GroceryCook_topElectric	0.65	0.35	N/A	N/A
Grocery	Cook_top	Natural_Gas	EASHARE	GroceryCook_topNatural_Gas	0.65	0.35	N/A	N/A
Grocery	Fryer	Electric	EASHARE	GroceryFryerElectric	0.65	0.35	N/A	N/A
Grocery	Fryer	Natural_Gas	EASHARE	GroceryFryerNatural_Gas	0.65	0.35	N/A	N/A
Grocery	Griddle	Electric	EASHARE	GroceryGriddleElectric	0.65	0.35	N/A	N/A
Grocery	Griddle	Natural_Gas	EASHARE	GroceryGriddleNatural_Gas	0.65	0.35	N/A	N/A
Grocery	Other	Natural_Gas	EASHARE	GroceryOtherNatural_Gas	1	N/A	N/A	N/A
Grocery	Other_Cooking	Electric	EASHARE	GroceryOther_CookingElectric	0.65	0.35	N/A	N/A
Grocery	Other_Cooking	Natural_Gas	EASHARE	GroceryOther_CookingNatural_Gas	0.65	0.35	N/A	N/A
Grocery	Space_Heat	Electric	EASHARE	GrocerySpace_HeatElectric	1	999	999	999
Grocery	Space_Heat	Natural_Gas	EASHARE	GrocerySpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Grocery	Water_Heat	Electric	EASHARE	GroceryWater_HeatElectric	0.4	0.5	0.08	0.02
Grocery	Water_Heat	Natural_Gas	EASHARE	GroceryWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Health	AC_Compressor	Electric	EASHARE	HealthAC_CompressorElectric	0.65	0.35	N/A	N/A
Health	AC_Compressor	Natural_Gas	EASHARE	HealthAC_CompressorNatural_Gas	0.65	0.35	N/A	N/A
Health	Cook_top	Electric	EASHARE	HealthCook_topElectric	0.65	0.35	N/A	N/A
Health	Cook_top	Natural_Gas	EASHARE	HealthCook_topNatural_Gas	0.65	0.35	N/A	N/A
Health	Drying	Electric	EASHARE	HealthDryingElectric	0.65	0.35	N/A	N/A
Health	Drying	Natural_Gas	EASHARE	HealthDryingNatural_Gas	0.65	0.35	N/A	N/A
Health	Fryer	Electric	EASHARE	HealthFryerElectric	0.65	0.35	N/A	N/A
Health	Fryer	Natural_Gas	EASHARE	HealthFryerNatural_Gas	0.65	0.35	N/A	N/A
Health	Griddle	Electric	EASHARE	HealthGriddleElectric	0.65	0.35	N/A	N/A
Health	Griddle	Natural_Gas	EASHARE	HealthGriddleNatural_Gas	0.65	0.35	N/A	N/A
Health	Other	Natural_Gas	EASHARE	HealthOtherNatural_Gas	1	N/A	N/A	N/A
Health	Other_Cooking	Electric	EASHARE	HealthOther_CookingElectric	0.65	0.35	N/A	N/A
Health	Other_Cooking	Natural_Gas	EASHARE	HealthOther_CookingNatural_Gas	0.65	0.35	N/A	N/A
Health	Space_Heat	Electric	EASHARE	HealthSpace_HeatElectric	1	999	999	999
Health	Space_Heat	Natural_Gas	EASHARE	HealthSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Health	Water_Heat	Electric	EASHARE	HealthWater_HeatElectric	0.4	0.5	0.08	0.02
Health	Water_Heat	Natural_Gas	EASHARE	HealthWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Laundry	Drying	Electric	EASHARE	LaundryDryingElectric	0.65	0.35	N/A	N/A

bname	nname	fname	_NAME_	SAT_LOOKUP	Stock_Qtec	Standard_Qtec	High_Qtec	Premium_Qtec
Laundry	Drying	Natural_Gas	EASHARE	LaundryDryingNatural_Gas	0.65	0.35	N/A	N/A
Laundry	Other	Natural_Gas	EASHARE	LaundryOtherNatural_Gas	1	N/A	N/A	N/A
Laundry	Space_Heat	Electric	EASHARE	LaundrySpace_HeatElectric	1	999	999	999
Laundry	Space_Heat	Natural_Gas	EASHARE	LaundrySpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Laundry	Water_Heat	Electric	EASHARE	LaundryWater_HeatElectric	0.4	0.5	0.08	0.02
Laundry	Water_Heat	Natural_Gas	EASHARE	LaundryWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Lodging	AC_Compressor	Electric	EASHARE	LodgingAC_CompressorElectric	0.65	0.35	N/A	N/A
Lodging	AC_Compressor	Natural_Gas	EASHARE	LodgingAC_CompressorNatural_Gas	0.65	0.35	N/A	N/A
Lodging	Cook_top	Electric	EASHARE	LodgingCook_topElectric	0.65	0.35	N/A	N/A
Lodging	Cook_top	Natural_Gas	EASHARE	LodgingCook_topNatural_Gas	0.65	0.35	N/A	N/A
Lodging	Drying	Electric	EASHARE	LodgingDryingElectric	0.65	0.35	N/A	N/A
Lodging	Drying	Natural_Gas	EASHARE	LodgingDryingNatural_Gas	0.65	0.35	N/A	N/A
Lodging	Fryer	Electric	EASHARE	LodgingFryerElectric	0.65	0.35	N/A	N/A
Lodging	Fryer	Natural_Gas	EASHARE	LodgingFryerNatural_Gas	0.65	0.35	N/A	N/A
Lodging	Griddle	Electric	EASHARE	LodgingGriddleElectric	0.65	0.35	N/A	N/A
Lodging	Griddle	Natural_Gas	EASHARE	LodgingGriddleNatural_Gas	0.65	0.35	N/A	N/A
Lodging	Other	Natural_Gas	EASHARE	LodgingOtherNatural_Gas	1	N/A	N/A	N/A
Lodging	Other_Cooking	Electric	EASHARE	LodgingOther_CookingElectric	0.65	0.35	N/A	N/A
Lodging	Other_Cooking	Natural_Gas	EASHARE	LodgingOther_CookingNatural_Gas	0.65	0.35	N/A	N/A
Lodging	Space_Heat	Electric	EASHARE	LodgingSpace_HeatElectric	1	999	999	999
Lodging	Space_Heat	Natural_Gas	EASHARE	LodgingSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Lodging	Water_Heat	Electric	EASHARE	LodgingWater_HeatElectric	0.4	0.5	0.08	0.02
Lodging	Water_Heat	Natural_Gas	EASHARE	LodgingWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Misc	AC_Compressor	Electric	EASHARE	MiscAC_CompressorElectric	0.65	0.35	N/A	N/A
Misc	AC_Compressor	Natural_Gas	EASHARE	MiscAC_CompressorNatural_Gas	0.65	0.35	N/A	N/A
Misc	Cook_top	Electric	EASHARE	MiscCook_topElectric	0.65	0.35	N/A	N/A
Misc	Cook_top	Natural_Gas	EASHARE	MiscCook_topNatural_Gas	0.65	0.35	N/A	N/A
Misc	Fryer	Electric	EASHARE	MiscFryerElectric	0.65	0.35	N/A	N/A
Misc	Fryer	Natural_Gas	EASHARE	MiscFryerNatural_Gas	0.65	0.35	N/A	N/A
Misc	Griddle	Electric	EASHARE	MiscGriddleElectric	0.65	0.35	N/A	N/A
Misc	Griddle	Natural_Gas	EASHARE	MiscGriddleNatural_Gas	0.65	0.35	N/A	N/A
Misc	Other	Natural_Gas	EASHARE	MiscOtherNatural_Gas	1	N/A	N/A	N/A
Misc	Other_Cooking	Electric	EASHARE	MiscOther_CookingElectric	0.65	0.35	N/A	N/A
Misc	Other_Cooking	Natural_Gas	EASHARE	MiscOther_CookingNatural_Gas	0.65	0.35	N/A	N/A
Misc	Space_Heat	Electric	EASHARE	MiscSpace_HeatElectric	1	999	999	999
Misc	Space_Heat	Natural_Gas	EASHARE	MiscSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Misc	Water_Heat	Electric	EASHARE	MiscWater_HeatElectric	0.4	0.5	0.08	0.02
Misc	Water_Heat	Natural_Gas	EASHARE	MiscWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Office	AC_Compressor	Electric	EASHARE	OfficeAC_CompressorElectric	0.65	0.35	N/A	N/A
Office	AC_Compressor	Natural_Gas	EASHARE	OfficeAC_CompressorNatural_Gas	0.65	0.35	N/A	N/A
Office	Cooking	Electric	EASHARE	OfficeCookingElectric	0.65	0.35	N/A	N/A
Office	Cooking	Natural_Gas	EASHARE	OfficeCookingNatural_Gas	0.65	0.35	N/A	N/A
Office	Other	Natural_Gas	EASHARE	OfficeOtherNatural_Gas	1	N/A	N/A	N/A
Office	Space_Heat	Electric	EASHARE	OfficeSpace_HeatElectric	1	999	999	999
Office	Space_Heat	Natural_Gas	EASHARE	OfficeSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Office	Water_Heat	Electric	EASHARE	OfficeWater_HeatElectric	0.4	0.5	0.08	0.02
Office	Water_Heat	Natural_Gas	EASHARE	OfficeWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Restaurant	AC_Compressor	Electric	EASHARE	RestaurantAC_CompressorElectric	0.65	0.35	N/A	N/A
Restaurant	AC_Compressor	Natural_Gas	EASHARE	RestaurantAC_CompressorNatural_Gas	0.65	0.35	N/A	N/A
Restaurant	Cook_top	Electric	EASHARE	RestaurantCook_topElectric	0.65	0.35	N/A	N/A
Restaurant	Cook_top	Natural_Gas	EASHARE	RestaurantCook_topNatural_Gas	0.65	0.35	N/A	N/A
Restaurant	Fryer	Electric	EASHARE	RestaurantFryerElectric	0.65	0.35	N/A	N/A
Restaurant	Fryer	Natural_Gas	EASHARE	RestaurantFryerNatural_Gas	0.65	0.35	N/A	N/A
Restaurant	Griddle	Electric	EASHARE	RestaurantGriddleElectric	0.65	0.35	N/A	N/A
Restaurant	Griddle	Natural_Gas	EASHARE	RestaurantGriddleNatural_Gas	0.65	0.35	N/A	N/A
Restaurant	Other	Natural_Gas	EASHARE	RestaurantOtherNatural_Gas	1	N/A	N/A	N/A
Restaurant	Other_Cooking	Electric	EASHARE	RestaurantOther_CookingElectric	0.65	0.35	N/A	N/A
Restaurant	Other_Cooking	Natural_Gas	EASHARE	RestaurantOther_CookingNatural_Gas	0.65	0.35	N/A	N/A
Restaurant	Space_Heat	Electric	EASHARE	RestaurantSpace_HeatElectric	1	999	999	999
Restaurant	Space_Heat	Natural_Gas	EASHARE	RestaurantSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Restaurant	Water_Heat	Electric	EASHARE	RestaurantWater_HeatElectric	0.4	0.5	0.08	0.02
Restaurant	Water_Heat	Natural_Gas	EASHARE	RestaurantWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Retail	Cooking	Electric	EASHARE	RetailCookingElectric	0.65	0.35	N/A	N/A
Retail	Cooking	Natural_Gas	EASHARE	RetailCookingNatural_Gas	0.65	0.35	N/A	N/A
Retail	Other	Natural_Gas	EASHARE	RetailOtherNatural_Gas	1	N/A	N/A	N/A
Retail	Space_Heat	Electric	EASHARE	RetailSpace_HeatElectric	1	999	999	999
Retail	Space_Heat	Natural_Gas	EASHARE	RetailSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Retail	Water_Heat	Electric	EASHARE	RetailWater_HeatElectric	0.4	0.5	0.08	0.02
Retail	Water_Heat	Natural_Gas	EASHARE	RetailWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
School	AC_Compressor	Electric	EASHARE	SchoolAC_CompressorElectric	0.65	0.35	N/A	N/A
School	AC_Compressor	Natural_Gas	EASHARE	SchoolAC_CompressorNatural_Gas	0.65	0.35	N/A	N/A
School	Cook_top	Electric	EASHARE	SchoolCook_topElectric	0.65	0.35	N/A	N/A
School	Cook_top	Natural_Gas	EASHARE	SchoolCook_topNatural_Gas	0.65	0.35	N/A	N/A
School	Fryer	Electric	EASHARE	SchoolFryerElectric	0.65	0.35	N/A	N/A
School	Fryer	Natural_Gas	EASHARE	SchoolFryerNatural_Gas	0.65	0.35	N/A	N/A
School	Griddle	Electric	EASHARE	SchoolGriddleElectric	0.65	0.35	N/A	N/A
School	Griddle	Natural_Gas	EASHARE	SchoolGriddleNatural_Gas	0.65	0.35	N/A	N/A

bname	nname	fname	_NAME_	SAT_LOOKUP	Stock_Qtec	Standard_Qtec	High_Qtec	Premium_Qtec
School	Other	Natural_Gas	EASHARE	SchoolOtherNatural_Gas	1	N/A	N/A	N/A
School	Other_Cooking	Electric	EASHARE	SchoolOther_CookingElectric	0.65	0.35	N/A	N/A
School	Other_Cooking	Natural_Gas	EASHARE	SchoolOther_CookingNatural_Gas	0.65	0.35	N/A	N/A
School	Space_Heat	Electric	EASHARE	SchoolSpace_HeatElectric	1	999	999	999
School	Space_Heat	Natural_Gas	EASHARE	SchoolSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
School	Water_Heat	Electric	EASHARE	SchoolWater_HeatElectric	0.4	0.5	0.08	0.02
School	Water_Heat	Natural_Gas	EASHARE	SchoolWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
TCU	Engine	Electric	EASHARE	TCUEngineElectric	0.65	0.35	N/A	N/A
TCU	Engine	Natural_Gas	EASHARE	TCUEngineNatural_Gas	0.65	0.35	N/A	N/A
TCU	Other	Natural_Gas	EASHARE	TCUOtherNatural_Gas	1	N/A	N/A	N/A
TCU	Space_Heat	Electric	EASHARE	TCUSpace_HeatElectric	1	999	999	999
TCU	Space_Heat	Natural_Gas	EASHARE	TCUSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
TCU	Water_Heat	Electric	EASHARE	TCUWater_HeatElectric	0.4	0.5	0.08	0.02
TCU	Water_Heat	Natural_Gas	EASHARE	TCUWater_HeatNatural_Gas	0.4	0.5	0.08	0.02
Warehouse	Engine	Electric	EASHARE	WarehouseEngineElectric	0.65	0.35	N/A	N/A
Warehouse	Engine	Natural_Gas	EASHARE	WarehouseEngineNatural_Gas	0.65	0.35	N/A	N/A
Warehouse	Other	Natural_Gas	EASHARE	WarehouseOtherNatural_Gas	1	999	N/A	N/A
Warehouse	Space_Heat	Electric	EASHARE	WarehouseSpace_HeatElectric	1	999	999	999
Warehouse	Space_Heat	Natural_Gas	EASHARE	WarehouseSpace_HeatNatural_Gas	0.65	0.3	0.04	0.01
Warehouse	Water_Heat	Electric	EASHARE	WarehouseWater_HeatElectric	0.4	0.5	0.08	0.02
Warehouse	Water_Heat	Natural_Gas	EASHARE	WarehouseWater_HeatNatural_Gas	0.4	0.5	0.08	0.02

Southern California Gas Company
Average Equipment Age
Core Commercial Market

Sector	Space Heater	Water Heater	Cooktop	Griddle	Fryer	Other Cooking Equipment	Kitchen Equipment	AC	Dryer	Engine	Other
Office	1987	1983	1984	1977	1984	1983	1973	2000	1984	1988	1975
Restaurant	1987	1988	1987	1986	1986	1989	1981	1993	1985	1978	1980
Retail	1993	1983	1992	1985	1988	1992	1973	1976	1990	1994	1975
Laundry	1985	1999	2008	1995	1979	1979	1939	1975	1991	.	2006
Warehouse	1987	1984	1983	1983	2002	1995	1974	1975	1989	1996	1976
School	1993	1982	1981	1974	1979	1979	1968	1973	1980	1986	1973
College	1994	1988	1978	1980	1968	1986	1971	1979	1989	1981	1974
Health	1985	1984	1980	1976	1979	1981	1974	1975	1980	1981	1974
Lodging	1993	1990	1992	1979	1990	1991	1973	1975	1985	1984	1977
Misc	1982	1980	1982	1973	1981	1987	1970	1974	1982	1989	1971
Government	1987	1983	1981	1975	1981	1984	1986	1975	1986	1989	1973
TCU	1982	1980	1984	1982	1984	1986	1980	1975	1979	1979	1974
Construction	1986	1983	1988	1974	1993	1987	1972	1973	1993	1980	1974
Agriculture	1992	1989	1982	1965	1978	1978	1978	1976	1981	1998	1988

2022 CGR GAS ENGINE FORECAST
ACTIVE Meter

Red values are Actuals

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2019	686	687	687	686	682	681	682	684	686	686	684	682	684
2020	678	672	667	656	659	659	659	665	663	663	658	661	663
2021	657	656	651	657	656	652	652	651	652	651	649	639	652
2022	672	671	666	672	671	667	667	666	667	666	664	654	667
2023	672	671	666	672	671	667	667	666	667	666	664	654	667
2024	672	671	666	672	671	667	667	666	667	666	664	654	667
2025	672	671	666	672	671	667	667	666	667	666	664	654	667
2026	672	671	666	672	671	667	667	666	667	666	664	654	667
2027	672	671	666	672	671	667	667	666	667	666	664	654	667
2028	672	671	666	672	671	667	667	666	667	666	664	654	667
2029	672	671	666	672	671	667	667	666	667	666	664	654	667
2030	672	671	666	672	671	667	667	666	667	666	664	654	667
2031	672	671	666	672	671	667	667	666	667	666	664	654	667
2032	672	671	666	672	671	667	667	666	667	666	664	654	667
2033	672	671	666	672	671	667	667	666	667	666	664	654	667
2034	672	671	666	672	671	667	667	666	667	666	664	654	667
2035	672	671	666	672	671	667	667	666	667	666	664	654	667
2036	672	671	666	672	671	667	667	666	667	666	664	654	667
2037	672	671	666	672	671	667	667	666	667	666	664	654	667
2038	672	671	666	672	671	667	667	666	667	666	664	654	667
2039	672	671	666	672	671	667	667	666	667	666	664	654	667
2040	672	671	666	672	671	667	667	666	667	666	664	654	667

2022 CGR GAS ENGINE FORECAST
(MDTH)

Mdth

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2019	**84**	**73**	**67**	**108**	**154**	**176**	**223**	**245**	**224**	**160**	**129**	**79**	**1722**
2020	**49**	**83**	**143**	**75**	**157**	**244**	**281**	**286**	**264**	**197**	**145**	**102**	**2028**
2021	**90**	**105**	**125**	**161**	**209**	**277**	**305**	**291**	**244**	**185**	**118**	**86**	**2198**
2022	75	86	110	115	173	230	269	275	245	182	133	90	1983
2023	75	86	110	115	173	230	269	275	245	182	133	90	1983
2024	75	86	110	115	173	230	269	275	245	182	133	90	1983
2025	75	86	110	115	173	230	269	275	245	182	133	90	1983
2026	75	86	110	115	173	230	269	275	245	182	133	90	1983
2027	75	86	110	115	173	230	269	275	245	182	133	90	1983
2028	75	86	110	115	173	230	269	275	245	182	133	90	1983
2029	75	86	110	115	173	230	269	275	245	182	133	90	1983
2030	75	86	110	115	173	230	269	275	245	182	133	90	1983
2031	75	86	110	115	173	230	269	275	245	182	133	90	1983
2032	75	86	110	115	173	230	269	275	245	182	133	90	1983
2033	75	86	110	115	173	230	269	275	245	182	133	90	1983
2034	75	86	110	115	173	230	269	275	245	182	133	90	1983
2035	75	86	110	115	173	230	269	275	245	182	133	90	1983
2036	75	86	110	115	173	230	269	275	245	182	133	90	1983
2037	75	86	110	115	173	230	269	275	245	182	133	90	1983
2038	75	86	110	115	173	230	269	275	245	182	133	90	1983
2039	75	86	110	115	173	230	269	275	245	182	133	90	1983
2040	75	86	110	115	173	230	269	275	245	182	133	90	1983

AC Active METER

Red Values indicate Actuals

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2019	5	5	5	7	5	5	5	5	5	5	5	5	5
2020	5	5	5	5	5	5	4	4	4	4	4	4	5
2021	4	4	4	4	5	5	4	4	5	4	5	5	4
2022	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2023	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2024	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2025	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2026	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2027	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2028	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2029	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2030	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2031	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2032	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2033	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2034	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2035	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2036	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2037	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2038	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2039	5	5	5	5	5	5	4	4	4	4	4	4	4.5
2040	5	5	5	5	5	5	4	4	4	4	4	4	4.5

2022 CGR GAS AC FORECAST
A/C FORECAST (IN MDTH)

Mdth Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2019	1.3	1.3	1.0	1.4	1.6	1.9	1.7	2.7	1.8	2.4	2.0	1.1	20.1
2020	0.7	0.8	0.9	0.7	0.5	0.6	0.8	0.8	1.0	0.9	0.9	0.6	9.4
2021	0.5	0.8	0.1	0.5	1.0	1.1	1.8	1.9	1.7	1.3	1.0	1.0	12.7
2022	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2023	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2024	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2025	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2026	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2027	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2028	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2029	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2030	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2031	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2032	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2033	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2034	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2035	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2036	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0

A/C FORECAST (IN MDTH)

Mdth Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2037	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2038	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2039	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0
2040	0.8	1.0	0.7	0.9	1.0	1.2	1.5	1.8	1.6	1.5	1.3	0.9	14.0

G10 Industrial DATA TABLES

Southern California Gas Company
Industrial G10
The Year the Equipment Was Installed by Business Types

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other
Mining	2002	1980	1979	1980	1968	1978	.	1970	1976
Food	2004	1999	2002	1992	1992	2002	1965	1994	1983
Textile	1999	1998	1994	1982	1992	1982	.	.	1980
Wood_Paper	1997	1994	1995	1981	1981	2006	.	.	1975
Chemical	2005	1995	2002	1986	1985	1981	.	1999	1976
Petroleum	2006	1990	2002	1975	1981	1971	.	.	1977
Stone	2007	1983	1996	1982	1982	1982	1985	2014	1975
Primary_Metal	1993	1991	1987	1982	1978	1982	.	1996	1976
Fabricated_Metal	2002	1989	1986	1980	1984	1980	.	1984	1975
Transport	1993	1994	1996	1981	1987	1983	1973	2003	1976
Misc	1996	1995	1994	1981	1987	1978	1984	1999	1978

Southern California Gas Company
Industrial G10
Electric Price Forecasat (Cent/KWH)

(a) Average Price Forecast

Year	Chemical	Fab_Metal	Food	Mining	Petroleum	Prim_Metal	Stone	Textile	Transport	Wood_Paper	Misc
2021	16.08	14.47	14.65	14.08	15.07	13.53	15.25	14.68	15.76	15.27	16.44
2022	17.37	15.78	15.96	15.40	16.38	14.86	16.56	16.00	17.06	16.58	17.73
2023	17.87	16.13	16.32	15.71	16.79	15.11	16.98	16.36	17.53	17.00	18.27
2024	18.24	16.41	16.61	15.96	17.10	15.34	17.30	16.65	17.88	17.32	18.65
2025	19.05	17.05	17.27	16.56	17.81	15.88	18.03	17.32	18.66	18.05	19.50
2026	19.70	17.60	17.84	17.10	18.40	16.39	18.63	17.89	19.29	18.65	20.16
2027	20.11	17.95	18.19	17.42	18.77	16.69	19.00	18.24	19.69	19.02	20.59
2028	20.99	18.71	18.96	18.15	19.58	17.38	19.82	19.02	20.55	19.84	21.49
2029	21.85	19.48	19.74	18.89	20.38	18.09	20.64	19.80	21.40	20.65	22.37
2030	22.71	20.24	20.51	19.63	21.18	18.79	21.45	20.58	22.24	21.46	23.25
2031	23.54	20.98	21.26	20.35	21.96	19.49	22.24	21.34	23.05	22.24	24.09
2032	24.41	21.77	22.06	21.12	22.78	20.22	23.06	22.14	23.90	23.07	24.97
2033	25.31	22.57	22.87	21.89	23.62	20.96	23.91	22.95	24.79	23.92	25.90
2034	26.24	23.39	23.70	22.68	24.48	21.72	24.79	23.80	25.70	24.79	26.85
2035	27.18	24.23	24.56	23.50	25.36	22.50	25.68	24.65	26.62	25.68	27.81

(b) Marginal Price Forecast

Year	Chemical	Fab_Metal	Food	Mining	Petroleum	Prim_Metal	Stone	Textile	Transport	Wood_Paper	Misc
2021	12.29	11.64	11.74	11.43	11.87	11.16	11.99	11.48	12.17	12.06	12.54
2022	13.32	12.68	12.77	12.47	12.90	12.20	13.02	12.52	13.20	13.09	13.56
2023	13.68	12.97	13.07	12.74	13.21	12.44	13.35	12.79	13.55	13.42	13.94
2024	13.95	13.20	13.31	12.96	13.46	12.65	13.60	13.01	13.81	13.68	14.23
2025	14.55	13.73	13.85	13.46	14.01	13.12	14.17	13.52	14.40	14.25	14.86
2026	15.05	14.18	14.31	13.90	14.48	13.54	14.64	13.96	14.88	14.73	15.37
2027	15.36	14.46	14.59	14.17	14.77	13.79	14.94	14.23	15.18	15.03	15.69
2028	16.02	15.08	15.21	14.77	15.40	14.37	15.58	14.84	15.84	15.68	16.37
2029	16.69	15.70	15.84	15.37	16.03	14.95	16.22	15.44	16.50	16.32	17.05
2030	17.34	16.31	16.46	15.97	16.66	15.54	16.86	16.04	17.14	16.96	17.72
2031	17.98	16.91	17.06	16.56	17.27	16.11	17.47	16.63	17.77	17.59	18.37
2032	18.64	17.54	17.69	17.18	17.91	16.71	18.12	17.25	18.43	18.24	19.05
2033	19.33	18.18	18.35	17.80	18.57	17.32	18.79	17.88	19.11	18.91	19.76
2034	20.05	18.84	19.02	18.45	19.25	17.95	19.48	18.54	19.82	19.61	20.49
2035	20.77	19.52	19.70	19.11	19.94	18.59	20.18	19.20	20.53	20.31	21.23

Southern California Gas Company
Industrial G10
Gas Price Forecasat ($/Therm)

(a) Average Price Forecast

Year	Price Deflator	Chemical	Fabricated Metal	Food	Mining	Petroleum	Primary Metal	Stone	Textile	Transport	Wood_Paper	Misc
2021	100.00	1.02	0.91	0.93	0.89	0.95	0.86	0.96	0.93	1.00	0.97	1.04
2022	105.03	1.15	1.04	1.05	1.02	1.08	0.98	1.09	1.05	1.12	1.09	1.17
2023	107.05	1.09	0.98	0.99	0.96	1.02	0.92	1.03	1.00	1.07	1.04	1.11
2024	109.29	1.08	0.98	0.99	0.95	1.02	0.91	1.03	0.99	1.06	1.03	1.11
2025	111.56	1.06	0.95	0.96	0.92	0.99	0.88	1.00	0.96	1.04	1.00	1.08
2026	114.02	1.08	0.96	0.97	0.93	1.01	0.90	1.02	0.98	1.05	1.02	1.10
2027	116.67	1.09	0.98	0.99	0.95	1.02	0.91	1.03	0.99	1.07	1.03	1.12
2028	119.45	1.11	0.99	1.01	0.96	1.04	0.92	1.05	1.01	1.09	1.05	1.14
2029	122.27	1.14	1.02	1.03	0.99	1.06	0.94	1.08	1.03	1.12	1.08	1.17
2030	125.13	1.17	1.05	1.06	1.01	1.10	0.97	1.11	1.06	1.15	1.11	1.20
2031	127.97	1.21	1.08	1.09	1.05	1.13	1.00	1.14	1.10	1.19	1.14	1.24
2032	130.80	1.25	1.12	1.13	1.08	1.17	1.04	1.18	1.13	1.23	1.18	1.28
2033	133.74	1.28	1.14	1.16	1.11	1.20	1.06	1.21	1.16	1.26	1.21	1.31
2034	136.80	1.32	1.17	1.19	1.14	1.23	1.09	1.24	1.19	1.29	1.24	1.35
2035	139.94	1.36	1.21	1.23	1.17	1.27	1.12	1.28	1.23	1.33	1.28	1.39

(b) Marginal Price Forecasat

Year	Price Deflator	Chemical	Fabricated Metal	Food	Mining	Petroleum	Primary Metal	Stone	Textile	Transport	Wood_Paper	Misc
2021	100.00	0.90	0.85	0.86	0.84	0.87	0.82	0.88	0.84	0.89	0.88	0.92
2022	105.03	1.03	0.98	0.98	0.96	0.99	0.94	1.00	0.96	1.02	1.01	1.04
2023	107.05	0.97	0.92	0.92	0.90	0.93	0.88	0.94	0.90	0.96	0.95	0.99
2024	109.29	0.96	0.91	0.92	0.89	0.93	0.87	0.94	0.90	0.95	0.94	0.98
2025	111.56	0.93	0.88	0.89	0.86	0.90	0.84	0.91	0.87	0.92	0.91	0.95
2026	114.02	0.95	0.89	0.90	0.87	0.91	0.85	0.92	0.88	0.94	0.93	0.97
2027	116.67	0.96	0.90	0.91	0.88	0.92	0.86	0.93	0.89	0.95	0.94	0.98
2028	119.45	0.98	0.92	0.93	0.90	0.94	0.87	0.95	0.90	0.96	0.95	1.00
2029	122.27	1.00	0.94	0.95	0.92	0.96	0.90	0.97	0.93	0.99	0.98	1.02
2030	125.13	1.03	0.97	0.98	0.95	0.99	0.92	1.00	0.95	1.02	1.01	1.05
2031	127.97	1.06	1.00	1.01	0.98	1.02	0.95	1.03	0.98	1.05	1.04	1.08
2032	130.80	1.10	1.03	1.04	1.01	1.05	0.98	1.07	1.02	1.09	1.07	1.12
2033	133.74	1.13	1.06	1.07	1.04	1.08	1.01	1.09	1.04	1.11	1.10	1.15
2034	136.80	1.15	1.08	1.09	1.06	1.11	1.03	1.12	1.07	1.14	1.13	1.18
2035	139.94	1.19	1.12	1.13	1.10	1.14	1.07	1.16	1.10	1.18	1.16	1.22

Southern California Gas Company
Industrial G10
Historical Throughput and Customer Counts

Business Type	therms_ 2021	meters_ 2021	meters_ 2021_ ExCust	meters_ 2021_ NewCust	avgUse_ 2021_ ExCust	avgUse_ 2021_ NewCust	Price Elasticity	Employment Elasticity
Mining	**1725824**	199	197	2	8504	25254	0.000000	0.321451
Food	**77457314**	2718	2,688	30	28669	13169	0.000000	1.242506
Textile	**8656376**	441	441	0	19629	0	0.000000	0.033325
Wood_Paper	**8795343**	369	369	0	23836	0	-0.114000	0.508272
Chemical	**17489343**	984	978	6	17831	8459	0.000000	0.650067
Petroleum	**13274235**	133	133	0	99806	0	0.000000	0.084537
Stone	**5252881**	368	367	1	14305	3030	0.000000	0.416909
Prim_Metal	**10399652**	299	299	0	34781	0	0.000000	0.956685
Fab_Metal	**21304069**	1880	1,876	4	11353	1548	0.000000	1.023881
Transport	**13357405**	1364	1,363	1	9798	3000	0.000000	0.402505
Misc	**32554137**	5569	5,559	10	5823	18587	0.000000	0.879307
Total	210,266,578	14,324						

Southern California Gas Company
Industrial G10
Average Use Per Meter (therm)

Business Type	Water_ Boiler	Fire_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other	Total
Mining	0	4055	28	1252	50	0	0	2	3117	8504
Food	3763	11998	98	3369	6284	9	85	99	2962	28669
Textile	4456	6013	50	1188	6884	63	0	0	974	19629
Wood_Paper	4783	12840	492	1378	1721	128	0	4	2490	23836
Chemical	1674	6410	2349	1420	1757	565	2	72	3581	17831
Petroleum	2440	23170	148	144	46289	10	0	10179	17428	99806
Stone	533	1977	57	590	4824	4099	1	0	2224	14305
Prim_Metal	1649	2599	341	2046	6635	17646	12	0	3854	34781
Fab_Metal	342	666	211	1473	3157	2728	0	8	2769	11353
Transport	591	2416	1366	1350	1275	799	0	238	1763	9798
Misc	257	1154	372	561	1718	420	0	20	1320	5823

Southern California Gas Company
Industrial G10
Use Per Meter for New Customers (therm)

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other	Total
Mining	0	2	0	18181	0	0	0	0	7071	25254
Food	1979	7947	24	1203	1234	0	0	0	783	13169
Textile	0	0	0	0	0	0	0	0	0	0
Wood_Paper	0	0	0	0	0	0	0	0	0	0
Chemical	1720	3614	1006	793	1135	0	0	11	180	8459
Petroleum	0	0	0	0	0	0	0	0	0	0
Stone	0	0	327	0	2702	0	0	0	0	3030
Prim_Metal	0	0	0	0	0	0	0	0	0	0
Fab_Metal	0	56	3	8	1101	6	0	0	374	1548
Transport	0	573	335	105	359	567	0	1059	0	3000
Misc	2726	2637	459	1210	5367	285	0	22	5880	18587

Southern California Gas Company
Industrial G10
Electric UEC (Kwh/SqFt)

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other
Mining	12053557	117480	22540	4117	3349437	1388699	3261	2871579	0
Food	992080	234899	77958	15939	1062552	781260	24817	1163891	0
Textile	1428304	371125	20797	30369	3811277	1069238	74615	0	0
Wood_Paper	11051345	3626956	48301	2915	523062	985476	3282	0	0
Chemical	1169880	658201	34723	19440	26417	593554	1620	738	0
Petroleum	1527674	385215	15711	15192	13761553	60935	0	101154	0
Stone	4960873	985989	31975	22824	6850607	6237158	37820	0	0
Primary_Metal	174313	550730	55233	9317	25494	13916258	66288	0	0
Fabricated_Metal	605450	591011	55315	8658	57653	2084618	5763	0	0
Transportation	76358	44486	30560	6490	228869	392291	1456	7240	0
Miscellaneous	148060	104128	22745	4673	181266	1005453	8471	17618	0

Southern California Gas Company
Industrial G10
GAS UEC (Therm per SqFt)

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other
Mining	0	2241270	252	5268	91253	672	0	114	6627
Food	111173	105371	954	4330	187397	2237	39768	13205	3384
Textile	97756	84794	490	4406	97074	28811	0	0	2469
Wood_Paper	8370448	5798602	3701	3131	78733	32091	0	567	3558
Chemical	205830	167162	13968	3956	84011	226745	1213	3553	6903
Petroleum	211874	619041	1095	797	1339771	2325	0	235689	27337
Stone	1361622	1403586	286	1377	501090	171147	49	2	3023
Primary_Metal	659478	366908	2067	4478	123877	329457	2863	0	5996
Fabricated_Metal	352859	114530	1645	3351	65002	216651	55	950	3834
Transportation	219678	209547	7747	3077	44487	83150	0	31017	1883
Miscellaneous	107096	63857	2150	1293	53625	55446	5	2640	1626

Southern California Gas Company
Industrial G10
Gas Market Shares

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other
Chemical	0.0000	0.2778	0.2361	0.5000	0.0278	0.0139	0.0000	0.0278	0.7222
Fabricated_Metal	0.0636	0.2139	0.1445	0.7737	0.2362	0.0107	0.0025	0.0091	0.7399
Food	0.1978	0.3077	0.1648	0.4286	0.5714	0.0275	0.0000	0.0000	0.4451
Mining	0.0533	0.2067	0.2000	0.5333	0.2267	0.0533	0.0000	0.0133	0.6533
Miscllaneous	0.0685	0.3227	0.2714	0.5795	0.2054	0.0293	0.0024	0.0342	0.6113
Petroleum	0.0741	0.2407	0.1667	0.2222	0.2593	0.0370	0.0000	0.0556	0.5741
Primary_Metal	0.0315	0.1132	0.2201	0.4717	0.2579	0.3208	0.0189	0.0126	0.5912
Stone	0.0328	0.0929	0.2077	0.5519	0.3279	0.4918	0.0055	0.0109	0.5902
Textile	0.0136	0.0819	0.1733	0.5703	0.3192	0.1242	0.0014	0.0096	0.7121
Transportation	0.0159	0.0680	0.1996	0.4966	0.1973	0.0794	0.0000	0.0091	0.7732
Wood_Paper	0.0153	0.1153	0.2116	0.5312	0.2386	0.0677	0.0016	0.0095	0.7254

Southern California Gas Company
Industrial G10
Saturation Rate

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other
Mining	0.01	0.01	0.73	0.73	0.03	0.06	0.64	0.87	1.00
Food	0.45	0.45	0.60	0.85	0.12	0.33	0.73	0.70	1.00
Textile	0.26	0.26	0.70	0.71	0.14	0.09	0.72	0.46	1.00
Wood_Paper	0.01	0.01	0.62	0.77	0.09	0.07	0.71	0.50	1.00
Chemical	0.14	0.14	0.73	0.73	0.12	0.10	0.74	0.70	1.00
Petroleum	0.14	0.14	0.73	0.73	0.12	0.10	0.74	0.70	1.00
Stone	0.01	0.01	0.73	0.73	0.03	0.06	0.64	0.87	1.00
Prim_Metal	0.07	0.07	0.73	0.76	0.15	0.10	0.68	0.86	1.00
Fab_Metal	0.07	0.07	0.73	0.76	0.15	0.10	0.68	0.86	1.00
Transport	0.14	0.14	0.73	0.73	0.12	0.10	0.74	0.70	1.00
Misc	0.14	0.14	0.73	0.73	0.12	0.10	0.74	0.70	1.00

Southern California Gas Company
Industrial G10
UEC, Equipment Cost and Efficiency Shares

Where Fuel = 1 (gas) and = 2 (electric), and
Efficiency =1 (stock), =2 (standard), =3 (high) and =4 (premium)

Business Type	End Use	Fuel	Efficiency	EQcost
Mining	Fire_Tube_Boiler	1	1	3,907,010
Mining	Fire_Tube_Boiler	1	2	4,297,711
Mining	Fire_Tube_Boiler	1	3	4,688,412
Mining	Fire_Tube_Boiler	2	1	3,125,608
Mining	Fire_Tube_Boiler	2	2	3,438,169
Mining	Fire_Tube_Boiler	2	3	3,750,729
Mining	Water_Tube_Boiler	1	1	38,080
Mining	Water_Tube_Boiler	1	2	41,888
Mining	Water_Tube_Boiler	1	3	45,696
Mining	Water_Tube_Boiler	2	1	30,464
Mining	Water_Tube_Boiler	2	2	33,510
Mining	Water_Tube_Boiler	2	3	36,557
Mining	Space_Heat	1	1	7,306
Mining	Space_Heat	1	2	8,037
Mining	Space_Heat	1	3	8,767
Mining	Space_Heat	2	1	5,845
Mining	Space_Heat	2	2	6,429
Mining	Space_Heat	2	3	7,014
Mining	Water_Heat	1	1	1,868
Mining	Water_Heat	1	2	2,055
Mining	Water_Heat	1	3	2,242
Mining	Water_Heat	2	1	1,494
Mining	Water_Heat	2	2	1,644
Mining	Water_Heat	2	3	1,793
Mining	Dryer	1	1	1,085,678
Mining	Dryer	1	2	1,194,246
Mining	Dryer	1	3	1,302,814
Mining	Dryer	2	1	868,543
Mining	Dryer	2	2	955,397
Mining	Dryer	2	3	1,042,251
Mining	Furnace_Oven_Kiln	1	1	450,129
Mining	Furnace_Oven_Kiln	1	2	495,142
Mining	Furnace_Oven_Kiln	1	3	540,155
Mining	Furnace_Oven_Kiln	2	1	360,104
Mining	Furnace_Oven_Kiln	2	2	396,114
Mining	Furnace_Oven_Kiln	2	3	432,124
Mining	AC	1	1	1,057
Mining	AC	1	2	1,163
Mining	AC	1	3	1,268
Mining	AC	2	1	846
Mining	AC	2	2	930
Mining	AC	2	3	1,015
Mining	Engine	1	1	930,786
Mining	Engine	1	2	1,023,865
Mining	Engine	1	3	1,116,944
Mining	Engine	2	1	744,629
Mining	Engine	2	2	819,092
Mining	Engine	2	3	893,555
Mining	Other	1	1	-
Mining	Other	1	2	-
Mining	Other	1	3	-
Mining	Other	2	1	-
Mining	Other	2	2	-
Mining	Other	2	3	-
Food	Fire_Tube_Boiler	1	1	303,093
Food	Fire_Tube_Boiler	1	2	333,402
Food	Fire_Tube_Boiler	1	3	363,711
Food	Fire_Tube_Boiler	2	1	242,474
Food	Fire_Tube_Boiler	2	2	266,722
Food	Fire_Tube_Boiler	2	3	290,969

Food	Water_Tube_Boiler	1	1	71,765
Food	Water_Tube_Boiler	1	2	78,941
Food	Water_Tube_Boiler	1	3	86,117
Food	Water_Tube_Boiler	2	1	57,412
Food	Water_Tube_Boiler	2	2	63,153
Food	Water_Tube_Boiler	2	3	68,894
Food	Space_Heat	1	1	23,817
Food	Space_Heat	1	2	26,199
Food	Space_Heat	1	3	28,580
Food	Space_Heat	2	1	19,054
Food	Space_Heat	2	2	20,959
Food	Space_Heat	2	3	22,864
Food	Water_Heat	1	1	6,817
Food	Water_Heat	1	2	7,499
Food	Water_Heat	1	3	8,181
Food	Water_Heat	2	1	5,454
Food	Water_Heat	2	2	5,999
Food	Water_Heat	2	3	6,545
Food	Dryer	1	1	324,623
Food	Dryer	1	2	357,085
Food	Dryer	1	3	389,547
Food	Dryer	2	1	259,698
Food	Dryer	2	2	285,668
Food	Dryer	2	3	311,638
Food	Furnace_Oven_Kiln	1	1	238,684
Food	Furnace_Oven_Kiln	1	2	262,553
Food	Furnace_Oven_Kiln	1	3	286,421
Food	Furnace_Oven_Kiln	2	1	190,948
Food	Furnace_Oven_Kiln	2	2	210,042
Food	Furnace_Oven_Kiln	2	3	229,137
Food	AC	1	1	7,582
Food	AC	1	2	8,340
Food	AC	1	3	9,098
Food	AC	2	1	6,065
Food	AC	2	2	6,672
Food	AC	2	3	7,279
Food	Engine	1	1	355,583
Food	Engine	1	2	391,141
Food	Engine	1	3	426,700
Food	Engine	2	1	284,466
Food	Engine	2	2	312,913
Food	Engine	2	3	341,360
Food	Other	1	1	-
Food	Other	1	2	-
Food	Other	1	3	-
Food	Other	2	1	-
Food	Other	2	2	-
Food	Other	2	3	-
Textile	Fire_Tube_Boiler	1	1	440,682
Textile	Fire_Tube_Boiler	1	2	484,750
Textile	Fire_Tube_Boiler	1	3	528,818
Textile	Fire_Tube_Boiler	2	1	352,546
Textile	Fire_Tube_Boiler	2	2	387,800
Textile	Fire_Tube_Boiler	2	3	423,055
Textile	Water_Tube_Boiler	1	1	114,505
Textile	Water_Tube_Boiler	1	2	125,956
Textile	Water_Tube_Boiler	1	3	137,406
Textile	Water_Tube_Boiler	2	1	91,604
Textile	Water_Tube_Boiler	2	2	100,765
Textile	Water_Tube_Boiler	2	3	109,925
Textile	Space_Heat	1	1	6,417
Textile	Space_Heat	1	2	7,058
Textile	Space_Heat	1	3	7,700
Textile	Space_Heat	2	1	5,133
Textile	Space_Heat	2	2	5,647
Textile	Space_Heat	2	3	6,160
Textile	Water_Heat	1	1	13,118
Textile	Water_Heat	1	2	14,430
Textile	Water_Heat	1	3	15,742
Textile	Water_Heat	2	1	10,494
Textile	Water_Heat	2	2	11,544
Textile	Water_Heat	2	3	12,593

Textile	Dryer	1	1	1,175,913
Textile	Dryer	1	2	1,293,505
Textile	Dryer	1	3	1,411,096
Textile	Dryer	2	1	940,731
Textile	Dryer	2	2	1,034,804
Textile	Dryer	2	3	1,128,877
Textile	Furnace_Oven_Kiln	1	1	329,898
Textile	Furnace_Oven_Kiln	1	2	362,887
Textile	Furnace_Oven_Kiln	1	3	395,877
Textile	Furnace_Oven_Kiln	2	1	263,918
Textile	Furnace_Oven_Kiln	2	2	290,310
Textile	Furnace_Oven_Kiln	2	3	316,702
Textile	AC	1	1	23,021
Textile	AC	1	2	25,323
Textile	AC	1	3	27,626
Textile	AC	2	1	18,417
Textile	AC	2	2	20,259
Textile	AC	2	3	22,100
Textile	Engine	1	1	-
Textile	Engine	1	2	-
Textile	Engine	1	3	-
Textile	Engine	2	1	-
Textile	Engine	2	2	-
Textile	Engine	2	3	-
Textile	Other	1	1	-
Textile	Other	1	2	-
Textile	Other	1	3	-
Textile	Other	2	1	-
Textile	Other	2	2	-
Textile	Other	2	3	-
Wood_Paper	Fire_Tube_Boiler	1	1	3,531,505
Wood_Paper	Fire_Tube_Boiler	1	2	3,884,655
Wood_Paper	Fire_Tube_Boiler	1	3	4,237,806
Wood_Paper	Fire_Tube_Boiler	2	1	2,825,204
Wood_Paper	Fire_Tube_Boiler	2	2	3,107,724
Wood_Paper	Fire_Tube_Boiler	2	3	3,390,245
Wood_Paper	Water_Tube_Boiler	1	1	1,159,009
Wood_Paper	Water_Tube_Boiler	1	2	1,274,910
Wood_Paper	Water_Tube_Boiler	1	3	1,390,811
Wood_Paper	Water_Tube_Boiler	2	1	927,207
Wood_Paper	Water_Tube_Boiler	2	2	1,019,928
Wood_Paper	Water_Tube_Boiler	2	3	1,112,649
Wood_Paper	Space_Heat	1	1	15,435
Wood_Paper	Space_Heat	1	2	16,978
Wood_Paper	Space_Heat	1	3	18,522
Wood_Paper	Space_Heat	2	1	12,348
Wood_Paper	Space_Heat	2	2	13,583
Wood_Paper	Space_Heat	2	3	14,817
Wood_Paper	Water_Heat	1	1	1,304
Wood_Paper	Water_Heat	1	2	1,435
Wood_Paper	Water_Heat	1	3	1,565
Wood_Paper	Water_Heat	2	1	1,043
Wood_Paper	Water_Heat	2	2	1,148
Wood_Paper	Water_Heat	2	3	1,252
Wood_Paper	Dryer	1	1	167,147
Wood_Paper	Dryer	1	2	183,861
Wood_Paper	Dryer	1	3	200,576
Wood_Paper	Dryer	2	1	133,717
Wood_Paper	Dryer	2	2	147,089
Wood_Paper	Dryer	2	3	160,461
Wood_Paper	Furnace_Oven_Kiln	1	1	314,913
Wood_Paper	Furnace_Oven_Kiln	1	2	346,404
Wood_Paper	Furnace_Oven_Kiln	1	3	377,896
Wood_Paper	Furnace_Oven_Kiln	2	1	251,931
Wood_Paper	Furnace_Oven_Kiln	2	2	277,124
Wood_Paper	Furnace_Oven_Kiln	2	3	302,317
Wood_Paper	AC	1	1	1,049
Wood_Paper	AC	1	2	1,154
Wood_Paper	AC	1	3	1,258
Wood_Paper	AC	2	1	839
Wood_Paper	AC	2	2	923
Wood_Paper	AC	2	3	1,007

Wood_Paper	Engine	1	1	-
Wood_Paper	Engine	1	2	-
Wood_Paper	Engine	1	3	-
Wood_Paper	Engine	2	1	-
Wood_Paper	Engine	2	2	-
Wood_Paper	Engine	2	3	-
Wood_Paper	Other	1	1	-
Wood_Paper	Other	1	2	-
Wood_Paper	Other	1	3	-
Wood_Paper	Other	2	1	-
Wood_Paper	Other	2	2	-
Wood_Paper	Other	2	3	-
Chemical	Fire_Tube_Boiler	1	1	374,525
Chemical	Fire_Tube_Boiler	1	2	411,977
Chemical	Fire_Tube_Boiler	1	3	449,430
Chemical	Fire_Tube_Boiler	2	1	299,620
Chemical	Fire_Tube_Boiler	2	2	329,582
Chemical	Fire_Tube_Boiler	2	3	359,544
Chemical	Water_Tube_Boiler	1	1	210,716
Chemical	Water_Tube_Boiler	1	2	231,788
Chemical	Water_Tube_Boiler	1	3	252,859
Chemical	Water_Tube_Boiler	2	1	168,573
Chemical	Water_Tube_Boiler	2	2	185,430
Chemical	Water_Tube_Boiler	2	3	202,287
Chemical	Space_Heat	1	1	11,116
Chemical	Space_Heat	1	2	12,228
Chemical	Space_Heat	1	3	13,339
Chemical	Space_Heat	2	1	8,893
Chemical	Space_Heat	2	2	9,782
Chemical	Space_Heat	2	3	10,672
Chemical	Water_Heat	1	1	8,713
Chemical	Water_Heat	1	2	9,584
Chemical	Water_Heat	1	3	10,456
Chemical	Water_Heat	2	1	6,970
Chemical	Water_Heat	2	2	7,668
Chemical	Water_Heat	2	3	8,365
Chemical	Dryer	1	1	8,457
Chemical	Dryer	1	2	9,303
Chemical	Dryer	1	3	10,148
Chemical	Dryer	2	1	6,766
Chemical	Dryer	2	2	7,442
Chemical	Dryer	2	3	8,119
Chemical	Furnace_Oven_Kiln	1	1	190,020
Chemical	Furnace_Oven_Kiln	1	2	209,022
Chemical	Furnace_Oven_Kiln	1	3	228,024
Chemical	Furnace_Oven_Kiln	2	1	152,016
Chemical	Furnace_Oven_Kiln	2	2	167,218
Chemical	Furnace_Oven_Kiln	2	3	182,419
Chemical	AC	1	1	519
Chemical	AC	1	2	571
Chemical	AC	1	3	622
Chemical	AC	2	1	415
Chemical	AC	2	2	456
Chemical	AC	2	3	498
Chemical	Engine	1	1	236
Chemical	Engine	1	2	260
Chemical	Engine	1	3	284
Chemical	Engine	2	1	189
Chemical	Engine	2	2	208
Chemical	Engine	2	3	227
Chemical	Other	1	1	-
Chemical	Other	1	2	-
Chemical	Other	1	3	-
Chemical	Other	2	1	-
Chemical	Other	2	2	-
Chemical	Other	2	3	-
Petroleum	Fire_Tube_Boiler	1	1	461,658
Petroleum	Fire_Tube_Boiler	1	2	507,824
Petroleum	Fire_Tube_Boiler	1	3	553,990
Petroleum	Fire_Tube_Boiler	2	1	369,326
Petroleum	Fire_Tube_Boiler	2	2	406,259
Petroleum	Fire_Tube_Boiler	2	3	443,192

Petroleum	Water_Tube_Boiler	1	1	116,411
Petroleum	Water_Tube_Boiler	1	2	128,052
Petroleum	Water_Tube_Boiler	1	3	139,693
Petroleum	Water_Tube_Boiler	2	1	93,129
Petroleum	Water_Tube_Boiler	2	2	102,442
Petroleum	Water_Tube_Boiler	2	3	111,754
Petroleum	Space_Heat	1	1	4,748
Petroleum	Space_Heat	1	2	5,222
Petroleum	Space_Heat	1	3	5,697
Petroleum	Space_Heat	2	1	3,798
Petroleum	Space_Heat	2	2	4,178
Petroleum	Space_Heat	2	3	4,558
Petroleum	Water_Heat	1	1	6,427
Petroleum	Water_Heat	1	2	7,070
Petroleum	Water_Heat	1	3	7,713
Petroleum	Water_Heat	2	1	5,142
Petroleum	Water_Heat	2	2	5,656
Petroleum	Water_Heat	2	3	6,170
Petroleum	Dryer	1	1	4,158,697
Petroleum	Dryer	1	2	4,574,567
Petroleum	Dryer	1	3	4,990,436
Petroleum	Dryer	2	1	3,326,957
Petroleum	Dryer	2	2	3,659,653
Petroleum	Dryer	2	3	3,992,349
Petroleum	Furnace_Oven_Kiln	1	1	18,414
Petroleum	Furnace_Oven_Kiln	1	2	20,256
Petroleum	Furnace_Oven_Kiln	1	3	22,097
Petroleum	Furnace_Oven_Kiln	2	1	14,731
Petroleum	Furnace_Oven_Kiln	2	2	16,205
Petroleum	Furnace_Oven_Kiln	2	3	17,678
Petroleum	AC	1	1	-
Petroleum	AC	1	2	-
Petroleum	AC	1	3	-
Petroleum	AC	2	1	-
Petroleum	AC	2	2	-
Petroleum	AC	2	3	-
Petroleum	Engine	1	1	30,569
Petroleum	Engine	1	2	33,625
Petroleum	Engine	1	3	36,682
Petroleum	Engine	2	1	24,455
Petroleum	Engine	2	2	26,900
Petroleum	Engine	2	3	29,346
Petroleum	Other	1	1	-
Petroleum	Other	1	2	-
Petroleum	Other	1	3	-
Petroleum	Other	2	1	-
Petroleum	Other	2	2	-
Petroleum	Other	2	3	-
Stone	Fire_Tube_Boiler	1	1	1,591,073
Stone	Fire_Tube_Boiler	1	2	1,750,181
Stone	Fire_Tube_Boiler	1	3	1,909,288
Stone	Fire_Tube_Boiler	2	1	1,272,859
Stone	Fire_Tube_Boiler	2	2	1,400,145
Stone	Fire_Tube_Boiler	2	3	1,527,431
Stone	Water_Tube_Boiler	1	1	316,231
Stone	Water_Tube_Boiler	1	2	347,854
Stone	Water_Tube_Boiler	1	3	379,477
Stone	Water_Tube_Boiler	2	1	252,985
Stone	Water_Tube_Boiler	2	2	278,283
Stone	Water_Tube_Boiler	2	3	303,582
Stone	Space_Heat	1	1	10,255
Stone	Space_Heat	1	2	11,281
Stone	Space_Heat	1	3	12,306
Stone	Space_Heat	2	1	8,204
Stone	Space_Heat	2	2	9,024
Stone	Space_Heat	2	3	9,845
Stone	Water_Heat	1	1	10,249
Stone	Water_Heat	1	2	11,273
Stone	Water_Heat	1	3	12,298
Stone	Water_Heat	2	1	8,199
Stone	Water_Heat	2	2	9,019
Stone	Water_Heat	2	3	9,839

Stone	Dryer	1	1	2,197,157
Stone	Dryer	1	2	2,416,873
Stone	Dryer	1	3	2,636,589
Stone	Dryer	2	1	1,757,726
Stone	Dryer	2	2	1,933,498
Stone	Dryer	2	3	2,109,271
Stone	Furnace_Oven_Kiln	1	1	2,000,409
Stone	Furnace_Oven_Kiln	1	2	2,200,450
Stone	Furnace_Oven_Kiln	1	3	2,400,491
Stone	Furnace_Oven_Kiln	2	1	1,600,327
Stone	Furnace_Oven_Kiln	2	2	1,760,360
Stone	Furnace_Oven_Kiln	2	3	1,920,393
Stone	AC	1	1	12,130
Stone	AC	1	2	13,343
Stone	AC	1	3	14,556
Stone	AC	2	1	9,704
Stone	AC	2	2	10,674
Stone	AC	2	3	11,645
Stone	Engine	1	1	-
Stone	Engine	1	2	-
Stone	Engine	1	3	-
Stone	Engine	2	1	-
Stone	Engine	2	2	-
Stone	Engine	2	3	-
Stone	Other	1	1	-
Stone	Other	1	2	-
Stone	Other	1	3	-
Stone	Other	2	1	-
Stone	Other	2	2	-
Stone	Other	2	3	-
Prim_Metal	Fire_Tube_Boiler	1	1	54,853
Prim_Metal	Fire_Tube_Boiler	1	2	60,338
Prim_Metal	Fire_Tube_Boiler	1	3	65,823
Prim_Metal	Fire_Tube_Boiler	2	1	43,882
Prim_Metal	Fire_Tube_Boiler	2	2	48,270
Prim_Metal	Fire_Tube_Boiler	2	3	52,658
Prim_Metal	Water_Tube_Boiler	1	1	173,303
Prim_Metal	Water_Tube_Boiler	1	2	190,633
Prim_Metal	Water_Tube_Boiler	1	3	207,963
Prim_Metal	Water_Tube_Boiler	2	1	138,642
Prim_Metal	Water_Tube_Boiler	2	2	152,506
Prim_Metal	Water_Tube_Boiler	2	3	166,371
Prim_Metal	Space_Heat	1	1	17,381
Prim_Metal	Space_Heat	1	2	19,119
Prim_Metal	Space_Heat	1	3	20,857
Prim_Metal	Space_Heat	2	1	13,905
Prim_Metal	Space_Heat	2	2	15,295
Prim_Metal	Space_Heat	2	3	16,685
Prim_Metal	Water_Heat	1	1	4,105
Prim_Metal	Water_Heat	1	2	4,515
Prim_Metal	Water_Heat	1	3	4,926
Prim_Metal	Water_Heat	2	1	3,284
Prim_Metal	Water_Heat	2	2	3,612
Prim_Metal	Water_Heat	2	3	3,941
Prim_Metal	Dryer	1	1	8,022
Prim_Metal	Dryer	1	2	8,825
Prim_Metal	Dryer	1	3	9,627
Prim_Metal	Dryer	2	1	6,418
Prim_Metal	Dryer	2	2	7,060
Prim_Metal	Dryer	2	3	7,701
Prim_Metal	Furnace_Oven_Kiln	1	1	4,379,149
Prim_Metal	Furnace_Oven_Kiln	1	2	4,817,064
Prim_Metal	Furnace_Oven_Kiln	1	3	5,254,978
Prim_Metal	Furnace_Oven_Kiln	2	1	3,503,319
Prim_Metal	Furnace_Oven_Kiln	2	2	3,853,651
Prim_Metal	Furnace_Oven_Kiln	2	3	4,203,983
Prim_Metal	AC	1	1	20,859
Prim_Metal	AC	1	2	22,945
Prim_Metal	AC	1	3	25,031
Prim_Metal	AC	2	1	16,687
Prim_Metal	AC	2	2	18,356
Prim_Metal	AC	2	3	20,025

Prim_Metal	Engine	1	1	-
Prim_Metal	Engine	1	2	-
Prim_Metal	Engine	1	3	-
Prim_Metal	Engine	2	1	-
Prim_Metal	Engine	2	2	-
Prim_Metal	Engine	2	3	-
Prim_Metal	Other	1	1	-
Prim_Metal	Other	1	2	-
Prim_Metal	Other	1	3	-
Prim_Metal	Other	2	1	-
Prim_Metal	Other	2	2	-
Prim_Metal	Other	2	3	-
Fab_Metal	Fire_Tube_Boiler	1	1	199,496
Fab_Metal	Fire_Tube_Boiler	1	2	219,446
Fab_Metal	Fire_Tube_Boiler	1	3	239,395
Fab_Metal	Fire_Tube_Boiler	2	1	159,597
Fab_Metal	Fire_Tube_Boiler	2	2	175,557
Fab_Metal	Fire_Tube_Boiler	2	3	191,516
Fab_Metal	Water_Tube_Boiler	1	1	194,739
Fab_Metal	Water_Tube_Boiler	1	2	214,212
Fab_Metal	Water_Tube_Boiler	1	3	233,686
Fab_Metal	Water_Tube_Boiler	2	1	155,791
Fab_Metal	Water_Tube_Boiler	2	2	171,370
Fab_Metal	Water_Tube_Boiler	2	3	186,949
Fab_Metal	Space_Heat	1	1	18,226
Fab_Metal	Space_Heat	1	2	20,049
Fab_Metal	Space_Heat	1	3	21,872
Fab_Metal	Space_Heat	2	1	14,581
Fab_Metal	Space_Heat	2	2	16,039
Fab_Metal	Space_Heat	2	3	17,497
Fab_Metal	Water_Heat	1	1	3,994
Fab_Metal	Water_Heat	1	2	4,393
Fab_Metal	Water_Heat	1	3	4,793
Fab_Metal	Water_Heat	2	1	3,195
Fab_Metal	Water_Heat	2	2	3,515
Fab_Metal	Water_Heat	2	3	3,834
Fab_Metal	Dryer	1	1	18,997
Fab_Metal	Dryer	1	2	20,896
Fab_Metal	Dryer	1	3	22,796
Fab_Metal	Dryer	2	1	15,197
Fab_Metal	Dryer	2	2	16,717
Fab_Metal	Dryer	2	3	18,237
Fab_Metal	Furnace_Oven_Kiln	1	1	686,883
Fab_Metal	Furnace_Oven_Kiln	1	2	755,571
Fab_Metal	Furnace_Oven_Kiln	1	3	824,260
Fab_Metal	Furnace_Oven_Kiln	2	1	549,507
Fab_Metal	Furnace_Oven_Kiln	2	2	604,457
Fab_Metal	Furnace_Oven_Kiln	2	3	659,408
Fab_Metal	AC	1	1	1,899
Fab_Metal	AC	1	2	2,089
Fab_Metal	AC	1	3	2,279
Fab_Metal	AC	2	1	1,519
Fab_Metal	AC	2	2	1,671
Fab_Metal	AC	2	3	1,823
Fab_Metal	Engine	1	1	-
Fab_Metal	Engine	1	2	-
Fab_Metal	Engine	1	3	-
Fab_Metal	Engine	2	1	-
Fab_Metal	Engine	2	2	-
Fab_Metal	Engine	2	3	-
Fab_Metal	Other	1	1	-
Fab_Metal	Other	1	2	-
Fab_Metal	Other	1	3	-
Fab_Metal	Other	2	1	-
Fab_Metal	Other	2	2	-
Fab_Metal	Other	2	3	-
Transport	Fire_Tube_Boiler	1	1	27,156
Transport	Fire_Tube_Boiler	1	2	29,871
Transport	Fire_Tube_Boiler	1	3	32,587
Transport	Fire_Tube_Boiler	2	1	21,724
Transport	Fire_Tube_Boiler	2	2	23,897
Transport	Fire_Tube_Boiler	2	3	26,069

Transport	Water_Tube_Boiler	1	1	15,821
Transport	Water_Tube_Boiler	1	2	17,403
Transport	Water_Tube_Boiler	1	3	18,985
Transport	Water_Tube_Boiler	2	1	12,657
Transport	Water_Tube_Boiler	2	2	13,922
Transport	Water_Tube_Boiler	2	3	15,188
Transport	Space_Heat	1	1	10,868
Transport	Space_Heat	1	2	11,955
Transport	Space_Heat	1	3	13,042
Transport	Space_Heat	2	1	8,694
Transport	Space_Heat	2	2	9,564
Transport	Space_Heat	2	3	10,433
Transport	Water_Heat	1	1	3,231
Transport	Water_Heat	1	2	3,554
Transport	Water_Heat	1	3	3,877
Transport	Water_Heat	2	1	2,585
Transport	Water_Heat	2	2	2,843
Transport	Water_Heat	2	3	3,102
Transport	Dryer	1	1	81,394
Transport	Dryer	1	2	89,533
Transport	Dryer	1	3	97,673
Transport	Dryer	2	1	65,115
Transport	Dryer	2	2	71,627
Transport	Dryer	2	3	78,138
Transport	Furnace_Oven_Kiln	1	1	139,512
Transport	Furnace_Oven_Kiln	1	2	153,464
Transport	Furnace_Oven_Kiln	1	3	167,415
Transport	Furnace_Oven_Kiln	2	1	111,610
Transport	Furnace_Oven_Kiln	2	2	122,771
Transport	Furnace_Oven_Kiln	2	3	133,932
Transport	AC	1	1	518
Transport	AC	1	2	570
Transport	AC	1	3	621
Transport	AC	2	1	414
Transport	AC	2	2	456
Transport	AC	2	3	497
Transport	Engine	1	1	2,575
Transport	Engine	1	2	2,832
Transport	Engine	1	3	3,090
Transport	Engine	2	1	2,060
Transport	Engine	2	2	2,266
Transport	Engine	2	3	2,472
Transport	Other	1	1	-
Transport	Other	1	2	-
Transport	Other	1	3	-
Transport	Other	2	1	-
Transport	Other	2	2	-
Transport	Other	2	3	-
Misc	Fire_Tube_Boiler	1	1	50,324
Misc	Fire_Tube_Boiler	1	2	55,356
Misc	Fire_Tube_Boiler	1	3	60,388
Misc	Fire_Tube_Boiler	2	1	40,259
Misc	Fire_Tube_Boiler	2	2	44,285
Misc	Fire_Tube_Boiler	2	3	48,311
Misc	Water_Tube_Boiler	1	1	35,392
Misc	Water_Tube_Boiler	1	2	38,931
Misc	Water_Tube_Boiler	1	3	42,470
Misc	Water_Tube_Boiler	2	1	28,313
Misc	Water_Tube_Boiler	2	2	31,145
Misc	Water_Tube_Boiler	2	3	33,976
Misc	Space_Heat	1	1	7,731
Misc	Space_Heat	1	2	8,504
Misc	Space_Heat	1	3	9,277
Misc	Space_Heat	2	1	6,185
Misc	Space_Heat	2	2	6,803
Misc	Space_Heat	2	3	7,422
Misc	Water_Heat	1	1	2,224
Misc	Water_Heat	1	2	2,446
Misc	Water_Heat	1	3	2,669
Misc	Water_Heat	2	1	1,779
Misc	Water_Heat	2	2	1,957
Misc	Water_Heat	2	3	2,135

Misc	Dryer	1	1	61,610
Misc	Dryer	1	2	67,771
Misc	Dryer	1	3	73,932
Misc	Dryer	2	1	49,288
Misc	Dryer	2	2	54,217
Misc	Dryer	2	3	59,145
Misc	Furnace_Oven_Kiln	1	1	341,739
Misc	Furnace_Oven_Kiln	1	2	375,913
Misc	Furnace_Oven_Kiln	1	3	410,087
Misc	Furnace_Oven_Kiln	2	1	273,391
Misc	Furnace_Oven_Kiln	2	2	300,731
Misc	Furnace_Oven_Kiln	2	3	328,070
Misc	AC	1	1	2,879
Misc	AC	1	2	3,167
Misc	AC	1	3	3,455
Misc	AC	2	1	2,303
Misc	AC	2	2	2,534
Misc	AC	2	3	2,764
Misc	Engine	1	1	5,988
Misc	Engine	1	2	6,587
Misc	Engine	1	3	7,186
Misc	Engine	2	1	4,790
Misc	Engine	2	2	5,270
Misc	Engine	2	3	5,749
Misc	Other	1	1	-
Misc	Other	1	2	-
Misc	Other	1	3	-
Misc	Other	2	1	-
Misc	Other	2	2	-
Misc	Other	2	3	-

Southern California Gas Company
Industrial G10
Employment Forecast (in thousands)

YEAR	Mining	Food	Textile	Wood_Paper	Chemical	Petroleum	Stone	Primary_Metal	Fabricated_Metal	Transportation	Miscellaneous	Total
2021	12.8542	119.4775	7.3158	28.2025	44.6258	8.8992	15.2425	9.4558	79.5175	74.8233	262.8592	663.2717
2022	13.2775	123.0608	7.2833	28.6117	46.1233	9.6117	15.4417	9.6075	80.8558	77.7767	267.9150	679.5675
2023	13.6300	123.5450	7.0908	28.2825	46.3367	9.4283	16.2208	9.3925	82.9492	81.7525	269.7400	688.3708
2024	13.6817	122.8625	6.8800	28.5317	45.3692	9.2117	16.6333	9.1800	85.3150	78.6358	267.0900	683.3942
2025	13.5108	123.4425	6.7667	28.5700	44.5542	8.9900	16.8600	9.0692	85.9208	75.0458	262.9433	675.6683
2026	13.3033	124.5700	6.7667	28.4050	44.0600	8.7675	16.8917	8.9275	85.4225	74.2692	258.4883	669.8717
2027	13.1867	125.8042	6.7783	27.9667	43.7200	8.5225	17.0867	8.8275	85.4875	75.3033	255.9458	668.6300
2028	13.1842	126.7192	6.7800	27.5950	43.3725	8.2725	17.2167	8.6833	85.2375	74.6408	253.5000	665.1992
2029	13.2517	127.5825	6.7842	27.6425	43.0000	8.0475	17.2833	8.4975	84.7758	74.4208	250.8800	662.1658
2030	13.2858	128.2133	6.7733	27.9925	42.6175	7.8417	17.3450	8.3250	84.4483	73.5800	248.5683	658.9892
2031	13.2983	129.1808	6.7017	28.7483	42.1875	7.5983	17.3717	8.2750	84.9092	72.0675	247.5758	657.9142
2032	13.4792	130.2250	6.6300	29.4292	41.6950	7.3350	17.5150	8.1433	85.3567	70.2683	246.9808	657.0583
2033	13.4467	131.2017	6.5733	29.5933	41.1683	7.1000	17.7117	7.9233	85.8042	68.8925	246.6333	656.0417
2034	13.3408	131.3600	6.4908	29.1492	40.6283	6.8642	17.7667	7.6983	86.3800	68.1192	246.2650	654.0608
2035	13.2825	131.6000	6.3975	28.7267	40.0800	6.6292	17.9608	7.4833	86.7133	67.8983	245.9317	652.7008

Southern California Gas Company
Industrial G10
Core Industrial Demand Forecast (Mdth)
Average Temperature

Avg Year	Model Output G10-Ind	EE/DSM	AB980	City of Vernon	C2NC Migration	Final
2021	21,026.7	0	0	0	0	21,026.7
2022	21,300.3	247.8	0.0	26.3	495.7	20,530.6
2023	21,342.8	519.9	0.0	52.5	495.7	20,274.7
2024	21,203.4	786.5	0.1	78.8	495.7	19,842.5
2025	21,104.4	1,064.3	0.1	105.1	495.7	19,439.4
2026	21,027.5	1,297.1	0.1	131.3	495.7	19,103.4
2027	21,015.1	1,541.2	0.1	157.6	495.7	18,820.7
2028	20,965.7	1,785.2	0.1	183.9	495.7	18,501.0
2029	20,914.2	2,023.7	0.2	210.1	495.7	18,184.8
2030	20,859.7	2,273.4	0.2	210.1	495.7	17,880.7
2031	20,881.2	2,528.7	0.2	210.1	495.7	17,646.8
2032	20,904.8	2,778.4	0.2	210.1	495.7	17,420.8
2033	20,919.5	3,028.1	0.2	210.1	495.7	17,185.8
2034	20,878.6	3,277.8	0.3	210.1	495.7	16,895.3
2035	20,849.2	3,527.4	0.3	210.1	495.7	16,616.2

Southern California Gas Company
Industrial G10
Core Industrial Demand Forecast (Mdth)
Cold Temperature

Cold YEAR	Model Output G10-Ind	EE/DSM	AB980	City of Vernon	C2NC Migration	Final
2021	21,321.6	0	0	0	0	21,321.6
2022	21,590.4	247.8	0.0	26.3	495.7	20,820.6
2023	21,628.0	519.9	0.0	52.5	495.7	20,559.8
2024	21,483.8	786.5	0.1	78.8	495.7	20,122.9
2025	21,380.1	1,064.3	0.1	105.1	495.7	19,715.1
2026	21,298.6	1,297.1	0.1	131.3	495.7	19,374.6
2027	21,281.7	1,541.2	0.1	157.6	495.7	19,087.3
2028	21,227.8	1,785.2	0.1	183.9	495.7	18,763.1
2029	21,172.0	2,023.7	0.2	210.1	495.7	18,442.6
2030	21,113.2	2,273.4	0.2	210.1	495.7	18,134.1
2031	21,130.4	2,528.7	0.2	210.1	495.7	17,896.1
2032	21,149.9	2,778.4	0.2	210.1	495.7	17,665.9
2033	21,160.4	3,028.1	0.2	210.1	495.7	17,426.8
2034	21,115.6	3,277.8	0.3	210.1	495.7	17,132.2
2035	21,082.2	3,527.4	0.3	210.1	495.7	16,849.1

Southern California Gas Company
Industrial G10
Core Industrial Demand Forecast (Mdth)
Hot Temperature

Hot YEAR	Model Output G10-Ind	EE/DSM	AB980	City of Vernon	C2NC Migration	Final
2021	20,731.7	0.0	0.0	0.0	0.0	20,731.7
2022	21,010.3	247.8	0.0	26.3	495.7	20,240.6
2023	21,057.6	519.9	0.0	52.5	495.7	19,989.5
2024	20,923.0	786.5	0.1	78.8	495.7	19,562.1
2025	20,828.6	1,064.3	0.1	105.1	495.7	19,163.7
2026	20,756.4	1,297.1	0.1	131.3	495.7	18,832.3
2027	20,748.5	1,541.2	0.1	157.6	495.7	18,554.2
2028	20,703.5	1,785.2	0.1	183.9	495.7	18,238.9
2029	20,656.4	2,023.7	0.2	210.1	495.7	17,927.1
2030	20,606.2	2,273.4	0.2	210.1	495.7	17,627.2
2031	20,631.9	2,528.7	0.2	210.1	495.7	17,397.6
2032	20,659.8	2,778.4	0.2	210.1	495.7	17,175.8
2033	20,678.5	3,028.1	0.2	210.1	495.7	16,944.8
2034	20,641.7	3,277.8	0.3	210.1	495.7	16,658.3
2035	20,616.2	3,527.4	0.3	210.1	495.7	16,383.2

Southern California Gas Company
Industrial G10
Core Industrial Demand Forecast (Mdth)
Base Temperature

Base YEAR	Model Output G10-Ind	EE/DSM	AB980	City of Vernon	C2NC Migration	Final
2021	19,412.2	0.0	0.0	0.0	0.0	19,412.2
2022	19,712.9	247.8	0.0	26.3	495.7	18,943.2
2023	19,781.9	519.9	0.0	52.5	495.7	18,713.7
2024	19,668.6	786.5	0.1	78.8	495.7	18,307.6
2025	19,595.1	1,064.3	0.1	105.1	495.7	17,930.2
2026	19,543.4	1,297.1	0.1	131.3	495.7	17,619.4
2027	19,555.8	1,541.2	0.1	157.6	495.7	17,361.5
2028	19,530.8	1,785.2	0.1	183.9	495.7	17,066.1
2029	19,503.3	2,023.7	0.2	210.1	495.7	16,773.9
2030	19,472.3	2,273.4	0.2	210.1	495.7	16,493.3
2031	19,517.0	2,528.7	0.2	210.1	495.7	16,282.6
2032	19,563.4	2,778.4	0.2	210.1	495.7	16,079.4
2033	19,600.5	3,028.1	0.2	210.1	495.7	15,866.8
2034	19,581.6	3,277.8	0.3	210.1	495.7	15,598.3
2035	19,573.8	3,527.4	0.3	210.1	495.7	15,340.8

2022 CALIFORNIA GAS REPORT

NONCORE COMMERCIAL AND INDUSTRIAL

SoCalGas

A Sempra Energy utility®

Noncore Commercial Gas Demand

Introduction

The purpose of these workpapers is to document the methodology used to forecast demand for SoCalGas' noncore commercial market. Noncore commercial customers are determined by the NAICS (North American Industrial Classification System) code on the billing record. The final demand forecast for the noncore commercial market is estimated by the output from a base econometric forecast and some "out-of-model" (post-model) adjustments, including CPUC-authorized energy efficiency goal and core to noncore migration.

Data Sources

A. Historical Billing Data

Monthly historical gas consumption for the noncore commercial market was obtained from SoCalGas' billing records for 2010-2021.

B. Natural Gas Price

The natural gas prices used to forecast demand were based on the price of gas at the burner-tip in each market segment, which is composed of the gas commodity cost, transportation rate (G-30 tariff rate), and Public Purpose Program surcharge. The cost of gas delivered to the SoCalGas "city gate" was used for the gas commodity cost. Since the G-30 tariff rate is priced according to tier, calculations were made to arrive at the overall average transportation rates from historical usage in 2021. The average rate is calculated from the weighted average rate at each tier.

C. HDD data

For the base econometric forecast model, SoCalGas recorded monthly system Hdd data are used for historical data, and average year weather design Hdd data are used for forecasting period.

D. Employment

Employment, as a measure of economic activity, is used to drive the noncore commercial demand forecast models. The employment forecast through 2035 is based on Global Insight's November 2021 Regional forecast. Global Insight prepares regular regional employment forecast for California and the aggregated six largest counties' Metropolitan Statistical Area (MSA) in SoCalGas' service area. (The six counties – Kern, Los Angeles, Orange, Riverside, San Bernardino, and Ventura – account for about 85% of the service area's total population and employment). The historical employment data used was derived from the California Employment

Development Department (EDD) for the 12 counties served by SoCalGas. The monthly employment used in the model was generally by summing the employment data over the commercial and industrial NAICS codes.

E. Post-Model Adjustment

Once the base econometric forecast model generated the base forecast, post-model adjustments were made to account for effects the model is not designed to simulate. Energy savings goals that were authorized by the CPUC in decision D.04-09-060 and migration of customers between noncore and core service has been observed to the extent that the net-migration is from core to noncore. An outlook for this net load migration, split between commercial and industrial sectors was developed and results in a *subtraction* from the respective core sector and a corresponding *addition* to the respective noncore sector.

Base Forecast Model

Noncore Commercial consumption are forecasted using a base econometric employing monthly historic data from 2010 through 2021. To model the dependent variable (consumption as Mdth), the independent variables are HDD, Employment, Gas burner-tip price, monthly dummy variables, and autoregressive terms to correct for any autocorrelation that may be present in the model errors.

Noncore Commercial and Industrial *Gas Transportation Rates*

Gas Transp. Forecast from Rate Design (Nominal Cents per Therm)							Trans Option: "Class Averge"			Trans Option: "Reservation"					
Year	PPP (¢/Thm)	Dcharge ($/mo /mtr)	D1 (¢/Thm)	D2 (¢/Thm)	D3 (¢/Thm)	D4 (¢/Thm)	Tcharge ($/mo /mtr)	T1 (¢/Thm)	T2 (¢/Thm)	Tcharge (¢/Thm/day per Mtr)	T1 (¢/Thm)	T2 (¢/Thm)	GHG Credit (¢/Thm)	CPI	BTS $/Dth
2021	5.34	$350	34.80	24.12	17.28	12.40	$0	8.12	8.12	1.06	6.55	6.55	-4.529	1.000	0.401
2022	6.01	$350	40.22	29.36	22.42	17.46	$0	14.13	14.13	1.07	12.55	12.55	-10.911	1.050	0.368
2023	6.11	$350	41.50	30.13	22.85	17.66	$0	14.78	14.78	1.46	12.61	12.61	-10.911	1.071	0.547
2024	6.24	$350	42.01	30.41	22.99	17.68	$0	14.73	14.73	1.47	12.56	12.56	-10.911	1.093	0.547
2025	6.37	$350	42.61	30.76	23.18	17.76	$0	14.72	14.72	1.47	12.55	12.55	-10.911	1.116	0.547
2026	6.52	$350	43.30	31.16	23.40	17.85	$0	14.73	14.73	1.47	12.55	12.55	-10.911	1.140	0.547
2027	6.68	$350	44.02	31.59	23.64	17.95	$0	14.74	14.74	1.48	12.55	12.55	-10.911	1.167	0.547
2028	6.85	$350	44.79	32.04	23.89	18.06	$0	14.75	14.75	1.49	12.55	12.55	-10.911	1.194	0.547
2029	7.02	$350	45.60	32.52	24.15	18.17	$0	14.76	14.76	1.49	12.55	12.55	-10.911	1.223	0.547
2030	7.21	$350	46.44	33.02	24.43	18.30	$0	14.78	14.78	1.50	12.56	12.56	-10.911	1.251	0.547
2031	7.39	$350	47.30	33.53	24.72	18.42	$0	14.80	14.80	1.50	12.57	12.57	-10.911	1.280	0.547
2032	7.59	$350	48.19	34.05	25.01	18.55	$0	14.82	14.82	1.51	12.58	12.58	-10.911	1.308	0.547
2033	7.78	$350	49.09	34.59	25.31	18.68	$0	14.83	14.83	1.52	12.59	12.59	-10.911	1.337	0.547
2034	7.98	$350	50.02	35.13	25.61	18.81	$0	14.85	14.85	1.52	12.60	12.60	-10.911	1.368	0.547
2035	8.19	$350	50.97	35.70	25.93	18.95	$0	14.87	14.87	1.53	12.61	12.61	-10.911	1.399	0.547

2021 Noncore Commercial Weight of Usage by Tier

Distribution	95.67%
Transmission	4.33%

Tier	% of Group	% of Total
D1	26.76%	25.6%
D2	39.90%	38.2%
D3	15.88%	15.2%
D4	17.46%	16.7%
T1	99.05%	4.3%
T2	0.95%	0.0%
		100.0%

Example Calculation for 2025 August Noncore Commercial Gas Price

Transportation Charge (¢/Thm): (including GHG)	36.143	**=**	**+ (95.67% Ind Dist of total Ind) * { (26.76%*42.61 ¢/Thm + 39.90%* 30.76 ¢/Thm + 15.88%* 23.18 ¢/Thm + 17.46%* 17.76 ¢/Thm) }** **+ (4.33% Ind Trans of total Ind) * { (99.05%* 14.72 ¢/Thm+0.95%* 14.72¢/Thm) }** **+ PPP Surcharge (¢/Thm): 6.370¢/Thm, in 2025**
Gas Commodity Price (¢/Thm):	39.473	**=**	**(market price of gas at the SoCalGas City Gate)**
Customer's "Burner-Tip" Price:	**75.616**	**=**	**(36.143 + 39.473) ¢/Thm (Final Average nominal price)**
CPI (Yr 2021 = 100)	1.118		
Real Price -2021 (¢/Thm)	67.611		
Real Price -2021 $/Dth	6.761		**(Final Average 2021 real price)**

Below are SAS base econometric forecast model results.

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	577023.541	DFE	128
MSE	4508	Root MSE	67.14161
SBC	1683.32242	AIC	1635.80541
MAE	42.280703	AICC	1640.08887
MAPE	2.87197891	HQC	1655.11364
Log Likelihood	-801.90271	Transformed Regression R-Square	0.8652
Durbin-Watson	1.8998	Total R-Square	0.9219
		Observations	144

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	1351	254.4345	5.31	<.0001
HDD	1	1.2566	0.1547	8.12	<.0001
Employment	1	25.1886	28.0506	0.90	0.3709
Price	1	-10.9049	7.8618	-1.39	0.1678
Month_01	1	11.0762	23.3364	0.47	0.6359
Month_02	1	-131.2635	29.6171	-4.43	<.0001
Month_03	1	-35.7148	35.9421	-0.99	0.3223
Month_04	1	-148.1492	44.9382	-3.30	0.0013
Month_05	1	-178.6929	48.8993	-3.65	0.0004
Month_06	1	-280.4717	53.4428	-5.25	<.0001
Month_07	1	-297.4440	54.2184	-5.49	<.0001
Month_08	1	-241.5884	53.1966	-4.54	<.0001
Month_09	1	77.8645	52.6510	1.48	0.1416
Month_10	1	-51.8989	48.0246	-1.08	0.2819
Month_11	1	-140.2687	32.2760	-4.35	<.0001
AR1	1	-0.6514	0.0674	-9.67	<.0001

The table below shows the base noncore Commercial gas demand forecast from econometric model before post-model adjustment.

Base Forecast of Noncore Commercial Gas Demand (2022-2035)

Month	HDD	Employment	Price	Month_01	Month_02	Month_03	Month_04	Month_05	Month_06	Month_07	Month_08	Month_09	Month_10	Month_11	Forecast Mdth
Jan-22	254.4	8.287	8.494	1	0	0	0	0	0	0	0	0	0	0	1,783.2
Feb-22	218.0	8.357	7.976	0	1	0	0	0	0	0	0	0	0	0	1,607.7
Mar-22	166.1	8.355	8.229	0	0	1	0	0	0	0	0	0	0	0	1,638.6
Apr-22	102.6	8.542	7.360	0	0	0	1	0	0	0	0	0	0	0	1,462.9
May-22	47.1	8.634	7.295	0	0	0	0	1	0	0	0	0	0	0	1,367.0
Jun-22	9.7	8.763	7.698	0	0	0	0	0	1	0	0	0	0	0	1,218.0
Jul-22	2.0	8.625	8.832	0	0	0	0	0	0	1	0	0	0	0	1,176.2
Aug-22	1.7	8.698	8.942	0	0	0	0	0	0	0	1	0	0	0	1,232.8
Sep-22	4.5	8.769	8.352	0	0	0	0	0	0	0	0	1	0	0	1,564.1
Oct-22	30.3	8.787	7.528	0	0	0	0	0	0	0	0	0	1	0	1,476.4
Nov-22	123.3	8.863	8.301	0	0	0	0	0	0	0	0	0	0	1	1,498.6
Dec-22	282.3	8.827	9.295	0	0	0	0	0	0	0	0	0	0	0	1,826.9
Jan-23	253.2	8.474	7.950	1	0	0	0	0	0	0	0	0	0	0	1,807.2
Feb-23	216.9	8.547	8.861	0	1	0	0	0	0	0	0	0	0	0	1,611.2
Mar-23	165.2	8.545	7.750	0	0	1	0	0	0	0	0	0	0	0	1,653.9
Apr-23	102.1	8.645	6.472	0	0	0	1	0	0	0	0	0	0	0	1,478.7
May-23	46.9	8.736	6.347	0	0	0	0	1	0	0	0	0	0	0	1,382.3
Jun-23	9.6	8.865	6.388	0	0	0	0	0	1	0	0	0	0	0	1,236.6
Jul-23	2.0	8.652	7.461	0	0	0	0	0	0	1	0	0	0	0	1,193.0
Aug-23	1.7	8.725	7.533	0	0	0	0	0	0	0	1	0	0	0	1,249.5
Sep-23	4.5	8.797	7.035	0	0	0	0	0	0	0	0	1	0	0	1,579.7
Oct-23	30.2	8.830	8.235	0	0	0	0	0	0	0	0	0	1	0	1,470.0
Nov-23	122.7	8.906	7.819	0	0	0	0	0	0	0	0	0	0	1	1,504.4
Dec-23	280.9	8.870	8.389	0	0	0	0	0	0	0	0	0	0	0	1,836.3
Jan-24	251.9	8.507	8.393	1	0	0	0	0	0	0	0	0	0	0	1,801.7
Feb-24	215.9	8.581	8.010	0	1	0	0	0	0	0	0	0	0	0	1,620.1
Mar-24	164.4	8.579	7.531	0	0	1	0	0	0	0	0	0	0	0	1,656.2
Apr-24	101.6	8.675	6.790	0	0	0	1	0	0	0	0	0	0	0	1,475.4
May-24	46.6	8.764	6.698	0	0	0	0	1	0	0	0	0	0	0	1,379.0
Jun-24	9.6	8.891	6.697	0	0	0	0	0	1	0	0	0	0	0	1,233.8
Jul-24	2.0	8.690	7.319	0	0	0	0	0	0	1	0	0	0	0	1,195.5
Aug-24	1.7	8.764	7.373	0	0	0	0	0	0	0	1	0	0	0	1,252.3
Sep-24	4.4	8.836	7.212	0	0	0	0	0	0	0	0	1	0	0	1,578.7
Oct-24	30.0	8.859	6.638	0	0	0	0	0	0	0	0	0	1	0	1,487.9
Nov-24	122.2	8.934	6.929	0	0	0	0	0	0	0	0	0	0	1	1,514.0
Dec-24	279.5	8.899	7.769	0	0	0	0	0	0	0	0	0	0	0	1,842.0

Base Forecast of Noncore Commercial Gas Demand (2022-2035)

Month	HDD	Employment	Price	Month_01	Month_02	Month_03	Month_04	Month_05	Month_06	Month_07	Month_08	Month_09	Month_10	Month_11	Forecast Mdth
Jan-25	250.7	8.544	7.759	1	0	0	0	0	0	0	0	0	0	0	1,808.0
Feb-25	214.8	8.618	7.552	0	1	0	0	0	0	0	0	0	0	0	1,624.7
Mar-25	163.6	8.617	7.033	0	0	1	0	0	0	0	0	0	0	0	1,661.6
Apr-25	101.1	8.720	6.454	0	0	0	1	0	0	0	0	0	0	0	1,479.5
May-25	46.4	8.809	6.327	0	0	0	0	1	0	0	0	0	0	0	1,383.8
Jun-25	9.5	8.934	6.365	0	0	0	0	0	1	0	0	0	0	0	1,238.4
Jul-25	2.0	8.738	6.638	0	0	0	0	0	0	1	0	0	0	0	1,204.1
Aug-25	1.7	8.813	6.761	0	0	0	0	0	0	0	1	0	0	0	1,260.1
Sep-25	4.4	8.885	6.690	0	0	0	0	0	0	0	0	1	0	0	1,585.6
Oct-25	29.9	8.914	6.549	0	0	0	0	0	0	0	0	0	1	0	1,490.1
Nov-25	121.6	8.989	6.722	0	0	0	0	0	0	0	0	0	0	1	1,516.9
Dec-25	278.2	8.955	7.328	0	0	0	0	0	0	0	0	0	0	0	1,846.5
Jan-26	249.5	8.602	7.526	1	0	0	0	0	0	0	0	0	0	0	1,810.5
Feb-26	213.8	8.677	7.340	0	1	0	0	0	0	0	0	0	0	0	1,627.2
Mar-26	162.8	8.675	7.022	0	0	1	0	0	0	0	0	0	0	0	1,662.2
Apr-26	100.7	8.781	6.466	0	0	0	1	0	0	0	0	0	0	0	1,480.3
May-26	46.2	8.870	6.405	0	0	0	0	1	0	0	0	0	0	0	1,384.2
Jun-26	9.5	8.995	6.416	0	0	0	0	0	1	0	0	0	0	0	1,239.3
Jul-26	2.0	8.796	6.559	0	0	0	0	0	0	1	0	0	0	0	1,206.4
Aug-26	1.7	8.871	6.676	0	0	0	0	0	0	0	1	0	0	0	1,262.5
Sep-26	4.4	8.944	6.592	0	0	0	0	0	0	0	0	1	0	0	1,588.1
Oct-26	29.7	8.968	6.450	0	0	0	0	0	0	0	0	0	1	0	1,492.3
Nov-26	121.0	9.043	6.750	0	0	0	0	0	0	0	0	0	0	1	1,517.2
Dec-26	276.8	9.009	7.179	0	0	0	0	0	0	0	0	0	0	0	1,847.8
Jan-27	248.3	8.651	7.383	1	0	0	0	0	0	0	0	0	0	0	1,811.8
Feb-27	212.7	8.727	7.219	0	1	0	0	0	0	0	0	0	0	0	1,628.4
Mar-27	162.0	8.725	6.959	0	0	1	0	0	0	0	0	0	0	0	1,663.1
Apr-27	100.2	8.826	6.404	0	0	0	1	0	0	0	0	0	0	0	1,481.5
May-27	46.0	8.915	6.361	0	0	0	0	1	0	0	0	0	0	0	1,385.5
Jun-27	9.4	9.039	6.365	0	0	0	0	0	1	0	0	0	0	0	1,241.0
Jul-27	2.0	8.835	6.497	0	0	0	0	0	0	1	0	0	0	0	1,208.1
Aug-27	1.7	8.910	6.600	0	0	0	0	0	0	0	1	0	0	0	1,264.3
Sep-27	4.4	8.983	6.514	0	0	0	0	0	0	0	0	1	0	0	1,589.9
Oct-27	29.6	9.006	6.363	0	0	0	0	0	0	0	0	0	1	0	1,494.0
Nov-27	120.4	9.081	6.643	0	0	0	0	0	0	0	0	0	0	1	1,518.6
Dec-27	275.5	9.047	7.062	0	0	0	0	0	0	0	0	0	0	0	1,848.3

Base Forecast of Noncore Commercial Gas Demand (2022-2035)

Month	HDD	Employment	Price	Month_01	Month_02	Month_03	Month_04	Month_05	Month_06	Month_07	Month_08	Month_09	Month_10	Month_11	Forecast Mdth
Jan-28	247.0	8.687	7.276	1	0	0	0	0	0	0	0	0	0	0	1,812.3
Feb-28	211.6	8.763	7.141	0	1	0	0	0	0	0	0	0	0	0	1,628.9
Mar-28	161.2	8.761	6.905	0	0	1	0	0	0	0	0	0	0	0	1,663.6
Apr-28	99.7	8.862	6.374	0	0	0	1	0	0	0	0	0	0	0	1,482.1
May-28	45.7	8.951	6.323	0	0	0	0	1	0	0	0	0	0	0	1,386.6
Jun-28	9.4	9.075	6.325	0	0	0	0	0	1	0	0	0	0	0	1,242.3
Jul-28	2.0	8.869	6.457	0	0	0	0	0	0	1	0	0	0	0	1,209.3
Aug-28	1.7	8.944	6.561	0	0	0	0	0	0	0	1	0	0	0	1,265.6
Sep-28	4.3	9.017	6.480	0	0	0	0	0	0	0	0	1	0	0	1,591.1
Oct-28	29.4	9.038	6.316	0	0	0	0	0	0	0	0	0	1	0	1,495.2
Nov-28	119.8	9.113	6.586	0	0	0	0	0	0	0	0	0	0	1	1,519.3
Dec-28	274.1	9.079	6.949	0	0	0	0	0	0	0	0	0	0	0	1,848.7
Jan-29	245.8	8.717	7.503	1	0	0	0	0	0	0	0	0	0	0	1,809.0
Feb-29	210.6	8.794	7.282	0	1	0	0	0	0	0	0	0	0	0	1,626.8
Mar-29	160.4	8.792	6.983	0	0	1	0	0	0	0	0	0	0	0	1,662.5
Apr-29	99.2	8.892	6.374	0	0	0	1	0	0	0	0	0	0	0	1,482.3
May-29	45.5	8.981	6.295	0	0	0	0	1	0	0	0	0	0	0	1,387.4
Jun-29	9.3	9.106	6.279	0	0	0	0	0	1	0	0	0	0	0	1,243.5
Jul-29	2.0	8.899	6.418	0	0	0	0	0	0	1	0	0	0	0	1,210.5
Aug-29	1.7	8.974	6.534	0	0	0	0	0	0	0	1	0	0	0	1,266.6
Sep-29	4.3	9.048	6.446	0	0	0	0	0	0	0	0	1	0	0	1,592.2
Oct-29	29.3	9.070	6.251	0	0	0	0	0	0	0	0	0	1	0	1,496.5
Nov-29	119.2	9.145	6.519	0	0	0	0	0	0	0	0	0	0	1	1,520.1
Dec-29	272.7	9.111	6.843	0	0	0	0	0	0	0	0	0	0	0	1,848.9
Jan-30	244.6	8.749	7.762	1	0	0	0	0	0	0	0	0	0	0	1,805.5
Feb-30	209.5	8.826	7.438	0	1	0	0	0	0	0	0	0	0	0	1,624.6
Mar-30	159.6	8.825	7.071	0	0	1	0	0	0	0	0	0	0	0	1,661.4
Apr-30	98.7	8.925	6.385	0	0	0	1	0	0	0	0	0	0	0	1,482.3
May-30	45.3	9.014	6.289	0	0	0	0	1	0	0	0	0	0	0	1,388.0
Jun-30	9.3	9.139	6.267	0	0	0	0	0	1	0	0	0	0	0	1,244.4
Jul-30	2.0	8.936	6.410	0	0	0	0	0	0	1	0	0	0	0	1,211.5
Aug-30	1.7	9.012	6.526	0	0	0	0	0	0	0	1	0	0	0	1,267.7
Sep-30	4.3	9.085	6.438	0	0	0	0	0	0	0	0	1	0	0	1,593.2
Oct-30	29.1	9.102	6.239	0	0	0	0	0	0	0	0	0	1	0	1,497.3
Nov-30	118.6	9.177	6.508	0	0	0	0	0	0	0	0	0	0	1	1,520.3
Dec-30	271.4	9.143	6.828	0	0	0	0	0	0	0	0	0	0	0	1,848.1

Base Forecast of Noncore Commercial Gas Demand (2022-2035)

Month	HDD	Employment	Price	Month_01	Month_02	Month_03	Month_04	Month_05	Month_06	Month_07	Month_08	Month_09	Month_10	Month_11	Forecast Mdth
Jan-31	243.3	8.777	7.838	1	0	0	0	0	0	0	0	0	0	0	1,803.8
Feb-31	208.5	8.854	7.506	0	1	0	0	0	0	0	0	0	0	0	1,623.2
Mar-31	158.8	8.853	7.137	0	0	1	0	0	0	0	0	0	0	0	1,660.4
Apr-31	98.2	8.956	6.444	0	0	0	1	0	0	0	0	0	0	0	1,481.8
May-31	45.0	9.045	6.346	0	0	0	0	1	0	0	0	0	0	0	1,387.8
Jun-31	9.2	9.170	6.323	0	0	0	0	0	1	0	0	0	0	0	1,244.5
Jul-31	2.0	8.967	6.466	0	0	0	0	0	0	1	0	0	0	0	1,211.7
Aug-31	1.7	9.042	6.582	0	0	0	0	0	0	0	1	0	0	0	1,267.8
Sep-31	4.3	9.117	6.494	0	0	0	0	0	0	0	0	1	0	0	1,593.4
Oct-31	29.0	9.143	6.296	0	0	0	0	0	0	0	0	0	1	0	1,497.5
Nov-31	118.0	9.219	6.564	0	0	0	0	0	0	0	0	0	0	1	1,519.9
Dec-31	270.0	9.184	6.885	0	0	0	0	0	0	0	0	0	0	0	1,846.9
Jan-32	242.1	8.820	7.949	1	0	0	0	0	0	0	0	0	0	0	1,802.1
Feb-32	207.4	8.898	7.610	0	1	0	0	0	0	0	0	0	0	0	1,621.9
Mar-32	158.0	8.897	7.234	0	0	1	0	0	0	0	0	0	0	0	1,659.4
Apr-32	97.7	9.002	6.528	0	0	0	1	0	0	0	0	0	0	0	1,481.5
May-32	44.8	9.091	6.427	0	0	0	0	1	0	0	0	0	0	0	1,387.9
Jun-32	9.2	9.218	6.405	0	0	0	0	0	1	0	0	0	0	0	1,244.7
Jul-32	1.9	9.014	6.548	0	0	0	0	0	0	1	0	0	0	0	1,212.0
Aug-32	1.7	9.089	6.663	0	0	0	0	0	0	0	1	0	0	0	1,268.1
Sep-32	4.3	9.164	6.576	0	0	0	0	0	0	0	0	1	0	0	1,593.7
Oct-32	28.8	9.195	6.380	0	0	0	0	0	0	0	0	0	1	0	1,497.7
Nov-32	117.4	9.271	6.648	0	0	0	0	0	0	0	0	0	0	1	1,519.6
Dec-32	268.6	9.236	6.969	0	0	0	0	0	0	0	0	0	0	0	1,845.5
Jan-33	240.9	8.870	7.971	1	0	0	0	0	0	0	0	0	0	0	1,801.6
Feb-33	206.4	8.948	7.629	0	1	0	0	0	0	0	0	0	0	0	1,621.6
Mar-33	157.2	8.947	7.253	0	0	1	0	0	0	0	0	0	0	0	1,659.4
Apr-33	97.2	9.054	6.543	0	0	0	1	0	0	0	0	0	0	0	1,482.0
May-33	44.6	9.145	6.441	0	0	0	0	1	0	0	0	0	0	0	1,388.8
Jun-33	9.1	9.272	6.418	0	0	0	0	0	1	0	0	0	0	0	1,245.9
Jul-33	1.9	9.071	6.560	0	0	0	0	0	0	1	0	0	0	0	1,213.2
Aug-33	1.6	9.146	6.672	0	0	0	0	0	0	0	1	0	0	0	1,269.4
Sep-33	4.2	9.222	6.586	0	0	0	0	0	0	0	0	1	0	0	1,595.0
Oct-33	28.7	9.251	6.391	0	0	0	0	0	0	0	0	0	1	0	1,498.8
Nov-33	116.8	9.327	6.657	0	0	0	0	0	0	0	0	0	0	1	1,520.2
Dec-33	267.3	9.292	6.975	0	0	0	0	0	0	0	0	0	0	0	1,845.2

Base Forecast of Noncore Commercial Gas Demand (2022-2035)

Month	HDD	Employment	Price	Month_01	Month_02	Month_03	Month_04	Month_05	Month_06	Month_07	Month_08	Month_09	Month_10	Month_11	Forecast Mdth
Jan-34	239.7	8.923	7.987	1	0	0	0	0	0	0	0	0	0	0	1,801.2
Feb-34	205.3	9.002	7.645	0	1	0	0	0	0	0	0	0	0	0	1,621.5
Mar-34	156.4	9.001	7.267	0	0	1	0	0	0	0	0	0	0	0	1,659.6
Apr-34	96.7	9.109	6.554	0	0	0	1	0	0	0	0	0	0	0	1,482.6
May-34	44.4	9.200	6.451	0	0	0	0	1	0	0	0	0	0	0	1,389.7
Jun-34	9.1	9.328	6.429	0	0	0	0	0	1	0	0	0	0	0	1,247.1
Jul-34	1.9	9.124	6.569	0	0	0	0	0	0	1	0	0	0	0	1,214.5
Aug-34	1.6	9.200	6.680	0	0	0	0	0	0	0	1	0	0	0	1,270.7
Sep-34	4.2	9.275	6.595	0	0	0	0	0	0	0	0	1	0	0	1,596.2
Oct-34	28.6	9.304	6.402	0	0	0	0	0	0	0	0	0	1	0	1,499.9
Nov-34	116.2	9.381	6.666	0	0	0	0	0	0	0	0	0	0	1	1,520.7
Dec-34	265.9	9.346	6.982	0	0	0	0	0	0	0	0	0	0	0	1,844.7
Jan-35	238.4	8.975	8.065	1	0	0	0	0	0	0	0	0	0	0	1,800.1
Feb-35	204.3	9.054	7.720	0	1	0	0	0	0	0	0	0	0	0	1,620.6
Mar-35	155.6	9.053	7.335	0	0	1	0	0	0	0	0	0	0	0	1,659.2
Apr-35	96.2	9.161	6.607	0	0	0	1	0	0	0	0	0	0	0	1,482.8
May-35	44.1	9.253	6.503	0	0	0	0	1	0	0	0	0	0	0	1,390.2
Jun-35	9.1	9.382	6.482	0	0	0	0	0	1	0	0	0	0	0	1,247.9
Jul-35	1.9	9.176	6.621	0	0	0	0	0	0	1	0	0	0	0	1,215.2
Aug-35	1.6	9.252	6.729	0	0	0	0	0	0	0	1	0	0	0	1,271.4
Sep-35	4.2	9.328	6.645	0	0	0	0	0	0	0	0	1	0	0	1,596.9
Oct-35	28.4	9.355	6.456	0	0	0	0	0	0	0	0	0	1	0	1,500.4
Nov-35	115.6	9.432	6.720	0	0	0	0	0	0	0	0	0	0	1	1,520.6
Dec-35	264.5	9.397	7.035	0	0	0	0	0	0	0	0	0	0	0	1,843.7

Noncore Commercial Annual Post-model Adjustment (2021-2035)

Year	Base Econometric Model Output (MDth)	Vernon Migration	EE Program (MDth)	Migration: core --> noncore	Final Average Year Forecast (MDth)	Adjustment %
2021	17,982.5	0.0	0.0	0.0	17,982.5	0.0%
2022	17,852.5	0.0	22.3	389.5	18,219.7	2.1%
2023	18,002.7	0.0	46.7	389.5	18,345.5	1.9%
2024	18,036.6	0.0	70.7	389.5	18,355.4	1.8%
2025	18,099.5	0.0	95.7	389.5	18,393.3	1.6%
2026	18,118.1	0.0	116.6	389.5	18,391.0	1.5%
2027	18,134.6	0.0	138.5	389.5	18,385.6	1.4%
2028	18,144.9	0.0	160.5	389.5	18,373.9	1.3%
2029	18,146.4	0.0	181.9	389.5	18,353.9	1.1%
2030	18,144.2	0.0	204.4	389.5	18,329.3	1.0%
2031	18,138.7	0.0	227.3	389.5	18,300.9	0.9%
2032	18,134.0	0.0	249.8	389.5	18,273.7	0.8%
2033	18,141.1	0.0	272.2	389.5	18,258.3	0.6%
2034	18,148.5	0.0	294.7	389.5	18,243.3	0.5%
2035	18,149.1	0.0	317.1	389.5	18,221.5	0.4%

Noncore Commercial Monthly Post-model Adjustment (2022-2035)

Month	Base Econometric Model Output (Mdth)	Average Year Adjustment %	Final Average Year Forecast (Mdth)
Jan-22	1,783.2	2.06%	1,819.9
Feb-22	1,607.7	2.06%	1,640.8
Mar-22	1,638.6	2.06%	1,672.3
Apr-22	1,462.9	2.06%	1,493.0
May-22	1,367.0	2.06%	1,395.1
Jun-22	1,218.0	2.06%	1,243.1
Jul-22	1,176.2	2.06%	1,200.4
Aug-22	1,232.8	2.06%	1,258.1
Sep-22	1,564.1	2.06%	1,596.3
Oct-22	1,476.4	2.06%	1,506.8
Nov-22	1,498.6	2.06%	1,529.4
Dec-22	1,826.9	2.06%	1,864.4
Jan-23	1,807.2	1.90%	1,841.6
Feb-23	1,611.2	1.90%	1,641.9
Mar-23	1,653.9	1.90%	1,685.4
Apr-23	1,478.7	1.90%	1,506.8
May-23	1,382.3	1.90%	1,408.6
Jun-23	1,236.6	1.90%	1,260.1
Jul-23	1,193.0	1.90%	1,215.7
Aug-23	1,249.5	1.90%	1,273.3
Sep-23	1,579.7	1.90%	1,609.7
Oct-23	1,470.0	1.90%	1,497.9
Nov-23	1,504.4	1.90%	1,533.0
Dec-23	1,836.3	1.90%	1,871.2
Jan-24	1,801.7	1.77%	1,833.6
Feb-24	1,620.1	1.77%	1,648.7
Mar-24	1,656.2	1.77%	1,685.5
Apr-24	1,475.4	1.77%	1,501.4
May-24	1,379.0	1.77%	1,403.3
Jun-24	1,233.8	1.77%	1,255.6
Jul-24	1,195.5	1.77%	1,216.6
Aug-24	1,252.3	1.77%	1,274.4
Sep-24	1,578.7	1.77%	1,606.6
Oct-24	1,487.9	1.77%	1,514.2
Nov-24	1,514.0	1.77%	1,540.8
Dec-24	1,842.0	1.77%	1,874.6
Jan-25	1,808.0	1.62%	1,837.4
Feb-25	1,624.7	1.62%	1,651.1
Mar-25	1,661.6	1.62%	1,688.6
Apr-25	1,479.5	1.62%	1,503.6
May-25	1,383.8	1.62%	1,406.3
Jun-25	1,238.4	1.62%	1,258.5
Jul-25	1,204.1	1.62%	1,223.7
Aug-25	1,260.1	1.62%	1,280.6
Sep-25	1,585.6	1.62%	1,611.3
Oct-25	1,490.1	1.62%	1,514.3
Nov-25	1,516.9	1.62%	1,541.6
Dec-25	1,846.5	1.62%	1,876.5

Noncore Commercial Monthly Post-model Adjustment (2022-2035)

Month	Base Econometric Model Output (Mdth)	Average Year Adjustment %	Final Average Year Forecast (Mdth)
Jan-26	1,810.5	1.51%	1,837.8
Feb-26	1,627.2	1.51%	1,651.7
Mar-26	1,662.2	1.51%	1,687.2
Apr-26	1,480.3	1.51%	1,502.6
May-26	1,384.2	1.51%	1,405.1
Jun-26	1,239.3	1.51%	1,258.0
Jul-26	1,206.4	1.51%	1,224.6
Aug-26	1,262.5	1.51%	1,281.5
Sep-26	1,588.1	1.51%	1,612.0
Oct-26	1,492.3	1.51%	1,514.8
Nov-26	1,517.2	1.51%	1,540.1
Dec-26	1,847.8	1.51%	1,875.6
Jan-27	1,811.8	1.38%	1,836.8
Feb-27	1,628.4	1.38%	1,651.0
Mar-27	1,663.1	1.38%	1,686.1
Apr-27	1,481.5	1.38%	1,502.0
May-27	1,385.5	1.38%	1,404.7
Jun-27	1,241.0	1.38%	1,258.1
Jul-27	1,208.1	1.38%	1,224.8
Aug-27	1,264.3	1.38%	1,281.8
Sep-27	1,589.9	1.38%	1,611.9
Oct-27	1,494.0	1.38%	1,514.7
Nov-27	1,518.6	1.38%	1,539.6
Dec-27	1,848.3	1.38%	1,873.9
Jan-28	1,812.3	1.26%	1,835.1
Feb-28	1,628.9	1.26%	1,649.4
Mar-28	1,663.6	1.26%	1,684.6
Apr-28	1,482.1	1.26%	1,500.8
May-28	1,386.6	1.26%	1,404.1
Jun-28	1,242.3	1.26%	1,257.9
Jul-28	1,209.3	1.26%	1,224.6
Aug-28	1,265.6	1.26%	1,281.6
Sep-28	1,591.1	1.26%	1,611.2
Oct-28	1,495.2	1.26%	1,514.1
Nov-28	1,519.3	1.26%	1,538.5
Dec-28	1,848.7	1.26%	1,872.0
Jan-29	1,809.0	1.14%	1,829.7
Feb-29	1,626.8	1.14%	1,645.4
Mar-29	1,662.5	1.14%	1,681.5
Apr-29	1,482.3	1.14%	1,499.2
May-29	1,387.4	1.14%	1,403.3
Jun-29	1,243.5	1.14%	1,257.7
Jul-29	1,210.5	1.14%	1,224.4
Aug-29	1,266.6	1.14%	1,281.1
Sep-29	1,592.2	1.14%	1,610.5
Oct-29	1,496.5	1.14%	1,513.6
Nov-29	1,520.1	1.14%	1,537.5
Dec-29	1,848.9	1.14%	1,870.1

Noncore Commercial Monthly Post-model Adjustment (2022-2035)

Month	Base Econometric Model Output (Mdth)	Average Year Adjustment %	Final Average Year Forecast (Mdth)
Jan-30	1,805.5	1.02%	1,823.9
Feb-30	1,624.6	1.02%	1,641.2
Mar-30	1,661.4	1.02%	1,678.3
Apr-30	1,482.3	1.02%	1,497.5
May-30	1,388.0	1.02%	1,402.1
Jun-30	1,244.4	1.02%	1,257.1
Jul-30	1,211.5	1.02%	1,223.9
Aug-30	1,267.7	1.02%	1,280.6
Sep-30	1,593.2	1.02%	1,609.5
Oct-30	1,497.3	1.02%	1,512.5
Nov-30	1,520.3	1.02%	1,535.8
Dec-30	1,848.1	1.02%	1,867.0
Jan-31	1,803.8	0.89%	1,819.9
Feb-31	1,623.2	0.89%	1,637.7
Mar-31	1,660.4	0.89%	1,675.2
Apr-31	1,481.8	0.89%	1,495.1
May-31	1,387.8	0.89%	1,400.3
Jun-31	1,244.5	0.89%	1,255.6
Jul-31	1,211.7	0.89%	1,222.5
Aug-31	1,267.8	0.89%	1,279.2
Sep-31	1,593.4	0.89%	1,607.6
Oct-31	1,497.5	0.89%	1,510.9
Nov-31	1,519.9	0.89%	1,533.5
Dec-31	1,846.9	0.89%	1,863.4
Jan-32	1,802.1	0.77%	1,816.0
Feb-32	1,621.9	0.77%	1,634.4
Mar-32	1,659.4	0.77%	1,672.2
Apr-32	1,481.5	0.77%	1,492.9
May-32	1,387.9	0.77%	1,398.6
Jun-32	1,244.7	0.77%	1,254.3
Jul-32	1,212.0	0.77%	1,221.3
Aug-32	1,268.1	0.77%	1,277.9
Sep-32	1,593.7	0.77%	1,605.9
Oct-32	1,497.7	0.77%	1,509.2
Nov-32	1,519.6	0.77%	1,531.3
Dec-32	1,845.5	0.77%	1,859.8
Jan-33	1,801.6	0.65%	1,813.2
Feb-33	1,621.6	0.65%	1,632.1
Mar-33	1,659.4	0.65%	1,670.2
Apr-33	1,482.0	0.65%	1,491.6
May-33	1,388.8	0.65%	1,397.7
Jun-33	1,245.9	0.65%	1,253.9
Jul-33	1,213.2	0.65%	1,221.1
Aug-33	1,269.4	0.65%	1,277.6
Sep-33	1,595.0	0.65%	1,605.3
Oct-33	1,498.8	0.65%	1,508.5
Nov-33	1,520.2	0.65%	1,530.0
Dec-33	1,845.2	0.65%	1,857.1

Noncore Commercial Monthly Post-model Adjustment (2022-2035)

Month	Base Econometric Model Output (Mdth)	Average Year Adjustment %	Final Average Year Forecast (Mdth)
Jan-34	1,801.2	0.52%	1,810.6
Feb-34	1,621.5	0.52%	1,629.9
Mar-34	1,659.6	0.52%	1,668.3
Apr-34	1,482.6	0.52%	1,490.4
May-34	1,389.7	0.52%	1,397.0
Jun-34	1,247.1	0.52%	1,253.6
Jul-34	1,214.5	0.52%	1,220.8
Aug-34	1,270.7	0.52%	1,277.3
Sep-34	1,596.2	0.52%	1,604.5
Oct-34	1,499.9	0.52%	1,507.7
Nov-34	1,520.7	0.52%	1,528.6
Dec-34	1,844.7	0.52%	1,854.4
Jan-35	1,800.1	0.40%	1,807.3
Feb-35	1,620.6	0.40%	1,627.1
Mar-35	1,659.2	0.40%	1,665.8
Apr-35	1,482.8	0.40%	1,488.7
May-35	1,390.2	0.40%	1,395.8
Jun-35	1,247.9	0.40%	1,252.8
Jul-35	1,215.2	0.40%	1,220.1
Aug-35	1,271.4	0.40%	1,276.5
Sep-35	1,596.9	0.40%	1,603.3
Oct-35	1,500.4	0.40%	1,506.3
Nov-35	1,520.6	0.40%	1,526.7
Dec-35	1,843.7	0.40%	1,851.1

2022 CALIFORNIA GAS REPORT

NONCORE INDUSTRIAL

Noncore Industrial Non-Refinery Gas Demand

Introduction

The purpose of these workpapers is to document the methodology used to forecast demand for SoCalGas' noncore industrial non-refinery market. Noncore industrial customers are determined by the NAICS (North American Industrial Classification System) code on the billing record. The final demand forecast for the noncore industrial non-refinery market is estimated by the output from a base econometric forecast and some "out-of-model" (post-model) adjustments, including CPUC-authorized energy efficiency goal, core to noncore migration, and expected load leaving SoCalGas' retail service for service by the City of Vernon.

Data Sources

A. Historical Billing Data

Monthly historical gas consumption for the noncore industrial non-refinery market was obtained from SoCalGas' billing records for 2010-2021.

B. Natural Gas Price

The natural gas prices used to forecast demand were based on the price of gas at the burner-tip in each market segment, which is composed of the gas commodity cost, transportation rate (G-30 tariff rate), and Public Purpose Program surcharge. The cost of gas delivered to the SoCalGas "city gate" was used for the gas commodity cost. Since the G-30 tariff rate is priced according to tier, calculations were made to arrive at the overall average transportation rates from historical usage in 2021. The average rate is calculated from the weighted average rate at each tier.

C. HDD data

For the base econometric forecast model, SoCalGas recorded monthly system Hdd data are used for historical data, and average year weather design Hdd data are used for forecasting period.

D. Employment

Employment, as a measure of economic activity, is used to drive the noncore industrial non-refinery demand forecast models. The employment forecast through 2035 is based on Global Insight's November 2021 Regional forecast. Global Insight prepares regular regional employment forecast for California and the aggregated six largest counties' Metropolitan Statistical Area (MSA) in SoCalGas' service area. (The six counties – Kern, Los Angeles, Orange, Riverside, San Bernardino, and Ventura – account for about 85% of the service area's total population and employment). The historical employment data used was derived from the California Employment Development Department (EDD) for the 12 counties served by SoCalGas. The monthly employment used in the model was generally by summing the employment data over the commercial and industrial NAICS codes.

E. Post-Model Adjustment

Once the base econometric forecast model generated the base forecast, post-model adjustments were made to account for effects the model is not designed to simulate. Energy savings goals that were authorized by the CPUC in decision D.04-09-060 and expected load leaving SoCalGas' retail service for service by the City of Vernon were subtracted from the model forecast. The gas load for these customers essentially transfers from retail to wholesale service. Migration of customers between noncore and core service has been observed to the extent that the net-migration is from core to noncore. An outlook for this net load migration, split between commercial and industrial sectors was developed and results in a *subtraction* from the respective core sector and a corresponding *addition* to the respective noncore sector.

Base Forecast Model

Noncore Industrial non-refinery consumption is forecasted using a base econometric employing monthly historic data from 2010 through 2021. To model the dependent variable (consumption as Mdth), the independent variables are HDD, Employment, Gas burner-tip price, monthly dummy variables, and autoregressive terms to correct for any autocorrelation that may be present in the model errors.

2021 Noncore Industrial Weight of Usage by Tier

Distribution	94.81%
Transmission	5.19%

Tier	% of Group	% of Total
D1	15.27%	14.5%
D2	28.95%	27.4%
D3	17.40%	16.5%
D4	38.38%	36.4%
T1	31.69%	1.6%
T2	68.31%	3.5%
		100.0%

Example Calculation for 2025 August Noncore Industrial Gas Price

Transportation Charge (¢/Thm): (including GHG)	32.029	**=**	**+ (94.81% Ind Dist of total Ind) * { (15.27%*42.61 ¢/Thm + 28.95%* 30.76 ¢/Thm + 17.40%* 23.18 ¢/Thm + 38.38%* 17.76 ¢/Thm) }** **+ (5.19% Ind Trans of total Ind) * { (31.69%* 14.72 ¢/Thm+68.31%* 14.72¢/Thm) }** **+ PPP Surcharge (¢/Thm): 6.370¢/Thm, in 2025**
Gas Commodity Price (¢/Thm):	39.473	**=**	**(market price of gas at the SoCalGas City Gate)**
Customer's "Burner-Tip" Price:	**71.502**	**=**	**(32.029 + 39.473) ¢/Thm (Final Average nominal price)**
CPI (Yr 2021 = 100)	1.118		
Real Price -2021 (¢/Thm)	63.932		
Real Price -2021 $/Dth	6.393		**(Final Average 2021 real price)**

Below are SAS base econometric forecast model results.

The AUTOREG Procedure

Maximum Likelihood Estimates			
SSE	1812775.43	DFE	128
MSE	14162	Root MSE	119.00550
SBC	1847.89544	AIC	1800.37843
MAE	85.2368364	AICC	1804.66189
MAPE	1.98978163	HQC	1819.68666
Log Likelihood	-884.18921	Transformed Regression R-Square	0.8416
Durbin-Watson	1.9781	Total R-Square	0.8989
		Observations	144

Parameter Estimates

Variable	DF	Estimate	Standard Error	t Value	Approx Pr > |t|
Intercept	1	1095	518.3556	2.11	0.0366
HDD	1	0.4092	0.2799	1.46	0.1462
Employment	1	3.7778	0.6893	5.48	<.0001
Price	1	-16.6990	11.8088	-1.41	0.1598
Month_01	1	273.4393	41.5605	6.58	<.0001
Month_02	1	-18.8902	51.6922	-0.37	0.7154
Month_03	1	364.9462	61.2643	5.96	<.0001
Month_04	1	429.8263	76.0570	5.65	<.0001
Month_05	1	520.7200	83.3136	6.25	<.0001
Month_06	1	371.3747	91.9600	4.04	<.0001
Month_07	1	792.8907	93.0174	8.52	<.0001
Month_08	1	1150	92.4392	12.44	<.0001
Month_09	1	836.0985	91.7296	9.11	<.0001
Month_10	1	511.1468	85.2532	6.00	<.0001
Month_11	1	149.8781	58.5724	2.56	0.0117
AR1	1	-0.4972	0.0794	-6.26	<.0001

The table below shows the base noncore Industrial non-refinery gas demand forecast from econometric model before post-model adjustment.

Base Forecast of Noncore Industrial Gas Demand (2022-2035)

Month	HDD	Employment	Price	Month_01	Month_02	Month_03	Month_04	Month_05	Month_06	Month_07	Month_08	Month_09	Month_10	Month_11	Forecast Mdth
Jan-22	254.4	668.953	8.132	1	0	0	0	0	0	0	0	0	0	0	3,937.7
Feb-22	218.0	673.087	7.615	0	1	0	0	0	0	0	0	0	0	0	3,617.6
Mar-22	166.1	673.250	7.868	0	0	1	0	0	0	0	0	0	0	0	3,958.1
Apr-22	102.6	670.407	6.999	0	0	0	1	0	0	0	0	0	0	0	3,991.6
May-22	47.1	678.298	6.935	0	0	0	0	1	0	0	0	0	0	0	4,086.1
Jun-22	9.7	686.310	7.338	0	0	0	0	0	1	0	0	0	0	0	3,942.7
Jul-22	2.0	679.870	8.473	0	0	0	0	0	0	1	0	0	0	0	4,316.7
Aug-22	1.7	681.385	8.584	0	0	0	0	0	0	0	1	0	0	0	4,676.6
Sep-22	4.5	681.279	7.994	0	0	0	0	0	0	0	0	1	0	0	4,373.4
Oct-22	30.3	687.538	7.170	0	0	0	0	0	0	0	0	0	1	0	4,096.3
Nov-22	123.3	687.315	7.944	0	0	0	0	0	0	0	0	0	0	1	3,759.2
Dec-22	282.3	687.104	8.938	0	0	0	0	0	0	0	0	0	0	0	3,656.9
Jan-23	253.2	680.148	7.578	1	0	0	0	0	0	0	0	0	0	0	3,914.9
Feb-23	216.9	684.485	8.490	0	1	0	0	0	0	0	0	0	0	0	3,608.9
Mar-23	165.2	684.692	7.379	0	0	1	0	0	0	0	0	0	0	0	3,990.9
Apr-23	102.1	680.541	6.102	0	0	0	1	0	0	0	0	0	0	0	4,035.6
May-23	46.9	688.821	5.978	0	0	0	0	1	0	0	0	0	0	0	4,137.2
Jun-23	9.6	697.006	6.019	0	0	0	0	0	1	0	0	0	0	0	4,002.9
Jul-23	2.0	691.845	7.092	0	0	0	0	0	0	1	0	0	0	0	4,383.9
Aug-23	1.7	693.311	7.165	0	0	0	0	0	0	0	1	0	0	0	4,744.8
Sep-23	4.5	693.175	6.668	0	0	0	0	0	0	0	0	1	0	0	4,440.2
Oct-23	30.2	689.041	7.868	0	0	0	0	0	0	0	0	0	1	0	4,090.1
Nov-23	122.7	688.821	7.453	0	0	0	0	0	0	0	0	0	0	1	3,772.8
Dec-23	280.9	688.575	8.024	0	0	0	0	0	0	0	0	0	0	0	3,677.2
Jan-24	251.9	676.493	8.021	1	0	0	0	0	0	0	0	0	0	0	3,893.2
Feb-24	215.9	680.795	7.639	0	1	0	0	0	0	0	0	0	0	0	3,608.7
Mar-24	164.4	681.004	7.160	0	0	1	0	0	0	0	0	0	0	0	3,980.3
Apr-24	101.6	675.396	6.420	0	0	0	1	0	0	0	0	0	0	0	4,010.6
May-24	46.6	683.556	6.328	0	0	0	0	1	0	0	0	0	0	0	4,111.4
Jun-24	9.6	691.607	6.328	0	0	0	0	0	1	0	0	0	0	0	3,977.3
Jul-24	2.0	686.359	6.951	0	0	0	0	0	0	1	0	0	0	0	4,365.5
Aug-24	1.7	687.768	7.005	0	0	0	0	0	0	0	1	0	0	0	4,726.6
Sep-24	4.4	687.665	6.845	0	0	0	0	0	0	0	0	1	0	0	4,416.4
Oct-24	30.0	683.615	6.272	0	0	0	0	0	0	0	0	0	1	0	4,096.2
Nov-24	122.2	683.377	6.564	0	0	0	0	0	0	0	0	0	0	1	3,766.8
Dec-24	279.5	683.077	7.404	0	0	0	0	0	0	0	0	0	0	0	3,666.2

Base Forecast of Noncore Industrial Gas Demand (2022-2035)

Month	HDD	Employment	Price	Month_01	Month_02	Month_03	Month_04	Month_05	Month_06	Month_07	Month_08	Month_09	Month_10	Month_11	Forecast Mdth
Jan-25	250.7	670.383	7.386	1	0	0	0	0	0	0	0	0	0	0	3,880.2
Feb-25	214.8	674.633	7.181	0	1	0	0	0	0	0	0	0	0	0	3,592.6
Mar-25	163.6	674.841	6.662	0	0	1	0	0	0	0	0	0	0	0	3,965.0
Apr-25	101.1	668.385	6.083	0	0	0	1	0	0	0	0	0	0	0	3,989.6
May-25	46.4	676.382	5.957	0	0	0	0	1	0	0	0	0	0	0	4,090.4
Jun-25	9.5	684.289	5.995	0	0	0	0	0	1	0	0	0	0	0	3,955.2
Jul-25	2.0	677.762	6.269	0	0	0	0	0	0	1	0	0	0	0	4,344.4
Aug-25	1.7	679.155	6.393	0	0	0	0	0	0	0	1	0	0	0	4,704.2
Sep-25	4.4	679.091	6.323	0	0	0	0	0	0	0	0	1	0	0	4,392.7
Oct-25	29.9	674.668	6.183	0	0	0	0	0	0	0	0	0	1	0	4,063.8
Nov-25	121.6	674.399	6.356	0	0	0	0	0	0	0	0	0	0	1	3,736.2
Dec-25	278.2	674.051	6.963	0	0	0	0	0	0	0	0	0	0	0	3,638.9
Jan-26	249.5	662.324	7.153	1	0	0	0	0	0	0	0	0	0	0	3,853.1
Feb-26	213.8	666.507	6.968	0	1	0	0	0	0	0	0	0	0	0	3,565.1
Mar-26	162.8	666.717	6.650	0	0	1	0	0	0	0	0	0	0	0	3,934.2
Apr-26	100.7	661.968	6.094	0	0	0	1	0	0	0	0	0	0	0	3,964.9
May-26	46.2	669.755	6.035	0	0	0	0	1	0	0	0	0	0	0	4,064.0
Jun-26	9.5	677.549	6.046	0	0	0	0	0	1	0	0	0	0	0	3,928.8
Jul-26	2.0	672.590	6.190	0	0	0	0	0	0	1	0	0	0	0	4,326.2
Aug-26	1.7	673.993	6.307	0	0	0	0	0	0	0	1	0	0	0	4,686.2
Sep-26	4.4	673.945	6.224	0	0	0	0	0	0	0	0	1	0	0	4,374.9
Oct-26	29.7	671.355	6.082	0	0	0	0	0	0	0	0	0	1	0	4,052.9
Nov-26	121.0	671.071	6.383	0	0	0	0	0	0	0	0	0	0	1	3,722.9
Dec-26	276.8	670.696	6.813	0	0	0	0	0	0	0	0	0	0	0	3,628.2
Jan-27	248.3	660.221	7.009	1	0	0	0	0	0	0	0	0	0	0	3,847.1
Feb-27	212.7	664.385	6.845	0	1	0	0	0	0	0	0	0	0	0	3,558.7
Mar-27	162.0	664.607	6.587	0	0	1	0	0	0	0	0	0	0	0	3,926.9
Apr-27	100.2	660.904	6.032	0	0	0	1	0	0	0	0	0	0	0	3,961.8
May-27	46.0	668.544	5.990	0	0	0	0	1	0	0	0	0	0	0	4,060.0
Jun-27	9.4	676.301	5.995	0	0	0	0	0	1	0	0	0	0	0	3,925.0
Jul-27	2.0	671.998	6.127	0	0	0	0	0	0	1	0	0	0	0	4,325.0
Aug-27	1.7	673.406	6.231	0	0	0	0	0	0	0	1	0	0	0	4,685.2
Sep-27	4.4	673.360	6.145	0	0	0	0	0	0	0	0	1	0	0	4,374.0
Oct-27	29.6	670.269	5.996	0	0	0	0	0	0	0	0	0	1	0	4,050.2
Nov-27	120.4	669.976	6.276	0	0	0	0	0	0	0	0	0	0	1	3,720.3
Dec-27	275.5	669.590	6.696	0	0	0	0	0	0	0	0	0	0	0	3,625.4

Base Forecast of Noncore Industrial Gas Demand (2022-2035)

Month	HDD	Employment	Price	Month_01	Month_02	Month_03	Month_04	Month_05	Month_06	Month_07	Month_08	Month_09	Month_10	Month_11	Forecast Mdth
Jan-28	247.0	657.843	6.902	1	0	0	0	0	0	0	0	0	0	0	3,839.4
Feb-28	211.6	661.986	6.767	0	1	0	0	0	0	0	0	0	0	0	3,550.5
Mar-28	161.2	662.210	6.532	0	0	1	0	0	0	0	0	0	0	0	3,918.5
Apr-28	99.7	657.660	6.001	0	0	0	1	0	0	0	0	0	0	0	3,949.8
May-28	45.7	665.196	5.951	0	0	0	0	1	0	0	0	0	0	0	4,047.9
Jun-28	9.4	672.908	5.954	0	0	0	0	0	1	0	0	0	0	0	3,912.8
Jul-28	2.0	667.981	6.087	0	0	0	0	0	0	1	0	0	0	0	4,310.5
Aug-28	1.7	669.410	6.192	0	0	0	0	0	0	0	1	0	0	0	4,670.8
Sep-28	4.3	669.380	6.111	0	0	0	0	0	0	0	0	1	0	0	4,359.5
Oct-28	29.4	666.274	5.948	0	0	0	0	0	0	0	0	0	1	0	4,035.8
Nov-28	119.8	665.967	6.218	0	0	0	0	0	0	0	0	0	0	1	3,705.9
Dec-28	274.1	665.575	6.583	0	0	0	0	0	0	0	0	0	0	0	3,611.6
Jan-29	245.8	654.263	7.127	1	0	0	0	0	0	0	0	0	0	0	3,821.6
Feb-29	210.6	658.384	6.908	0	1	0	0	0	0	0	0	0	0	0	3,534.1
Mar-29	160.4	658.606	6.609	0	0	1	0	0	0	0	0	0	0	0	3,903.2
Apr-29	99.2	654.559	6.000	0	0	0	1	0	0	0	0	0	0	0	3,937.9
May-29	45.5	662.016	5.923	0	0	0	0	1	0	0	0	0	0	0	4,036.3
Jun-29	9.3	669.699	5.907	0	0	0	0	0	1	0	0	0	0	0	3,901.5
Jul-29	2.0	665.290	6.047	0	0	0	0	0	0	1	0	0	0	0	4,301.0
Aug-29	1.7	666.745	6.163	0	0	0	0	0	0	0	1	0	0	0	4,661.2
Sep-29	4.3	666.729	6.076	0	0	0	0	0	0	0	0	1	0	0	4,350.1
Oct-29	29.3	663.573	5.883	0	0	0	0	0	0	0	0	0	1	0	4,026.7
Nov-29	119.2	663.262	6.151	0	0	0	0	0	0	0	0	0	0	1	3,696.5
Dec-29	272.7	662.865	6.475	0	0	0	0	0	0	0	0	0	0	0	3,602.6
Jan-30	244.6	651.337	7.386	1	0	0	0	0	0	0	0	0	0	0	3,805.7
Feb-30	209.5	655.441	7.062	0	1	0	0	0	0	0	0	0	0	0	3,520.0
Mar-30	159.6	655.658	6.696	0	0	1	0	0	0	0	0	0	0	0	3,890.3
Apr-30	98.7	651.503	6.011	0	0	0	1	0	0	0	0	0	0	0	3,926.0
May-30	45.3	658.885	5.916	0	0	0	0	1	0	0	0	0	0	0	4,024.5
Jun-30	9.3	666.536	5.894	0	0	0	0	0	1	0	0	0	0	0	3,889.7
Jul-30	2.0	661.695	6.038	0	0	0	0	0	0	1	0	0	0	0	4,287.5
Aug-30	1.7	663.173	6.155	0	0	0	0	0	0	0	1	0	0	0	4,647.8
Sep-30	4.3	663.175	6.068	0	0	0	0	0	0	0	0	1	0	0	4,336.8
Oct-30	29.1	660.492	5.869	0	0	0	0	0	0	0	0	0	1	0	4,015.2
Nov-30	118.6	660.181	6.138	0	0	0	0	0	0	0	0	0	0	1	3,684.8
Dec-30	271.4	659.780	6.460	0	0	0	0	0	0	0	0	0	0	0	3,590.6

Base Forecast of Noncore Industrial Gas Demand (2022-2035)

Month	HDD	Employment	Price	Month _01	Month _02	Month _03	Month _04	Month _05	Month _06	Month _07	Month _08	Month _09	Month _10	Month _11	Forecast Mdth
Jan-31	243.3	648.869	7.460	1	0	0	0	0	0	0	0	0	0	0	3,794.6
Feb-31	208.5	652.956	7.130	0	1	0	0	0	0	0	0	0	0	0	3,509.0
Mar-31	158.8	653.165	6.761	0	0	1	0	0	0	0	0	0	0	0	3,879.5
Apr-31	98.2	650.002	6.069	0	0	0	1	0	0	0	0	0	0	0	3,919.1
May-31	45.0	657.378	5.971	0	0	0	0	1	0	0	0	0	0	0	4,017.8
Jun-31	9.2	665.017	5.949	0	0	0	0	0	1	0	0	0	0	0	3,883.0
Jul-31	2.0	661.163	6.092	0	0	0	0	0	0	1	0	0	0	0	4,284.6
Aug-31	1.7	662.668	6.209	0	0	0	0	0	0	0	1	0	0	0	4,645.0
Sep-31	4.3	662.696	6.122	0	0	0	0	0	0	0	0	1	0	0	4,334.1
Oct-31	29.0	660.699	5.925	0	0	0	0	0	0	0	0	0	1	0	4,015.0
Nov-31	118.0	660.379	6.194	0	0	0	0	0	0	0	0	0	0	1	3,684.4
Dec-31	270.0	659.966	6.515	0	0	0	0	0	0	0	0	0	0	0	3,589.8
Jan-32	242.1	648.402	7.570	1	0	0	0	0	0	0	0	0	0	0	3,790.6
Feb-32	207.4	652.497	7.232	0	1	0	0	0	0	0	0	0	0	0	3,505.2
Mar-32	158.0	652.697	6.857	0	0	1	0	0	0	0	0	0	0	0	3,875.8
Apr-32	97.7	649.425	6.151	0	0	0	1	0	0	0	0	0	0	0	3,915.4
May-32	44.8	656.831	6.051	0	0	0	0	1	0	0	0	0	0	0	4,014.3
Jun-32	9.2	664.465	6.029	0	0	0	0	0	1	0	0	0	0	0	3,879.6
Jul-32	1.9	660.143	6.173	0	0	0	0	0	0	1	0	0	0	0	4,279.4
Aug-32	1.7	661.676	6.288	0	0	0	0	0	0	0	1	0	0	0	4,639.9
Sep-32	4.3	661.732	6.203	0	0	0	0	0	0	0	0	1	0	0	4,329.1
Oct-32	28.8	659.312	6.007	0	0	0	0	0	0	0	0	0	1	0	4,008.3
Nov-32	117.4	658.973	6.276	0	0	0	0	0	0	0	0	0	0	1	3,677.5
Dec-32	268.6	658.540	6.597	0	0	0	0	0	0	0	0	0	0	0	3,582.5
Jan-33	240.9	647.432	7.590	1	0	0	0	0	0	0	0	0	0	0	3,786.0
Feb-33	206.4	651.528	7.250	0	1	0	0	0	0	0	0	0	0	0	3,500.8
Mar-33	157.2	651.721	6.874	0	0	1	0	0	0	0	0	0	0	0	3,871.5
Apr-33	97.2	648.546	6.165	0	0	0	1	0	0	0	0	0	0	0	3,911.6
May-33	44.6	655.988	6.063	0	0	0	0	1	0	0	0	0	0	0	4,010.8
Jun-33	9.1	663.617	6.041	0	0	0	0	0	1	0	0	0	0	0	3,876.2
Jul-33	1.9	659.125	6.183	0	0	0	0	0	0	1	0	0	0	0	4,275.4
Aug-33	1.6	660.680	6.297	0	0	0	0	0	0	0	1	0	0	0	4,636.0
Sep-33	4.2	660.755	6.211	0	0	0	0	0	0	0	0	1	0	0	4,325.2
Oct-33	28.7	658.088	6.016	0	0	0	0	0	0	0	0	0	1	0	4,003.5
Nov-33	116.8	657.731	6.284	0	0	0	0	0	0	0	0	0	0	1	3,672.4
Dec-33	267.3	657.287	6.602	0	0	0	0	0	0	0	0	0	0	0	3,577.1

Base Forecast of Noncore Industrial Gas Demand (2022-2035)

Month	HDD	Employment	Price	Month_01	Month_02	Month_03	Month_04	Month_05	Month_06	Month_07	Month_08	Month_09	Month_10	Month_11	Forecast Mdth
Jan-34	239.7	645.934	7.605	1	0	0	0	0	0	0	0	0	0	0	3,779.6
Feb-34	205.3	650.024	7.264	0	1	0	0	0	0	0	0	0	0	0	3,494.4
Mar-34	156.4	650.215	6.887	0	0	1	0	0	0	0	0	0	0	0	3,865.3
Apr-34	96.7	646.327	6.174	0	0	0	1	0	0	0	0	0	0	0	3,902.9
May-34	44.4	653.783	6.072	0	0	0	0	1	0	0	0	0	0	0	4,002.3
Jun-34	9.1	661.388	6.051	0	0	0	0	0	1	0	0	0	0	0	3,867.6
Jul-34	1.9	657.039	6.191	0	0	0	0	0	0	1	0	0	0	0	4,267.4
Aug-34	1.6	658.591	6.303	0	0	0	0	0	0	0	1	0	0	0	4,628.0
Sep-34	4.2	658.674	6.218	0	0	0	0	0	0	0	0	1	0	0	4,317.2
Oct-34	28.6	655.989	6.026	0	0	0	0	0	0	0	0	0	1	0	3,995.3
Nov-34	116.2	655.617	6.291	0	0	0	0	0	0	0	0	0	0	1	3,664.1
Dec-34	265.9	655.164	6.608	0	0	0	0	0	0	0	0	0	0	0	3,568.5
Jan-35	238.4	644.189	7.682	1	0	0	0	0	0	0	0	0	0	0	3,771.3
Feb-35	204.3	648.272	7.338	0	1	0	0	0	0	0	0	0	0	0	3,486.1
Mar-35	155.6	648.465	6.953	0	0	1	0	0	0	0	0	0	0	0	3,857.2
Apr-35	96.2	644.774	6.226	0	0	0	1	0	0	0	0	0	0	0	3,896.0
May-35	44.1	652.230	6.123	0	0	0	0	1	0	0	0	0	0	0	3,995.5
Jun-35	9.1	659.817	6.102	0	0	0	0	0	1	0	0	0	0	0	3,860.8
Jul-35	1.9	655.816	6.242	0	0	0	0	0	0	1	0	0	0	0	4,261.9
Aug-35	1.6	657.373	6.351	0	0	0	0	0	0	0	1	0	0	0	4,622.6
Sep-35	4.2	657.460	6.268	0	0	0	0	0	0	0	0	1	0	0	4,311.8
Oct-35	28.4	655.078	6.080	0	0	0	0	0	0	0	0	0	1	0	3,990.9
Nov-35	115.6	654.697	6.344	0	0	0	0	0	0	0	0	0	0	1	3,659.5
Dec-35	264.5	654.233	6.660	0	0	0	0	0	0	0	0	0	0	0	3,563.5

Noncore Industrial Annual Post-model Adjustment (2021-2035)

Year	Base Econometric Model Output (MDth)	Vernon Migration	EE Program (MDth)	Migration: core --> noncore	Final Average Year Forecast (MDth)	Adjustment %
2021	48,478.3	0.0	0.0	0.0	48,478.3	0.0%
2022	48,412.9	28.7	69.8	495.7	48,810.1	0.8%
2023	48,799.3	57.4	146.6	495.7	49,091.1	0.6%
2024	48,619.1	86.1	221.7	495.7	48,807.1	0.4%
2025	48,353.2	114.8	300.0	495.7	48,434.1	0.2%
2026	48,101.3	143.5	365.7	495.7	48,088.0	0.0%
2027	48,059.5	172.2	434.5	495.7	47,948.7	-0.2%
2028	47,913.0	200.8	503.3	495.7	47,704.6	-0.4%
2029	47,772.6	229.5	570.5	495.7	47,468.3	-0.6%
2030	47,619.0	229.5	640.9	495.7	47,244.4	-0.8%
2031	47,556.1	229.5	712.8	495.7	47,109.4	-0.9%
2032	47,497.6	229.5	783.2	495.7	46,980.5	-1.1%
2033	47,446.6	229.5	853.6	495.7	46,859.2	-1.2%
2034	47,352.5	229.5	924.0	495.7	46,694.7	-1.4%
2035	47,277.0	229.5	994.4	495.7	46,548.8	-1.5%

Noncore Industrial Monthly Post-model Adjustment (2022-2035)

Month	Base Econometric Model Output (Mdth)	Average Year Adjustment %	Final Average Year Forecast (Mdth)
Jan-22	3,937.7	0.82%	3,970.0
Feb-22	3,617.6	0.82%	3,647.3
Mar-22	3,958.1	0.82%	3,990.6
Apr-22	3,991.6	0.82%	4,024.4
May-22	4,086.1	0.82%	4,119.6
Jun-22	3,942.7	0.82%	3,975.0
Jul-22	4,316.7	0.82%	4,352.1
Aug-22	4,676.6	0.82%	4,715.0
Sep-22	4,373.4	0.82%	4,409.3
Oct-22	4,096.3	0.82%	4,129.9
Nov-22	3,759.2	0.82%	3,790.1
Dec-22	3,656.9	0.82%	3,686.9
Jan-23	3,914.9	0.60%	3,938.3
Feb-23	3,608.9	0.60%	3,630.5
Mar-23	3,990.9	0.60%	4,014.8
Apr-23	4,035.6	0.60%	4,059.7
May-23	4,137.2	0.60%	4,162.0
Jun-23	4,002.9	0.60%	4,026.8
Jul-23	4,383.9	0.60%	4,410.1
Aug-23	4,744.8	0.60%	4,773.2
Sep-23	4,440.2	0.60%	4,466.7
Oct-23	4,090.1	0.60%	4,114.5
Nov-23	3,772.8	0.60%	3,795.4
Dec-23	3,677.2	0.60%	3,699.2
Jan-24	3,893.2	0.39%	3,908.2
Feb-24	3,608.7	0.39%	3,622.7
Mar-24	3,980.3	0.39%	3,995.7
Apr-24	4,010.6	0.39%	4,026.1
May-24	4,111.4	0.39%	4,127.3
Jun-24	3,977.3	0.39%	3,992.7
Jul-24	4,365.5	0.39%	4,382.4
Aug-24	4,726.6	0.39%	4,744.8
Sep-24	4,416.4	0.39%	4,433.5
Oct-24	4,096.2	0.39%	4,112.0
Nov-24	3,766.8	0.39%	3,781.4
Dec-24	3,666.2	0.39%	3,680.4
Jan-25	3,880.2	0.17%	3,886.7
Feb-25	3,592.6	0.17%	3,598.7
Mar-25	3,965.0	0.17%	3,971.6
Apr-25	3,989.6	0.17%	3,996.3
May-25	4,090.4	0.17%	4,097.2
Jun-25	3,955.2	0.17%	3,961.8
Jul-25	4,344.4	0.17%	4,351.7
Aug-25	4,704.2	0.17%	4,712.1
Sep-25	4,392.7	0.17%	4,400.1
Oct-25	4,063.8	0.17%	4,070.6
Nov-25	3,736.2	0.17%	3,742.4
Dec-25	3,638.9	0.17%	3,645.0

Noncore Industrial Monthly Post-model Adjustment (2022-2035)

Month	Base Econometric Model Output (Mdth)	Average Year Adjustment %	Final Average Year Forecast (Mdth)
Jan-26	3,853.1	-0.03%	3,852.1
Feb-26	3,565.1	-0.03%	3,564.1
Mar-26	3,934.2	-0.03%	3,933.1
Apr-26	3,964.9	-0.03%	3,963.8
May-26	4,064.0	-0.03%	4,062.8
Jun-26	3,928.8	-0.03%	3,927.8
Jul-26	4,326.2	-0.03%	4,325.0
Aug-26	4,686.2	-0.03%	4,684.9
Sep-26	4,374.9	-0.03%	4,373.7
Oct-26	4,052.9	-0.03%	4,051.8
Nov-26	3,722.9	-0.03%	3,721.8
Dec-26	3,628.2	-0.03%	3,627.2
Jan-27	3,847.1	-0.23%	3,838.2
Feb-27	3,558.7	-0.23%	3,550.5
Mar-27	3,926.9	-0.23%	3,917.9
Apr-27	3,961.8	-0.23%	3,952.6
May-27	4,060.0	-0.23%	4,050.7
Jun-27	3,925.0	-0.23%	3,915.9
Jul-27	4,325.0	-0.23%	4,315.0
Aug-27	4,685.2	-0.23%	4,674.4
Sep-27	4,374.0	-0.23%	4,363.9
Oct-27	4,050.2	-0.23%	4,040.8
Nov-27	3,720.3	-0.23%	3,711.7
Dec-27	3,625.4	-0.23%	3,617.0
Jan-28	3,839.4	-0.43%	3,822.7
Feb-28	3,550.5	-0.43%	3,535.0
Mar-28	3,918.5	-0.43%	3,901.4
Apr-28	3,949.8	-0.43%	3,932.6
May-28	4,047.9	-0.43%	4,030.3
Jun-28	3,912.8	-0.43%	3,895.8
Jul-28	4,310.5	-0.43%	4,291.7
Aug-28	4,670.8	-0.43%	4,650.5
Sep-28	4,359.5	-0.43%	4,340.6
Oct-28	4,035.8	-0.43%	4,018.3
Nov-28	3,705.9	-0.43%	3,689.7
Dec-28	3,611.6	-0.43%	3,595.9
Jan-29	3,821.6	-0.64%	3,797.3
Feb-29	3,534.1	-0.64%	3,511.6
Mar-29	3,903.2	-0.64%	3,878.4
Apr-29	3,937.9	-0.64%	3,912.8
May-29	4,036.3	-0.64%	4,010.6
Jun-29	3,901.5	-0.64%	3,876.6
Jul-29	4,301.0	-0.64%	4,273.6
Aug-29	4,661.2	-0.64%	4,631.5
Sep-29	4,350.1	-0.64%	4,322.4
Oct-29	4,026.7	-0.64%	4,001.0
Nov-29	3,696.5	-0.64%	3,673.0
Dec-29	3,602.6	-0.64%	3,579.6

Noncore Industrial Monthly Post-model Adjustment (2022-2035)

Month	Base Econometric Model Output (Mdth)	Average Year Adjustment %	Final Average Year Forecast (Mdth)
Jan-30	3,805.7	-0.79%	3,775.8
Feb-30	3,520.0	-0.79%	3,492.3
Mar-30	3,890.3	-0.79%	3,859.7
Apr-30	3,926.0	-0.79%	3,895.1
May-30	4,024.5	-0.79%	3,992.8
Jun-30	3,889.7	-0.79%	3,859.1
Jul-30	4,287.5	-0.79%	4,253.8
Aug-30	4,647.8	-0.79%	4,611.2
Sep-30	4,336.8	-0.79%	4,302.7
Oct-30	4,015.2	-0.79%	3,983.6
Nov-30	3,684.8	-0.79%	3,655.9
Dec-30	3,590.6	-0.79%	3,562.4
Jan-31	3,794.6	-0.94%	3,759.0
Feb-31	3,509.0	-0.94%	3,476.1
Mar-31	3,879.5	-0.94%	3,843.1
Apr-31	3,919.1	-0.94%	3,882.3
May-31	4,017.8	-0.94%	3,980.1
Jun-31	3,883.0	-0.94%	3,846.6
Jul-31	4,284.6	-0.94%	4,244.4
Aug-31	4,645.0	-0.94%	4,601.4
Sep-31	4,334.1	-0.94%	4,293.4
Oct-31	4,015.0	-0.94%	3,977.3
Nov-31	3,684.4	-0.94%	3,649.8
Dec-31	3,589.8	-0.94%	3,556.1
Jan-32	3,790.6	-1.09%	3,749.3
Feb-32	3,505.2	-1.09%	3,467.0
Mar-32	3,875.8	-1.09%	3,833.6
Apr-32	3,915.4	-1.09%	3,872.8
May-32	4,014.3	-1.09%	3,970.6
Jun-32	3,879.6	-1.09%	3,837.4
Jul-32	4,279.4	-1.09%	4,232.8
Aug-32	4,639.9	-1.09%	4,589.4
Sep-32	4,329.1	-1.09%	4,282.0
Oct-32	4,008.3	-1.09%	3,964.7
Nov-32	3,677.5	-1.09%	3,637.5
Dec-32	3,582.5	-1.09%	3,543.5
Jan-33	3,786.0	-1.24%	3,739.2
Feb-33	3,500.8	-1.24%	3,457.4
Mar-33	3,871.5	-1.24%	3,823.6
Apr-33	3,911.6	-1.24%	3,863.2
May-33	4,010.8	-1.24%	3,961.2
Jun-33	3,876.2	-1.24%	3,828.2
Jul-33	4,275.4	-1.24%	4,222.5
Aug-33	4,636.0	-1.24%	4,578.6
Sep-33	4,325.2	-1.24%	4,271.7
Oct-33	4,003.5	-1.24%	3,953.9
Nov-33	3,672.4	-1.24%	3,627.0
Dec-33	3,577.1	-1.24%	3,532.8

Noncore Industrial Monthly Post-model Adjustment (2022-2035)

Month	Base Econometric Model Output (Mdth)	Average Year Adjustment %	Final Average Year Forecast (Mdth)
Jan-34	3,779.6	-1.39%	3,727.1
Feb-34	3,494.4	-1.39%	3,445.9
Mar-34	3,865.3	-1.39%	3,811.6
Apr-34	3,902.9	-1.39%	3,848.7
May-34	4,002.3	-1.39%	3,946.7
Jun-34	3,867.6	-1.39%	3,813.8
Jul-34	4,267.4	-1.39%	4,208.1
Aug-34	4,628.0	-1.39%	4,563.7
Sep-34	4,317.2	-1.39%	4,257.3
Oct-34	3,995.3	-1.39%	3,939.8
Nov-34	3,664.1	-1.39%	3,613.2
Dec-34	3,568.5	-1.39%	3,518.9
Jan-35	3,771.3	-1.54%	3,713.2
Feb-35	3,486.1	-1.54%	3,432.4
Mar-35	3,857.2	-1.54%	3,797.8
Apr-35	3,896.0	-1.54%	3,836.0
May-35	3,995.5	-1.54%	3,933.9
Jun-35	3,860.8	-1.54%	3,801.3
Jul-35	4,261.9	-1.54%	4,196.3
Aug-35	4,622.6	-1.54%	4,551.4
Sep-35	4,311.8	-1.54%	4,245.4
Oct-35	3,990.9	-1.54%	3,929.4
Nov-35	3,659.5	-1.54%	3,603.1
Dec-35	3,563.5	-1.54%	3,508.6

2022 CALIFORNIA GAS REPORT

NATURAL GAS VEHICLES

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Workpaper NGV-2	SoCalGas G-NGV Forecast of Meter Count
Workpaper NGV-3	SoCalGas G-NGV Forecast of Volume and Meter Count Growth Rates

2. Data

Table 1 - SoCalGas Historic Volumes				
Years	Compressed		Uncompressed	
	Volume	Annual Growth	Volume	Annual Growth
	MM CCF	%	MM CCF	%
2013	2.3	-	111.5	-
2014	2.2	-4.23%	119.9	7.50%
2015	2.3	4.37%	125.2	4.45%
2016	2.3	0.16%	131.1	4.74%
2017	2.3	0.29%	138.3	5.43%
2018	3.56	51.38%	146.2	5.72%
2019	3.98	11.98%	150.9	3.23%
2020	4.74	19.00%	131.3	-13.02%
2021	5.83	22.96%	143.4	9.25%

Table 2 - SoCalGas Monthly Volumes													
Year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Compressed Volumes - Total (M decatherms)													
2021	38.5	38.3	48.1	46.5	46.2	49.8	51.6	56.7	55.6	58.6	59.6	60.3	609.9
2022	45.4	45.2	56.8	54.9	54.5	58.7	60.9	66.8	65.6	69.1	70.3	71.2	719.6
2023	53.6	53.4	67.0	64.8	64.3	69.3	71.8	78.9	77.4	81.6	83.0	84.0	849.0
2024	63.2	63.0	79.1	76.4	75.8	81.8	84.8	93.0	91.3	96.2	97.9	99.1	1,001.6
2025	74.6	74.3	93.3	90.2	89.5	96.5	100.0	109.8	107.7	113.5	115.5	116.9	1,181.7
2026	87.3	86.9	109.1	105.5	104.7	112.8	117.0	128.4	126.0	132.8	135.1	136.7	1,382.4
2027	101.2	100.8	126.6	122.3	121.4	130.9	135.7	148.9	146.1	154.0	156.7	158.6	1,603.3
2028	116.4	115.9	145.5	140.7	139.6	150.5	156.0	171.2	168.0	177.1	180.2	182.3	1,843.5
2029	132.7	132.1	165.9	160.3	159.1	171.5	177.8	195.2	191.5	201.9	205.4	207.8	2,101.3
2030	148.6	147.9	185.8	179.5	178.2	192.1	199.1	218.6	214.5	226.1	230.0	232.7	2,353.0
2031	163.4	162.7	204.3	197.4	196.0	211.3	219.0	240.4	235.9	248.6	252.9	256.0	2,587.9
2032	176.5	175.7	220.6	213.2	211.6	228.1	236.5	259.6	254.7	268.5	273.1	276.4	2,794.4
2033	187.0	186.2	233.8	226.0	224.3	241.8	250.6	275.1	270.0	284.5	289.4	292.9	2,961.6
2034	192.6	191.8	240.8	232.7	231.0	249.0	258.1	283.3	278.0	293.0	298.1	301.7	3,049.9
2035	192.6	191.8	240.8	232.7	231.0	249.0	258.1	283.3	278.0	293.0	298.1	301.7	3,049.9
Compressed Volumes - Public Use (M decatherms)													
2021	26.0	26.7	34.2	33.9	33.7	36.5	38.1	42.5	41.8	44.7	46.6	47.2	451.7
2022	29.1	30.0	38.7	38.4	38.2	41.4	43.3	48.3	47.6	51.0	53.4	54.0	513.3
2023	34.8	35.9	46.2	45.8	45.5	49.3	51.6	57.6	56.7	60.7	63.4	64.2	611.8
2024	43.5	44.6	57.2	56.5	56.1	60.8	63.5	70.7	69.6	74.4	77.4	78.4	752.8
2025	53.7	54.9	70.1	69.1	68.6	74.3	77.5	86.1	84.8	90.4	93.8	95.0	918.3
2026	64.9	66.1	84.3	82.9	82.3	89.1	92.9	103.1	101.4	108.1	111.9	113.3	1,100.3
2027	78.9	80.0	101.8	99.7	99.1	107.1	111.6	123.6	121.6	129.3	133.5	135.1	1,321.2
2028	94.0	95.1	120.7	118.1	117.3	126.7	131.9	145.9	143.5	152.4	156.9	158.9	1,561.4
2029	110.3	111.3	141.1	137.7	136.8	147.8	153.7	169.9	167.0	177.1	182.1	184.4	1,819.2
2030	126.2	127.1	161.0	156.9	155.8	168.3	175.1	193.2	189.9	201.3	206.7	209.3	2,070.9
2031	141.1	141.9	179.5	174.9	173.6	187.5	194.9	215.1	211.3	223.9	229.7	232.5	2,305.8
2032	154.1	154.9	195.8	190.6	189.3	204.3	212.4	234.3	230.1	243.7	249.9	252.9	2,512.3
2033	164.6	165.4	209.0	203.4	201.9	218.0	226.6	249.8	245.4	259.8	266.2	269.5	2,679.5
2034	170.2	170.9	216.0	210.1	208.6	225.2	234.0	258.0	253.4	268.3	274.8	278.2	2,767.8
2035	170.2	170.9	216.0	210.1	208.6	225.2	234.0	258.0	253.4	268.3	274.8	278.2	2,767.8

Compressed Volumes - Utility Use (M decatherms)													
2021	12.5	11.7	13.9	12.7	12.5	13.3	13.5	14.2	13.8	13.9	13.0	13.2	158.2
2022	16.3	15.2	18.1	16.5	16.3	17.4	17.6	18.5	18.0	18.1	17.0	17.2	206.2
2023	18.8	17.5	20.9	19.0	18.8	20.0	20.2	21.3	20.7	20.8	19.5	19.7	237.2
2024	19.7	18.4	21.9	19.9	19.7	21.0	21.2	22.3	21.7	21.8	20.5	20.7	248.8
2025	20.9	19.4	23.2	21.1	20.9	22.2	22.5	23.6	22.9	23.1	21.7	21.9	263.4
2026	22.4	20.8	24.8	22.6	22.3	23.8	24.1	25.3	24.6	24.8	23.2	23.5	282.1
2027	22.4	20.8	24.8	22.6	22.3	23.8	24.1	25.3	24.6	24.8	23.2	23.5	282.1
2028	22.4	20.8	24.8	22.6	22.3	23.8	24.1	25.3	24.6	24.8	23.2	23.5	282.1
2029	22.4	20.8	24.8	22.6	22.3	23.8	24.1	25.3	24.6	24.8	23.2	23.5	282.1
2030	22.4	20.8	24.8	22.6	22.3	23.8	24.1	25.3	24.6	24.8	23.2	23.5	282.1
2031	22.4	20.8	24.8	22.6	22.3	23.8	24.1	25.3	24.6	24.8	23.2	23.5	282.1
2032	22.4	20.8	24.8	22.6	22.3	23.8	24.1	25.3	24.6	24.8	23.2	23.5	282.1
2033	22.4	20.8	24.8	22.6	22.3	23.8	24.1	25.3	24.6	24.8	23.2	23.5	282.1
2034	22.4	20.8	24.8	22.6	22.3	23.8	24.1	25.3	24.6	24.8	23.2	23.5	282.1
2035	22.4	20.8	24.8	22.6	22.3	23.8	24.1	25.3	24.6	24.8	23.2	23.5	282.1

Uncompressed Volumes - Total (M Decatherms)													
2021	1,061	1,021	1,198	1,197	1,199	1,243	1,280	1,347	1,330	1,335	1,288	1,303	14,801
2022	1,074	1,034	1,213	1,212	1,214	1,259	1,297	1,364	1,347	1,352	1,305	1,319	14,992
2023	1,088	1,048	1,229	1,228	1,230	1,276	1,313	1,382	1,365	1,370	1,322	1,337	15,187
2024	1,102	1,061	1,245	1,244	1,246	1,292	1,330	1,400	1,382	1,388	1,339	1,354	15,384
2025	1,117	1,075	1,261	1,260	1,262	1,309	1,348	1,418	1,400	1,406	1,356	1,371	15,583
2026	1,131	1,089	1,277	1,276	1,278	1,326	1,365	1,436	1,418	1,424	1,374	1,389	15,785
2027	1,146	1,103	1,294	1,293	1,295	1,343	1,383	1,455	1,437	1,442	1,392	1,407	15,989
2028	1,161	1,117	1,311	1,309	1,312	1,361	1,401	1,474	1,455	1,461	1,410	1,425	16,197
2029	1,176	1,132	1,328	1,326	1,329	1,378	1,419	1,493	1,474	1,480	1,428	1,444	16,406
2030	1,191	1,147	1,345	1,344	1,346	1,396	1,437	1,512	1,493	1,499	1,447	1,463	16,619
2031	1,206	1,161	1,362	1,361	1,363	1,414	1,456	1,532	1,513	1,519	1,465	1,482	16,834
2032	1,222	1,177	1,380	1,379	1,381	1,433	1,475	1,552	1,532	1,538	1,484	1,501	17,053
2033	1,238	1,192	1,398	1,396	1,399	1,451	1,494	1,572	1,552	1,558	1,504	1,520	17,274
2034	1,254	1,207	1,416	1,415	1,417	1,470	1,513	1,592	1,572	1,578	1,523	1,540	17,497
2035	1,270	1,223	1,434	1,433	1,435	1,489	1,533	1,613	1,593	1,599	1,543	1,560	17,724

Uncompressed Volumes - Customer Owned Gas (M decatherms)													
2021	759	741	856	868	878	911	943	960	937	940	893	887	10,574
2022	769	751	867	879	889	923	955	972	949	953	905	899	10,711
2023	779	760	878	891	900	935	968	985	962	965	917	910	10,850
2024	789	770	890	902	912	947	980	998	974	977	929	922	10,990
2025	799	780	901	914	924	959	993	1,011	987	990	941	934	11,133
2026	809	790	913	926	936	972	1,006	1,024	999	1,003	953	946	11,277
2027	820	800	925	938	948	984	1,019	1,037	1,012	1,016	965	958	11,423
2028	831	811	937	950	960	997	1,032	1,050	1,025	1,029	978	971	11,571
2029	841	821	949	962	973	1,010	1,046	1,064	1,039	1,042	990	983	11,721
2030	852	832	961	975	985	1,023	1,059	1,078	1,052	1,056	1,003	996	11,873
2031	863	843	974	987	998	1,036	1,073	1,092	1,066	1,070	1,016	1,009	12,027
2032	874	854	986	1,000	1,011	1,050	1,087	1,106	1,080	1,083	1,029	1,022	12,183
2033	886	865	999	1,013	1,024	1,064	1,101	1,120	1,094	1,098	1,043	1,035	12,341
2034	897	876	1,012	1,026	1,037	1,077	1,115	1,135	1,108	1,112	1,056	1,049	12,500
2035	909	887	1,025	1,039	1,051	1,091	1,130	1,150	1,122	1,126	1,070	1,062	12,662

Uncompressed Volumes - Utility Procurement Customers (M decatherms)													
2021	301.6	280.2	341.9	328.5	321.0	332.1	336.8	386.9	392.8	394.7	394.9	415.4	4,226.8
2022	305.5	283.8	346.3	332.8	325.2	336.4	341.2	391.9	397.9	399.8	400.0	420.8	4,281.6
2023	309.5	287.5	350.8	337.1	329.4	340.8	345.6	397.0	403.0	405.0	405.2	426.3	4,337.1
2024	313.5	291.2	355.4	341.5	333.7	345.2	350.1	402.1	408.3	410.3	410.4	431.8	4,393.3
2025	317.5	295.0	360.0	345.9	338.0	349.7	354.6	407.3	413.6	415.6	415.7	437.4	4,450.2
2026	321.6	298.8	364.6	350.4	342.4	354.2	359.2	412.6	418.9	421.0	421.1	443.0	4,507.9
2027	325.8	302.7	369.3	354.9	346.8	358.8	363.9	418.0	424.3	426.4	426.6	448.8	4,566.3
2028	330.0	306.6	374.1	359.5	351.3	363.4	368.6	423.4	429.8	431.9	432.1	454.6	4,625.5
2029	334.3	310.6	379.0	364.2	355.9	368.1	373.3	428.9	435.4	437.5	437.7	460.5	4,685.4
2030	338.6	314.6	383.9	368.9	360.5	372.9	378.2	434.4	441.1	443.2	443.4	466.5	4,746.1
2031	343.0	318.7	388.9	373.7	365.2	377.7	383.1	440.1	446.8	449.0	449.1	472.5	4,807.6
2032	347.5	322.8	393.9	378.5	369.9	382.6	388.0	445.8	452.6	454.8	454.9	478.6	4,870.0
2033	352.0	327.0	399.0	383.4	374.7	387.6	393.1	451.5	458.4	460.7	460.8	484.8	4,933.1
2034	356.5	331.3	404.2	388.4	379.5	392.6	398.2	457.4	464.4	466.6	466.8	491.1	4,997.0
2035	361.2	335.6	409.4	393.4	384.5	397.7	403.3	463.3	470.4	472.7	472.8	497.5	5,061.7

1. Title - SoCalGas G-NGV Forecast of Meter Count

2. Data

Table 1 - SoCalGas Historic Meter Counts						
Years	Uncompressed				Compressed	
	P-1	P-2A	Total	Annual Growth	Public Access	Fleet
	-	-	-	%	-	-
2013	187	80	267	-	-	-
2014	193	88	281	5.24%	-	-
2015	194	96	290	3.20%	-	-
2016	189	102	291	0.34%	-	-
2017	191	106	297	2.06%	12	9
2018	209	103	312	5.05%	13	12
2019	207	102	309	-0.96%	14	12
2020	213	105	318	2.91%	15	11
2021	204	121	325	2.20%	16	11

Table 2 - SoCalGas Forecasted Meter Counts						
Years	Uncompressed			Compressed		
	P-1	P-2A	Total	Public Access	Fleet	Total
2022	208	123	331	16	12	28
2023	212	125	337	16	13	29
2024	216	127	343	16	14	30
2025	220	129	349	16	15	31
2026	224	131	355	16	16	32
2027	228	133	361	16	16	32
2028	232	135	367	16	16	32
2029	235	137	372	16	16	32
2030	238	138	376	16	16	32
2031	240	139	379	16	16	32
2032	241	140	381	16	16	32
2033	242	140	382	16	16	32
2034	242	140	382	16	16	32
2035	242	140	382	16	16	32

3. Source

Historic meter count data taken from utility G-NGV billing data.

1. Title - SoCalGas G-NGV Forecast of Volume and Meter Count Growth Rates

2. Data

Table 1 - SoCalGas Historic Volume and Meter Count Growth Rates			
Description	Uncompressed		Compressed
	Volume	Meter Count	Volume
3-Year Average Growth	-0.18%	1.38%	17.98%
4-Year Average Growth	1.30%	2.30%	26.33%
Annual Growth Rate Change (2026-2029)	-	-0.15%	-1.00%
Annual Growth Rate Change (2030-2033)	-	-0.30%	-2.00%
Annual Growth Rate Change (2034)	-	-0.45%	-3.00%

Table 2 - SoCalGas Compressed Volumes - Utility Use			
Year	CNG Fleet Vehicles		Volume
	Number	Growth Rate	MMCCF
2021	1,251	-	158.2
2022	1,631	30.4%	206.2
2023	1,876	15.0%	237.2
2024	1,968	4.9%	248.8
2025	2,083	5.8%	263.4

2026	2,231	7.1%	282.1
2027	2,231	0.0%	282.1
Annual Growth Rate (2028-2035)		0.0%	0.0%

SOURCE: CNG Fleet Vehicle figures provided by Mike Franco (Fleet Services) on March 23, 2022.

2022 CALIFORNIA GAS REPORT

ENERGY EFFICIENCY

SoCalGas

A Sempra Energy utility®

2022 California Gas Report
SocalGas Energy Efficiency (EE) forecast

SoCalGas' EE forecast is based upon inputs from the 2022-3 energy efficiency bi-annual budget advice letter (AL5898-A), utilizing program level energy savings values forecasted for the 2022 program year. Savings estimates from SoCalGas' 2022 EE programs are grouped by the classifications identified in the 2022 CGR (Residential, Commercial, Industrial, Industrial Refinery). These savings estimates are further split between the core and non-core classifications based on the estimated historical core and non-core savings achievements in 2017-2021. EE program savings for 2017-2021 have been updated for this report.

Forecasted savings for the 2023-2035 period are based on the 2022 EE forecast scaled to the goals approved in the recent EE proceeding goals decision, D.21-09-037, which set EE goals through 2032. Forecasted savings beyond 2032 are held constant based on 2032 forecasted values. Cumulative savings reflect the lifecycle EE program achievements from forecasted program savings starting in 2022 and does not include lifecycle savings from prior program years. SoCalGas currently uses a 15-year lifecycle for cumulative savings calculations.

2022-2032 Goals

	EE Incentive Porgrams [1] Goal (Net, MMTh)	EE C&S Programs [1] (Net, MMTh)	LI/ESA Potential [2] Potential (Net, MMTh)	Total w/o C&S Total (Net, MMTh)	Total w/C&S Total (Net, MMTh) [3]
2022	19	24	1.4	20.4	44.4
2023	21	26	1.4	22.4	48.4
Total System Benefit (TSB) [2]					
2024	$94,305,917	26	1.4		27.4
2025	$105,511,595	25	1.4		26.4
2026	$115,302,575	16	1.4		17.4
2027	$131,937,530	16	1.4		17.4
2028	$141,969,329	15	1.4		16.4
2029	$153,846,185	13	1.4		14.4
2030	$168,151,490	13	1.4		14.4
2031	$179,411,291	13	1.4		14.4
2032	$188,296,981	12	1.4		13.4

[1] Therm savings figures based on EE program goals in D.21-09-037.
[2] CPUC has replaced current metrics (e.g., GWh, MW, MMTherms) with 1 new metric for EE portfolios: Total System Benefit (TSB) starting in PY2024.
[3] Total w/C&S is the sum of LI/ESA potential net MMTherms + C&S programs net MMTherms

SoCalGas 2022-2032 Energy Efficiency Goals of D.21-09-037

Year	Incentive Programs			Codes and Standards		
	GWh	MW	MMTherms	GWh	MW	MMTherms
2022	-	-	19	-	-	24
2023	-	-	21	-	-	26
	Total System Benefit (TSB)					
2024	$94,305,917			-	-	26
2025	$105,511,595			-	-	25
2026	$115,302,575			-	-	16
2027	$131,937,530			-	-	16
2028	$141,969,329			-	-	15
2029	$153,846,185			-	-	13
2030	$168,151,490			-	-	13
2031	$179,411,291			-	-	13
2032	$188,296,981			-	-	12

	Reported 2010 Therms	Reported 2011 Therms	Reported 2012 Therms	Reported 2013	Reported 2014	Reported 2015	Reported 2016	Reported 2017 NET	Reported 2018 NET	Reported 2019 NET	Reported 2020 NET	Reported 2021 NET	Forecast 2022 NET	Forecast 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030	Forecast 2031	Forecast 2032	Forecast 2033	Forecast 2034	Forecast 2035
SoCalGas EE Program TOTAL	**27,413,193**	**37,233,416**	**32,077,678**	**25,817,960**	**28,856,008**	**21,620,562**	**30,155,462**	**33,320,672**	**48,732,219**	**52,121,053**	**45,002,960**	**31,819,335**	**44,096,252**													
PUC Goal	**28,000,000**	**30,000,000**	**32,000,000**	24,120,000	23,190,000	25,300,000	29,100,000	30,300,000	46,000,000	48,000,000	35,400,000	35,400,000	44,440,000	48,440,000	47,440,000	49,440,000	41,440,000	43,440,000	43,440,000	42,440,000	44,440,000	45,440,000	44,440,000	44,440,000	44,440,000	44,440,000
Difference	**(586,807)**	**7,233,416**	**77,678**	**1,697,960**	**5,666,008**	**(3,679,438)**	**1,055,462**	**3,020,672**	**2,732,219**	**4,121,053**	**9,602,960**	**(3,580,665)**	**(343,748)**													

SoCalGas	**2010 therms**	**2011 therms**	**2012 therms**	**2013 therms**	**2014 therms**	**2015 therms**	**2016 therms**	**2017 therms**	**2018 therms**	**2019 therms**	**2020 therms**	**2021 therms**	**2022 therms**
Core Residential	9,072,268	12,564,473	8,445,190	8,173,595	7,371,223	7,037,522	14,912,118	20,833,175	35,227,014	39,152,937	31,729,897	24,658,800	28,176,230
Core Commercial	7,457,290	10,030,218	9,608,803	2,380,370	4,093,890	6,286,602	11,216,376	10,448,422	11,831,578	12,031,527	9,194,225	6,070,938	12,521,271
Core Industrial	2,268,570	3,051,276	2,923,078	2,803,233	2,457,183	1,928,820	1,236,543	611,937	456,371	487,431	346,005	298,976	2,477,588
NonCore Commercial	1,064,214	1,431,391	1,371,252	293,874	2,168,951	1,878,668	335,445	290,846	56,422	198,032	65,288	-	-
NonCore Industrial retail	2,483,166	3,339,913	3,199,588	4,184,881	6,592,493	2,495,191	1,562,769	1,013,868	1,093,600	98,374	460,317	534,045	698,437
NonCore Industrial refinery	5,067,684	6,816,146	6,529,768	7,982,006	6,172,268	1,993,759	892,212	122,423	67,235	152,753	3,207,229	256,577	222,726
Total	**27,413,193**	**37,233,416**	**32,077,678**	**25,817,960**	**28,856,008**	**21,620,562**	**30,155,462**	**33,320,672**	**48,732,219**	**52,121,053**	**45,002,960**	**31,819,335**	**44,096,252**

Proportionally scale it down or up to match PUC Goals for 2010 - 2014

ANNUAL NET SAVINGS	**2010 Mdth**	**2011 Mdth**	**2012 Mdth**	**2013 Mdth**	**2014 Mdth**	**2015 Mdth**	**2016 Mdth**	**2017 Mdth**	**2018 Mdth**	**2019 Mdth**	**2020 Mdth**	**2021 Mdth**	**2022 Mdth**	**2023 Mdth**	**2024 Mdth**	**2025 Mdth**	**2026 Mdth**	**2027 Mdth**	**2028 Mdth**	**2029 Mdth**	**2030 Mdth**	**2031 Mdth**	**2032 Mdth**	**2033 Mdth**	**2034 Mdth**	**2035 Mdth**
Core Residential	927	1,012	842	764	592	704	1,491	2,083	3,523	3,915	3,173	2496	2818	3095	3031	3159	2648	2776	2776	2712	2840	2903	2840	2840	2840	2840
Core Commercial	762	808	959	222	329	629	1,122	1,045	1,183	1,203	919	723	1,252	1,375	1347	1,404	1,177	1,233	1,233	1,205	1,262	1,290	1,262	1,262	1,262	1,262
Core Industrial	232	246	292	262	197	193	124	61	46	49	35	27	248	272	267	278	233	244	244	238	250	255	250	250	250	250
NonCore Commercial	109	115	137	27	174	188	34	29	6	20	7	5	-	-	0	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial retail	254	269	319	391	530	250	156	101	109	10	46	36	70	77	75	78	66	69	69	67	70	72	70	70	70	70
NonCore Industrial refinery	518	549	651	746	496	199	89	12	7	15	321	252	22	24	24	25	21	22	22	21	22	23	22	22	22	22
Total	**2,800**	**3,000**	**3,200**	**2,412**	**2,319**	**2,162**	**3,016**	**3,332**	**4,873**	**5,212**	**4,500**	**3,540**	**4,410**	**4,844**	**4,744**	**4,944**	**4,144**	**4,344**	**4,344**	**4,244**	**4,444**	**4,544**	**4,444**	**4,444**	**4,444**	**4,444**

Cumulative Savings Mdth	**2012 Mdth**	**2013 Mdth**	**2014 Mdth**	**2015 Mdth**	**2016 Mdth**	**2017 Mdth**	**2018 Mdth**	**2019 Mdth**	**2020 Mdth**	**2021 Mdth**	**2022 Mdth**	**2023 Mdth**	**2024 Mdth**	**2025 Mdth**	**2026 Mdth**	**2027 Mdth**	**2028 Mdth**	**2029 Mdth**	**2030 Mdth**	**2031 Mdth**	**2032 Mdth**	**2033 Mdth**	**2034 Mdth**	**2035 Mdth**
Core Residential											2,818	5,913	8,944	12,103	14,751	17,527	20,302	23,014	25,854	28,757	31,597	34,436	37,276	40,116
Core Commercial											1,252	2,628	3,975	5,379	6,555	7,789	9,022	10,227	11,489	12,779	14,041	15,303	16,565	17,827
Core Industrial											248	520	786	1,064	1,297	1,541	1,785	2,024	2,273	2,529	2,778	3,028	3,278	3,527
NonCore Commercial											-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial regular											70	147	222	300	366	434	503	570	641	713	783	854	924	994
NonCore Industrial refinery											22	47	71	96	117	139	160	182	204	227	250	272	295	317
Total Load Impacts											**4,410**	**9,254**	**13,998**	**18,942**	**23,086**	**27,430**	**31,774**	**36,018**	**40,462**	**45,006**	**49,450**	**53,894**	**58,338**	**62,782**

MMCF factor: **1.032**

Cumulative Savings MMCF	2012 mmcf	**2013 mmcf**	**2014 mmcf**	**2015 mmcf**	**2016 mmcf**	**2017 mmcf**	**2018 mmcf**	**2019 mmcf**	**2020 mmcf**	**2021 mmcf**	**2022 mmcf**	**2023 mmcf**	**2024 mmcf**	**2025 mmcf**	**2026 mmcf**	**2027 mmcf**	**2028 mmcf**	**2029 mmcf**	**2030 mmcf**	**2031 mmcf**	**2032 mmcf**	**2033 mmcf**	**2034 mmcf**	**2035 mmcf**
Core Residential	-		-	-	-	-	-	-	-	-	2,730	5,729	8,667	11,728	14,294	16,983	19,673	22,301	25,052	27,866	30,617	33,369	36,120	38,872
Core Commercial	-		-	-	-	-	-	-	-	-	1,213	2,546	3,851	5,212	6,352	7,547	8,742	9,910	11,133	12,383	13,606	14,829	16,052	17,274
Core Industrial	-		-	-	-	-	-	-	-	-	240	504	762	1,031	1,257	1,493	1,730	1,961	2,203	2,450	2,692	2,934	3,176	3,418
NonCore Commercial	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial regular	-		-	-	-	-	-	-	-	-	68	142	215	291	354	421	488	553	621	691	759	827	895	964
NonCore Industrial refinery	-		-	-	-	-	-	-	-	-	22	45	69	93	113	134	156	176	198	220	242	264	286	307
Total Cumulative Load	-		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**4,273**	**8,967**	**13,564**	**18,354**	**22,370**	**26,579**	**30,788**	**34,901**	**39,207**	**43,610**	**47,916**	**52,223**	**56,529**	**60,835**
Forecast Year ====>											1	2	3	4	5	6	7	8	9	10	11	12	13	14

Life cycle is 15 years.

	Reported 2010 Therms	Reported 2011 Therms	Reported 2012 Therms	Reported 2013	Reported 2014	Reported 2015	Reported 2016	Reported 2017 NET	Reported 2018 NET	Reported 2019 NET	Reported 2020 NET	Reported 2021	Forecast 2022	Forecast 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030	Forecast 2031	Forecast 2032	Forecast 2033	Forecast 2034	Forecast 2035
SoCalGas EE Program TOTAL	**27,413,193**	**37,233,416**	**32,077,678**	**25,817,960**	**28,856,008**	**21,620,562**	**10,465,569**	**8,851,583**	**19,380,337**	**22,391,690**	**28,143,380**	**15,982,242**	**27,377,356**													
PUC Goal	**28,000,000**	**30,000,000**	**32,000,000**	24,120,000	23,190,000	25,300,000	17,300,000	18,100,000	20,000,000	22,000,000	14,400,000	15,400,000	20,440,000	22,440,000	21,440,000	24,440,000	25,440,000	27,440,000	28,440,000	29,440,000	31,440,000	32,440,000	32,440,000	32,440,000	32,440,000	32,440,000
Difference	**(586,807)**	**7,233,416**	**77,678**	**1,697,960**	**5,666,008**	**(3,679,438)**	**(6,834,431)**	**(9,248,417)**	**(619,663)**	**391,690**	**13,743,380**	**582,242**	**6,937,356**													

SoCalGas	2010 therms	2011 therms	2012 therms	2013 therms	2014 therms	2015 therms	2016 therms	2017 therms	2018 therms	2019 therms	2020 therms	2021 therms	2022 therms
Core Residential	9,072,268	12,564,473	8,445,190	8,173,595	7,371,223	7,037,522	3,980,507	4,296,916	13,457,604	16,927,428	18,765,627	13,002,600	15,794,664
Core Commercial	7,457,290	10,030,218	9,608,803	2,380,370	4,093,890	6,286,602	2,458,094	2,515,592	4,249,106	4,527,673	5,298,914	1,890,045	8,183,941
Core Industrial	2,268,570	3,051,276	2,923,078	2,803,233	2,457,183	1,928,820	1,236,543	611,937	456,371	487,431	346,005	298,976	2,477,588
NonCore Commercial	1,064,214	1,431,391	1,371,252	293,874	2,168,951	1,878,668	335,445	290,846	56,422	198,032	65,288	-	-
NonCore Industrial retail	2,483,166	3,339,913	3,199,588	4,184,881	6,592,493	2,495,191	1,562,769	1,013,868	1,093,600	98,374	460,317	534,045	698,437
NonCore Industrial refinery	5,067,684	6,816,146	6,529,768	7,982,006	6,172,268	1,993,759	892,212	122,423	67,235	152,753	3,207,229	256,577	222,726
Total	**27,413,193**	**37,233,416**	**32,077,678**	**25,817,960**	**28,856,008**	**21,620,562**	**10,465,569**	**8,851,583**	**19,380,337**	**22,391,690**	**28,143,380**	**15,982,242**	**27,377,356**

Proportionally scale it down or up to match PUC Goals for 2010 - 2014

ANNUAL NET SAVINGS	2010 Mdth	2011 Mdth	2012 Mdth	2013 Mdth	2014 Mdth	2015 Mdth	2016 Mdth	2017 Mdth	2018 Mdth	2019 Mdth	2020 Mdth	2021 Mdth	2022 Mdth	2023 Mdth	2024 Mdth	2025 Mdth	2026 Mdth	2027 Mdth	2028 Mdth	2029 Mdth	2030 Mdth	2031 Mdth	2032 Mdth	2033 Mdth	2034 Mdth	2035 Mdth
Core Residential	927	1,012	842	764	592	704	398	430	1,346	1,693	1,877	1,300	1,579	1,295	1,237	1,410	1,468	1,583	1,641	1,698	1,814	1,872	1,872	1,872	1,872	1,872
Core Commercial	762	808	959	222	329	629	246	252	425	453	530	189	818	671	641	731	760	820	850	880	940	970	970	970	970	970
Core Industrial	232	246	292	262	197	193	124	61	46	49	35	30	248	203	194	221	230	248	257	266	285	294	294	294	294	294
NonCore Commercial	109	115	137	27	174	188	34	29	6	20	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial retail	254	269	319	391	530	250	156	101	109	10	46	53	70	57	55	62	65	70	73	75	80	83	83	83	83	83
NonCore Industrial refinery	518	549	651	746	496	199	89	12	7	15	321	26	22	18	17	20	21	22	23	24	26	26	26	26	26	26
Total	**2,800**	**3,000**	**3,200**	**2,412**	**2,319**	**2,162**	**1,047**	**885**	**1,938**	**2,239**	**2,814**	**1,598**	**2,738**	**2,244**	**2,144**	**2,444**	**2,544**	**2,744**	**2,844**	**2,944**	**3,144**	**3,244**	**3,244**	**3,244**	**3,244**	**3,244**

Cumulative Savings Mdth	2012 Mdth	2013 Mdth	2014 Mdth	2015 Mdth	2016 Mdth	2017 Mdth	2018 Mdth	2019 Mdth	2020 Mdth	2021 Mdth	2022 Mdth	2023 Mdth	2024 Mdth	2025 Mdth	2026 Mdth	2027 Mdth	2028 Mdth	2029 Mdth	2030 Mdth	2031 Mdth	2032 Mdth	2033 Mdth	2034 Mdth	2035 Mdth
Core Residential											1,579	2,874	4,111	5,521	6,989	8,572	10,213	11,911	13,725	15,596	17,468	19,340	21,211	23,083
Core Commercial											818	1,489	2,130	2,861	3,621	4,441	5,292	6,172	7,111	8,081	9,051	10,021	10,990	11,960
Core Industrial											248	451	645	866	1,096	1,345	1,602	1,868	2,153	2,446	2,740	3,034	3,327	3,621
NonCore Commercial											-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial regular											70	127	182	244	309	379	452	527	607	690	772	855	938	1,021
NonCore Industrial refinery											22	41	58	78	99	121	144	168	194	220	246	273	299	325
Total Load Impacts											**2,738**	**4,982**	**7,126**	**9,570**	**12,114**	**14,858**	**17,702**	**20,646**	**23,790**	**27,034**	**30,278**	**33,522**	**36,766**	**40,010**

MMCF factor: **1.032**

Cumulative Savings MMCF	2012 mmcf	2013 mmcf	2014 mmcf	2015 mmcf	2016 mmcf	2017 mmcf	2018 mmcf	2019 mmcf	2020 mmcf	2021 mmcf	2022 mmcf	2023 mmcf	2024 mmcf	2025 mmcf	2026 mmcf	2027 mmcf	2028 mmcf	2029 mmcf	2030 mmcf	2031 mmcf	2032 mmcf	2033 mmcf	2034 mmcf	2035 mmcf
Core Residential	-		-	-	-	-	-	-	-	-	1,530	2,785	3,984	5,350	6,772	8,306	9,896	11,542	13,299	15,113	16,926	18,740	20,553	22,367
Core Commercial	-		-	-	-	-	-	-	-	-	793	1,443	2,064	2,772	3,509	4,304	5,128	5,980	6,891	7,831	8,770	9,710	10,650	11,589
Core Industrial	-		-	-	-	-	-	-	-	-	240	437	625	839	1,062	1,303	1,552	1,810	2,086	2,371	2,655	2,940	3,224	3,509
NonCore Commercial	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial regular	-		-	-	-	-	-	-	-	-	68	123	176	237	299	367	438	510	588	668	748	829	909	989
NonCore Industrial refinery	-		-	-	-	-	-	-	-	-	22	39	56	75	95	117	140	163	188	213	239	264	290	315
Total Cumulative Load	-		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2,653**	**4,827**	**6,905**	**9,273**	**11,738**	**14,397**	**17,153**	**20,006**	**23,052**	**26,195**	**29,339**	**32,482**	**35,626**	**38,769**
Forecast Year ====>											1	2	3	4	5	6	7	8	9	10	11	12	13	14

Life cycle is 15 years.

	Reported 2010 Therms	Reported 2011 Therms	Reported 2012 Therms	Reported 2013	Reported 2014	Reported 2015	Reported 2016	Reported 2017 NET	Reported 2018 NET	Reported 2019 NET	Reported 2020 NET	Reported 2021 NET	Forecast 2022	Forecast 2023	Forecast 2024	Forecast 2025	Forecast 2026	Forecast 2027	Forecast 2028	Forecast 2029	Forecast 2030	Forecast 2031	Forecast 2032	Forecast 2033	Forecast 2034	Forecast 2035
SoCalGas EE Program TOTAL	**27,413,193**	**37,233,416**	**32,077,678**	**25,817,960**	**28,856,008**	**21,620,562**	**19,689,893**	**24,469,089**	**29,351,882**	**29,729,363**	**16,859,580**	**15,837,094**	**16,718,896**													
PUC Goal	**28,000,000**	**30,000,000**	**32,000,000**	24,120,000	23,190,000	25,300,000	11,700,000	18,100,000	26,000,000	26,000,000	21,000,000	22,000,000	24,000,000	26,000,000	26,000,000	25,000,000	16,000,000	16,000,000	15,000,000	13,000,000	13,000,000	13,000,000	12,000,000	12,000,000	12,000,000	12,000,000
Difference	**(586,807)**	**7,233,416**	**77,678**	**1,697,960**	**5,666,008**	**(3,679,438)**	**7,989,893**	**6,369,089**	**3,351,882**	**3,729,363**	**(4,281,104)**	**(6,162,906)**	**(7,281,104)**													

SoCalGas	2010 therms	2011 therms	2012 therms	2013 therms	2014 therms	2015 therms	2016 therms	2017 therms	2018 therms	2019 therms	2020 therms	2021 therms	2022 therms
Core Residential	9,072,268	12,564,473	8,445,190	8,173,595	7,371,223	7,037,522	10,931,611	16,536,258	21,769,410	22,225,510	12,964,270	11,656,200	12,381,566
Core Commercial	7,457,290	10,030,218	9,608,803	2,380,370	4,093,890	6,286,602	8,758,283	7,932,831	7,582,472	7,503,854	3,895,310	4,180,893	4,337,330
Core Industrial	2,268,570	3,051,276	2,923,078	2,803,233	2,457,183	1,928,820	-	-	-	-	-	-	-
NonCore Commercial	1,064,214	1,431,391	1,371,252	293,874	2,168,951	1,878,668	-	-	-	-	-	-	-
NonCore Industrial retail	2,483,166	3,339,913	3,199,588	4,184,881	6,592,493	2,495,191	-	-	-	-	-	-	-
NonCore Industrial refinery	5,067,684	6,816,146	6,529,768	7,982,006	6,172,268	1,993,759	-	-	-	-	-	-	-
Total	**27,413,193**	**37,233,416**	**32,077,678**	**25,817,960**	**28,856,008**	**21,620,562**	**19,689,893**	**24,469,089**	**29,351,882**	**29,729,363**	**16,859,580**	**15,837,094**	**16,718,896**

Proportionally scale it down or up to match PUC Goals for 2010 - 2014

ANNUAL NET SAVINGS	2010 Mdth	2011 Mdth	2012 Mdth	2013 Mdth	2014 Mdth	2015 Mdth	2016 Mdth	2017 Mdth	2018 Mdth	2019 Mdth	2020 Mdth	2021 Mdth	2022 Mdth	2023 Mdth	2024 Mdth	2025 Mdth	2026 Mdth	2027 Mdth	2028 Mdth	2029 Mdth	2030 Mdth	2031 Mdth	2032 Mdth	2033 Mdth	2034 Mdth	2035 Mdth
Core Residential	927	1,012	842	764	592	704	1,093	1,654	2,177	2,223	1,296	1,166	1,238	1925	1925	1851	1185	1185	1111	963	963	963	889	889	889	889
Core Commercial	762	808	959	222	329	629	876	793	758	750	390	418	434	675	675	649	415	415	389	337	337	337	311	311	311	311
Core Industrial	232	246	292	262	197	193	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Commercial	109	115	137	27	174	188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial retail	254	269	319	391	530	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial refinery	518	549	651	746	496	199	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2,800**	**3,000**	**3,200**	**2,412**	**2,319**	**2,162**	**1,969**	**2,447**	**2,935**	**2,973**	**1,686**	**1,584**	**1,672**	**2,600**	**2,600**	**2,500**	**1,600**	**1,600**	**1,500**	**1,300**	**1,300**	**1,300**	**1,200**	**1,200**	**1,200**	**1,200**

Cumulative Savings Mdth	2012 Mdth	2013 Mdth	2014 Mdth	2015 Mdth	2016 Mdth	2017 Mdth	2018 Mdth	2019 Mdth	2020 Mdth	2021 Mdth	2022 Mdth	2023 Mdth	2024 Mdth	2025 Mdth	2026 Mdth	2027 Mdth	2028 Mdth	2029 Mdth	2030 Mdth	2031 Mdth	2032 Mdth	2033 Mdth	2034 Mdth	2035 Mdth
Core Residential											1,238	3,164	5,089	6,941	8,125	9,310	10,421	11,384	12,347	13,309	14,198	15,087	15,976	16,864
Core Commercial											434	1,108	1,783	2,431	2,846	3,261	3,651	3,988	4,325	4,662	4,974	5,285	5,596	5,908
Core Industrial											-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Commercial											-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial regular											-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial refinery											-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Load Impacts											**1,672**	**4,272**	**6,872**	**9,372**	**10,972**	**12,572**	**14,072**	**15,372**	**16,672**	**17,972**	**19,172**	**20,372**	**21,572**	**22,772**

MMCF factor: **1.032**

Cumulative Savings MMCF	2012 mmcf	2013 mmcf	2014 mmcf	2015 mmcf	2016 mmcf	2017 mmcf	2018 mmcf	2019 mmcf	2020 mmcf	2021 mmcf	2022 mmcf	2023 mmcf	2024 mmcf	2025 mmcf	2026 mmcf	2027 mmcf	2028 mmcf	2029 mmcf	2030 mmcf	2031 mmcf	2032 mmcf	2033 mmcf	2034 mmcf	2035 mmcf
Core Residential	-		-	-	-	-	-	-	-	-	1,200	3,066	4,931	6,725	7,874	9,022	10,098	11,031	11,964	12,897	13,758	14,619	15,480	16,341
Core Commercial	-		-	-	-	-	-	-	-	-	420	1,074	1,727	2,356	2,758	3,160	3,537	3,864	4,191	4,518	4,819	5,121	5,423	5,724
Core Industrial	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Commercial	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial regular	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NonCore Industrial refinery	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Cumulative Load	-		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1,620**	**4,139**	**6,659**	**9,081**	**10,632**	**12,182**	**13,636**	**14,895**	**16,155**	**17,415**	**18,577**	**19,740**	**20,903**	**22,066**
Forecast Year ====>											1	2	3	4	5	6	7	8	9	10	11	12	13	14

Life cycle is 15 years.

2022 CALIFORNIA GAS REPORT

EXCHANGE

A Sempra Energy utility®

Exchange Gas Demand

The Master Exchange Agreement (MEA) was made and entered into on the March 1st, 1990, by and between Pacific Gas and Electric Company (PG&E) and Southern California Gas Company (SoCalGas). The MEA sets the terms and conditions of any delivery or redelivery of natural gas for standby or for ongoing deliveries.

For the purposes of the forecast, the monthly exchange volumes for SoCalGas deliveries to PG&E and PG&E deliveries to SoCalGas at various exchange taps were tracked. The historical exchange deliveries formed the basis for the exchange forecast.

The forecasts of Exchange volumes are:

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	**TOTAL**
2021	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2022	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2023	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2024	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2025	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2026	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2027	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2028	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2029	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2030	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2031	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2032	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2033	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2034	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**
2035	62.6	50.2	39.0	27.6	19.4	20.3	16.7	22.0	18.8	28.7	39.7	67.2	**411.9**

2022 CALIFORNIA GAS REPORT

ENHANCED OIL RECOVERY-STEAM & COGEN

Enhanced Oil Recovery

2022 CALIFORNIA GAS REPORT WORKPAPERS

Forecasted demand for 2022 to 2035 assumes that, for both Steaming & Cogen use, EOR is going to remain stable and then gradually decrease. Forecasted break out by service levels (Medium Pressure Distribution - MPD, High Pressure Distribution - HPD, and Transmission Level Service - TLS) was determined by using the average of service level distributions from 2020 and 2021 actuals.

Southern California Gas Company EOR Workpaper		MDTH/Year Steaming				MDTH/Year Cogen				MDTH/Year Total			
		MPD	HPD	TLS	Total	MPD	HPD	TLS	Total	MPD	HPD	TLS	Total
Units	Year												
Mdth/year	2020 Actual	2	10,331	1,545	11,878	0	2,838	3,793	6,631	2	13,169	5,338	18,509
Mdth/year	2021 Actual	1	7,610	1,138	8,750	0	1,822	2,435	4,257	1	9,432	3,573	13,006
Mdth/year	2022 forecast	1	8,970	1,342	10,314	0	2,330	3,114	5,444	1	11,301	4,456	15,758
Mdth/year	2023 forecast	1	8,970	1,342	10,314	0	2,330	3,114	5,444	1	11,301	4,456	15,758
Mdth/year	2024 forecast	1	8,970	1,342	10,314	0	2,330	3,114	5,444	1	11,301	4,456	15,758
Mdth/year	2025 forecast	1	8,970	1,342	10,314	0	2,330	3,114	5,444	1	11,301	4,456	15,758
Mdth/year	2026 forecast	1	8,701	1,302	10,004	0	2,260	3,020	5,281	1	10,962	4,322	15,285
Mdth/year	2027 forecast	1	8,440	1,263	9,704	0	2,192	2,930	5,122	1	10,633	4,192	14,826
Mdth/year	2028 forecast	1	8,187	1,225	9,413	0	2,127	2,842	4,969	1	10,314	4,067	14,382
Mdth/year	2029 forecast	1	7,941	1,188	9,131	0	2,063	2,757	4,820	1	10,004	3,945	13,950
Mdth/year	2030 forecast	1	7,703	1,152	8,857	0	2,001	2,674	4,675	1	9,704	3,826	13,532
Mdth/year	2031 forecast	1	7,472	1,118	8,591	0	1,941	2,594	4,535	1	9,413	3,712	13,126
Mdth/year	2032 forecast	1	7,248	1,084	8,333	0	1,883	2,516	4,399	1	9,131	3,600	12,732
Mdth/year	2033 forecast	1	7,030	1,052	8,083	0	1,826	2,440	4,267	1	8,857	3,492	12,350
Mdth/year	2034 forecast	1	6,820	1,020	7,841	0	1,771	2,367	4,139	1	8,591	3,387	11,979
Mdth/year	2035 forecast	1	6,615	990	7,606	0	1,718	2,296	4,015	1	8,333	3,286	11,620

2022 CALIFORNIA GAS REPORT

REFINERIES

SoCalGas
A Sempra Energy utility®

Refinery Non-Cogeneration and Cogeneration Gas Demand

INTRODUCTION

Gas demand for refineries is developed from a base econometric forecast for both non-cogeneration (rate class G-30) load and cogeneration (rate class G-50) load. The separation into G-30 and G-50 categories is based on the historical 2021 average monthly proportions of each rate class.

For the non-cogeneration load component, there is an "out-of-model" adjustment to reflect expected implementation of mandated Energy Efficiency for this customer segment.

BASE FORECAST EQUATION

The base econometric forecast is generated from an equation that uses the natural logarithm of average daily monthly refinery gas consumption as the dependent variable. The key explanatory variable is the natural logarithm of the monthly ratio of burner-tip natural gas rates (e.g., transportation rate + commodity price) relative to the propane prices. The second component of the forecast equation is a constant term.

The base forecast equation is shown below:

$$LN(Ref\_MDth/d) = 5.7598439 + (-0.0435752) \times LN(G/P)$$

where

G = Gas burner-tip price, and
P = Propane price.

The parameters of this equation were estimated from monthly data for Jan-2010 through Dec-2021.

EXAMPLE OF FORECAST CALCULATIONS

The refinery gas demand in a particular month is calculated as:

$$Ref\_MDth/mo = (\#days\ in\ month) \times EXP[LN(Ref\_MDth/d)].$$

For example, the calculation of total refinery gas demand for August 2024 is as follows:

LN[Ref_MDth/d] = 5.7598439 + (-0.0435752) x LN(5.49350 / 12.27700)
LN[Ref_MDth/d] = 5.7948854

Ref_MDth = (31 days) x (EXP[5.7948854])
= (31 days) x (328.61452 MDth/d)
= (10,187.1 MDth)

This total refinery gas demand was "split" between G-30 and G-50 load using the 2021 monthly proportions that the G-30 load represented relative to the total refinery load. The table below provides these proportions.

Month	2021 G-30 % of total Refinery
Jan	83.969%
Feb	79.660%
Mar	79.009%
Apr	78.973%
May	76.545%
Jun	78.816%
Jul	78.048%
Aug	79.134%
Sep	78.899%
Oct	81.714%
Nov	81.193%
Dec	82.512%

Based on the August 2024 example above, the total refinery gas demand is split into G-30 and G-50 values:

Ref_G-30 = (8,061.5 MDth) = (10,187.1 MDth) x (79.134%), and
Ref_G-50 = (2,125.6 MDth) = (10,187.1 MDth) x (20.866%)

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The table below shows the entire base refinery gas demand forecast and the split into G-30 and G-50 rate class component loads.

Base Forecast of Refinery Gas Demand (2021-2035)

Month	Ref G30 %	#Days per month	Month #	Total Ref Mdth	Total Ref Mdth/Day	Ln(Mdth_D)	ln(G/P)	Burner_tip_Gas (G) $/dth	Propane (P) $/dth
Jan-21	83.97%	31	1	10,665.1	344.0	5.8407	-0.7184	4.9214	10.0949
Feb-21	79.66%	28	2	8,252.0	294.7	5.6860	-0.8974	4.6061	11.2993
Mar-21	79.01%	31	3	10,887.2	351.2	5.8614	-0.8497	4.6108	10.7847
Apr-21	78.97%	30	4	9,895.2	329.8	5.7986	-0.8251	4.0731	9.2956
May-21	76.55%	31	5	9,469.0	305.5	5.7218	-0.6963	4.4966	9.0219
Jun-21	78.82%	30	6	9,722.6	324.1	5.7810	-0.7594	4.8672	10.4015
Jul-21	78.05%	31	7	8,978.2	289.6	5.6686	-0.8298	5.1333	11.7701
Aug-21	79.13%	31	8	10,091.5	325.5	5.7855	-0.8178	5.3647	12.1533
Sep-21	78.90%	30	9	9,668.9	322.3	5.7755	-0.9622	5.3540	14.0146
Oct-21	81.71%	31	10	10,446.2	337.0	5.8200	-0.8830	6.6103	15.9854
Nov-21	81.19%	30	11	9,830.8	327.7	5.7921	-0.7000	7.2261	14.5511
Dec-21	82.51%	31	12	10,530.6	339.7	5.8281	-0.5271	7.3680	12.4818
Jan-22	83.97%	31	1	10,116.6	326.3	5.7879	-0.6448	6.3534	12.1071
Feb-22	79.66%	28	2	9,195.9	328.4	5.7943	-0.7909	5.7978	12.7865
Mar-22	79.01%	31	3	10,111.0	326.2	5.7874	-0.6323	6.0679	11.4194
Apr-22	78.97%	30	4	9,798.7	326.6	5.7888	-0.6647	5.1669	10.0442
May-22	76.55%	31	5	10,149.5	327.4	5.7912	-0.7193	5.0956	10.4617
Jun-22	78.82%	30	6	9,844.2	328.1	5.7934	-0.7709	5.5438	11.9843
Jul-22	78.05%	31	7	10,119.8	326.4	5.7883	-0.6521	6.7462	12.9502
Aug-22	79.13%	31	8	10,128.6	326.7	5.7891	-0.6721	6.8802	13.4741
Sep-22	78.90%	30	9	9,879.2	329.3	5.7970	-0.8525	6.2683	14.7020
Oct-22	81.71%	31	10	10,334.2	333.4	5.8092	-1.1333	5.4217	16.8386
Nov-22	81.19%	30	11	9,917.9	330.6	5.8009	-0.9423	6.2501	16.0363
Dec-22	82.51%	31	12	10,156.0	327.6	5.7918	-0.7341	7.3270	15.2669
Jan-23	83.97%	31	1	10,098.9	325.8	5.7862	-0.6048	5.9099	10.8204
Feb-23	79.66%	28	2	9,083.8	324.4	5.7820	-0.5095	6.8655	11.4276
Mar-23	79.01%	31	3	10,089.5	325.5	5.7853	-0.5835	5.6945	10.2059
Apr-23	78.97%	30	4	9,824.8	327.5	5.7915	-0.7257	4.3448	8.9768
May-23	76.55%	31	5	10,184.4	328.5	5.7946	-0.7982	4.2087	9.3499
Jun-23	78.82%	30	6	9,907.4	330.2	5.7998	-0.9179	4.2774	10.7107
Jul-23	78.05%	31	7	10,165.7	327.9	5.7928	-0.7560	5.4344	11.5740
Aug-23	79.13%	31	8	10,175.4	328.2	5.7937	-0.7779	5.5316	12.0422
Sep-23	78.90%	30	9	9,927.6	330.9	5.8019	-0.9647	5.0074	13.1396
Oct-23	81.71%	31	10	10,214.8	329.5	5.7976	-0.8667	6.3259	15.0491
Nov-23	81.19%	30	11	9,895.0	329.8	5.7986	-0.8891	5.8909	14.3321
Dec-23	82.51%	31	12	10,157.1	327.6	5.7919	-0.7367	6.5317	13.6444
Jan-24	83.97%	31	1	10,063.4	324.6	5.7827	-0.5239	6.5328	11.0314
Feb-24	79.66%	29	2	9,464.4	326.4	5.7880	-0.6460	6.1065	11.6505
Mar-24	79.01%	31	3	10,105.7	326.0	5.7869	-0.6201	5.5969	10.4049
Apr-24	78.97%	30	4	9,790.0	326.3	5.7879	-0.6442	4.8055	9.1518
May-24	76.55%	31	5	10,143.9	327.2	5.7906	-0.7068	4.7014	9.5322
Jun-24	78.82%	30	6	9,872.7	329.1	5.7963	-0.8374	4.7265	10.9195
Jul-24	78.05%	31	7	10,175.9	328.3	5.7938	-0.7790	5.4143	11.7996
Aug-24	79.13%	31	8	10,187.1	328.6	5.7949	-0.8042	5.4935	12.2770
Sep-24	78.90%	30	9	9,909.1	330.3	5.8000	-0.9219	5.3285	13.3958
Oct-24	81.71%	31	10	10,353.9	334.0	5.8111	-1.1769	4.7289	15.3425
Nov-24	81.19%	30	11	9,969.3	332.3	5.8061	-1.0607	5.0585	14.6116
Dec-24	82.51%	31	12	10,202.9	329.1	5.7964	-0.8399	6.0058	13.9105
Jan-25	83.97%	31	1	10,106.8	326.0	5.7870	-0.6226	5.9850	11.1545
Feb-25	79.66%	28	2	9,166.8	327.4	5.7911	-0.7183	5.7440	11.7804
Mar-25	79.01%	31	3	10,144.8	327.3	5.7907	-0.7087	5.1791	10.5210
Apr-25	78.97%	30	4	9,818.2	327.3	5.7908	-0.7103	4.5483	9.2539
May-25	76.55%	31	5	10,177.7	328.3	5.7940	-0.7832	4.4043	9.6385
Jun-25	78.82%	30	6	9,901.2	330.0	5.7992	-0.9035	4.4733	11.0413
Jul-25	78.05%	31	7	10,235.8	330.2	5.7997	-0.9137	4.7850	11.9313
Aug-25	79.13%	31	8	10,238.9	330.3	5.8000	-0.9207	4.9438	12.4140
Sep-25	78.90%	30	9	9,952.3	331.7	5.8044	-1.0216	4.8765	13.5453
Oct-25	81.71%	31	10	10,356.8	334.1	5.8114	-1.1834	4.7507	15.5137
Nov-25	81.19%	30	11	9,983.1	332.8	5.8075	-1.0926	4.9546	14.7746
Dec-25	82.51%	31	12	10,234.3	330.1	5.7995	-0.9103	5.6600	14.0656

Base Forecast of Refinery Gas Demand (2021-2035)

Month	Ref G30 %	#Days per month	Month #	Total Ref Mdth	Total Ref Mdth/Day	Ln(Mdth_D)	ln(G/P)	Burner_tip_Gas (G) $/dth	Propane (P) $/dth
Jan-26	83.97%	31	1	10,130.2	326.8	5.7893	-0.6757	5.8698	11.5369
Feb-26	79.66%	28	2	9,187.1	328.1	5.7933	-0.7689	5.6477	12.1843
Mar-26	79.01%	31	3	10,149.6	327.4	5.7912	-0.7197	5.2985	10.8817
Apr-26	78.97%	30	4	9,820.3	327.3	5.7910	-0.7152	4.6812	9.5712
May-26	76.55%	31	5	10,172.4	328.1	5.7934	-0.7712	4.6104	9.9690
Jun-26	78.82%	30	6	9,898.9	330.0	5.7990	-0.8982	4.6512	11.4199
Jul-26	78.05%	31	7	10,247.3	330.6	5.8008	-0.9394	4.8232	12.3404
Aug-26	79.13%	31	8	10,250.9	330.7	5.8011	-0.9476	4.9773	12.8396
Sep-26	78.90%	30	9	9,965.4	332.2	5.8057	-1.0518	4.8937	14.0097
Oct-26	81.71%	31	10	10,370.9	334.5	5.8128	-1.2147	4.7621	16.0456
Nov-26	81.19%	30	11	9,983.6	332.8	5.8075	-1.0937	5.1187	15.2811
Dec-26	82.51%	31	12	10,251.1	330.7	5.8012	-0.9480	5.6373	14.5479
Jan-27	83.97%	31	1	10,155.0	327.6	5.7917	-0.7319	5.8610	12.1850
Feb-27	79.66%	28	2	9,208.2	328.9	5.7956	-0.8217	5.6582	12.8688
Mar-27	79.01%	31	3	10,168.0	328.0	5.7930	-0.7611	5.3688	11.4929
Apr-27	78.97%	30	4	9,838.5	327.9	5.7929	-0.7577	4.7386	10.1089
May-27	76.55%	31	5	10,189.3	328.7	5.7951	-0.8093	4.6874	10.5290
Jun-27	78.82%	30	6	9,916.0	330.5	5.8007	-0.9379	4.7215	12.0614
Jul-27	78.05%	31	7	10,266.1	331.2	5.8026	-0.9815	4.8844	13.0336
Aug-27	79.13%	31	8	10,271.0	331.3	5.8031	-0.9924	5.0267	13.5609
Sep-27	78.90%	30	9	9,985.1	332.8	5.8077	-1.0972	4.9391	14.7967
Oct-27	81.71%	31	10	10,392.5	335.2	5.8148	-1.2623	4.7959	16.9470
Nov-27	81.19%	30	11	10,005.9	333.5	5.8097	-1.1449	5.1364	16.1396
Dec-27	82.51%	31	12	10,274.1	331.4	5.8034	-0.9995	5.6552	15.3651
Jan-28	83.97%	31	1	10,181.8	328.4	5.7944	-0.7923	5.8932	13.0152
Feb-28	79.66%	29	2	9,560.0	329.7	5.7980	-0.8767	5.7203	13.7456
Mar-28	79.01%	31	3	10,190.3	328.7	5.7952	-0.8114	5.4536	12.2760
Apr-28	78.97%	30	4	9,857.9	328.6	5.7948	-0.8029	4.8377	10.7976
May-28	76.55%	31	5	10,210.3	329.4	5.7972	-0.8565	4.7756	11.2464
Jun-28	78.82%	30	6	9,936.7	331.2	5.8028	-0.9856	4.8082	12.8832
Jul-28	78.05%	31	7	10,287.2	331.8	5.8047	-1.0287	4.9764	13.9216
Aug-28	79.13%	31	8	10,291.9	332.0	5.8051	-1.0392	5.1236	14.4848
Sep-28	78.90%	30	9	10,005.1	333.5	5.8097	-1.1430	5.0393	15.8048
Oct-28	81.71%	31	10	10,414.8	336.0	5.8170	-1.3115	4.8767	18.1016
Nov-28	81.19%	30	11	10,028.2	334.3	5.8120	-1.1960	5.2134	17.2392
Dec-28	82.51%	31	12	10,302.0	332.3	5.8061	-1.0616	5.6768	16.4120
Jan-29	83.97%	31	1	10,181.8	328.4	5.7944	-0.7923	6.3300	13.9800
Feb-29	79.66%	28	2	9,230.3	329.7	5.7980	-0.8767	6.0500	14.5377
Mar-29	79.01%	31	3	10,190.3	328.7	5.7952	-0.8114	5.6987	12.8276
Apr-29	78.97%	30	4	9,857.9	328.6	5.7948	-0.8029	4.9731	11.0999
May-29	76.55%	31	5	10,210.3	329.4	5.7972	-0.8565	4.8752	11.4811
Jun-29	78.82%	30	6	9,936.7	331.2	5.8028	-0.9856	4.8862	13.0921
Jul-29	78.05%	31	7	10,287.2	331.8	5.8047	-1.0287	5.0664	14.1734
Aug-29	79.13%	31	8	10,291.9	332.0	5.8051	-1.0392	5.2311	14.7889
Sep-29	78.90%	30	9	10,005.1	333.5	5.8097	-1.1430	5.1367	16.1102
Oct-29	81.71%	31	10	10,414.8	336.0	5.8170	-1.3115	4.9331	18.3108
Nov-29	81.19%	30	11	10,028.2	334.3	5.8120	-1.1960	5.2739	17.4395
Dec-29	82.51%	31	12	10,302.0	332.3	5.8061	-1.0616	5.6989	16.4758
Jan-30	83.97%	31	1	10,181.8	328.4	5.7944	-0.7923	6.8188	15.0596
Feb-30	79.66%	28	2	9,230.3	329.7	5.7980	-0.8767	6.4039	15.3882
Mar-30	79.01%	31	3	10,190.3	328.7	5.7952	-0.8114	5.9611	13.4184
Apr-30	78.97%	30	4	9,857.9	328.6	5.7948	-0.8029	5.1255	11.4401
May-30	76.55%	31	5	10,210.3	329.4	5.7972	-0.8565	5.0031	11.7823
Jun-30	78.82%	30	6	9,936.7	331.2	5.8028	-0.9856	5.0060	13.4132
Jul-30	78.05%	31	7	10,287.2	331.8	5.8047	-1.0287	5.1945	14.5319
Aug-30	79.13%	31	8	10,291.9	332.0	5.8051	-1.0392	5.3637	15.1637
Sep-30	78.90%	30	9	10,005.1	333.5	5.8097	-1.1430	5.2663	16.5169
Oct-30	81.71%	31	10	10,414.8	336.0	5.8170	-1.3115	5.0510	18.7483
Nov-30	81.19%	30	11	10,028.2	334.3	5.8120	-1.1960	5.4005	17.8580
Dec-30	82.51%	31	12	10,302.0	332.3	5.8061	-1.0616	5.8308	16.8571

Base Forecast of Refinery Gas Demand (2021-2035)

Month	Ref G30 %	#Days per month	Month #	Total Ref Mdth	Total Ref Mdth/Day	Ln(Mdth_D)	ln(G/P)	Burner_tip_Gas (G) $/dth	Propane (P) $/dth
Jan-31	83.97%	31	1	10,181.8	328.4	5.7944	-0.7923	7.0909	15.6604
Feb-31	79.66%	28	2	9,230.3	329.7	5.7980	-0.8767	6.6570	15.9963
Mar-31	79.01%	31	3	10,190.3	328.7	5.7952	-0.8114	6.2002	13.9566
Apr-31	78.97%	30	4	9,857.9	328.6	5.7948	-0.8029	5.3351	11.9079
May-31	76.55%	31	5	10,210.3	329.4	5.7972	-0.8565	5.2068	12.2620
Jun-31	78.82%	30	6	9,936.7	331.2	5.8028	-0.9856	5.2095	13.9584
Jul-31	78.05%	31	7	10,287.2	331.8	5.8047	-1.0287	5.4017	15.1114
Aug-31	79.13%	31	8	10,291.9	332.0	5.8051	-1.0392	5.5735	15.7567
Sep-31	78.90%	30	9	10,005.1	333.5	5.8097	-1.1430	5.4749	17.1708
Oct-31	81.71%	31	10	10,414.8	336.0	5.8170	-1.3115	5.2553	19.5067
Nov-31	81.19%	30	11	10,028.2	334.3	5.8120	-1.1960	5.6128	18.5599
Dec-31	82.51%	31	12	10,302.0	332.3	5.8061	-1.0616	6.0523	17.4974
Jan-32	83.97%	31	1	10,181.8	328.4	5.7944	-0.7923	7.4109	16.3673
Feb-32	79.66%	29	2	9,560.0	329.7	5.7980	-0.8767	6.9573	16.7180
Mar-32	79.01%	31	3	10,190.3	328.7	5.7952	-0.8114	6.4819	14.5907
Apr-32	78.97%	30	4	9,857.9	328.6	5.7948	-0.8029	5.5786	12.4513
May-32	76.55%	31	5	10,210.3	329.4	5.7972	-0.8565	5.4439	12.8203
Jun-32	78.82%	30	6	9,936.7	331.2	5.8028	-0.9856	5.4470	14.5948
Jul-32	78.05%	31	7	10,287.2	331.8	5.8047	-1.0287	5.6434	15.7875
Aug-32	79.13%	31	8	10,291.9	332.0	5.8051	-1.0392	5.8178	16.4473
Sep-32	78.90%	30	9	10,005.1	333.5	5.8097	-1.1430	5.7179	17.9331
Oct-32	81.71%	31	10	10,414.8	336.0	5.8170	-1.3115	5.4949	20.3963
Nov-32	81.19%	30	11	10,028.2	334.3	5.8120	-1.1960	5.8614	19.3820
Dec-32	82.51%	31	12	10,302.0	332.3	5.8061	-1.0616	6.3118	18.2477
Jan-33	83.97%	31	1	10,181.8	328.4	5.7944	-0.7923	7.6196	16.8282
Feb-33	79.66%	28	2	9,230.3	329.7	5.7980	-0.8767	7.1530	17.1883
Mar-33	79.01%	31	3	10,190.3	328.7	5.7952	-0.8114	6.6661	15.0054
Apr-33	78.97%	30	4	9,857.9	328.6	5.7948	-0.8029	5.7392	12.8098
May-33	76.55%	31	5	10,210.3	329.4	5.7972	-0.8565	5.6003	13.1886
Jun-33	78.82%	30	6	9,936.7	331.2	5.8028	-0.9856	5.6038	15.0148
Jul-33	78.05%	31	7	10,287.2	331.8	5.8047	-1.0287	5.8027	16.2333
Aug-33	79.13%	31	8	10,291.9	332.0	5.8051	-1.0392	5.9788	16.9027
Sep-33	78.90%	30	9	10,005.1	333.5	5.8097	-1.1430	5.8782	18.4358
Oct-33	81.71%	31	10	10,414.8	336.0	5.8170	-1.3115	5.6531	20.9834
Nov-33	81.19%	30	11	10,028.2	334.3	5.8120	-1.1960	6.0252	19.9236
Dec-33	82.51%	31	12	10,302.0	332.3	5.8061	-1.0616	6.4825	18.7413
Jan-34	83.97%	31	1	10,181.8	328.4	5.7944	-0.7923	7.8341	17.3019
Feb-34	79.66%	28	2	9,230.3	329.7	5.7980	-0.8767	7.3559	17.6758
Mar-34	79.01%	31	3	10,190.3	328.7	5.7952	-0.8114	6.8559	15.4325
Apr-34	78.97%	30	4	9,857.9	328.6	5.7948	-0.8029	5.9027	13.1747
May-34	76.55%	31	5	10,210.3	329.4	5.7972	-0.8565	5.7597	13.5641
Jun-34	78.82%	30	6	9,936.7	331.2	5.8028	-0.9856	5.7641	15.4444
Jul-34	78.05%	31	7	10,287.2	331.8	5.8047	-1.0287	5.9656	16.6889
Aug-34	79.13%	31	8	10,291.9	332.0	5.8051	-1.0392	6.1432	17.3673
Sep-34	78.90%	30	9	10,005.1	333.5	5.8097	-1.1430	6.0418	18.9490
Oct-34	81.71%	31	10	10,414.8	336.0	5.8170	-1.3115	5.8157	21.5869
Nov-34	81.19%	30	11	10,028.2	334.3	5.8120	-1.1960	6.1932	20.4793
Dec-34	82.51%	31	12	10,302.0	332.3	5.8061	-1.0616	6.6576	19.2476
Jan-35	83.97%	31	1	10,181.8	328.4	5.7944	-0.7923	8.1378	17.9725
Feb-35	79.66%	28	2	9,230.3	329.7	5.7980	-0.8767	7.6458	18.3724
Mar-35	79.01%	31	3	10,190.3	328.7	5.7952	-0.8114	7.1244	16.0370
Apr-35	78.97%	30	4	9,857.9	328.6	5.7948	-0.8029	6.1297	13.6814
May-35	76.55%	31	5	10,210.3	329.4	5.7972	-0.8565	5.9817	14.0868
Jun-35	78.82%	30	6	9,936.7	331.2	5.8028	-0.9856	5.9880	16.0442
Jul-35	78.05%	31	7	10,287.2	331.8	5.8047	-1.0287	6.1930	17.3251
Aug-35	79.13%	31	8	10,291.9	332.0	5.8051	-1.0392	6.3721	18.0144
Sep-35	78.90%	30	9	10,005.1	333.5	5.8097	-1.1430	6.2700	19.6648
Oct-35	81.71%	31	10	10,414.8	336.0	5.8170	-1.3115	6.0438	22.4337
Nov-35	81.19%	30	11	10,028.2	334.3	5.8120	-1.1960	6.4289	21.2586
Dec-35	82.51%	31	12	10,302.0	332.3	5.8061	-1.0616	6.9035	19.9583

ADJUSTMENTS TO THE BASE FORECAST

A. Energy Efficiency/DSM Program Savings

Adjustments for energy efficiency/DSM (EE/DSM) programs for refinery customers are applied to the G-30 load portion of the refinery gas demand. The cogeneration (G-50) load is exempt from participating in these programs. The values applied to the refinery G-30 load have been noted in the earlier discussion of the overall G-30 load forecast.

B. Refinery Industrial G-30 Gas Demand

The noncore industrial refinery gas demand receives G-30 rate treatment. It is basically the non-cogeneration gas load at refinery facilities served by SoCalGas. The details of how the gas demand forecast for total gas demand at refineries is provided above as the Base forecast of refinery gas demand. In this part of the noncore C&I only the refinery load billed at G-30 rates is discussed.

Continuing with the August 2024 month as an example and using the data from the following two tables, the G-30 industrial refinery demand was projected to be:

G-30 Refinery Gas Demand, Aug-2024 = (8,061.5) - (6.0) = (8,055.5 MDth).

The reduction of 6.0 MDth is the accumulated EE/DSM program impact for refineries.

C. Refinery Cogeneration Gas Demand

Gas used for cogeneration at refineries receives G-50 rate treatment does not have out-of-model adjustment. The G-50 gas demand forecast for cogeneration for August 2024 is:

G-50 Refinery Gas Demand, Aug-2024 = (2,125.6 MDth).

REFINERY GAS DEMAND FORECASTS

A. Annual Forecast Table

The first table below provides annual gas demand for the refinery segment. Recorded data are for year 2021, while forecasts cover years 2022-2035.

B. Monthly Forecast Tables

The additional four tables below provide monthly gas demand for the refinery segment. Recorded data are for year 2021, while forecasts cover years 2022-2035.

Annual Refinery Gas Demand: Recorded (2021)

Forecast (2022-2035) (MDth)

		Refinery Industrial (G-30) Gas Demand			Refinery Cogeneration (G-50) Gas Demand			
Year	Total Refinery (G30 + G50) (MDth)	Ref **G30**, Base Econ. Fcst	Accum. EE/DSM Scg Pgm Savings for **Refinery G-30**	Base Ref **G30,** *less* EE/DSM (MDth)	Cal. Days per Year	Ref **G50**, Base Econ. Fcst	Out-of-model Adj. for **Refinery G-50**	Base Ref **G50** *plus* Out-of-model Adj (MDth)
2021	**118,437**	94,685	0	94,685	365	23,752	0	23,752
2022	**119,729**	95,660	22	95,638	365	24,092	0	24,092
2023	**119,678**	95,632	47	95,585	365	24,093	0	24,093
2024	**120,167**	96,046	71	95,976	366	24,192	0	24,192
2025	**120,221**	96,109	96	96,013	365	24,208	0	24,208
2026	**120,311**	96,199	117	96,082	365	24,229	0	24,229
2027	**120,531**	96,393	139	96,254	365	24,277	0	24,277
2028	**121,106**	96,869	160	96,708	366	24,397	0	24,397
2029	**120,755**	96,606	182	96,424	365	24,330	0	24,330
2030	**120,732**	96,606	204	96,402	365	24,330	0	24,330
2031	**120,709**	96,606	227	96,379	365	24,330	0	24,330
2032	**121,016**	96,869	250	96,619	366	24,397	0	24,397
2033	**120,664**	96,606	272	96,334	365	24,330	0	24,330
2034	**120,642**	96,606	295	96,311	365	24,330	0	24,330
2035	**120,619**	96,606	317	96,289	365	24,330	0	24,330

Monthly Refinery Gas Demand: Recorded (2021)

Forecast (2022-2035) (MDth)

		Refinery Industrial (G-30) Gas Demand			Refinery Cogeneration (G-50) Gas Demand			
Month	Total Refinery (G30 + G50) (MDth)	Ref **G30**, Base Econ. Fcst	Accum. EE/DSM Scg Pgm Savings for **Refinery G-30**	Cal. Days per Year	Cal. Days per Month	Ref **G50**, Base Econ. Fcst	Out-of-model Adj. for **Refinery G-50**	Base Ref **G50** *plus* Out-of-model Adj (MDth)
Jan-21	**10,665**	8,955	0	8,955	31	1,710	0	1,710
Feb-21	**8,252**	6,574	0	6,574	28	1,678	0	1,678
Mar-21	**10,887**	8,602	0	8,602	31	2,285	0	2,285
Apr-21	**9,895**	7,814	0	7,814	30	2,081	0	2,081
May-21	**9,469**	7,248	0	7,248	31	2,221	0	2,221
Jun-21	**9,723**	7,663	0	7,663	30	2,060	0	2,060
Jul-21	**8,978**	7,007	0	7,007	31	1,971	0	1,971
Aug-21	**10,091**	7,986	0	7,986	31	2,106	0	2,106
Sep-21	**9,669**	7,629	0	7,629	30	2,040	0	2,040
Oct-21	**10,446**	8,536	0	8,536	31	1,910	0	1,910
Nov-21	**9,831**	7,982	0	7,982	30	1,849	0	1,849
Dec-21	**10,531**	8,689	0	8,689	31	1,842	0	1,842
Jan-22	**10,115**	8,495	2	8,493	31	1,622	0	1,622
Feb-22	**9,194**	7,325	2	7,324	28	1,870	0	1,870
Mar-22	**10,109**	7,989	2	7,987	31	2,122	0	2,122
Apr-22	**9,797**	7,738	2	7,736	30	2,060	0	2,060
May-22	**10,148**	7,769	2	7,767	31	2,381	0	2,381
Jun-22	**9,842**	7,759	2	7,757	30	2,085	0	2,085
Jul-22	**10,118**	7,898	2	7,896	31	2,222	0	2,222
Aug-22	**10,127**	8,015	2	8,013	31	2,113	0	2,113
Sep-22	**9,877**	7,795	2	7,793	30	2,085	0	2,085
Oct-22	**10,332**	8,444	2	8,443	31	1,890	0	1,890
Nov-22	**9,916**	8,053	2	8,051	30	1,865	0	1,865
Dec-22	**10,154**	8,380	2	8,378	31	1,776	0	1,776
Jan-23	**10,095**	8,480	4	8,476	31	1,619	0	1,619
Feb-23	**9,080**	7,236	4	7,233	28	1,848	0	1,848
Mar-23	**10,086**	7,972	4	7,968	31	2,118	0	2,118
Apr-23	**9,821**	7,759	4	7,755	30	2,066	0	2,066
May-23	**10,180**	7,796	4	7,792	31	2,389	0	2,389
Jun-23	**9,904**	7,809	4	7,805	30	2,099	0	2,099
Jul-23	**10,162**	7,934	4	7,930	31	2,232	0	2,232
Aug-23	**10,171**	8,052	4	8,048	31	2,123	0	2,123
Sep-23	**9,924**	7,833	4	7,829	30	2,095	0	2,095
Oct-23	**10,211**	8,347	4	8,343	31	1,868	0	1,868
Nov-23	**9,891**	8,034	4	8,030	30	1,861	0	1,861
Dec-23	**10,153**	8,381	4	8,377	31	1,776	0	1,776
Jan-24	**10,057**	8,450	6	8,444	31	1,613	0	1,613
Feb-24	**9,459**	7,539	6	7,534	29	1,925	0	1,925
Mar-24	**10,100**	7,984	6	7,978	31	2,121	0	2,121
Apr-24	**9,784**	7,731	6	7,726	30	2,059	0	2,059
May-24	**10,138**	7,765	6	7,759	31	2,379	0	2,379
Jun-24	**9,867**	7,781	6	7,775	30	2,091	0	2,091
Jul-24	**10,170**	7,942	6	7,936	31	2,234	0	2,234
Aug-24	**10,181**	8,061	6	8,055	31	2,126	0	2,126
Sep-24	**9,903**	7,818	6	7,812	30	2,091	0	2,091
Oct-24	**10,348**	8,461	6	8,455	31	1,893	0	1,893
Nov-24	**9,963**	8,094	6	8,089	30	1,875	0	1,875
Dec-24	**10,197**	8,419	6	8,413	31	1,784	0	1,784
Jan-25	**10,099**	8,487	8	8,478	31	1,620	0	1,620
Feb-25	**9,159**	7,302	7	7,295	28	1,865	0	1,865
Mar-25	**10,137**	8,015	8	8,007	31	2,130	0	2,130
Apr-25	**9,810**	7,754	8	7,746	30	2,064	0	2,064
May-25	**10,170**	7,791	8	7,782	31	2,387	0	2,387
Jun-25	**9,893**	7,804	8	7,796	30	2,097	0	2,097
Jul-25	**10,228**	7,989	8	7,981	31	2,247	0	2,247
Aug-25	**10,231**	8,102	8	8,094	31	2,136	0	2,136
Sep-25	**9,944**	7,852	8	7,844	30	2,100	0	2,100
Oct-25	**10,349**	8,463	8	8,455	31	1,894	0	1,894
Nov-25	**9,975**	8,106	8	8,098	30	1,877	0	1,877
Dec-25	**10,226**	8,445	8	8,436	31	1,790	0	1,790

Monthly Refinery Gas Demand: Recorded (2021)

Forecast (2022-2035) (MDth)

		Refinery Industrial (G-30) Gas Demand			Refinery Cogeneration (G-50) Gas Demand			
Month	Total Refinery (G30 + G50) (MDth)	Ref **G30**, Base Econ. Fcst	Accum. EE/DSM Scg Pgm Savings for **Refinery G-30**	Cal. Days per Year	Cal. Days per Month	Ref **G50**, Base Econ. Fcst	Out-of-model Adj. for **Refinery G-50**	Base Ref **G50** *plus* Out-of-model Adj (MDth)
Jan-26	**10,120**	8,506	10	8,496	31	1,624	0	1,624
Feb-26	**9,178**	7,318	9	7,309	28	1,869	0	1,869
Mar-26	**10,140**	8,019	10	8,009	31	2,131	0	2,131
Apr-26	**9,811**	7,755	10	7,746	30	2,065	0	2,065
May-26	**10,163**	7,786	10	7,777	31	2,386	0	2,386
Jun-26	**9,889**	7,802	10	7,792	30	2,097	0	2,097
Jul-26	**10,237**	7,998	10	7,988	31	2,250	0	2,250
Aug-26	**10,241**	8,112	10	8,102	31	2,139	0	2,139
Sep-26	**9,956**	7,863	10	7,853	30	2,103	0	2,103
Oct-26	**10,361**	8,475	10	8,465	31	1,896	0	1,896
Nov-26	**9,974**	8,106	10	8,096	30	1,878	0	1,878
Dec-26	**10,241**	8,458	10	8,449	31	1,793	0	1,793
Jan-27	**10,143**	8,527	12	8,515	31	1,628	0	1,628
Feb-27	**9,198**	7,335	11	7,325	28	1,873	0	1,873
Mar-27	**10,156**	8,034	12	8,022	31	2,134	0	2,134
Apr-27	**9,827**	7,770	11	7,758	30	2,069	0	2,069
May-27	**10,178**	7,799	12	7,788	31	2,390	0	2,390
Jun-27	**9,905**	7,815	11	7,804	30	2,101	0	2,101
Jul-27	**10,254**	8,012	12	8,001	31	2,254	0	2,254
Aug-27	**10,259**	8,128	12	8,116	31	2,143	0	2,143
Sep-27	**9,974**	7,878	11	7,867	30	2,107	0	2,107
Oct-27	**10,381**	8,492	12	8,480	31	1,900	0	1,900
Nov-27	**9,995**	8,124	11	8,113	30	1,882	0	1,882
Dec-27	**10,262**	8,477	12	8,466	31	1,797	0	1,797
Jan-28	**10,168**	8,550	14	8,536	31	1,632	0	1,632
Feb-28	**9,547**	7,615	13	7,603	29	1,945	0	1,945
Mar-28	**10,177**	8,051	14	8,038	31	2,139	0	2,139
Apr-28	**9,845**	7,785	13	7,772	30	2,073	0	2,073
May-28	**10,197**	7,816	14	7,802	31	2,395	0	2,395
Jun-28	**9,924**	7,832	13	7,819	30	2,105	0	2,105
Jul-28	**10,274**	8,029	14	8,015	31	2,258	0	2,258
Aug-28	**10,278**	8,144	14	8,131	31	2,147	0	2,147
Sep-28	**9,992**	7,894	13	7,881	30	2,111	0	2,111
Oct-28	**10,401**	8,510	14	8,497	31	1,904	0	1,904
Nov-28	**10,015**	8,142	13	8,129	30	1,886	0	1,886
Dec-28	**10,288**	8,500	14	8,487	31	1,802	0	1,802
Jan-29	**10,166**	8,550	15	8,534	31	1,632	0	1,632
Feb-29	**9,216**	7,353	14	7,339	28	1,877	0	1,877
Mar-29	**10,175**	8,051	15	8,036	31	2,139	0	2,139
Apr-29	**9,843**	7,785	15	7,770	30	2,073	0	2,073
May-29	**10,195**	7,816	15	7,800	31	2,395	0	2,395
Jun-29	**9,922**	7,832	15	7,817	30	2,105	0	2,105
Jul-29	**10,272**	8,029	15	8,014	31	2,258	0	2,258
Aug-29	**10,276**	8,144	15	8,129	31	2,147	0	2,147
Sep-29	**9,990**	7,894	15	7,879	30	2,111	0	2,111
Oct-29	**10,399**	8,510	15	8,495	31	1,904	0	1,904
Nov-29	**10,013**	8,142	15	8,127	30	1,886	0	1,886
Dec-29	**10,287**	8,500	15	8,485	31	1,802	0	1,802
Jan-30	**10,164**	8,550	17	8,532	31	1,632	0	1,632
Feb-30	**9,215**	7,353	16	7,337	28	1,877	0	1,877
Mar-30	**10,173**	8,051	17	8,034	31	2,139	0	2,139
Apr-30	**9,841**	7,785	17	7,768	30	2,073	0	2,073
May-30	**10,193**	7,816	17	7,798	31	2,395	0	2,395
Jun-30	**9,920**	7,832	17	7,815	30	2,105	0	2,105
Jul-30	**10,270**	8,029	17	8,012	31	2,258	0	2,258
Aug-30	**10,275**	8,144	17	8,127	31	2,147	0	2,147
Sep-30	**9,988**	7,894	17	7,877	30	2,111	0	2,111
Oct-30	**10,397**	8,510	17	8,493	31	1,904	0	1,904
Nov-30	**10,011**	8,142	17	8,125	30	1,886	0	1,886
Dec-30	**10,285**	8,500	17	8,483	31	1,802	0	1,802

Monthly Refinery Gas Demand: Recorded (2021)

Forecast (2022-2035) (MDth)

		Refinery Industrial (G-30) Gas Demand			Refinery Cogeneration (G-50) Gas Demand			
Month	Total Refinery (G30 + G50) (MDth)	Ref **G30**, Base Econ. Fcst	Accum. EE/DSM Scg Pgm Savings for **Refinery G-30**	Cal. Days per Year	Cal. Days per Month	Ref **G50**, Base Econ. Fcst	Out-of-model Adj. for **Refinery G-50**	Base Ref **G50** *plus* Out-of-model Adj (MDth)
Jan-31	**10,162**	8,550	19	8,530	31	1,632	0	1,632
Feb-31	**9,213**	7,353	17	7,335	28	1,877	0	1,877
Mar-31	**10,171**	8,051	19	8,032	31	2,139	0	2,139
Apr-31	**9,839**	7,785	19	7,766	30	2,073	0	2,073
May-31	**10,191**	7,816	19	7,796	31	2,395	0	2,395
Jun-31	**9,918**	7,832	19	7,813	30	2,105	0	2,105
Jul-31	**10,268**	8,029	19	8,010	31	2,258	0	2,258
Aug-31	**10,273**	8,144	19	8,125	31	2,147	0	2,147
Sep-31	**9,986**	7,894	19	7,875	30	2,111	0	2,111
Oct-31	**10,395**	8,510	19	8,491	31	1,904	0	1,904
Nov-31	**10,010**	8,142	19	8,124	30	1,886	0	1,886
Dec-31	**10,283**	8,500	19	8,481	31	1,802	0	1,802
Jan-32	**10,161**	8,550	21	8,528	31	1,632	0	1,632
Feb-32	**9,540**	7,615	20	7,596	29	1,945	0	1,945
Mar-32	**10,169**	8,051	21	8,030	31	2,139	0	2,139
Apr-32	**9,837**	7,785	20	7,765	30	2,073	0	2,073
May-32	**10,189**	7,816	21	7,794	31	2,395	0	2,395
Jun-32	**9,916**	7,832	20	7,811	30	2,105	0	2,105
Jul-32	**10,266**	8,029	21	8,008	31	2,258	0	2,258
Aug-32	**10,271**	8,144	21	8,123	31	2,147	0	2,147
Sep-32	**9,985**	7,894	20	7,873	30	2,111	0	2,111
Oct-32	**10,394**	8,510	21	8,489	31	1,904	0	1,904
Nov-32	**10,008**	8,142	20	8,122	30	1,886	0	1,886
Dec-32	**10,281**	8,500	21	8,479	31	1,802	0	1,802
Jan-33	**10,159**	8,550	23	8,526	31	1,632	0	1,632
Feb-33	**9,209**	7,353	21	7,332	28	1,877	0	1,877
Mar-33	**10,167**	8,051	23	8,028	31	2,139	0	2,139
Apr-33	**9,836**	7,785	22	7,763	30	2,073	0	2,073
May-33	**10,187**	7,816	23	7,792	31	2,395	0	2,395
Jun-33	**9,914**	7,832	22	7,809	30	2,105	0	2,105
Jul-33	**10,264**	8,029	23	8,006	31	2,258	0	2,258
Aug-33	**10,269**	8,144	23	8,121	31	2,147	0	2,147
Sep-33	**9,983**	7,894	22	7,872	30	2,111	0	2,111
Oct-33	**10,392**	8,510	23	8,487	31	1,904	0	1,904
Nov-33	**10,006**	8,142	22	8,120	30	1,886	0	1,886
Dec-33	**10,279**	8,500	23	8,477	31	1,802	0	1,802
Jan-34	**10,157**	8,550	25	8,525	31	1,632	0	1,632
Feb-34	**9,208**	7,353	23	7,330	28	1,877	0	1,877
Mar-34	**10,165**	8,051	25	8,026	31	2,139	0	2,139
Apr-34	**9,834**	7,785	24	7,761	30	2,073	0	2,073
May-34	**10,185**	7,816	25	7,790	31	2,395	0	2,395
Jun-34	**9,912**	7,832	24	7,807	30	2,105	0	2,105
Jul-34	**10,262**	8,029	25	8,004	31	2,258	0	2,258
Aug-34	**10,267**	8,144	25	8,119	31	2,147	0	2,147
Sep-34	**9,981**	7,894	24	7,870	30	2,111	0	2,111
Oct-34	**10,390**	8,510	25	8,485	31	1,904	0	1,904
Nov-34	**10,004**	8,142	24	8,118	30	1,886	0	1,886
Dec-34	**10,277**	8,500	25	8,475	31	1,802	0	1,802
Jan-35	**10,155**	8,550	27	8,523	31	1,632	0	1,632
Feb-35	**9,206**	7,353	24	7,329	28	1,877	0	1,877
Mar-35	**10,163**	8,051	27	8,024	31	2,139	0	2,139
Apr-35	**9,832**	7,785	26	7,759	30	2,073	0	2,073
May-35	**10,183**	7,816	27	7,789	31	2,395	0	2,395
Jun-35	**9,911**	7,832	26	7,806	30	2,105	0	2,105
Jul-35	**10,260**	8,029	27	8,002	31	2,258	0	2,258
Aug-35	**10,265**	8,144	27	8,118	31	2,147	0	2,147
Sep-35	**9,979**	7,894	26	7,868	30	2,111	0	2,111
Oct-35	**10,388**	8,510	27	8,483	31	1,904	0	1,904
Nov-35	**10,002**	8,142	26	8,116	30	1,886	0	1,886
Dec-35	**10,275**	8,500	27	8,473	31	1,802	0	1,802

2022 CALIFORNIA GAS REPORT

ELECTRIC GENERATION

A Sempra Energy utility®

2022 CALIFORNIA GAS REPORT

NON-COGENERATION EG

A Sempra Energy utility®

SDG&E/SoCalGas

Jeff Huang

The electric generation forecast is based on an analysis of the plant's operation in the western electric market using the PLEXOS model from Energy Exemplar. This workpapers include both the input assumptions and results.

<u>Workpapers List</u>

California Energy Demand Forecast
California Energy Commission's (CEC's) California Energy Demand Forecast, 2021 – 2035 Managed Forecast, adopted January 2022. SoCalGas selected the Mid Energy Demand scenario with Additional Achievable Energy Efficiency (AAEE) Scenario 3 and Additional Achievable Fuel Switching (AAFS) Scenario 2.

See Schedule 1 - 3 for the summary of peak and energy data.

New California Resource Assumptions
The base case assumed the resource additions in 2021 Preferred System Plan as a guideline. See Schedule 4.

Green House Gas (GHG) Compliance Costs
See Schedule 5.

Once Through Cooling (OTC) Compliance Schedule
See Schedule 6.

Annual Gas Demand Throughput Forecasts
See Schedule 7 and Schedule 8.

Peak Day Forecasts
See Schedule 9 and Schedule 10.

Schedule 1: Form 1.5a - STATEWIDE

California Energy Demand 2021-2035 Forecast - Mid Baseline - AAEE Scenario 3 - AAFS Scenario 2
Total Energy to Serve Load by Agency and Balancing Authority (GWh)

Balancing Authority	Agency	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Average Annual Growth (2021-2035)
	PG&E Service Area - Greater Bay Area	34,302	32,659	32,774	32,824	32,952	33,018	33,089	33,216	33,381	33,616	33,866	34,174	34,446	34,782	35,117	35,493	0.60%
	NCPA - Greater Bay Area	1,329	1,268	1,287	1,294	1,300	1,305	1,311	1,318	1,326	1,337	1,348	1,363	1,376	1,391	1,407	1,424	0.83%
	Power Enterprise of the San Francisco PUC	922	900	922	925	922	920	918	917	916	917	917	919	920	923	926	929	0.23%
	Silicon Valley Power	4,061	4,163	4,621	5,172	5,690	6,262	6,890	7,314	7,463	7,560	7,686	7,813	7,891	7,909	7,924	7,937	4.72%
	Other NP15 LSEs - Bay Area	26	25	25	25	25	25	25	25	25	25	25	26	26	26	26	26	0.42%
	CDWR - Greater Bay Area	500	791	791	791	791	791	791	791	791	791	791	791	791	791	791	791	0.00%
	WAPA - Greater Bay Area	511	496	509	512	513	514	515	516	517	518	520	522	524	527	530	533	0.52%
Greater Bay Area Subtotal		**41,652**	**40,301**	**40,929**	**41,543**	**42,193**	**42,835**	**43,539**	**44,098**	**44,419**	**44,765**	**45,153**	**45,607**	**45,974**	**46,349**	**46,722**	**47,133**	**1.12%**
	PG&E Service Area - Non Bay Area	42,120	40,206	40,485	40,630	40,840	40,971	41,114	41,301	41,502	41,777	42,071	42,431	42,746	43,127	43,506	43,928	0.63%
	NCPA - Non Bay Area	1,021	969	973	976	980	983	985	989	994	1,000	1,007	1,016	1,024	1,033	1,042	1,052	0.59%
	Other NP15 LSEs - Non Bay Area	161	153	153	154	154	155	155	156	157	158	160	161	162	164	166	167	0.64%
	CDWR - Non Bay Area	500	792	792	792	792	792	792	792	792	792	792	792	792	792	792	792	0.00%
	WAPA - Non Bay Area	1,881	1,823	1,872	1,884	1,885	1,889	1,893	1,899	1,902	1,908	1,912	1,922	1,930	1,942	1,953	1,963	0.53%
Total North of Path 15		**87,335**	**84,244**	**85,205**	**85,978**	**86,845**	**87,624**	**88,479**	**89,234**	**89,765**	**90,400**	**91,095**	**91,929**	**92,628**	**93,406**	**94,180**	**95,037**	**0.86%**
	PG&E Service Area - ZP26	8,996	7,998	8,068	8,103	8,151	8,182	8,215	8,258	8,305	8,369	8,437	8,521	8,595	8,684	8,772	8,871	0.74%
	CDWR - ZP26	1,054	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668	1,668	0.00%
	WAPA - ZP26	144	140	143	144	144	145	145	145	146	146	146	147	148	148	149	150	0.52%
Total Zone Path 26		**10,193**	**9,805**	**9,879**	**9,915**	**9,963**	**9,994**	**10,028**	**10,071**	**10,118**	**10,183**	**10,251**	**10,336**	**10,410**	**10,500**	**10,589**	**10,689**	**0.62%**
Total Valley		**55,877**	**53,748**	**54,155**	**54,350**	**54,615**	**54,783**	**54,968**	**55,208**	**55,464**	**55,818**	**56,193**	**56,658**	**57,064**	**57,556**	**58,047**	**58,592**	**0.62%**
Total North of Path 26 (Total PG&E TAC Area)		**97,529**	**94,050**	**95,085**	**95,893**	**96,808**	**97,618**	**98,507**	**99,305**	**99,883**	**100,583**	**101,346**	**102,265**	**103,038**	**103,905**	**104,769**	**105,725**	**0.84%**
	Turlock Irrigation District	2,355	2,365	2,385	2,397	2,408	2,416	2,424	2,433	2,442	2,448	2,452	2,448	2,450	2,451	2,450	2,447	0.24%
	Merced Irrigation District	546	549	553	556	559	561	562	564	567	568	569	568	568	569	569	568	0.24%
Total Turlock Irrigation District Control Area		**2,902**	**2,914**	**2,939**	**2,954**	**2,967**	**2,977**	**2,986**	**2,997**	**3,008**	**3,016**	**3,021**	**3,016**	**3,018**	**3,020**	**3,019**	**3,015**	**0.24%**
	Sacramento Municipal Utility District	11,125	10,962	11,085	11,172	11,251	11,316	11,380	11,457	11,549	11,657	11,770	11,880	11,978	12,060	12,114	12,158	0.74%
	Modesto Irrigation District	2,753	2,764	2,788	2,802	2,815	2,824	2,833	2,844	2,854	2,862	2,867	2,861	2,864	2,866	2,864	2,860	0.24%
	Roseville, City of	1,224	1,229	1,239	1,246	1,251	1,255	1,259	1,264	1,269	1,272	1,274	1,272	1,273	1,274	1,273	1,271	0.24%
	Redding, City of	753	756	762	766	770	772	775	778	780	782	784	782	783	784	783	782	0.24%
	Shasta Lake, City of	222	223	225	226	227	228	229	230	230	231	231	231	231	231	231	231	0.24%
	WAPA (BANC)	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	308	0.00%
Total Balancing Authority of Northern California Control Area		**16,385**	**16,242**	**16,408**	**16,521**	**16,622**	**16,704**	**16,783**	**16,879**	**16,990**	**17,112**	**17,234**	**17,335**	**17,437**	**17,522**	**17,574**	**17,611**	**0.58%**
	SCE Service Area - LA Basin	67,944	66,014	66,684	67,244	67,807	68,142	68,459	68,923	69,252	69,621	69,945	70,339	70,570	70,844	71,091	71,341	0.56%
	Anaheim, City of	2,228	2,186	2,217	2,237	2,255	2,266	2,277	2,294	2,305	2,319	2,331	2,347	2,357	2,368	2,378	2,388	0.64%
	Pasadena Water and Power	1,057	1,033	1,051	1,062	1,071	1,078	1,084	1,093	1,101	1,110	1,118	1,127	1,134	1,141	1,148	1,155	0.80%
	Riverside, City of	2,291	2,243	2,268	2,287	2,307	2,320	2,333	2,351	2,365	2,380	2,394	2,410	2,421	2,433	2,444	2,455	0.65%
	Vernon, City of	1,196	1,186	1,195	1,199	1,211	1,224	1,236	1,248	1,261	1,273	1,286	1,299	1,312	1,325	1,338	1,352	0.94%
	Other SP15 LSEs - LA Basin	1,473	1,444	1,463	1,476	1,487	1,495	1,502	1,513	1,520	1,530	1,538	1,547	1,554	1,561	1,568	1,575	0.62%
LA Basin Subtotal		**76,188**	**74,106**	**74,878**	**75,505**	**76,139**	**76,525**	**76,892**	**77,422**	**77,804**	**78,233**	**78,612**	**79,070**	**79,347**	**79,673**	**79,968**	**80,265**	**0.57%**
	SCE Service Area - Big Creek/Ventura	17,008	16,543	16,715	16,855	16,997	17,083	17,165	17,283	17,368	17,464	17,549	17,651	17,713	17,786	17,852	17,918	0.57%
	CDWR - Big Creek/Ventura	2,036	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155	0.00%
Big Creek/Ventura Subtotal		**19,043**	**19,698**	**19,870**	**20,010**	**20,152**	**20,238**	**20,320**	**20,438**	**20,523**	**20,619**	**20,704**	**20,806**	**20,868**	**20,941**	**21,006**	**21,073**	**0.48%**
	SCE Service Area - Other	4,891	4,755	4,806	4,847	4,888	4,913	4,937	4,972	4,997	5,025	5,050	5,080	5,098	5,119	5,139	5,159	0.58%
	Other SP15 LSEs - Other	190	187	187	188	190	190	191	192	192	193	193	194	194	194	194	194	0.27%
	CDWR - Other	360	557	557	557	557	557	557	557	557	557	557	557	557	557	557	557	0.00%
Total SCE TAC Area		**100,672**	**99,303**	**100,299**	**101,108**	**101,925**	**102,423**	**102,897**	**103,581**	**104,073**	**104,627**	**105,116**	**105,707**	**106,064**	**106,484**	**106,865**	**107,248**	**0.55%**
MWD TAC Area		**1,123**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**1,862**	**0.00%**
SDG&E TAC Area		**18,877**	**18,183**	**18,433**	**18,455**	**18,545**	**18,595**	**18,649**	**18,706**	**18,759**	**18,832**	**18,918**	**19,028**	**19,111**	**19,208**	**19,283**	**19,361**	**0.45%**
Valley Electric Association (CA Territory)		**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**0.02%**
Total South of Path 26		**120,683**	**119,358**	**120,604**	**121,435**	**122,342**	**122,890**	**123,418**	**124,159**	**124,704**	**125,331**	**125,905**	**126,606**	**127,047**	**127,563**	**128,020**	**128,481**	**0.53%**
	LADWP	23,768	23,306	23,506	23,533	23,494	23,461	23,437	23,516	23,648	23,878	24,162	24,502	24,838	25,185	25,538	25,899	0.76%
	Burbank	1,059	1,058	1,085	1,095	1,102	1,106	1,111	1,117	1,125	1,136	1,147	1,161	1,171	1,181	1,192	1,203	0.92%
	Glendale	1,046	1,040	1,058	1,067	1,074	1,079	1,084	1,089	1,097	1,107	1,118	1,132	1,141	1,150	1,159	1,169	0.84%
Total LADWP Control Area		**25,872**	**25,404**	**25,649**	**25,695**	**25,670**	**25,647**	**25,631**	**25,722**	**25,869**	**26,121**	**26,427**	**26,794**	**27,150**	**27,516**	**27,889**	**28,271**	**0.77%**
Imperial Irrigation District Control Area		**3,962**	**3,945**	**3,973**	**3,989**	**4,007**	**4,022**	**4,042**	**4,062**	**4,082**	**4,092**	**4,099**	**4,099**	**4,097**	**4,092**	**4,081**	**4,065**	**0.22%**
Total California ISO		**218,211**	**213,408**	**215,689**	**217,328**	**219,150**	**220,508**	**221,925**	**223,464**	**224,587**	**225,914**	**227,251**	**228,871**	**230,085**	**231,469**	**232,790**	**234,206**	**0.67%**
Total STATEWIDE		**267,332**	**261,912**	**264,658**	**266,486**	**268,415**	**269,858**	**271,368**	**273,125**	**274,537**	**276,254**	**278,033**	**280,114**	**281,788**	**283,619**	**285,353**	**287,168**	**0.66%**

This table includes retail sales and other deliveries at the customer level including losses - total energy to serve load. Table developed based on actual 2019 data.

Total California ISO at Line 60 does not include total energy to serve load for the Nevada portion of the VEA service territory

The SCE forecast published in the planning area and hourly forecast forms includes the MWD TAC load, which is reported separately here.

Schedule 2: Form 1.5b - STATEWIDE

California Energy Demand 2021-2035 Forecast - Mid Baseline - AAEE Scenario 3 - AAFS Scenario 2

1-in-2 Net Electricity Peak Demand by Agency and Balancing Authority (MW)

Balancing Authority	Agency	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Average Annual Growth (2021-2035)
	PG&E Service Area - Greater Bay Area	6,635	6,609	6,577	6,600	6,639	6,685	6,741	6,819	6,867	6,932	7,018	7,102	7,172	7,237	7,279	0.66%
	NCPA - Greater Bay Area	204	206	206	207	208	210	212	215	217	219	222	225	228	230	232	0.90%
	Power Enterprise of the San Francisco PUC	112	114	113	113	113	113	114	114	114	115	115	116	116	117	116	0.30%
	Silicon Valley Power	592	644	720	793	872	960	1,019	1,040	1,053	1,071	1,088	1,099	1,102	1,104	1,106	4.56%
	Other NP15 LSEs - Bay Area	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0.49%
	CDWR - Greater Bay Area	53	53	55	55	55	55	55	55	55	55	55	55	55	55	55	0.22%
	WAPA - Greater Bay Area	61	59	61	61	61	61	61	61	62	62	62	62	62	63	63	0.26%
Greater Bay Area Subtotal		**7,661**	**7,688**	**7,736**	**7,832**	**7,952**	**8,088**	**8,206**	**8,308**	**8,372**	**8,457**	**8,564**	**8,663**	**8,739**	**8,810**	**8,855**	**1.04%**
	PG&E Service Area - Non Bay Area	10,350	10,345	10,316	10,366	10,438	10,525	10,621	10,742	10,815	10,912	11,041	11,167	11,269	11,361	11,416	0.70%
	NCPA - Non Bay Area	225	225	224	225	226	228	230	232	234	236	239	241	244	246	247	0.66%
	Other NP15 LSEs - Non Bay Area	5	5	5	5	5	5	5	5	5	6	6	6	6	6	6	0.71%
	CDWR - Non Bay Area	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	0.00%
	WAPA - Non Bay Area	211	217	218	219	219	220	220	221	221	222	223	224	225	226	228	0.53%
Total North of Path 15		**18,506**	**18,533**	**18,555**	**18,702**	**18,895**	**19,121**	**19,341**	**19,571**	**19,712**	**19,898**	**20,140**	**20,372**	**20,555**	**20,723**	**20,829**	**0.85%**
	PG&E Service Area - ZP26	2,037	2,040	2,035	2,047	2,062	2,081	2,101	2,127	2,143	2,165	2,194	2,221	2,245	2,266	2,281	0.81%
	CDWR - ZP26	112	112	117	116	116	116	116	116	116	116	116	116	116	116	116	0.22%
	WAPA - ZP26	17	17	17	17	17	17	17	17	17	17	18	18	18	18	18	0.52%
Total Zone Path 26		**2,166**	**2,169**	**2,170**	**2,180**	**2,195**	**2,214**	**2,234**	**2,260**	**2,277**	**2,298**	**2,327**	**2,355**	**2,378**	**2,400**	**2,415**	**0.78%**
Total Valley		**13,011**	**13,014**	**12,987**	**13,048**	**13,137**	**13,245**	**13,364**	**13,513**	**13,605**	**13,727**	**13,889**	**14,047**	**14,175**	**14,292**	**14,365**	**0.71%**
Total North of Path 26 (Total PG&E TAC Area)		**20,672**	**20,702**	**20,723**	**20,880**	**21,089**	**21,333**	**21,570**	**21,821**	**21,977**	**22,184**	**22,453**	**22,710**	**22,914**	**23,102**	**23,220**	**0.83%**
	Turlock Irrigation District	576	563	568	574	579	585	590	597	602	607	612	617	620	624	626	0.60%
	Merced Irrigation District	120	117	118	120	121	122	123	125	126	127	128	129	129	130	131	0.60%
Total Turlock Irrigation District Control Area		**697**	**681**	**686**	**693**	**700**	**706**	**713**	**722**	**728**	**734**	**740**	**745**	**750**	**754**	**757**	**0.60%**
	Sacramento Municipal Utility District	2,804	2,741	2,756	2,780	2,799	2,820	2,842	2,879	2,908	2,938	2,969	2,999	3,027	3,052	3,077	0.67%
	Modesto Irrigation District	707	690	696	703	710	717	723	732	738	745	751	756	761	764	768	0.60%
	Roseville, City of	361	352	355	359	362	366	369	374	377	380	383	386	388	390	392	0.60%
	Redding, City of	245	240	241	244	246	249	251	254	256	258	260	262	264	265	266	0.60%
	Shasta Lake, City of	38	37	38	38	38	39	39	40	40	40	41	41	41	41	42	0.60%
	WAPA (BANC)	66	64	64	64	64	64	64	64	64	64	64	64	64	64	64	-0.22%
Total Balancing Authority of Northern California Control Area		**4,221**	**4,125**	**4,151**	**4,188**	**4,221**	**4,254**	**4,289**	**4,342**	**4,383**	**4,425**	**4,468**	**4,508**	**4,545**	**4,577**	**4,609**	**0.63%**
	SCE Service Area - LA Basin	16,302	16,369	16,427	16,477	16,485	16,522	16,621	16,685	16,753	16,793	16,996	17,062	17,130	17,136	17,273	0.41%
	Anaheim, City of	520	525	527	528	529	530	533	535	538	540	547	549	552	553	557	0.49%
	Pasadena Water and Power	298	301	303	304	304	305	308	309	312	313	318	320	322	323	326	0.65%
	Riverside, City of	588	591	593	595	596	598	602	605	608	610	618	621	624	625	631	0.50%
	Vernon, City of	165	166	165	166	167	168	170	172	173	174	177	179	181	182	185	0.80%
	Other SP15 LSEs - LA Basin	302	304	306	306	306	307	309	310	312	313	317	318	320	320	323	0.48%
LA Basin Subtotal		**18,176**	**18,256**	**18,321**	**18,376**	**18,387**	**18,430**	**18,543**	**18,617**	**18,695**	**18,743**	**18,973**	**19,050**	**19,129**	**19,139**	**19,295**	**0.43%**
	SCE Service Area - Big Creek/Ventura	3,846	3,862	3,876	3,888	3,890	3,900	3,923	3,939	3,956	3,966	4,015	4,031	4,048	4,050	4,084	0.43%
	CDWR - Big Creek/Ventura	271	271	271	271	271	271	272	272	272	298	298	298	298	298	298	0.69%
Big Creek/Ventura Subtotal		**4,116**	**4,133**	**4,147**	**4,159**	**4,161**	**4,171**	**4,195**	**4,211**	**4,227**	**4,264**	**4,313**	**4,330**	**4,346**	**4,349**	**4,382**	**0.45%**
	SCE Service Area - Other	919	923	926	929	930	932	938	942	946	949	960	964	968	969	977	0.44%
	Other SP15 LSEs - Other	40	40	40	40	40	40	40	40	40	40	40	40	40	40	41	0.13%
	CDWR - Other	44	44	44	44	44	44	44	44	44	49	49	49	49	49	49	0.69%
Total SCE TAC Area		**23,295**	**23,396**	**23,478**	**23,548**	**23,562**	**23,618**	**23,760**	**23,854**	**23,953**	**24,045**	**24,335**	**24,433**	**24,533**	**24,546**	**24,744**	**0.43%**
MWD TAC Area		158	158	158	158	158	158	158	158	158	174	174	174	174	174	174	**0.69%**
Total SDG&E TAC Area		**4,248**	**4,330**	**4,366**	**4,411**	**4,446**	**4,490**	**4,534**	**4,578**	**4,621**	**4,668**	**4,718**	**4,765**	**4,815**	**4,856**	**4,892**	**1.01%**
Valley Electric Association		**147**	**147**	**150**	**153**	**155**	**157**	**159**	**162**	**164**	**167**	**170**	**173**	**175**	**177**	**180**	**1.45%**
Total South of Path 26		**27,848**	**28,031**	**28,152**	**28,270**	**28,321**	**28,423**	**28,611**	**28,752**	**28,896**	**29,054**	**29,397**	**29,545**	**29,697**	**29,753**	**29,990**	**0.53%**
	LADWP	5,717	5,607	5,501	5,471	5,446	5,420	5,403	5,429	5,440	5,455	5,476	5,496	5,520	5,546	5,581	-0.17%
	Burbank	287	281	281	282	283	283	284	286	287	289	290	292	294	295	297	0.26%
	Glendale	297	291	292	292	293	294	294	296	298	299	301	303	304	306	308	0.26%
Total LADWP Control Area		**6,301**	**6,179**	**6,074**	**6,046**	**6,022**	**5,997**	**5,981**	**6,012**	**6,024**	**6,042**	**6,067**	**6,091**	**6,118**	**6,148**	**6,186**	**-0.13%**
Imperial Irrigation District Control Area		**1,120**	**1,092**	**1,099**	**1,108**	**1,117**	**1,127**	**1,136**	**1,148**	**1,155**	**1,163**	**1,169**	**1,174**	**1,178**	**1,180**	**1,181**	**0.38%**
Total California ISO Noncoincident Peak		**48,520**	**48,733**	**48,875**	**49,150**	**49,410**	**49,756**	**50,181**	**50,573**	**50,873**	**51,238**	**51,850**	**52,255**	**52,611**	**52,855**	**53,210**	**0.66%**
Total California ISO Coincident Peak		**45,966**	**46,307**	**46,677**	**47,248**	**47,642**	**48,045**	**48,591**	**49,062**	**49,497**	**50,007**	**50,655**	**51,117**	**51,487**	**51,625**	**52,022**	**0.89%**
Total STATEWIDE Noncoincident Peak		**60,858**	**60,809**	**60,884**	**61,186**	**61,471**	**61,840**	**62,301**	**62,796**	**63,164**	**63,602**	**64,295**	**64,773**	**65,201**	**65,514**	**65,943**	**0.57%**
Total STATEWIDE Coincident Peak		**57,655**	**57,782**	**58,146**	**58,818**	**59,271**	**59,714**	**60,326**	**60,920**	**61,455**	**62,074**	**62,813**	**63,362**	**63,808**	**63,989**	**64,471**	**0.80%**

Table developed using weather normalized 2021 net peak demand values for each BA area.

Agency peak demand within a BA area is adjusted to be coincident with the respective BA area net peak demand total.

The SCE forecast published in the planning area and hourly forecast forms includes the MWD TAC load, which is reported separately here.

Schedule 3: Form 1.1c - STATEWIDE

California Energy Demand 2021-2035 Forecast - Mid Baseline - AAEE Scenario 3 - AAFS Scenario 2

Electricity Deliveries to End Users by Agency (GWh)

Planning Area	Agency	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Average Annual Growth (2021-2035)
PG&E	Pacific Gas & Electric Company (Bundled)	36,022	30,085	28,230	27,388	27,526	27,604	27,706	27,840	27,982	28,194	28,415	28,711	28,980	29,305	29,629	29,981	-0.02%
	Pacific Gas & Electric Company (Direct Access)	8,812	9,869	10,631	11,393	11,393	11,393	11,393	11,393	11,393	11,393	11,393	11,393	11,393	11,393	11,393	11,393	1.03%
	BART	316	359	420	420	420	420	420	420	420	420	420	420	420	420	420	420	1.12%
	CCA - Central Coast Community Energy	3,278	4,531	4,587	4,576	4,608	4,624	4,642	4,669	4,691	4,720	4,748	4,784	4,809	4,840	4,871	4,903	0.57%
	CCA - CleanPowerSF	2,918	2,938	3,018	3,030	3,049	3,061	3,073	3,091	3,111	3,139	3,168	3,203	3,233	3,270	3,306	3,347	0.94%
	CCA - East Bay Community Energy	5,856	5,552	5,564	5,577	5,608	5,624	5,642	5,669	5,701	5,745	5,793	5,849	5,898	5,958	6,018	6,085	0.66%
	CCA - King City Community Power	35	33	34	34	34	34	34	35	35	35	35	36	36	37	37	38	0.83%
	CCA - Marin Clean Energy	5,262	5,382	5,732	5,861	5,895	5,909	5,918	5,937	5,972	6,015	6,068	6,118	6,160	6,212	6,267	6,335	1.17%
	CCA - Peninsula Clean Energy Authority	3,402	3,528	3,859	3,917	3,941	3,957	3,972	3,994	4,020	4,056	4,093	4,137	4,175	4,223	4,269	4,322	1.46%
	CCA - Pioneer Community Energy	1,135	1,116	1,822	1,896	1,907	1,912	1,916	1,924	1,935	1,950	1,966	1,984	1,999	2,017	2,036	2,059	4.47%
	CCA - Redwood Coast Energy Authority	617	584	582	583	586	588	589	591	595	599	604	609	614	619	625	631	0.56%
	CCA - San José Clean Energy	4,003	3,852	3,785	3,798	3,820	3,834	3,848	3,868	3,892	3,925	3,960	4,001	4,036	4,080	4,123	4,172	0.57%
	CCA - Silicon Valley Clean Energy	3,838	3,637	3,649	3,657	3,677	3,688	3,700	3,718	3,739	3,768	3,799	3,836	3,869	3,908	3,947	3,991	0.67%
	CCA - Sonoma Clean Power	2,319	2,204	2,201	2,207	2,220	2,228	2,234	2,245	2,259	2,277	2,297	2,320	2,339	2,363	2,387	2,415	0.66%
	CCA - Valley Clean Energy Alliance	707	719	729	733	737	741	744	749	754	762	769	778	786	795	805	816	0.90%
	Alameda Municipal Power	337	320	323	324	326	327	328	330	332	334	337	341	344	347	351	355	0.74%
	Biggs Municipal Utilities	18	17	17	17	17	17	16	16	16	17	17	17	17	17	17	17	0.01%
	Calaveras Public Power Agency	30	29	30	30	31	31	31	31	31	32	32	32	32	33	33	33	0.90%
	Gridley Electric Utility	32	30	30	31	31	31	31	31	31	31	32	32	32	33	33	33	0.66%
	Healdsburg, City of	74	70	71	71	71	72	72	72	72	73	73	74	75	75	76	77	0.65%
	Kirkwood Meadows Public Utility District	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	7	0.59%
	Lassen Municipal Utility District	124	118	117	118	119	119	120	120	121	122	123	124	125	127	128	129	0.67%
	Lathrop Irrigation District	17	15	15	15	15	15	15	15	16	16	16	16	16	16	16	16	0.31%
	Lodi Electric Utility	430	405	407	408	410	410	411	412	414	417	419	423	426	429	433	437	0.54%
	Lompoc, City of	123	117	117	117	118	118	118	118	119	120	121	121	122	123	124	126	0.51%
	Palo Alto, City of	825	787	800	805	810	813	818	823	828	836	844	854	862	873	884	895	0.93%
	Pittsburg, City of (dba Island Energy on Mare Island)	24	23	23	23	23	23	23	23	23	23	23	24	24	24	24	24	0.42%
	Plumas-Sierra Rural Electric Cooperative	150	143	144	145	145	146	146	147	148	149	150	151	152	153	155	156	0.61%
	Port of Oakland	56	55	56	56	56	56	56	55	55	55	55	55	55	55	55	55	-0.05%
	Port of Stockton	17	16	17	17	17	17	17	17	17	17	17	17	17	17	17	18	0.47%
	Power Enterprise of the San Francisco PUC	845	825	845	848	845	843	842	841	840	840	840	842	844	846	849	852	0.23%
	Silicon Valley Power	3,723	3,816	4,236	4,741	5,215	5,739	6,316	6,704	6,840	6,930	7,045	7,161	7,233	7,249	7,263	7,275	4.72%
	Tuolumne County Public Power Agency	31	30	31	31	31	32	32	32	32	32	33	33	33	34	34	35	0.98%
	Ukiah, City of	110	105	106	107	107	108	108	109	110	111	112	113	114	116	117	119	0.89%
	California Department of Water Resources	1,891	2,993	2,993	2,993	2,993	2,993	2,993	2,993	2,993	2,993	2,993	2,993	2,993	2,993	2,993	2,993	0.00%
	USBR WAPA Central Valley Project	2,253	2,185	2,244	2,258	2,260	2,264	2,269	2,274	2,278	2,285	2,290	2,301	2,311	2,323	2,336	2,349	0.52%
PG&E Total		**89,406**	**86,217**	**87,166**	**87,906**	**88,746**	**89,487**	**90,302**	**91,035**	**91,564**	**92,206**	**92,905**	**93,748**	**94,457**	**95,252**	**96,044**	**96,920**	**0.84%**
SCE	Southern California Edison Company (Bundled)	59,144	56,955	55,101	50,844	51,333	51,631	51,916	52,336	52,625	52,957	53,247	53,609	53,822	54,068	54,291	54,513	-0.31%
	Southern California Edison Company (Direct Access)	9,958	10,710	11,531	13,457	13,457	13,457	13,457	13,457	13,457	13,457	13,457	13,457	13,457	13,457	13,457	13,457	1.64%
	CCA - Apple Valley Choice Energy	262	255	255	257	259	261	263	265	267	268	270	271	272	273	274	275	0.52%
	CCA - Baldwin Park, City of	20	125	25														
	CCA - Central Coast Community Energy	0	123	555	554	551	548	546	543	540	538	535	532	530	533	536	540	11.15%
	CCA - Clean Power Alliance	11,191	10,909	10,804	10,895	11,000	11,066	11,129	11,220	11,289	11,363	11,429	11,501	11,544	11,593	11,638	11,686	0.49%
	CCA - Desert Community Energy	562	548	549	554	560	563	567	572	576	580	583	587	589	591	594	596	0.60%
	CCA - Energy for Palmdale's Independent Choice	0	0	52	380	402	405	408	411	414	418	421	424	426	429	431	433	
	CCA - Lancaster Choice Energy	597	583	583	588	594	598	601	606	610	614	618	622	624	626	628	631	0.57%
	CCA - Orange County Power Authority	0	0	1,897	4,461	4,505	4,536	4,567	4,608	4,644	4,682	4,716	4,752	4,777	4,804	4,829	4,855	
	CCA - Pico Rivera Innovative Municipal Energy	226	222	223	225	227	229	230	232	233	235	236	238	239	240	241	242	0.64%
	CCA - Pomona Choice Energy	49	311	383	387	390	393	395	399	401	404	407	410	412	414	416	417	2.12%
	CCA - Rancho Mirage Energy Authority	284	278	278	280	283	284	286	288	289	291	292	294	294	295	296	297	0.47%
	CCA - San Jacinto Power	171	167	166	168	169	170	171	173	174	175	176	177	177	178	178	179	0.50%
	CCA - Santa Barbara Clean Energy	0	26	251	287	290	292	293	296	298	300	302	304	305	307	308	310	19.28%
	CCA - Western Community Energy	1,068	641	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Anaheim, City of	2,086	2,047	2,076	2,094	2,111	2,122	2,132	2,147	2,158	2,172	2,183	2,197	2,206	2,217	2,227	2,236	0.64%
	Anza Electric Cooperative, Inc.	76	74	74	74	75	75	76	77	77	78	78	78	79	79	79	79	0.52%
	Azusa Light and Water	245	239	242	243	245	246	247	249	250	251	252	253	254	255	255	256	0.48%
	Banning, City of	144	141	142	143	145	146	146	148	149	150	151	151	152	153	153	154	0.63%
	Bear Valley Electric Service	133	129	129	131	132	133	134	135	136	137	138	139	139	140	141	141	0.64%
	Cerritos, City of	59	60	60	60	61	61	61	62	62	62	62	63	63	63	64	64	0.50%
	Colton Public Utilities	349	342	346	349	352	354	356	358	360	362	364	366	368	370	371	373	0.62%
	Corona, City of	136	134	137	138	139	139	139	139	139	139	140	140	141	141	141	141	0.40%
	Industry, City of	36	35	37	37	37	37	38	38	38	38	39	39	39	40	40	40	0.91%
	Moreno Valley Electric Utility	204	200	203	205	207	208	209	211	212	214	215	217	219	220	221	223	0.78%
	Pasadena Water and Power	989	968	984	994	1,002	1,009	1,015	1,024	1,031	1,039	1,047	1,056	1,062	1,069	1,075	1,081	0.80%
	Rancho Cucamonga Municipal Utility	73	72	74	75	75	76	76	77	77	78	78	79	80	80	81	82	0.92%

Schedule 3: Form 1.1c - STATEWIDE

California Energy Demand 2021-2035 Forecast - Mid Baseline - AAEE Scenario 3 - AAFS Scenario 2

Electricity Deliveries to End Users by Agency (GWh)

Planning Area	Agency	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	Average Annual Growth (2021-2035)
	Riverside, City of	2,145	2,100	2,123	2,142	2,160	2,173	2,184	2,201	2,214	2,229	2,242	2,257	2,267	2,278	2,289	2,299	0.65%
	Vernon, City of	1,120	1,110	1,119	1,123	1,134	1,146	1,157	1,169	1,180	1,192	1,204	1,216	1,228	1,241	1,253	1,266	0.94%
	Victorville Municipal Utility Services	102	102	102	102	103	103	103	103	103	103	103	103	103	103	103	103	0.08%
	California Department of Water Resources	2,206	3,418	3,418	3,418	3,418	3,418	3,418	3,418	3,418	3,418	3,418	3,418	3,418	3,418	3,418	3,418	0.00%
	Metropolitan Water District of Southern California	1,630	1,715	1,715	1,715	1,715	1,715	1,715	1,715	1,715	1,715	1,715	1,715	1,715	1,715	1,715	1,715	0.00%
SCE Total		**95,227**	**94,638**	**95,570**	**96,329**	**97,094**	**97,560**	**98,005**	**98,645**	**99,106**	**99,626**	**100,083**	**100,637**	**100,972**	**101,365**	**101,722**	**102,081**	**0.54%**
SDG&E	San Diego Gas & Electric Company (Bundled)	13,999	10,463	7,275	4,441	3,814	3,806	3,806	3,809	3,809	3,822	3,838	3,861	3,878	3,900	3,917	3,930	-6.76%
	San Diego Gas & Electric Company (Direct Access)	3,391	3,940	3,940	3,940	3,940	3,940	3,940	3,940	3,940	3,940	3,940	3,940	3,940	3,940	3,940	3,940	0.00%
	CCA - Clean Energy Alliance	0	394	624	1,253	1,453	1,461	1,468	1,474	1,481	1,489	1,499	1,511	1,520	1,530	1,538	1,547	10.27%
	CCA - Solana Energy Alliance	57																
	CCA - San Diego Community Power	0	2,008	5,197	7,422	7,932	7,979	8,023	8,065	8,108	8,154	8,207	8,274	8,325	8,382	8,427	8,477	10.83%
SDG&E Total		**17,447**	**16,805**	**17,036**	**17,056**	**17,139**	**17,186**	**17,236**	**17,289**	**17,338**	**17,405**	**17,484**	**17,586**	**17,663**	**17,752**	**17,822**	**17,894**	**0.45%**
Northern California Non-California ISO (NCNC)	Sacramento Municipal Utility District	10,456	10,302	10,418	10,500	10,574	10,635	10,695	10,768	10,854	10,956	11,062	11,165	11,258	11,334	11,386	11,427	0.74%
	Modesto Irrigation District	2,587	2,598	2,620	2,634	2,646	2,654	2,663	2,673	2,683	2,690	2,694	2,689	2,691	2,693	2,692	2,688	0.24%
	Roseville Electric	1,150	1,155	1,165	1,171	1,176	1,180	1,184	1,188	1,192	1,196	1,198	1,195	1,196	1,197	1,197	1,195	0.24%
	Redding Electric Utility	707	710	717	720	723	726	728	731	733	735	737	735	736	736	736	735	0.24%
	Shasta Lake, City of	209	210	211	213	214	214	215	216	217	217	217	217	217	217	217	217	0.24%
	USBR WAPA Central Valley Project	289	289	289	289	289	289	289	289	289	289	289	289	289	289	289	289	0.00%
	Turlock Irrigation District	2,213	2,223	2,242	2,253	2,263	2,271	2,278	2,286	2,295	2,301	2,305	2,301	2,302	2,304	2,303	2,300	0.24%
	Merced Irrigation District	514	516	520	523	525	527	529	530	532	534	535	534	534	535	534	534	0.24%
NCNC Total		**18,126**	**18,003**	**18,183**	**18,303**	**18,410**	**18,496**	**18,580**	**18,681**	**18,796**	**18,917**	**19,037**	**19,126**	**19,225**	**19,306**	**19,354**	**19,385**	**0.53%**
LADWP	Los Angeles Department of Water and Power	**20,941**	**20,534**	**20,711**	**20,734**	**20,700**	**20,671**	**20,649**	**20,719**	**20,835**	**21,038**	**21,288**	**21,587**	**21,884**	**22,189**	**22,500**	**22,818**	**0.76%**
Burbank/Glendale (BUGL)	Burbank Water and Power	995	994	1,019	1,029	1,035	1,040	1,044	1,050	1,057	1,067	1,078	1,091	1,101	1,110	1,120	1,131	0.92%
	Glendale Water and Power	983	977	995	1,003	1,010	1,014	1,018	1,024	1,031	1,040	1,051	1,064	1,072	1,081	1,089	1,099	0.84%
BUGL Total		**1,978**	**1,972**	**2,014**	**2,032**	**2,045**	**2,054**	**2,063**	**2,073**	**2,088**	**2,108**	**2,129**	**2,154**	**2,173**	**2,191**	**2,210**	**2,229**	**0.88%**
IID	Imperial Irrigation District	**3,512**	**3,497**	**3,522**	**3,536**	**3,552**	**3,566**	**3,584**	**3,601**	**3,618**	**3,627**	**3,634**	**3,634**	**3,632**	**3,628**	**3,618**	**3,604**	**0.22%**
VEA (CA Territory)	Valley Electric Association, Inc.	**10**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**0.02%**
OTHER Total	Liberty Utilities	554	543	548	552	556	559	562	566	569	572	576	580	584	588	591	595	0.66%
	Needles, City of	61	60	61	61	62	62	62	63	63	64	64	64	65	65	66	66	0.66%
	PacifiCorp	762	747	755	760	765	770	774	779	783	788	793	799	804	809	814	819	0.66%
	Surprise Valley Electric Cooperative	112	110	111	112	112	113	114	114	115	116	117	117	118	119	120	120	0.66%
	Truckee Donner Public Utility District	159	156	158	159	160	161	162	163	164	165	166	167	168	169	170	171	0.66%
OTHER Total		**1,717**	**1,682**	**1,700**	**1,712**	**1,724**	**1,734**	**1,743**	**1,755**	**1,764**	**1,775**	**1,786**	**1,799**	**1,810**	**1,822**	**1,833**	**1,844**	**0.66%**
STATEWIDE Total		**248,363**	**243,357**	**245,911**	**247,617**	**249,419**	**250,764**	**252,171**	**253,806**	**255,118**	**256,710**	**258,355**	**260,280**	**261,824**	**263,514**	**265,112**	**266,784**	**0.66%**
Total Pumping Load		6,365	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	8,764	**0.00%**
STATEWIDE Total Excluding Pumping		**241,999**	**234,593**	**237,147**	**238,853**	**240,655**	**242,001**	**243,407**	**245,043**	**246,354**	**247,946**	**249,592**	**251,517**	**253,060**	**254,750**	**256,348**	**258,021**	**0.68%**

This table includes retail sales and other deliveries only measured at the customer level. Losses and consumption served by self-generation are excluded. Table developed based on actual 2019 data.

Table includes sales from entities outside of California control area. Thus, STATEWIDE Total in row 105 is higher than total given in STATEWIDE Form 1.1b.

Schedule 4
New Resources in California (Cumulative MW)

Year	Biogas & Biomass	Geothermal	Solar PV/Thermal	Wind	4-hr Energy Storage	8-hr Energy Storage	Demand Response	Total
2022	34	14	3,094	1,719	2,565	-	151	7,577
2023	65	114	6,549	1,741	4,604	-	151	13,224
2024	83	114	7,750	2,071	10,617	-	353	20,988
2025	107	114	11,000	3,553	12,553	-	441	27,768
2026	107	184	11,000	3,553	12,553	196	441	28,034
2027	107	184	11,000	3,553	12,553	196	441	28,034
2028	134	584	11,397	3,553	13,609	1,000	441	30,718
2029	134	584	12,927	5,053	13,609	1,000	441	33,748
2030	134	860	14,457	5,053	14,086	1,000	441	36,031
2031	134	860	16,670	5,053	14,086	1,000	441	38,244
2032	134	1,160	18,883	5,053	14,751	1,000	441	41,422
2033	134	1,160	18,883	5,053	14,751	1,000	441	41,422
2034	134	1,160	18,883	5,053	14,751	1,000	441	41,422
2035	134	1,160	18,883	5,053	14,751	1,000	441	41,422

Schedule 5
GHG Compliance Cost

Year	Nominal $/Ton
2022	$ 24.92
2023	$ 27.93
2024	$ 31.31
2025	$ 35.09
2026	$ 39.33
2027	$ 44.08
2028	$ 49.40
2029	$ 55.37
2030	$ 62.05
2031	$ 69.55
2032	$ 77.95
2033	$ 87.36
2034	$ 97.92
2035	$ 109.74

Note: CEC 2021 IEPR, Mid-Price scenario.

Schedule 6
OTC Schedule

Plants	Existing Capacity (MW)	SWRCB Approved Compliance Dates	Updated Compliance Dates	2022 CGR Compliance Dates
Humboldt Bay (1,2)	163	12/31/2010	9/30/2010	Offline
South Bay	708	12/31/2011	12/31/2010	Offline
Potrero (3)	206	10/1/2011	2/28/2011	Offline
Huntington Beach (3,4)	452	12/31/2020	11/1/2012	Offline
Contra Costa (6,7)	674	12/31/2017	4/30/2013	Offline
Haynes (5,6)	535	12/31/2013	6/1/2013	Offline
San Onofre (2,3)	2,246	12/31/2022	6/7/2013	Offline
El Segundo (3)	335	12/31/2015	7/27/2013	Offline
Morro Bay (3,4)	650	12/31/2015	2/5/2014	Offline
El Segundo (4)	335	12/31/2015	12/31/2015	Offline
Scattergood (3)	450	12/31/2015	12/31/2015	Offline
Moss Landing (6,7)	1,510	12/31/2020	12/31/2016	Offline
Pittsburg (5,6,7)	1,307	12/31/2017	12/31/2016	Offline
Encina (1)	104	12/31/2017	3/1/2017	Offline
Mandalay (1,2)	430	12/31/2020	2/5/2018	Offline
Encina (2)	104	12/31/2017	12/31/2018	Offline
Encina (3)	110	12/31/2017	12/31/2018	Offline
Encina (4,5)	628	12/31/2017	12/31/2018	Offline
Redondo (7)	493	12/31/2020	10/1/2019	Offline
Alamitos (1,2,6)	848	12/31/2020	12/31/2019	Offline
Huntington Beach (1)	226	12/31/2020	12/31/2019	Offline
Moss Landing (1,2)	1,020	12/31/2020	12/31/2020	Complied Track 2
Redondo (5,6,8)	850	12/31/2020	12/31/2023	12/31/2023
Alamitos (3,4,5)	1,163	12/31/2020	12/31/2023	12/31/2023
Huntington Beach (2)	226	12/31/2020	12/31/2023	12/31/2023
Ormond Beach (1,2)	1,516	12/31/2020	12/31/2023	12/31/2023
Diablo Canyon (1)	1,120	12/31/2024	11/2/2024	11/2/2024
Scattergood (1,2)	367	12/31/2024	12/31/2029	12/31/2024
Diablo Canyon (2)	1,120	12/31/2024	8/26/2025	8/26/2025
Harbor (5)	229	12/31/2029	12/31/2029	12/31/2029
Haynes (1,2)	444	12/31/2029	12/31/2029	12/31/2029
Haynes (8)	575	12/31/2029	12/31/2029	12/31/2029

Based on March 14, 2022 SACCWIS Report.

Schedule 7
Annual Base Case EG Throughput (BCF)
EG Including Large Cogen

Year	SDG&E	SoCalGas	Total
2022	32	189	221
2023	28	188	216
2024	23	168	192
2025	21	157	178
2026	21	153	173
2027	20	148	168
2028	19	138	157
2029	19	133	152
2030	18	124	142
2031	18	124	142
2032	17	118	135
2033	17	116	133
2034	18	114	132
2035	18	113	131

Schedule 8
Annual Dry Hydro EG Throughput (BCF)
EG Including Large Cogen

Year	SDG&E	SoCalGas	Total
2022	32	189	221
2023	28	189	218
2024	24	170	193
2025	21	160	181
2026	21	155	176
2027	21	151	172
2028	19	140	159
2029	20	136	155
2030	18	126	144
2031	18	125	144
2032	18	119	137
2033	18	118	136
2034	18	117	136
2035	20	118	138

Schedule 9

Base Case Winter Coincidental Peak Day Demand (MMCFD)

EG (Including Large Cogen)

Year	SDG&E	SoCalGas	Total
2022	96	521	616
2023	83	512	595
2024	73	479	552
2025	77	449	526
2026	82	430	512
2027	82	455	536
2028	57	422	479
2029	75	376	451
2030	75	346	421
2031	73	354	427
2032	72	340	412
2033	67	347	414
2034	60	349	408
2035	46	359	405

Schedule 10

Dry Hydro Summer Coincidental Peak Day Demand (MMCFD)

EG (Including Large Cogen)

Year	SDG&E	SoCalGas	Total
2022	163	870	1,033
2023	117	854	971
2024	88	683	771
2025	65	756	821
2026	108	762	870
2027	130	764	894
2028	95	721	816
2029	53	668	721
2030	63	501	563
2031	81	608	690
2032	60	575	635
2033	137	605	743
2034	211	640	850
2035	218	610	827

2022 CALIFORNIA GAS REPORT

INDUSTRIAL/COMMERCIAL COGENERATION < 20MW

SoCalGas
A Sempra Energy utility®

Small Cogeneration / Self-Generation (Capacity < 20 Mw) Gas Demand

INTRODUCTION

The gas demand forecast for small cogeneration / self-generation (capacity < 20 Mw) is based on an econometric relationship from analysis of annual historical data together with a monthly profile of how the annual consumption is split over the months of a year.

BASE EQUATION TO FORECAST ANNUAL DEMAND

The base forecast equation for annual demand is shown below:

LN(SmCoGen_MDth/yr) = 8.1913656+ LN(#Cust) x (0.3428311)
+ LN(G/E) x (-0.0794262), where

#Cust = Number of active meters/customers,
G =SCG's "EG tier1" Burner-Tip Price converted to ¢/Kwh
at 10,000 Btu/Kwh, and
E = SCE-Retail Ind Elec. Price. ¢/Kwh

The small cogeneration gas demand in a particular year is calculated as:

SmCoGen_MDth/yr = EXP[LN(SmCoGen_MDth/yr)].

For example, the calculation of small cogeneration gas demand for 2024 is as follows:

LN[SmCoGen_MDth/yr] = 8.1913656+LN(320)* 0.3428311
+ LN[(7.319161 ¢/Kwh)/(16.661679 ¢/Kwh)] x (-0.0794262)

LN[SmCoGen_MDth/yr] = 10.234263

(EXP[10.24835]) = 27840.9 MDth/yr

The table below shows the base annual small cogeneration gas demand forecast.

Base Annual Forecast of Small Cogeneration Gas Demand

Year	Annual Load (Mdth)	Cust cnt	LN(Ann. Mdth/Yr)	LN(Cust cnt)	LN (G/E)	Gas/Elec. (G/E) Price Ratio	SCE-Retail Ind Elec. Price	SCG's "EG tier1" Burner-Tip Price cnv. to ¢/Kw h
2022	27,543	320	10.223	5.768	-0.687	0.50	15.89	7.99
2023	27,763	320	10.231	5.768	-0.788	0.45	16.32	7.43
2024	27,841	320	10.234	5.768	-0.823	0.44	16.66	7.32
2025	28,044	320	10.242	5.768	-0.914	0.40	17.44	6.99
2026	28,109	320	10.244	5.768	-0.943	0.39	18.17	7.07
2027	28,138	320	10.245	5.768	-0.956	0.38	18.59	7.14
2028	28,211	320	10.247	5.768	-0.989	0.37	19.49	7.25
2029	28,258	320	10.249	5.768	-1.010	0.36	20.39	7.43
2030	28,291	320	10.250	5.768	-1.024	0.36	21.31	7.65
2031	28,310	320	10.251	5.768	-1.033	0.36	22.21	7.90
2032	28,324	320	10.251	5.768	-1.039	0.35	23.16	8.19
2033	28,361	320	10.253	5.768	-1.056	0.35	24.14	8.40
2034	28,397	320	10.254	5.768	-1.072	0.34	25.14	8.61
2035	28,415	320	10.255	5.768	-1.080	0.34	26.16	8.89

NONCORE SELF-GENERATION INCENTIVE PROGRAM (G-50, SGIP LOAD)

SoCalGas administers a program funded by the State of California to encourage customers to install small capacity electric generation equipment to generate electricity for the customer's own use (not for re-sale into the electric transmission & distribution grid). The table below shows the expected annual gas demand for the noncore (G-50) part of the SGIP:

Noncore SGIP Annual Forecast of Gas Demand

Year	G50 SGIP (Mdth)
2022	5.6
2023	11.2
2024	16.8
2025	22.4
2026	28.0
2027	33.6
2028	39.2
2029	44.8
2030	50.4
2031	56.0
2032	61.6
2033	67.2
2034	72.8
2035	78.4

MONTHLY PATTERN FOR TOTAL SMALL COGEN LOAD

This total annual small cogeneration gas demand was "allocated" into monthly load using the monthly proportions in the table below.

Month #	Month	Smoothed Monthly Load as % of Annual (2019-2021)
1	Jan	8.566%
2	Feb	7.216%
3	Mar	8.152%
4	Apr	7.936%
5	May	8.506%
6	Jun	8.407%
7	Jul	8.791%
8	Aug	8.996%
9	Sep	8.416%
10	Oct	8.230%
11	Nov	8.287%
12	Dec	8.496%
	Total	**100.000%**

FORECAST RESULTS

Based on the year 2024 example above together with the monthly percentages of annual total load in the table above, the August 2024 small cogeneration (G-50) gas demand is calculated as:

SmCoGen_G-50 = (27,840.9 MDth/yr, base forecast + 16.8 MDth/yr, from G-50 SGIP)
X (8.996%, monthly % of annual)
= 2,506 MDth

The tables below provide the small cogeneration annual and monthly gas demand forecasts. Recorded data are for year 2021, while forecasts cover years from 2022 through 2035.

Annual Small Cogeneration / Self-Generation (C&I) Gas Demand: Recorded (2021) and Forecast (2022-2035) (MDth)

Year	Small Cogen (C&I) (G-50) Gas Demand (MDth)
2021	26,174
2022	27,548
2023	27,775
2024	27,858
2025	28,066
2026	28,137
2027	28,171
2028	28,250
2029	28,303
2030	28,341
2031	28,366
2032	28,385
2033	28,429
2034	28,470
2035	28,493

Monthly Small Cogeneration / Self-Generation (C&I) Gas Demand: Recorded (2021) and Forecast (2022-2035) (MDth)

Year	Month	Small Cogen (C&I) (G-50) Gas Demand (MDth)
2021	Jan-21	2,242
2021	Feb-21	1,889
2021	Mar-21	2,134
2021	Apr-21	2,077
2021	May-21	2,226
2021	Jun-21	2,201
2021	Jul-21	2,301
2021	Aug-21	2,355
2021	Sep-21	2,203
2021	Oct-21	2,154
2021	Nov-21	2,169
2021	Dec-21	2,224
2022	Jan-22	2,360
2022	Feb-22	1,988
2022	Mar-22	2,246
2022	Apr-22	2,186
2022	May-22	2,343
2022	Jun-22	2,316
2022	Jul-22	2,422
2022	Aug-22	2,478
2022	Sep-22	2,318
2022	Oct-22	2,267
2022	Nov-22	2,283
2022	Dec-22	2,341
2023	Jan-23	2,379
2023	Feb-23	2,004
2023	Mar-23	2,264
2023	Apr-23	2,204
2023	May-23	2,363
2023	Jun-23	2,335
2023	Jul-23	2,442
2023	Aug-23	2,499
2023	Sep-23	2,337
2023	Oct-23	2,286
2023	Nov-23	2,302
2023	Dec-23	2,360
2024	Jan-24	2,386
2024	Feb-24	2,010
2024	Mar-24	2,271
2024	Apr-24	2,211
2024	May-24	2,370
2024	Jun-24	2,342
2024	Jul-24	2,449
2024	Aug-24	2,506
2024	Sep-24	2,344
2024	Oct-24	2,293
2024	Nov-24	2,308
2024	Dec-24	2,367
2025	Jan-25	2,404
2025	Feb-25	2,025
2025	Mar-25	2,288
2025	Apr-25	2,227
2025	May-25	2,387
2025	Jun-25	2,360
2025	Jul-25	2,467
2025	Aug-25	2,525
2025	Sep-25	2,362
2025	Oct-25	2,310
2025	Nov-25	2,326
2025	Dec-25	2,385

**Monthly Small Cogeneration / Self-Generation (C&I) Gas Demand:
Recorded (2021) and
Forecast (2022-2035) (MDth)**

Year	Month	Small Cogen (C&I) (G-50) Gas Demand (MDth)
2026	Jan-26	2,410
2026	Feb-26	2,031
2026	Mar-26	2,294
2026	Apr-26	2,233
2026	May-26	2,393
2026	Jun-26	2,366
2026	Jul-26	2,474
2026	Aug-26	2,531
2026	Sep-26	2,368
2026	Oct-26	2,316
2026	Nov-26	2,332
2026	Dec-26	2,391
2027	Jan-27	2,413
2027	Feb-27	2,033
2027	Mar-27	2,297
2027	Apr-27	2,236
2027	May-27	2,396
2027	Jun-27	2,368
2027	Jul-27	2,476
2027	Aug-27	2,534
2027	Sep-27	2,371
2027	Oct-27	2,318
2027	Nov-27	2,334
2027	Dec-27	2,394
2028	Jan-28	2,420
2028	Feb-28	2,039
2028	Mar-28	2,303
2028	Apr-28	2,242
2028	May-28	2,403
2028	Jun-28	2,375
2028	Jul-28	2,483
2028	Aug-28	2,541
2028	Sep-28	2,377
2028	Oct-28	2,325
2028	Nov-28	2,341
2028	Dec-28	2,400
2029	Jan-29	2,424
2029	Feb-29	2,042
2029	Mar-29	2,307
2029	Apr-29	2,246
2029	May-29	2,407
2029	Jun-29	2,379
2029	Jul-29	2,488
2029	Aug-29	2,546
2029	Sep-29	2,382
2029	Oct-29	2,329
2029	Nov-29	2,345
2029	Dec-29	2,405
2030	Jan-30	2,428
2030	Feb-30	2,045
2030	Mar-30	2,311
2030	Apr-30	2,249
2030	May-30	2,411
2030	Jun-30	2,383
2030	Jul-30	2,491
2030	Aug-30	2,549
2030	Sep-30	2,385
2030	Oct-30	2,332
2030	Nov-30	2,349
2030	Dec-30	2,408

Monthly Small Cogeneration / Self-Generation (C&I) Gas Demand:
Recorded (2021) and
Forecast (2022-2035) (MDth)

Year	Month	Small Cogen (C&I) (G-50) Gas Demand (MDth)
2031	Jan-31	2,430
2031	Feb-31	2,047
2031	Mar-31	2,313
2031	Apr-31	2,251
2031	May-31	2,413
2031	Jun-31	2,385
2031	Jul-31	2,494
2031	Aug-31	2,552
2031	Sep-31	2,387
2031	Oct-31	2,335
2031	Nov-31	2,351
2031	Dec-31	2,410
2032	Jan-32	2,432
2032	Feb-32	2,048
2032	Mar-32	2,314
2032	Apr-32	2,253
2032	May-32	2,414
2032	Jun-32	2,386
2032	Jul-32	2,495
2032	Aug-32	2,553
2032	Sep-32	2,389
2032	Oct-32	2,336
2032	Nov-32	2,352
2032	Dec-32	2,412
2033	Jan-33	2,435
2033	Feb-33	2,052
2033	Mar-33	2,318
2033	Apr-33	2,256
2033	May-33	2,418
2033	Jun-33	2,390
2033	Jul-33	2,499
2033	Aug-33	2,557
2033	Sep-33	2,392
2033	Oct-33	2,340
2033	Nov-33	2,356
2033	Dec-33	2,415
2034	Jan-34	2,439
2034	Feb-34	2,055
2034	Mar-34	2,321
2034	Apr-34	2,260
2034	May-34	2,422
2034	Jun-34	2,394
2034	Jul-34	2,503
2034	Aug-34	2,561
2034	Sep-34	2,396
2034	Oct-34	2,343
2034	Nov-34	2,359
2034	Dec-34	2,419
2035	Jan-35	2,441
2035	Feb-35	2,056
2035	Mar-35	2,323
2035	Apr-35	2,261
2035	May-35	2,424
2035	Jun-35	2,395
2035	Jul-35	2,505
2035	Aug-35	2,563
2035	Sep-35	2,398
2035	Oct-35	2,345
2035	Nov-35	2,361
2035	Dec-35	2,421

2022 CALIFORNIA GAS REPORT

INDUSTRIAL/COMMERCIAL COGENERATION > 20MW

PLEASE REFER TO THE NON-COGENERATION EG SECTION OF THE WORKPAPERS FOR THE DESCRIPTION OF THE DETAILS FOR THE INDUSTRIAL/COMMERCIAL COGEN MARKET.

2022 CALIFORNIA GAS REPORT

ENHANCED OIL RECOVERY-RELATED COGENERATION

Enhanced Oil Recovery-Related Cogeneration

2022 CALIFORNIA GAS REPORT WORKPAPERS

Please refer to pages 468-469 for details about the enhanced oil recovery market.

2022 CALIFORNIA GAS REPORT

REFINERY RELATED COGENERATION

PLEASE SEE THE DISCUSSION UNDER “REFINERIES” FOR THE REFINERY-RELATED COGENERATION DEMAND.

2022 CALIFORNIA GAS REPORT

WHOLESALE AND INTERNATIONAL REQUIREMENTS

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2022 CALIFORNIA GAS REPORT

SAN DIEGO GAS & ELECTRIC COMPANY

FOR DETAILS ABOUT SDG&E PLEASE REFER TO THE 2022 CALIFORNIA GAS REPORT WORKPAPERS FILED SEPARATELY BY SAN DIEGO GAS & ELECTRIC COMPANY

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2022 CALIFORNIA GAS REPORT

LONG BEACH GAS ENERGY RESOURCES DEPARTMENT

The workpapers for Long Beach Oil and Gas have been redacted in this version.

2022 CALIFORNIA GAS REPORT

SOUTHWEST GAS CORPORATION

The workpapers for Southwest Gas have been redacted in this version.

2022 CALIFORNIA GAS REPORT

CITY OF VERNON

The workpapers for the City of Vernon have been redacted in this version.

2022 CALIFORNIA GAS REPORT

ECOGAS MEXICO

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2022 CALIFORNIA GAS REPORT

CORE PEAK DAY FORECAST

SoCalGas Monthly Heating Degree Day (HDD) Weather Designs (Calendar Based)					
	Cold			Hot	
Month	1-in-35 Design	1-in-10 Design	Average	1-in-10 Design	1-in-35 Design
Jan-2021	302.3	286.4	255.6	224.9	208.9
Feb-2021	259.0	245.3	219.0	192.7	179.0
Mar-2021	197.3	186.9	166.9	146.8	136.4
Apr-2021	122.0	115.5	103.1	90.7	84.3
May-2021	56.0	53.0	47.3	41.6	38.7
Jun-2021	11.5	10.9	9.7	8.5	7.9
Jul-2021	2.4	2.3	2.1	1.8	1.7
Aug-2021	2.1	2.0	1.8	1.5	1.4
Sep-2021	5.3	5.0	4.5	4.0	3.7
Oct-2021	36.0	34.1	30.5	26.8	24.9
Nov-2021	146.6	138.8	123.9	109.0	101.3
Dec-2021	335.5	317.7	283.6	249.5	231.8
Jan-2022	301.1	285.1	254.4	223.7	207.7
Feb-2022	258.0	244.3	218.0	191.6	178.0
Mar-2022	196.5	186.1	166.1	146.0	135.6
Apr-2022	121.5	115.0	102.6	90.2	83.8
May-2022	55.7	52.8	47.1	41.4	38.4
Jun-2022	11.4	10.8	9.7	8.5	7.9
Jul-2022	2.4	2.3	2.0	1.8	1.7
Aug-2022	2.1	2.0	1.7	1.5	1.4
Sep-2022	5.3	5.0	4.5	3.9	3.7
Oct-2022	35.9	34.0	30.3	26.7	24.7
Nov-2022	146.0	138.2	123.3	108.4	100.7
Dec-2022	334.1	316.4	282.3	248.2	230.5
Jan-2023	299.9	283.9	253.2	222.4	206.5
Feb-2023	256.9	243.2	216.9	190.6	176.9
Mar-2023	195.7	185.3	165.2	145.2	134.8
Apr-2023	121.0	114.5	102.1	89.7	83.3
May-2023	55.5	52.5	46.9	41.2	38.2
Jun-2023	11.4	10.8	9.6	8.4	7.8
Jul-2023	2.4	2.3	2.0	1.8	1.7
Aug-2023	2.1	1.9	1.7	1.5	1.4
Sep-2023	5.3	5.0	4.5	3.9	3.6
Oct-2023	35.7	33.8	30.2	26.5	24.6
Nov-2023	145.4	137.6	122.7	107.9	100.1
Dec-2023	332.7	315.0	280.9	246.8	229.1
Jan-2024	298.6	282.7	251.9	221.2	205.2
Feb-2024	255.9	242.2	215.9	189.5	175.8
Mar-2024	194.9	184.5	164.4	144.4	134.0
Apr-2024	120.5	114.0	101.6	89.2	82.8
May-2024	55.3	52.3	46.6	40.9	38.0
Jun-2024	11.3	10.7	9.6	8.4	7.8
Jul-2024	2.4	2.3	2.0	1.8	1.6
Aug-2024	2.0	1.9	1.7	1.5	1.4
Sep-2024	5.3	5.0	4.4	3.9	3.6
Oct-2024	35.6	33.7	30.0	26.4	24.5
Nov-2024	144.8	137.0	122.2	107.3	99.5
Dec-2024	331.4	313.6	279.5	245.5	227.7
Jan-2025	297.4	281.4	250.7	220.0	204.0
Feb-2025	254.8	241.1	214.8	188.5	174.8
Mar-2025	194.1	183.7	163.6	143.6	133.2
Apr-2025	120.0	113.5	101.1	88.8	82.3
May-2025	55.0	52.1	46.4	40.7	37.8
Jun-2025	11.3	10.7	9.5	8.4	7.7
Jul-2025	2.4	2.3	2.0	1.8	1.6
Aug-2025	2.0	1.9	1.7	1.5	1.4

SoCalGas Monthly Heating Degree Day (HDD) Weather Designs (Calendar Based)					
Month	Cold		Average	Hot	
	1-in-35 Design	1-in-10 Design		1-in-10 Design	1-in-35 Design
Sep-2025	5.2	5.0	4.4	3.9	3.6
Oct-2025	35.4	33.5	29.9	26.2	24.3
Nov-2025	144.2	136.5	121.6	106.7	98.9
Dec-2025	330.0	312.3	278.2	244.1	226.4
Jan-2026	296.2	280.2	249.5	218.8	202.8
Feb-2026	253.8	240.1	213.8	187.4	173.7
Mar-2026	193.3	182.9	162.8	142.8	132.4
Apr-2026	119.5	113.0	100.7	88.3	81.8
May-2026	54.8	51.9	46.2	40.5	37.5
Jun-2026	11.2	10.6	9.5	8.3	7.7
Jul-2026	2.4	2.2	2.0	1.8	1.6
Aug-2026	2.0	1.9	1.7	1.5	1.4
Sep-2026	5.2	4.9	4.4	3.9	3.6
Oct-2026	35.3	33.4	29.7	26.1	24.2
Nov-2026	143.6	135.9	121.0	106.1	98.3
Dec-2026	328.6	310.9	276.8	242.7	225.0
Jan-2027	295.0	279.0	248.3	217.5	201.6
Feb-2027	252.7	239.0	212.7	186.4	172.7
Mar-2027	192.5	182.1	162.0	142.0	131.6
Apr-2027	119.0	112.6	100.2	87.8	81.3
May-2027	54.6	51.6	46.0	40.3	37.3
Jun-2027	11.2	10.6	9.4	8.3	7.7
Jul-2027	2.4	2.2	2.0	1.7	1.6
Aug-2027	2.0	1.9	1.7	1.5	1.4
Sep-2027	5.2	4.9	4.4	3.8	3.5
Oct-2027	35.1	33.2	29.6	25.9	24.0
Nov-2027	143.0	135.3	120.4	105.5	97.7
Dec-2027	327.3	309.6	275.5	241.4	223.6
Jan-2028	293.7	277.8	247.0	216.3	200.3
Feb-2028	251.7	238.0	211.6	185.3	171.6
Mar-2028	191.7	181.3	161.2	141.2	130.8
Apr-2028	118.5	112.1	99.7	87.3	80.8
May-2028	54.4	51.4	45.7	40.0	37.1
Jun-2028	11.1	10.5	9.4	8.2	7.6
Jul-2028	2.4	2.2	2.0	1.7	1.6
Aug-2028	2.0	1.9	1.7	1.5	1.4
Sep-2028	5.2	4.9	4.3	3.8	3.5
Oct-2028	35.0	33.1	29.4	25.8	23.9
Nov-2028	142.4	134.7	119.8	104.9	97.1
Dec-2028	325.9	308.2	274.1	240.0	222.3
Jan-2029	292.5	276.5	245.8	215.1	199.1
Feb-2029	250.6	236.9	210.6	184.3	170.6
Mar-2029	190.9	180.5	160.4	140.4	130.0
Apr-2029	118.0	111.6	99.2	86.8	80.3
May-2029	54.1	51.2	45.5	39.8	36.9
Jun-2029	11.1	10.5	9.3	8.2	7.6
Jul-2029	2.3	2.2	2.0	1.7	1.6
Aug-2029	2.0	1.9	1.7	1.5	1.4
Sep-2029	5.2	4.9	4.3	3.8	3.5
Oct-2029	34.9	32.9	29.3	25.6	23.7
Nov-2029	141.8	134.1	119.2	104.3	96.5
Dec-2029	324.6	306.8	272.7	238.6	220.9
Jan-2030	291.3	275.3	244.6	213.8	197.9
Feb-2030	249.6	235.9	209.5	183.2	169.5
Mar-2030	190.1	179.7	159.6	139.6	129.2
Apr-2030	117.5	111.1	98.7	86.3	79.8

SoCalGas Monthly Heating Degree Day (HDD) Weather Designs (Calendar Based)					
	Cold			Hot	
Month	1-in-35 Design	1-in-10 Design	Average	1-in-10 Design	1-in-35 Design
May-2030	53.9	51.0	45.3	39.6	36.6
Jun-2030	11.1	10.4	9.3	8.1	7.5
Jul-2030	2.3	2.2	2.0	1.7	1.6
Aug-2030	2.0	1.9	1.7	1.5	1.4
Sep-2030	5.1	4.8	4.3	3.8	3.5
Oct-2030	34.7	32.8	29.1	25.5	23.6
Nov-2030	141.2	133.5	118.6	103.7	95.9
Dec-2030	323.2	305.5	271.4	237.3	219.5
Jan-2031	290.0	274.1	243.3	212.6	196.6
Feb-2031	248.5	234.8	208.5	182.2	168.5
Mar-2031	189.3	178.9	158.8	138.8	128.3
Apr-2031	117.0	110.6	98.2	85.8	79.3
May-2031	53.7	50.7	45.0	39.4	36.4
Jun-2031	11.0	10.4	9.2	8.1	7.5
Jul-2031	2.3	2.2	2.0	1.7	1.6
Aug-2031	2.0	1.9	1.7	1.5	1.3
Sep-2031	5.1	4.8	4.3	3.7	3.5
Oct-2031	34.6	32.7	29.0	25.3	23.4
Nov-2031	140.6	132.9	118.0	103.1	95.3
Dec-2031	321.8	304.1	270.0	235.9	218.2
Jan-2032	288.8	272.8	242.1	211.4	195.4
Feb-2032	247.5	233.8	207.4	181.1	167.4
Mar-2032	188.5	178.1	158.0	138.0	127.5
Apr-2032	116.5	110.1	97.7	85.3	78.8
May-2032	53.5	50.5	44.8	39.1	36.2
Jun-2032	11.0	10.4	9.2	8.0	7.4
Jul-2032	2.3	2.2	1.9	1.7	1.6
Aug-2032	2.0	1.9	1.7	1.4	1.3
Sep-2032	5.1	4.8	4.3	3.7	3.4
Oct-2032	34.4	32.5	28.8	25.2	23.3
Nov-2032	140.0	132.3	117.4	102.5	94.7
Dec-2032	320.5	302.7	268.6	234.5	216.8
Jan-2033	287.6	271.6	240.9	210.2	194.2
Feb-2033	246.4	232.7	206.4	180.1	166.4
Mar-2033	187.7	177.3	157.2	137.2	126.7
Apr-2033	116.0	109.6	97.2	84.8	78.3
May-2033	53.2	50.3	44.6	38.9	35.9
Jun-2033	10.9	10.3	9.1	8.0	7.4
Jul-2033	2.3	2.2	1.9	1.7	1.6
Aug-2033	2.0	1.9	1.6	1.4	1.3
Sep-2033	5.1	4.8	4.2	3.7	3.4
Oct-2033	34.3	32.4	28.7	25.0	23.1
Nov-2033	139.4	131.7	116.8	101.9	94.1
Dec-2033	319.1	301.4	267.3	233.2	215.5
Jan-2034	286.4	270.4	239.7	208.9	193.0
Feb-2034	245.3	231.7	205.3	179.0	165.3
Mar-2034	186.9	176.5	156.4	136.4	125.9
Apr-2034	115.5	109.1	96.7	84.3	77.8
May-2034	53.0	50.0	44.4	38.7	35.7
Jun-2034	10.9	10.3	9.1	7.9	7.3
Jul-2034	2.3	2.2	1.9	1.7	1.5
Aug-2034	2.0	1.9	1.6	1.4	1.3
Sep-2034	5.0	4.8	4.2	3.7	3.4
Oct-2034	34.1	32.2	28.6	24.9	23.0
Nov-2034	138.8	131.1	116.2	101.3	93.6
Dec-2034	317.7	300.0	265.9	231.8	214.1

SoCalGas Monthly Heating Degree Day (HDD) Weather Designs
(Calendar Based)

Month	Cold		Average	Hot	
	1-in-35 Design	1-in-10 Design		1-in-10 Design	1-in-35 Design
Jan-2035	285.1	269.2	238.4	207.7	191.7
Feb-2035	244.3	230.6	204.3	178.0	164.3
Mar-2035	186.1	175.7	155.6	135.6	125.1
Apr-2035	115.0	108.6	96.2	83.8	77.3
May-2035	52.8	49.8	44.1	38.4	35.5
Jun-2035	10.8	10.2	9.1	7.9	7.3
Jul-2035	2.3	2.2	1.9	1.7	1.5
Aug-2035	2.0	1.8	1.6	1.4	1.3
Sep-2035	5.0	4.7	4.2	3.7	3.4
Oct-2035	34.0	32.1	28.4	24.7	22.8
Nov-2035	138.2	130.5	115.6	100.7	93.0
Dec-2035	316.4	298.6	264.5	230.5	212.7

SoCalGas Annual Heating Degree Day (HDD) Weather Designs (Calendar Based)					
Year	Cold		Average	Hot	
	1-in-35 Design	1-in-10 Design		1-in-10 Design	1-in-35 Design
2021	1,476	1,398	1,248	1,098	1,020
2022	1,470	1,392	1,242	1,092	1,014
2023	1,464	1,386	1,236	1,086	1,008
2024	1,458	1,380	1,230	1,080	1,002
2025	1,452	1,374	1,224	1,074	996
2026	1,446	1,368	1,218	1,068	990
2027	1,440	1,362	1,212	1,062	984
2028	1,434	1,356	1,206	1,056	978
2029	1,428	1,350	1,200	1,050	972
2030	1,422	1,344	1,194	1,044	966
2031	1,416	1,338	1,188	1,038	960
2032	1,410	1,332	1,182	1,032	954
2033	1,404	1,326	1,176	1,026	948
2034	1,398	1,320	1,170	1,020	942
2035	1,392	1,314	1,164	1,014	936

2022-CGR Sales + Transport + Exchange for Month of DECEMBER
(units=Mdth/Day)
"1-in-2" Likelihood Cold Day Temperature

No. "CGR_B"	CLASS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035
		----	----	----	----	----	----	----	----	----	----	----
1	RESIDEN	1936.8	1918.5	1895.9	1868.8	1838.5	1809.5	1779.4	1748.4	1716.7	1683.7	1517.5
2	Com G10	419.6	419.5	408.3	398.2	389.0	380.8	372.9	365.0	357.9	350.6	318.4
2	GAC 2/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	GEN 2/	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
3	Ind G10	72.2	70.6	69.7	68.3	67.0	65.8	64.9	63.8	62.7	61.7	57.4
4	NGV 2/	43.5	44.3	45.2	46.2	47.3	48.5	49.8	51.1	52.5	53.9	59.3
		======	======	======	======	======	======	======	======	======	======	======
Total:	MDth/day	2475.0	2455.8	2421.9	2384.4	2344.7	2307.6	2269.9	2231.1	2192.8	2152.9	1955.4
	MMcf/day 4/	2397.7	2379.2	2346.4	2310.0	2271.6	2235.6	2199.0	2161.5	2124.4	2085.8	1894.4
	Days per Mo	31	31	31	31	31	31	31	31	31	31	31
	Pk-Day Temp. (deg-F) =	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7
	Hdd: December--AvgYr =	283.6	282.3	280.9	279.5	278.2	276.8	275.5	274.1	272.7	271.4	264.5
	Hdd: December--ColdYr =	335.5	334.1	332.7	331.4	330.0	328.6	327.3	325.9	324.6	323.2	316.4
	"Wkday/Wkend" Factor-Res:	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	"Wkday/Wkend" Factor-NonRes:	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Use this Methodology for the 2022-CGR Res and C&I Calculations

Notes:

1/ =("Avg-Dec" / 31 days) + {[("Cold-Dec" - "Avg-Dec") / ("Cold-Dec-Hdd" - "Avg-Dec-Hdd")]
* [(65 degF - 45.7 degF) - (Avg-Dec-Hdd / 31 days)]}

2/ "Non-temperature" sensitive market segment.

3/ "Weekday/Weekend" Factor applies to the "raw" estimate.

4/ Dth/Mcf= 1.0322

2022-CGR Sales + Transport + Exchange for Month of DECEMBER
(units=Mdth/Day)
"1-in-10" Likelihood Cold Day Temperature

No. "CGR_B"	CLASS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035
		----	----	----	----	----	----	----	----	----	----	----
1	RESIDEN	2229.5	2206.1	2178.6	2146.6	2111.5	2077.8	2043.1	2007.5	1971.3	1934.0	1746.8
2	Com G10	465.6	467.5	455.2	444.2	434.0	424.9	416.1	407.4	399.5	391.4	355.1
2	GAC 2/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	GEN 2/	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
3	Ind G10	76.7	75.0	74.0	72.6	71.2	70.0	69.0	67.8	66.7	65.6	60.9
4	NGV 2/	43.5	44.3	45.2	46.2	47.3	48.5	49.8	51.1	52.5	53.9	59.3
		======	======	======	======	======	======	======	======	======	======	======
Total:	MDth/day	2818.2	2795.9	2756.0	2712.5	2666.9	2624.1	2580.9	2536.7	2492.9	2447.8	2225.1
	MMcf/day 4/	2730.3	2708.7	2670.0	2627.9	2583.7	2542.3	2500.4	2457.6	2415.2	2371.4	2155.6
	Days per Mo	31	31	31	31	31	31	31	31	31	31	31
Pk-Day Temp. (deg-F) =		42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2	42.2
Hdd: December--AvgYr =		283.6	282.3	280.9	279.5	278.2	276.8	275.5	274.1	272.7	271.4	264.5
Hdd: December--ColdYr =		335.5	334.1	332.7	331.4	330.0	328.6	327.3	325.9	324.6	323.2	316.4
"Wkday/Wkend" Factor-Res:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
"Wkday/Wkend" Factor-NonRes:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Use this Methodology for the 2022-CGR Res and C&I Calculations

Notes:

1/ =("Avg-Dec" / 31 days) + {[("Cold-Dec" - "Avg-Dec") / ("Cold-Dec-Hdd" - "Avg-Dec-Hdd")]
* [(65 degF - 42.2 degF) - (Avg-Dec-Hdd / 31 days)]}

2/ "Non-temperature" sensitive market segment.

3/ "Weekday/Weekend" Factor applies to the "raw" estimate.

4/ Dth/Mcf= 1.0322

2022-CGR Sales + Transport + Exchange for Month of DECEMBER
(units=Mdth/Day)
"1-in-35" Likelihood Cold Day Temperature

No. "CGR_B"	CLASS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035
		----	----	----	----	----	----	----	----	----	----	----
1	RESIDEN	2371.7	2345.8	2315.9	2281.5	2244.1	2208.1	2171.1	2133.3	2095.0	2055.5	1858.2
2	Com G10	488.0	490.8	478.1	466.6	455.9	446.4	437.2	428.0	419.7	411.2	372.9
2	GAC 2/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	GEN 2/	2.8	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
3	Ind G10	78.9	77.2	76.2	74.7	73.2	72.0	70.9	69.8	68.6	67.5	62.7
4	NGV 2/	43.5	44.3	45.2	46.2	47.3	48.5	49.8	51.1	52.5	53.9	59.3
		======	======	======	======	======	======	======	======	======	======	======
Total:	MDth/day	2984.9	2961.1	2918.2	2871.9	2823.4	2777.9	2731.9	2685.1	2638.7	2591.0	2356.0
	MMcf/day 4/	2891.8	2868.7	2827.2	2782.3	2735.4	2691.2	2646.7	2601.3	2556.4	2510.2	2282.5
	Days per Mo	31	31	31	31	31	31	31	31	31	31	31
Pk-Day Temp. (deg-F) =		40.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5
Hdd: December--AvgYr =		283.6	282.3	280.9	279.5	278.2	276.8	275.5	274.1	272.7	271.4	264.5
Hdd: December--ColdYr =		335.5	334.1	332.7	331.4	330.0	328.6	327.3	325.9	324.6	323.2	316.4
"Wkday/Wkend" Factor-Res:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
"Wkday/Wkend" Factor-NonRes:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Use this Methodology for the 2022-CGR Res and C&I Calculations

Notes:

1/ =("Avg-Dec" / 31 days) + {[("Cold-Dec" - "Avg-Dec") / ("Cold-Dec-Hdd" - "Avg-Dec-Hdd")]
* [(65 degF - 40.5 degF) - (Avg-Dec-Hdd / 31 days)]}

2/ "Non-temperature" sensitive market segment.

3/ "Weekday/Weekend" Factor applies to the "raw" estimate.

4/ Dth/Mcf = 1.0322

2022-CGR Sales + Transport + Exchange for Month of DECEMBER
(units=Mdth/Day)
Temp=December, Average Year

No.	"CGR_CLASS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035
		----	----	----	----	----	----	----	----	----	----	----
1	Residen	33726.4	33500.1	33138.7	32633.4	32025.6	31453.9	30844.2	30199.9	29533.5	28823.9	25173.6
2	Com G10	8871.6	8671.4	8396.3	8157.8	7942.5	7751.3	7567.2	7382.9	7223.0	7061.3	6367.0
2	GAC	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
2	GEN	86.4	89.8	89.8	89.8	89.8	89.8	89.8	89.8	89.8	89.8	89.8
3	Ind G10	1830.2	1786.0	1762.9	1724.4	1688.5	1658.6	1633.3	1604.8	1576.7	1549.6	1437.1
4	NGV	1349.7	1373.4	1400.7	1432.2	1466.3	1502.4	1542.3	1584.3	1628.2	1671.8	1838.0
		======	======	======	======	======	======	======	======	======	======	======
		45865	45422	44789	44038	43214	42457	41678	40863	40052	39197	34906

2022-CGR Sales + Transport + Exchange for Month of DECEMBER
(units=Mdth/Day)
Temp=December, Cold Year

No. "CGR_ CLASS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035
	----	----	----	----	----	----	----	----	----	----	----
1 Residen	38060.0	37758.8	37323.8	36746.3	36067.4	35425.9	34747.6	34035.8	33303.1	32528.5	28568.9
2 Com G10	9552.8	9381.9	9091.8	8838.5	8608.9	8404.6	8207.9	8011.2	7839.1	7664.8	6910.7
2 GAC	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
2 GEN	86.4	89.8	89.8	89.8	89.8	89.8	89.8	89.8	89.8	89.8	89.8
3 Ind G10	1897.2	1852.0	1827.7	1788.1	1751.2	1720.2	1693.9	1664.4	1635.3	1607.2	1490.0
4 NGV	1349.7	1373.4	1400.7	1432.2	1466.3	1502.4	1542.3	1584.3	1628.2	1671.8	1838.0
	======	======	======	======	======	======	======	======	======	======	======
	50947	50457	49735	48896	47985	47144	46282	45386	44497	43563	38898
Mdth/Hdd	98.1	97.2	95.4	93.7	92.1	90.4	88.9	87.3	85.8	84.2	77.0

2022 CALIFORNIA GAS REPORT

SUPPORTING DATA

SoCalGas

A Sempra Energy utility®

2022 CALIFORNIA GAS REPORT

WEATHER

HEATING DEGREE DAYS – AVERAGE AND “COLD” YEAR DESIGNS AND WINTER PEAK DAY DESIGN TEMPERATURES

Weather for SoCalGas: Heating Degree Days –Average and Cold Year Designs; and Winter Peak Day Design Temperatures

July 2022

I. Overview

Southern California Gas Company's service area extends from Fresno County to the Mexican border. To quantify the overall temperature experienced within this region, SoCalGas aggregates daily temperature recordings from fifteen U.S. Weather Bureau weather stations first into six temperature zones and then into one system average heating degree-day ("HDD") figure. The table below lists weather station locations by temperature zones.

Table 1

Weather Stations by Temperature Zones and Weights

Temperature Zone	Weight	Station (After 10/31/2002)	Station (Before 11/1/2002)
1. High mountain	0.0057	Big Bear Lake	Lake Arrowhead
2. Low desert	0.0386	Palm Springs El Centro	Palm Springs Brawley
3. Coastal	0.1821	Los Angeles Airport Newport Beach Santa Barbara Airport	Los Angeles Airport Newport Beach Harbor Santa Barbara Airport
4. High desert	0.0722	Bakersfield Lancaster Airport Fresno	Bakersfield Airport Palmdale Visalia
5. Interior valleys	0.3819	Burbank Pasadena Ontario Rialto	Burbank Pasadena Pomona Cal Poly Redlands
6. Basin	0.3195	Los Angeles Civic Center Santa Ana	Los Angeles Civic Center/ Downtown-USC Santa Ana

SoCalGas uses 65° Fahrenheit to calculate the number of HDDs. One heating degree day is accumulated for each degree that the daily average is below 65° Fahrenheit. To arrive at the HDD figure for each temperature zone, SoCalGas uses the simple average of the weather station HDDs in that temperature zone. To arrive at the system average HDDs figure for its entire service area, SoCalGas weights the HDD figure for each zone using the proportion of gas customers within each temperature zone based on December 2021 customer counts. These weights have been used in calculating the data shown from January 2002 to December 2021.

Daily weather temperatures are from the National Climatic Data Center or from preliminary data that SoCalGas captures each day and posts on its internal Company server directory at \\ap-ewerep-p01\weather\b_detail\ for various individual weather stations as well as for its system average values of HDD. Annual HDDs for the entire service area from 2002 to 2021 are listed in Table 2, below.

Table 2

Calendar Month Heating Degree-Days (Jan. 2002 through Dec. 2021)

	Month												Total
Year	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**"Cal-Year"**
2002	334	202	226	148	78	10	2	4	8	77	92	315	**1496**
2003	141	232	166	180	74	17	1	1	3	16	200	306	**1337**
2004	292	301	86	85	17	8	3	2	4	73	227	292	**1390**
2005	287	208	176	115	35	11	4	1	9	44	99	235	**1224**
2006	272	200	338	162	28	3	0	1	5	36	104	278	**1427**
2007	347	214	125	117	50	16	1	1	12	37	126	353	**1399**
2008	347	262	148	123	76	8	1	0	2	23	75	334	**1399**
2009	196	259	194	134	18	16	3	4	1	43	117	320	**1305**
2010	254	220	173	164	71	14	8	9	14	42	203	268	**1440**
2011	250	307	211	105	80	27	3	3	6	39	207	349	**1587**
2012	224	236	222	118	38	11	6	1	1	16	110	300	**1283**
2013	329	263	125	65	17	4	1	2	2	44	103	257	**1212**
2014	142	148	90	76	19	4	0	1	1	5	66	223	**775**
2015	180	94	64	67	69	5	1	0	1	4	162	316	**963**
2016	281	111	113	54	45	8	1	1	3	14	110	268	**1009**
2017	319	208	99	44	50	6	1	0	4	12	50	174	**967**
2018	155	210	180	71	57	6	0	0	1	10	79	247	**1016**
2019	262	350	165	53	76	9	2	1	3	23	125	264	**1333**
2020	241	174	204	107	11	3	3	2	1	10	149	236	**1141**
2021	258	180	231	74	37	8	0	1	9	41	74	336	**1249**
20-Yr-Avg (Jan2002-Dec2021)													
Avg.	255.6	219.0	166.8	103.1	47.3	9.7	2.1	1.8	4.5	30.5	123.9	283.6	**1247.6**
St.Dev.	65.8	62.6	64.4	40.5	24.1	5.9	2.1	2.1	3.9	20.8	51.4	46.9	**210.1**
Min.	141.0	94.0	64.0	44.0	11.0	3.0	0.0	0.0	1.0	4.0	50.0	174.0	**775.0**
Max.	347.0	350.0	338.0	180.0	80.0	27.0	8.0	9.0	14.0	77.0	227.0	353.0	**1587.0**

II. Calculations to Define Our Average-Temperature Year

The simple average of the 20-year period (January 2002 through December 2021) was used to represent the Average Year total and the individual monthly values for HDD. In this CGR, the standard deviation has been calculated using an approach that compensates for the annual HDD values for the years 2014-2018 in SoCalGas' service territory being dramatically lower than in any preceding year going back to 1950. A regression with a time trend and a dummy variable for the years 2014-2018 has been used to estimate a shift in the level of annual HDD that occurred beginning in 2014. A dummy variable takes the value one for some observations to indicate the presence of an effect or membership in a group and zero for the remaining observations. Estimating the effect of the dummy variable gives an estimate of that effect or the impact of membership in that group. A dummy variable is used here to estimate the average effect on annual HDD of a given year having membership in the group of years 2014-2018. The dataset is SoCalGas system-wide annual HDD for the years 2002-2021. The regression equation is:

$$HDD_t = \alpha + \beta * t + \beta_{2014-2018} * D_{2014-2018} + \varepsilon$$

where $D_{2014-2018}$ is a dummy variable for the years 2014-2018 and $\beta_{2014-2018}$is the corresponding dummy coefficient. This regression equation estimates average HDD over the period 2002-2021 controlling for time trends in HDD and the warm weather regime of years 2014-2018. It's important to note that p-value for the estimate of $\beta_{2014-2018}$ is less than 0.003%, indicating an extremely low probability that membership in the group of years 2014-2018 had no effect on annual HDDs. Please see table 3 below for the full regression output.

Table 3

Dummy Regression for Calculation of Heating Degree-Day Standard Deviation

Regression Statistics	
Multiple R	0.875160819
R Square	0.765906459
Adjusted R Squar	0.738366043
Standard Error	107.4790962
Observations	20

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	642514.9459	321257.473	27.8102714	4.36325E-06
Residual	17	196379.8541	11551.75612		
Total	19	838894.8			

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	17936.32201	9383.914185	1.911390243	0.072963703
Regime Dummy	-352.6163522	62.17005618	-5.67180366	0.000027572
YEAR	-8.252830189	4.668593607	-1.767733687	0.095048045

The dummy variable's estimated effect, $\beta_{2014-2018}$, is subtracted from the actual annual HDD data for years 2014-2018 to adjust the data to remove the level shift. The standard deviation has been calculated using this adjusted dataset. This standard deviation has been used to design the two Cold Years based on a "1-in-10" and "1-in-35" chance, ***c***, that the respective annual "Cold Year" $\boldsymbol{hdd_c}$ value would be exceeded.

A probability model for the annual HDD is based on a t-Distribution with N-1 degrees of freedom, where, N is the number of years of HDD data we use, μ is the average of the last 20 years of HDD, and S_{20} is the average of the standard deviations of the 20 most recent 20 year periods:

$U = (HDD_y - \mu)/S_{20}$, has a t-Distribution with N-1 degrees of freedom.

III. Calculating the Cold-Temperature Year Weather Designs

<u>Cold Year HDD Weather Designs</u>

For SoCalGas, cold-temperature-year HDD weather designs are developed with a 1-in-35 annual chance of occurrence. In terms of probabilities this can be expressed as the following for a "1-in-35" cold-year HDD value in equation 1 and a "1-in-10" cold-year HDD value in equation 2, with Annual HDD as the random variable:

(1) Prob { Annual HDD > "1-in-35" Cold-Yr HDD } = 1/35 = 0.0286

(2) Prob { Annual HDD > "1-in-10" Cold-Yr HDD } = 1/10 = 0.1000

An area of 0.0286 under one tail of the T-Distribution translates to 2.025 standard deviations *above* an average-year based on a t-statistic with 19 degrees of freedom. Using the standard deviation calculated as described earlier, which is 112.8 HDD, these equations yield values of about 1,476 HDD for a "1-in-35" cold year and 1,398 HDDs for a "1-in-10" cold year. (An area of 0.1000 under one tail of the T-Distribution translates to 1.328 standard deviations *above* an average-year based on a t-statistic with 19 degrees of freedom.) For example, the "1-in-35" cold-year HDD is calculated as follows:

(3) Cold-year HDD = 1,476 which equals approximately

1,248 average-year HDDs + 2.025 * 112.8

Table 4 shows monthly HDD figures for "1-in-35" cold year, "1-in-10" cold year and, average year temperature designs. The monthly average-temperature-year HDDs are calculated from weighted monthly HDDs from 2002 to 2021, as shown as the bottom of Table 2, above. For example, the average-year December value of 283.6 HDD equals the simple average of the twenty

December HDD figures from 2002 to 2021. SoCalGas calculates the cold--temperature-year monthly HDD values using the same distribution of average-year HDDs. For example, 22.73 percent (283.6 / 1247.6) of average-temperature-year HDDs occurred in December, so the estimated number of HDDs during December for a 1-in-35 cold-year is equal to 1,476 HDDs multiplied by 22.73 percent, or 335.5 HDDs.

Table 4

Calendar Month Heating Degree-Day Designs

	Cold		Average	Hot	
	1-in-35 Design	**1-in-10 Design**		**1-in-10 Design**	**1-in-35 Design**
January	302.3	286.4	255.6	224.9	208.9
February	259.0	245.3	219.0	192.7	179.0
March	197.3	186.9	166.9	146.8	136.4
April	122.0	115.5	103.1	90.7	84.3
May	56.0	53.0	47.3	41.6	38.7
June	11.5	10.9	9.7	8.5	7.9
July	2.4	2.3	2.1	1.8	1.7
August	2.1	2.0	1.8	1.5	1.4
September	5.3	5.0	4.5	4.0	3.7
October	36.0	34.1	30.5	26.8	24.9
November	146.6	138.8	123.9	109.0	101.3
December	335.5	317.7	283.6	249.5	231.8
	1476	1398	1248	1098	1020

IV. Adjusting Forecasted HDDs for a Climate-Change Trend

SoCalGas incorporates a climate-change warming trend that reduces HDDs by 6 HDDs per year over the forecast period. The annual reduction is based on the latest twenty-year trend in 20-year-averaged HDDs. That is, they are based on the observed trend in changes starting with average HDDs for years 1983-2002, then 1984-2003, 1985-2004...and ending with the average HDDs for years 2002-2021.

Table 5 below shows system HDDs, rolling 20-year averaged HDDs, and the annual changes in those rolling 20-year averages. The actual average annual change is -7.0 HDDs for the most recent twenty of the 20-year averages (with ending years from 2002 through 2021). A simple “ordinary least squares” regression-fitted time trend (using Microsoft Excel’s “LINEST” function) was applied to those same annual changes, resulting in a fitted estimation of -6.2 HDDs per year. Based on the fitted trend, it was decided to decrease average-year and cold-year forecasted HDD’s by an even 6 HDDs per year, starting with the first forecast year of 2022.

Table 5

Average Annual Changes in 20-Year Averaged Heating-Degree Days

Average Annual Changes in 20-Year-Averaged HDDs		
	Regression Fitted trend	Actual
20 years (2002-2021)	-6.2	-7.0

Year	SoCalGas System HDDs	20-year averaged HDDs	Annual change in 20-year averaged HDDs
1982	1650		
1983	1384		
1984	1332		
1985	1584		
1986	1090		
1987	1497		
1988	1365		
1989	1359		
1990	1441		
1991	1405		
1992	1252		
1993	1208		
1994	1462		
1995	1240		
1996	1183		
1997	1152		
1998	1565		
1999	1535		
2000	1369		
2001	1688	1388.1	
2002	1496	1380.4	-7.7
2003	1337	1378.0	-2.3
2004	1390	1380.9	2.9
2005	1224	1362.9	-18.0
2006	1427	1379.8	16.8
2007	1399	1374.9	-4.9
2008	1399	1376.6	1.7
2009	1305	1373.9	-2.7
2010	1440	1373.8	0.0
2011	1587	1382.9	9.1
2012	1283	1384.5	1.5
2013	1212	1384.7	0.2
2014	775	1350.3	-34.4
2015	963	1336.5	-13.8
2016	1009	1327.8	-8.7
2017	967	1318.5	-9.3
2018	1016	1291.1	-27.5
2019	1333	1281.0	-10.1
2020	1141	1269.6	-11.4
2021	1249	1247.6	-22.0

V. Calculating the Peak-Day Design Temperature

SoCalGas' 1-in-35 Peak-Day design temperature of 40.5 degrees Fahrenheit, denoted "Deg-F," is determined from a statistical analysis of observed annual minimum daily system average temperatures constructed from daily temperature recordings from the fifteen U.S. Weather Bureau weather stations discussed above. Since we have a time series of daily data by year, the following notation will be used for the remainder of this discussion:

(1) $AVG_{y,d}$ = sy stem avg value of temperature for calendar year "y" and day "d".

The calendar year, y, can range from 1950 through 2021, while the day, d, can range from 1 to 365, for non-leap years, or from 1 to 366 for leap years. The "upper" value for the day, d, thus depends on the calendar year, y, and will be denoted by n(y)=365, or 366, respectively, when y is a non-leap year or a leap year.

For each calendar year, we calculate the following statistic from our series of daily system average temperatures defined in equation (1) above:

$$(2) \qquad MinAVG_y = \min_{d=1}^{n(y)}\{ AVG_{y,d} \}, \text{ for } y=1950, 1951, \ldots, 2021.$$

(The notation used in equation 2 means "For a particular year, y, list all the daily values of system average temperature for that year, then pick the smallest one.")

The resulting minimum annual temperatures are shown in Tables 6.1 and 6.2, below. Most of the minimum temperatures occur in the months of December, January, or February; for a few calendar years the minimums occurred in March or November.

The statistical methods we use to analyze this data employ software developed to fit three generic probability models: the Generalized Extreme Value (GEV) model, the Double-Exponential or GUMBEL (EV1) model and a 2-Parameter Students' T-Distribution (T-Dist) model. [The GEV and EV1 models have the same mathematical specification as those implemented in a DOS-based executable-only computer code that was developed by Richard L. Lehman and described in a paper published in the Proceedings of the Eighth Conference on Applied Climatology, January 17-22, 1993, Anaheim, California, pp. 270-273, by the American Meteorological Society, Boston, MA., with the title "Two Software Products for Extreme Value Analysis: System Overviews of ANYEX and DDEX." At the time he wrote the paper, Dr. Lehman was with the Climate Analysis Center, National Weather Service/NOAA in Washington, D.C., zip code 20233.] The Statistical Analysis Software (SAS) procedure for nonlinear statistical model estimation (PROC MODEL) was used to do the calculations. Further, the calculation procedures were implemented to fit the probability models to observed *maxima* of data, like heating degrees. By recognizing that:

$$- \mathrm{MinAVG}_y = - \min_{d=1}^{n(y)}\{\mathrm{AVG}_{y,d}\} = \max_{d=1}^{n(y)}\{ -\mathrm{AVG}_{y,d}\}, \text{ for } y=1950, \ldots, 2021$$

this same software, when applied to the *negative* of the minimum temperature data, yields appropriate probability model estimation results.

The calculations done to fit any one of the three probability models chooses the parameter values that provide the "best fit" of the parametric probability model's calculated cumulative distribution function (CDF) to the empirical cumulative distribution function (ECDF). Note that the ECDF is constructed based on the variable "-MinAVG_y" (which is a *maximum* over a set of *negative* temperatures) with values of the variable MinAVG_y that are the same as shown in Tables 6.1 and 6.2, below.

In Tables 7.1 and 7.2, the data for -MinAVG_y are shown after they have been sorted from "lowest" to "highest" value. The ascending *ordinal* value is shown in the column labeled "RANK" and the empirical cumulative distribution function is calculated and shown in the next column. The formula used to calculate this function is:

ECDF = (RANK – α)/[MaxRANK + (1 – 2 α)],

where the parameter "α" (shown as *alpha* in Table 7.1 and Table 7.2) is a "small" positive value (usually less than ½) that is used to bound the ECDF away from 0 and 1.

Of the three probability models considered (GEV, EV1, and T_Dist) the results obtained for the T_Dist model were selected since the fit to the ECDF was better than that of either the GEV model or the EV1 model. (Although convergence to stable parameter estimates is occasionally a problem with fitting a GEV model to the ECDF, the T_Dist model had no problems with convergence of the iterative procedure to estimate parameters.)

The T_Dist model used here is a three-parameter probability model where the varable z = (-MinAVG_y - γ) / θ, for each year, y, is presumed to follow a T_Dist with location parameter, γ, and scale parameter, θ, and a third parameter, ν, that represents the number of degrees of freedom. For a given number of years of data, N, then ν=N-2.

The following mathematical expression specifies the T_Dist model we fit to the data for "-MinAVG_y " shown in Table 7.1 and Table 7.2, below.

(3) ECDF(-MinAVG_y) = Prob { -T < -MinAVG_y }= T_Dist{z; γ, θ, ν=N-2},

where "T_Dist{ . }" is the cumulative probability distribution function for Student's T-Distribution[1], and

[1] A common mathematical expression for Student's T-Distribution is provided at http://en.wikipedia.org/wiki/Student%27s_t-distribution; with a probability density function

$$f(t) = \frac{\Gamma(\frac{\nu+1}{2})}{\sqrt{\nu\pi}\,\Gamma(\frac{\nu}{2})}\left(1+\frac{t^2}{\nu}\right)^{-\frac{\nu+1}{2}},$$

(4) $z = (-MinAVG_y - \gamma) / \theta$, for each year, y, and

the parameters "γ" and "θ" are estimated for this model for given degrees of freedom v=N-2. The estimated values for γ and θ are shown in Table 7.2 along with the fitted values of the model CDF (the column: "Fitted" Model CDF).

Now, to calculate a *peak-day design temperature*, $TPDD_\delta$, with a specified likelihood, δ, that a value less than $TPDD_\delta$ would be observed, we use the equation below:

(5) $\delta = \text{Prob} \{ T \leq TPDD_\delta \}$, which is equivalent to

(6) $\delta = \text{Prob} \{ [(-T - \gamma) / \theta] \geq [(-TPDD_\delta - \gamma) / \theta] \}, = \text{Prob} \{ [(-T - \gamma) / \theta] \geq [z_\delta] \}$,

where $z_\delta = [(-TPDD_\delta - \gamma) / \theta]$. In terms of our probability model,

(7) $\delta = 1 - \text{T\_Dist}\{ z_\delta; \gamma, \theta, v=N-2\}$,

which yields the following equation for z_δ,

(7') $z_\delta = \{ \text{TINV\_Dist}\{ (1-\delta); \gamma, \theta, v=N-2\}$, where "TINV_Dist{ . }" is the inverse function of the T_Dist{ . } function[2]. The implied equation for $TPDD_\delta$ is:

(8) $TPDD_\delta = - [\gamma + (z_\delta)(\theta)]$.

To calculate the minimum daily (system average) temperature to define our extreme weather event, we specify that this COLDEST-Day be one where the temperature would be lower with a "1-in-35" likelihood. This criterion translates into two equations to be solved based on equations (7) and (8) above:

(9) solve for "z_δ" from equation (7') above with $(1-\delta) = (1 - 1/35) = 1 - 0.0286$,

(10) solve for "$TPDD_\delta$" from $TPDD_\delta = - [\gamma + (z_\delta)(\theta)]$.

The value of $z_\delta = 1.935$ and $TPDD_\delta = - [\gamma + (z_\delta)(\theta)] = 40.5$ degrees Fahrenheit, with values for "v=N-2"; along with "γ" and "θ" in Tables 7.1 & 7.2, below.

SoCalGas' 1-in-10 peak-day design temperature of 42.2 degrees Fahrenheit, is calculated in a methodologically similar way as for the 40.5 degree peak day temperature. The criteria specified in equation (9) above for a "1-in-35" likelihood would be replaced by a "1-in-10" likelihood.

(9') solve for "z_δ" from equation (7') above with $(1-\delta) = (1 - 1/10) = 1 - 0.1000$,

which yields a "z_δ" value of $z_\delta = 1.294$ and, $TPDD_\delta = - [\gamma + (z_\delta)(\theta)] = 42.2$ with values for "v=N-2"; along with "γ" and "θ" in Tables 7.1 and 7.2, below.

A plot of the cumulative distribution function for $MinAVG_y$ based on "v=N-2", the fitted model parameters, "γ" and "θ" with values in Tables 7.1 and 7.2, below, is shown in Figure 1.

such that $\text{T\_Dist}\{z; \gamma, \theta, \nu=N-2\}=\int f(t)\, dt$, from $t=-\infty$ to $t=z$. Also, the notation $\Gamma(.)$ is known in mathematics as the GAMMA function; see http://www.wikipedia.org/wiki/Gamma_function for a description. Also, see *Statistical Theory*, 3rd Ed., B.W. Lindgren, MacMillian Pub. Inc, 1976, pp. 336-337.

[2] Computer software packages such as SAS and EXCEL have implemented statistical and mathematical functions to readily calculate values for T_Dist{ . } and TINV_Dist{ . } as defined above.

Table 6.1

YEAR	MINAVG	Month(MinAvg)
1950	40.86	Jan
1951	44.57	Dec
1952	43.07	Jan
1953	45.69	Feb
1954	45.70	Dec
1955	45.84	Dec
1956	44.91	Feb
1957	39.50	Jan
1958	46.27	Nov
1959	48.26	Feb
1960	42.33	Jan
1961	47.22	Dec
1962	43.42	Jan
1963	42.61	Jan
1964	45.24	Nov
1965	44.80	Jan
1966	46.72	Jan
1967	40.77	Dec
1968	40.64	Dec
1969	44.85	Jan
1970	46.83	Dec
1971	43.01	Jan
1972	41.43	Dec
1973	45.07	Jan
1974	42.99	Jan
1975	44.64	Jan
1976	44.85	Jan
1977	48.35	Jan
1978	41.66	Dec
1979	41.39	Jan
1980	50.36	Jan
1981	49.34	Jan
1982	45.35	Jan
1983	48.69	Jan
1984	46.92	Dec
1985	45.13	Feb
1986	48.60	Feb
1987	43.46	Dec
1988	43.29	Dec
1989	40.61	Feb
1990	39.01	Dec
1991	48.68	Mar
1992	47.36	Dec
1993	46.12	Jan
1994	47.16	Nov

Table 6.2

YEAR	MINAVG	Month(MinAvg)
1995	49.85	Dec
1996	44.96	Feb
1997	48.38	Jan
1998	43.64	Dec
1999	49.01	Jan
2000	48.79	Mar
2001	47.17	Feb
2002	45.82	Jan
2003	47.09	Dec
2004	48.22	Nov
2005	47.28	Jan
2006	45.80	Mar
2007	41.54	Jan
2008	45.81	Dec
2009	45.27	Dec
2010	44.71	Dec
2011	46.76	Feb
2012	46.78	Dec
2013	43.92	Jan
2014	48.07	Dec
2015	45.62	Jan
2016	46.74	Dec
2017	47.58	Jan
2018	47.38	Feb
2019	47.27	Feb
2020	50.00	Feb
2021	46.98	Jan

Table 7.1

alpha= 0.375

Year	Days/Yr	-MinAvg	Month (-MinAvg)	Rank	Emprical CDF	Fitted Model CDF
1980	366	-50.3562	Jan	1	0.0087	-1.8315
2020	366	-49.9988	Feb	2	0.0225	-1.6975
1995	365	-49.8502	Dec	3	0.0363	-1.6418
1981	365	-49.3410	Jan	4	0.0502	-1.4509
1999	365	-49.0143	Jan	5	0.0640	-1.3284
2000	366	-48.7946	Mar	6	0.0779	-1.2460
1983	365	-48.6916	Jan	7	0.0917	-1.2074
1991	365	-48.6770	Mar	8	0.1055	-1.2019
1986	365	-48.5968	Feb	9	0.1194	-1.1718
1997	365	-48.3795	Jan	10	0.1332	-1.0903
1977	365	-48.3454	Jan	11	0.1471	-1.0775
1959	365	-48.2581	Feb	12	0.1609	-1.0448
2004	366	-48.2200	Nov	13	0.1747	-1.0305
2014	365	-48.0744	Dec	14	0.1886	-0.9759
2017	365	-47.5793	Jan	15	0.2024	-0.7902
2018	365	-47.3752	Feb	16	0.2163	-0.7137
1992	366	-47.3557	Dec	17	0.2301	-0.7064
2005	365	-47.2788	Jan	18	0.2439	-0.6776
2019	365	-47.2671	Feb	19	0.2578	-0.6732
1961	365	-47.2162	Dec	20	0.2716	-0.6541
2001	365	-47.1654	Feb	21	0.2855	-0.6350
1994	365	-47.1570	Nov	22	0.2993	-0.6319
2003	365	-47.0899	Dec	23	0.3131	-0.6068
2021	365	-46.9762	Jan	24	0.3270	-0.5641
1984	366	-46.9228	Dec	25	0.3408	-0.5441
1970	365	-46.8300	Dec	26	0.3547	-0.5093
2012	366	-46.7772	Dec	27	0.3685	-0.4895
2011	365	-46.7623	Feb	28	0.3824	-0.4839
2016	366	-46.7389	Dec	29	0.3962	-0.4751
1966	365	-46.7161	Jan	30	0.4100	-0.4666
1958	365	-46.2675	Nov	31	0.4239	-0.2984
1993	365	-46.1152	Jan	32	0.4377	-0.2412
1955	365	-45.8398	Dec	33	0.4516	-0.1380
2002	365	-45.8224	Jan	34	0.4654	-0.1315
2008	366	-45.8121	Dec	35	0.4792	-0.1276
2006	365	-45.8025	Mar	36	0.4931	-0.1240
1954	365	-45.6962	Dec	37	0.5069	-0.0841
1953	365	-45.6852	Feb	38	0.5208	-0.0800
2015	365	-45.6211	Jan	39	0.5346	-0.0560
1982	365	-45.3516	Jan	40	0.5484	0.0451
2009	365	-45.2689	Dec	41	0.5623	0.0761
1964	366	-45.2362	Nov	42	0.5761	0.0884
1985	365	-45.1295	Feb	43	0.5900	0.1284
1973	365	-45.0719	Jan	44	0.6038	0.1500
1996	366	-44.9572	Feb	45	0.6176	0.1930

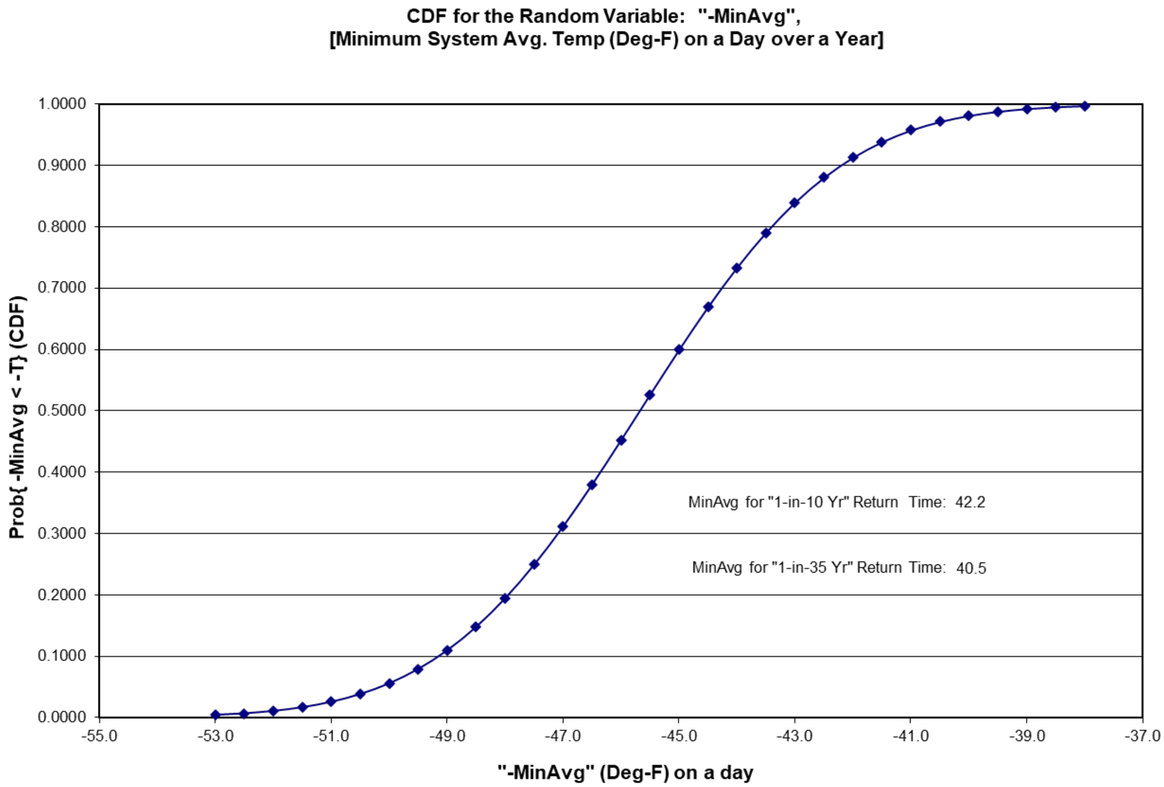
Table 7.2

alpha= 0.375

Year	Days/Yr	-MinAvg	Month (-MinAvg)	Rank	Emprical CDF	Fitted Model CDF
1956	366	-44.9092	Feb	46	0.6315	0.2110
1976	366	-44.8492	Jan	47	0.6453	0.2335
1969	365	-44.8451	Jan	48	0.6592	0.2350
1965	365	-44.8016	Jan	49	0.6730	0.2513
2010	365	-44.7107	Dec	50	0.6869	0.2854
1975	365	-44.6416	Jan	51	0.7007	0.3113
1951	365	-44.5690	Dec	52	0.7145	0.3386
2013	365	-43.9179	Jan	53	0.7284	0.5827
1998	365	-43.6433	Dec	54	0.7422	0.6857
1987	365	-43.4643	Dec	55	0.7561	0.7528
1962	365	-43.4218	Jan	56	0.7699	0.7687
1988	366	-43.2901	Dec	57	0.7837	0.8181
1952	366	-43.0724	Jan	58	0.7976	0.8997
1971	365	-43.0081	Jan	59	0.8114	0.9239
1974	365	-42.9915	Jan	60	0.8253	0.9301
1963	365	-42.6117	Jan	61	0.8391	1.0725
1960	366	-42.3298	Jan	62	0.8529	1.1782
1978	365	-41.6636	Dec	63	0.8668	1.4281
2007	365	-41.5391	Jan	64	0.8806	1.4747
1972	366	-41.4268	Dec	65	0.8945	1.5168
1979	365	-41.3863	Jan	66	0.9083	1.5320
1950	365	-40.8618	Jan	67	0.9221	1.7287
1967	365	-40.7720	Dec	68	0.9360	1.7624
1968	366	-40.6420	Dec	69	0.9498	1.8111
1989	365	-40.6067	Feb	70	0.9637	1.8244
1957	365	-39.5002	Jan	71	0.9775	2.2393
1990	365	-39.0145	Dec	72	0.9913	2.4214

"Gamma" (Fitted) =	**-45.68**
"Theta" (Fitted) =	**2.68**
Deg. Freedom=	**70**

Figure 1


CDF for the Random Variable: "-MinAvg",
[Minimum System Avg. Temp (Deg-F) on a Day over a Year]
Prob{ -MinAvg < -T} (CDF)
1.0000
0.9000
0.8000
0.7000
0.6000
0.5000
0.4000
0.3000
0.2000
0.1000
0.0000
-55.0
-53.0
-51.0
-49.0
-47.0
-45.0
-43.0
-41.0
-39.0
-37.0
MinAvg for "1-in-10 Yr" Return Time: 42.2
MinAvg for "1-in-35 Yr" Return Time: 40.5
"-MinAvg" (Deg-F) on a day

VI. Estimating the Uncertainty in the Peak-Day Design Temperature

The calculated peak-day design temperatures in section V above also have a statistical uncertainty associated with them. The estimated measures of uncertainty recommended for our use are calculated from the fitted model for the probability distribution and are believed to be reasonable, although rough, approximations.

The basic approach used the estimated parameters for the probability distribution (see the results provided in Tables 7.1 and 7.2, above) to calculate the fitted temperatures as a function of the empirical CDF listed in Tables 7.1 and 7.2, above. These fitted temperatures are then compared with the observed temperatures by calculating the difference = “observed” – “fitted” values. The full set of differences are then separated into the lower third (L), the middle third (M) and the upper third (U) of the distribution. Finally, values of the root-mean-square error (RMSE) of the differences in each third of the distribution are calculated, along with the RMSE for the entire set of differences overall. The data in Tables 8.1 and 8.2, below, show the temperature data and the resulting RMSE values.

The formula below is used to calculate the RMSE for a specified set of “N” data differences:

$$\text{RMSE} = \text{SQRT}\left\{ \left(\sum_{i=1, \ldots, N} e[\,i\,]^{2} \right) / \, (N-2) \right\},$$

where e[i] = *observed* less *fitted* value of temperature, T[i]. The number of estimated parameters (3 for the GEV model, 2 for the T-Dist and EV1 models) is subtracted from the respective number of data differences, N, in the denominator of the RMSE expression.

Since both the “1-in-35” and “1-in-10” peak-day temperature values are in the lower third quantile of the fitted distribution, the calculated standard error for these estimates is 0.57 Deg-F.

Table 8.1

Quantile: (Lower, Middle, Upper 3rd's)	Observed $T_{[i]}$ Temp. Ranked	Fitted Value of $T_{[i]}$	Residual $e_{[i]}$: Obs'd. less Fitted Value of $T_{[i]}$	Square of $e_{[i]}$:
U	50.3562	52.2131	-1.8569	3.448046
U	49.9988	51.1494	-1.1506	1.323977
U	49.8502	50.5625	-0.7123	0.507337
U	49.3410	50.1411	-0.8001	0.640203
U	49.0143	49.8060	-0.7917	0.626760
U	48.7946	49.5244	-0.7299	0.532690
U	48.6916	49.2794	-0.5878	0.345459
U	48.6770	49.0609	-0.3840	0.147427
U	48.5968	48.8627	-0.2659	0.070724
U	48.3795	48.6805	-0.3010	0.090595
U	48.3454	48.5111	-0.1657	0.027463
U	48.2581	48.3524	-0.0942	0.008882
U	48.2200	48.2025	0.0175	0.000307
U	48.0744	48.0601	0.0143	0.000203
U	47.5793	47.9242	-0.3449	0.118968
U	47.3752	47.7938	-0.4186	0.175220
U	47.3557	47.6683	-0.3126	0.097689
U	47.2788	47.5470	-0.2682	0.071946
U	47.2671	47.4295	-0.1624	0.026360
U	47.2162	47.3153	-0.0990	0.009810
U	47.1654	47.2040	-0.0386	0.001490
U	47.1570	47.0952	0.0618	0.003817
U	47.0899	46.9888	0.1011	0.010220
U	46.9762	46.8845	0.0917	0.008403
M	46.9228	46.7819	0.1409	0.019847
M	46.8300	46.6810	0.1489	0.022180
M	46.7772	46.5815	0.1957	0.038290
M	46.7623	46.4833	0.2791	0.077888
M	46.7389	46.3861	0.3528	0.124477
M	46.7161	46.2898	0.4262	0.181666
M	46.2675	46.1944	0.0731	0.005343
M	46.1152	46.0996	0.0156	0.000242
M	45.8398	46.0053	-0.1656	0.027411
M	45.8224	45.9115	-0.0891	0.007933
M	45.8121	45.8179	-0.0058	0.000034
M	45.8025	45.7246	0.0779	0.006072
M	45.6962	45.6312	0.0650	0.004227
M	45.6852	45.5378	0.1474	0.021713
M	45.6211	45.4443	0.1769	0.031276
M	45.3516	45.3504	0.0011	0.000001
M	45.2689	45.2562	0.0128	0.000163
M	45.2362	45.1614	0.0748	0.005595
M	45.1295	45.0659	0.0636	0.004044
M	45.0719	44.9697	0.1022	0.010452
M	44.9572	44.8725	0.0846	0.007162
M	44.9092	44.7743	0.1350	0.018217
M	44.8492	44.6748	0.1745	0.030433
M	44.8451	44.5738	0.2713	0.073580

Table 8.2

Quantile: (Lower, Middle, Upper 3rd's)	Observed $T_{[i]}$ Temp. Ranked	Fitted Value of $T_{[i]}$	Residual $e_{[i]}$: Obs'd. less Fitted Value of $T_{[i]}$	Square of $e_{[i]}$:
L	44.8016	44.4713	0.3303	0.109112
L	44.7107	44.3670	0.3438	0.118166
L	44.6416	44.2605	0.3811	0.145228
L	44.5690	44.1518	0.4172	0.174035
L	43.9179	44.0405	-0.1227	0.015045
L	43.6433	43.9263	-0.2830	0.080089
L	43.4643	43.8088	-0.3445	0.118689
L	43.4218	43.6875	-0.2657	0.070582
L	43.2901	43.5620	-0.2718	0.073897
L	43.0724	43.4316	-0.3592	0.129007
L	43.0081	43.2957	-0.2876	0.082718
L	42.9915	43.1533	-0.1618	0.026174
L	42.6117	43.0034	-0.3917	0.153447
L	42.3298	42.8447	-0.5149	0.265102
L	41.6636	42.6753	-1.0117	1.023556
L	41.5391	42.4931	-0.9540	0.910045
L	41.4268	42.2949	-0.8681	0.753526
L	41.3863	42.0764	-0.6901	0.476274
L	40.8618	41.8314	-0.9696	0.940056
L	40.7720	41.5498	-0.7778	0.604952
L	40.6420	41.2147	-0.5727	0.328023
L	40.6067	40.7933	-0.1866	0.034824
L	39.5002	40.2063	-0.7061	0.498579
L	39.0145	39.1427	-0.1283	0.016450

Overall RMSE ($e_{[i]}$):	**0.48**	**°F**
Upper 3rd RMSE ($e_{[i]}$):	**0.61**	**°F**
Middle 3rd RMSE ($e_{[i]}$):	**0.18**	**°F**
Lower 3rd RMSE ($e_{[i]}$):	**0.57**	**°F**

VII. The Relationship between Annual Likelihoods for Peak-Day Temperatures and "Expected Return Time"

The event whose probability distribution we've modeled is the likelihood that the minimum daily temperature over a calendar year is less than a specified value. And, in particular, we've used this probability model to infer the value of a temperature, our *peak-day design temperature* ($TPDD_\delta$), that corresponds to a pre-defined likelihood, δ, that the observed minimum temperature is less than or equal to this design temperature.

(1) δ = Prob{ Minimum Daily Temperature over the Year < $TPDD_\delta$ }.

For some applications, it is useful to think of how this specified likelihood (or "risk level" δ) relates to the expected number of years until this Peak-Day event would first occur. This expected number of years is what is meant by the *return period*. The results stated below are found in the book: ***Statistics of Extremes***, E.J. Gumbel, Columbia University Press, 1958, on pages 21-25.

(2) E[#Yrs for Peak-Day Event to Occur] = 1 / δ,

1 / Prob{ Minimum Daily Temperature over the Year < $TPDD_\delta$ }.

For our peak-day design temperature (40.5°F) associated with a 1-in-35 annual likelihood, the return period is 35 years (δ=1/35). For the 42.2°F peak-day design temperature, the return period is 10 years (δ=1/10). Occasionally, a less precise terminology is used. For example, the 40.5°F peak-day design temperature may be referred to as a "1-in-35 year cold day"; and the 42.2°F peak-day design temperature may be referred to as a "1-in-10 year cold day."

The probability model for the *return period*, as a random variable, is a geometric (discrete) distribution with positive integer values for the *return period*. The parameter δ = Prob{ Minimum Daily Temperature over the Year < $TPDD_\delta$ }.

(3) Prob{ *return period* = r } = $(1 - \delta)^{(r-1)}\,\delta$, for r = 1, 2, 3, . . .

The expected value of the *return period* is already given in (2) above; the variance of the *return period* is:

(4) Var[*return period*] = (E[*return period*])^2 x (1- (1 / E [*return period*])),

(4') Var[*return period*] = (E[*return period*]) x (E [*return period*] - 1).

Equations (4) and (4') indicate that the standard deviation (square root of the variance) of the *return period* is nearly equal to its expected value. Thus, there is substantial variability about the expected value—a *return period* is not very precise.

2022 CALIFORNIA GAS REPORT

GAS PRICE FORECAST

The Gas Company

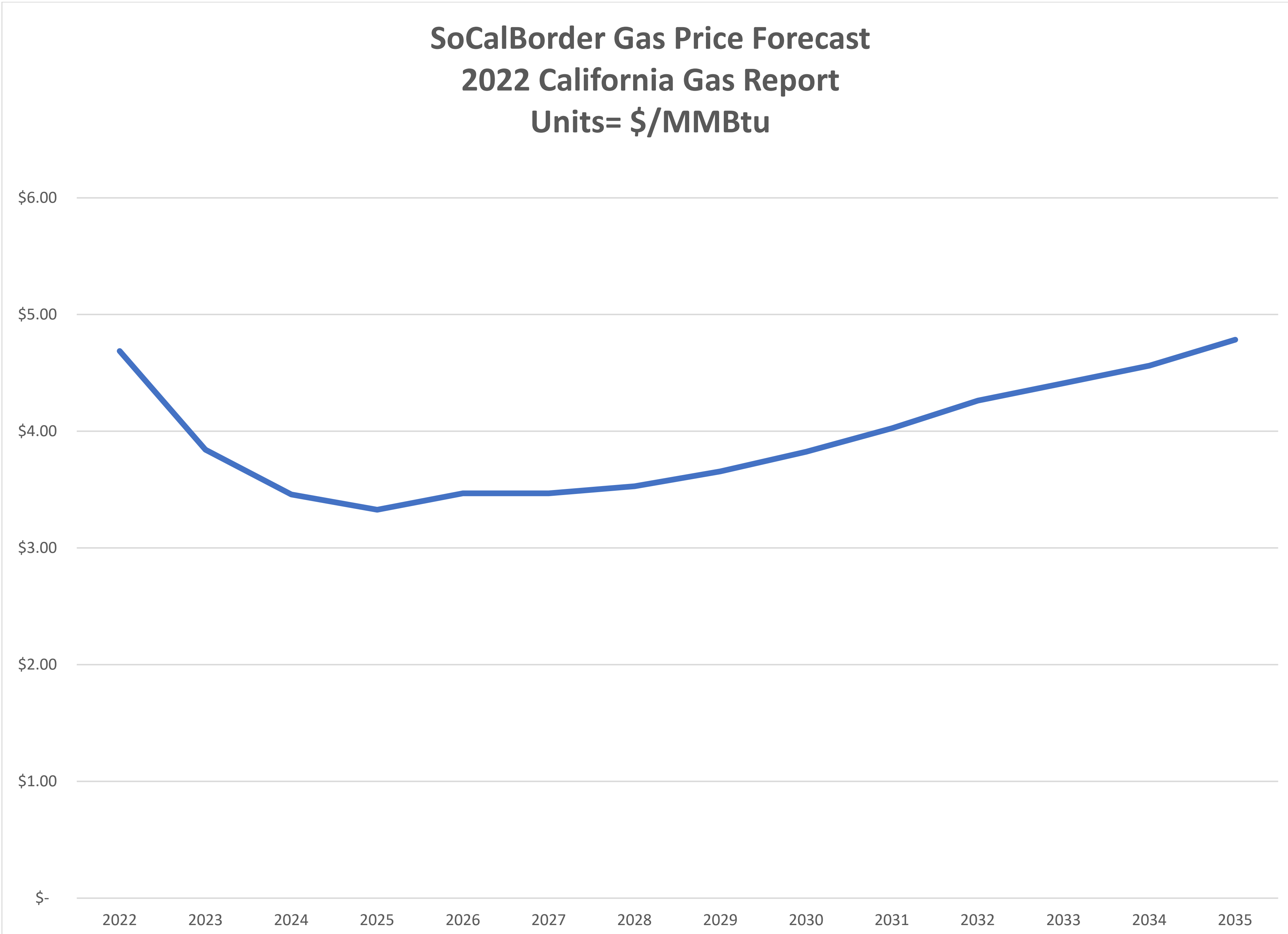
A Sempra Energy utility℠

The natural gas price forecast used to develop the demand forecasts for SoCalGas and SDG&E was prepared in March 2022 using New York Mercantile Exchange (NYMEX)-based natural gas futures prices and other forecast sources. Consistent with the gas price forecast methodology used to develop demand forecasts authorized by Commission Decision (D.)09-11-006,[1] SoCalGas and SDG&E used this methodology to forecast the cost of gas to be used for determining the cost of Unaccounted-For (UAF) and Company-Use (CU) fuel.

This forecast is based on NYMEX Henry Hub ClearPort Basis Swap futures prices through December 2027. For the period covering January 2028 to December 2029, the natural gas price was forecast was spliced. Beginning January 2030, the gas price forecast at Henry Hub was a blended forecast composed of a composite of proprietary and public market gas price forecasts.

[1] D.09-11-002 approved a settlement agreement in Phase 2 of SoCalGas and SDG&E's 2009 BCAP.

The monthly gas price data have been redacted in this version.


SoCalBorder Gas Price Forecast
2022 California Gas Report
Units= $/MMBtu
$6.00
$5.00
$4.00
$3.00
$2.00
$1.00
$-
2022
2023
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2022 CALIFORNIA GAS REPORT

SERVICE AREA ECONOMIC FORECAST

SOUTHERN CALIFORNIA GAS COMPANY SERVICE AREA ECONOMIC FORECAST

(Employment based on Global Insight's November 2021 Regional Forecast)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
EMPLOYMENT (1000's)										
Total	9,025.7	9,187.3	9,368.5	9,512.2	8,789.1	8,955.6	9,305.2	9,404.5	9,431.7	9,470.2
Agriculture	241.3	240.1	238.2	238.9	228.0	231.7	232.0	231.5	230.6	230.0
Total Non-farm	8,784.4	8,947.2	9,130.4	9,273.2	8,561.1	8,723.9	9,073.2	9,173.0	9,201.2	9,240.2
Mining	15.2	14.6	15.5	15.9	13.6	12.9	13.3	13.6	13.7	13.5
Construction	391.2	409.3	434.0	441.6	428.9	436.6	442.5	447.8	448.2	451.3
Manufacturing	721.3	713.1	708.0	706.9	659.0	650.4	666.3	674.7	669.7	662.2
Transportation, Information, Utilities	588.6	587.6	600.9	616.1	578.8	598.1	627.6	638.7	655.4	668.9
Trade	1,492.3	1,512.7	1,526.8	1,524.0	1,430.7	1,486.1	1,502.3	1,490.1	1,466.8	1,451.7
Retail	1,010.1	1,016.5	1,014.4	1,001.5	918.2	950.7	938.8	906.0	869.0	838.7
Wholesale (including warehousing)	482.2	496.2	512.5	522.5	512.5	535.4	563.5	584.2	597.9	613.1
Restaurants	758.3	781.9	796.7	811.3	633.2	664.2	655.2	633.0	606.4	585.7
Finance, Insurance & Real Estate	437.9	441.0	441.4	440.6	423.2	417.8	436.4	442.4	449.2	455.6
Services	2,873.5	2,949.7	3,044.5	3,140.6	2,886.1	2,979.6	3,192.0	3,274.6	3,324.7	3,374.9
Accomodation	137.5	141.5	143.4	145.3	98.9	105.0	123.0	137.0	141.3	142.3
Personal & Laundry Services	96.7	98.7	101.8	104.1	72.3	73.7	84.9	88.6	89.6	90.7
Professional & Business Services	1,196.8	1,214.4	1,256.0	1,294.7	1,214.5	1,246.2	1,354.5	1,407.9	1,432.2	1,456.7
Health & Social Services	1,193.8	1,244.3	1,283.8	1,327.6	1,309.2	1,338.5	1,380.9	1,382.1	1,399.4	1,419.7
Misc. Services	248.7	250.9	259.5	268.9	191.2	216.2	248.7	259.2	262.2	265.5
Government & Education	1,506.1	1,537.3	1,562.5	1,576.3	1,507.7	1,478.3	1,537.6	1,558.0	1,567.0	1,576.4
OTHER INDICATORS										
Southern California Consumer Inflation*	1.9%	2.8%	3.8%	3.1%	1.6%	3.8%	5.0%	1.9%	2.1%	2.1%
Inflation--US Gross Domestic Product**	0.7%	1.9%	2.3%	1.5%	1.2%	3.9%	4.4%	2.2%	2.1%	2.1%

* Consumer Price Index for Greater Los Angeles area (Los Angeles and Orange Counties), from Global Insight's February 2022 Regional Forecast.

** Chained Price Index--US GDP: from Global Insight's February 2022 Forecast of the U.S. Economy; beyond 2032 is from their November 2021 long-term forecast.

SOUTHERN CALIFORNIA GAS COMPANY SERVICE AREA ECONOMIC FORECAST

(Employment based on Global Insight's November 2021 Regional Forecast)

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
EMPLOYMENT (1000's)										
Total	9,522.3	9,564.0	9,595.1	9,623.1	9,653.5	9,685.0	9,731.6	9,784.7	9,836.8	9,887.4
Agriculture	229.9	229.9	230.0	230.1	230.0	230.0	230.4	230.7	230.5	230.0
Total Non-farm	9,292.4	9,334.1	9,365.1	9,392.9	9,423.5	9,455.0	9,501.2	9,554.0	9,606.3	9,657.4
Mining	13.3	13.2	13.2	13.3	13.3	13.3	13.5	13.4	13.3	13.3
Construction	454.2	455.9	458.1	463.0	467.3	469.1	472.8	480.2	488.1	497.2
Manufacturing	656.6	655.4	652.0	648.9	645.7	644.6	643.6	642.6	640.7	639.4
Transportation, Information, Utilities	674.4	673.1	669.4	664.4	658.7	655.2	652.6	646.7	640.5	634.3
Trade	1,450.7	1,444.1	1,435.5	1,427.8	1,426.3	1,430.1	1,436.2	1,445.1	1,452.2	1,461.2
Retail	826.6	813.5	805.9	799.9	801.5	806.0	814.4	825.9	835.7	846.8
Wholesale (including warehousing)	624.1	630.6	629.7	627.9	624.8	624.1	621.8	619.2	616.6	614.4
Restaurants	577.3	568.1	562.8	558.7	559.9	563.1	569.0	577.0	583.8	591.6
Finance, Insurance & Real Estate	456.1	451.6	448.6	445.1	441.6	439.7	440.2	440.8	442.2	443.1
Services	3,424.5	3,478.2	3,522.9	3,561.5	3,589.7	3,614.3	3,640.2	3,667.1	3,696.6	3,720.4
Accomodation	142.8	143.5	144.9	146.7	148.6	149.3	149.4	149.7	149.4	149.3
Personal & Laundry Services	91.7	92.9	94.0	94.7	95.1	95.6	95.8	95.9	96.1	96.3
Professional & Business Services	1,481.0	1,509.6	1,529.4	1,546.8	1,559.0	1,556.0	1,553.3	1,557.7	1,564.6	1,571.7
Health & Social Services	1,440.5	1,460.1	1,479.4	1,496.1	1,508.8	1,533.8	1,561.4	1,583.3	1,605.2	1,621.4
Misc. Services	268.5	272.0	275.2	277.1	278.3	279.7	280.3	280.6	281.3	281.7
Government & Education	1,585.3	1,594.5	1,602.5	1,610.3	1,621.0	1,625.6	1,633.2	1,641.0	1,648.8	1,656.9
OTHER INDICATORS										
Southern California Consumer Inflation*	2.2%	2.3%	2.4%	2.4%	2.3%	2.3%	2.2%	2.2%	2.3%	2.3%
Inflation--US Gross Domestic Product**	2.1%	2.2%	2.2%	2.2%	2.2%	2.1%	2.1%	2.1%	2.1%	2.1%

* Consumer Price Index for Greater Los Angeles area (Los Angeles and Orange Counties), from Global Insight's February 2022 Regional Forecast.

** Chained Price Index--US GDP: from Global Insight's February 2022 Forecast of the U.S. Economy; beyond 2032 is from their November 2021 long-term forecast.