2006 California Gas Report Workpapers

Redacted

Prepared by

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2006 CALIFORNIA GAS REPORT

HISTORICAL DATA
JULY 2006

Summary of Gas Sendout

Year 2005
MMcf

Class of Service	SALES	TRANS	Recorded OTHER	RESALE	TOTAL
Residential	239,696	1,198			240,894
Commercial	75,691	23,445			99,136
Industrial	23,444	125,938			149,382
EOR Steaming	0	12,516			12,516
NGV	7,409	0			7,409
Electric Generation	0	246,778			246,778
Total Retail	346,240	409,875			756,115
Exchange			-277		-277
Company Use & LUAF	7,239				7,239
Total Non-Sales	7,239	0	-277		6,962
Total Retail & Non-Sales	353,479	409,875	-277		763,077
Wholesale / International		143,378			143,378
Total System	353,479	553,253	-277		906,455
Retail residential	239,696				239,696
Retail Commercial	75,691				75,691
Retail Industrial	23,444				23,444
EOR Steaming	0				0
NGV	7,409				7,409
Electric Generation	0				0
Total Retail Sales	346,240				346,240

2006 CALIFORNIA GAS REPORT

FORECAST OF REQUIREMENTS - SUMMARY
JULY 2006

A Sempra Energy utility™

2006 CALIFORNIA GAS REPORT

FORECAST OF REQUIREMENTS - AVERAGE TEMPERATURE YEAR
JULY 2006

TABLE 1-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2006 THRU 2010

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		2006	2007	2008	2009	2010	LINE
1	California Source Gas		310	310	310	310	310	1
	Out-of-State Gas							
2	Mojave (Hector Road)		50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		1,210	1,210	1,210	1,210	1,210	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	7
8	LNG Capacity 3/		0	0	800	800	800	8
9	Total Out-of-State Gas		3,565	3,565	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		3,875	3,875	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN							
11	California Source Gas		310	310	310	310	310	11
12	Out-of-State		2,335	2,343	2,400	2,303	2,232	12
13	TOTAL SUPPLY TAKEN		2,645	2,653	2,710	2,613	2,542	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		2,645	2,653	2,710	2,613	2,542	15
	REQUIREMENTS FORECAST BY END-USE 2/							
16	CORE	Residential	700	698	701	708	711	16
17		Commercial	218	216	215	215	213	17
18		Industrial	64	62	61	61	59	18
19		NGV	20	21	22	23	24	19
20		Subtotal-CORE	1,001	997	999	1,007	1,008	20
21	NONCORE	Commercial	57	57	57	58	58	21
22		Industrial	349	344	343	344	343	22
23		EOR Steaming	35	35	30	20	20	23
24		Electric Generation (EG)	745	779	833	725	671	24
25		Subtotal-NONCORE	1,186	1,214	1,263	1,146	1,092	25
26	WHOLESALE &	Core	180	181	177	173	175	26
27	INTERNATIONAL	Noncore Excl. EG	43	43	44	44	44	27
28		Electric Generation (EG)	185	168	175	192	174	28
29		Subtotal-WHOLESALE &	409	392	397	410	393	29
30		Co. Use & LUAF	50	50	51	49	48	30
31	SYSTEM TOTAL THROUGHPUT		2,645	2,653	2,710	2,613	2,542	31
	TRANSPORTATION AND EXCHANGE							
32	CORE	All End Uses	8	8	8	8	8	32
33	NONCORE	Commercial/Industrial	406	401	401	402	402	33
34		EOR Steaming	35	35	30	20	20	34
35		Electric Generation (EG)	745	779	833	725	671	35
36		Subtotal-RETAIL	1,193	1,222	1,270	1,154	1,100	36
37	WHOLESALE & INTERNATIONAL	All End Uses	409	392	397	410	393	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,602	1,614	1,667	1,564	1,494	38
	CURTAILMENT (RETAIL & WHOLESALE)							
39		Core	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	41
	NOTES:							
	1/ Excludes own-source gas supply of gas procurement by the City of Long Beach		3	3	3	3	3	

2/ Requirement forecast by end-use includes sales, transportation, and exchange volumes
3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

TABLE 2-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2011 THRU 2025

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		2011	2012	2015	2020	2025	LINE
1	California Source Gas		310	310	310	310	310	1
	Out-of-State Gas							
2	Mojave (Hector Road)		50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		1,210	1,210	1,210	1,210	1,210	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN							
11	California Source Gas		310	310	310	310	310	11
12	Out-of-State		2,157	2,170	2,199	2,243	2,403	12
13	TOTAL SUPPLY TAKEN		2,467	2,480	2,509	2,553	2,713	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		2,467	2,480	2,509	2,553	2,713	15
	REQUIREMENTS FORECAST BY END-USE 2/							
16	CORE	Residential	716	718	734	744	765	16
17		Commercial	211	207	198	176	170	17
18		Industrial	58	57	52	43	39	18
19		NGV	25	25	27	30	33	19
20		Subtotal-CORE	1,010	1,008	1,011	994	1,008	20
21	NONCORE	Commercial	59	59	60	60	61	21
22		Industrial	335	335	337	328	323	22
23		EOR Steaming	20	20	20	20	20	23
24		Electric Generation (EG)	603	612	636	692	806	24
25		Subtotal-NONCORE	1,016	1,025	1,053	1,100	1,210	25
26	WHOLESALE &	Core	176	176	179	185	194	26
27	INTERNATIONAL	Noncore Excl. EG	45	44	45	46	47	27
28		Electric Generation (EG)	174	179	174	181	204	28
29		Subtotal-WHOLESALE &	394	399	398	411	444	29
30		Co. Use & LUAF	46	47	47	48	51	31
31	SYSTEM TOTAL THROUGHPUT		2,467	2,480	2,509	2,553	2,713	32
	TRANSPORTATION AND EXCHANGE							
32	CORE	All End Uses	8	8	7	7	7	33
33	NONCORE	Commercial/Industrial	394	394	397	388	384	34
34		EOR Steaming	20	20	20	20	20	35
35		Electric Generation (EG)	603	612	636	692	806	36
36		Subtotal-RETAIL	1,024	1,033	1,060	1,107	1,217	37
37	WHOLESALE & INTERNATIONAL	All End Uses	394	399	398	411	444	38
38	TOTAL TRANSPORTATION & EXCHANGE		1,418	1,432	1,458	1,518	1,661	39
	CURTAILMENT (RETAIL & WHOLESALE)							
39		Core	0	0	0	0	0	40
40		Noncore	0	0	0	0	0	41
41		TOTAL - Curtailment	0	0	0	0	0	42

NOTES:

1/ Excludes own-source gas supply of 3 3 3 3 3
gas procurement by the City of Long Beach

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 1-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2006

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		0	0	0	0	0	0	0	0	0	0	0	0	0	8
9	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	9
10	TOTAL CAPACITY AVAILABLE		3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		2,869	2,783	2,448	2,263	2,002	1,954	2,068	2,128	2,096	1,970	2,474	2,991	2,335	12
13	TOTAL SUPPLY TAKEN		3,179	3,093	2,758	2,573	2,312	2,264	2,378	2,438	2,406	2,280	2,784	3,301	2,645	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,179	3,093	2,758	2,573	2,312	2,264	2,378	2,438	2,406	2,280	2,784	3,301	2,645	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,177	1,070	900	700	520	419	379	379	388	462	812	1,210	700	16
17		Commercial	282	290	231	211	197	188	165	165	180	174	250	289	218	17
18		Industrial	69	73	66	64	60	61	55	58	63	60	67	67	64	18
19		NGV	18	19	19	20	19	20	19	20	21	19	20	19	20	19
20		Subtotal-CORE	1,545	1,451	1,216	995	797	688	619	622	651	716	1,148	1,586	1,001	20
21	NONCORE	Commercial	70	67	62	59	52	50	46	47	56	53	57	66	57	21
22		Industrial	337	350	348	346	335	345	346	367	369	355	349	338	349	22
23		EOR Steaming	35	35	35	35	35	35	35	35	35	35	35	35	35	23
24		Electric Generation (EG)	597	599	592	692	675	787	956	971	901	729	716	718	745	24
25		Subtotal-NONCORE	1,039	1,050	1,036	1,133	1,096	1,216	1,383	1,420	1,361	1,172	1,157	1,156	1,186	25
26	WHOLESALE &	Core	288	269	231	183	144	120	112	108	113	130	197	276	180	26
27	INTERNATIONAL	Noncore Excl. EG	41	41	40	41	39	45	44	45	49	45	49	42	43	27
28		Electric Generation (EG)	205	223	182	173	194	152	174	197	188	174	181	178	185	28
29		Subtotal-WHOLESALE &	535	534	453	397	376	316	331	350	349	349	427	496	409	29
30		Co. Use & LUAF	60	58	52	48	43	43	45	46	45	43	52	62	50	30
31	SYSTEM TOTAL THROUGHPUT		3,179	3,093	2,758	2,573	2,312	2,264	2,378	2,438	2,406	2,280	2,784	3,301	2,645	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	11	11	9	8	6	6	5	5	5	6	9	11	8	32
33	NONCORE	Commercial/Industrial	407	416	410	406	386	395	392	415	425	408	406	404	406	33
34		EOR Steaming	35	35	35	35	35	35	35	35	35	35	35	35	35	34
35		Electric Generation (EG)	597	599	592	692	675	787	956	971	901	729	716	718	745	35
36		Subtotal-RETAIL	1,050	1,061	1,045	1,140	1,103	1,222	1,388	1,425	1,366	1,177	1,166	1,168	1,193	36
37	WHOLESALE & INTERNATIONAL	All End Uses	535	534	453	397	376	316	331	350	349	349	427	496	409	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,585	1,594	1,499	1,537	1,478	1,538	1,719	1,775	1,715	1,526	1,593	1,664	1,602	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41

NOTES:

1/ Excludes own-source gas supply of 3 3 3 3 3 3 3 3 3 3 3 3 3
gas procurement by the City of Long Beach

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 1-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2007

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		0	0	0	0	0	0	0	0	0	0	0	0	0	8
9	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	9
10	TOTAL CAPACITY AVAILABLE		3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		2,931	2,809	2,530	2,211	1,954	1,965	2,087	2,137	2,105	1,953	2,462	2,999	2,343	12
13	TOTAL SUPPLY TAKEN		3,241	3,119	2,840	2,521	2,264	2,275	2,397	2,447	2,415	2,263	2,772	3,309	2,653	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,241	3,119	2,840	2,521	2,264	2,275	2,397	2,447	2,415	2,263	2,772	3,309	2,653	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,174	1,067	898	698	519	419	378	378	387	461	810	1,207	698	16
17		Commercial	278	286	229	210	195	186	164	162	177	173	247	286	216	17
18		Industrial	67	71	65	63	59	60	54	56	61	59	65	66	62	18
19		NGV	19	20	21	21	21	21	21	21	22	21	21	21	21	19
20		Subtotal-CORE	1,539	1,445	1,212	992	794	686	617	618	648	713	1,143	1,579	997	20
21	NONCORE	Commercial	70	67	62	59	51	50	46	47	56	53	56	65	57	21
22		Industrial	336	342	341	340	330	340	341	362	364	350	346	336	344	22
23		EOR Steaming	35	35	35	35	35	35	35	35	35	35	35	35	35	23
24		Electric Generation (EG)	704	695	712	685	682	797	974	987	916	731	724	730	779	24
25		Subtotal-NONCORE	1,145	1,139	1,149	1,119	1,098	1,222	1,395	1,432	1,371	1,169	1,161	1,166	1,214	25
26	WHOLESALE &	Core	291	271	233	184	144	120	112	108	113	131	197	278	181	26
27	INTERNATIONAL	Noncore Excl. EG	44	42	42	41	39	44	44	44	48	44	48	41	43	27
28		Electric Generation (EG)	162	163	151	138	146	160	184	199	190	164	171	181	168	28
29		Subtotal-WHOLESALE &	497	476	426	363	329	324	340	352	351	339	416	501	392	29
30		Co. Use & LUAF	61	59	53	47	43	43	45	46	45	43	52	62	50	30
31	SYSTEM TOTAL THROUGHPUT		3,241	3,119	2,840	2,521	2,264	2,275	2,397	2,447	2,415	2,263	2,772	3,309	2,653	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	11	11	9	8	6	6	5	5	5	6	9	11	8	32
33	NONCORE	Commercial/Industrial	406	409	402	399	381	390	387	410	420	404	402	402	401	33
34		EOR Steaming	35	35	35	35	35	35	35	35	35	35	35	35	35	34
35		Electric Generation (EG)	704	695	712	685	682	797	974	987	916	731	724	730	779	35
36		Subtotal-RETAIL	1,156	1,150	1,158	1,127	1,104	1,228	1,400	1,436	1,376	1,175	1,170	1,178	1,222	36
	WHOLESALE &															38
37	INTERNATIONAL	All End Uses	497	476	426	363	329	324	340	352	351	339	416	501	392	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,653	1,626	1,584	1,490	1,433	1,551	1,740	1,788	1,727	1,513	1,586	1,679	1,614	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41

NOTES:

1/ Excludes own-source gas supply of 3 3 3 3 3 3 3 3 3 3 3 3 3
gas procurement by the City of Long Beach

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 1-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2008

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		2,950	2,758	2,556	2,239	1,977	2,039	2,165	2,239	2,159	2,070	2,568	3,079	2,400	12
13	TOTAL SUPPLY TAKEN		3,260	3,068	2,866	2,549	2,287	2,349	2,475	2,549	2,469	2,380	2,878	3,389	2,710	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,260	3,068	2,866	2,549	2,287	2,349	2,475	2,549	2,469	2,380	2,878	3,389	2,710	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,183	1,038	904	703	523	422	381	381	390	465	816	1,216	701	16
17		Commercial	278	276	229	209	194	186	164	161	177	172	246	285	215	17
18		Industrial	66	68	64	62	58	59	53	56	61	58	65	65	61	18
19		NGV	20	21	22	23	22	23	22	23	24	22	23	22	22	19
20		Subtotal-CORE	1,547	1,403	1,219	997	798	689	620	621	651	717	1,149	1,588	999	20
21	NONCORE	Commercial	71	65	62	60	52	50	46	48	57	54	57	66	57	21
22		Industrial	336	336	340	339	330	341	341	362	364	351	346	336	343	22
23		EOR Steaming	35	35	35	35	35	35	27	27	27	27	20	20	30	23
24		Electric Generation (EG)	709	689	721	705	695	858	1,045	1,080	973	845	832	831	833	24
25		Subtotal-NONCORE	1,150	1,125	1,158	1,139	1,112	1,283	1,459	1,517	1,420	1,276	1,254	1,252	1,263	25
26	WHOLESALE &	Core	277	267	231	182	144	121	113	110	111	124	188	263	177	26
27	INTERNATIONAL	Noncore Excl. EG	42	44	42	41	40	48	47	48	50	40	46	41	44	27
28		Electric Generation (EG)	183	172	161	142	151	164	189	206	190	179	185	180	175	28
29		Subtotal-WHOLESALE &	501	482	434	365	335	332	349	363	352	342	420	485	397	29
30		Co. Use & LUAF	61	58	54	48	43	44	47	48	46	45	54	64	51	30
31	SYSTEM TOTAL THROUGHPUT		3,260	3,068	2,866	2,549	2,287	2,349	2,475	2,549	2,469	2,380	2,878	3,389	2,710	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	11	10	9	8	6	6	5	5	5	6	9	11	8	32
33	NONCORE	Commercial/Industrial	406	401	402	399	382	391	388	410	421	404	403	402	401	33
34		EOR Steaming	35	35	35	35	35	35	27	27	27	27	20	20	30	34
35		Electric Generation (EG)	709	689	721	705	695	858	1,045	1,080	973	845	832	831	833	35
36		Subtotal-RETAIL	1,161	1,135	1,167	1,146	1,118	1,289	1,464	1,522	1,426	1,281	1,263	1,264	1,270	36
	WHOLESALE &															38
37	INTERNATIONAL	All End Uses	501	482	434	365	335	332	349	363	352	342	420	485	397	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,662	1,618	1,602	1,511	1,453	1,621	1,813	1,885	1,777	1,624	1,683	1,748	1,667	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of		3	3	3	3	3	3	3	3	3	3	3	3	3	
	gas procurement by the City of Long Beach															
	2/ Requirement forecast by end-use includes sales, transportation, and exchange volumes															
	3/ Liquified Natural Gas delivery capacity assumed to be available in 2008															

Work Paper: TABLE 1-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2009

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		2,920	2,829	2,514	2,202	1,938	1,889	1,985	2,047	1,998	1,936	2,439	2,969	2,303	12
13	TOTAL SUPPLY TAKEN		3,230	3,139	2,824	2,512	2,248	2,199	2,295	2,357	2,308	2,246	2,749	3,279	2,613	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,230	3,139	2,824	2,512	2,248	2,199	2,295	2,357	2,308	2,246	2,749	3,279	2,613	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,191	1,083	911	708	527	425	384	384	393	468	821	1,225	708	16
17		Commercial	278	286	229	209	194	186	164	161	177	172	246	285	215	17
18		Industrial	66	69	63	61	58	58	53	55	60	57	64	64	61	18
19		NGV	21	23	23	24	23	24	23	24	25	23	24	23	23	19
20		Subtotal-CORE	1,556	1,461	1,226	1,003	802	693	623	624	654	720	1,156	1,598	1,007	20
21	NONCORE	Commercial	71	68	63	60	52	51	47	48	57	54	57	67	58	21
22		Industrial	335	342	340	340	331	341	342	363	365	351	346	336	344	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	710	704	688	667	661	699	852	870	792	690	676	683	725	24
25		Subtotal-NONCORE	1,137	1,133	1,110	1,086	1,064	1,111	1,260	1,301	1,233	1,115	1,099	1,105	1,146	25
26	WHOLESALE &	Core	265	263	221	174	138	117	110	108	111	124	189	265	173	26
27	INTERNATIONAL	Noncore Excl. EG	41	44	42	41	40	48	47	48	51	41	47	41	44	27
28		Electric Generation (EG)	171	178	171	161	162	190	211	233	214	204	205	208	192	28
29		Subtotal-WHOLESALE &	477	485	435	375	340	355	368	389	377	369	442	514	410	29
30		Co. Use & LUAF	61	59	53	47	42	41	43	44	43	42	52	62	49	30
31	SYSTEM TOTAL THROUGHPUT		3,230	3,139	2,824	2,512	2,248	2,199	2,295	2,357	2,308	2,246	2,749	3,279	2,613	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	11	11	9	8	6	6	5	5	5	6	9	11	8	32
33	NONCORE	Commercial/Industrial	407	409	403	400	383	392	389	411	422	405	404	403	402	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	710	704	688	667	661	699	852	870	792	690	676	683	725	35
36		Subtotal-RETAIL	1,148	1,144	1,119	1,094	1,070	1,116	1,265	1,306	1,239	1,121	1,108	1,117	1,154	36
	WHOLESALE &															38
37	INTERNATIONAL	All End Uses	477	485	435	375	340	355	368	389	377	369	442	514	410	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,624	1,629	1,554	1,469	1,410	1,471	1,633	1,694	1,615	1,490	1,550	1,631	1,564	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of gas procurement by the City of Long Beach		3	3	3	3	3	3	3	3	3	3	3	3	3	

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 1-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2010

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		2,847	2,733	2,440	2,111	1,853	1,815	1,914	1,973	1,925	1,890	2,388	2,916	2,232	12
13	TOTAL SUPPLY TAKEN		3,157	3,043	2,750	2,421	2,163	2,125	2,224	2,283	2,235	2,200	2,698	3,226	2,542	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,157	3,043	2,750	2,421	2,163	2,125	2,224	2,283	2,235	2,200	2,698	3,226	2,542	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,196	1,087	914	711	529	426	385	385	394	470	825	1,229	711	16
17		Commercial	275	283	227	207	193	184	162	160	176	171	244	283	213	17
18		Industrial	64	68	62	60	56	57	52	54	59	56	63	63	59	18
19		NGV	22	24	24	24	24	25	24	24	25	24	25	24	24	19
20		Subtotal-CORE	1,558	1,462	1,227	1,003	802	692	623	624	654	720	1,156	1,599	1,008	20
21	NONCORE	Commercial	72	68	63	61	53	51	47	49	57	54	58	67	58	21
22		Industrial	335	340	339	338	330	340	341	362	363	350	345	335	343	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	628	616	625	603	597	655	805	825	743	664	643	644	671	24
25		Subtotal-NONCORE	1,054	1,045	1,046	1,022	999	1,065	1,212	1,255	1,184	1,088	1,066	1,066	1,092	25
26	WHOLESALE &	Core	267	265	223	175	139	117	111	108	112	125	191	268	175	26
27	INTERNATIONAL	Noncore Excl. EG	41	44	42	41	40	48	47	48	51	41	47	41	44	27
28		Electric Generation (EG)	177	170	159	134	143	162	188	205	192	185	187	190	174	28
29		Subtotal-WHOLESALE &	486	479	425	351	322	327	347	361	355	350	425	499	393	29
30		Co. Use & LUAF	59	57	52	45	41	40	42	43	42	41	51	61	48	30
31	SYSTEM TOTAL THROUGHPUT		3,157	3,043	2,750	2,421	2,163	2,125	2,224	2,283	2,235	2,200	2,698	3,226	2,542	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	11	11	9	8	6	6	5	5	5	6	9	11	8	32
33	NONCORE	Commercial/Industrial	407	409	402	399	382	391	388	410	421	405	403	402	402	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	628	616	625	603	597	655	805	825	743	664	643	644	671	35
36		Subtotal-RETAIL	1,066	1,055	1,055	1,029	1,005	1,071	1,217	1,260	1,189	1,094	1,075	1,078	1,100	36
	WHOLESALE &															38
37	INTERNATIONAL	All End Uses	486	479	425	351	322	327	347	361	355	350	425	499	393	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,551	1,535	1,480	1,380	1,327	1,398	1,564	1,621	1,544	1,444	1,500	1,577	1,494	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of		3	3	3	3	3	3	3	3	3	3	3	3	3	
	gas procurement by the City of Long Beach															
	2/ Requirement forecast by end-use includes sales, transportation, and exchange volumes															
	3/ Liquified Natural Gas delivery capacity assumed to be available in 2008															

Work Paper: TABLE 2-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2011

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		2,778	2,674	2,370	2,047	1,784	1,751	1,836	1,897	1,846	1,800	2,296	2,831	2,157	12
13	TOTAL SUPPLY TAKEN		3,088	2,984	2,680	2,357	2,094	2,061	2,146	2,207	2,156	2,110	2,606	3,141	2,467	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,088	2,984	2,680	2,357	2,094	2,061	2,146	2,207	2,156	2,110	2,606	3,141	2,467	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,205	1,095	921	716	533	429	388	388	397	473	831	1,239	716	16
17		Commercial	272	280	224	205	191	182	161	158	174	169	242	280	211	17
18		Industrial	63	67	61	59	55	56	51	53	58	55	61	62	58	18
19		NGV	23	24	24	25	24	25	24	25	26	24	25	24	25	19
20		Subtotal-CORE	1,563	1,467	1,230	1,006	803	693	624	625	655	722	1,159	1,605	1,010	20
21	NONCORE	Commercial	72	69	64	61	53	51	47	49	58	55	58	67	59	21
22		Industrial	326	332	331	330	322	332	333	354	355	342	338	328	335	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	562	556	557	541	531	589	733	753	672	589	570	571	603	24
25		Subtotal-NONCORE	980	977	971	952	925	992	1,133	1,176	1,104	1,006	985	986	1,016	25
26	WHOLESALE &	Core	269	267	225	176	139	118	112	109	113	125	192	269	176	26
27	INTERNATIONAL	Noncore Excl. EG	41	45	42	41	40	48	48	48	51	41	47	42	45	27
28		Electric Generation (EG)	177	172	162	138	147	170	190	208	192	176	174	180	174	28
29		Subtotal-WHOLESALE &	487	484	429	355	327	337	349	366	356	343	413	491	394	29
30		Co. Use & LUAF	58	56	50	44	39	39	40	41	41	40	49	59	46	30
31	SYSTEM TOTAL THROUGHPUT		3,088	2,984	2,680	2,357	2,094	2,061	2,146	2,207	2,156	2,110	2,606	3,141	2,467	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	11	11	9	7	6	6	5	5	5	6	9	11	8	32
33	NONCORE	Commercial/Industrial	398	401	394	391	375	384	380	403	413	397	396	395	394	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	562	556	557	541	531	589	733	753	672	589	570	571	603	35
36		Subtotal-RETAIL	991	988	980	959	931	998	1,138	1,181	1,110	1,012	994	997	1,024	36
37	WHOLESALE & INTERNATIONAL	All End Uses	487	484	429	355	327	337	349	366	356	343	413	491	394	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,478	1,472	1,409	1,315	1,258	1,334	1,487	1,546	1,466	1,354	1,407	1,488	1,418	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of gas procurement by the City of Long Beach		3	3	3	3	3	3	3	3	3	3	3	3	3	

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 2-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2012

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		2,789	2,604	2,405	2,069	1,788	1,766	1,859	1,915	1,873	1,820	2,299	2,851	2,170	12
13	TOTAL SUPPLY TAKEN		3,099	2,914	2,715	2,379	2,098	2,076	2,169	2,225	2,183	2,130	2,609	3,161	2,480	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,099	2,914	2,715	2,379	2,098	2,076	2,169	2,225	2,183	2,130	2,609	3,161	2,480	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,212	1,063	926	721	536	432	390	390	399	476	835	1,246	718	16
17		Commercial	268	267	221	202	188	180	159	156	171	167	238	276	207	17
18		Industrial	62	63	59	58	54	55	49	52	56	54	60	60	57	18
19		NGV	23	24	25	26	25	26	25	26	27	25	26	25	25	19
20		Subtotal-CORE	1,565	1,417	1,232	1,006	803	692	623	624	654	721	1,159	1,607	1,008	20
21	NONCORE	Commercial	72	67	64	61	53	52	48	49	58	55	58	68	59	21
22		Industrial	327	327	331	331	322	333	333	354	356	343	338	328	335	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	566	549	575	550	533	601	747	768	694	602	572	580	612	24
25		Subtotal-NONCORE	984	963	990	962	928	1,005	1,148	1,190	1,128	1,020	988	996	1,025	25
26	WHOLESALE &	Core	271	259	226	177	140	119	112	109	113	126	192	271	176	26
27	INTERNATIONAL	Noncore Excl. EG	41	43	42	41	40	48	48	48	51	41	47	42	44	27
28		Electric Generation (EG)	179	177	175	147	148	172	197	211	197	182	173	187	179	28
29		Subtotal-WHOLESALE &	492	479	443	366	328	339	357	369	361	349	413	499	399	29
30		Co. Use & LUAF	58	55	51	45	39	39	41	42	41	40	49	59	47	30
31	SYSTEM TOTAL THROUGHPUT		3,099	2,914	2,715	2,379	2,098	2,076	2,169	2,225	2,183	2,130	2,609	3,161	2,480	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	11	10	9	7	6	6	5	5	5	6	9	11	8	32
33	NONCORE	Commercial/Industrial	399	394	395	392	375	384	381	403	414	398	396	396	394	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	566	549	575	550	533	601	747	768	694	602	572	580	612	35
36		Subtotal-RETAIL	996	973	998	969	934	1,011	1,153	1,195	1,133	1,025	996	1,007	1,033	36
37	WHOLESALE & INTERNATIONAL	All End Uses	492	479	443	366	328	339	357	369	361	349	413	499	399	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,487	1,452	1,441	1,335	1,262	1,350	1,509	1,564	1,494	1,374	1,409	1,506	1,432	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of gas procurement by the City of Long Beach		3	3	3	3	3	3	3	3	3	3	3	3	3	

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 2-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2015

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		2,817	2,715	2,416	2,102	1,821	1,793	1,893	1,966	1,898	1,834	2,307	2,853	2,199	12
13	TOTAL SUPPLY TAKEN		3,127	3,025	2,726	2,412	2,131	2,103	2,203	2,276	2,208	2,144	2,617	3,163	2,509	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,127	3,025	2,726	2,412	2,131	2,103	2,203	2,276	2,208	2,144	2,617	3,163	2,509	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,234	1,122	944	734	546	440	398	398	407	485	851	1,269	734	16
17		Commercial	255	262	210	192	179	171	151	149	163	159	226	262	198	17
18		Industrial	57	60	55	53	50	50	45	48	52	49	55	56	52	18
19		NGV	25	27	27	28	27	28	27	27	29	27	28	27	27	19
20		Subtotal-CORE	1,571	1,471	1,235	1,007	801	689	621	622	651	720	1,161	1,614	1,011	20
21	NONCORE	Commercial	73	70	65	62	54	52	48	50	59	56	59	69	60	21
22		Industrial	329	334	333	332	324	334	335	356	357	344	340	330	337	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	582	576	587	576	562	627	785	820	723	621	581	588	636	24
25		Subtotal-NONCORE	1,004	999	1,004	990	959	1,033	1,188	1,245	1,158	1,040	1,000	1,006	1,053	25
26	WHOLESALE &	Core	276	273	229	179	141	119	113	110	114	127	195	275	179	26
27	INTERNATIONAL	Noncore Excl. EG	42	45	43	42	41	48	48	49	52	41	47	42	45	27
28		Electric Generation (EG)	176	179	164	150	149	174	192	208	192	176	165	167	174	28
29		Subtotal-WHOLESALE &	494	497	435	370	330	341	353	367	358	344	408	484	398	29
30		Co. Use & LUAF	59	57	51	45	40	40	41	43	41	40	49	59	47	30
31	SYSTEM TOTAL THROUGHPUT		3,127	3,025	2,726	2,412	2,131	2,103	2,203	2,276	2,208	2,144	2,617	3,163	2,509	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	11	11	9	7	6	5	5	5	5	5	9	11	7	32
33	NONCORE	Commercial/Industrial	402	404	398	394	378	386	383	405	416	400	399	399	397	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	582	576	587	576	562	627	785	820	723	621	581	588	636	35
36		Subtotal-RETAIL	1,015	1,010	1,013	997	965	1,038	1,193	1,249	1,164	1,046	1,008	1,017	1,060	36
37	WHOLESALE & INTERNATIONAL	All End Uses	494	497	435	370	330	341	353	367	358	344	408	484	398	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,508	1,507	1,448	1,368	1,296	1,379	1,546	1,616	1,521	1,390	1,416	1,501	1,458	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41

NOTES:

1/ Excludes own-source gas supply of 3 3 3 3 3 3 3 3 3 3 3 3 3
gas procurement by the City of Long Beach

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 2-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2020

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		2,838	2,635	2,446	2,135	1,852	1,844	1,955	2,053	1,951	1,861	2,375	2,974	2,243	12
13	TOTAL SUPPLY TAKEN		3,148	2,945	2,756	2,445	2,162	2,154	2,265	2,363	2,261	2,171	2,685	3,284	2,553	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,148	2,945	2,756	2,445	2,162	2,154	2,265	2,363	2,261	2,171	2,685	3,284	2,553	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,256	1,102	960	747	555	448	405	405	414	493	866	1,291	744	16
17		Commercial	226	225	187	171	160	153	135	134	146	142	202	233	176	17
18		Industrial	47	48	45	44	41	42	37	39	43	41	46	46	43	18
19		NGV	28	29	30	31	30	31	30	30	32	30	31	30	30	19
20		Subtotal-CORE	1,557	1,404	1,222	992	786	673	607	608	635	706	1,144	1,600	994	20
21	NONCORE	Commercial	74	68	66	63	54	53	49	50	59	56	60	69	60	21
22		Industrial	321	320	324	324	316	326	326	347	348	336	331	322	328	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	614	597	624	611	600	689	859	915	788	662	653	686	692	24
25		Subtotal-NONCORE	1,029	1,005	1,034	1,017	989	1,087	1,253	1,331	1,216	1,073	1,063	1,097	1,100	25
26	WHOLESALE &	Core	287	274	238	185	145	123	116	114	117	131	202	286	185	26
27	INTERNATIONAL	Noncore Excl. EG	43	44	43	43	42	49	49	49	52	42	48	43	46	27
28		Electric Generation (EG)	174	162	167	162	159	182	197	216	199	178	177	197	181	28
29		Subtotal-WHOLESALE &	504	480	448	389	346	354	362	380	368	351	427	526	411	29
30		Co. Use & LUAF	59	55	52	46	41	40	43	44	42	41	50	62	48	30
31	SYSTEM TOTAL THROUGHPUT		3,148	2,945	2,756	2,445	2,162	2,154	2,265	2,363	2,261	2,171	2,685	3,284	2,553	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	11	10	8	7	6	5	4	4	5	5	8	11	7	32
33	NONCORE	Commercial/Industrial	395	389	390	387	370	378	375	397	408	392	391	391	388	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	614	597	624	611	600	689	859	915	788	662	653	686	692	35
36		Subtotal-RETAIL	1,040	1,015	1,042	1,024	995	1,092	1,258	1,336	1,221	1,078	1,071	1,107	1,107	36
37	WHOLESALE & INTERNATIONAL	All End Uses	504	480	448	389	346	354	362	380	368	351	427	526	411	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,543	1,495	1,490	1,413	1,341	1,446	1,620	1,715	1,589	1,429	1,499	1,633	1,518	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of gas procurement by the City of Long Beach		3	3	3	3	3	3	3	3	3	3	3	3	3	

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 2-SC

SOUTHERN CALIFORNIA GAS COMPANY

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

AVERAGE TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		2,949	2,841	2,517	2,225	1,964	2,029	2,232	2,320	2,160	1,977	2,518	3,125	2,403	12
13	TOTAL SUPPLY TAKEN		3,259	3,151	2,827	2,535	2,274	2,339	2,542	2,630	2,470	2,287	2,828	3,435	2,713	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,259	3,151	2,827	2,535	2,274	2,339	2,542	2,630	2,470	2,287	2,828	3,435	2,713	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,287	1,170	984	766	569	459	415	415	424	506	888	1,323	765	16
17		Commercial	218	224	180	165	154	148	131	129	141	137	194	225	170	17
18		Industrial	43	45	41	40	37	38	34	36	39	37	42	42	39	18
19		NGV	31	34	33	34	33	34	33	33	35	33	34	33	33	19
20		Subtotal-CORE	1,579	1,473	1,238	1,004	793	678	612	613	639	712	1,157	1,623	1,008	20
21	NONCORE	Commercial	76	72	67	64	55	54	50	51	61	57	61	71	61	21
22		Industrial	315	320	318	318	310	320	320	340	342	329	325	316	323	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	682	678	664	668	679	836	1,084	1,124	949	752	756	789	806	24
25		Subtotal-NONCORE	1,092	1,089	1,069	1,070	1,064	1,229	1,474	1,535	1,371	1,158	1,161	1,195	1,210	25
26	WHOLESALE &	Core	302	298	249	194	152	129	122	119	123	136	210	300	194	26
27	INTERNATIONAL	Noncore Excl. EG	43	47	44	43	42	50	49	50	53	43	49	44	47	27
28		Electric Generation (EG)	182	185	174	176	179	208	237	264	239	194	197	209	204	28
29		Subtotal-WHOLESALE &	527	530	467	413	374	387	408	433	414	373	456	552	444	29
30		Co. Use & LUAF	61	59	53	48	43	44	48	49	46	43	53	65	51	30
31	SYSTEM TOTAL THROUGHPUT		3,259	3,151	2,827	2,535	2,274	2,339	2,542	2,630	2,470	2,287	2,828	3,435	2,713	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	11	10	8	7	6	5	4	4	5	5	8	11	7	32
33	NONCORE	Commercial/Industrial	391	391	385	382	365	373	370	391	402	387	386	386	384	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	682	678	664	668	679	836	1,084	1,124	949	752	756	789	806	35
36		Subtotal-RETAIL	1,103	1,099	1,077	1,076	1,070	1,234	1,478	1,540	1,375	1,163	1,169	1,206	1,217	36
37	WHOLESALE & INTERNATIONAL	All End Uses	527	530	467	413	374	387	408	433	414	373	456	552	444	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,630	1,629	1,544	1,490	1,444	1,621	1,886	1,973	1,790	1,536	1,625	1,758	1,661	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41

NOTES:

1/ Excludes own-source gas supply of 3 3 3 3 3 3 3 3 3 3 3 3 3
gas procurement by the City of Long Beach

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

2006 CALIFORNIA GAS REPORT

FORECAST OF REQUIREMENTS - COLD TEMPERATURE YEAR
JULY 2006

The Gas Company

A Sempra Energy utility™

TABLE 3-SC

SOUTHERN CALIFORNIA GAS COMPAN

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DA
ESTIMATED YEARS 2006 THRU 2010

COLD TEMPERATURE YEAF

LINE	FIRM CAPACITY AVAILABLE		2006	2007	2008	2009	2010	LINE
1	California Source Gas		310	310	310	310	310	1
	Out-of-State Gas							
2	Mojave (Hector Road)		50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		1,210	1,210	1,210	1,210	1,210	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	7
8	LNG Capacity 4/		0	0	800	800	800	8
9	Total Out-of-State Gas		3,565	3,565	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		3,875	3,875	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN							
11	California Source Gas		310	310	310	310	310	11
12	Out-of-State		2,445	2,453	2,511	2,413	2,342	12
13	TOTAL SUPPLY TAKEN		2,755	2,763	2,821	2,723	2,652	13
14	Net Underground Storage Withdrawa		0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		2,755	2,763	2,821	2,723	2,652	15
	REQUIREMENTS FORECAST BY END-USE 3							
16	CORE	Residential	775	774	777	785	788	16
17		Commercial	231	228	227	228	226	17
18		Industrial	65	64	63	62	61	18
19		NGV	20	21	22	23	24	19
20		Subtotal-CORE	1,091	1,087	1,089	1,098	1,099	20
21	NONCORE	Commercial	57	57	57	58	58	21
22		Industrial	349	344	343	344	343	22
23		EOR Steaming	35	35	30	20	20	23
24		Electric Generation (EG)	745	779	833	725	671	24
25		Subtotal-NONCORE	1,186	1,214	1,263	1,146	1,092	25
26	WHOLESALE &	Core	198	199	197	190	192	26
27	INTERNATIONAL	Noncore Excl. EG	43	43	44	44	44	27
28		Electric Generation (EG)	185	168	175	192	174	28
29		Subtotal-WHOLESALE & INTI	426	410	416	427	411	29
30		Co. Use & LUAF	52	52	53	51	50	30
31	SYSTEM TOTAL THROUGHPUT /1		2,755	2,763	2,821	2,723	2,652	31
	TRANSPORTATION AND EXCHANGE							
32	CORE	All End Uses	8	8	8	8	8	32
33	NONCORE	Commercial/Industrial	406	401	401	402	402	33
34		EOR Steaming	35	35	30	20	20	34
35		Electric Generation (EG)	745	779	833	725	671	35
36		Subtotal-RETAIL	1,194	1,223	1,271	1,155	1,101	36
37	WHOLESALE & INTERNATIONAL	All End Uses	426	410	416	427	411	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,620	1,632	1,687	1,582	1,511	38
	CURTAILMENT (RETAIL & WHOLESALE)							
39		Core	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	41

NOTES:

1/ Figures exclude pipeline bypass load losses o — 864 | 861 | 876 | 986 | 1,082
to non-jurisdictional gas suppliers.

2/ Excludes own-source gas supply of — 864 | 3 | 3 | 3 | 3
gas procurement by the City of Long Beach

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

4/ Liquified Natural Gas delivery capacity assumed to be available in 200

TABLE 4-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2011 THRU 2025

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		2011	2012	2015	2020	2025	LINE
1	California Source Gas		310	310	310	310	310	1
	Out-of-State Gas							
2	Mojave (Hector Road		50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		1,210	1,210	1,210	1,210	1,210	3
4	El Paso Natural Gas Co. (Topock		540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles		800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge		765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	7
8	LNG Capacity 4/		800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN							
11	California Source Gas		310	310	310	310	310	11
12	Out-of-State		2,267	2,280	2,311	2,355	2,518	12
13	TOTAL SUPPLY TAKEN		2,577	2,590	2,621	2,665	2,828	13
14	Net Underground Storage Withdrawa		0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		2,577	2,590	2,621	2,665	2,828	15
	REQUIREMENTS FORECAST BY END-USE 3/							
16	CORE	Residential	794	796	813	825	848	16
17		Commercial	224	220	210	186	180	17
18		Industrial	60	58	54	44	40	18
19		NGV	25	25	27	30	33	19
20		Subtotal-CORE	1,102	1,099	1,104	1,086	1,102	20
21	NONCORE	Commercial	59	59	60	60	61	21
22		Industrial	335	335	337	328	323	22
23		EOR Steaming	20	20	20	20	20	23
24		Electric Generation (EG)	603	612	636	692	806	24
25		Subtotal-NONCORE	1,016	1,025	1,053	1,100	1,210	25
26	WHOLESALE &	Core	193	193	196	203	213	26
27	INTERNATIONAL	Noncore Excl. EG	45	44	45	46	47	27
28		Electric Generation (EG)	174	179	174	181	204	28
29		Subtotal-WHOLESALE & INTL	411	417	415	429	463	29
30								30
31		Co. Use & LUAF	48	49	49	50	53	31
32	SYSTEM TOTAL THROUGHPUT /1		2,577	2,590	2,621	2,665	2,828	32
	TRANSPORTATION AND EXCHANGE							
33	CORE	All End Uses	8	8	8	8	8	33
34	NONCORE	Commercial/Industrial	394	394	397	388	384	34
35		EOR Steaming	20	20	20	20	20	35
36		Electric Generation (EG)	603	612	636	692	806	36
37		Subtotal-RETAIL	1,024	1,034	1,061	1,108	1,217	37
38	WHOLESALE &							38
39	INTERNATIONAL	All End Uses	411	417	415	429	463	39
40	TOTAL TRANSPORTATION & EXCHANGE		1,436	1,450	1,476	1,537	1,680	40
	CURTAILMENT (RETAIL & WHOLESALE)							
41		Core	0	0	0	0	0	41
42		Noncore	0	0	0	0	0	42
43		TOTAL - Curtailment	0	0	0	0	0	43

NOTES:

1/ Figures exclude pipeline bypass load losses c 1,082 1,082 1,109 1,070 1,054
to non-jurisdictional gas suppliers

2/ Excludes own-source gas supply of 3 3 3 3 3
gas procurement by the City of Long Beach

3/ Requirement forecast by end-use includes sales, transportation, and exchange volume

4/ Liquified Natural Gas delivery capacity assumed to be available in 200

Work Paper: TABLE 3-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2006

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		0	0	0	0	0	0	0	0	0	0	0	0	0	8
9	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	9
10	TOTAL CAPACITY AVAILABLE		3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		3,124	3,027	2,626	2,370	2,056	1,973	2,073	2,133	2,108	1,990	2,618	3,266	2,445	12
13	TOTAL SUPPLY TAKEN		3,434	3,337	2,936	2,680	2,366	2,283	2,383	2,443	2,418	2,300	2,928	3,576	2,755	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,434	3,337	2,936	2,680	2,366	2,283	2,383	2,443	2,418	2,300	2,928	3,576	2,755	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,365	1,232	1,024	777	556	428	379	379	391	482	912	1,404	775	16
17		Commercial	312	317	249	223	206	192	165	165	182	178	270	320	231	17
18		Industrial	72	76	69	66	62	62	55	58	64	61	69	70	65	18
19		NGV	18	19	19	20	19	20	19	20	21	19	20	19	20	19
20		Subtotal-CORE	1,767	1,644	1,361	1,086	843	702	619	622	658	740	1,271	1,813	1,091	20
21	NONCORE	Commercial	70	67	62	59	52	50	46	47	56	53	57	66	57	21
22		Industrial	337	350	348	346	335	345	346	367	369	355	349	338	349	22
23		EOR Steaming	35	35	35	35	35	35	35	35	35	35	35	35	35	23
24		Electric Generation (EG)	597	599	592	692	675	787	956	971	901	729	716	718	745	24
25		Subtotal-NONCORE	1,039	1,050	1,036	1,133	1,096	1,216	1,383	1,420	1,361	1,172	1,157	1,156	1,186	25
26	WHOLESALE &	Core	319	315	261	199	151	123	115	111	116	131	217	319	198	26
27	INTERNATIONAL	Noncore Excl. EG	40	43	40	40	38	47	46	47	50	40	48	42	43	27
28		Electric Generation (EG)	205	223	182	173	194	152	174	197	188	174	181	178	185	28
29		Subtotal-WHOLESALE & INTL.	564	580	483	412	383	322	336	355	354	346	446	539	426	29
30		Co. Use & LUAF	65	63	55	50	44	43	45	46	45	43	55	67	52	30
31	SYSTEM TOTAL THROUGHPUT		3,434	3,337	2,936	2,680	2,366	2,283	2,383	2,443	2,418	2,300	2,928	3,576	2,755	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	13	12	10	8	7	6	5	5	5	6	10	13	8	32
33	NONCORE	Commercial/Industrial	407	416	410	406	386	395	392	415	425	408	406	404	406	33
34		EOR Steaming	35	35	35	35	35	35	35	35	35	35	35	35	35	34
35		Electric Generation (EG)	597	599	592	692	675	787	956	971	901	729	716	718	745	35
36		Subtotal-RETAIL	1,051	1,062	1,046	1,141	1,103	1,222	1,388	1,425	1,366	1,177	1,166	1,169	1,194	36
37	WHOLESALE & INTERNATIONAL	All End Uses	564	580	483	412	383	322	336	355	354	346	446	539	426	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,616	1,643	1,530	1,553	1,486	1,544	1,724	1,781	1,720	1,523	1,612	1,709	1,620	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41

NOTES:

1/ Excludes own-source gas supply of 3 3 3 3 3 3 3 3 3 3 3 3 3
gas procurement by the City of Long Beach

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 3-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2007

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		0	0	0	0	0	0	0	0	0	0	0	0	0	8
9	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	9
10	TOTAL CAPACITY AVAILABLE		3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	3,875	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		3,185	3,053	2,709	2,318	2,008	1,983	2,093	2,143	2,117	1,973	2,606	3,273	2,453	12
13	TOTAL SUPPLY TAKEN		3,495	3,363	3,019	2,628	2,318	2,293	2,403	2,453	2,427	2,283	2,916	3,583	2,763	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,495	3,363	3,019	2,628	2,318	2,293	2,403	2,453	2,427	2,283	2,916	3,583	2,763	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,362	1,229	1,022	775	555	427	378	378	390	481	910	1,401	774	16
17		Commercial	308	314	247	221	204	190	164	162	180	176	266	316	228	17
18		Industrial	70	74	67	65	60	60	54	56	62	60	68	69	64	18
19		NGV	19	20	21	21	21	21	21	21	22	21	21	21	21	19
20		Subtotal-CORE	1,759	1,637	1,357	1,082	840	699	617	618	654	737	1,265	1,806	1,087	20
21	NONCORE	Commercial	70	67	62	59	51	50	46	47	56	53	56	65	57	21
22		Industrial	336	342	341	340	330	340	341	362	364	350	346	336	344	22
23		EOR Steaming	35	35	35	35	35	35	35	35	35	35	35	35	35	23
24		Electric Generation (EG)	704	695	712	685	682	797	974	987	916	731	724	730	779	24
25		Subtotal-NONCORE	1,145	1,139	1,149	1,119	1,098	1,222	1,395	1,432	1,371	1,169	1,161	1,166	1,214	25
26	WHOLESALE &	Core	321	317	263	200	151	123	115	112	117	132	218	321	199	26
27	INTERNATIONAL	Noncore Excl. EG	42	44	42	40	39	46	46	47	49	40	46	41	43	27
28		Electric Generation (EG)	162	163	151	138	146	160	184	199	190	164	171	181	168	28
29		Subtotal-WHOLESALE & INTL	525	524	456	378	336	329	345	358	356	335	435	544	410	29
30		Co. Use & LUAF	66	63	57	49	44	43	45	46	46	43	55	67	52	30
31	SYSTEM TOTAL THROUGHPUT		3,495	3,363	3,019	2,628	2,318	2,293	2,403	2,453	2,427	2,283	2,916	3,583	2,763	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	13	12	10	8	7	6	5	5	5	6	10	13	8	32
33	NONCORE	Commercial/Industrial	406	409	402	399	381	390	387	410	420	404	402	402	401	33
34		EOR Steaming	35	35	35	35	35	35	35	35	35	35	35	35	35	34
35		Electric Generation (EG)	704	695	712	685	682	797	974	987	916	731	724	730	779	35
36		Subtotal-RETAIL	1,157	1,151	1,159	1,127	1,105	1,228	1,400	1,436	1,376	1,175	1,171	1,179	1,223	36
	WHOLESALE &															38
37	INTERNATIONAL	All End Uses	525	524	456	378	336	329	345	358	356	335	435	544	410	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,683	1,675	1,615	1,505	1,441	1,557	1,746	1,794	1,732	1,510	1,605	1,723	1,632	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of		3	3	3	3	3	3	3	3	3	3	3	3	3	
	gas procurement by the City of Long Beach															
	2/ Requirement forecast by end-use includes sales, transportation, and exchange volumes															
	3/ Liquified Natural Gas delivery capacity assumed to be available in 2008															

Work Paper: TABLE 3-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2008

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		3,226	2,992	2,739	2,353	2,034	2,056	2,169	2,242	2,168	2,097	2,714	3,353	2,511	12
13	TOTAL SUPPLY TAKEN		3,536	3,302	3,049	2,663	2,344	2,366	2,479	2,552	2,478	2,407	3,024	3,663	2,821	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,536	3,302	3,049	2,663	2,344	2,366	2,479	2,552	2,478	2,407	3,024	3,663	2,821	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,372	1,196	1,030	781	559	430	381	381	393	484	916	1,411	777	16
17		Commercial	307	302	246	221	203	190	164	161	179	175	266	316	227	17
18		Industrial	69	70	66	64	59	60	53	56	62	59	67	68	63	18
19		NGV	20	21	22	23	22	23	22	23	24	22	23	22	22	19
20		Subtotal-CORE	1,769	1,590	1,364	1,088	844	703	620	621	658	740	1,272	1,816	1,089	20
21	NONCORE	Commercial	71	65	62	60	52	50	46	48	57	54	57	66	57	21
22		Industrial	336	336	340	339	330	341	341	362	364	351	346	336	343	22
23		EOR Steaming	35	35	35	35	35	35	27	27	27	27	20	20	30	23
24		Electric Generation (EG)	709	689	721	705	695	858	1,045	1,080	973	845	832	831	833	24
25		Subtotal-NONCORE	1,150	1,125	1,158	1,139	1,112	1,283	1,459	1,517	1,420	1,276	1,254	1,252	1,263	25
26	WHOLESALE &	Core	325	310	266	202	153	124	117	113	112	127	209	304	197	26
27	INTERNATIONAL	Noncore Excl. EG	43	44	43	42	40	48	47	48	51	40	46	41	44	27
28		Electric Generation (EG)	183	172	161	142	151	164	189	206	190	179	185	180	175	28
29		Subtotal-WHOLESALE & INTL	551	526	469	386	344	336	353	367	353	346	441	525	416	29
30		Co. Use & LUAF	66	62	57	50	44	44	47	48	47	45	57	69	53	30
31	SYSTEM TOTAL THROUGHPUT		3,536	3,302	3,049	2,663	2,344	2,366	2,479	2,552	2,478	2,407	3,024	3,663	2,821	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	13	12	10	8	7	6	5	5	5	6	10	13	8	32
33	NONCORE	Commercial/Industrial	406	401	402	399	382	391	388	410	421	404	403	402	401	33
34		EOR Steaming	35	35	35	35	35	35	27	27	27	27	20	20	30	34
35		Electric Generation (EG)	709	689	721	705	695	858	1,045	1,080	973	845	832	831	833	35
36		Subtotal-RETAIL	1,163	1,137	1,168	1,147	1,119	1,289	1,464	1,522	1,426	1,281	1,264	1,265	1,271	36
	WHOLESALE &															38
37	INTERNATIONAL	All End Uses	551	526	469	386	344	336	353	367	353	346	441	525	416	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,713	1,663	1,637	1,533	1,462	1,625	1,817	1,889	1,779	1,627	1,705	1,791	1,687	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of gas procurement by the City of Long Beach		3	3	3	3	3	3	3	3	3	3	3	3	3	

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 3-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2009

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		3,189	3,064	2,692	2,313	1,994	1,906	1,986	2,048	2,006	1,965	2,585	3,244	2,413	12
13	TOTAL SUPPLY TAKEN		3,499	3,374	3,002	2,623	2,304	2,216	2,296	2,358	2,316	2,275	2,895	3,554	2,723	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,499	3,374	3,002	2,623	2,304	2,216	2,296	2,358	2,316	2,275	2,895	3,554	2,723	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,382	1,247	1,037	787	563	433	384	384	396	488	923	1,421	785	16
17		Commercial	307	313	246	221	203	190	164	161	179	176	266	316	228	17
18		Industrial	69	72	66	63	59	59	53	55	61	58	66	67	62	18
19		NGV	21	23	23	24	23	24	23	24	25	23	24	23	23	19
20		Subtotal-CORE	1,779	1,656	1,372	1,094	849	706	623	624	661	744	1,279	1,827	1,098	20
21	NONCORE	Commercial	71	68	63	60	52	51	47	48	57	54	57	67	58	21
22		Industrial	335	342	340	340	331	341	342	363	365	351	346	336	344	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	710	704	688	667	661	699	852	870	792	690	676	683	725	24
25		Subtotal-NONCORE	1,137	1,133	1,110	1,086	1,064	1,111	1,260	1,301	1,233	1,115	1,099	1,105	1,146	25
26	WHOLESALE &	Core	305	300	250	192	146	119	112	108	113	128	210	306	190	26
27	INTERNATIONAL	Noncore Excl. EG	41	44	42	41	40	48	47	48	51	41	47	41	44	27
28		Electric Generation (EG)	171	178	171	161	162	190	211	233	214	204	205	208	192	28
29		Subtotal-WHOLESALE & INTL	517	523	464	393	349	357	370	389	378	372	463	555	427	29
30		Co. Use & LUAF	66	63	56	49	43	42	43	44	44	43	54	67	51	30
31	SYSTEM TOTAL THROUGHPUT		3,499	3,374	3,002	2,623	2,304	2,216	2,296	2,358	2,316	2,275	2,895	3,554	2,723	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	13	12	10	8	7	6	5	5	5	6	10	13	8	32
33	NONCORE	Commercial/Industrial	407	409	403	400	383	392	389	411	422	405	404	403	402	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	710	704	688	667	661	699	852	870	792	690	676	683	725	35
36		Subtotal-RETAIL	1,149	1,145	1,120	1,095	1,071	1,117	1,265	1,306	1,239	1,121	1,109	1,118	1,155	36
	WHOLESALE &															38
37	INTERNATIONAL	All End Uses	517	523	464	393	349	357	370	389	378	372	463	555	427	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,666	1,668	1,584	1,488	1,419	1,474	1,635	1,695	1,617	1,493	1,572	1,673	1,582	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of gas procurement by the City of Long Beach		3	3	3	3	3	3	3	3	3	3	3	3	3	

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 3-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2010

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 3/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		3,115	2,970	2,618	2,223	1,910	1,831	1,916	1,974	1,933	1,918	2,534	3,192	2,342	12
13	TOTAL SUPPLY TAKEN		3,425	3,280	2,928	2,533	2,220	2,141	2,226	2,284	2,243	2,228	2,844	3,502	2,652	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/		3,425	3,280	2,928	2,533	2,220	2,141	2,226	2,284	2,243	2,228	2,844	3,502	2,652	15
	REQUIREMENTS FORECAST BY END-USE 2/															
16	CORE	Residential	1,387	1,252	1,041	790	565	435	385	385	397	489	926	1,426	788	16
17		Commercial	305	310	244	219	202	188	162	160	178	174	264	313	226	17
18		Industrial	67	71	64	62	58	58	52	54	60	57	65	66	61	18
19		NGV	22	24	24	24	24	25	24	24	25	24	25	24	24	19
20		Subtotal-CORE	1,781	1,657	1,373	1,095	848	706	623	624	660	744	1,279	1,829	1,099	20
21	NONCORE	Commercial	72	68	63	61	53	51	47	49	57	54	58	67	58	21
22		Industrial	335	340	339	338	330	340	341	362	363	350	345	335	343	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	628	616	625	603	597	655	805	825	743	664	643	644	671	24
25		Subtotal-NONCORE	1,054	1,045	1,046	1,022	999	1,065	1,212	1,255	1,184	1,088	1,066	1,066	1,092	25
26	WHOLESALE &	Core	308	303	253	193	148	120	113	109	114	128	212	309	192	26
27	INTERNATIONAL	Noncore Excl. EG	41	44	42	41	40	48	47	48	51	41	47	41	44	27
28		Electric Generation (EG)	177	170	159	134	143	162	188	205	192	185	187	190	174	28
29		Subtotal-WHOLESALE & INTL.	526	517	454	369	331	330	348	361	356	354	446	541	411	29
30		Co. Use & LUAF	64	62	55	48	42	40	42	43	42	42	53	66	50	30
31	SYSTEM TOTAL THROUGHPUT		3,425	3,280	2,928	2,533	2,220	2,141	2,226	2,284	2,243	2,228	2,844	3,502	2,652	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	13	12	10	8	7	6	5	5	5	6	10	13	8	32
33	NONCORE	Commercial/Industrial	407	409	402	399	382	391	388	410	421	405	403	402	402	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	628	616	625	603	597	655	805	825	743	664	643	644	671	35
36		Subtotal-RETAIL	1,067	1,057	1,056	1,030	1,005	1,071	1,217	1,260	1,189	1,094	1,076	1,079	1,101	36
	WHOLESALE &															38
37	INTERNATIONAL	All End Uses	526	517	454	369	331	330	348	361	356	354	446	541	411	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,593	1,573	1,510	1,399	1,336	1,401	1,566	1,622	1,546	1,448	1,522	1,620	1,511	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41

NOTES:

1/ Excludes own-source gas supply of 3 3 3 3 3 3 3 3 3 3 3 3 3
gas procurement by the City of Long Beach

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 4-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2011

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 4/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		3,048	2,912	2,551	2,159	1,841	1,767	1,837	1,897	1,854	1,828	2,445	3,108	2,267	12
13	TOTAL SUPPLY TAKEN		3,358	3,222	2,861	2,469	2,151	2,077	2,147	2,207	2,164	2,138	2,755	3,418	2,577	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		3,358	3,222	2,861	2,469	2,151	2,077	2,147	2,207	2,164	2,138	2,755	3,418	2,577	15
	REQUIREMENTS FORECAST BY END-USE 3/															
16	CORE	Residential	1,397	1,261	1,049	796	570	438	388	388	400	493	933	1,437	794	16
17		Commercial	301	307	242	216	200	186	161	158	176	172	261	310	224	17
18		Industrial	66	69	63	61	57	57	51	53	59	56	64	64	60	18
19		NGV	23	24	24	25	24	25	24	25	26	24	25	24	25	19
20		Subtotal-CORE	1,788	1,662	1,378	1,098	850	707	624	625	661	746	1,283	1,836	1,102	20
21	NONCORE	Commercial	72	69	64	61	53	51	47	49	58	55	58	67	59	21
22		Industrial	326	332	331	330	322	332	333	354	355	342	338	328	335	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	562	556	557	541	531	589	733	753	672	589	570	571	603	24
25		Subtotal-NONCORE	980	977	971	952	925	992	1,133	1,176	1,104	1,006	985	986	1,016	25
26	WHOLESALE &	Core	310	305	254	194	148	121	113	110	114	129	213	311	193	26
27	INTERNATIONAL	Noncore Excl. EG	41	45	42	41	40	48	48	48	51	41	47	42	45	27
28		Electric Generation (EG)	177	172	162	138	147	170	190	208	192	176	174	180	174	28
29		Subtotal-WHOLESALE & INTL.	528	522	458	374	336	339	350	366	357	346	434	532	411	29
30		Co. Use & LUAF	63	61	54	46	40	39	40	41	41	40	52	64	48	30
31	SYSTEM TOTAL THROUGHPUT /1		3,358	3,222	2,861	2,469	2,151	2,077	2,147	2,207	2,164	2,138	2,755	3,418	2,577	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	13	12	10	8	7	6	5	5	5	6	10	13	8	32
33	NONCORE	Commercial/Industrial	398	401	394	391	375	384	380	403	413	397	396	395	394	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	562	556	557	541	531	589	733	753	672	589	570	571	603	35
36		Subtotal-RETAIL	992	989	981	960	932	998	1,138	1,181	1,110	1,012	995	999	1,024	36
37	WHOLESALE & INTERNATIONAL	All End Uses	528	522	458	374	336	339	350	366	357	346	434	532	411	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,520	1,511	1,439	1,334	1,267	1,337	1,488	1,547	1,467	1,358	1,429	1,531	1,436	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41

NOTES:

1/ Excludes own-source gas supply of 3 3 3 3 3 3 3 3 3 3 3 3 3
gas procurement by the City of Long Beach

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 4-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2012

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 4/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		3,060	2,833	2,585	2,181	1,845	1,782	1,860	1,916	1,881	1,848	2,448	3,130	2,280	12
13	TOTAL SUPPLY TAKEN		3,370	3,143	2,895	2,491	2,155	2,092	2,170	2,226	2,191	2,158	2,758	3,440	2,590	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		3,370	3,143	2,895	2,491	2,155	2,092	2,170	2,226	2,191	2,158	2,758	3,440	2,590	15
	REQUIREMENTS FORECAST BY END-USE 3/															
16	CORE	Residential	1,405	1,225	1,055	800	573	441	390	390	402	496	939	1,445	796	16
17		Commercial	297	292	238	213	197	184	159	156	174	170	257	305	220	17
18		Industrial	65	65	62	59	55	56	49	52	57	55	62	63	58	18
19		NGV	23	24	25	26	25	26	25	26	27	25	26	25	25	19
20		Subtotal-CORE	1,790	1,606	1,379	1,098	850	706	623	624	660	745	1,284	1,838	1,099	20
21	NONCORE	Commercial	72	67	64	61	53	52	48	49	58	55	58	68	59	21
22		Industrial	327	327	331	331	322	333	333	354	356	343	338	328	335	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	566	549	575	550	533	601	747	768	694	602	572	580	612	24
25		Subtotal-NONCORE	984	963	990	962	928	1,005	1,148	1,190	1,128	1,020	988	996	1,025	25
26	WHOLESALE &	Core	312	296	255	195	149	121	114	110	115	129	214	313	193	26
27	INTERNATIONAL	Noncore Excl. EG	41	43	42	41	40	48	48	48	51	41	47	42	44	27
28		Electric Generation (EG)	179	177	175	147	148	172	197	211	197	182	173	187	179	28
29		Subtotal-WHOLESALE & INTL	532	515	472	384	337	342	358	369	363	352	434	541	417	29
30		Co. Use & LUAF	63	59	54	47	40	39	41	42	41	41	52	65	49	30
31	SYSTEM TOTAL THROUGHPUT /1		3,370	3,143	2,895	2,491	2,155	2,092	2,170	2,226	2,191	2,158	2,758	3,440	2,590	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	13	12	10	8	7	6	5	5	5	6	10	13	8	32
33	NONCORE	Commercial/Industrial	399	394	395	392	375	384	381	403	414	398	396	396	394	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	566	549	575	550	533	601	747	768	694	602	572	580	612	35
36		Subtotal-RETAIL	997	974	999	970	935	1,011	1,153	1,195	1,133	1,025	997	1,009	1,034	36
37	WHOLESALE & INTERNATIONAL	All End Uses	532	515	472	384	337	342	358	369	363	352	434	541	417	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,529	1,490	1,472	1,354	1,271	1,353	1,511	1,564	1,495	1,378	1,432	1,550	1,450	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of gas procurement by the City of Long Beach		3	3	3	3	3	3	3	3	3	3	3	3	3	
	2/ Requirement forecast by end-use includes sales, transportation, and exchange volumes															
	3/ Liquified Natural Gas delivery capacity assumed to be available in 2008															

Work Paper: TABLE 4-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2015

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 4/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		3,090	2,954	2,598	2,216	1,878	1,809	1,894	1,967	1,907	1,863	2,457	3,134	2,311	12
13	TOTAL SUPPLY TAKEN		3,400	3,264	2,908	2,526	2,188	2,119	2,204	2,277	2,217	2,173	2,767	3,444	2,621	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		3,400	3,264	2,908	2,526	2,188	2,119	2,204	2,277	2,217	2,173	2,767	3,444	2,621	15
	REQUIREMENTS FORECAST BY END-USE 3/															
16	CORE	Residential	1,432	1,292	1,075	815	584	449	398	398	410	505	956	1,473	813	16
17		Commercial	282	287	226	203	187	175	151	149	165	162	244	290	210	17
18		Industrial	59	62	57	55	51	51	45	48	53	50	57	58	54	18
19		NGV	25	27	27	28	27	28	27	27	29	27	28	27	27	19
20		Subtotal-CORE	1,798	1,669	1,384	1,100	848	703	621	622	657	744	1,286	1,847	1,104	20
21	NONCORE	Commercial	73	70	65	62	54	52	48	50	59	56	59	69	60	21
22		Industrial	329	334	333	332	324	334	335	356	357	344	340	330	337	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	582	576	587	576	562	627	785	820	723	621	581	588	636	24
25		Subtotal-NONCORE	1,004	999	1,004	990	959	1,033	1,188	1,245	1,158	1,040	1,000	1,006	1,053	25
26	WHOLESALE &	Core	317	311	259	197	150	122	114	111	116	131	217	317	196	26
27	INTERNATIONAL	Noncore Excl. EG	42	45	43	42	41	49	48	49	52	41	47	42	45	27
28		Electric Generation (EG)	176	179	164	150	149	174	192	208	192	176	165	167	174	28
29		Subtotal-WHOLESALE & INTL	535	535	465	389	339	344	354	368	359	348	429	526	415	29
30		Co. Use & LUAF	64	61	55	47	41	40	41	43	42	41	52	65	49	30
31	SYSTEM TOTAL THROUGHPUT /1		3,400	3,264	2,908	2,526	2,188	2,119	2,204	2,277	2,217	2,173	2,767	3,444	2,621	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	12	12	10	8	6	5	5	5	5	6	9	13	8	32
33	NONCORE	Commercial/Industrial	402	404	398	394	378	386	383	405	416	400	399	399	397	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	582	576	587	576	562	627	785	820	723	621	581	588	636	35
36		Subtotal-RETAIL	1,016	1,011	1,014	998	966	1,038	1,193	1,249	1,164	1,046	1,009	1,019	1,061	36
	WHOLESALE &															
37	INTERNATIONAL	All End Uses	535	535	465	389	339	344	354	368	359	348	429	526	415	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,551	1,546	1,479	1,387	1,305	1,382	1,547	1,617	1,523	1,394	1,438	1,545	1,476	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41

NOTES:

1/ Excludes own-source gas supply of 3 3 3 3 3 3 3 3 3 3 3 3 3
gas procurement by the City of Long Beach

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 4-SC

SOUTHERN CALIFORNIA GAS COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2020

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 4/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		3,111	2,867	2,626	2,246	1,907	1,860	1,957	2,054	1,960	1,893	2,531	3,258	2,355	12
13	TOTAL SUPPLY TAKEN		3,421	3,177	2,936	2,556	2,217	2,170	2,267	2,364	2,270	2,203	2,841	3,568	2,665	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		3,421	3,177	2,936	2,556	2,217	2,170	2,267	2,364	2,270	2,203	2,841	3,568	2,665	15
	REQUIREMENTS FORECAST BY END-USE 3/															
16	CORE	Residential	1,457	1,269	1,093	829	594	457	405	405	417	514	973	1,498	825	16
17		Commercial	250	246	201	181	167	156	135	134	148	145	218	258	186	17
18		Industrial	49	50	47	45	42	42	37	39	44	42	47	48	44	18
19		NGV	28	29	30	31	30	31	30	30	32	30	31	30	30	19
20		Subtotal-CORE	1,784	1,595	1,371	1,085	832	686	607	608	640	730	1,268	1,834	1,086	20
21	NONCORE	Commercial	74	68	66	63	54	53	49	50	59	56	60	69	60	21
22		Industrial	321	320	324	324	316	326	326	347	348	336	331	322	328	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	614	597	624	611	600	689	859	915	788	662	653	686	692	24
25		Subtotal-NONCORE	1,029	1,005	1,034	1,017	989	1,087	1,253	1,331	1,216	1,073	1,063	1,097	1,100	25
26	WHOLESALE &	Core	328	311	266	201	153	125	118	115	120	139	230	331	203	26
27	INTERNATIONAL	Noncore Excl. EG	43	44	43	43	42	49	49	49	52	42	48	43	46	27
28		Electric Generation (EG)	174	162	167	162	159	182	197	216	199	178	177	197	181	28
29		Subtotal-WHOLESALE & INTL	544	516	476	405	354	356	363	380	371	359	456	571	429	29
30		Co. Use & LUAF	64	60	55	48	42	41	43	44	43	41	53	67	50	30
31	SYSTEM TOTAL THROUGHPUT /1		3,421	3,177	2,936	2,556	2,217	2,170	2,267	2,364	2,270	2,203	2,841	3,568	2,665	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	12	11	9	8	6	5	4	4	5	5	9	12	8	32
33	NONCORE	Commercial/Industrial	395	389	390	387	370	378	375	397	408	392	391	391	388	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	614	597	624	611	600	689	859	915	788	662	653	686	692	35
36		Subtotal-RETAIL	1,041	1,016	1,043	1,024	995	1,092	1,258	1,336	1,221	1,078	1,072	1,109	1,108	36
	WHOLESALE &															
37	INTERNATIONAL	All End Uses	544	516	476	405	354	356	363	380	371	359	456	571	429	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,585	1,533	1,519	1,430	1,349	1,449	1,621	1,716	1,592	1,438	1,528	1,679	1,537	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41
	NOTES:															
	1/ Excludes own-source gas supply of gas procurement by the City of Long Beach		3	3	3	3	3	3	3	3	3	3	3	3	3	

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

Work Paper: TABLE 4-SC

SOUTHERN CALIFORNIA GAS COMPANY

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

COLD TEMPERATURE YEAR

LINE	FIRM CAPACITY AVAILABLE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
1	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	1
	Out-of-State Gas															
2	Mojave (Hector Road)		50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	El Paso Natural Gas Co. (Blythe)		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	3
4	El Paso Natural Gas Co. (Topock)		540	540	540	540	540	540	540	540	540	540	540	540	540	4
5	Transwestern Pipeline Co. (No. Needles)		800	800	800	800	800	800	800	800	800	800	800	800	800	5
6	Kern-Mojave, PG&E, Oxy (Wheeler Ridge)		765	765	765	765	765	765	765	765	765	765	765	765	765	6
7	Kern-Mojave (Kramer Junction)		200	200	200	200	200	200	200	200	200	200	200	200	200	7
8	LNG Capacity 4/		800	800	800	800	800	800	800	800	800	800	800	800	800	8
9	Total Out-of-State Gas		4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	4,365	9
10	TOTAL CAPACITY AVAILABLE /1		4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	4,675	10
	GAS SUPPLY TAKEN															
11	California Source Gas		310	310	310	310	310	310	310	310	310	310	310	310	310	11
12	Out-of-State		3,227	3,086	2,702	2,338	2,020	2,044	2,233	2,321	2,170	2,011	2,676	3,414	2,518	12
13	TOTAL SUPPLY TAKEN		3,537	3,396	3,012	2,648	2,330	2,354	2,543	2,631	2,480	2,321	2,986	3,724	2,828	13
14	Net Underground Storage Withdrawal		0	0	0	0	0	0	0	0	0	0	0	0	0	14
15	TOTAL THROUGHPUT 1/, 2/		3,537	3,396	3,012	2,648	2,330	2,354	2,543	2,631	2,480	2,321	2,986	3,724	2,828	15
	REQUIREMENTS FORECAST BY END-USE 3/															
16	CORE	Residential	1,493	1,348	1,121	850	609	468	415	415	428	527	997	1,536	848	16
17		Commercial	241	246	194	174	161	151	131	129	143	139	210	248	180	17
18		Industrial	45	47	43	41	38	38	34	36	40	38	43	44	40	18
19		NGV	31	34	33	34	33	34	33	33	35	33	34	33	33	19
20		Subtotal-CORE	1,810	1,674	1,390	1,099	840	691	612	613	645	737	1,284	1,860	1,102	20
21	NONCORE	Commercial	76	72	67	64	55	54	50	51	61	57	61	71	61	21
22		Industrial	315	320	318	318	310	320	320	340	342	329	325	316	323	22
23		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	23
24		Electric Generation (EG)	682	678	664	668	679	836	1,084	1,124	949	752	756	789	806	24
25		Subtotal-NONCORE	1,092	1,089	1,069	1,070	1,064	1,229	1,474	1,535	1,371	1,158	1,161	1,195	1,210	25
26	WHOLESALE &	Core	343	338	279	211	160	131	123	120	125	144	240	346	213	26
27	INTERNATIONAL	Noncore Excl. EG	43	47	44	43	42	50	49	50	53	43	49	44	47	27
28		Electric Generation (EG)	182	185	174	176	179	208	237	264	239	194	197	209	204	28
29		Subtotal-WHOLESALE & INTL.	569	569	497	430	382	389	409	434	417	382	485	599	463	29
30		Co. Use & LUAF	66	64	57	50	44	44	48	49	47	44	56	70	53	30
31	SYSTEM TOTAL THROUGHPUT /1		3,537	3,396	3,012	2,648	2,330	2,354	2,543	2,631	2,480	2,321	2,986	3,724	2,828	31
	TRANSPORTATION AND EXCHANGE															
32	CORE	All End Uses	12	11	9	7	6	5	4	4	5	5	9	12	8	32
33	NONCORE	Commercial/Industrial	391	391	385	382	365	373	370	391	402	387	386	386	384	33
34		EOR Steaming	20	20	20	20	20	20	20	20	20	20	20	20	20	34
35		Electric Generation (EG)	682	678	664	668	679	836	1,084	1,124	949	752	756	789	806	35
36		Subtotal-RETAIL	1,104	1,100	1,078	1,077	1,070	1,235	1,478	1,540	1,375	1,163	1,170	1,207	1,217	36
37	WHOLESALE & INTERNATIONAL	All End Uses	569	569	497	430	382	389	409	434	417	382	485	599	463	37
38	TOTAL TRANSPORTATION & EXCHANGE		1,673	1,669	1,575	1,507	1,452	1,624	1,887	1,974	1,793	1,545	1,656	1,806	1,680	38
	CURTAILMENT (RETAIL & WHOLESALE)															
39		Core	0	0	0	0	0	0	0	0	0	0	0	0	0	39
40		Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	40
41		TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	41

NOTES:

1/ Excludes own-source gas supply of 3 3 3 3 3 3 3 3 3 3 3 3 3
gas procurement by the City of Long Beach

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

3/ Liquified Natural Gas delivery capacity assumed to be available in 2008

2006 CALIFORNIA GAS REPORT

FORECAST OF REQUIREMENTS - DETAIL
JULY 2006

2006 CALIFORNIA GAS REPORT

CUSTOMER FORECAST
JULY 2006

SOUTHERN CALIFORNIA GAS COMPANY: CUSTOMER FORECAST
(annual averages)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Residential											
Single-Family											
Active	3,377,588	3,434,786	3,489,419	3,540,411	3,593,130	3,645,277	3,697,090	3,748,482	3,799,978	3,851,418	3,903,449
Inactive	52,228	58,138	63,823	63,581	64,527	65,463	66,393	67,316	68,240	69,164	70,098
Connected	3,429,816	3,492,924	3,553,242	3,603,992	3,657,656	3,710,740	3,763,483	3,815,798	3,868,218	3,920,582	3,973,547
Multi-Family											
Active	1,633,083	1,637,608	1,647,522	1,662,073	1,678,061	1,696,229	1,716,710	1,737,703	1,758,815	1,781,367	1,806,050
Inactive	77,471	82,582	84,539	83,818	84,625	85,543	86,577	87,635	88,700	89,839	91,085
Connected	1,710,554	1,720,189	1,732,061	1,745,891	1,762,686	1,781,772	1,803,287	1,825,339	1,847,515	1,871,206	1,897,135
Master-Meter											
Active	43,540	43,177	42,809	42,482	42,159	41,838	41,519	41,203	40,889	40,577	40,268
Inactive	621	626	619	598	577	556	535	515	495	476	457
Connected	44,160	43,802	43,427	43,080	42,735	42,393	42,054	41,718	41,384	41,053	40,725
Total Residential											
Active	5,054,210	5,115,570	5,179,750	5,244,966	5,313,349	5,383,344	5,455,319	5,527,388	5,599,682	5,673,362	5,749,767
Inactive	130,319	141,345	148,981	147,996	149,729	151,562	153,506	155,467	157,436	159,479	161,640
Connected	5,184,529	5,256,916	5,328,730	5,392,962	5,463,078	5,534,906	5,608,824	5,682,854	5,757,118	5,832,841	5,911,407
Commercial											
Active	191,291	192,270	192,889	194,385	195,232	196,115	196,927	197,593	198,185	198,787	199,499
Inactive	45,021	45,560	46,189	46,060	46,260	46,469	46,662	46,819	46,959	47,102	47,271
Connected	236,312	237,831	239,078	240,445	241,492	242,584	243,588	244,413	245,144	245,889	246,770
Industrial											
Active	20,734	20,590	20,480	20,512	20,488	20,473	20,460	20,450	20,448	20,448	20,450
Inactive	7,575	7,687	7,770	7,659	7,650	7,644	7,639	7,636	7,635	7,635	7,635
Connected	28,309	28,277	28,250	28,171	28,138	28,117	28,099	28,086	28,083	28,083	28,085
TOTAL											
Active	5,266,235	5,328,430	5,393,118	5,459,864	5,529,069	5,599,931	5,672,705	5,745,431	5,818,314	5,892,598	5,969,716
Inactive	182,915	194,593	202,940	201,715	203,639	205,676	207,807	209,922	212,030	214,216	216,546
Connected	5,449,150	5,523,023	5,596,058	5,661,579	5,732,708	5,805,607	5,880,512	5,955,353	6,030,345	6,106,813	6,186,263
Net Active Gain	68,062	62,195	64,688	66,746	69,205	70,862	72,774	72,726	72,883	74,283	77,119

SOUTHERN CALIFORNIA GAS COMPANY: CUSTOMER FORECAST
(annual averages)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Residential											
Single-Family											
Active	3,956,072	4,008,739	4,061,058	4,112,915	4,164,545	4,215,994	4,267,198	4,318,097	4,368,768	4,419,217	4,469,714
Inactive	71,043	71,989	72,928	73,859	74,786	75,709	76,628	77,542	78,452	79,357	80,264
Connected	4,027,116	4,080,727	4,133,986	4,186,774	4,239,331	4,291,703	4,343,826	4,395,639	4,447,219	4,498,574	4,549,978
Multi-Family											
Active	1,832,350	1,859,689	1,887,882	1,916,883	1,946,656	1,976,941	2,007,671	2,038,683	2,070,125	2,102,154	2,134,844
Inactive	92,412	93,791	95,213	96,676	98,178	99,705	101,255	102,819	104,405	106,020	107,669
Connected	1,924,762	1,953,480	1,983,095	2,013,559	2,044,833	2,076,646	2,108,926	2,141,502	2,174,530	2,208,174	2,242,513
Master-Meter											
Active	39,961	39,657	39,355	39,055	38,757	38,462	38,169	37,878	37,590	37,303	37,019
Inactive	438	419	400	382	364	347	329	312	295	278	262
Connected	40,399	40,076	39,755	39,437	39,122	38,809	38,498	38,190	37,885	37,581	37,281
Total Residential											
Active	5,828,384	5,908,084	5,988,295	6,068,852	6,149,958	6,231,397	6,313,038	6,394,658	6,476,482	6,558,673	6,641,576
Inactive	163,893	166,199	168,541	170,917	173,328	175,761	178,213	180,673	183,151	185,656	188,195
Connected	5,992,277	6,074,283	6,156,836	6,239,769	6,323,286	6,407,158	6,491,251	6,575,331	6,659,634	6,744,329	6,829,771
Commercial											
Active	200,192	200,899	201,612	202,383	203,109	203,901	204,630	205,379	206,209	207,033	207,896
Inactive	47,435	47,603	47,772	47,954	48,126	48,314	48,487	48,664	48,861	49,056	49,261
Connected	247,627	248,502	249,383	250,337	251,236	252,215	253,117	254,044	255,070	256,090	257,157
Industrial											
Active	20,454	20,458	20,463	20,466	20,469	20,469	20,469	20,470	20,471	20,472	20,472
Inactive	7,637	7,639	7,640	7,642	7,643	7,643	7,643	7,643	7,643	7,644	7,644
Connected	28,091	28,097	28,103	28,108	28,112	28,112	28,112	28,113	28,114	28,116	28,116
TOTAL											
Active	6,049,030	6,129,442	6,210,369	6,291,701	6,373,537	6,455,767	6,538,138	6,620,507	6,703,162	6,786,179	6,869,945
Inactive	218,965	221,440	223,953	226,513	229,097	231,718	234,342	236,980	239,656	242,356	245,100
Connected	6,267,995	6,350,882	6,434,323	6,518,215	6,602,634	6,687,485	6,772,480	6,857,487	6,942,818	7,028,535	7,115,044
Net Active Gain	79,314	80,412	80,928	81,332	81,835	82,230	82,370	82,369	82,655	83,017	83,766

2006 CALIFORNIA GAS REPORT

EUFORECASTER
JULY 2006

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

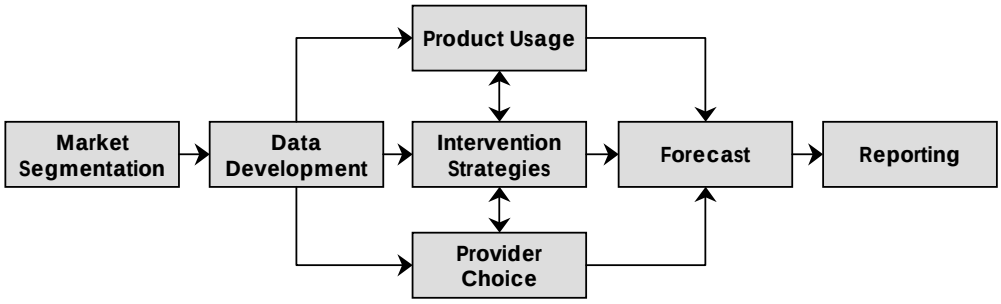
End Use Forecaster has other dimensions that capture factors affecting product demands. Perhaps the most important of these is End Use Forecaster's "vintaging" capability. Vintaging refers to product or service turnover that is a function of either physical lives or contract period. Accurate assessments 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

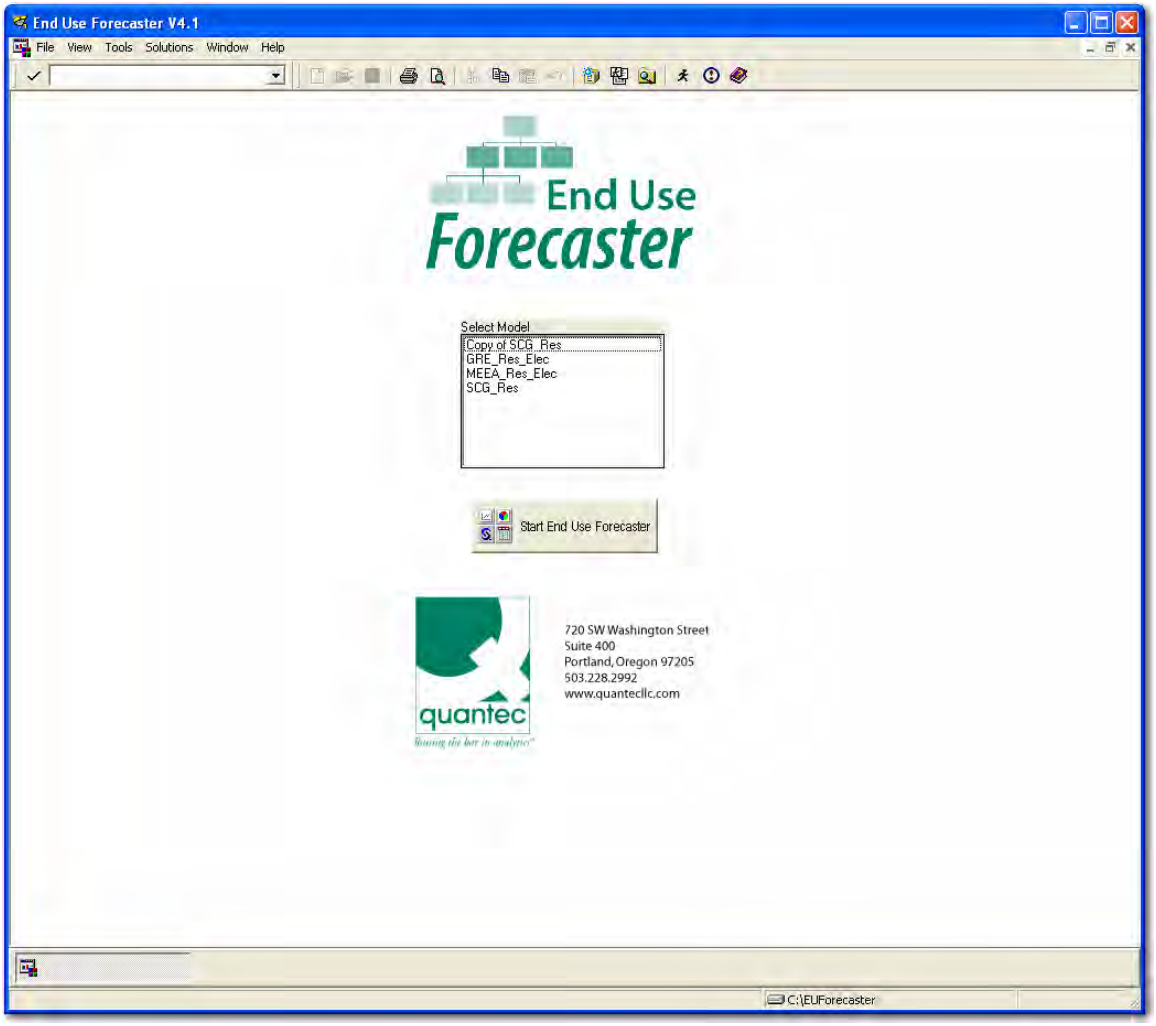
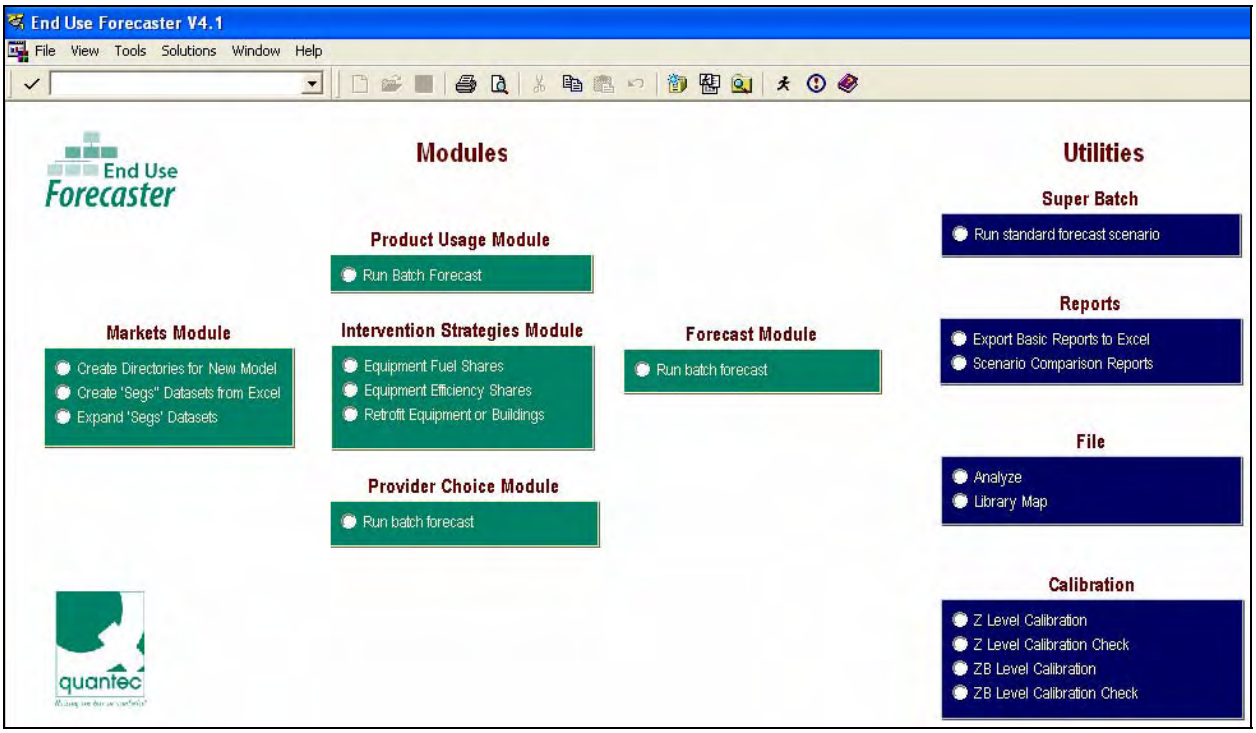


Figure 3. Main Dashboard



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 Segmentation

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.

Product Usage Module: Modeling Equipment Consumption

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

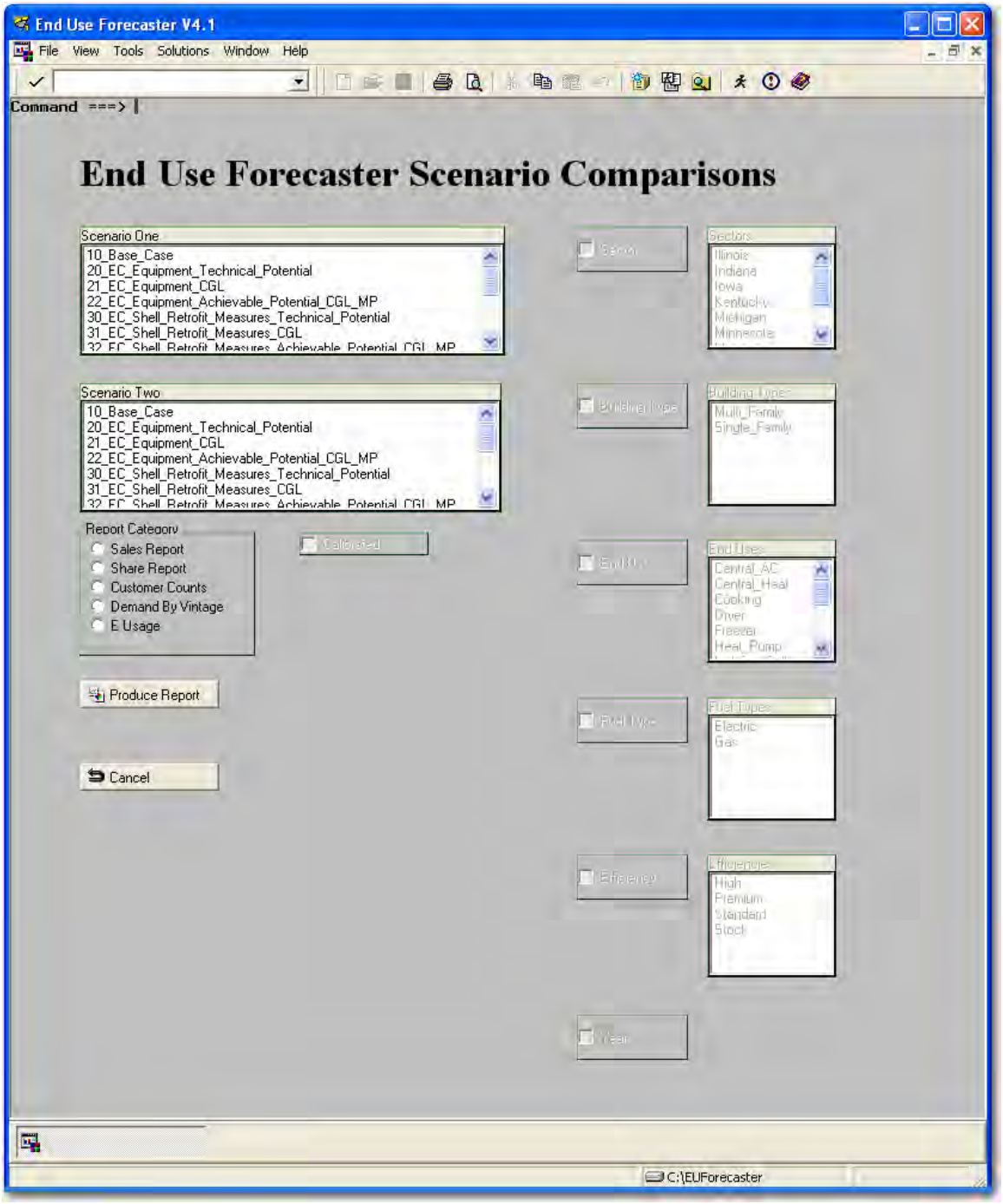
The Forecast Module incorporates all the information compiled from the other modules – Usage, Choice, and Intervention Strategies – related to the overall economic growth of the market segment and equipment lifetime (decay) functions to create the final forecast for a given scenario.

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.

In addition to the SAS-based reports, End Use Forecaster offers the user the opportunity to export the Sales Report data into empty Excel workbooks for ad hoc analyses by the user.

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, 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, 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 the physical 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

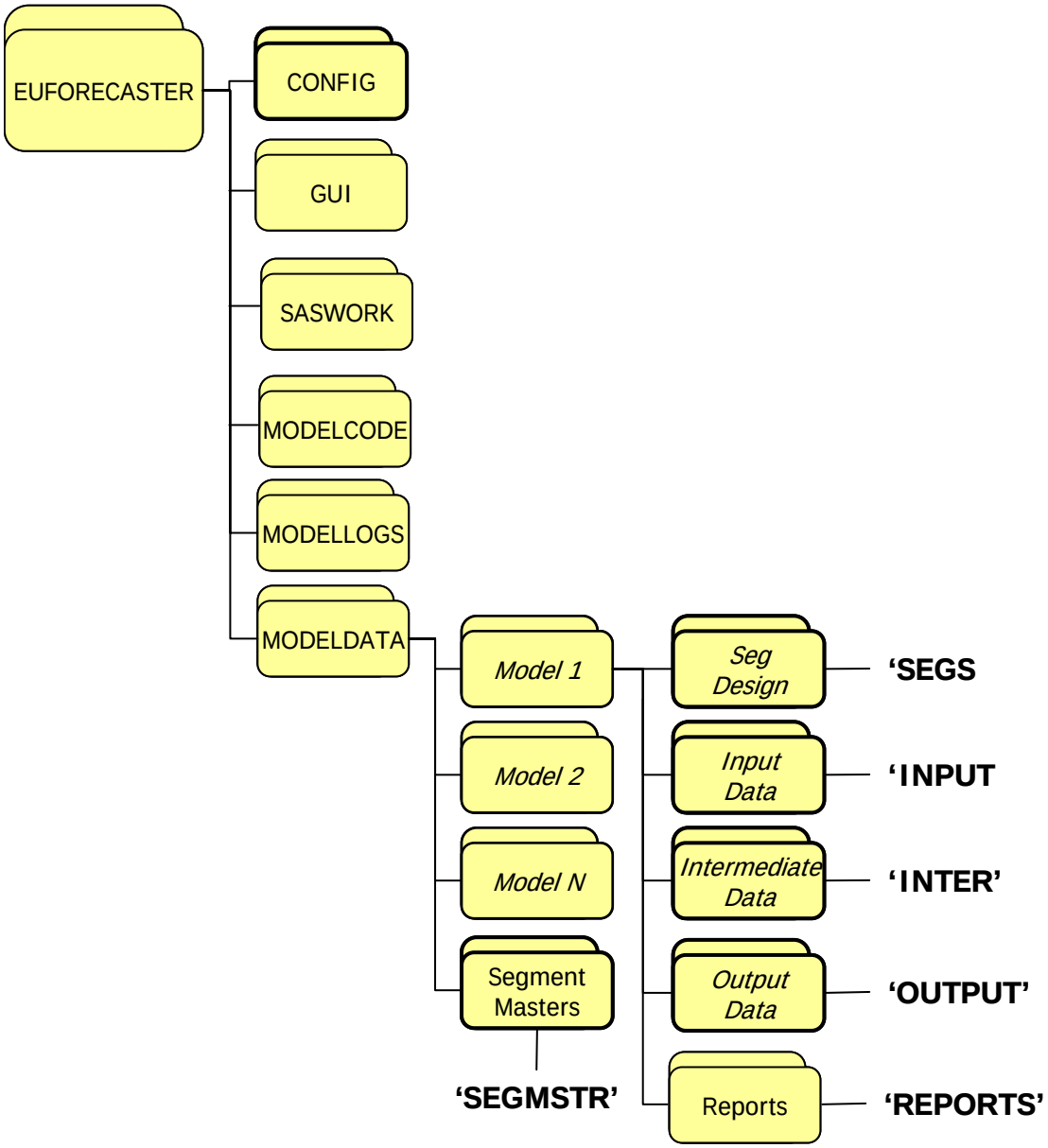
cases, where the documentation does not refer to a specific scenario, datasets are referred to with an **"_xx**" suffix, such as **saturations_xx**.

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

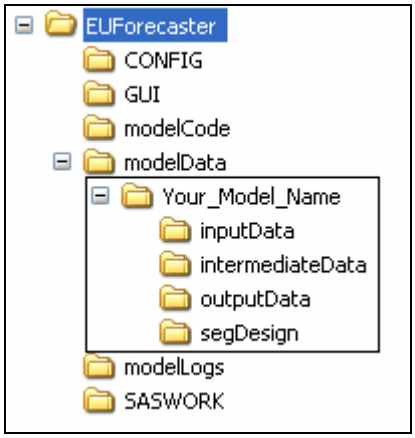
The execution of the first task – creation of a customized market segmentation design – is based on four steps, listed briefly below and then described in greater detail.

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.

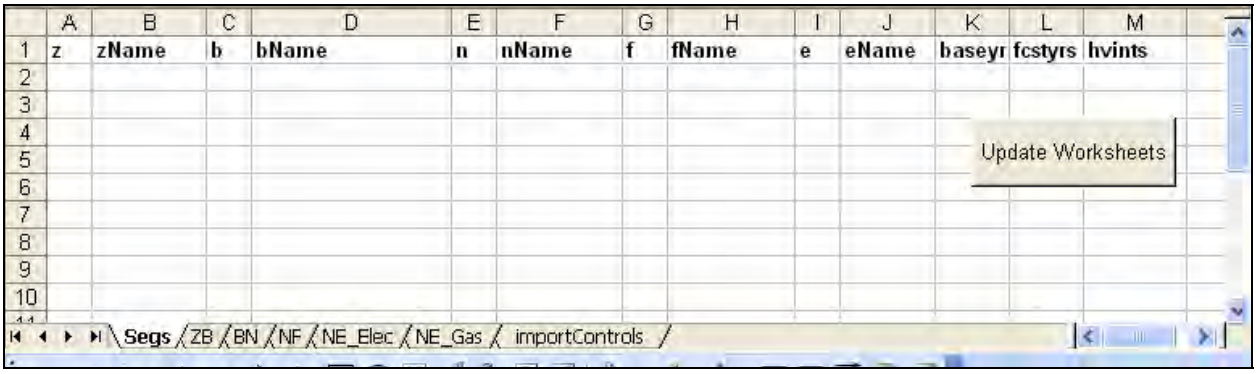
Table 3 summarizes the intended use of each of these dimensions. Note that while the model must include all five dimension, you are not required to use all of them. For example, suppose you want a design with alternative providers at Dimension 4 and do not wish to complicate the model with product/service 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 horizon. That sheet should look like the image below, with no values for any of the dimensions:

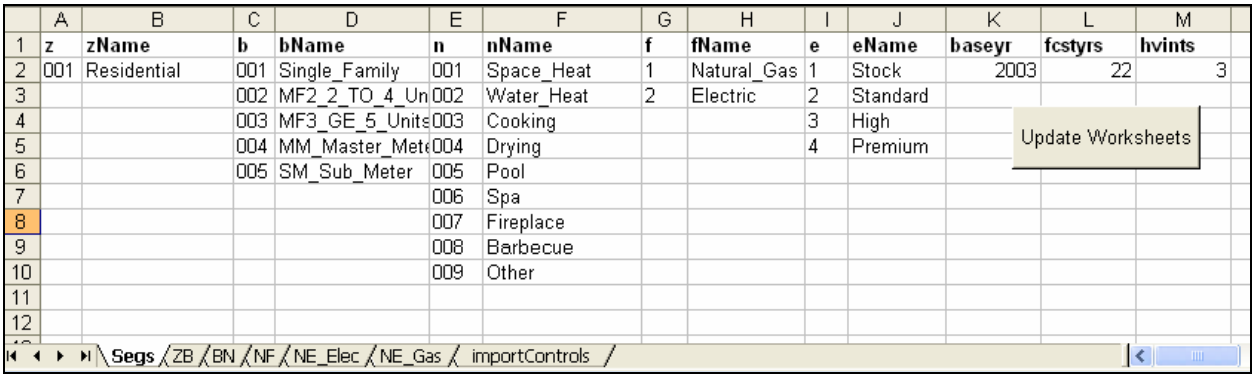
Figure 7. Empty "Segs" Tab in Seg_Design_Template.xls



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



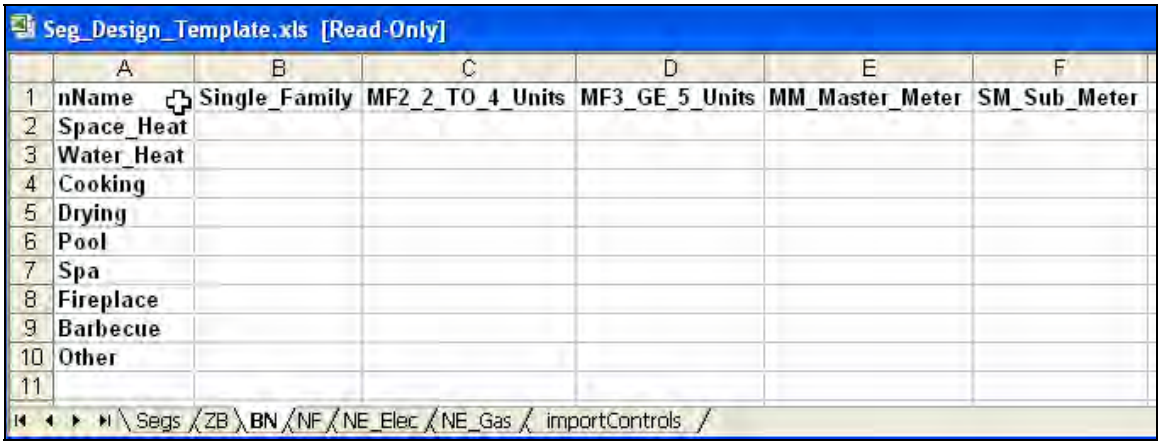
	A	B	C	D	E	F	G	H	I	J	K	L	M
1	**z**	**zName**	**b**	**bName**	**n**	**nName**	**f**	**fName**	**e**	**eName**	**baseyr**	**fcstyrs**	**hvints**
2	001	Residential	001	Single_Family	001	Space_Heat	1	Natural_Gas	1	Stock	2003	22	3
3			002	MF2_2_TO_4_Un	002	Water_Heat	2	Electric	2	Standard			
4			003	MF3_GE_5_Units	003	Cooking			3	High			
5			004	MM_Master_Met	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

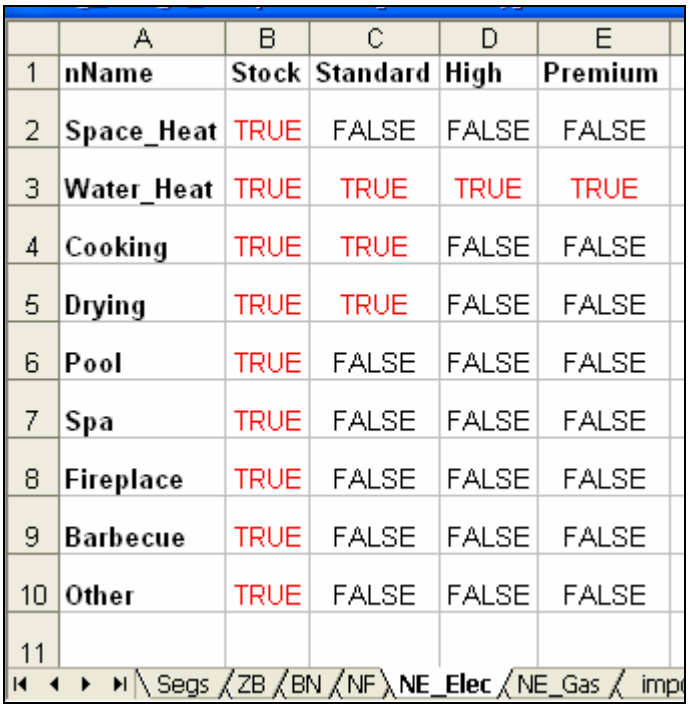
Again, the segmentation is hierarchical. The purpose of the newly-populated tabs ("ZB," "BN," "NF," "NE_Elec," and "NE_Gas") is to allow the specification of which dimensions belong together – starting at the top of the hierarchy and moving down – in the segmentation design. For example, with the ZB 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					

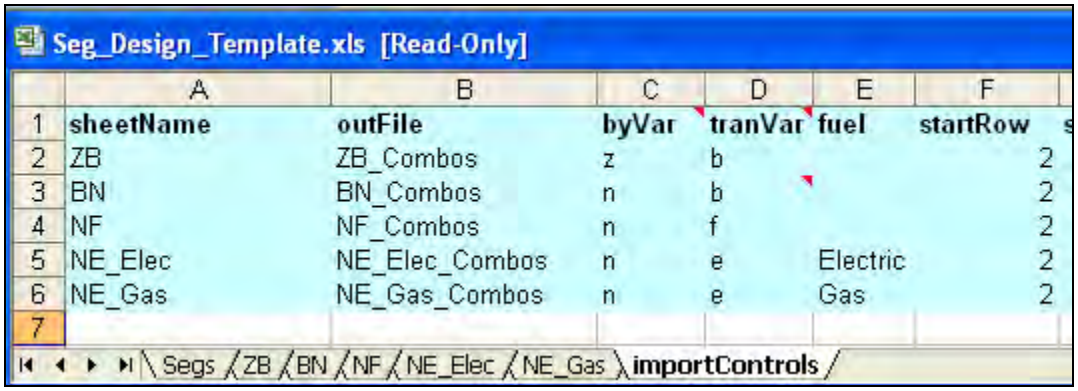
Segs | ZB | BN | NF | NE_Elec | NE_Gas | impo

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



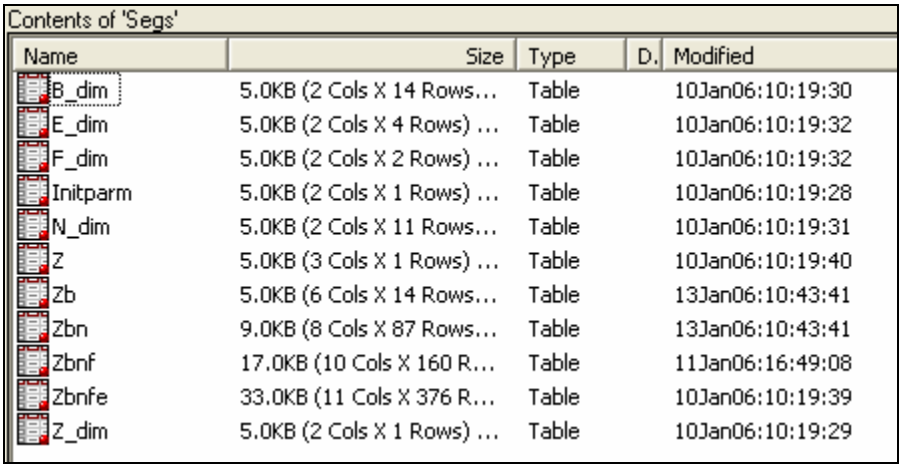
	A	B	C	D	E	F
1	**sheetName**	**outFile**	**byVar**	**tranVar**	**fuel**	**startRow**
2	ZB	ZB_Combos	z	b		2
3	BN	BN_Combos	n	b		2
4	NF	NF_Combos	n	f		2
5	NE_Elec	NE_Elec_Combos	n	e	Electric	2
6	NE_Gas	NE_Gas_Combos	n	e	Gas	2
7						

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.

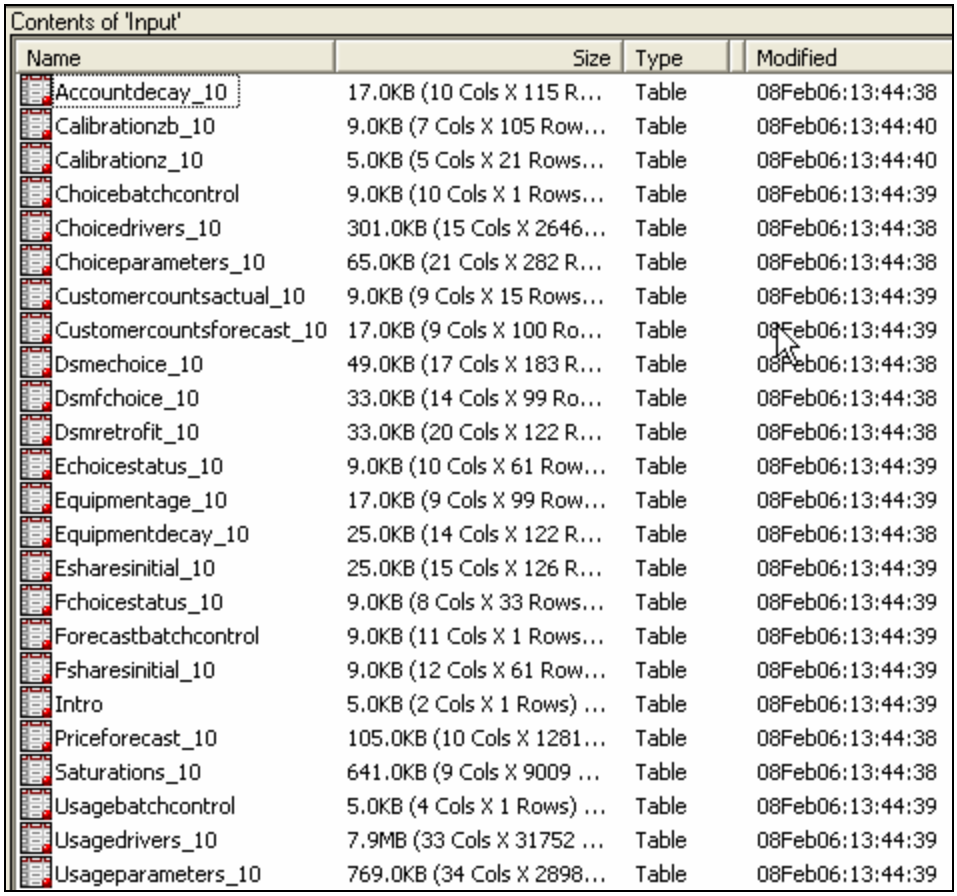
Figure 12. Contents of Segs Library



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.

Figure 13. Contents of the Input Library



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.

Table 4. Starting Datasets in INPUT Library

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:

(1) $$usageMonthly_xx_m = \Sigma_c\ usageParameters_xx_c * usageDrivers_xx_{cm}$$

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:

(2) $$usageMonthly_xx_m = exp(\Sigma_c\ usageParameters_xx_c * log(usageDrivers_xx_{cm}))$$

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**)

[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 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"

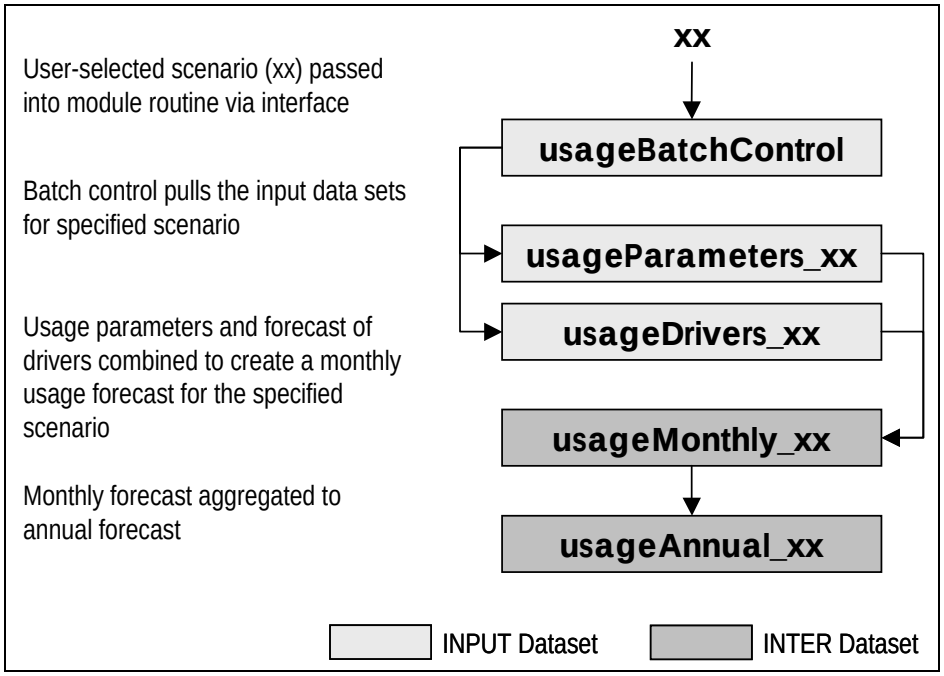


Table 5. Product Usage Module Data Library

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

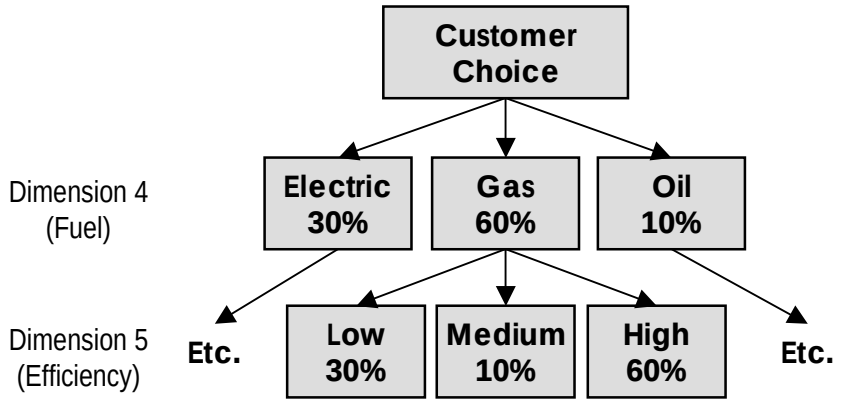
V. Provider Choice Module

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. 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

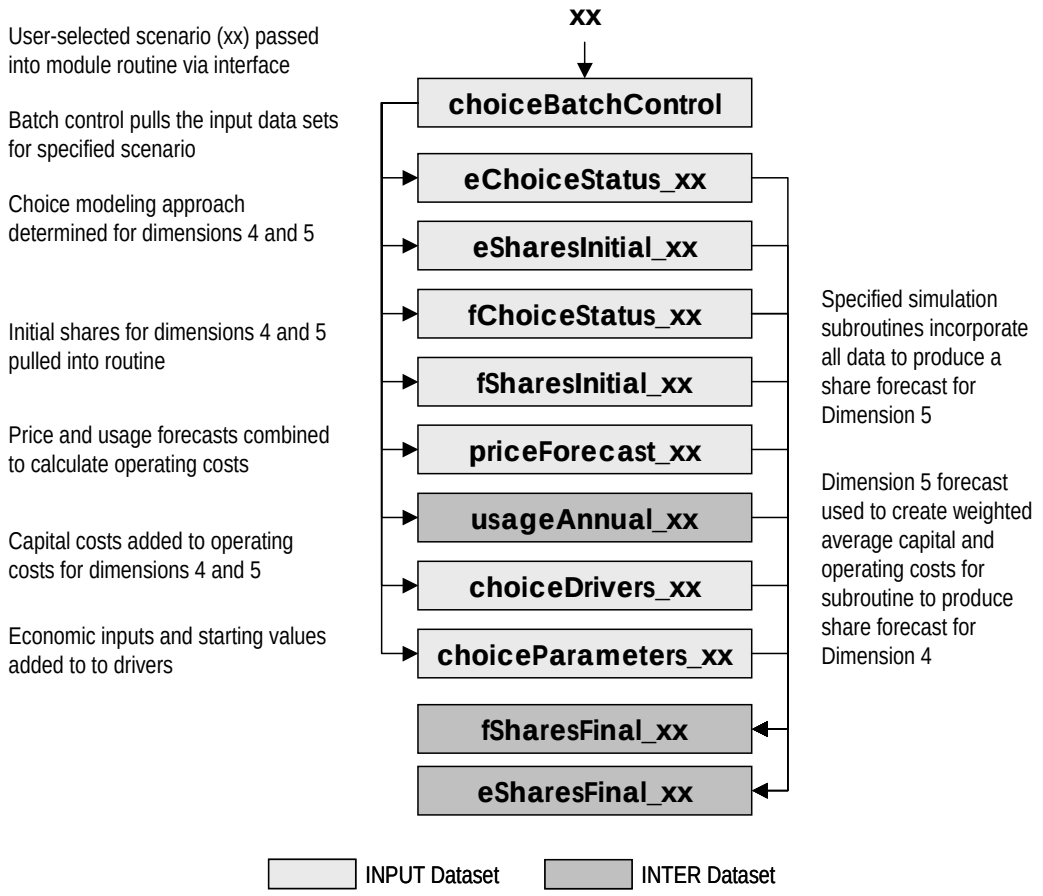
Figure 17 shows the data and analysis flow through the Provider Choice Module.

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. 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:

- Check the output files shown in the lower panel of Figure zzz. (Not sure which figure this is)Missing values in these forecasted market shares indicate a calibration problem.
- 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.
- 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.
- 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 module summarizes the data files used in this module.

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**).

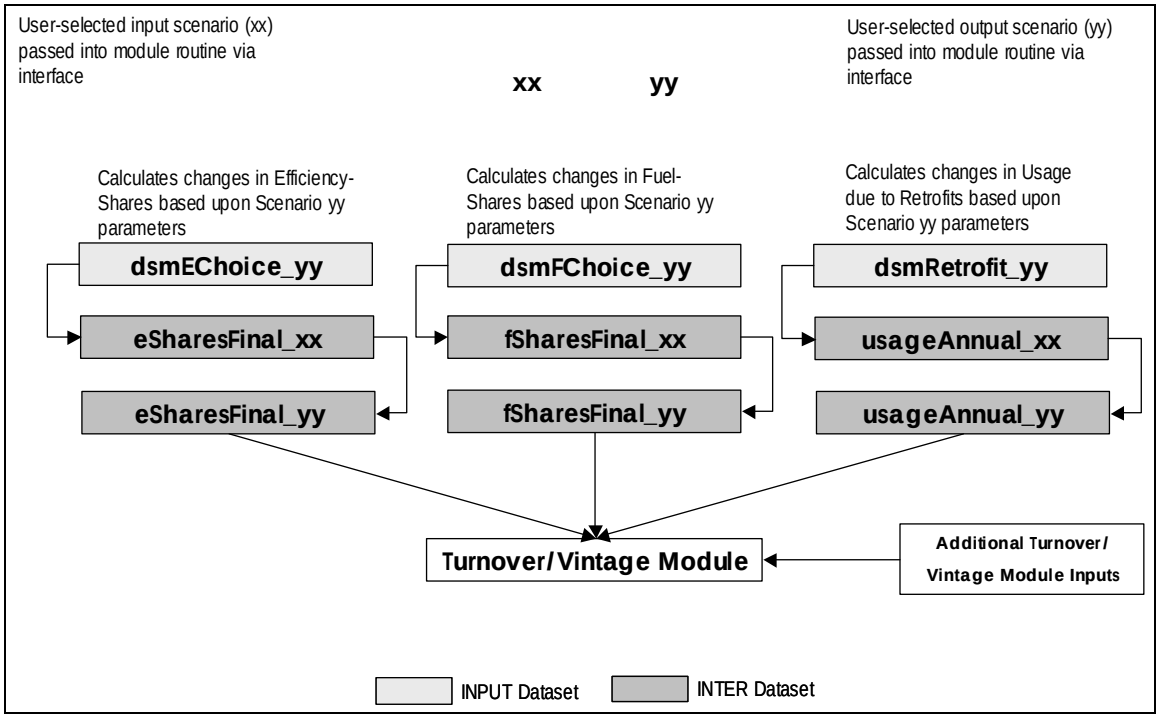
The Market Segmentation module creates base case files ("_10" files) where there is no intervention for each of these program categories. These files serve as templates that allow the user to create different scenarios of interest. To create strategies, you must copy these files to another scenario number 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, 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 for use by the End Use Forecaster analyst. Other reports from End Use Forecaster are described in Chapter 8.

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

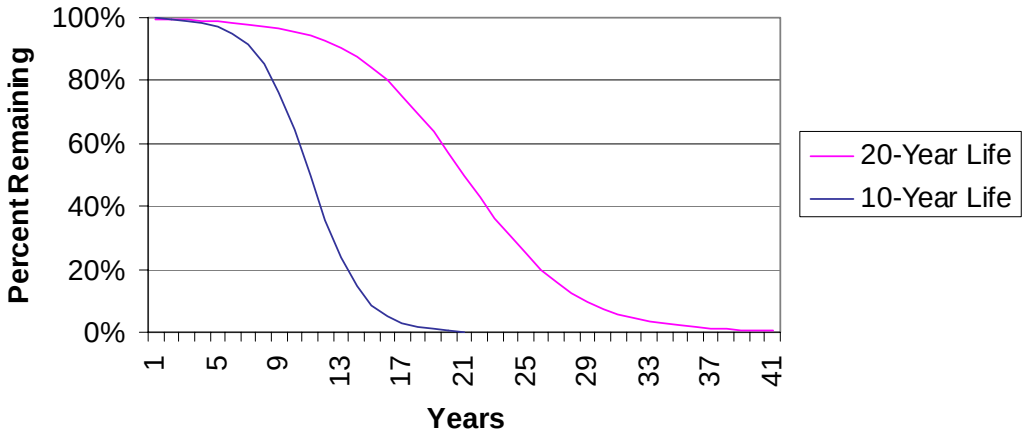
[3] These are discrete analogs to the continuous time distributions.

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:

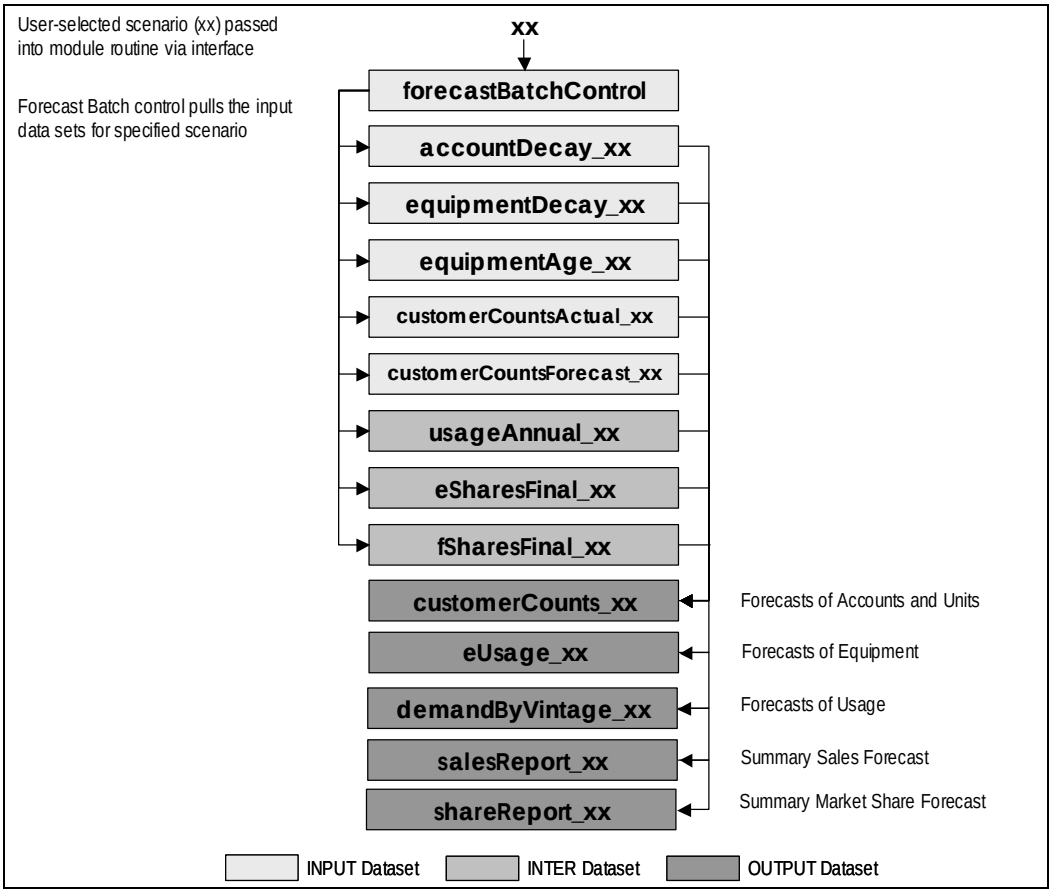
1. Merges all input data across Dimensions 1-3, including:
   - Existing accounts, plus a distribution of accounts across historical building vintages
   - New construction forecast, plus capture rates for new and conversion buildings
   - Dimension 3 saturation, equal to the number of Dimension 2 customers 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.

Table 13. Forecast Module Data Library and Files

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

Figure 20. Turnover (Vintage) Module System Diagram



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 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

Table 24. INPUT\dsmFChoice_xx

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

Table 27. INPUT\eSharesInitial_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
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

Table 30. INPUT\fChoiceStatus_xx

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

Table 34. INPUT\priceForecast_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
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

Table 39. INPUT\usageParameters_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
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)

Table 42. INTER\usageAnnual_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
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

Table 45. OUTPUT\demandByVintage_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.
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.

Table 47. OUTPUT\salesReport_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
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

Table 48. OUTPUT\shareReport_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
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.

- Company-specific primary research – Studies conducted by or for the Gas Company help to characterize the market for different segments.
- 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.
- Secondary data sources – Recent state projects by CALMAC, for example, have information on baseline end-use consumption and equipment costs.
- 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.

Usage Module - Residential

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*	

Forecast Module - Residential

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.

Usage Module – Commercial Core and Noncore

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 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.

Forecast Module – Commercial Core and Noncore

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.

Usage Module – Industrial Core and Noncore

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.	

Forecast Module – Industrial Core and Noncore

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	

2006 CALIFORNIA GAS REPORT

RESIDENTIAL DEMAND FORECAST
JULY 2006

Core Residential End-Use Model
2006 California Gas Report

Introduction:

SoCalGas used the End Use Forecaster model to generate annual gas demand forecasts for the residential market from 2006 through 2025. 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.

See Figure 1 for a classification of the number of efficiency levels for each end use by customer segment type.

A set of post-model adjustments were applied to the model's annual demand forecast. The first adjustment calibrates to the recorded 2005 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[1] 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. A final adjustment to the forecast offsets the throughput by the energy efficiency savings. See Figure 2 for the annual demand forecast. Figures 3-6 illustrate the monthly forecasts for each weather scenario.

Data Sources:

The information used to perform the modeling and to generate the forecast includes historical 2005 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 data were extracted from the billing tables housed within the Customer Information System (CIS). See Figure 7 for the 2005 historical data.

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 8 for the meter count forecast.

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 9 for the appliance UEC's.

[1] SCG Monthly Use Per Customer = (0.74) * Calendar Days + (0.17) * Heating Degree Days

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 10 illustrates the gas price forecasts.

Electric Price Data:

The electricity price inputs consist of average prices (cents/kWh) and marginal prices (cents/kWh). The forecasts for the residential customer class were developed by SDG&E's electricity rate analysis group for 2006 through 2025.

A ratio of the housing type's average gas price to the overall residential gas price was constructed. The weight was then multiplied by the overall average electricity price to derive residential market-specific electricity prices.

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, 1.034 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 in March 2006. Figure 11 illustrates the electricity price forecasts.

Price elasticities for each building type were based on the SoCalGas Residential Econometric Demand Forecasting Model. See Figure 7 for price elasticities.

Equipment Capital Costs and Availability:

Data on equipment capital costs and availability were from EIA, the Residential Appliance Saturation Survey (RASS), Energy Star (EPA & DOE), and SoCalGas company data. See Figures 12 and 13 for gas and electric appliance equipment cost.

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 14 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 15 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 2004 RASS Update. Please see Figures 16-19 for saturations, fuel, and efficiency shares.

RESIDENTIAL DATA

2006 California Gas Report - Residential
Figure 1: Number of Efficiency Levels by End Use by Customer Segment

	Space Heating		Water Heating		Cooking		Drying		Pool		Spa		Fireplace		BBQ	
	Gas	Electric	Gas	Electric	Gas	Electric	Gas	Electric	Gas	Electric	Gas	Electric	Gas	Electric	Gas	Electric
Single Family	4	1	4	4	2	2	2	4	2	0	2	0	1	0	1	1
Multi-Family <= 4 Units	4	1	4	4	2	2	2	4	0	0	0	0	0	0	1	1
Multi-Family > 4 Units	4	1	4	4	2	2	2	4	0	0	0	0	0	0	1	1
Master Meter	4	1	4	4	2	2	2	4	0	0	0	0	0	0	1	1
Sub-Meter	4	1	4	4	2	2	2	4	0	0	0	0	0	0	1	1

2006 California Gas Report - Residential
Figure 2: Annual Demand Forecast (Mdth)

Year	Total	Single Family	Multi-Family 2 - 4 Units	Multi-Family > 4 Units	Master Meter	Sub Meter
2005	259,267	186,016	18,377	33,829	15,270	5,776
2006	262,885	189,394	18,574	33,901	15,229	5,786
2007	262,708	189,811	18,486	33,644	15,058	5,710
2008	265,087	192,131	18,621	33,673	14,973	5,689
2009	267,511	194,446	18,774	33,737	14,888	5,667
2010	269,084	196,060	18,874	33,750	14,774	5,625
2011	271,672	198,444	19,057	33,872	14,694	5,605
2012	273,854	200,513	19,207	33,960	14,600	5,575
2013	276,342	202,792	19,389	34,097	14,515	5,550
2014	278,709	204,946	19,572	34,247	14,423	5,520
2015	281,101	207,098	19,766	34,418	14,330	5,489
2016	283,317	209,093	19,951	34,587	14,231	5,454
2017	285,098	210,730	20,107	34,730	14,120	5,410
2018	286,398	211,972	20,231	34,842	13,996	5,357
2019	287,828	213,297	20,369	34,977	13,877	5,307
2020	289,414	214,730	20,524	35,136	13,764	5,260
2021	291,043	216,184	20,685	35,307	13,652	5,214
2022	292,865	217,779	20,864	35,503	13,547	5,172
2023	294,459	219,185	21,027	35,684	13,436	5,127
2024	296,077	220,595	21,196	35,877	13,327	5,082
2025	297,704	221,999	21,369	36,079	13,219	5,037

2006 California Gas Report - Residential
Figure 3: Average-Temperature Year Demand Forecast

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	37,035	30,406	28,320	21,317	16,380	12,776	11,935	11,935	11,817	14,550	24,716	38,081	259,267
2006	37,552	30,831	28,715	21,614	16,608	12,954	12,101	12,101	11,982	14,753	25,061	38,612	262,885
2007	37,527	30,810	28,696	21,600	16,597	12,945	12,093	12,093	11,974	14,743	25,044	38,586	262,708
2008	37,867	31,089	28,956	21,795	16,747	13,063	12,203	12,203	12,082	14,876	25,271	38,936	265,087
2009	38,213	31,373	29,220	21,995	16,901	13,182	12,314	12,314	12,193	15,012	25,502	39,292	267,511
2010	38,438	31,558	29,392	22,124	17,000	13,259	12,387	12,387	12,264	15,100	25,652	39,523	269,084
2011	38,807	31,861	29,675	22,337	17,163	13,387	12,506	12,506	12,382	15,246	25,898	39,903	271,672
2012	39,119	32,117	29,913	22,516	17,301	13,495	12,606	12,606	12,482	15,368	26,106	40,224	273,854
2013	39,474	32,409	30,185	22,721	17,459	13,617	12,721	12,721	12,595	15,508	26,344	40,589	276,342
2014	39,812	32,686	30,443	22,915	17,608	13,734	12,830	12,830	12,703	15,641	26,569	40,937	278,709
2015	40,154	32,967	30,705	23,112	17,759	13,852	12,940	12,940	12,812	15,775	26,797	41,288	281,101
2016	40,471	33,227	30,947	23,294	17,899	13,961	13,042	13,042	12,913	15,899	27,008	41,614	283,317
2017	40,725	33,436	31,141	23,441	18,012	14,049	13,124	13,124	12,994	15,999	27,178	41,875	285,098
2018	40,911	33,588	31,283	23,547	18,094	14,113	13,184	13,184	13,054	16,072	27,302	42,066	286,398
2019	41,115	33,756	31,440	23,665	18,184	14,183	13,250	13,250	13,119	16,152	27,438	42,276	287,828
2020	41,342	33,942	31,613	23,795	18,284	14,261	13,323	13,323	13,191	16,241	27,590	42,509	289,414
2021	41,574	34,133	31,791	23,929	18,387	14,342	13,398	13,398	13,265	16,333	27,745	42,748	291,043
2022	41,835	34,347	31,990	24,079	18,502	14,431	13,482	13,482	13,348	16,435	27,919	43,016	292,865
2023	42,062	34,534	32,164	24,210	18,603	14,510	13,555	13,555	13,421	16,524	28,071	43,250	294,459
2024	42,293	34,723	32,341	24,343	18,705	14,590	13,629	13,629	13,495	16,615	28,225	43,488	296,077
2025	42,526	34,914	32,518	24,477	18,808	14,670	13,704	13,704	13,569	16,707	28,380	43,727	297,704

2006 California Gas Report - Residential
Figure 4: Cold-Temperature Year Demand Forecast

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	42,962	35,026	32,242	23,670	17,513	13,037	11,935	11,935	11,904	15,160	27,766	44,182	287,330
2006	43,561	35,514	32,692	24,000	17,757	13,219	12,101	12,101	12,070	15,371	28,154	44,798	291,340
2007	43,532	35,490	32,670	23,984	17,745	13,210	12,093	12,093	12,062	15,361	28,135	44,768	291,144
2008	43,926	35,812	32,966	24,201	17,906	13,330	12,203	12,203	12,171	15,500	28,389	45,174	293,781
2009	44,328	36,139	33,267	24,423	18,070	13,452	12,314	12,314	12,283	15,642	28,649	45,587	296,467
2010	44,588	36,352	33,463	24,566	18,176	13,531	12,387	12,387	12,355	15,734	28,818	45,855	298,210
2011	45,017	36,701	33,784	24,802	18,351	13,661	12,506	12,506	12,474	15,885	29,095	46,296	301,078
2012	45,379	36,996	34,056	25,002	18,498	13,771	12,606	12,606	12,574	16,013	29,328	46,668	303,497
2013	45,791	37,332	34,365	25,229	18,666	13,896	12,721	12,721	12,688	16,158	29,595	47,092	306,254
2014	46,183	37,652	34,659	25,445	18,826	14,015	12,830	12,830	12,797	16,296	29,848	47,495	308,877
2015	46,580	37,975	34,957	25,663	18,988	14,135	12,940	12,940	12,907	16,436	30,104	47,903	311,528
2016	46,947	38,275	35,233	25,866	19,137	14,247	13,042	13,042	13,008	16,566	30,342	48,280	313,984
2017	47,242	38,515	35,454	26,028	19,258	14,336	13,124	13,124	13,090	16,670	30,533	48,584	315,958
2018	47,457	38,691	35,616	26,147	19,345	14,401	13,184	13,184	13,150	16,746	30,672	48,805	317,398
2019	47,694	38,884	35,793	26,277	19,442	14,473	13,250	13,250	13,216	16,830	30,825	49,049	318,983
2020	47,957	39,098	35,991	26,422	19,549	14,553	13,323	13,323	13,288	16,922	30,995	49,319	320,741
2021	48,227	39,318	36,193	26,571	19,659	14,635	13,398	13,398	13,363	17,018	31,169	49,597	322,546
2022	48,529	39,564	36,420	26,737	19,782	14,727	13,482	13,482	13,447	17,124	31,364	49,907	324,565
2023	48,793	39,780	36,618	26,883	19,890	14,807	13,555	13,555	13,520	17,217	31,535	50,179	326,332
2024	49,061	39,998	36,819	27,031	19,999	14,888	13,629	13,629	13,594	17,312	31,708	50,455	328,125
2025	49,331	40,218	37,022	27,179	20,109	14,970	13,704	13,704	13,669	17,407	31,883	50,732	329,928

2006 California Gas Report - Residential
Figure 5: Hot-Temperature Year Demand Forecast

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	31,109	25,787	24,485	18,964	15,334	12,427	11,848	11,848	11,730	13,852	21,578	31,893	230,855
2006	31,543	26,147	24,827	19,228	15,548	12,601	12,013	12,013	11,894	14,046	21,879	32,338	234,076
2007	31,522	26,130	24,810	19,215	15,537	12,592	12,005	12,005	11,886	14,036	21,865	32,316	233,919
2008	31,807	26,366	25,035	19,389	15,678	12,706	12,114	12,114	11,993	14,163	22,063	32,609	236,037
2009	32,098	26,607	25,264	19,567	15,822	12,822	12,225	12,225	12,103	14,293	22,264	32,907	238,196
2010	32,287	26,764	25,412	19,682	15,915	12,898	12,296	12,296	12,174	14,377	22,395	33,101	239,596
2011	32,597	27,021	25,657	19,871	16,068	13,022	12,415	12,415	12,291	14,515	22,611	33,419	241,900
2012	32,859	27,238	25,863	20,031	16,197	13,126	12,514	12,514	12,390	14,632	22,792	33,688	243,844
2013	33,158	27,486	26,098	20,213	16,344	13,246	12,628	12,628	12,502	14,765	22,999	33,994	246,059
2014	33,442	27,721	26,321	20,386	16,484	13,359	12,736	12,736	12,609	14,891	23,196	34,285	248,166
2015	33,729	27,959	26,547	20,561	16,625	13,474	12,846	12,846	12,718	15,019	23,395	34,579	250,296
2016	33,994	28,179	26,756	20,723	16,756	13,580	12,947	12,947	12,818	15,137	23,580	34,852	252,269
2017	34,208	28,356	26,925	20,853	16,862	13,665	13,028	13,028	12,899	15,232	23,728	35,071	253,855
2018	34,364	28,486	27,047	20,948	16,939	13,728	13,088	13,088	12,957	15,302	23,836	35,231	255,013
2019	34,536	28,628	27,182	21,053	17,023	13,796	13,153	13,153	13,022	15,378	23,955	35,406	256,286
2020	34,726	28,786	27,332	21,169	17,117	13,872	13,225	13,225	13,094	15,463	24,087	35,602	257,698
2021	34,921	28,948	27,486	21,288	17,213	13,950	13,300	13,300	13,167	15,550	24,223	35,802	259,149
2022	35,140	29,129	27,658	21,421	17,321	14,038	13,383	13,383	13,250	15,647	24,375	36,026	260,771
2023	35,331	29,288	27,809	21,538	17,415	14,114	13,456	13,456	13,322	15,733	24,507	36,222	262,190
2024	35,526	29,448	27,961	21,656	17,511	14,191	13,530	13,530	13,395	15,819	24,642	36,421	263,631
2025	35,721	29,610	28,115	21,775	17,607	14,269	13,604	13,604	13,469	15,906	24,777	36,621	265,080

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Figure 6: Base-Temperature Year Demand Forecast

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	11,761	10,622	11,761	11,381	11,761	11,381	11,761	11,761	11,381	11,761	11,381	11,761	138,472
2006	11,925	10,771	11,925	11,540	11,925	11,540	11,925	11,925	11,540	11,925	11,540	11,925	140,404
2007	11,917	10,763	11,917	11,532	11,917	11,532	11,917	11,917	11,532	11,917	11,532	11,917	140,310
2008	12,025	10,861	12,025	11,637	12,025	11,637	12,025	12,025	11,637	12,025	11,637	12,025	141,580
2009	12,135	10,960	12,135	11,743	12,135	11,743	12,135	12,135	11,743	12,135	11,743	12,135	142,875
2010	12,206	11,025	12,206	11,812	12,206	11,812	12,206	12,206	11,812	12,206	11,812	12,206	143,715
2011	12,323	11,131	12,323	11,926	12,323	11,926	12,323	12,323	11,926	12,323	11,926	12,323	145,097
2012	12,422	11,220	12,422	12,022	12,422	12,022	12,422	12,422	12,022	12,422	12,022	12,422	146,263
2013	12,535	11,322	12,535	12,131	12,535	12,131	12,535	12,535	12,131	12,535	12,131	12,535	147,592
2014	12,643	11,419	12,643	12,235	12,643	12,235	12,643	12,643	12,235	12,643	12,235	12,643	148,856
2015	12,751	11,517	12,751	12,340	12,751	12,340	12,751	12,751	12,340	12,751	12,340	12,751	150,133
2016	12,852	11,608	12,852	12,437	12,852	12,437	12,852	12,852	12,437	12,852	12,437	12,852	151,317
2017	12,932	11,681	12,932	12,515	12,932	12,515	12,932	12,932	12,515	12,932	12,515	12,932	152,268
2018	12,991	11,734	12,991	12,572	12,991	12,572	12,991	12,991	12,572	12,991	12,572	12,991	152,962
2019	13,056	11,793	13,056	12,635	13,056	12,635	13,056	13,056	12,635	13,056	12,635	13,056	153,726
2020	13,128	11,858	13,128	12,705	13,128	12,705	13,128	13,128	12,705	13,128	12,705	13,128	154,573
2021	13,202	11,924	13,202	12,776	13,202	12,776	13,202	13,202	12,776	13,202	12,776	13,202	155,443
2022	13,285	11,999	13,285	12,856	13,285	12,856	13,285	13,285	12,856	13,285	12,856	13,285	156,416
2023	13,357	12,064	13,357	12,926	13,357	12,926	13,357	13,357	12,926	13,357	12,926	13,357	157,268
2024	13,430	12,131	13,430	12,997	13,430	12,997	13,430	13,430	12,997	13,430	12,997	13,430	158,132
2025	13,504	12,197	13,504	13,069	13,504	13,069	13,504	13,504	13,069	13,504	13,069	13,504	159,001

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Figure 7: 2005 Historical Data

	Single Family	Multi-Family 2 - 4 Units	Multi-Family > 4 Units	Master Meter	Sub Meter
Total Therm Sales	1,860,157,165	183,767,047	338,286,034	152,698,477	57,759,198
Meter Count					
Pre-1979 Customers	2,468,038	422,260	727,088	35,878	1,720
1979 - 2001 Customers	968,528	99,224	357,402	3,454	94
2004-2005 Customers	61,357	3,217	7,182	49	-
TOTAL	3,497,923	524,701	1,091,672	39,381	1,814
Use Per Customer (UPC, therms)					
Pre-1979 Customers	533	355	323	3,674	31,267
1979 - 2001 Customers	516	313	276	5,539	36,236
2004-2005 Customers	444	252	205	4,894	-
Price Elasticity	-0.105	-0.112	-0.071	-0.069	-0.105

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Figure 8: Meter Count Forecast

Year	Total	Single Family	Multi-Family 2 - 4 Units	Multi-Family > 4 Units	Master Meter	Sub Meter
2005	5,155,491	3,497,923	524,701	1,091,672	39,381	1,814
2006	5,220,398	3,552,280	528,135	1,098,788	39,381	1,814
2007	5,286,456	3,605,233	532,401	1,107,627	39,381	1,814
2008	5,355,306	3,657,952	537,652	1,118,507	39,381	1,814
2009	5,425,622	3,710,099	543,567	1,130,761	39,381	1,814
2010	5,497,916	3,761,912	550,234	1,144,575	39,381	1,814
2011	5,570,301	3,813,304	557,068	1,158,735	39,381	1,814
2012	5,642,909	3,864,800	563,940	1,172,974	39,381	1,814
2013	5,716,901	3,916,240	571,281	1,188,185	39,381	1,814
2014	5,793,615	3,968,271	579,316	1,204,833	39,381	1,814
2015	5,872,539	4,020,894	587,877	1,222,572	39,381	1,814
2016	5,952,544	4,073,561	596,777	1,241,011	39,381	1,814
2017	6,033,056	4,125,880	605,954	1,260,027	39,381	1,814
2018	6,113,913	4,177,737	615,395	1,279,587	39,381	1,814
2019	6,195,317	4,229,368	625,086	1,299,668	39,381	1,814
2020	6,277,051	4,280,816	634,945	1,320,095	39,381	1,814
2021	6,358,985	4,332,020	644,948	1,340,822	39,381	1,814
2022	6,440,896	4,382,919	655,044	1,361,738	39,381	1,814
2023	6,523,008	4,433,590	665,279	1,382,945	39,381	1,814
2024	6,605,486	4,484,039	675,705	1,404,548	39,381	1,814
2025	6,688,673	4,534,536	686,346	1,426,596	39,381	1,814

Note: The master meter and sub meter groups are expected to decline.
A decay rate was built into the model specification.

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Figure 9: Appliance Unit Energy Consumption (Gas in therms, Electric in Kwh)

		Single Family		Multi-Family 2 - 4 Units		Multi-Family > 4 Units		Master Meter		Sub Meter	
End-Use	**Vintage**	**Gas**	**Electric**	**Gas**	**Electric**	**Gas**	**Electric**	**Gas**	**Electric**	**Gas**	**Electric**
Space Heat	Stock	370	4,110	200	730	200	730	200	730	330	1,340
	Standard	330	3,730	180	670	180	-	180	-	300	-
	High	310	3,450	170	620	170	-	170	-	280	-
	Premium	280	3,170	150	570	150	-	150	-	260	-
Water Heat	Stock	260	2,440	230	2,440	230	2,440	230	2,440	210	2,010
	Standard	240	2,220	210	2,220	210	2,220	210	2,220	190	1,830
	High	230	2,110	200	2,110	200	2,110	200	2,110	180	1,740
	Premium	220	2,050	190	2,050	190	2,050	190	2,050	180	1,690
Cooking	Stock	50	574	34	465	34	465	34	465	45	514
	Standard	42.5	487.9	28.9	395	29	395	29	395	38	437
Drying	Stock	45.1	1442.1	24.2	1442.1	24	1,442	24	1,442	26	873
	Standard	42.8	1369.9	23.0	1370.0	23	1,370	23	1,370	25	830
Pool	Stock	177	3,431	177	3,431	177	3,431	177	3,431	177	3,431
Spa	Stock	146	430	146	430	146	430	146	430	146	430
Fireplace	Stock	21	-	21	-	21	-	21	-	21	-
BBQ	Stock	28	-	28	-	28	-	28	-	28	-

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Figure 10: Average and Marginal Gas Price Forecast (Nominal $ / therm)

		Average Price					Marginal Price				
Year	Price Deflator	Single Family	Multi-Family 2 - 4 Units	Multi-Family > 4 Units	Master Meter	Sub Meter	Single Family	Multi-Family 2 - 4 Units	Multi-Family > 4 Units	Master Meter	Sub Meter
2005	100.00	1.1238	1.0946	1.0975	1.0766	1.0871	1.2340	1.2340	1.2340	1.2340	1.2340
2006	102.80	1.0426	1.0134	1.0163	0.9954	1.0058	1.1529	1.1529	1.1529	1.1529	1.1529
2007	104.53	1.1340	1.1050	1.1079	1.0872	1.0975	1.2431	1.2431	1.2431	1.2431	1.2431
2008	106.44	1.1074	1.0787	1.0815	1.0610	1.0713	1.2155	1.2155	1.2155	1.2155	1.2155
2009	108.36	1.0758	1.0461	1.0490	1.0279	1.0384	1.1875	1.1875	1.1875	1.1875	1.1875
2010	110.25	1.0806	1.0477	1.0509	1.0275	1.0392	1.2044	1.2044	1.2044	1.2044	1.2044
2011	112.36	1.0466	1.0130	1.0163	0.9923	1.0043	1.1734	1.1734	1.1734	1.1734	1.1734
2012	115.02	1.0390	1.0043	1.0078	0.9830	0.9954	1.1695	1.1695	1.1695	1.1695	1.1695
2013	117.93	1.0226	0.9876	0.9911	0.9662	0.9786	1.1542	1.1542	1.1542	1.1542	1.1542
2014	120.84	1.0141	0.9783	0.9818	0.9562	0.9690	1.1493	1.1493	1.1493	1.1493	1.1493
2015	123.79	1.0077	0.9707	0.9744	0.9480	0.9612	1.1471	1.1471	1.1471	1.1471	1.1471
2016	126.97	1.0173	0.9799	0.9836	0.9569	0.9702	1.1583	1.1583	1.1583	1.1583	1.1583
2017	130.38	1.0508	1.0122	1.0160	0.9885	1.0023	1.1963	1.1963	1.1963	1.1963	1.1963
2018	133.90	1.1130	1.0731	1.0771	1.0486	1.0628	1.2634	1.2634	1.2634	1.2634	1.2634
2019	137.53	1.1720	1.1310	1.1350	1.1058	1.1204	1.3264	1.3264	1.3264	1.3264	1.3264
2020	141.23	1.2232	1.1808	1.1850	1.1549	1.1700	1.3827	1.3827	1.3827	1.3827	1.3827
2021	145.02	1.2737	1.2300	1.2343	1.2032	1.2188	1.4385	1.4385	1.4385	1.4385	1.4385
2022	148.90	1.3175	1.2733	1.2776	1.2461	1.2619	1.4841	1.4841	1.4841	1.4841	1.4841
2023	152.89	1.3734	1.3277	1.3322	1.2997	1.3160	1.5454	1.5454	1.5454	1.5454	1.5454
2024	156.98	1.4300	1.3828	1.3875	1.3539	1.3707	1.6075	1.6075	1.6075	1.6075	1.6075
2025	161.16	1.4889	1.4402	1.4450	1.4104	1.4278	1.6721	1.6721	1.6721	1.6721	1.6721

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Figure 11: Average and Marginal Electric Price Forecast (Nominal cents / Kwh)

		Average Price					Marginal Price				
Year	Price Deflator	Single Family	Multi-Family 2 - 4 Units	Multi-Family > 4 Units	Master Meter	Sub Meter	Single Family	Multi-Family 2 - 4 Units	Multi-Family > 4 Units	Master Meter	Sub Meter
2005	100.00	13.06	12.72	12.76	12.52	12.64	19.77	19.26	19.31	12.94	14.22
2006	102.80	15.80	15.36	15.40	15.09	15.25	23.91	23.24	23.31	15.60	17.16
2007	104.53	16.98	16.55	16.59	16.28	16.44	25.70	25.04	25.11	16.84	18.50
2008	106.44	17.90	17.44	17.48	17.15	17.32	27.09	26.39	26.46	17.74	19.49
2009	108.36	17.70	17.22	17.26	16.92	17.09	26.79	26.05	26.12	17.49	19.23
2010	110.25	16.85	16.34	16.39	16.03	16.21	25.50	24.73	24.80	16.57	18.24
2011	112.36	17.32	16.77	16.82	16.42	16.62	26.21	25.37	25.45	16.98	18.71
2012	115.02	16.35	15.80	15.85	15.47	15.66	24.73	23.91	23.99	15.99	17.62
2013	117.93	16.51	15.94	16.00	15.60	15.80	24.98	24.12	24.21	16.13	17.78
2014	120.84	16.75	16.15	16.21	15.79	16.00	25.34	24.45	24.53	16.33	18.01
2015	123.79	16.98	16.35	16.42	15.97	16.19	25.69	24.75	24.84	16.52	18.22
2016	126.97	17.17	16.54	16.60	16.15	16.38	25.98	25.03	25.12	16.70	18.43
2017	130.38	17.36	16.73	16.79	16.33	16.56	26.27	25.31	25.40	16.89	18.64
2018	133.90	17.54	16.91	16.97	16.53	16.75	26.54	25.59	25.68	17.09	18.85
2019	137.53	17.72	17.10	17.16	16.72	16.94	26.81	25.87	25.96	17.29	19.06
2020	141.23	17.90	17.28	17.34	16.90	17.12	27.09	26.15	26.25	17.48	19.27
2021	145.02	18.09	17.47	17.53	17.09	17.31	27.37	26.43	26.53	17.67	19.48
2022	148.90	18.27	17.66	17.72	17.28	17.50	27.64	26.72	26.81	17.87	19.69
2023	152.89	18.45	17.84	17.90	17.46	17.68	27.93	27.00	27.09	18.06	19.90
2024	156.98	18.64	18.03	18.09	17.65	17.87	28.21	27.28	27.37	18.25	20.11
2025	161.16	18.83	18.21	18.27	17.84	18.05	28.49	27.56	27.65	18.44	20.32

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Figure 12: Gas Appliance Equipment Cost (Nominal $)

End-use	Efficiency Level	Single Family	Multi-Family 2 - 4 Units	Multi-Family > 4 Units	Master Meter	Sub Meter
Space Heat	Stock	4,000	2,000	1,600	1,000	1,600
	Standard	4,600	2,300	1,840	1,150	1,840
	High	4,800	2,400	1,920	1,200	1,920
	Premium	5,000	2,500	1,980	1,250	1,980
Water Heat	Stock	550	330	330	330	330
	Standard	650	390	390	390	390
	High	700	420	420	420	420
	Premium	750	450	450	450	450
Cooking	Stock	500	300	250	250	250
	Standard	1,400	1,400	1,400	1,400	1,400
Drying	Stock	328	328	328	328	328
	Standard	482	482	482	482	482
Pool	Stock	1,200	1,200	1,200	1,200	1,200
Spa	Stock	2,000	2,000	2,000	2,000	2,000
Fireplace	Stock	150	150	150	150	150
BBQ	Stock	1,000	600	600	600	600

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Figure 13: Electric Appliance Equipment Cost (Nominal $)

End-use	Efficiency Level	Single Family	Multi-Family 2 - 4 Units	Multi-Family > 4 Units	Master Meter	Sub Meter
Space Heat	Stock	4,100	2,050	1,640	1,025	1,640
Water Heat	Stock	550	330	330	330	330
	Standard	650	390	390	390	390
	High	700	420	420	420	420
	Premium	750	450	450	450	450
Cooking	Stock	500	300	250	250	250
	Standard	1,400	1,400	1,400	1,400	1,400
Drying	Stock	328	328	328	328	328
	Standard	482	482	482	482	482
Pool	Stock	1,200	1,200	1,200	1,200	1,200
Spa	Stock	2,000	2,000	2,000	2,000	2,000
Fireplace	Stock	150	150	150	150	150
BBQ	Stock	1,000	600	600	600	600

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Figure 14: Building Lives and Decay Rate

Building Type	Building Decay Rate
Single-Family	0.003
Multi-Family 2 - 4 Units	0.006
Multi-Family > 4 Units	0.006
Master Meter	0.008
Sub Meter	0.008

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Figure 15: Gas Appliance Equipment Age (Years)

			Single Family		Multi-Family 2 - 4 Units		Multi-Family > 4 Units		Master Meter		Sub Meter	
End-Use	Vintage	Max	Average	Max	Average	Max	Average	Max	Average	Max	Average	Max
Space Heat	Pre-1979	17	17	17	15	15	15	15	16	16	16	16
	1979 - 2003	17	10	17	12	15	11	15	11	16	11	16
	2004-2005	17	3	17	4	15	4	15	4	16	4	16
Water Heat	Pre-1979	7	7	7	7	8	6	8	6	8	6	8
	1979 - 2003	7	7	7	8	8	8	8	8	8	8	8
	2004-2005	7	3	7	2	8	4	8	4	8	4	8
Cooking	Pre-1979	12	10	12	10	10	10	11	14	14	14	14
	1979 - 2003	12	10	12	9	10	11	11	11	14	11	14
	2004-2005	12	2	12	2	10	4	11	3	14	3	14
Drying	Pre-1979	8	8	8	7	9	6	8	8	8	8	8
	1979 - 2003	8	8	8	9	9	8	8	8	8	8	8
	2004-2005	8	6	8	3	9	3	8	4	8	4	8
Pool	Pre-1979	13	13	13	13	13	13	13	13	13	13	13
	1979 - 2003	13	9	13	9	13	9	13	9	13	9	13
	2004-2005	13	3	13	3	13	3	13	3	13	3	13
Spa	Pre-1979	11	11	11	11	11	11	11	11	11	11	11
	1979 - 2003	11	8	11	8	11	8	11	8	11	8	11
	2004-2005	11	3	11	3	11	3	11	3	11	3	11
Fireplace	Pre-1979	15	15	15	15	15	15	15	15	15	15	15
	1979 - 2003	15	15	15	15	15	15	15	15	15	15	15
	2004-2005	15	15	15	15	15	15	15	15	15	15	15
BBQ	Pre-1979	7	7	7	5	6	5	5	5	9	5	9
	1979 - 2003	7	7	7	6	6	5	5	9	9	9	9
	2004-2005	7	5	7	3	6	5	5	2	9	2	9
Other	Pre-1979	15	15	15	15	15	15	15	15	15	15	15
	1979 - 2003	15	15	15	15	15	15	15	15	15	15	15
	2004-2005	15	15	15	15	15	15	15	15	15	15	15

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Figure 16: End-Use Saturations

End-use	Vintage	Family	2 - 4 Units	> 4 Units	r Meter	Sub Meter
Space Heat	Pre-1979	0.9955	0.9809	0.9655	0.9375	1.0000
	1979 - 2003	0.9990	0.9979	0.9933	0.9600	1.0000
	2004-2005	0.9968	1.0000	0.9491	1.0000	1.0000
Water Heat	Pre-1979	0.9994	1.0000	0.9873	0.9834	1.0000
	1979 - 2003	1.0000	1.0000	0.9892	1.0000	1.0000
	2004-2005	1.0000	1.0000	0.9613	1.0000	1.0000
Cooking	Pre-1979	0.9923	0.9855	0.9855	0.9921	0.9705
	1979 - 2003	0.9953	0.9913	0.9913	1.0000	1.0000
	2004-2005	0.9922	1.0000	1.0000	1.0000	1.0000
Drying	Pre-1979	0.8721	0.8153	0.8153	0.7578	0.8529
	1979 - 2003	0.8973	0.8602	0.8602	0.9600	0.7272
	2004-2005	0.9248	0.7744	0.7744	1.0000	1.0000
Pool	Pre-1979	0.0772	0.0521	0.1045	0.1179	0.1179
	1979 - 2003	0.1611	0.1308	0.1941	0.0053	0.0053
	2004-2005	0.1555	0.1308	0.1941	0.0053	0.0053
Spa	Pre-1979	0.1354	0.0526	0.0668	0.1329	0.1329
	1979 - 2003	0.2339	0.1923	0.2896	0.2012	0.2012
	2004-2005	0.2039	0.1923	0.2896	0.2012	0.2012
Fireplace	Pre-1979	0.5493	0.2634	0.1519	0.1894	0.1894
	1979 - 2003	0.7149	0.6261	0.4775	0.4156	0.4156
	2004-2005	0.7149	0.6261	0.4775	0.4156	0.4156
Barbecue	Pre-1979	0.4595	0.2630	0.1524	0.1875	0.2058
	1979 - 2003	0.5980	0.4739	0.3192	0.3600	0.2727
	2004-2005	0.6581	0.4405	0.1639	0.0000	0.0000

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Figure 17: Gas Fuel Shares

End-use	Single Fam	Multi-Family 2 - 4 Units	Multi-Family > 4 Units	ıster Me	Sub Meter
Space Heat	0.9573	0.9399	0.8249	0.9610	0.9610
Water Heat	0.9876	0.9803	0.9627	0.9614	0.9614
Cooking	0.8075	0.8183	0.8151	0.8744	0.8744
Drying	0.7924	0.7416	0.7445	0.7190	0.5657
Pool	0.8247	0.8247	0.8247	0.8247	0.8247
Spa	0.5819	0.5819	0.5819	0.5819	0.5819
Fireplace	0.5816	0.5816	0.5816	0.5816	0.5816
Barbecue	0.2759	0.2663	0.2978	0.1251	0.0364

2006 California Gas Report - Residential

Figure 18: Gas Efficiency Shares

Gas End-use	Efficiency Level	Single Family		2 - 4 Units		> 4 Units		Master Meter		Sub Meter	
		Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
Space Heat	Stock	0.59	0.59	0.70	0.70	0.50	0.50	0.50	0.50	0.59	0.59
	Standard	0.34	0.34	0.28	0.28	0.48	0.48	0.48	0.48	0.34	0.34
	High	0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06
	Premium	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Water Heat	Stock	0.10	0.10	0.22	0.22	0.13	0.13	0.13	0.13	0.10	0.10
	Standard	0.68	0.68	0.61	0.61	0.76	0.76	0.76	0.76	0.68	0.68
	High	0.21	0.21	0.16	0.16	0.10	0.10	0.10	0.10	0.21	0.21
	Premium	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cooking	Stock	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
	Standard	0.10	0.10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Drying	Stock	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Standard	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Pool	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Spa	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fireplace	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Barbecue	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

2006 California Gas Report - Residential

Figure 19: Electric Efficiency Shares

Electric End-use	Efficiency Level	Single Family		Multi-Family 2 - 4 Units		Multi-Family > 4 Units		Master Meter		Sub Meter	
		Existing	New	Existing	New	Existing	New	Existing	New	Existing	New
Space Heat	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Water Heat	Stock	0.10	0.10	0.22	0.22	0.13	0.13	0.13	0.13	0.10	0.10
	Standard	0.68	0.68	0.61	0.61	0.76	0.76	0.76	0.76	0.68	0.68
	High	0.21	0.21	0.16	0.16	0.10	0.10	0.10	0.10	0.21	0.21
	Premium	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cooking	Stock	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
	Standard	0.10	0.10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Drying	Stock	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Standard	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Pool	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Space Heat	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fireplace	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Barbeque	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

2006 CALIFORNIA GAS REPORT

CORE COMMERCIAL AND INDUSTRIAL DEMAND FORECAST
JULY 2006

A Sempra Energy utility™

Core Commercial and Industrial End Use Model

2006 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 2006 through 2025.

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 1386 for an Average Year. The gas demand forecasts under Cold, Hot and Base temperature were then constructed based on Cold Year (Hdd = 1708), Hot Year (Hdd=1060) and Base Year (Hdd=0) annual assumptions.

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 load associated with (existing) G10 commercial and industrial customers who install electric self-generation equipment. This program was established by the State of California through AB970. The final adjustment is to add 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 2005 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 2005 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 1386 average year Hdd.

B. Employment Data:

The level of employment in each business type is used as a measure of economic activity in the G10 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 forecast data comes from Global Insight's Winter 2006 Regional forecast released in February 2006 and based on Global Insight's January 2006 US Economic Forecast. The historical 2005 data comes from the California Employment Development Department.

C. Incremental Meter Data:

Regression equations were developed for each of the 14 commercial and 11 industrial customer types, using each sector's employment as the main driver of its customer growth. Recorded annual data from 1980 through 2005 were used to develop the equations. The equations then used forecasted employment to forecast annual sector customers through 2025. The 14 commercial customer forecasts were then scaled equally "across the board" year-by-year, so that their aggregated total each year would match the already-forecasted single-series forecast of active commercial meters in SoCalGas' separate econometric Customer Forecast model. Likewise, the 11 industrial sector forecasts were scaled equally so their aggregate for each year would match the customer model's single-series forecast of active industrial meters.

For each commercial and industrial market and segment listed above we populated EUForecaster with the number of SoCalGas customer accounts as of December 2005. The forecast of new construction was developed in a manner to achieve consistency with our Commercial econometric models. The number of new customers is based entirely on employment growth forecasts and on employment elasticities derived from our econometric demand forecast. The employment elasticities essentially show how changes in employment affect sales growth. The end-use models preserved this relationship by the development of growth indices that were derived by multiplying the employment elasticities. This

growth index was then multiplied by the stock of existing customers to provide an estimate of sale growth for EUForecaster.

D. Gas Price Data:

Average and marginal gas prices ($/Therm) were calculated from forecasts of the G-10 rate components. We used the underlying detailed consumption data, previously used for our econometric model work on our G-10 commercial and industrial customers, to separate monthly consumption for customers by each business type into the respective G-10 consumption tiers. (The most recent 12-month period, April 2002 through March 2003 of this detailed consumption data was used.)

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.

E. Electric Price Data:

Both average prices (cents/kWh) and marginal prices (cents/kWh) were developed as electricity price inputs. Forecasts for the SCE medium commercial and industrial customer class were developed by SDG&E's electricity rate analysis group for 2006 through 2025. These were the average electricity prices for the G-10 commercial and industrial market, overall.

The marginal prices were calculated by multiplying each year's respective average price by a ratio. This ratio, 0.789, was estimated from an analysis of the SCE GS-2 rate schedule posted on their web-site in March 2006. (These customers were assumed to be large 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 G-10 commercial and industrial gas price for each business type, then multiplied by the overall average (or marginal) electricity price.

F. Building and Equipment Decay Rates:

Building decay rates are based on the building lifetimes, where the lifetime is defined as the length of time it takes for either a demolition or a major renovation where are 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 large gas transport (non-core) customers. In both the commercial and industrial non-core models the existing building decay rate was set equal to zero.

Similarly, 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

G. 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. The commercial models developed saturation and fuel share estimates from our others end-use models. 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%, where as 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 proportionately to the medium, high and premium alternatives proportionate to their shares noted above. Therefore, for replacement of new equipment stock, the medium efficiency share ranges from 80% to 90% and the high efficiency share ranges from 10% to 20%.

H. DSM 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 forecast of core gas air conditioning and gas engine demand are based on the latest information provided by customers. Both segments are forecast based on the expected number of customers in each market times their usage per customer. Usage per customer is based on the annual average use per customer of 2003 – 2005.

G10 COMMERCIAL DATA TABLES

2006 California Gas Report - Commercial G10
The Year the Equipment Was Installed by Business Types

Sector	Space Heater	Water Heater	Cooktop	Griddle	Fryer	Other Cooking Equipment	Kitchen Equipment	AC	Dryer	Engine	Other
Office	1977	1978	1974	1978	1979	1976	1980	1975	1978	1975	1973
Restaurant	1980	1983	1980	1980	1982	1981	1983	1977	1983	1978	1980
Retail	1976	1979	1977	1977	1984	1981	1977	1976	1978	1984	1977
Laundry	1979	1975	1981	1986	1986	1986	1986	1975	1976	.	1975
Warehouse	1977	1977	1975	1981	1979	1979	1939	1975	1983	1981	1978
School	1975	1977	1971	1972	1975	1972	1972	1973	1975	1974	1972
College	1974	1976	1973	1974	1975	1975	1973	1979	1974	1973	1970
Health	1976	1979	1974	1975	1977	1975	1973	1975	1977	1974	1975
Lodging	1974	1981	1975	1979	1983	1979	1984	1975	1980	1975	1981
Misc	1974	1977	1972	1972	1976	1973	1979	1974	1978	1974	1978
Government	1975	1977	1973	1979	1975	1976	1978	1975	1980	1978	1972
TIU	1975	1979	1975	1978	1982	1979	1990	1975	1983	1978	1981
Construction	1977	1977	1972	1974	1975	1974	1953	1973	1980	1975	1976
Agriculture	1982	1980	1973	1979	1980	1979	1970	1976	1971	1987	1985

2006 California Gas Report - Commercial G10
Incremental Meter Forecast by Business Types

Year	Office	Restaurant	Retail	Laundry	Warehouse	School	College	Health	Lodging	Misc	Government	TCU	Construction	Agriculture
2006	382	421	-81	-5	-43	21	-19	81	48	-506	27	63	32	200
2007	546	587	105	5	-14	90	31	113	58	-244	35	91	24	70
2008	476	436	-35	-10	-43	27	9	85	44	-301	25	70	6	56
2009	543	414	-73	-10	-58	74	26	80	52	-344	32	83	6	58
2010	456	384	-123	-4	-50	69	24	60	58	-259	38	95	11	54
2011	373	359	-145	-6	-64	72	25	63	56	-255	35	95	13	48
2012	296	362	-143	-6	-76	49	17	75	57	-247	38	98	19	52
2013	382	351	-130	-12	-79	57	20	63	51	-292	35	89	17	52
2014	527	333	-143	-13	-75	58	20	62	51	-302	35	87	19	56
2015	521	322	-136	-15	-78	45	16	59	48	-275	32	79	18	56
2016	518	299	-151	-15	-72	36	12	73	48	-225	31	77	17	59
2017	450	285	-152	-14	-69	31	11	95	46	-150	29	77	14	59
2018	494	292	-129	-15	-67	13	4	100	46	-141	28	74	13	60
2019	531	287	-124	-18	-66	0	0	97	46	-195	27	73	11	59
2020	480	305	-103	-17	-66	27	9	100	48	-177	31	77	14	63
2021	475	277	-120	-18	-74	14	5	109	45	-152	25	73	10	60
2022	513	267	-116	-20	-69	15	5	107	43	-159	26	70	8	61
2023	591	262	-115	-20	-70	19	7	107	43	-160	26	70	8	63
2024	623	250	-120	-21	-70	19	7	102	41	-168	25	68	7	62
2025	659	244	-123	-21	-69	28	10	95	41	-169	26	69	9	64

2006 California Gas Report - Commercial G10
Electric Price Forecast (Cent/KWh)

(a) Average Price Forecast

Year	Agriculture	College	Construction	Government	Health	Laundry	Lodging	Misc	Office	Restaurant	Retail	School	TCU	Warehouse
2005	14.93	15.43	19.03	16.12	16.39	16.13	16.16	18.06	17.67	17.03	17.80	16.83	16.16	16.30
2006	16.14	16.76	21.10	17.62	17.97	17.68	17.71	19.96	19.50	18.80	19.66	18.52	17.67	17.82
2007	17.56	18.17	22.49	19.04	19.39	19.11	19.13	21.36	20.91	20.24	21.07	19.95	19.09	19.23
2008	18.48	19.13	23.76	20.05	20.42	20.11	20.15	22.54	22.05	21.32	22.23	21.01	20.11	20.26
2009	18.35	18.96	23.54	19.81	20.14	19.78	19.84	22.30	21.77	20.90	21.94	20.68	19.86	20.07
2010	17.32	17.92	22.46	18.77	19.10	18.76	18.81	21.23	20.72	19.87	20.88	19.64	18.82	19.02
2011	17.62	18.28	23.20	19.22	19.58	19.22	19.27	21.88	21.33	20.44	21.51	20.18	19.27	19.48
2012	16.53	17.18	21.93	18.09	18.45	18.10	18.15	20.66	20.13	19.29	20.31	19.03	18.15	18.34
2013	16.62	17.29	22.20	18.23	18.61	18.25	18.30	20.89	20.35	19.49	20.53	19.21	18.29	18.48
2014	16.76	17.46	22.58	18.45	18.85	18.48	18.53	21.21	20.66	19.77	20.84	19.48	18.51	18.71
2015	16.88	17.62	22.94	18.66	19.07	18.69	18.74	21.53	20.95	20.05	21.15	19.73	18.72	18.91
2016	17.06	17.81	23.18	18.87	19.29	18.92	18.96	21.76	21.19	20.30	21.39	19.97	18.93	19.12
2017	17.28	18.04	23.37	19.10	19.52	19.16	19.20	21.96	21.40	20.54	21.60	20.20	19.16	19.34
2018	17.58	18.32	23.46	19.35	19.76	19.42	19.45	22.11	21.57	20.77	21.77	20.42	19.41	19.57
2019	17.87	18.59	23.56	19.60	20.00	19.68	19.71	22.27	21.75	20.99	21.94	20.65	19.65	19.80
2020	18.13	18.84	23.72	19.83	20.23	19.93	19.95	22.45	21.95	21.22	22.14	20.87	19.89	20.03
2021	18.37	19.08	23.88	20.07	20.46	20.17	20.19	22.64	22.15	21.46	22.34	21.10	20.12	20.25
2022	18.63	19.32	24.03	20.30	20.70	20.41	20.43	22.82	22.35	21.68	22.53	21.33	20.36	20.47
2023	18.88	19.57	24.19	20.54	20.93	20.66	20.67	23.01	22.55	21.92	22.73	21.56	20.59	20.70
2024	19.12	19.81	24.36	20.77	21.16	20.90	20.91	23.20	22.75	22.15	22.93	21.78	20.82	20.92
2025	19.37	20.05	24.52	21.00	21.39	21.14	21.15	23.39	22.95	22.38	23.13	22.01	21.06	21.14

(b) Marginal Price Forecast

Year	Agriculture	College	Construction	Government	Health	Laundry	Lodging	Misc	Office	Restaurant	Retail	School	TCU	Warehouse
2005	15.57	15.89	17.34	16.35	16.66	16.94	16.56	17.22	17.18	17.43	17.28	16.88	16.48	16.27
2006	16.86	17.27	19.17	17.87	18.27	18.64	18.14	19.02	18.95	19.26	19.09	18.55	18.03	17.78
2007	18.27	18.69	20.59	19.29	19.68	20.05	19.56	20.44	20.37	20.68	20.51	19.97	19.45	19.19
2008	19.25	19.69	21.71	20.32	20.74	21.13	20.61	21.54	21.47	21.80	21.61	21.04	20.49	20.22
2009	19.20	19.58	21.32	20.13	20.49	20.83	20.37	21.18	21.12	21.40	21.24	20.75	20.28	20.04
2010	18.14	18.52	20.29	19.08	19.45	19.79	19.33	20.15	20.08	20.37	20.21	19.71	19.23	18.99
2011	18.48	18.91	20.89	19.54	19.95	20.33	19.81	20.73	20.66	20.98	20.80	20.24	19.70	19.44
2012	17.35	17.78	19.73	18.39	18.80	19.17	18.67	19.57	19.50	19.82	19.64	19.09	18.56	18.29
2013	17.45	17.90	19.94	18.54	18.96	19.36	18.83	19.77	19.70	20.03	19.84	19.27	18.71	18.44
2014	17.62	18.09	20.24	18.76	19.21	19.63	19.07	20.06	19.99	20.34	20.14	19.53	18.95	18.66
2015	17.76	18.25	20.54	18.97	19.45	19.89	19.29	20.35	20.27	20.64	20.43	19.79	19.17	18.86
2016	17.93	18.44	20.79	19.18	19.66	20.12	19.51	20.59	20.51	20.89	20.68	20.02	19.38	19.06
2017	18.14	18.65	21.01	19.40	19.89	20.34	19.73	20.82	20.74	21.12	20.90	20.24	19.60	19.28
2018	18.41	18.91	21.21	19.63	20.11	20.56	19.96	21.02	20.94	21.32	21.10	20.45	19.83	19.52
2019	18.67	19.16	21.41	19.87	20.33	20.77	20.18	21.22	21.15	21.51	21.31	20.67	20.06	19.75
2020	18.90	19.39	21.63	20.09	20.56	20.99	20.41	21.44	21.36	21.73	21.52	20.89	20.28	19.98
2021	19.12	19.61	21.85	20.31	20.78	21.21	20.63	21.66	21.58	21.95	21.74	21.11	20.50	20.20
2022	19.36	19.84	22.06	20.54	21.00	21.43	20.85	21.88	21.80	22.16	21.96	21.33	20.73	20.43
2023	19.59	20.07	22.28	20.76	21.22	21.65	21.08	22.09	22.02	22.38	22.17	21.55	20.95	20.65
2024	19.82	20.30	22.49	20.99	21.44	21.87	21.30	22.31	22.24	22.60	22.39	21.77	21.18	20.88
2025	20.05	20.52	22.71	21.21	21.67	22.09	21.52	22.53	22.46	22.81	22.61	21.99	21.40	21.10

2006 California Gas Report - Commercial G10
Gas Price Forecast ($/Therm)

(a) Average Price Forecast

Year	Price Deflator	Agriculture	College	Construction	Government	Health	Laundry	Lodging	Misc	Office	Restaurant	Retail	School	TCU	Warehouse
2005	100.00	0.9137	0.9439	1.1647	0.9861	1.0030	0.9870	0.9890	1.1053	1.0812	1.0421	1.0892	1.0298	0.9887	0.9975
2006	102.80	0.8654	0.8983	1.1309	0.9447	0.9631	0.9475	0.9491	1.0697	1.0451	1.0079	1.0540	0.9928	0.9474	0.9550
2007	104.53	0.9580	0.9917	1.2272	1.0390	1.0579	1.0425	1.0440	1.1655	1.1409	1.1042	1.1499	1.0883	1.0418	1.0491
2008	106.44	0.9306	0.9636	1.1967	1.0102	1.0287	1.0131	1.0147	1.1355	1.1109	1.0737	1.1197	1.0585	1.0129	1.0204
2009	108.36	0.8542	0.8824	1.0958	0.9219	0.9374	0.9206	0.9234	1.0378	1.0133	0.9727	1.0210	0.9624	0.9244	0.9342
2010	110.25	0.8245	0.8533	1.0693	0.8937	0.9096	0.8930	0.8956	1.0109	0.9864	0.9462	0.9942	0.9352	0.8962	0.9058
2011	112.36	0.7869	0.8165	1.0358	0.8581	0.8745	0.8581	0.8605	0.9768	0.9523	0.9127	0.9604	0.9009	0.8606	0.8698
2012	115.02	0.7707	0.8008	1.0223	0.8432	0.8599	0.8436	0.8460	0.9629	0.9384	0.8992	0.9466	0.8869	0.8458	0.8547
2013	117.93	0.7529	0.7834	1.0061	0.8262	0.8431	0.8269	0.8292	0.9465	0.9220	0.8830	0.9303	0.8704	0.8288	0.8375
2014	120.84	0.7359	0.7668	0.9912	0.8102	0.8274	0.8113	0.8134	0.9314	0.9069	0.8682	0.9152	0.8551	0.8128	0.8214
2015	123.79	0.7201	0.7516	0.9784	0.7958	0.8134	0.7974	0.7994	0.9181	0.8936	0.8554	0.9021	0.8416	0.7985	0.8068
2016	126.97	0.7290	0.7611	0.9907	0.8064	0.8244	0.8085	0.8104	0.9300	0.9054	0.8677	0.9141	0.8533	0.8090	0.8170
2017	130.38	0.7522	0.7850	1.0170	0.8311	0.8495	0.8338	0.8355	0.9559	0.9313	0.8940	0.9401	0.8790	0.8338	0.8415
2018	133.90	0.8035	0.8369	1.0718	0.8841	0.9029	0.8874	0.8889	1.0102	0.9857	0.9488	0.9946	0.9331	0.8868	0.8942
2019	137.53	0.8542	0.8884	1.1261	0.9365	0.9557	0.9404	0.9418	1.0640	1.0394	1.0031	1.0485	0.9866	0.9392	0.9463
2020	141.23	0.8941	0.9291	1.1698	0.9783	0.9980	0.9828	0.9840	1.1072	1.0826	1.0468	1.0919	1.0296	0.9811	0.9878
2021	145.02	0.9331	0.9688	1.2127	1.0192	1.0394	1.0244	1.0254	1.1496	1.1250	1.0897	1.1344	1.0717	1.0220	1.0284
2022	148.90	0.9754	1.0118	1.2583	1.0630	1.0836	1.0688	1.0697	1.1947	1.1701	1.1353	1.1797	1.1167	1.0659	1.0720
2023	152.89	1.0195	1.0567	1.3064	1.1091	1.1302	1.1156	1.1162	1.2423	1.2177	1.1835	1.2275	1.1640	1.1120	1.1177
2024	156.98	1.0639	1.1019	1.3551	1.1556	1.1772	1.1627	1.1632	1.2904	1.2657	1.2321	1.2757	1.2118	1.1585	1.1638
2025	161.16	1.1104	1.1493	1.4059	1.2042	1.2263	1.2121	1.2123	1.3407	1.3159	1.2830	1.3262	1.2618	1.2071	1.2120

(b) Marginal Price Forecast

Year	Price Deflator	Agriculture	College	Construction	Government	Health	Laundry	Lodging	Misc	Office	Restaurant	Retail	School	TCU	Warehouse
2005	100.00	0.8714	0.8893	0.9706	0.9150	0.9322	0.9484	0.9268	0.9640	0.9615	0.9753	0.9674	0.9445	0.9221	0.9108
2006	102.80	0.8186	0.8387	0.9310	0.8678	0.8870	0.9048	0.8808	0.9235	0.9202	0.9353	0.9268	0.9008	0.8756	0.8631
2007	104.53	0.9100	0.9307	1.0258	0.9606	0.9804	0.9988	0.9740	1.0180	1.0147	1.0302	1.0214	0.9946	0.9687	0.9558
2008	106.44	0.8836	0.9038	0.9966	0.9330	0.9523	0.9703	0.9461	0.9890	0.9857	1.0009	0.9923	0.9662	0.9409	0.9283
2009	108.36	0.8154	0.8315	0.9056	0.8548	0.8702	0.8846	0.8653	0.8995	0.8970	0.9090	0.9022	0.8813	0.8611	0.8511
2010	110.25	0.7846	0.8013	0.8778	0.8253	0.8412	0.8561	0.8361	0.8715	0.8689	0.8813	0.8743	0.8527	0.8318	0.8215
2011	112.36	0.7456	0.7629	0.8427	0.7880	0.8046	0.8200	0.7992	0.8361	0.8333	0.8463	0.8390	0.8165	0.7948	0.7840
2012	115.02	0.7284	0.7462	0.8280	0.7720	0.7890	0.8048	0.7835	0.8213	0.8185	0.8318	0.8243	0.8012	0.7789	0.7679
2013	117.93	0.7102	0.7282	0.8112	0.7543	0.7716	0.7877	0.7660	0.8044	0.8015	0.8150	0.8074	0.7840	0.7614	0.7502
2014	120.84	0.6925	0.7109	0.7955	0.7375	0.7551	0.7715	0.7494	0.7885	0.7856	0.7994	0.7916	0.7677	0.7447	0.7332
2015	123.79	0.6757	0.6946	0.7814	0.7219	0.7399	0.7568	0.7341	0.7743	0.7713	0.7854	0.7774	0.7530	0.7293	0.7175
2016	126.97	0.6834	0.7029	0.7923	0.7310	0.7496	0.7670	0.7436	0.7850	0.7819	0.7964	0.7882	0.7630	0.7386	0.7265
2017	130.38	0.7057	0.7257	0.8174	0.7545	0.7736	0.7914	0.7674	0.8099	0.8067	0.8216	0.8132	0.7873	0.7623	0.7499
2018	133.90	0.7557	0.7763	0.8708	0.8060	0.8256	0.8440	0.8193	0.8630	0.8597	0.8751	0.8664	0.8398	0.8140	0.8012
2019	137.53	0.8052	0.8264	0.9236	0.8570	0.8772	0.8960	0.8707	0.9156	0.9122	0.9280	0.9191	0.8917	0.8652	0.8521
2020	141.23	0.8440	0.8657	0.9658	0.8972	0.9180	0.9374	0.9113	0.9576	0.9541	0.9704	0.9612	0.9330	0.9057	0.8922
2021	145.02	0.8816	0.9041	1.0071	0.9365	0.9579	0.9778	0.9510	0.9986	0.9950	1.0118	1.0023	0.9733	0.9452	0.9313
2022	148.90	0.9228	0.9458	1.0513	0.9790	1.0009	1.0214	0.9939	1.0426	1.0390	1.0562	1.0465	1.0167	0.9880	0.9737
2023	152.89	0.9656	0.9892	1.0978	1.0234	1.0459	1.0670	1.0387	1.0889	1.0851	1.1028	1.0928	1.0622	1.0326	1.0179
2024	156.98	1.0086	1.0329	1.1447	1.0681	1.0913	1.1130	1.0838	1.1355	1.1317	1.1499	1.1396	1.1081	1.0776	1.0625
2025	161.16	1.0537	1.0787	1.1938	1.1149	1.1388	1.1611	1.1311	1.1843	1.1803	1.1991	1.1885	1.1561	1.1247	1.1091

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Historical Throughput and Customer Counts

Segment	2005 Therm Sales	2005 Meter Count	2005 Meter Count, Existing/Old customers	2005 Meter Count New Customers	Avg Use Per Meter Existing Customers	Avg Use Per Meter New Customers	Price Elasticity	Employment Elasticities
Office	67,226,443	42,782	41,535	1,247	1,571	1,583	-0.135376	0.5048142
Restaurant	240,472,875	39,753	38,162	1,591	6,084	5,201	-0.091877	1.1390094
Retail	52,640,477	30,890	30,067	823	1,699	1,899	-0.265060	0.6699614
Laundry	68,089,023	5,398	5,248	150	12,651	11,288	-0.122795	0.4107731
Warehouse	25,514,062	9,006	8,835	171	2,851	1,882	-0.043035	0.5413965
School	37,781,845	6,034	5,855	179	6,337	3,793	0.000000	0.0000000
College	21,342,690	2,224	2,151	73	9,781	4,169	-0.037179	0.7344599
Health	49,679,198	8,726	8,593	133	5,667	7,370	-0.096826	0.1338678
Lodging	55,914,374	4,927	4,842	85	11,174	21,281	-0.105697	0.4292959
Misc	75,185,093	37,919	37,213	706	1,960	3,222	0.000000	0.0000000
Government	22,495,056	3,489	3,383	106	6,377	8,723	-0.095709	1.6919191
TCU	33,311,505	8,576	8,357	219	3,826	6,113	-0.129301	0.7235239
Construction	4,586,586	5,421	5,212	209	828	1,298	-0.161076	0.1063725
Agriculture	35,960,573	1,817	1,786	31	20,023	6,478	-0.315282	0.6688191
Total	790,199,800	206,962						

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Average Use Per Meter (Therm)

Sector	Space Heater	Water Heater	Cooktop	Griddle	Fryer	Other Cooking Equipment	Kitchen Equipment	AC	Dryer	Engine	Other	Total Building
Office	578	240	29	10	7	30	6	10	29	8	576	1,525
Restaurant	441	853	1,424	586	1,125	1,244	303	18	8	0	280	6,280
Retail	389	237	86	14	96	165	102	23	44	3	540	1,699
Laundry	38	611	5	1	1	7	0	1	6,139	0	5,717	12,521
Warehouse	466	135	19	5	46	53	68	53	155	46	1,500	2,548
School	3,310	1,116	189	14	42	347	35	42	7	45	969	6,115
College	4,291	2,120	207	61	106	255	59	268	65	91	2,919	10,442
Health	1,639	1,027	165	32	45	127	72	30	225	17	1,733	5,109
Lodging	1,641	3,353	463	113	145	564	277	27	873	1	3,789	11,246
Misc	735	449	91	18	30	75	24	76	29	6	496	2,027
Government	2,709	1,575	138	68	40	114	62	72	37	400	1,062	6,277
TCU	884	318	28	7	13	25	17	43	3	1,386	1,466	4,188
Construction	291	91	7	0	1	4	2	9	54	0	429	889
Agriculture	2,844	689	117	20	243	541	492	7	717	4,703	9,496	19,869

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Use Per Meter for New Customers (Therm)

Sector	Space Heater	Water Heater	Cooktop	Griddle	Fryer	Other Cooking Equipment	Kitchen Equipment	AC	Dryer	Engine	Other	Total Building
Office	337	2	44	228	0	91	17	0	0	0	1,117	1,836
Restaurant	1,212	1,101	1,218	718	850	464	803	16	0	0	1,370	7,752
Retail	671	548	77	18	109	107	499	0	402	1	0	2,432
Laundry	0	31	0	0	0	0	0	0	6,996	0	5,016	12,043
Warehouse	109	164	0	184	0	0	946	0	3,207	0	0	4,610
School	2,565	1,069	225	1	0	413	12	0	0	0	5,285	9,570
College	2,336	94	0	0	0	0	0	0	0	3,948	0	6,378
Health	876	1,956	205	0	86	82	94	0	97	0	3,244	6,640
Lodging	504	2,958	0	221	292	596	17	0	712	0	21,124	26,424
Misc	423	50	0	2	0	0	42	0	22	0	7,515	8,054
Government	0	0	0	0	0	0	0	0	0	0	0	0
TCU	682	26	0	0	0	0	0	0	0	4,476	4,749	9,934
Construction	0	0	0	0	0	0	0	0	0	0	0	0
Agriculture	592	392	0	0	0	0	0	0	0	6,394	12,316	19,694

2006 California Gas Report - Commercial 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 Types	End Use	Fuel	Efficiency	UEC (therm/SqFt)	Equipment Cost	Efficiency Shares
Office	Space_Heat	1	1	0.3046	4.3149	0.65
Office	Space_Heat	1	2	0.2742	4.7464	0.3
Office	Space_Heat	1	3	0.2495	5.1779	0.04
Office	Space_Heat	1	4	0.2248	5.6094	0.01
Office	Space_Heat	2	1	6.2481	3.4519	1
Office	Space_Heat	2	2	5.6233	3.7971	0
Office	Space_Heat	2	3	5.1172	4.1423	0
Office	Space_Heat	2	4	4.6111	4.4875	0
Office	Water_Heat	1	1	0.0474	0.6712	0.4
Office	Water_Heat	1	2	0.0427	0.7384	0.5
Office	Water_Heat	1	3	0.0373	0.8055	0.08
Office	Water_Heat	1	4	0.032	0.8726	0.02
Office	Water_Heat	2	1	0.972	0.537	0.4
Office	Water_Heat	2	2	0.8748	0.5907	0.5
Office	Water_Heat	2	3	0.7654	0.6444	0.08
Office	Water_Heat	2	4	0.6561	0.6981	0.02
Office	Cooking	1	1	0.0346	0.4899	0.65
Office	Cooking	1	2	0.0311	0.5389	0.35
Office	Cooking	2	1	0.7094	0.3919	0.65
Office	Cooking	2	2	0.6385	0.4311	0.35
Office	AC_Compressor	1	1	0.1043	1.4773	0.65
Office	AC_Compressor	1	2	0.0939	1.6251	0.35
Office	AC_Compressor	2	1	2.1392	1.1819	0.65
Office	AC_Compressor	2	2	1.9253	1.3	0.35
Office	Other	1	1	0	0	1
Office	Other	2	1	0	0	0
Restaurant	Space_Heat	1	1	0.1177	1.5841	0.65
Restaurant	Space_Heat	1	2	0.1059	1.7425	0.3
Restaurant	Space_Heat	1	3	0.0964	1.9009	0.04
Restaurant	Space_Heat	1	4	0.0868	2.0593	0.01
Restaurant	Space_Heat	2	1	2.4134	1.2673	1
Restaurant	Space_Heat	2	2	2.1721	1.394	0
Restaurant	Space_Heat	2	3	1.9766	1.5207	0
Restaurant	Space_Heat	2	4	1.7811	1.6474	0
Restaurant	Water_Heat	1	1	0.8666	11.666	0.4
Restaurant	Water_Heat	1	2	0.7799	12.8326	0.5
Restaurant	Water_Heat	1	3	0.6824	13.9992	0.08
Restaurant	Water_Heat	1	4	0.5849	15.1658	0.02
Restaurant	Water_Heat	2	1	17.7736	9.3328	0.4
Restaurant	Water_Heat	2	2	15.9962	10.2661	0.5
Restaurant	Water_Heat	2	3	13.9967	11.1994	0.08
Restaurant	Water_Heat	2	4	11.9972	12.1327	0.02
Restaurant	Cook_top	1	1	1.1985	16.1343	0.65
Restaurant	Cook_top	1	2	1.0787	17.7477	0.35
Restaurant	Cook_top	2	1	24.5811	12.9074	0.65
Restaurant	Cook_top	2	2	22.123	14.1981	0.35
Restaurant	Fryer	1	1	1.0791	14.5274	0.65
Restaurant	Fryer	1	2	0.9712	15.9802	0.35
Restaurant	Fryer	2	1	22.133	11.622	0.65
Restaurant	Fryer	2	2	19.9197	12.7841	0.35
Restaurant	Griddle	1	1	0.9107	12.2603	0.65
Restaurant	Griddle	1	2	0.8197	13.4863	0.35

2006 California Gas Report - Commercial 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 Types	End Use	Fuel	Efficiency	UEC (therm/SqFt)	Equipment Cost	Efficiency Shares
Restaurant	Griddle	2	1	18.6789	9.8082	0.65
Restaurant	Griddle	2	2	16.8111	10.789	0.35
Restaurant	Other_Cooking	1	1	0.9712	13.0747	0.65
Restaurant	Other_Cooking	1	2	0.8741	14.3822	0.35
Restaurant	Other_Cooking	2	1	19.9197	10.4598	0.65
Restaurant	Other_Cooking	2	2	17.9278	11.5057	0.35
Restaurant	AC_Compressor	1	1	0.2028	2.7306	0.65
Restaurant	AC_Compressor	1	2	0.1826	3.0036	0.35
Restaurant	AC_Compressor	2	1	4.1601	2.1844	0.65
Restaurant	AC_Compressor	2	2	3.7441	2.4029	0.35
Restaurant	Other	1	1	0	0	1
Restaurant	Other	2	1	0	0	0
Retail	Space_Heat	1	1	0.2455	3.5122	0.65
Retail	Space_Heat	1	2	0.221	3.8634	0.3
Retail	Space_Heat	1	3	0.2011	4.2146	0.04
Retail	Space_Heat	1	4	0.1812	4.5658	0.01
Retail	Space_Heat	2	1	5.0356	2.8097	1
Retail	Space_Heat	2	2	4.532	3.0907	0
Retail	Space_Heat	2	3	4.1241	3.3717	0
Retail	Space_Heat	2	4	3.7163	3.6527	0
Retail	Water_Heat	1	1	0.1093	1.563	0.4
Retail	Water_Heat	1	2	0.0983	1.7193	0.5
Retail	Water_Heat	1	3	0.086	1.8756	0.08
Retail	Water_Heat	1	4	0.0738	2.0319	0.02
Retail	Water_Heat	2	1	2.2409	1.2504	0.4
Retail	Water_Heat	2	2	2.0168	1.3754	0.5
Retail	Water_Heat	2	3	1.7647	1.5004	0.08
Retail	Water_Heat	2	4	1.5126	1.6255	0.02
Retail	Cooking	1	1	0.3079	4.4039	0.65
Retail	Cooking	1	2	0.2771	4.8443	0.35
Retail	Cooking	2	1	6.3142	3.5231	0.65
Retail	Cooking	2	2	5.683	3.875	0.35
Retail	Other	1	1	0	0	1
Retail	Other	2	1	0	0	0
Laundry	Space_Heat	1	1	0.147	1.836	0.65
Laundry	Space_Heat	1	2	0.132	2.02	0.3
Laundry	Space_Heat	1	3	0.12	2.203	0.04
Laundry	Space_Heat	1	4	0.108	2.387	0.01
Laundry	Space_Heat	2	1	3.012	1.469	1
Laundry	Space_Heat	2	2	2.711	1.616	0
Laundry	Space_Heat	2	3	2.467	1.763	0
Laundry	Space_Heat	2	4	2.223	1.909	0
Laundry	Water_Heat	1	1	2.76	34.512	0.4
Laundry	Water_Heat	1	2	2.484	37.963	0.5
Laundry	Water_Heat	1	3	2.174	41.414	0.08
Laundry	Water_Heat	1	4	1.863	44.865	0.02
Laundry	Water_Heat	2	1	56.617	27.609	0.4
Laundry	Water_Heat	2	2	50.955	30.37	0.5
Laundry	Water_Heat	2	3	44.586	33.131	0.08
Laundry	Water_Heat	2	4	38.216	35.892	0.02
Laundry	Drying	1	1	14.937	186.738	0.65
Laundry	Drying	1	2	13.443	205.412	0.35

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UEC, Equipment Cost and Efficiency Shares

Where Fuel = 1 (gas) and = 2 (electric), and
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Business Types	End Use	Fuel	Efficiency	UEC (therm/SqFt)	Equipment Cost	Efficiency Shares
Laundry	Drying	2	1	306.348	149.39	0.65
Laundry	Drying	2	2	275.713	164.329	0.35
Laundry	Other	1	1	0	0	1
Laundry	Other	2	1	0	0	0
Warehouse	Space_Heat	1	1	0.621	7.909	0.65
Warehouse	Space_Heat	1	2	0.559	8.7	0.3
Warehouse	Space_Heat	1	3	0.509	9.491	0.04
Warehouse	Space_Heat	1	4	0.458	10.282	0.01
Warehouse	Space_Heat	2	1	12.739	6.327	1
Warehouse	Space_Heat	2	2	11.465	6.96	0
Warehouse	Space_Heat	2	3	10.433	7.593	0
Warehouse	Space_Heat	2	4	9.401	8.225	0
Warehouse	Water_Heat	1	1	0.205	2.608	0.4
Warehouse	Water_Heat	1	2	0.184	2.869	0.5
Warehouse	Water_Heat	1	3	0.161	3.13	0.08
Warehouse	Water_Heat	1	4	0.138	3.39	0.02
Warehouse	Water_Heat	2	1	4.2	2.086	0.4
Warehouse	Water_Heat	2	2	3.78	2.295	0.5
Warehouse	Water_Heat	2	3	3.308	2.504	0.08
Warehouse	Water_Heat	2	4	2.835	2.712	0.02
Warehouse	Engine	1	1	8.884	113.127	0.65
Warehouse	Engine	1	2	7.995	124.44	0.35
Warehouse	Engine	2	1	182.207	90.502	0.65
Warehouse	Engine	2	2	163.986	99.552	0.35
Warehouse	Other	1	1	0	0	1
Warehouse	Other	2	1	0	0	0
School	Space_Heat	1	1	0.092	1.225	0.65
School	Space_Heat	1	2	0.083	1.348	0.3
School	Space_Heat	1	3	0.076	1.471	0.04
School	Space_Heat	1	4	0.068	1.593	0.01
School	Space_Heat	2	1	1.895	0.98	1
School	Space_Heat	2	2	1.705	1.078	0
School	Space_Heat	2	3	1.552	1.176	0
School	Space_Heat	2	4	1.398	1.274	0
School	Water_Heat	1	1	0.123	1.635	0.4
School	Water_Heat	1	2	0.111	1.799	0.5
School	Water_Heat	1	3	0.097	1.962	0.08
School	Water_Heat	1	4	0.083	2.126	0.02
School	Water_Heat	2	1	2.528	1.308	0.4
School	Water_Heat	2	2	2.276	1.439	0.5
School	Water_Heat	2	3	1.991	1.57	0.08
School	Water_Heat	2	4	1.707	1.701	0.02
School	Cook_top	1	1	0.046	0.61	0.65
School	Cook_top	1	2	0.041	0.671	0.35
School	Cook_top	2	1	0.943	0.488	0.65
School	Cook_top	2	2	0.849	0.537	0.35
School	Fryer	1	1	0.046	0.612	0.65
School	Fryer	1	2	0.041	0.673	0.35
School	Fryer	2	1	0.946	0.489	0.65
School	Fryer	2	2	0.851	0.538	0.35
School	Griddle	1	1	0.046	0.612	0.65
School	Griddle	1	2	0.041	0.673	0.35

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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 Types	End Use	Fuel	Efficiency	UEC (therm/SqFt)	Equipment Cost	Efficiency Shares
School	Griddle	2	1	0.946	0.489	0.65
School	Griddle	2	2	0.851	0.538	0.35
School	Other_Cooking	1	1	0.046	0.61	0.65
School	Other_Cooking	1	2	0.041	0.671	0.35
School	Other_Cooking	2	1	0.943	0.488	0.65
School	Other_Cooking	2	2	0.849	0.537	0.35
School	AC_Compressor	1	1	0.065	0.866	0.65
School	AC_Compressor	1	2	0.059	0.953	0.35
School	AC_Compressor	2	1	1.339	0.693	0.65
School	AC_Compressor	2	2	1.205	0.762	0.35
School	Other	1	1	0	0	1
School	Other	2	1	0	0	0
College	Space_Heat	1	1	0.26643	3.14441	0.65
College	Space_Heat	1	2	0.23979	3.45885	0.3
College	Space_Heat	1	3	0.21821	3.77329	0.04
College	Space_Heat	1	4	0.19663	4.08773	0.01
College	Space_Heat	2	1	5.46443	2.51553	1
College	Space_Heat	2	2	4.91799	2.76708	0
College	Space_Heat	2	3	4.47537	3.01863	0
College	Space_Heat	2	4	4.03275	3.27018	0
College	Water_Heat	1	1	0.28715	3.38894	0.4
College	Water_Heat	1	2	0.25844	3.72784	0.5
College	Water_Heat	1	3	0.22613	4.06673	0.08
College	Water_Heat	1	4	0.19383	4.40563	0.02
College	Water_Heat	2	1	5.88939	2.71116	0.4
College	Water_Heat	2	2	5.30045	2.98227	0.5
College	Water_Heat	2	3	4.6379	3.25339	0.08
College	Water_Heat	2	4	3.97534	3.5245	0.02
College	Cook_top	1	1	0.0486	0.57358	0.65
College	Cook_top	1	2	0.04374	0.63093	0.35
College	Cook_top	2	1	0.99678	0.45886	0.65
College	Cook_top	2	2	0.8971	0.50475	0.35
College	Fryer	1	1	0.04857	0.57322	0.65
College	Fryer	1	2	0.04371	0.63055	0.35
College	Fryer	2	1	0.99616	0.45858	0.65
College	Fryer	2	2	0.89655	0.50444	0.35
College	Griddle	1	1	0.04857	0.57322	0.65
College	Griddle	1	2	0.04371	0.63055	0.35
College	Griddle	2	1	0.99616	0.45858	0.65
College	Griddle	2	2	0.89655	0.50444	0.35
College	Other_Cooking	1	1	0.0486	0.57358	0.65
College	Other_Cooking	1	2	0.04374	0.63093	0.35
College	Other_Cooking	2	1	0.99678	0.45886	0.65
College	Other_Cooking	2	2	0.8971	0.50475	0.35
College	AC_Compressor	1	1	0.11819	1.3949	0.65
College	AC_Compressor	1	2	0.10637	1.53439	0.35
College	AC_Compressor	2	1	2.4241	1.11592	0.65
College	AC_Compressor	2	2	2.18169	1.22752	0.35
College	Other	1	1	0	0	1
College	Other	2	1	0	0	0
Health	Space_Heat	1	1	0.06894	0.8825	0.65
Health	Space_Heat	1	2	0.06205	0.97075	0.3

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UEC, Equipment Cost and Efficiency Shares

Where Fuel = 1 (gas) and = 2 (electric), and
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Business Types	End Use	Fuel	Efficiency	UEC (therm/SqFt)	Equipment Cost	Efficiency Shares
Health	Space_Heat	1	3	0.05646	1.059	0.04
Health	Space_Heat	1	4	0.05088	1.14725	0.01
Health	Space_Heat	2	1	1.41395	0.706	1
Health	Space_Heat	2	2	1.27255	0.7766	0
Health	Space_Heat	2	3	1.15802	0.8472	0
Health	Space_Heat	2	4	1.04349	0.9178	0
Health	Water_Heat	1	1	0.41709	5.33917	0.4
Health	Water_Heat	1	2	0.37538	5.87309	0.5
Health	Water_Heat	1	3	0.32846	6.407	0.08
Health	Water_Heat	1	4	0.28154	6.94092	0.02
Health	Water_Heat	2	1	8.55444	4.27134	0.4
Health	Water_Heat	2	2	7.699	4.69847	0.5
Health	Water_Heat	2	3	6.73662	5.1256	0.08
Health	Water_Heat	2	4	5.77425	5.55274	0.02
Health	Cook_top	1	1	0.26358	3.37409	0.65
Health	Cook_top	1	2	0.23722	3.7115	0.35
Health	Cook_top	2	1	5.40598	2.69927	0.65
Health	Cook_top	2	2	4.86538	2.9692	0.35
Health	Fryer	1	1	0.26358	3.37409	0.65
Health	Fryer	1	2	0.23722	3.7115	0.35
Health	Fryer	2	1	5.40598	2.69927	0.65
Health	Fryer	2	2	4.86538	2.9692	0.35
Health	Griddle	1	1	0.26358	3.37409	0.65
Health	Griddle	1	2	0.23722	3.7115	0.35
Health	Griddle	2	1	5.40598	2.69927	0.65
Health	Griddle	2	2	4.86538	2.9692	0.35
Health	Other_Cooking	1	1	0.02636	0.33743	0.65
Health	Other_Cooking	1	2	0.02372	0.37118	0.35
Health	Other_Cooking	2	1	0.54064	0.26995	0.65
Health	Other_Cooking	2	2	0.48657	0.29694	0.35
Health	Drying	1	1	0.14598	1.86871	0.65
Health	Drying	1	2	0.13138	2.05558	0.35
Health	Drying	2	1	2.99405	1.49497	0.65
Health	Drying	2	2	2.69465	1.64446	0.35
Health	AC_Compressor	1	1	0.11386	1.45749	0.65
Health	AC_Compressor	1	2	0.10247	1.60324	0.35
Health	AC_Compressor	2	1	2.3352	1.16599	0.65
Health	AC_Compressor	2	2	2.10168	1.28259	0.35
Health	Other	1	1	0	0	1
Health	Other	2	1	0	0	0
Lodging	Space_Heat	1	1	0.38698	4.85892	0.65
Lodging	Space_Heat	1	2	0.3483	5.3448	0.3
Lodging	Space_Heat	1	3	0.3169	5.8307	0.04
Lodging	Space_Heat	1	4	0.2856	6.3166	0.01
Lodging	Space_Heat	2	1	7.9369	3.8871	1
Lodging	Space_Heat	2	2	7.1432	4.2759	
Lodging	Space_Heat	2	3	6.5003	4.6646	
Lodging	Space_Heat	2	4	5.8574	5.0533	
Lodging	Water_Heat	1	1	0.6901	8.6651	0.4
Lodging	Water_Heat	1	2	0.6211	9.5317	0.5
Lodging	Water_Heat	1	3	0.5435	10.3982	0.08
Lodging	Water_Heat	1	4	0.4658	11.2647	0.02

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UEC, Equipment Cost and Efficiency Shares

Where Fuel = 1 (gas) and = 2 (electric), and
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Business Types	End Use	Fuel	Efficiency	UEC (therm/SqFt)	Equipment Cost	Efficiency Shares
Lodging	Water_Heat	2	1	14.1542	6.9321	0.4
Lodging	Water_Heat	2	2	12.7388	7.6253	0.5
Lodging	Water_Heat	2	3	11.1465	8.3185	0.08
Lodging	Water_Heat	2	4	9.5541	9.0118	0.02
Lodging	Cook_top	1	1	0.321	4.0305	0.65
Lodging	Cook_top	1	2	0.2889	4.4335	0.35
Lodging	Cook_top	2	1	6.5837	3.2244	0.65
Lodging	Cook_top	2	2	5.9253	3.5468	0.35
Lodging	Fryer	1	1	0.4183	5.2524	0.65
Lodging	Fryer	1	2	0.3765	5.7777	0.35
Lodging	Fryer	2	1	8.5797	4.2019	0.65
Lodging	Fryer	2	2	7.7217	4.6221	0.35
Lodging	Griddle	1	1	0.4183	5.2524	0.65
Lodging	Griddle	1	2	0.3765	5.7777	0.35
Lodging	Griddle	2	1	8.5797	4.2019	0.65
Lodging	Griddle	2	2	7.7217	4.6221	0.35
Lodging	Other_Cooking	1	1	0.041	0.5148	0.65
Lodging	Other_Cooking	1	2	0.0369	0.5663	0.35
Lodging	Other_Cooking	2	1	0.8409	0.4118	0.65
Lodging	Other_Cooking	2	2	0.7568	0.453	0.35
Lodging	Drying	1	1	0.1725	2.1663	0.65
Lodging	Drying	1	2	0.1553	2.3829	0.35
Lodging	Drying	2	1	3.5386	1.733	0.65
Lodging	Drying	2	2	3.1847	1.9063	0.35
Lodging	AC_Compressor	1	1	0.057	0.7157	0.65
Lodging	AC_Compressor	1	2	0.0513	0.7872	0.35
Lodging	AC_Compressor	2	1	1.169	0.5725	0.65
Lodging	AC_Compressor	2	2	1.0521	0.6298	0.35
Lodging	Other	1	1	0	0	1
Lodging	Other	2	1	0	0	0
Misc	Space_Heat	1	1	0.1469	2.1455	0.65
Misc	Space_Heat	1	2	0.1322	2.36	0.3
Misc	Space_Heat	1	3	0.1203	2.5746	0.04
Misc	Space_Heat	1	4	0.1084	2.7891	0.01
Misc	Space_Heat	2	1	3.0121	1.7164	1
Misc	Space_Heat	2	2	2.7109	1.888	0
Misc	Space_Heat	2	3	2.4669	2.0597	0
Misc	Space_Heat	2	4	2.2229	2.2313	0
Misc	Water_Heat	1	1	0.2013	2.9412	0.4
Misc	Water_Heat	1	2	0.1812	3.2354	0.5
Misc	Water_Heat	1	3	0.1585	3.5295	0.08
Misc	Water_Heat	1	4	0.1359	3.8236	0.02
Misc	Water_Heat	2	1	4.1292	2.353	0.4
Misc	Water_Heat	2	2	3.7163	2.5883	0.5
Misc	Water_Heat	2	3	3.2518	2.8236	0.08
Misc	Water_Heat	2	4	2.7872	3.0589	0.02
Misc	Cook_top	1	1	0.043	0.6282	0.65
Misc	Cook_top	1	2	0.0387	0.691	0.35
Misc	Cook_top	2	1	0.8819	0.5025	0.65
Misc	Cook_top	2	2	0.7937	0.5528	0.35
Misc	Fryer	1	1	0.043	0.6285	0.65
Misc	Fryer	1	2	0.0387	0.6913	0.35

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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 Types	End Use	Fuel	Efficiency	UEC (therm/SqFt)	Equipment Cost	Efficiency Shares
Misc	Fryer	2	1	0.8823	0.5028	0.65
Misc	Fryer	2	2	0.7941	0.5531	0.35
Misc	Griddle	1	1	0.043	0.6285	0.65
Misc	Griddle	1	2	0.0387	0.6913	0.35
Misc	Griddle	2	1	0.8823	0.5028	0.65
Misc	Griddle	2	2	0.7941	0.5531	0.35
Misc	Other_Cooking	1	1	0.043	0.6282	0.65
Misc	Other_Cooking	1	2	0.0387	0.691	0.35
Misc	Other_Cooking	2	1	0.8819	0.5025	0.65
Misc	Other_Cooking	2	2	0.7937	0.5528	0.35
Misc	AC_Compressor	1	1	0.1322	1.9306	0.65
Misc	AC_Compressor	1	2	0.1189	2.1237	0.35
Misc	AC_Compressor	2	1	2.7104	1.5445	0.65
Misc	AC_Compressor	2	2	2.4394	1.6989	0.35
Misc	Other	1	1	0	0	1
Misc	Other	2	1	0	0	0
Government	Space_Heat	1	1	0.3046	3.815	0.65
Government	Space_Heat	1	2	0.2742	4.1965	0.3
Government	Space_Heat	1	3	0.2495	4.578	0.04
Government	Space_Heat	1	4	0.2248	4.9595	0.01
Government	Space_Heat	2	1	6.2481	3.052	1
Government	Space_Heat	2	2	5.6233	3.3572	0
Government	Space_Heat	2	3	5.1172	3.6624	0
Government	Space_Heat	2	4	4.6111	3.9676	0
Government	Water_Heat	1	1	0.0474	0.5935	0.4
Government	Water_Heat	1	2	0.0427	0.6528	0.5
Government	Water_Heat	1	3	0.0373	0.7122	0.08
Government	Water_Heat	1	4	0.032	0.7715	0.02
Government	Water_Heat	2	1	0.972	0.4748	0.4
Government	Water_Heat	2	2	0.8748	0.5222	0.5
Government	Water_Heat	2	3	0.7654	0.5697	0.08
Government	Water_Heat	2	4	0.6561	0.6172	0.02
Government	Cook_top	1	1	0.0346	0.4333	0.65
Government	Cook_top	1	2	0.0311	0.4766	0.35
Government	Cook_top	2	1	0.7096	0.3466	0.65
Government	Cook_top	2	2	0.6387	0.3813	0.35
Government	Fryer	1	1	0.0346	0.4332	0.65
Government	Fryer	1	2	0.0311	0.4765	0.35
Government	Fryer	2	1	0.7094	0.3465	0.65
Government	Fryer	2	2	0.6385	0.3812	0.35
Government	Griddle	1	1	0.0346	0.4332	0.65
Government	Griddle	1	2	0.0311	0.4765	0.35
Government	Griddle	2	1	0.7094	0.3465	0.65
Government	Griddle	2	2	0.6385	0.3812	0.35
Government	Other_Cooking	1	1	0.0346	0.4333	0.65
Government	Other_Cooking	1	2	0.0311	0.4766	0.35
Government	Other_Cooking	2	1	0.7096	0.3466	0.65
Government	Other_Cooking	2	2	0.6387	0.3813	0.35
Government	AC_Compressor	1	1	0.1043	1.3062	0.65
Government	AC_Compressor	1	2	0.0939	1.4368	0.35
Government	AC_Compressor	2	1	2.1392	1.0449	0.65
Government	AC_Compressor	2	2	1.9253	1.1494	0.35

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UEC, Equipment Cost and Efficiency Shares

Where Fuel = 1 (gas) and = 2 (electric), and
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Business Types	End Use	Fuel	Efficiency	UEC (therm/SqFt)	Equipment Cost	Efficiency Shares
Government	Other	1	1	0	0	1
Government	Other	2	1	0	0	0
TCU	Space_Heat	1	1	0.1469	1.8457	0.65
TCU	Space_Heat	1	2	0.1322	2.0303	0.3
TCU	Space_Heat	1	3	0.1203	2.2149	0.04
TCU	Space_Heat	1	4	0.1084	2.3995	0.01
TCU	Space_Heat	2	1	3.0121	1.4766	1
TCU	Space_Heat	2	2	2.7109	1.6242	0
TCU	Space_Heat	2	3	2.4669	1.7719	0
TCU	Space_Heat	2	4	2.2229	1.9196	0
TCU	Water_Heat	1	1	0.2013	2.5303	0.4
TCU	Water_Heat	1	2	0.1812	2.7833	0.5
TCU	Water_Heat	1	3	0.1585	3.0364	0.08
TCU	Water_Heat	1	4	0.1359	3.2894	0.02
TCU	Water_Heat	2	1	4.1292	2.0243	0.4
TCU	Water_Heat	2	2	3.7163	2.2267	0.5
TCU	Water_Heat	2	3	3.2518	2.4291	0.08
TCU	Water_Heat	2	4	2.7872	2.6315	0.02
TCU	Engine	1	1	2.4409	30.6768	0.65
TCU	Engine	1	2	2.1968	33.7445	0.35
TCU	Engine	2	1	50.0617	24.5415	0.65
TCU	Engine	2	2	45.0556	26.9956	0.35
TCU	Other	1	1	0	0	1
TCU	Other	2	1	0	0	0
Construction	Space_Heat	1	1	0.1469	2.2951	0.65
Construction	Space_Heat	1	2	0.1322	2.5246	0.3
Construction	Space_Heat	1	3	0.1203	2.7542	0.04
Construction	Space_Heat	1	4	0.1084	2.9837	0.01
Construction	Space_Heat	2	1	3.0121	1.8361	1
Construction	Space_Heat	2	2	2.7109	2.0197	0
Construction	Space_Heat	2	3	2.4669	2.2033	0
Construction	Space_Heat	2	4	2.2229	2.3869	0
Construction	Water_Heat	1	1	0.2013	3.1464	0.4
Construction	Water_Heat	1	2	0.1812	3.461	0.5
Construction	Water_Heat	1	3	0.1585	3.7757	0.08
Construction	Water_Heat	1	4	0.1359	4.0903	0.02
Construction	Water_Heat	2	1	4.1292	2.5171	0.4
Construction	Water_Heat	2	2	3.7163	2.7688	0.5
Construction	Water_Heat	2	3	3.2518	3.0205	0.08
Construction	Water_Heat	2	4	2.7872	3.2722	0.02
Construction	Other	1	1	0	0	1
Construction	Other	2	1	0	0	0
Agriculture	Space_Heat	1	1	0.1469	1.6583	0.65
Agriculture	Space_Heat	1	2	0.1322	1.8242	0.3
Agriculture	Space_Heat	1	3	0.1203	1.99	0.04
Agriculture	Space_Heat	1	4	0.1084	2.1558	0.01
Agriculture	Space_Heat	2	1	3.0121	1.3267	1
Agriculture	Space_Heat	2	2	2.7109	1.4593	0
Agriculture	Space_Heat	2	3	2.4669	1.592	0
Agriculture	Space_Heat	2	4	2.2229	1.7247	0
Agriculture	Water_Heat	1	1	0.2013	2.2734	0.4
Agriculture	Water_Heat	1	2	0.1812	2.5008	0.5

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UEC, Equipment Cost and Efficiency Shares

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Business Types	End Use	Fuel	Efficiency	UEC (therm/SqFt)	Equipment Cost	Efficiency Shares
Agriculture	Water_Heat	1	3	0.1585	2.7281	0.08
Agriculture	Water_Heat	1	4	0.1359	2.9554	0.02
Agriculture	Water_Heat	2	1	4.1292	1.8187	0.4
Agriculture	Water_Heat	2	2	3.7163	2.0006	0.5
Agriculture	Water_Heat	2	3	3.2518	2.1825	0.08
Agriculture	Water_Heat	2	4	2.7872	2.3644	0.02
Agriculture	Drying	1	1	0.2013	2.2734	0.65
Agriculture	Drying	1	2	0.1812	2.5008	0.35
Agriculture	Drying	2	1	4.1292	1.8187	0.65
Agriculture	Drying	2	2	3.7163	2.0006	0.35
Agriculture	Engine	1	1	0.8657	9.7757	0.65
Agriculture	Engine	1	2	0.7791	10.7533	0.35
Agriculture	Engine	2	1	17.7557	7.8206	0.65
Agriculture	Engine	2	2	15.9802	8.6026	0.35
Agriculture	Other	1	1	0	0	1
Agriculture	Other	2	1	0	0	0

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Fuel Market Share

Where Fuel = 1 (gas) and 2 (electric)

Business Types	End Use	Fuel	Share
Office	Space_Heat	1	0.8555
Office	Space_Heat	2	0.1445
Office	Water_Heat	1	0.16581
Office	Water_Heat	2	0.83419
Office	Cooking	1	0.02069
Office	Cooking	2	0.97931
Office	AC_Compressor	1	0.06
Office	AC_Compressor	2	0.94
Office	Other	1	1
Restaurant	Space_Heat	1	0.59046
Restaurant	Space_Heat	2	0.40954
Restaurant	Water_Heat	1	0.90204
Restaurant	Water_Heat	2	0.09796
Restaurant	Cook_top	1	0.97733
Restaurant	Cook_top	2	0.02267
Restaurant	Fryer	1	0.90535
Restaurant	Fryer	2	0.09465
Restaurant	Griddle	1	0.97038
Restaurant	Griddle	2	0.02962
Restaurant	Other_Cooking	1	0.66
Restaurant	Other_Cooking	2	0.34
Restaurant	AC_Compressor	1	0.06
Restaurant	AC_Compressor	2	0.94
Restaurant	Other	1	1
Retail	Space_Heat	1	0.51751
Retail	Space_Heat	2	0.48249
Retail	Water_Heat	1	0.31008
Retail	Water_Heat	2	0.68992
Retail	Cooking	1	0.09367
Retail	Cooking	2	0.90633
Retail	Other	1	1
Laundry	Space_Heat	1	0.57692
Laundry	Space_Heat	2	0.42308
Laundry	Water_Heat	1	0.67647
Laundry	Water_Heat	2	0.32353
Laundry	Drying	1	0.6
Laundry	Drying	2	0.4
Laundry	Other	1	1
Warehouse	Space_Heat	1	0.43723
Warehouse	Space_Heat	2	0.56277
Warehouse	Water_Heat	1	0.07159
Warehouse	Water_Heat	2	0.92841
Warehouse	Engine	1	0.06
Warehouse	Engine	2	0.94
Warehouse	Other	1	1
School	Space_Heat	1	0.75284
School	Space_Heat	2	0.24716
School	Water_Heat	1	0.75843
School	Water_Heat	2	0.24157
School	Cook_top	1	0.42857
School	Cook_top	2	0.57143
School	Fryer	1	0.42857
School	Fryer	2	0.57143
School	Griddle	1	0.42857

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Fuel Market Share

Where Fuel = 1 (gas) and 2 (electric)

Business Types	End Use	Fuel	Share
School	Griddle	2	0.57143
School	Other_Cooking	1	0.42857
School	Other_Cooking	2	0.57143
School	AC_Compressor	1	0.06
School	AC_Compressor	2	0.94
School	Other	1	1
College	Space_Heat	1	0.33028
College	Space_Heat	2	0.66972
College	Water_Heat	1	0.81675
College	Water_Heat	2	0.18325
College	Cook_top	1	0.04801
College	Cook_top	2	0.95199
College	Fryer	1	0.04801
College	Fryer	2	0.95199
College	Griddle	1	0.04801
College	Griddle	2	0.95199
College	Other_Cooking	1	0.04801
College	Other_Cooking	2	0.95199
College	AC_Compressor	1	0.06
College	AC_Compressor	2	0.94
College	Other	1	1
Health	Space_Heat	1	0.66026
Health	Space_Heat	2	0.33974
Health	Water_Heat	1	0.8242
Health	Water_Heat	2	0.1758
Health	Cook_top	1	0.09487
Health	Cook_top	2	0.90513
Health	Fryer	1	0.09487
Health	Fryer	2	0.90513
Health	Griddle	1	0.09487
Health	Griddle	2	0.90513
Health	Other_Cooking	1	0.66
Health	Other_Cooking	2	0.34
Health	Drying	1	0.6
Health	Drying	2	0.4
Health	AC_Compressor	1	0.06
Health	AC_Compressor	2	0.94
Health	Other	1	1
Lodging	Space_Heat	1	0.27151
Lodging	Space_Heat	2	0.72849
Lodging	Water_Heat	1	0.98948
Lodging	Water_Heat	2	0.01052
Lodging	Cook_top	1	0.44958
Lodging	Cook_top	2	0.55042
Lodging	Fryer	1	0.44958
Lodging	Fryer	2	0.55042
Lodging	Griddle	1	0.44958
Lodging	Griddle	2	0.55042
Lodging	Other_Cooking	1	0.44958
Lodging	Other_Cooking	2	0.55042
Lodging	Drying	1	0.6
Lodging	Drying	2	0.4
Lodging	AC_Compressor	1	0.06
Lodging	AC_Compressor	2	0.94

2006 California Gas Report - Commercial G10
Fuel Market Share

Where Fuel = 1 (gas) and 2 (electric)

Business Types	End Use	Fuel	Share
Lodging	Other	1	1
Misc	Space_Heat	1	0.54964
Misc	Space_Heat	2	0.45036
Misc	Water_Heat	1	0.55691
Misc	Water_Heat	2	0.44309
Misc	Cook_top	1	0.97733
Misc	Cook_top	2	0.02267
Misc	Fryer	1	0.90535
Misc	Fryer	2	0.09465
Misc	Griddle	1	0.97038
Misc	Griddle	2	0.02962
Misc	Other_Cooking	1	0.66
Misc	Other_Cooking	2	0.34
Misc	AC_Compressor	1	0.06
Misc	AC_Compressor	2	0.94
Misc	Other	1	1
Government	Space_Heat	1	0.8555
Government	Space_Heat	2	0.1445
Government	Water_Heat	1	0.16581
Government	Water_Heat	2	0.83419
Government	Cook_top	1	0.97733
Government	Cook_top	2	0.02267
Government	Fryer	1	0.90535
Government	Fryer	2	0.09465
Government	Griddle	1	0.97038
Government	Griddle	2	0.02962
Government	Other_Cooking	1	0.66
Government	Other_Cooking	2	0.34
Government	AC_Compressor	1	0.06
Government	AC_Compressor	2	0.94
Government	Other	1	1
TCU	Space_Heat	1	0.57692
TCU	Space_Heat	2	0.42308
TCU	Water_Heat	1	0.67647
TCU	Water_Heat	2	0.32353
TCU	Engine	1	0.06
TCU	Engine	2	0.94
TCU	Other	1	1
Construction	Space_Heat	1	0.57692
Construction	Space_Heat	2	0.42308
Construction	Water_Heat	1	0.67647
Construction	Water_Heat	2	0.32353
Construction	Other	1	1
Agriculture	Space_Heat	1	0.57692
Agriculture	Space_Heat	2	0.42308
Agriculture	Water_Heat	1	0.67647
Agriculture	Water_Heat	2	0.32353
Agriculture	Drying	1	1
Agriculture	Drying	2	0
Agriculture	Engine	1	0.06
Agriculture	Engine	2	0.94
Agriculture	Other	1	1
Grocery	Space_Heat	1	0.74652
Grocery	Space_Heat	2	0.25348

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Fuel Market Share

Where Fuel = 1 (gas) and 2 (electric)

Business Types	End Use	Fuel	Share
Grocery	Water_Heat	1	0.70846
Grocery	Water_Heat	2	0.29154
Grocery	Cook_top	1	0.35627
Grocery	Cook_top	2	0.64373
Grocery	Fryer	1	0.35627
Grocery	Fryer	2	0.64373
Grocery	Griddle	1	0.35627
Grocery	Griddle	2	0.64373
Grocery	Other_Cooking	1	0.35627
Grocery	Other_Cooking	2	0.64373
Grocery	AC_Compressor	1	0.06
Grocery	AC_Compressor	2	0.94
Grocery	Other	1	1

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Saturation Rate

Business Type	End Use	saturation
Office	Space_Heat	0.872
Office	Water_Heat	0.7
Office	Cooking	0.082
Office	AC_Compressor	0.931
Office	Other	1
Restaurant	Space_Heat	0.818
Restaurant	Water_Heat	0.96
Restaurant	Cook_top	0.75
Restaurant	Fryer	0.729
Restaurant	Griddle	0.574
Restaurant	Other_Cooking	0.9
Restaurant	AC_Compressor	0.871
Restaurant	Other	1
Retail	Space_Heat	0.771
Retail	Water_Heat	0.62
Retail	Cooking	0.245
Retail	Other	1
Laundry	Space_Heat	0.72
Laundry	Water_Heat	1
Laundry	Drying	1
Laundry	Other	1
Warehouse	Space_Heat	0.231
Warehouse	Water_Heat	0.88
Warehouse	Engine	0.25
Warehouse	Other	1
School	Space_Heat	0.967
School	Water_Heat	0.9
School	Cook_top	0.147
School	Fryer	0.147
School	Griddle	0.147
School	Other_Cooking	0.147
School	AC_Compressor	0.885
School	Other	1
College	Space_Heat	0.763
College	Water_Heat	0.955
College	Cook_top	0.147
College	Fryer	0.147
College	Griddle	0.147
College	Other_Cooking	0.147
College	AC_Compressor	0.885
College	Other	1
Health	Space_Heat	0.936
Health	Water_Heat	1
Health	Cook_top	0.102
Health	Fryer	0.102
Health	Griddle	0.102
Health	Other_Cooking	0.102
Health	Drying	0.82
Health	AC_Compressor	0.792
Health	Other	1
Lodging	Space_Heat	0.895
Lodging	Water_Heat	1
Lodging	Cook_top	0.084
Lodging	Fryer	0.084
Lodging	Griddle	0.084
Lodging	Other_Cooking	0.084

2006 California Gas Report - Commercial G10
Saturation Rate

Business Type	End Use	saturation
Lodging	Drying	0.82
Lodging	AC_Compressor	0.795
Lodging	Other	1
Misc	Space_Heat	0.695
Misc	Water_Heat	0.69
Misc	Cook_top	0.021
Misc	Fryer	0.021
Misc	Griddle	0.021
Misc	Other_Cooking	0.021
Misc	AC_Compressor	0.731
Misc	Other	1
Government	Space_Heat	0.872
Government	Water_Heat	0.7
Government	Cook_top	0.196
Government	Fryer	0.196
Government	Griddle	0.196
Government	Other_Cooking	0.196
Government	AC_Compressor	0.888
Government	Other	1
TCU	Space_Heat	0.72
TCU	Water_Heat	0.69
TCU	Engine	0.5
TCU	Other	1
Construction	Space_Heat	0.72
Construction	Water_Heat	0.69
Construction	Other	1
Agriculture	Space_Heat	0.72
Agriculture	Water_Heat	0.69
Agriculture	Drying	1
Agriculture	Engine	0.5
Agriculture	Other	1
Grocery	Space_Heat	0.647
Grocery	Water_Heat	0.93
Grocery	Cook_top	0.245
Grocery	Fryer	0.245
Grocery	Griddle	0.245
Grocery	Other_Cooking	0.245
Grocery	AC_Compressor	0.856
Grocery	Other	1

2006 California Gas Report - Commercial G10
Employment Forecast (in millions)

YEAR	Office	Restaurant	Retail	Laundry	Warehouse	School	College	Health	Lodging	Misc	Government	TCU	Construction	Agriculture	Total
2005	1.5848	0.5726	0.9816	0.0760	0.4315	0.5891	0.1964	0.7051	0.0933	0.2437	0.6088	0.5494	0.4557	0.2136	7.3016
2006	1.6199	0.5808	0.9956	0.0760	0.4347	0.5962	0.1987	0.7189	0.0950	0.2437	0.6147	0.5570	0.4785	0.2231	7.4327
2007	1.6565	0.5912	1.0135	0.0768	0.4389	0.6029	0.2010	0.7339	0.0965	0.2461	0.6199	0.5702	0.4904	0.2303	7.5679
2008	1.6943	0.5993	1.0274	0.0775	0.4418	0.6053	0.2018	0.7479	0.0977	0.2485	0.6215	0.5822	0.4982	0.2364	7.6795
2009	1.7312	0.6047	1.0367	0.0778	0.4410	0.6114	0.2038	0.7591	0.0989	0.2495	0.6266	0.5946	0.5018	0.2424	7.7796
2010	1.7605	0.6073	1.0411	0.0783	0.4398	0.6157	0.2052	0.7659	0.1000	0.2509	0.6333	0.6065	0.5047	0.2475	7.8567
2011	1.7847	0.6091	1.0441	0.0787	0.4365	0.6206	0.2069	0.7733	0.1009	0.2522	0.6333	0.6182	0.5086	0.2520	7.9190
2012	1.8040	0.6102	1.0460	0.0790	0.4313	0.6229	0.2076	0.7815	0.1014	0.2533	0.6348	0.6289	0.5149	0.2568	7.9727
2013	1.8295	0.6122	1.0494	0.0792	0.4268	0.6268	0.2089	0.7893	0.1019	0.2540	0.6374	0.6386	0.5228	0.2619	8.0389
2014	1.8617	0.6135	1.0517	0.0794	0.4228	0.6306	0.2102	0.7971	0.1024	0.2545	0.6397	0.6467	0.5324	0.2673	8.1101
2015	1.8945	0.6154	1.0548	0.0797	0.4191	0.6335	0.2112	0.8053	0.1028	0.2556	0.6414	0.6533	0.5430	0.2729	8.1826
2016	1.9273	0.6167	1.0571	0.0803	0.4164	0.6358	0.2119	0.8161	0.1034	0.2573	0.6423	0.6608	0.5542	0.2789	8.2586
2017	1.9571	0.6181	1.0595	0.0811	0.4144	0.6379	0.2126	0.8303	0.1040	0.2601	0.6432	0.6701	0.5651	0.2850	8.3387
2018	1.9897	0.6200	1.0629	0.0820	0.4129	0.6383	0.2128	0.8455	0.1048	0.2629	0.6425	0.6795	0.5760	0.2914	8.4210
2019	2.0239	0.6220	1.0663	0.0827	0.4116	0.6379	0.2126	0.8604	0.1056	0.2650	0.6415	0.6894	0.5865	0.2976	8.5031
2020	2.0544	0.6241	1.0698	0.0833	0.4099	0.6397	0.2132	0.8753	0.1065	0.2670	0.6448	0.6989	0.5972	0.3041	8.5882
2021	2.0854	0.6258	1.0727	0.0841	0.4076	0.6405	0.2135	0.8921	0.1072	0.2695	0.6415	0.7093	0.6075	0.3105	8.6672
2022	2.1191	0.6277	1.0760	0.0848	0.4061	0.6419	0.2140	0.9092	0.1079	0.2718	0.6417	0.7196	0.6181	0.3171	8.7550
2023	2.1566	0.6294	1.0790	0.0855	0.4046	0.6435	0.2145	0.9263	0.1086	0.2741	0.6421	0.7302	0.6287	0.3239	8.8468
2024	2.1956	0.6310	1.0817	0.0862	0.4032	0.6454	0.2151	0.9430	0.1092	0.2762	0.6429	0.7410	0.6396	0.3306	8.9406
2025	2.2361	0.6322	1.0837	0.0868	0.4016	0.6480	0.2160	0.9586	0.1097	0.2781	0.6440	0.7515	0.6512	0.3376	9.0352

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Core Commercial Demand Forecast (Mdth)
Avg Temperature

YEAR	Model Output G10-Com	DSM	AB970	Com-G10	GAC	GEN	Total Core Com
2005	79,020	0	0	79,020	150	1,692	80,862
2006	80,248	691	20	79,577	152	2,046	81,775
2007	80,353	1,645	40	78,748	151	2,007	80,906
2008	81,388	2,813	60	78,635	151	1,950	80,736
2009	82,764	4,177	80	78,667	151	1,950	80,768
2010	83,450	5,596	100	77,955	151	1,950	80,055
2011	84,106	7,095	120	77,131	151	1,950	79,232
2012	84,532	8,714	140	75,958	151	1,950	78,059
2013	85,052	10,509	160	74,702	151	1,950	76,803
2014	85,534	12,304	180	73,410	151	1,950	75,511
2015	86,032	14,099	200	72,133	151	1,950	74,234
2016	86,342	15,894	220	70,668	151	1,950	72,769
2017	86,583	17,689	240	69,134	151	1,950	71,235
2018	86,659	19,484	240	67,416	151	1,950	69,516
2019	86,753	21,279	240	65,714	151	1,950	67,815
2020	86,958	23,074	240	64,125	151	1,950	66,225
2021	87,126	24,178	240	63,188	151	1,950	65,288
2022	87,325	25,019	240	62,547	151	1,950	64,647
2023	87,524	25,646	240	62,119	151	1,950	64,220
2024	87,725	26,077	240	61,889	151	1,950	63,990
2025	87,906	26,453	240	61,693	151	1,950	63,794

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Core Commercial Demand Forecast (Mdth)
Cold Temperature

YEAR	Model Output G10-Com	DSM	AB970	Com-G10	GAC	GEN	Total Core Com
2005	83,844	0	0	83,844	150	1,692	85,686
2006	85,146	733	20	84,433	152	2,046	86,631
2007	85,258	1,745	40	83,552	151	2,007	85,711
2008	86,356	2,985	60	83,431	151	1,950	85,532
2009	87,816	4,432	80	83,464	151	1,950	85,565
2010	88,544	5,937	100	82,707	151	1,950	84,808
2011	89,240	7,528	120	81,832	151	1,950	83,933
2012	89,692	9,246	140	80,586	151	1,950	82,687
2013	90,243	11,151	160	79,253	151	1,950	81,354
2014	90,756	13,055	180	77,881	151	1,950	79,981
2015	91,283	14,960	200	76,524	151	1,950	78,625
2016	91,612	16,864	220	74,968	151	1,950	77,069
2017	91,868	18,769	240	73,340	151	1,950	75,441
2018	91,949	20,673	240	71,516	151	1,950	73,617
2019	92,049	22,578	240	69,711	151	1,950	71,812
2020	92,267	24,482	240	68,024	151	1,950	70,125
2021	92,444	25,654	240	67,030	151	1,950	69,131
2022	92,656	26,546	240	66,350	151	1,950	68,451
2023	92,867	27,211	240	65,896	151	1,950	67,997
2024	93,080	27,669	240	65,652	151	1,950	67,753
2025	93,272	28,068	240	65,445	151	1,950	67,546

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Core Commercial Demand Forecast (Mdth)
Hot Temperature

YEAR	Model Output G10-Com	DSM	AB970	Com-G10	GAC	GEN	Total Core Com
2005	74,085	0	0	74,085	150	1,692	75,927
2006	75,236	648	20	74,608	152	2,046	76,806
2007	75,334	1,542	40	73,832	151	2,007	75,990
2008	76,305	2,637	60	73,728	151	1,950	75,828
2009	77,595	3,916	80	73,759	151	1,950	75,860
2010	78,238	5,246	100	73,092	151	1,950	75,193
2011	78,853	6,652	120	72,322	151	1,950	74,423
2012	79,253	8,170	140	71,223	151	1,950	73,324
2013	79,740	9,853	160	70,047	151	1,950	72,148
2014	80,192	11,536	180	68,837	151	1,950	70,938
2015	80,659	13,219	200	67,640	151	1,950	69,741
2016	80,949	14,901	220	66,268	151	1,950	68,369
2017	81,176	16,584	240	64,831	151	1,950	66,932
2018	81,247	18,267	240	63,220	151	1,950	65,321
2019	81,335	19,950	240	61,625	151	1,950	63,726
2020	81,527	21,633	240	60,135	151	1,950	62,236
2021	81,684	22,668	240	59,256	151	1,950	61,357
2022	81,871	23,456	240	58,655	151	1,950	60,756
2023	82,058	24,044	240	58,254	151	1,950	60,355
2024	82,247	24,448	240	58,038	151	1,950	60,139
2025	82,416	24,801	240	57,855	151	1,950	59,956

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Core Commercial Demand Forecast (Mdth)
Base ("Zero" Hdd) Temperature

YEAR	Model Output G10-Com	DSM	AB970	Com-G10	GAC	GEN	Total Core Com
2005	58,080	0	0	58,080	150	1,692	59,922
2006	58,982	508	20	58,495	152	2,046	60,693
2007	59,059	1,209	40	57,891	151	2,007	60,049
2008	59,820	2,068	60	57,813	151	1,950	59,914
2009	60,832	3,070	80	57,842	151	1,950	59,943
2010	61,336	4,113	100	57,323	151	1,950	59,424
2011	61,818	5,215	120	56,724	151	1,950	58,824
2012	62,131	6,405	140	55,866	151	1,950	57,967
2013	62,513	7,724	160	54,949	151	1,950	57,050
2014	62,868	9,044	180	54,005	151	1,950	56,105
2015	63,234	10,363	200	53,071	151	1,950	55,172
2016	63,462	11,682	220	52,000	151	1,950	54,100
2017	63,639	13,002	240	50,878	151	1,950	52,978
2018	63,695	14,321	240	49,614	151	1,950	51,715
2019	63,764	15,640	240	48,364	151	1,950	50,465
2020	63,915	16,959	240	47,195	151	1,950	49,296
2021	64,038	17,771	240	46,507	151	1,950	48,608
2022	64,184	18,389	240	46,036	151	1,950	48,136
2023	64,331	18,850	240	45,721	151	1,950	47,822
2024	64,478	19,167	240	45,552	151	1,950	47,653
2025	64,611	19,443	240	45,409	151	1,950	47,509

G10 INDUSTRIAL DATA TABLES

2006 California Gas Report - 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
Chemical	1980	1980	1976	1977	1967	1976	1974	1980	1979
Fabricated_Metal	1982	1981	1976	1977	1979	1979	1976	1972	1976
Food	1980	1982	1975	1978	1976	1983	1970	1987	1977
Mining	1981	1974	1978	1978	1968	1980	1973	1980	1975
Misc	1979	1980	1976	1976	1978	1978	1976	1979	1977
Petroleum	1980	1981	1974	1977	1975	1979	.	1972	1978
Primary_Metal	1986	1979	1975	1976	1976	1977	1978	.	1974
Stone	1980	1973	1975	1977	1980	1978	1982	.	1977
Textile	1985	1979	1977	1978	1981	1976	1976	.	1979
Transport	1980	1978	1976	1976	1980	1980	1974	1988	1976
Wood_Paper	1979	1975	1975	1976	1976	1976	1976	.	1980

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Incremental Meter Forecast by Business Types

Year	Mining	Food	Textile	Wood_ Paper	Chemical	Petroleum	Stone	Primary_ Metal	Fabricated_ Metal	Transportation	Miscellaneous
2006	-2	-9	-23	-5	21	-2	6	-1	50	-16	-129
2007	1	-22	-18	1	16	0	15	-2	92	4	-53
2008	0	-35	-18	0	16	0	3	-9	64	4	-47
2009	-2	-29	-16	0	15	0	-5	-4	67	5	-46
2010	-2	-4	-15	1	16	0	-5	-5	33	6	-38
2011	-2	24	-15	-1	15	0	-3	-1	33	-1	-59
2012	-2	39	-16	-2	12	-1	0	-1	43	-6	-68
2013	-2	46	-15	-2	13	-1	1	-4	27	-5	-60
2014	-2	43	-14	-1	15	-1	1	-4	18	-2	-52
2015	-2	31	-14	-1	18	-1	0	-5	29	-2	-50
2016	-1	22	-12	0	23	0	1	-5	14	1	-37
2017	-1	14	-11	0	29	0	1	-4	3	3	-30
2018	-1	14	-11	1	31	0	6	-4	-9	4	-26
2019	-1	16	-11	1	31	0	6	-5	-13	4	-26
2020	-1	23	-10	1	30	0	6	-5	-24	5	-24
2021	-1	31	-10	1	30	0	4	-5	-26	4	-27
2022	-1	35	-10	0	30	0	4	-5	-27	3	-29
2023	-1	36	-10	0	30	0	4	-4	-24	2	-31
2024	-1	33	-10	0	30	0	4	-4	-26	3	-29
2025	-1	32	-9	1	31	0	0	-4	-33	5	-22

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Electric Price Forecast (Cent/KWh)

(a) Average Price Forecast

Year	Chemical	Fab_Metal	Food	Mining	Petroleum	Prim_Meta	Stone	Textile	Transport	ood_Pape	Misc
2005	14.08	14.39	13.61	14.21	13.50	13.91	14.10	13.70	15.21	14.06	14.71
2006	16.21	16.62	15.57	16.37	15.42	15.98	16.24	15.70	17.68	16.16	17.02
2007	17.46	17.87	16.83	17.62	16.68	17.24	17.49	16.95	18.92	17.42	18.28
2008	18.40	18.84	17.73	18.57	17.57	18.16	18.43	17.86	19.96	18.36	19.27
2009	18.16	18.55	17.55	18.33	17.42	17.94	18.19	17.68	19.64	18.14	18.98
2010	17.24	17.63	16.63	17.40	16.49	17.01	17.26	16.75	18.72	17.21	18.06
2011	17.68	18.12	17.01	17.87	16.85	17.44	17.71	17.15	19.31	17.65	18.59
2012	16.67	17.09	16.00	16.84	15.85	16.42	16.70	16.14	18.25	16.63	17.55
2013	16.82	17.26	16.12	17.00	15.96	16.56	16.85	16.26	18.46	16.78	17.73
2014	17.04	17.51	16.31	17.23	16.14	16.78	17.07	16.46	18.77	17.00	18.00
2015	17.25	17.75	16.48	17.45	16.29	16.97	17.28	16.63	19.06	17.20	18.26
2016	17.45	17.95	16.66	17.65	16.47	17.16	17.48	16.81	19.29	17.40	18.47
2017	17.64	18.15	16.85	17.85	16.66	17.36	17.68	17.01	19.48	17.59	18.66
2018	17.85	18.34	17.08	18.04	16.89	17.58	17.88	17.23	19.61	17.79	18.83
2019	18.05	18.53	17.30	18.23	17.12	17.78	18.08	17.44	19.76	17.99	19.00
2020	18.25	18.72	17.51	18.43	17.32	17.99	18.28	17.65	19.93	18.19	19.18
2021	18.44	18.92	17.71	18.62	17.53	18.19	18.48	17.85	20.10	18.38	19.37
2022	18.64	19.11	17.92	18.82	17.74	18.39	18.68	18.06	20.27	18.58	19.55
2023	18.84	19.31	18.12	19.01	17.94	18.60	18.88	18.26	20.45	18.78	19.73
2024	19.04	19.50	18.33	19.21	18.15	18.80	19.08	18.46	20.62	18.98	19.92
2025	19.24	19.70	18.53	19.41	18.35	19.00	19.28	18.66	20.80	19.17	20.11

(b) Marginal Price Forecast

Year	Chemical	Fab_Metal	Food	Mining	Petroleum	Prim_Meta	Stone	Textile	Transport	ood_Pape	Misc
2005	11.15	11.21	10.94	11.20	10.88	11.04	11.13	10.96	11.62	11.11	11.38
2006	12.83	12.92	12.54	12.91	12.47	12.68	12.80	12.57	13.49	12.78	13.15
2007	13.82	13.91	13.53	13.90	13.46	13.67	13.79	13.56	14.48	13.77	14.14
2008	14.56	14.66	14.26	14.65	14.18	14.41	14.54	14.29	15.26	14.51	14.91
2009	14.38	14.46	14.12	14.45	14.05	14.25	14.36	14.14	14.98	14.33	14.67
2010	13.65	13.74	13.39	13.72	13.32	13.52	13.63	13.41	14.26	13.60	13.95
2011	14.01	14.10	13.71	14.09	13.63	13.86	13.98	13.73	14.69	13.95	14.34
2012	13.20	13.29	12.91	13.28	12.83	13.05	13.17	12.93	13.88	13.15	13.53
2013	13.32	13.42	13.01	13.41	12.93	13.16	13.29	13.04	14.03	13.26	13.67
2014	13.50	13.60	13.17	13.59	13.09	13.33	13.47	13.20	14.25	13.44	13.87
2015	13.67	13.78	13.32	13.76	13.23	13.49	13.63	13.35	14.46	13.60	14.06
2016	13.82	13.94	13.46	13.92	13.37	13.64	13.79	13.49	14.64	13.76	14.23
2017	13.98	14.09	13.62	14.07	13.52	13.79	13.94	13.65	14.80	13.91	14.38
2018	14.13	14.24	13.78	14.23	13.69	13.95	14.10	13.81	14.93	14.07	14.53
2019	14.29	14.40	13.95	14.38	13.85	14.11	14.25	13.97	15.07	14.22	14.67
2020	14.44	14.55	14.10	14.53	14.01	14.27	14.41	14.13	15.22	14.38	14.82
2021	14.60	14.70	14.26	14.69	14.17	14.42	14.56	14.29	15.37	14.53	14.98
2022	14.75	14.86	14.42	14.84	14.33	14.58	14.72	14.45	15.52	14.69	15.13
2023	14.91	15.01	14.57	15.00	14.49	14.74	14.87	14.60	15.67	14.85	15.28
2024	15.06	15.17	14.73	15.15	14.64	14.89	15.03	14.76	15.82	15.00	15.44
2025	15.22	15.32	14.89	15.31	14.80	15.05	15.19	14.91	15.97	15.16	15.59

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Gas Price Forecast ($/Therm)

(a) Average Price Forecast

Year	Price Deflator	Chemical	Fabricated Metal	Food	Mining	Petroleum	Primary Metal	Stone	Textile	Transport	Wood Pa per	Misc
2005	100.00	0.9254	0.9455	0.8941	0.9337	0.8869	0.9141	0.9268	0.9005	0.9996	0.9238	0.9666
2006	102.80	0.8782	0.9003	0.8437	0.8869	0.8355	0.8660	0.8798	0.8505	0.9579	0.8759	0.9225
2007	104.53	0.9710	0.9938	0.9358	0.9799	0.9272	0.9586	0.9727	0.9426	1.0522	0.9685	1.0161
2008	106.44	0.9434	0.9656	0.9088	0.9521	0.9005	0.9312	0.9450	0.9156	1.0234	0.9410	0.9878
2009	108.36	0.8652	0.8837	0.8363	0.8731	0.8298	0.8544	0.8664	0.8423	0.9357	0.8642	0.9044
2010	110.25	0.8357	0.8547	0.8060	0.8438	0.7993	0.8248	0.8369	0.8122	0.9074	0.8345	0.8756
2011	112.36	0.7984	0.8180	0.7677	0.8066	0.7607	0.7872	0.7997	0.7740	0.8717	0.7970	0.8391
2012	115.02	0.7824	0.8024	0.7511	0.7906	0.7439	0.7710	0.7837	0.7575	0.8567	0.7808	0.8237
2013	117.93	0.7647	0.7850	0.7331	0.7731	0.7258	0.7533	0.7661	0.7395	0.8397	0.7631	0.8064
2014	120.84	0.7479	0.7685	0.7158	0.7563	0.7083	0.7363	0.7493	0.7223	0.8237	0.7461	0.7900
2015	123.79	0.7323	0.7534	0.6995	0.7408	0.6918	0.7205	0.7338	0.7061	0.8092	0.7304	0.7751
2016	126.97	0.7414	0.7630	0.7079	0.7500	0.6999	0.7295	0.7430	0.7145	0.8197	0.7393	0.7849
2017	130.38	0.7649	0.7870	0.7306	0.7736	0.7224	0.7528	0.7665	0.7374	0.8444	0.7626	0.8091
2018	133.90	0.8164	0.8390	0.7813	0.8252	0.7728	0.8040	0.8181	0.7882	0.8973	0.8139	0.8614
2019	137.53	0.8674	0.8905	0.8315	0.8763	0.8227	0.8548	0.8691	0.8384	0.9496	0.8647	0.9131
2020	141.23	0.9076	0.9313	0.8708	0.9167	0.8618	0.8948	0.9094	0.8779	0.9913	0.9048	0.9541
2021	145.02	0.9469	0.9712	0.9092	0.9561	0.8999	0.9339	0.9488	0.9164	1.0321	0.9438	0.9942
2022	148.90	0.9894	1.0142	0.9510	0.9987	0.9414	0.9762	0.9914	0.9583	1.0759	0.9862	1.0375
2023	152.89	1.0338	1.0592	0.9944	1.0432	0.9845	1.0203	1.0358	1.0018	1.1218	1.0303	1.0827
2024	156.98	1.0785	1.1046	1.0382	1.0881	1.0280	1.0648	1.0806	1.0457	1.1682	1.0748	1.1284
2025	161.16	1.1254	1.1521	1.0840	1.1351	1.0735	1.1114	1.1275	1.0917	1.2167	1.1214	1.1761

(b) Marginal Price Forecast

Year	Price Deflator	Chemical	Fabricated Metal	Food	Mining	Petroleum	Primary Metal	Stone	Textile	Transport	Wood Pa per	Misc
2005	100.00	0.8769	0.8821	0.8605	0.8814	0.8561	0.8685	0.8753	0.8619	0.9143	0.8738	0.8953
2006	102.80	0.8248	0.8307	0.8064	0.8298	0.8015	0.8154	0.8230	0.8079	0.8671	0.8214	0.8456
2007	104.53	0.9163	0.9224	0.8974	0.9216	0.8923	0.9067	0.9145	0.8990	0.9599	0.9128	0.9378
2008	106.44	0.8897	0.8957	0.8713	0.8948	0.8663	0.8803	0.8880	0.8728	0.9323	0.8863	0.9107
2009	108.36	0.8203	0.8250	0.8055	0.8244	0.8016	0.8127	0.8189	0.8067	0.8543	0.8176	0.8370
2010	110.25	0.7897	0.7946	0.7744	0.7939	0.7703	0.7819	0.7882	0.7757	0.8248	0.7869	0.8070
2011	112.36	0.7508	0.7559	0.7350	0.7552	0.7307	0.7427	0.7493	0.7363	0.7874	0.7479	0.7689
2012	115.02	0.7339	0.7391	0.7176	0.7384	0.7132	0.7255	0.7323	0.7189	0.7714	0.7309	0.7524
2013	117.93	0.7157	0.7210	0.6992	0.7202	0.6947	0.7072	0.7141	0.7005	0.7537	0.7127	0.7344
2014	120.84	0.6981	0.7035	0.6812	0.7027	0.6767	0.6895	0.6965	0.6827	0.7369	0.6950	0.7172
2015	123.79	0.6814	0.6870	0.6641	0.6862	0.6595	0.6726	0.6798	0.6656	0.7212	0.6783	0.7011
2016	126.97	0.6894	0.6951	0.6715	0.6943	0.6668	0.6803	0.6877	0.6730	0.7304	0.6861	0.7096
2017	130.38	0.7118	0.7176	0.6935	0.7168	0.6886	0.7024	0.7100	0.6950	0.7538	0.7084	0.7325
2018	133.90	0.7620	0.7680	0.7432	0.7672	0.7381	0.7524	0.7602	0.7447	0.8053	0.7585	0.7833
2019	137.53	0.8117	0.8179	0.7923	0.8170	0.7872	0.8018	0.8099	0.7939	0.8562	0.8081	0.8337
2020	141.23	0.8506	0.8570	0.8307	0.8561	0.8253	0.8404	0.8487	0.8323	0.8964	0.8469	0.8732
2021	145.02	0.8885	0.8951	0.8680	0.8941	0.8625	0.8780	0.8865	0.8697	0.9357	0.8847	0.9118
2022	148.90	0.9298	0.9366	0.9088	0.9356	0.9032	0.9191	0.9279	0.9106	0.9782	0.9260	0.9537
2023	152.89	0.9728	0.9797	0.9511	0.9787	0.9453	0.9617	0.9707	0.9529	1.0225	0.9688	0.9973
2024	156.98	1.0160	1.0231	0.9937	1.0221	0.9878	1.0046	1.0139	0.9956	1.0672	1.0119	1.0413
2025	161.16	1.0613	1.0686	1.0384	1.0676	1.0322	1.0496	1.0591	1.0403	1.1140	1.0571	1.0873

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Historical Throughput and Customer Counts

Business Type	therms_ 2005	meters_ 2005	meters_ 2005_ ExCust	meters_ 2005_ NewCust	avgUse_ 2005_ ExCust	avgUse_ 2005_ NewCust	Price Elasticity	Employment Elasticity
Mining	4,566,242	275	268	7.00	16,930	4,130	0.000000	0.321451
Food	55,321,663	2379	2240	139.00	24,315	6,163	-0.190795	1.242506
Textile	26,415,348	829	821	8.00	32,068	10,970	0.000000	0.033325
Wood_Paper	6,780,473	701	691	10.00	9,782	2,136	0.000000	0.508272
Chemical	16,311,213	920	891	29.00	17,933	11,481	-0.080517	0.650067
Petroleum	9,018,008	192	191	1.00	46,903	59,617	-0.180563	0.084537
Stone	9,816,528	640	622	18.00	15,217	19,528	0.000000	0.416909
Primary_Metal	14,344,783	435	429	6.00	32,928	36,431	0.000000	0.956685
Fabricated_Metal	26,553,544	2405	2355	50.00	11,166	5,134	-0.137441	1.023881
Transportation	9,827,808	2485	2466	19.00	3,710	35,770	0.000000	0.402505
Misc	59,542,042	10475	10300	175.00	5,699	4,796	-0.108307	0.879307
Total	238,497,652	21,736						

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Average Use Per Meter (Therm)

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other	Total
Chemical	5,933	3,338	757	575	49	1,094	6	0	3,051	14,805
Fabricated_Metal	1,535	1,499	1,207	267	134	3,842	21	0	2,435	10,939
Food	16,173	3,829	1,398	549	1,971	4,752	95	397	3,383	32,547
Mining	4,367	43	492	122	1,553	1,536	11	1,218	4,169	13,510
Misc	751	528	496	138	336	1,853	33	6	952	5,094
Petroleum	7,748	1,954	343	450	25,524	112	0	35	10,241	46,406
Primary_Metal	442	1,397	1,205	287	59	25,648	237	0	2,343	31,618
Stone	1,797	357	698	675	3,176	6,897	127	0	1,204	14,933
Textile	13,453	3,496	435	874	8,247	1,774	283	0	905	29,466
Transportation	387	226	667	192	424	723	6	2	373	3,000
Wood_Paper	4,004	1,314	895	91	728	1,271	12	0	1,333	9,648

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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
Chemical	0	0	0	0	0	0	0	0	17,867	17,867
Fabricated_Metal	0	0	558	0	0	3,042	0	0	8,111	11,711
Food	13,792	3	205	225	0	0	0	0	0	14,225
Mining	0	0	0	0	0	0	0	35,872	0	35,872
Misc	612	0	0	5	2,182	1,429	0	0	984	5,212
Petroleum	0	0	0	0	140,409	0	0	0	0	140,409
Primary_Metal	0	0	0	892	0	14,986	0	0	4,995	20,873
Stone	0	0	0	0	0	0	0	0	0	0
Textile	0	0	0	0	0	0	0	0	0	0
Transportation	0	0	0	0	0	2,306	0	0	331	2,638
Wood_Paper	.	.	.	.	.	.	.	.	.	0

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Electric UEC (KWh/SqFt)

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other
Mining	12,053,557	117,480	22,540	4,117	3,349,437	1,388,699	3,261	2,871,579	.
Food	992,080	234,899	77,958	15,939	1,062,552	781,260	24,817	1,163,891	.
Textile	1,428,304	371,125	20,797	30,369	3,811,277	1,069,238	74,615	0	.
Wood_Paper	11,051,345	3,626,956	48,301	2,915	523,062	985,476	3,282	0	.
Chemical	1,169,880	658,201	34,723	19,440	26,417	593,554	1,620	738	.
Petroleum	1,527,674	385,215	15,711	15,192	13,761,553	60,935	0	101,154	.
Stone	4,960,873	985,989	31,975	22,824	6,850,607	6,237,158	37,820	0	.
Primary_Metal	174,313	550,730	55,233	9,317	25,494	13,916,258	66,288	0	.
Fabricated_Metal	605,450	591,011	55,315	8,658	57,653	2,084,618	5,763	0	.
Transportation	76,358	44,486	30,560	6,490	228,869	392,291	1,456	7,240	.
Miscellaneous	148,060	104,128	22,745	4,673	181,266	1,005,453	8,471	17,618	.

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Gas Unit Energy Consumption (Therm per Sq. Ft.)

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other
Mining	587,697	5,728	1,099	281	163,309	67,709	159	140,010	4,169
Food	48,371	11,453	3,801	1,088	51,807	38,092	1,210	56,748	3,383
Textile	69,640	18,095	1,014	2,073	185,827	52,133	3,638	0	905
Wood_Paper	538,832	176,840	2,355	199	25,503	48,049	160	0	1,333
Chemical	57,040	32,092	1,693	1,327	1,288	28,940	79	36	3,051
Petroleum	74,485	18,782	766	1,037	670,974	2,971	0	4,932	10,241
Stone	241,878	48,074	1,559	1,558	334,016	304,106	1,844	0	1,204
Primary_Metal	8,499	26,852	2,693	636	1,243	678,517	3,232	0	2,343
Fabricated_Metal	29,520	28,816	2,697	591	2,811	101,640	281	0	2,435
Transportation	3,723	2,169	1,490	443	11,159	19,127	71	353	373
Miscellaneous	7,219	5,077	1,109	319	8,838	49,023	413	859	

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Gas Market Shares

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other
Chemical	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1
Fabricated_Metal	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1
Food	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1
Mining	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1
Miscllaneous	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1
Petroleum	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1
Primary_Metal	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1
Stone	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1
Textile	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1
Transportation	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1
Wood_Paper	0.74	0.74	0.61	0.59	0.32	0.38	0.11	0.01	1

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Saturation Rate

Business Type	Fire_ Tube_ Boiler	Water_ Tube_ Boiler	Space_ Heat	Water_ Heat	Dryer	Furnace_ Oven_ Kiln	AC	Engine	Other
Chemical	0.14	0.14	0.73	0.73	0.12	0.1	0.74	0.7	1
Fab_Metal	0.07	0.07	0.73	0.76	0.15	0.1	0.68	0.86	1
Food	0.45	0.45	0.6	0.85	0.12	0.33	0.73	0.7	1
Mining	0.01	0.01	0.73	0.73	0.03	0.06	0.64	0.87	1
Misc	0.14	0.14	0.73	0.73	0.12	0.1	0.74	0.7	1
Petroleum	0.14	0.14	0.73	0.73	0.12	0.1	0.74	0.7	1
Prim_Metal	0.07	0.07	0.73	0.76	0.15	0.1	0.68	0.86	1
Stone	0.01	0.01	0.73	0.73	0.03	0.06	0.64	0.87	1
Textile	0.26	0.26	0.7	0.71	0.14	0.09	0.72	0.46	1
Transport	0.14	0.14	0.73	0.73	0.12	0.1	0.74	0.7	1
Wood_Paper	0.01	0.01	0.62	0.77	0.09	0.07	0.71	0.5	1

2006 California Gas Report - 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

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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
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

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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
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

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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
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

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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
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

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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
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

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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
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

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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
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

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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
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

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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
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

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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
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	-

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Employment Forecast (in thousands)

YEAR	Mining	Food	Textile	Wood_Paper	Chemical	Petroleum	Stone	Primary_Metal	Fabricated_Metal	Transportation	Miscellaneous	Total
2005	9.01	125.03	42.50	33.31	31.13	4.73	27.56	14.75	90.36	85.08	433.95	897.40
2006	9.47	124.55	42.13	33.33	31.89	4.53	27.95	14.95	93.52	85.22	431.78	899.32
2007	9.89	124.60	40.30	33.38	32.17	4.74	28.47	14.86	97.21	84.62	424.07	894.31
2008	9.98	125.10	38.98	33.31	32.51	4.76	28.44	14.52	99.63	84.87	422.72	894.82
2009	9.53	125.60	38.32	33.21	32.79	4.65	28.04	14.32	102.03	85.56	421.85	895.88
2010	8.99	126.07	37.98	33.27	33.09	4.50	27.62	14.07	102.84	85.76	421.16	895.34
2011	8.46	126.76	37.91	33.36	33.40	4.35	27.36	13.99	103.74	85.56	419.63	894.52
2012	8.10	127.22	37.87	33.39	33.69	4.19	27.27	13.90	105.18	85.04	420.52	896.37
2013	7.87	127.54	37.89	33.42	33.99	4.04	27.21	13.70	105.89	84.38	422.33	898.26
2014	7.64	127.94	37.98	33.49	34.33	3.89	27.10	13.49	106.12	84.16	424.35	900.46
2015	7.38	128.67	38.14	33.60	34.77	3.73	27.02	13.24	106.80	83.87	426.75	903.97
2016	7.12	129.39	38.43	33.72	35.31	3.60	26.91	12.97	106.68	83.58	429.45	907.15
2017	6.84	130.21	38.66	33.80	36.00	3.50	26.78	12.73	106.03	83.36	431.89	909.78
2018	6.56	131.17	38.91	33.90	36.74	3.40	26.83	12.49	104.84	83.14	434.12	912.11
2019	6.28	132.03	39.12	33.98	37.48	3.30	26.86	12.23	103.52	82.94	436.00	913.73
2020	6.02	132.75	39.28	34.01	38.16	3.20	26.89	11.95	101.73	82.62	437.18	913.80
2021	5.78	133.46	39.39	34.01	38.84	3.10	26.86	11.69	99.97	82.29	438.60	914.00
2022	5.58	134.09	39.41	34.00	39.51	3.00	26.81	11.44	98.22	81.99	440.18	914.23
2023	5.40	134.68	39.41	34.00	40.18	2.90	26.80	11.22	96.63	81.71	442.08	915.01
2024	5.22	135.22	39.49	34.03	40.84	2.81	26.76	11.00	94.95	81.42	443.87	915.62
2025	5.04	135.82	39.74	34.14	41.47	2.70	26.54	10.77	92.97	81.12	445.40	915.72

Core Industrial Demand Forecast (Mdth)
Average Temperature

YEAR	Model Output G10-Ind	DSM	AB970	Ind G10
2005	23,850	0	0	23,850
2006	24,127	287	2	23,843
2007	23,953	678	4	23,279
2008	24,124	1,139	6	22,991
2009	24,404	1,676	8	22,735
2010	24,525	2,236	10	22,299
2011	24,694	2,827	12	21,879
2012	24,843	3,465	14	21,392
2013	24,972	4,173	16	20,815
2014	25,093	4,880	18	20,230
2015	25,252	5,588	20	19,684
2016	25,338	6,295	22	19,064
2017	25,390	7,003	24	18,411
2018	25,379	7,710	24	17,692
2019	25,356	8,418	24	16,961
2020	25,321	9,126	24	16,220
2021	25,296	9,546	24	15,773
2022	25,265	9,862	24	15,426
2023	25,244	10,109	24	15,158
2024	25,218	10,279	24	14,962
2025	25,178	10,428	24	14,774

Core Industrial Demand Forecast (Mdth)
Cold Temperature

YEAR	Model Output G10-Ind	DSM	AB970	Ind G10
2005	24,467	0	0	24,467
2006	24,752	294	2	24,460
2007	24,573	696	4	23,881
2008	24,749	1,168	6	23,586
2009	25,035	1,720	8	23,324
2010	25,160	2,294	10	22,876
2011	25,333	2,900	12	22,445
2012	25,486	3,555	14	21,945
2013	25,619	4,281	16	21,354
2014	25,742	5,007	18	20,754
2015	25,905	5,732	20	20,193
2016	25,994	6,458	22	19,557
2017	26,047	7,184	24	18,887
2018	26,036	7,910	24	18,149
2019	26,012	8,636	24	17,400
2020	25,977	9,362	24	16,639
2021	25,951	9,794	24	16,181
2022	25,919	10,118	24	15,825
2023	25,897	10,371	24	15,550
2024	25,871	10,545	24	15,349
2025	25,830	10,698	24	15,156

Core Industrial Demand Forecast (Mdth)
Hot Temperature

YEAR	Model Output G10-Ind	DSM	AB970	Ind G10
2005	23,180	0	0	23,180
2006	23,450	279	2	23,173
2007	23,281	659	4	22,626
2008	23,447	1,107	6	22,346
2009	23,719	1,629	8	22,097
2010	23,836	2,173	10	21,673
2011	24,001	2,747	12	21,265
2012	24,146	3,368	14	20,792
2013	24,271	4,056	16	20,232
2014	24,388	4,743	18	19,663
2015	24,543	5,431	20	19,132
2016	24,627	6,119	22	18,530
2017	24,677	6,806	24	17,895
2018	24,666	7,494	24	17,196
2019	24,644	8,182	24	16,486
2020	24,611	8,869	24	15,765
2021	24,586	9,278	24	15,331
2022	24,555	9,585	24	14,994
2023	24,535	9,826	24	14,733
2024	24,510	9,991	24	14,543
2025	24,471	10,135	24	14,360

Core Industrial Demand Forecast (Mdth)
Base Temperature

YEAR	Model Output G10-Ind	DSM	AB970	Ind G10
2005	21,072	0	0	21,072
2006	21,317	253	2	21,066
2007	21,163	599	4	20,568
2008	21,314	1,006	6	20,314
2009	21,561	1,481	8	20,088
2010	21,668	1,975	10	19,703
2011	21,818	2,497	12	19,332
2012	21,950	3,062	14	18,902
2013	22,064	3,687	16	18,393
2014	22,170	4,312	18	17,876
2015	22,311	4,937	20	17,394
2016	22,387	5,562	22	16,846
2017	22,433	6,187	24	16,269
2018	22,423	6,812	24	15,634
2019	22,402	7,438	24	14,989
2020	22,372	8,063	24	14,333
2021	22,350	8,435	24	13,939
2022	22,322	8,714	24	13,632
2023	22,304	8,932	24	13,395
2024	22,281	9,082	24	13,222
2025	22,246	9,213	24	13,056

2006 CALIFORNIA GAS REPORT

NONCORE COMMERCIAL AND INDUSTRIAL DEMAND FORECAST
JULY 2006

A Sempra Energy utility™

Noncore Commercial and Industrial End Use Model

Introduction

The purpose of these workpapers is to document the methodology used to forecast demand for SoCalGas' noncore commercial and industrial markets. The EUforecaster model's market segmentation and end-use modeling framework was used by SoCalGas to assess the impacts of equipment replacement and market scenarios on gas demand and market share. The model segments the noncore commercial and industrial markets into 14 sectors and 11 sectors by type of business activity, respectively. Business activity is determined by the NAICS (North American Industrial Classification System) code on the billing record. The final demand forecast for the noncore commercial and industrial market is taken from output from the EUForecaster and reduced by CPUC-authorized energy efficiency goal.

Data Sources

A. Historical Billing Data

Monthly historical gas usage for the commercial and industrial markets were obtained from SoCalGas' billing records for 2005. The recorded usage was then further disaggregated into the 14 commercial or 11 industrial business sectors.

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 weighted average cost of gas (WACOG) was used a proxy 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 and marginal transportation rates from historical usage in 2005. The average rate is calculated from the weighted average rate at each tier for each customer; where as the marginal rate is calculated as the rate that was billed at the last volume for each customer.

C. Electricity Price Data

Competitive electricity prices, both average electricity prices (cents/kWh) and marginal electricity prices (cents/kWh) were developed as inputs to the EuForecaster model. For the noncore commercial and industrial markets, SoCalGas used the data reported for Southern California Edison (SCE) in Table 10, "Industrial" customers, of this report. SoCalGas estimated the prices for 20xx-2025 by calculating the real-price growth from 20xx-20xx and then applying this annual rate each year from 20xx to

2025. These were the average electricity prices used for each of the noncore commercial and industrial markets, overall.

The marginal prices were calculated by multiplying each year's respective average price by a ratio. This ratio, 0.869, was estimated from an analysis of the SCT-TOU-8 rate schedule posted on SCE's web site in **March 2006**.

D. Employment

Employment, as a measure of economic activity, is used to drive the noncore commercial and industrial demand forecast models. The employment forecast is based on Global Insight's Winter 2005/2006 and Autumn Regional Forecasts for California and the aggregated six largest counties' Metropolitan Statistical Area (MSA) in SoCalGas' service area for which Global Insight makes regular forecasts. (The six counties – Kern, Los Angeles, Orange, Riverside, San Bernardino, and Ventura – account for 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 weighted employment data over the commercial and industrial NAICS codes.

E. Post-Model Adjustment

Once the EuForecaster end-use model forecast was generated, post-model adjustments were made to account for effects the model is not designed to simulate. Energy goals that were authorized by the CPUC in decision D.04-09-060 were subtracted from the model forecast to arrive at final demand forecast for the commercial and industrial markets.

Adjustments that were made in the 2004 California Gas Report (CGR) such as noncore to core migration, Rule 28 incentive program and the City of Vernon departure from SoCalGas' system are no longer valid and not include in this year CGR post-model adjustment. This is because noncore to core migration and the level of participation in the Rule 28 incentive program have ceased, and the City of Vernon non-EG load will continued to be served by SoCalGas.

NONCORE COMMERCIAL AND INDUSTRIAL DATA TABLES

Noncore Commercial Demand Forecast
Final (Forecast After Post-Model Adjustment) (Mdth)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	2,208	1,901	1,952	1,804	1,622	1,526	1,451	1,495	1,714	1,678	1,722	2,064	21,135
2006	2,235	1,924	1,975	1,826	1,641	1,544	1,469	1,513	1,735	1,699	1,743	2,089	21,393
2007	2,232	1,922	1,973	1,824	1,640	1,543	1,467	1,511	1,733	1,697	1,741	2,086	21,368
2008	2,249	1,936	1,988	1,838	1,652	1,554	1,478	1,522	1,746	1,710	1,754	2,102	21,527
2009	2,269	1,953	2,006	1,854	1,667	1,568	1,491	1,536	1,761	1,725	1,770	2,121	21,720
2010	2,284	1,967	2,019	1,867	1,678	1,579	1,501	1,546	1,773	1,737	1,782	2,135	21,867
2011	2,298	1,979	2,032	1,878	1,688	1,588	1,510	1,556	1,784	1,747	1,793	2,148	22,002
2012	2,308	1,987	2,040	1,886	1,695	1,595	1,517	1,562	1,791	1,755	1,800	2,157	22,094
2013	2,317	1,995	2,049	1,894	1,702	1,602	1,523	1,569	1,799	1,762	1,808	2,166	22,186
2014	2,327	2,003	2,057	1,902	1,709	1,608	1,529	1,575	1,806	1,769	1,815	2,175	22,277
2015	2,336	2,011	2,065	1,909	1,716	1,614	1,535	1,581	1,813	1,776	1,822	2,183	22,363
2016	2,343	2,017	2,071	1,915	1,721	1,619	1,540	1,586	1,819	1,781	1,828	2,190	22,430
2017	2,349	2,023	2,077	1,920	1,726	1,624	1,544	1,591	1,824	1,786	1,833	2,196	22,492
2018	2,352	2,025	2,079	1,922	1,728	1,625	1,546	1,592	1,826	1,788	1,834	2,198	22,515
2019	2,355	2,027	2,081	1,924	1,730	1,627	1,547	1,594	1,828	1,790	1,837	2,201	22,541
2020	2,361	2,033	2,088	1,930	1,735	1,632	1,552	1,599	1,833	1,795	1,842	2,207	22,607
2021	2,369	2,039	2,094	1,936	1,740	1,637	1,556	1,603	1,839	1,801	1,847	2,214	22,674
2022	2,377	2,046	2,101	1,943	1,746	1,643	1,562	1,609	1,845	1,807	1,854	2,222	22,754
2023	2,386	2,055	2,109	1,950	1,753	1,649	1,568	1,615	1,852	1,814	1,861	2,230	22,844
2024	2,396	2,063	2,118	1,959	1,760	1,656	1,575	1,622	1,860	1,822	1,869	2,240	22,941
2025	2,406	2,072	2,127	1,967	1,768	1,663	1,581	1,629	1,868	1,829	1,877	2,249	23,037

Noncore Commercial Demand Forecast
Energy Efficiency Post-Model Adjustment (Mdth)

	EUForecaster Commercial Forecast	EUForecaster Industrial Forecast	Energy Efficiency Commercial Goal	Energy Efficiency Industrial Goal	Commercial Forecast	Industrial Forecast
2005	21,135	62,944	-	-	21,135	62,944
2006	21,410	63,332	17	40	21,393	63,292
2007	21,408	63,085	40	93	21,368	62,992
2008	21,596	63,243	69	161	21,527	63,083
2009	21,823	63,358	103	240	21,720	63,118
2010	22,005	63,350	138	322	21,867	63,028
2011	22,177	63,419	176	410	22,002	63,009
2012	22,310	63,413	216	504	22,094	62,909
2013	22,446	63,398	260	608	22,186	62,790
2014	22,582	63,377	305	712	22,277	62,665
2015	22,713	63,362	350	816	22,363	62,546
2016	22,825	63,268	395	921	22,430	62,348
2017	22,931	63,122	439	1,025	22,492	62,097
2018	22,999	62,887	484	1,129	22,515	61,758
2019	23,070	62,651	529	1,233	22,541	61,418
2020	23,167	62,429	559	1,305	22,607	61,123
2021	23,261	62,216	587	1,370	22,674	60,846
2022	23,363	61,989	609	1,421	22,754	60,568
2023	23,469	61,778	624	1,457	22,844	60,320
2024	23,576	61,571	635	1,482	22,941	60,089
2025	23,681	61,354	645	1,504	23,037	59,850

Noncore Commercial Demand Forecast
Forecast by Sectors from EUForecaster Model (Mdth)

	Agri-culture	College	Construc-tion	Govern-ment	Health	Laundry	Lodging	Misc	Office	Restaurant	Retail	TCU	Ware-house	Total
2005	3,085	1,708	149	3,106	6,204	999	685	559	1,301	38	137	3,092	71	21,135
2006	3,159	1,725	153	3,133	6,286	1,005	694	562	1,318	38	139	3,126	72	21,410
2007	3,177	1,719	153	3,118	6,289	1,002	693	560	1,318	38	139	3,131	72	21,408
2008	3,222	1,725	155	3,126	6,352	1,009	698	563	1,332	39	140	3,165	72	21,596
2009	3,271	1,739	156	3,148	6,417	1,016	704	566	1,348	39	141	3,206	72	21,823
2010	3,313	1,748	157	3,169	6,461	1,022	710	569	1,361	39	141	3,243	72	22,005
2011	3,352	1,759	157	3,178	6,509	1,029	715	572	1,372	39	142	3,281	72	22,177
2012	3,387	1,764	158	3,184	6,548	1,033	717	574	1,380	40	142	3,310	72	22,310
2013	3,424	1,771	160	3,193	6,586	1,036	720	575	1,389	40	142	3,338	72	22,446
2014	3,463	1,778	161	3,201	6,624	1,040	722	576	1,401	40	143	3,362	72	22,582
2015	3,502	1,783	163	3,207	6,662	1,044	725	578	1,412	40	143	3,382	72	22,713
2016	3,539	1,785	164	3,208	6,700	1,047	726	579	1,422	40	143	3,399	72	22,825
2017	3,573	1,785	165	3,205	6,743	1,052	727	581	1,429	40	143	3,416	71	22,931
2018	3,602	1,780	166	3,193	6,778	1,054	727	582	1,435	40	143	3,428	71	22,999
2019	3,631	1,775	167	3,181	6,813	1,056	728	582	1,442	40	142	3,442	71	23,070
2020	3,664	1,773	168	3,180	6,853	1,058	729	583	1,448	40	142	3,457	71	23,167
2021	3,697	1,771	169	3,167	6,901	1,061	730	584	1,455	40	142	3,475	70	23,261
2022	3,730	1,769	170	3,160	6,948	1,063	730	585	1,462	40	142	3,492	70	23,363
2023	3,765	1,767	171	3,154	6,996	1,066	731	585	1,471	40	142	3,510	70	23,469
2024	3,800	1,766	172	3,149	7,043	1,068	732	586	1,480	40	142	3,529	70	23,576
2025	3,835	1,765	173	3,145	7,086	1,070	732	587	1,490	40	141	3,547	70	23,681

Noncore Commercial and Industrial Demand Forecast
Gas Price Forecast

Year	Commercial Price Deflator	Industrial Price Deflator	Commercial Non Core Average Price	Commercial Non Core Marginal Price	Industrial Non Core Average Price	Industrial Non Core Marginal Price
2005	100.00	100.00	0.8652	0.8409	0.8431	0.8231
2006	102.50	102.50	0.8096	0.7833	0.7857	0.7641
2007	104.57	104.57	0.9089	0.8799	0.8825	0.8588
2008	106.78	106.78	0.8869	0.8575	0.8602	0.8361
2009	109.07	109.07	0.8374	0.8100	0.8126	0.7902
2010	111.30	111.30	0.7995	0.7734	0.7758	0.7545
2011	113.63	113.63	0.7590	0.7320	0.7345	0.7125
2012	116.10	116.10	0.7406	0.7132	0.7157	0.6933
2013	118.60	118.60	0.7208	0.6935	0.6960	0.6737
2014	121.10	121.10	0.6998	0.6729	0.6754	0.6533
2015	123.67	123.67	0.6816	0.6542	0.6567	0.6343
2016	126.72	126.72	0.6855	0.6584	0.6610	0.6389
2017	129.87	129.87	0.7059	0.6788	0.6813	0.6591
2018	133.13	133.13	0.7557	0.7279	0.7305	0.7079
2019	136.46	136.46	0.8019	0.7747	0.7773	0.7550
2020	139.83	139.83	0.8400	0.8122	0.8148	0.7921
2021	143.31	143.31	0.8770	0.8486	0.8513	0.8281
2022	146.87	146.87	0.9176	0.8890	0.8917	0.8682
2023	150.52	150.52	0.9596	0.9304	0.9331	0.9092
2024	154.28	154.28	1.0019	0.9720	0.9748	0.9504
2025	158.10	158.10	1.0462	1.0157	1.0186	0.9936
2026	162.02	162.02	1.0462	1.0157	1.0186	0.9936
2027	166.03	166.03	1.0462	1.0157	1.0186	0.9936
2028	170.15	170.15	1.0462	1.0157	1.0186	0.9936
2029	174.37	174.37	1.0462	1.0157	1.0186	0.9936
2030	178.70	178.70	1.0462	1.0157	1.0186	0.9936

Noncore Commercial and Industrial Demand Forecast
Electric Price Forecast

Year	Commercial Non Core Average Price	Commercial Non Core Marginal Price	Industrial Non Core Average Price	Industrial Non Core Marginal Price
2005	12.54	8.84	12.54	8.84
2006	14.79	10.42	14.79	10.42
2007	15.93	11.23	15.93	11.23
2008	16.79	11.83	16.79	11.83
2009	16.58	11.68	16.58	11.68
2010	15.74	11.09	15.74	11.09
2011	16.15	11.38	16.15	11.38
2012	15.22	10.73	15.22	10.73
2013	15.36	10.82	15.36	10.82
2014	15.56	10.97	15.56	10.97
2015	15.75	11.10	15.75	11.10
2016	15.93	11.23	15.93	11.23
2017	16.11	11.36	16.11	11.36
2018	16.29	11.48	16.29	11.48
2019	16.47	11.61	16.47	11.61
2020	16.65	11.73	16.65	11.73
2021	16.83	11.86	16.83	11.86
2022	17.00	11.99	17.00	11.99
2023	17.18	12.11	17.18	12.11
2024	17.36	12.24	17.36	12.24
2025	17.54	12.36	17.54	12.36
2026	17.54	12.36	17.54	12.36
2027	17.54	12.36	17.54	12.36
2028	17.54	12.36	17.54	12.36
2029	17.54	12.36	17.54	12.36
2030	17.54	12.36	17.54	12.36

Noncore Commercial Demand Forecast
Equipment Installation Year

Sector	Space Heater	Water Heater	Cooktop	Griddle	Fryer	Other Cooking Equipment	Kitchen Equipment	AC	Dryer	Engine	Other
Office	.	.	.	.	.	.	.	.	.	.	1966
Restaurant	1972	.	.	.	.	.	.	.	.	.	1974
Retail											
Laundry	1965	1980	.	.	.	.	.	2001	1983	.	1984
Warehouse	.	.	.	.	.	.	.	.	.	.	.
School	.	.	.	.	.	.	.	.	.	.	.
College	1974	1975	.	.	.	.	1988	1981	.	.	1968
Health	1975	1973	1973	1979	1983	1980	1975	1985	1972	.	1974
Lodging	1985	1978	1990	1986	1986	1990	1990	1953	1989	.	1991
Misc	.	1996	.	.	.	.	.	.	.	.	1991
Government	1979	1980	1976	1982	1979	1979	1982	1987	1980	1965	1976
TCU	1976	1969	.	.	.	.	.	.	.	1975	1977
Construction	.	.	.	.	.	.	.	.	.	.	.
Agriculture	1992	1991	.	.	.	.	1998	.	1970	1975	1992

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Noncore Commercial and Industrial Demand Forecast
Employment Forecast (1,000's)

YEAR	Office	Restaurant	Retail	Laundry	Warehouse	School	College	Health	Lodging	Misc	Government	TCU	Construction	Agriculture
2005	1.58	0.57	0.98	0.08	0.43	0.59	0.20	0.71	0.09	0.24	0.61	0.55	0.46	0.21
2006	1.62	0.58	1.00	0.08	0.43	0.60	0.20	0.72	0.09	0.24	0.61	0.56	0.48	0.22
2007	1.66	0.59	1.01	0.08	0.44	0.60	0.20	0.73	0.10	0.25	0.62	0.57	0.49	0.23
2008	1.69	0.60	1.03	0.08	0.44	0.61	0.20	0.75	0.10	0.25	0.62	0.58	0.50	0.24
2009	1.73	0.60	1.04	0.08	0.44	0.61	0.20	0.76	0.10	0.25	0.63	0.59	0.50	0.24
2010	1.76	0.61	1.04	0.08	0.44	0.62	0.21	0.77	0.10	0.25	0.63	0.61	0.50	0.25
2011	1.78	0.61	1.04	0.08	0.44	0.62	0.21	0.77	0.10	0.25	0.63	0.62	0.51	0.25
2012	1.80	0.61	1.05	0.08	0.43	0.62	0.21	0.78	0.10	0.25	0.63	0.63	0.51	0.26
2013	1.83	0.61	1.05	0.08	0.43	0.63	0.21	0.79	0.10	0.25	0.64	0.64	0.52	0.26
2014	1.86	0.61	1.05	0.08	0.42	0.63	0.21	0.80	0.10	0.25	0.64	0.65	0.53	0.27
2015	1.89	0.62	1.05	0.08	0.42	0.63	0.21	0.81	0.10	0.26	0.64	0.65	0.54	0.27
2016	1.93	0.62	1.06	0.08	0.42	0.64	0.21	0.82	0.10	0.26	0.64	0.66	0.55	0.28
2017	1.96	0.62	1.06	0.08	0.41	0.64	0.21	0.83	0.10	0.26	0.64	0.67	0.57	0.29
2018	1.99	0.62	1.06	0.08	0.41	0.64	0.21	0.85	0.10	0.26	0.64	0.68	0.58	0.29
2019	2.02	0.62	1.07	0.08	0.41	0.64	0.21	0.86	0.11	0.26	0.64	0.69	0.59	0.30
2020	2.05	0.62	1.07	0.08	0.41	0.64	0.21	0.88	0.11	0.27	0.64	0.70	0.60	0.30
2021	2.09	0.63	1.07	0.08	0.41	0.64	0.21	0.89	0.11	0.27	0.64	0.71	0.61	0.31
2022	2.12	0.63	1.08	0.08	0.41	0.64	0.21	0.91	0.11	0.27	0.64	0.72	0.62	0.32
2023	2.16	0.63	1.08	0.09	0.40	0.64	0.21	0.93	0.11	0.27	0.64	0.73	0.63	0.32
2024	2.20	0.63	1.08	0.09	0.40	0.65	0.22	0.94	0.11	0.28	0.64	0.74	0.64	0.33
2025	2.24	0.63	1.08	0.09	0.40	0.65	0.22	0.96	0.11	0.28	0.64	0.75	0.65	0.34
2026	2.28	0.63	1.09	0.09	0.40	0.65	0.22	0.97	0.11	0.28	0.65	0.76	0.66	0.34
2027	2.32	0.64	1.09	0.09	0.40	0.65	0.22	0.99	0.11	0.28	0.65	0.77	0.67	0.35
2028	2.36	0.64	1.09	0.09	0.40	0.66	0.22	1.00	0.11	0.29	0.65	0.78	0.69	0.36
2029	2.40	0.64	1.09	0.09	0.39	0.66	0.22	1.02	0.11	0.29	0.65	0.79	0.70	0.37
2030	2.44	0.64	1.10	0.09	0.39	0.66	0.22	1.03	0.11	0.29	0.66	0.80	0.71	0.37

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Noncore Commercial Demand Forecast
Use Per Meter of New Customers (Therm)

Sector	Space Heater	Water Heater	Cooktop	Griddle	Fryer	Other Cooking Equipment	Kitchen Equipment	AC	Dryer	Engine	Other
Office	116,683	694	15,289	78,972	-	31,569	5,828	-	-	-	387,220
Restaurant	73,249	66,537	73,572	43,398	51,347	28,054	48,527	968	-	-	82,753
Retail	47,460	38,772	5,446	1,308	7,696	7,571	35,340	-	28,480	64	-
Laundry	-	1,009	-	-	-	-	-	-	227,980	-	163,468
Warehouse	10,158	15,286	-	17,118	-	-	88,043	-	298,533	-	-
School	-	-	-	-	-	-	-	-	-	-	-
College	292,196	11,727	-	-	-	-	-	-	-	493,859	-
Health	69,976	156,224	16,400	-	6,890	6,513	7,542	-	7,712	-	259,149
Lodging	5,274	30,974	-	2,319	3,055	6,245	177	-	7,460	-	221,221
Misc	59,760	7,117	-	273	-	27	6,001	-	3,040	-	1,062,520
Government	276,235	160,591	14,114	6,955	4,129	11,618	6,302	7,374	3,725	40,799	108,245
TCU	31,708	1,205	-	-	-	-	-	-	-	207,969	220,657
Construction	33,788	10,560	848	5	126	471	289	1,002	6,317	22	49,847
Agriculture	11,693	7,742	-	-	-	-	-	-	-	126,382	243,423

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Noncore Commercial Demand Forecast
Use per Meter of Existing Customers (Therm)

Sector	Space Heater	Water Heater	Cooktop	Griddle	Fryer	Other Cooking Equipment	Kitchen Equipment	AC	Dryer	Engine	Other
Office	328,883	136,546	16,654	5,537	4,224	17,227	3,695	5,637	16,394	4,684	327,921
Restaurant	13,280	25,705	42,903	17,650	33,895	37,502	9,132	529	237	-	8,428
Retail	314,715	191,155	69,601	11,591	77,525	133,640	82,643	18,337	35,240	2,815	436,090
Laundry	1,703	27,074	222	34	55	322	2	51	271,975	-	253,248
Warehouse	130,117	37,800	5,378	1,499	12,960	14,902	19,052	14,806	43,270	12,854	418,683
School	-	-	-	-	-	-	-	-	-	-	-
College	501,330	247,627	24,191	7,136	12,406	29,778	6,883	31,336	7,600	10,650	340,962
Health	245,545	153,859	24,659	4,776	6,699	18,963	10,726	4,444	33,778	2,519	259,617
Lodging	55,585	113,535	15,671	3,825	4,897	19,083	9,393	919	29,579	19	128,323
Misc	507,287	309,822	62,729	12,523	20,644	51,560	16,479	52,233	20,056	3,849	342,376
Government	352,720	205,056	18,022	8,881	5,272	14,834	8,046	9,416	4,757	52,096	138,216
TCU	125,462	45,103	3,973	987	1,873	3,479	2,376	6,129	387	196,846	208,104
Construction	489,070	152,848	12,273	72	1,824	6,817	4,181	14,502	91,440	314	721,504
Agriculture	86,561	20,972	3,562	594	7,408	16,473	14,976	203	21,831	143,133	289,011

Noncore Commercial Demand Forecast
Historic Usage

Segment	2005 Therm Sales	2005 Meter Count	2005 Meter Count, Existing/Old customers	2005 Meter Count New Customers	Avg Use Per Meter Existing Customers	Avg Use Per Meter New Customers	Price Elasticity	Employment Elasticities	MAS SQFT ADJ
Office	13,011,030	15	15	0	867,402	.	-0.0730	0.4100	3,786,510
Restaurant	378,520	2	2	0	189,260	.	-0.0730	0.4100	56,661
Retail	1,373,352	2	1	1	1,373,352	1,373,352	-0.0730	0.4100	5,705,744
Laundry	9,984,354	18	18	0	554,686	.	-0.0730	0.4100	53,150
Warehouse	711,321	1	1	0	711,321	.	-0.0730	0.4100	3,542,550
School	-	0	0	0	-	.	-0.0730	0.4100	-
College	17,078,581	14	14	0	1,219,899	.	-0.0730	0.4100	4,367,776
Health	62,012,457	82	81	0	765,586	.	-0.0730	0.4100	1,707,720
Lodging	6,854,927	18	18	0	380,829	.	-0.0730	0.4100	447,289
Misc	5,598,231	5	4	1	1,399,558	1,399,558	-0.0730	0.4100	8,338,418
Government	31,057,954	38	38	0	817,315	.	-0.0730	0.4100	3,248,578
TCU	30,925,351	53	52	0	594,718	.	-0.0730	0.4100	2,697,060
Construction	1,494,843	1	1	0	1,494,843	.	-0.0730	0.4100	10,264,100
Agriculture	30,840,899	52	51	0	604,724	.	-0.0730	0.4100	1,625,346

Noncore Commercial Market
Gas Saturation by Busineses and Equipment Types

Obs	bName	nName	_TYPE_	_FREQ_	Avg_Saturation
1	All	All	0	32,799	0.6197
2		AC_Compressor	1	3,016	0.8473
3		Cook_top	1	2,639	0.2067
4		Cooking	1	754	0.1635
5		Drying	1	1,508	0.9100
6		Engine	1	1,131	0.4167
7		Fryer	1	2,639	0.2037
8		Griddle	1	2,639	0.1816
9		Other	1	5,278	1.0000
10		Other_Cooking	1	2,639	0.2281
11		Space_Heat	1	5,278	0.7643
12		Water_Heat	1	5,278	0.8196
13	Agriculture		2	1,885	0.7820
14	College		2	3,016	0.5239
15	Construction		2	1,131	0.8033
16	Government		2	3,016	0.5305
17	Health		2	3,393	0.5507
18	Laundry		2	1,508	0.9300
19	Lodging		2	3,393	0.5384
20	Misc		2	3,016	0.4000
21	Office		2	1,885	0.7170
22	Restaurant		2	3,016	0.8253
23	Retail		2	1,508	0.6590
24	School		2	3,016	0.5425
25	TCU		2	1,508	0.7275
26	Warehouse		2	1,508	0.5903
27	Agriculture	Drying	3	377	1.0000
28	Agriculture	Engine	3	377	0.5000
29	Agriculture	Other	3	377	1.0000
30	Agriculture	Space_Heat	3	377	0.7200
31	Agriculture	Water_Heat	3	377	0.6900
32	College	AC_Compressor	3	377	0.8850
33	College	Cook_top	3	377	0.1470
34	College	Fryer	3	377	0.1470
35	College	Griddle	3	377	0.1470
36	College	Other	3	377	1.0000
37	College	Other_Cooking	3	377	0.1470
38	College	Space_Heat	3	377	0.7630
39	College	Water_Heat	3	377	0.9550
40	Construction	Other	3	377	1.0000
41	Construction	Space_Heat	3	377	0.7200
42	Construction	Water_Heat	3	377	0.6900
43	Government	AC_Compressor	3	377	0.8880
44	Government	Cook_top	3	377	0.1960
45	Government	Fryer	3	377	0.1960
46	Government	Griddle	3	377	0.1960

Noncore Commercial Market
Gas Saturation by Busineses and Equipment Types

Obs	bName	nName	_TYPE_	_FREQ_	Avg_Saturation
47	Government	Other	3	377	1.0000
48	Government	Other_Cooking	3	377	0.1960
49	Government	Space_Heat	3	377	0.8720
50	Government	Water_Heat	3	377	0.7000
51	Health	AC_Compressor	3	377	0.7920
52	Health	Cook_top	3	377	0.1020
53	Health	Drying	3	377	0.8200
54	Health	Fryer	3	377	0.1020
55	Health	Griddle	3	377	0.1020
56	Health	Other	3	377	1.0000
57	Health	Other_Cooking	3	377	0.1020
58	Health	Space_Heat	3	377	0.9360
59	Health	Water_Heat	3	377	1.0000
60	Laundry	Drying	3	377	1.0000
61	Laundry	Other	3	377	1.0000
62	Laundry	Space_Heat	3	377	0.7200
63	Laundry	Water_Heat	3	377	1.0000
64	Lodging	AC_Compressor	3	377	0.7950
65	Lodging	Cook_top	3	377	0.0840
66	Lodging	Drying	3	377	0.8200
67	Lodging	Fryer	3	377	0.0840
68	Lodging	Griddle	3	377	0.0840
69	Lodging	Other	3	377	1.0000
70	Lodging	Other_Cooking	3	377	0.0840
71	Lodging	Space_Heat	3	377	0.8950
72	Lodging	Water_Heat	3	377	1.0000
73	Misc	AC_Compressor	3	377	0.7310
74	Misc	Cook_top	3	377	0.0210
75	Misc	Fryer	3	377	0.0210
76	Misc	Griddle	3	377	0.0210
77	Misc	Other	3	377	1.0000
78	Misc	Other_Cooking	3	377	0.0210
79	Misc	Space_Heat	3	377	0.6950
80	Misc	Water_Heat	3	377	0.6900
81	Office	AC_Compressor	3	377	0.9310
82	Office	Cooking	3	377	0.0820
83	Office	Other	3	377	1.0000
84	Office	Space_Heat	3	377	0.8720
85	Office	Water_Heat	3	377	0.7000
86	Restaurant	AC_Compressor	3	377	0.8710
87	Restaurant	Cook_top	3	377	0.7500
88	Restaurant	Fryer	3	377	0.7290
89	Restaurant	Griddle	3	377	0.5740
90	Restaurant	Other	3	377	1.0000
91	Restaurant	Other_Cooking	3	377	0.9000
92	Restaurant	Space_Heat	3	377	0.8180

Noncore Commercial Market
Gas Saturation by Busineses and Equipment Types

Obs	bName	nName	_TYPE_	_FREQ_	Avg_Saturation
93	Restaurant	Water_Heat	3	377	0.9600
94	Retail	Cooking	3	377	0.2450
95	Retail	Other	3	377	1.0000
96	Retail	Space_Heat	3	377	0.7710
97	Retail	Water_Heat	3	377	0.6200
98	School	AC_Compressor	3	377	0.8850
99	School	Cook_top	3	377	0.1470
100	School	Fryer	3	377	0.1470
101	School	Griddle	3	377	0.1470
102	School	Other	3	377	1.0000
103	School	Other_Cooking	3	377	0.1470
104	School	Space_Heat	3	377	0.9670
105	School	Water_Heat	3	377	0.9000
106	TCU	Engine	3	377	0.5000
107	TCU	Other	3	377	1.0000
108	TCU	Space_Heat	3	377	0.7200
109	TCU	Water_Heat	3	377	0.6900
110	Warehouse	Engine	3	377	0.2500
111	Warehouse	Other	3	377	1.0000
112	Warehouse	Space_Heat	3	377	0.2310
113	Warehouse	Water_Heat	3	377	0.8800

Noncore Commercial Market
Efficiency Shares by End Uses and Fuels

Obs	nName	fName	eName	_TYPE_	_FREQ_	Avg_EShare
1	All	All	All	0	376	0.42553
2			High	1	42	0.06667
3			Premium	1	42	0.01667
4			Standard	1	132	0.37652
5			Stock	1	160	0.6675
6		Electric		2	160	0.45625
7		Natural_Gas		2	216	0.40278
8		Electric	High	3	14	0.08
9		Electric	Premium	3	14	0.02
10		Electric	Standard	3	59	0.38559
11		Electric	Stock	3	73	0.66918
12		Natural_Gas	High	3	28	0.06
13		Natural_Gas	Premium	3	28	0.015
14		Natural_Gas	Standard	3	73	0.36918
15		Natural_Gas	Stock	3	87	0.66609
16	AC_Compressor			4	32	0.5
17	Cook_top			4	28	0.5
18	Cooking			4	8	0.5
19	Drying			4	16	0.5
20	Engine			4	12	0.5
21	Fryer			4	28	0.5
22	Griddle			4	28	0.5
23	Other			4	14	1
24	Other_Cooking			4	28	0.5
25	Space_Heat			4	70	0.4
26	Water_Heat			4	112	0.25
27	AC_Compressor		Standard	5	16	0.35
28	AC_Compressor		Stock	5	16	0.65
29	Cook_top		Standard	5	14	0.35
30	Cook_top		Stock	5	14	0.65
31	Cooking		Standard	5	4	0.35
32	Cooking		Stock	5	4	0.65
33	Drying		Standard	5	8	0.35
34	Drying		Stock	5	8	0.65
35	Engine		Standard	5	6	0.35
36	Engine		Stock	5	6	0.65
37	Fryer		Standard	5	14	0.35
38	Fryer		Stock	5	14	0.65
39	Griddle		Standard	5	14	0.35
40	Griddle		Stock	5	14	0.65
41	Other		Stock	5	14	1
42	Other_Cooking		Standard	5	14	0.35
43	Other_Cooking		Stock	5	14	0.65
44	Space_Heat		High	5	14	0.04
45	Space_Heat		Premium	5	14	0.01
46	Space_Heat		Standard	5	14	0.3

Noncore Commercial Market
Efficiency Shares by End Uses and Fuels

Obs	nName	fName	eName	_TYPE_	_FREQ_	Avg_EShare
47	Space_Heat		Stock	5	28	0.825
48	Water_Heat		High	5	28	0.08
49	Water_Heat		Premium	5	28	0.02
50	Water_Heat		Standard	5	28	0.5
51	Water_Heat		Stock	5	28	0.4
52	AC_Compressor	Electric		6	16	0.5
53	AC_Compressor	Natural_Gas		6	16	0.5
54	Cook_top	Electric		6	14	0.5
55	Cook_top	Natural_Gas		6	14	0.5
56	Cooking	Electric		6	4	0.5
57	Cooking	Natural_Gas		6	4	0.5
58	Drying	Electric		6	8	0.5
59	Drying	Natural_Gas		6	8	0.5
60	Engine	Electric		6	6	0.5
61	Engine	Natural_Gas		6	6	0.5
62	Fryer	Electric		6	14	0.5
63	Fryer	Natural_Gas		6	14	0.5
64	Griddle	Electric		6	14	0.5
65	Griddle	Natural_Gas		6	14	0.5
66	Other	Natural_Gas		6	14	1
67	Other_Cooking	Electric		6	14	0.5
68	Other_Cooking	Natural_Gas		6	14	0.5
69	Space_Heat	Electric		6	14	1
70	Space_Heat	Natural_Gas		6	56	0.25
71	Water_Heat	Electric		6	56	0.25
72	Water_Heat	Natural_Gas		6	56	0.25
73	AC_Compressor	Electric	Standard	7	8	0.35
74	AC_Compressor	Electric	Stock	7	8	0.65
75	AC_Compressor	Natural_Gas	Standard	7	8	0.35
76	AC_Compressor	Natural_Gas	Stock	7	8	0.65
77	Cook_top	Electric	Standard	7	7	0.35
78	Cook_top	Electric	Stock	7	7	0.65
79	Cook_top	Natural_Gas	Standard	7	7	0.35
80	Cook_top	Natural_Gas	Stock	7	7	0.65
81	Cooking	Electric	Standard	7	2	0.35
82	Cooking	Electric	Stock	7	2	0.65
83	Cooking	Natural_Gas	Standard	7	2	0.35
84	Cooking	Natural_Gas	Stock	7	2	0.65
85	Drying	Electric	Standard	7	4	0.35
86	Drying	Electric	Stock	7	4	0.65
87	Drying	Natural_Gas	Standard	7	4	0.35
88	Drying	Natural_Gas	Stock	7	4	0.65
89	Engine	Electric	Standard	7	3	0.35
90	Engine	Electric	Stock	7	3	0.65
91	Engine	Natural_Gas	Standard	7	3	0.35
92	Engine	Natural_Gas	Stock	7	3	0.65

Noncore Commercial Market
Efficiency Shares by End Uses and Fuels

Obs	nName	fName	eName	_TYPE_	_FREQ_	Avg_EShare
93	Fryer	Electric	Standard	7	7	0.35
94	Fryer	Electric	Stock	7	7	0.65
95	Fryer	Natural_Gas	Standard	7	7	0.35
96	Fryer	Natural_Gas	Stock	7	7	0.65
97	Griddle	Electric	Standard	7	7	0.35
98	Griddle	Electric	Stock	7	7	0.65
99	Griddle	Natural_Gas	Standard	7	7	0.35
100	Griddle	Natural_Gas	Stock	7	7	0.65
101	Other	Natural_Gas	Stock	7	14	1
102	Other_Cooking	Electric	Standard	7	7	0.35
103	Other_Cooking	Electric	Stock	7	7	0.65
104	Other_Cooking	Natural_Gas	Standard	7	7	0.35
105	Other_Cooking	Natural_Gas	Stock	7	7	0.65
106	Space_Heat	Electric	Stock	7	14	1
107	Space_Heat	Natural_Gas	High	7	14	0.04
108	Space_Heat	Natural_Gas	Premium	7	14	0.01
109	Space_Heat	Natural_Gas	Standard	7	14	0.3
110	Space_Heat	Natural_Gas	Stock	7	14	0.65
111	Water_Heat	Electric	High	7	14	0.08
112	Water_Heat	Electric	Premium	7	14	0.02
113	Water_Heat	Electric	Standard	7	14	0.5
114	Water_Heat	Electric	Stock	7	14	0.4
115	Water_Heat	Natural_Gas	High	7	14	0.08
116	Water_Heat	Natural_Gas	Premium	7	14	0.02
117	Water_Heat	Natural_Gas	Standard	7	14	0.5
118	Water_Heat	Natural_Gas	Stock	7	14	0.4

Noncore Commercial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
1	All	All	All	0	160	0.54375
2			Electric	1	73	0.51838
3			Natural_Gas	1	87	0.56504
4		AC_Compressor		2	16	0.5
5		Cook_top		2	14	0.5
6		Cooking		2	4	0.5
7		Drying		2	8	0.5
8		Engine		2	6	0.5
9		Fryer		2	14	0.5
10		Griddle		2	14	0.5
11		Other		2	14	1
12		Other_Cooking		2	14	0.5
13		Space_Heat		2	28	0.5
14		Water_Heat		2	28	0.5
15		AC_Compressor	Electric	3	8	0.94
16		AC_Compressor	Natural_Gas	3	8	0.06
17		Cook_top	Electric	3	7	0.43528
18		Cook_top	Natural_Gas	3	7	0.56472
19		Cooking	Electric	3	2	0.94282
20		Cooking	Natural_Gas	3	2	0.05718
21		Drying	Electric	3	4	0.3
22		Drying	Natural_Gas	3	4	0.7
23		Engine	Electric	3	3	0.94
24		Engine	Natural_Gas	3	3	0.06
25		Fryer	Electric	3	7	0.46613
26		Fryer	Natural_Gas	3	7	0.53387
27		Griddle	Electric	3	7	0.43826
28		Griddle	Natural_Gas	3	7	0.56174
29		Other	Natural_Gas	3	14	1
30		Other_Cooking	Electric	3	7	0.49055
31		Other_Cooking	Natural_Gas	3	7	0.50945
32		Space_Heat	Electric	3	14	0.4194
33		Space_Heat	Natural_Gas	3	14	0.5806
34		Water_Heat	Electric	3	14	0.4095
35		Water_Heat	Natural_Gas	3	14	0.5905
36	Agriculture			4	9	0.55556
37	College			4	15	0.53333
38	Construction			4	5	0.6
39	Government			4	15	0.53333
40	Health			4	17	0.52941
41	Laundry			4	7	0.57143
42	Lodging			4	17	0.52941
43	Misc			4	15	0.53333
44	Office			4	9	0.55556
45	Restaurant			4	15	0.53333
46	Retail			4	7	0.57143
47	School			4	15	0.53333

Noncore Commercial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
48	TCU			4	7	0.57143
49	Warehouse			4	7	0.57143
50	Agriculture		Electric	5	4	0.42165
51	Agriculture		Natural_Gas	5	5	0.66268
52	College		Electric	5	7	0.80013
53	College		Natural_Gas	5	8	0.29988
54	Construction		Electric	5	2	0.3733
55	Construction		Natural_Gas	5	3	0.75113
56	Government		Electric	5	7	0.34366
57	Government		Natural_Gas	5	8	0.6993
58	Health		Electric	5	8	0.61386
59	Health		Natural_Gas	5	9	0.45434
60	Laundry		Electric	5	3	0.3822
61	Laundry		Natural_Gas	5	4	0.71335
62	Lodging		Electric	5	8	0.53509
63	Lodging		Natural_Gas	5	9	0.52437
64	Misc		Electric	5	7	0.33148
65	Misc		Natural_Gas	5	8	0.70995
66	Office		Electric	5	4	0.7245
67	Office		Natural_Gas	5	5	0.4204
68	Restaurant		Electric	5	7	0.27635
69	Restaurant		Natural_Gas	5	8	0.7582
70	Retail		Electric	5	3	0.69291
71	Retail		Natural_Gas	5	4	0.48031
72	School		Electric	5	7	0.53063
73	School		Natural_Gas	5	8	0.5357
74	TCU		Electric	5	3	0.5622
75	TCU		Natural_Gas	5	4	0.57835
76	Warehouse		Electric	5	3	0.81039
77	Warehouse		Natural_Gas	5	4	0.39221
78	Agriculture	Drying		6	2	0.5
79	Agriculture	Engine		6	2	0.5
80	Agriculture	Other		6	1	1
81	Agriculture	Space_Heat		6	2	0.5
82	Agriculture	Water_Heat		6	2	0.5
83	College	AC_Compressor		6	2	0.5
84	College	Cook_top		6	2	0.5
85	College	Fryer		6	2	0.5
86	College	Griddle		6	2	0.5
87	College	Other		6	1	1
88	College	Other_Cooking		6	2	0.5
89	College	Space_Heat		6	2	0.5
90	College	Water_Heat		6	2	0.5
91	Construction	Other		6	1	1
92	Construction	Space_Heat		6	2	0.5
93	Construction	Water_Heat		6	2	0.5
94	Government	AC_Compressor		6	2	0.5

Noncore Commercial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
95	Government	Cook_top		6	2	0.5
96	Government	Fryer		6	2	0.5
97	Government	Griddle		6	2	0.5
98	Government	Other		6	1	1
99	Government	Other_Cooking		6	2	0.5
100	Government	Space_Heat		6	2	0.5
101	Government	Water_Heat		6	2	0.5
102	Health	AC_Compressor		6	2	0.5
103	Health	Cook_top		6	2	0.5
104	Health	Drying		6	2	0.5
105	Health	Fryer		6	2	0.5
106	Health	Griddle		6	2	0.5
107	Health	Other		6	1	1
108	Health	Other_Cooking		6	2	0.5
109	Health	Space_Heat		6	2	0.5
110	Health	Water_Heat		6	2	0.5
111	Laundry	Drying		6	2	0.5
112	Laundry	Other		6	1	1
113	Laundry	Space_Heat		6	2	0.5
114	Laundry	Water_Heat		6	2	0.5
115	Lodging	AC_Compressor		6	2	0.5
116	Lodging	Cook_top		6	2	0.5
117	Lodging	Drying		6	2	0.5
118	Lodging	Fryer		6	2	0.5
119	Lodging	Griddle		6	2	0.5
120	Lodging	Other		6	1	1
121	Lodging	Other_Cooking		6	2	0.5
122	Lodging	Space_Heat		6	2	0.5
123	Lodging	Water_Heat		6	2	0.5
124	Misc	AC_Compressor		6	2	0.5
125	Misc	Cook_top		6	2	0.5
126	Misc	Fryer		6	2	0.5
127	Misc	Griddle		6	2	0.5
128	Misc	Other		6	1	1
129	Misc	Other_Cooking		6	2	0.5
130	Misc	Space_Heat		6	2	0.5
131	Misc	Water_Heat		6	2	0.5
132	Office	AC_Compressor		6	2	0.5
133	Office	Cooking		6	2	0.5
134	Office	Other		6	1	1
135	Office	Space_Heat		6	2	0.5
136	Office	Water_Heat		6	2	0.5
137	Restaurant	AC_Compressor		6	2	0.5
138	Restaurant	Cook_top		6	2	0.5
139	Restaurant	Fryer		6	2	0.5
140	Restaurant	Griddle		6	2	0.5
141	Restaurant	Other		6	1	1

Noncore Commercial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
142	Restaurant	Other_Cooking		6	2	0.5
143	Restaurant	Space_Heat		6	2	0.5
144	Restaurant	Water_Heat		6	2	0.5
145	Retail	Cooking		6	2	0.5
146	Retail	Other		6	1	1
147	Retail	Space_Heat		6	2	0.5
148	Retail	Water_Heat		6	2	0.5
149	School	AC_Compressor		6	2	0.5
150	School	Cook_top		6	2	0.5
151	School	Fryer		6	2	0.5
152	School	Griddle		6	2	0.5
153	School	Other		6	1	1
154	School	Other_Cooking		6	2	0.5
155	School	Space_Heat		6	2	0.5
156	School	Water_Heat		6	2	0.5
157	TCU	Engine		6	2	0.5
158	TCU	Other		6	1	1
159	TCU	Space_Heat		6	2	0.5
160	TCU	Water_Heat		6	2	0.5
161	Warehouse	Engine		6	2	0.5
162	Warehouse	Other		6	1	1
163	Warehouse	Space_Heat		6	2	0.5
164	Warehouse	Water_Heat		6	2	0.5
165	Agriculture	Drying	Electric	7	1	0
166	Agriculture	Drying	Natural_Gas	7	1	1
167	Agriculture	Engine	Electric	7	1	0.94
168	Agriculture	Engine	Natural_Gas	7	1	0.06
169	Agriculture	Other	Natural_Gas	7	1	1
170	Agriculture	Space_Heat	Electric	7	1	0.42308
171	Agriculture	Space_Heat	Natural_Gas	7	1	0.57692
172	Agriculture	Water_Heat	Electric	7	1	0.32353
173	Agriculture	Water_Heat	Natural_Gas	7	1	0.67647
174	College	AC_Compressor	Electric	7	1	0.94
175	College	AC_Compressor	Natural_Gas	7	1	0.06
176	College	Cook_top	Electric	7	1	0.95199
177	College	Cook_top	Natural_Gas	7	1	0.04801
178	College	Fryer	Electric	7	1	0.95199
179	College	Fryer	Natural_Gas	7	1	0.04801
180	College	Griddle	Electric	7	1	0.95199
181	College	Griddle	Natural_Gas	7	1	0.04801
182	College	Other	Natural_Gas	7	1	1
183	College	Other_Cooking	Electric	7	1	0.95199
184	College	Other_Cooking	Natural_Gas	7	1	0.04801
185	College	Space_Heat	Electric	7	1	0.66972
186	College	Space_Heat	Natural_Gas	7	1	0.33028
187	College	Water_Heat	Electric	7	1	0.18325
188	College	Water_Heat	Natural_Gas	7	1	0.81675

Noncore Commercial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
189	Construction	Other	Natural_Gas	7	1	1
190	Construction	Space_Heat	Electric	7	1	0.42308
191	Construction	Space_Heat	Natural_Gas	7	1	0.57692
192	Construction	Water_Heat	Electric	7	1	0.32353
193	Construction	Water_Heat	Natural_Gas	7	1	0.67647
194	Government	AC_Compressor	Electric	7	1	0.94
195	Government	AC_Compressor	Natural_Gas	7	1	0.06
196	Government	Cook_top	Electric	7	1	0.02267
197	Government	Cook_top	Natural_Gas	7	1	0.97733
198	Government	Fryer	Electric	7	1	0.09465
199	Government	Fryer	Natural_Gas	7	1	0.90535
200	Government	Griddle	Electric	7	1	0.02962
201	Government	Griddle	Natural_Gas	7	1	0.97038
202	Government	Other	Natural_Gas	7	1	1
203	Government	Other_Cooking	Electric	7	1	0.34
204	Government	Other_Cooking	Natural_Gas	7	1	0.66
205	Government	Space_Heat	Electric	7	1	0.1445
206	Government	Space_Heat	Natural_Gas	7	1	0.8555
207	Government	Water_Heat	Electric	7	1	0.83419
208	Government	Water_Heat	Natural_Gas	7	1	0.16581
209	Health	AC_Compressor	Electric	7	1	0.94
210	Health	AC_Compressor	Natural_Gas	7	1	0.06
211	Health	Cook_top	Electric	7	1	0.90513
212	Health	Cook_top	Natural_Gas	7	1	0.09487
213	Health	Drying	Electric	7	1	0.4
214	Health	Drying	Natural_Gas	7	1	0.6
215	Health	Fryer	Electric	7	1	0.90513
216	Health	Fryer	Natural_Gas	7	1	0.09487
217	Health	Griddle	Electric	7	1	0.90513
218	Health	Griddle	Natural_Gas	7	1	0.09487
219	Health	Other	Natural_Gas	7	1	1
220	Health	Other_Cooking	Electric	7	1	0.34
221	Health	Other_Cooking	Natural_Gas	7	1	0.66
222	Health	Space_Heat	Electric	7	1	0.33974
223	Health	Space_Heat	Natural_Gas	7	1	0.66026
224	Health	Water_Heat	Electric	7	1	0.1758
225	Health	Water_Heat	Natural_Gas	7	1	0.8242
226	Laundry	Drying	Electric	7	1	0.4
227	Laundry	Drying	Natural_Gas	7	1	0.6
228	Laundry	Other	Natural_Gas	7	1	1
229	Laundry	Space_Heat	Electric	7	1	0.42308
230	Laundry	Space_Heat	Natural_Gas	7	1	0.57692
231	Laundry	Water_Heat	Electric	7	1	0.32353
232	Laundry	Water_Heat	Natural_Gas	7	1	0.67647
233	Lodging	AC_Compressor	Electric	7	1	0.94
234	Lodging	AC_Compressor	Natural_Gas	7	1	0.06
235	Lodging	Cook_top	Electric	7	1	0.55042

Noncore Commercial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
236	Lodging	Cook_top	Natural_Gas	7	1	0.44958
237	Lodging	Drying	Electric	7	1	0.4
238	Lodging	Drying	Natural_Gas	7	1	0.6
239	Lodging	Fryer	Electric	7	1	0.55042
240	Lodging	Fryer	Natural_Gas	7	1	0.44958
241	Lodging	Griddle	Electric	7	1	0.55042
242	Lodging	Griddle	Natural_Gas	7	1	0.44958
243	Lodging	Other	Natural_Gas	7	1	1
244	Lodging	Other_Cooking	Electric	7	1	0.55042
245	Lodging	Other_Cooking	Natural_Gas	7	1	0.44958
246	Lodging	Space_Heat	Electric	7	1	0.72849
247	Lodging	Space_Heat	Natural_Gas	7	1	0.27151
248	Lodging	Water_Heat	Electric	7	1	0.01052
249	Lodging	Water_Heat	Natural_Gas	7	1	0.98948
250	Misc	AC_Compressor	Electric	7	1	0.94
251	Misc	AC_Compressor	Natural_Gas	7	1	0.06
252	Misc	Cook_top	Electric	7	1	0.02267
253	Misc	Cook_top	Natural_Gas	7	1	0.97733
254	Misc	Fryer	Electric	7	1	0.09465
255	Misc	Fryer	Natural_Gas	7	1	0.90535
256	Misc	Griddle	Electric	7	1	0.02962
257	Misc	Griddle	Natural_Gas	7	1	0.97038
258	Misc	Other	Natural_Gas	7	1	1
259	Misc	Other_Cooking	Electric	7	1	0.34
260	Misc	Other_Cooking	Natural_Gas	7	1	0.66
261	Misc	Space_Heat	Electric	7	1	0.45036
262	Misc	Space_Heat	Natural_Gas	7	1	0.54964
263	Misc	Water_Heat	Electric	7	1	0.44309
264	Misc	Water_Heat	Natural_Gas	7	1	0.55691
265	Office	AC_Compressor	Electric	7	1	0.94
266	Office	AC_Compressor	Natural_Gas	7	1	0.06
267	Office	Cooking	Electric	7	1	0.97931
268	Office	Cooking	Natural_Gas	7	1	0.02069
269	Office	Other	Natural_Gas	7	1	1
270	Office	Space_Heat	Electric	7	1	0.1445
271	Office	Space_Heat	Natural_Gas	7	1	0.8555
272	Office	Water_Heat	Electric	7	1	0.83419
273	Office	Water_Heat	Natural_Gas	7	1	0.16581
274	Restaurant	AC_Compressor	Electric	7	1	0.94
275	Restaurant	AC_Compressor	Natural_Gas	7	1	0.06
276	Restaurant	Cook_top	Electric	7	1	0.02267
277	Restaurant	Cook_top	Natural_Gas	7	1	0.97733
278	Restaurant	Fryer	Electric	7	1	0.09465
279	Restaurant	Fryer	Natural_Gas	7	1	0.90535
280	Restaurant	Griddle	Electric	7	1	0.02962
281	Restaurant	Griddle	Natural_Gas	7	1	0.97038
282	Restaurant	Other	Natural_Gas	7	1	1

Noncore Commercial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
283	Restaurant	Other_Cooking	Electric	7	1	0.34
284	Restaurant	Other_Cooking	Natural_Gas	7	1	0.66
285	Restaurant	Space_Heat	Electric	7	1	0.40954
286	Restaurant	nt Space_Heat	Natural_Gas	7	1	0.59046
287	Restaurant	Water_Heat	Electric	7	1	0.09796
288	Restaurant	nt Water_Heat	Natural_Gas	7	1	0.90204
289	Retail	Cooking	Electric	7	1	0.90633
290	Retail	Cooking	Natural_Gas	7	1	0.09367
291	Retail	Other	Natural_Gas	7	1	1
292	Retail	Space_Heat	Electric	7	1	0.48249
293	Retail	Space_Heat	Natural_Gas	7	1	0.51751
294	Retail	Water_Heat	Electric	7	1	0.68992
295	Retail	Water_Heat	Natural_Gas	7	1	0.31008
296	School	AC_Compressor	Electric	7	1	0.94
297	School	AC_Compressor	Natural_Gas	7	1	0.06
298	School	Cook_top	Electric	7	1	0.57143
299	School	Cook_top	Natural_Gas	7	1	0.42857
300	School	Fryer	Electric	7	1	0.57143
301	School	Fryer	Natural_Gas	7	1	0.42857
302	School	Griddle	Electric	7	1	0.57143
303	School	Griddle	Natural_Gas	7	1	0.42857
304	School	Other	Natural_Gas	7	1	1
305	School	Other_Cooking	Electric	7	1	0.57143
306	School	Other_Cooking	Natural_Gas	7	1	0.42857
307	School	Space_Heat	Electric	7	1	0.24716
308	School	Space_Heat	Natural_Gas	7	1	0.75284
309	School	Water_Heat	Electric	7	1	0.24157
310	School	Water_Heat	Natural_Gas	7	1	0.75843
311	TCU	Engine	Electric	7	1	0.94
312	TCU	Engine	Natural_Gas	7	1	0.06
313	TCU	Other	Natural_Gas	7	1	1
314	TCU	Space_Heat	Electric	7	1	0.42308
315	TCU	Space_Heat	Natural_Gas	7	1	0.57692
316	TCU	Water_Heat	Electric	7	1	0.32353
317	TCU	Water_Heat	Natural_Gas	7	1	0.67647
318	Warehouse	Engine	Electric	7	1	0.94
319	Warehouse	Engine	Natural_Gas	7	1	0.06
320	Warehouse	Other	Natural_Gas	7	1	1
321	Warehouse	Space_Heat	Electric	7	1	0.56277
322	Warehouse	Space_Heat	Natural_Gas	7	1	0.43723
323	Warehouse	Water_Heat	Electric	7	1	0.92841
324	Warehouse	Water_Heat	Natural_Gas	7	1	0.07159

Noncore Industrial Demand Forecast
Employment Forecast (1,000's)

YEAR	Mining	Food	Textile	Wood-Paper	Chem-ical	Petroleum	Stone	Prim-Metal	Fab-Metal	Trans-port	Misc	Total
2005	9.01	125.03	42.50	33.31	31.13	4.73	27.56	14.75	90.36	85.08	433.95	897.40
2006	9.47	124.55	42.13	33.33	31.89	4.53	27.95	14.95	93.52	85.22	431.78	899.32
2007	9.89	124.60	40.30	33.38	32.17	4.74	28.46	14.87	97.21	84.62	424.06	894.31
2008	9.98	125.10	38.98	33.31	32.51	4.76	28.44	14.52	99.63	84.87	422.72	894.82
2009	9.53	125.60	38.31	33.21	32.79	4.65	28.04	14.32	102.03	85.56	421.85	895.88
2010	8.99	126.07	37.98	33.26	33.09	4.50	27.62	14.07	102.84	85.76	421.16	895.34
2011	8.46	126.76	37.91	33.37	33.40	4.35	27.36	13.99	103.74	85.56	419.63	894.51
2012	8.10	127.22	37.86	33.39	33.69	4.19	27.27	13.90	105.18	85.04	420.52	896.37
2013	7.87	127.54	37.89	33.41	33.99	4.04	27.21	13.70	105.89	84.38	422.33	898.25
2014	7.64	127.94	37.98	33.49	34.33	3.89	27.10	13.49	106.12	84.16	424.35	900.46
2015	7.39	128.42	38.16	33.57	34.75	3.74	26.97	13.26	106.75	83.94	426.65	903.60
2016	7.12	129.13	38.44	33.69	35.28	3.62	26.86	12.98	106.64	83.65	429.33	906.75
2017	6.85	129.95	38.68	33.77	35.98	3.51	26.73	12.74	106.01	83.43	431.80	909.43
2018	6.57	130.90	38.93	33.87	36.71	3.41	26.77	12.50	104.84	83.21	434.02	911.74
2019	6.29	131.76	39.15	33.95	37.45	3.31	26.80	12.25	103.52	83.01	435.92	913.41
2020	6.03	132.48	39.30	33.98	38.13	3.21	26.83	11.97	101.75	82.69	437.12	913.50
2021	5.79	133.20	39.41	33.98	38.81	3.11	26.80	11.71	99.98	82.37	438.52	913.69
2022	5.59	133.82	39.44	33.98	39.48	3.01	26.75	11.46	98.23	82.06	440.10	913.93
2023	5.41	134.42	39.44	33.97	40.16	2.91	26.74	11.23	96.63	81.78	441.99	914.68
2024	5.23	134.96	39.52	34.00	40.81	2.81	26.71	11.01	94.97	81.50	443.79	915.31
2025	5.05	135.54	39.76	34.10	41.45	2.71	26.50	10.78	92.99	81.19	445.32	915.40

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Noncore Industrial Demand Forecast
Average Use by Business and Equipment (Therm)

Segment	Fire Tube- Boiler	Water Tube - Boiler	Space Heating	Water Heating	Furnace- Oven - Drying	Furnace- Oven - Kiln	AC	Engine	Misc Other	Total
Mining	113,880	450,810	5,860	3,490	302,614	793,067	0	32,891	15,809	1,718,420
Food	790,906	214,053	8,559	11,149	294,011	72,110	814	2,375	56,632	1,450,610
Textile	744,558	102,465	6,147	19,556	340,502	107,882	0	11,277	45,940	1,378,326
Wood_Paper	277,019	695,650	118	485	103,434	59,442	0	0	43,261	1,179,408
Chemical	430,994	134,886	3,027	2,105	0	20,858	6,931	0	251,525	850,327
Petroleum	117,816	0	52,878	4,078	446,359	1,420,495	0	0	147,035	2,188,661
Stone	111,026	0	17,210	3,115	69,909	2,894,202	0	0	139,591	3,235,053
Prim_Metal	23,483	84,280	2,646	304	27,816	1,039,372	95	0	100,336	1,278,333
Fab_Metal	118,029	12,398	16,053	1,666	2,609	704,458	53	981	139,599	995,847
Transport	80,970	121,414	24,659	2,582	1,440	678,150	191	0	118,916	1,028,322
Misc	349,617	115,870	14,185	14,835	25,987	240,894	5	0	222,959	984,352

Noncore Industrial Demand Forecast
Saturation

Segment	Fire Tube-Boiler	Water Tube - Boiler	Space Heating	Water Heating	Dryer	Furnace-Oven -Kiln	AC	Engine	Misc 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

Noncore Industrial Demand Forecast
Gas Unit Energy Consumption

Segment	Fire Tube- Boiler	Water Tube - Boiler	Space Heating	Water Heating	Dryer	Furnace- Oven - Kiln	AC	Engine	Misc Other
Mining	15,197,607	60,162,069	12,984	7,981	31,551,928	34,672,498	0	3,748,606	15,676
Food	2,019,797	546,644	19,869	18,855	6,599,447	493,600	8,815	289,660	48,356
Textile	3,108,844	427,834	11,556	37,402	6,188,629	2,557,853	0	1,977,498	37,055
Wood_Paper	38,981,557	97,890,377	324	1,108	3,790,529	2,348,782	0	0	45,230
Chemical	3,457,019	1,081,930	5,644	4,049	0	460,401	72,363	0	209,860
Petroleum	1,031,793	0	107,646	8,566	10,689,246	34,233,510	0	0	133,945
Stone	13,851,560	0	35,651	6,660	6,814,194	118,290,626	0	0	129,396
Prim_Metal	338,405	1,214,539	4,432	505	438,453	20,608,729	969	0	75,202
Fab_Metal	1,904,588	200,068	30,108	3,097	46,052	15,640,956	609	95,727	117,161
Transport	813,269	1,219,491	57,573	6,221	39,541	18,743,866	2,495	0	124,241
Misc	2,821,763	935,185	26,612	28,723	573,541	5,350,309	51	0	187,184

Noncore Industrial Demand Forecast
Electric Unit Energy Consumption

Segment	Fire Tube- Boiler	Water Tube - Boiler	Space Heating	Water Heating	Dryer	Furnace- Oven - Kiln	AC	Engine
Mining	311,700,114	1,233,912,930	266,299	116,921	647,124,219	711,126,534	0	76,883,217
Food	41,425,664	11,211,568	407,510	276,223	135,353,440	10,123,645	180,794	5,940,873
Textile	63,761,817	8,774,796	237,011	547,934	126,927,638	52,461,093	0	40,558,119
Wood_Paper	799,504,539	2,007,713,563	6,645	16,232	77,743,050	48,173,085	0	0
Chemical	70,902,822	22,190,185	115,757	59,317	0	9,442,740	1,484,152	0
Petroleum	21,161,884	0	2,207,800	125,491	219,234,462	702,122,971	0	0
Stone	284,092,939	0	731,195	97,568	139,757,861	2,426,118,904	0	0
Prim_Metal	6,940,624	24,909,971	90,900	7,398	8,992,590	422,681,228	19,874	0
Fab_Metal	39,062,748	4,103,358	617,510	45,371	944,518	320,793,120	12,490	1,963,343
Transport	16,679,997	25,011,535	1,180,812	91,137	810,979	384,433,232	51,172	0
Misc	57,873,838	19,180,472	545,807	420,788	11,763,220	109,733,850	1,046	0

Relative Efficiency Gas to Electric	Fire Tube- Boiler	Water Tube - Boiler	Space Heating	Water Heating	Dryer	Furnace- Oven - Kiln	AC	Engine
Mining	70%	70%	70%	50%	70%	70%	70%	70%
Food	70%	70%	70%	50%	70%	70%	70%	70%
Textile	70%	70%	70%	50%	70%	70%	70%	70%
Wood_Paper	70%	70%	70%	50%	70%	70%	70%	70%
Chemical	70%	70%	70%	50%	70%	70%	70%	70%
Petroleum	70%	70%	70%	50%	70%	70%	70%	70%
Stone	70%	70%	70%	50%	70%	70%	70%	70%
Prim_Metal	70%	70%	70%	50%	70%	70%	70%	70%
Fab_Metal	70%	70%	70%	50%	70%	70%	70%	70%
Transport	70%	70%	70%	50%	70%	70%	70%	70%
Misc	70%	70%	70%	50%	70%	70%	70%	70%

Noncore Industrial Demand Forecast
Market Share

Segment	Fire Tube-Boiler	Water Tube - Boiler	Space Heating	Water Heating	Dryer	Furnace-Oven -Kiln	AC	Engine	Misc Other	Source
Mining	0.75	0.75	0.61	0.59	0.32	0.62	0.11	0.01	1.00	
Food	0.79	0.79	0.61	0.59	0.32	0.62	0.11	0.01	1.00	CI 1996
Textile	0.79	0.79	0.61	0.59	0.32	0.62	0.11	0.01	1.00	
Wood_Paper	0.75	0.75	0.61	0.59	0.32	0.62	0.11	0.01	1.00	
Chemical	0.79	0.79	0.61	0.59	0.32	0.62	0.11	0.01	1.00	
Petroleum	0.79	0.79	0.61	0.59	0.32	0.62	0.11	0.01	1.00	
Stone	0.79	0.79	0.61	0.59	0.32	0.62	0.11	0.01	1.00	
Prim_Metal	0.79	0.79	0.61	0.59	0.32	0.62	0.11	0.01	1.00	
Fab_Metal	0.79	0.79	0.61	0.59	0.32	0.62	0.11	0.01	1.00	
Transport	0.75	0.75	0.61	0.59	0.32	0.62	0.11	0.01	1.00	
Misc	0.79	0.79	0.61	0.59	0.32	0.62	0.11	0.01	1.00	

Gas share unadjusted	Fire Tube-Boiler	Water Tube - Boiler	Space Heating	Water Heating	Dryer	Furnace-Oven -Kiln	AC	Engine	Misc Other	Source
Mining	75%	75%	65%	60%	33%	65%	11%	1%	100%	
Food	75%	75%	65%	60%	33%	65%	11%	1%	100%	CI 1996
Textile	75%	75%	65%	60%	33%	65%	11%	1%	100%	
Wood_Paper	75%	75%	65%	60%	33%	65%	11%	1%	100%	
Chemical	75%	75%	65%	60%	33%	65%	11%	1%	100%	
Petroleum	75%	75%	65%	60%	33%	65%	11%	1%	100%	
Stone	75%	75%	65%	60%	33%	65%	11%	1%	100%	
Prim_Metal	75%	75%	65%	60%	33%	65%	11%	1%	100%	
Fab_Metal	75%	75%	65%	60%	33%	65%	11%	1%	100%	
Transport	75%	75%	65%	60%	33%	65%	11%	1%	100%	
Misc	75%	75%	65%	60%	33%	65%	11%	1%	100%	

Electric share unadjusted	Fire Tube-Boiler	Water Tube - Boiler	Space Heating	Water Heating	Dryer	Furnace-Oven -Kiln	AC	Engine	Misc Other	Source
Mining	25%	25%	41%	41%	71%	40%	91%	99%	100%	
Food	20%	20%	41%	41%	71%	40%	91%	99%	100%	CI 1996
Textile	20%	20%	41%	41%	71%	40%	91%	99%	100%	
Wood_Paper	25%	25%	41%	41%	71%	40%	91%	99%	100%	
Chemical	20%	20%	41%	41%	71%	40%	91%	99%	100%	
Petroleum	20%	20%	41%	41%	71%	40%	91%	99%	100%	
Stone	20%	20%	41%	41%	71%	40%	91%	99%	100%	
Prim_Metal	20%	20%	41%	41%	71%	40%	91%	99%	100%	
Fab_Metal	20%	20%	41%	41%	71%	40%	91%	99%	100%	
Transport	25%	25%	41%	41%	71%	40%	91%	99%	100%	
Misc	20%	20%	41%	41%	71%	40%	91%	99%	100%	

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Noncore Industrial Demand Forecast
Equipment Installation Year

Segment	Fire Tube-Boiler	Water Tube - Boiler	Space Heating	Water Heating	Furnace- Oven - Dryer	Furnace- Oven - Kiln	AC	Engine	Misc Other
Mining	1979	1976	1971	1989	1973	1972	.	1985	1972
Food	1981	1979	1978	1980	1984	1978	1999	1989	1976
Textile	1977	1975	.	1980	1988	1975	1990	.	1971
Wood_Paper	1980	1975	1975	1975	1981	1977	.	1968	1981
Chemical	1985	1976	1978	1985	1986	1979	1996	.	1983
Petroleum	1970	.	1980	1982	1968	1988	.	.	1968
Stone	1976	.	1984	1982	1978	1976	.	.	1967
Prim_Metal	1990	1975	1974	1983	1989	1982	1975	.	1979
Fab_Metal	1974	1972	1976	1981	1976	1980	1998	.	1978
Transport	1977	1989	1970	1976	.	1981	1976	.	1982
Misc	1980	1978	1978	1982	1984	1980	.	.	1984

Noncore Industrial Demand Forecast
Historic Usage

Segment	2005 Therm Sales	2005 Meter Count	2005 Meter Count, Existing/Old customers	2005 Meter Count New Customers	Avg Use Per Meter Existing Customers	Avg Use Per Meter New Customers	Price Elasticity	Emp Elasticity
Mining	30,931,566	18	18	0	1,718,420	.	-0.0730	0.4100
Food	172,622,617	119	119	0	1,450,610	.	-0.0730	0.4100
Textile	46,863,094	34	34	0	1,378,326	.	-0.0730	0.4100
Wood_Paper	60,149,832	54	51	3	1,179,408	1,179,408	-0.0730	0.4100
Chemical	21,258,171	25	25	0	850,327	.	-0.0730	0.4100
Petroleum	85,357,789	39	39	0	2,188,661	.	-0.0730	0.4100
Stone	64,701,053	20	20	0	3,235,053	.	-0.0730	0.4100
Prim_Metal	46,019,976	36	36	0	1,278,333	.	-0.0730	0.4100
Fab_Metal	48,796,488	49	49	0	995,847	.	-0.0730	0.4100
Transport	13,368,190	13	13	0	1,028,322	.	-0.0730	0.4100
Misc	39,374,079	40	40	0	984,352	.	-0.0730	0.4100

Noncore Industrial Market
Gas Saturation by Busineses and Equipment Types

Obs	bName	nName	_TYPE_	_FREQ_	Avg_Saturation
1	All	All	0	35,438	0.47362
2		AC	1	3,770	0.702
3		Dryer	1	4,147	0.10818
4		Engine	1	2,639	0.74714
5		Fire_Tube_Boiler	1	4,147	0.13091
6		Furnace_Oven_Kiln	1	4,147	0.11
7		Other	1	4,147	1
8		Space_Heat	1	4,147	0.70545
9		Water_Heat	1	4,147	0.74818
10		Water_Tube_Boiler	1	4,147	0.13091
11	Chemical		2	3,393	0.48889
12	Fab_Metal		2	3,393	0.49111
13	Food		2	3,393	0.58111
14	Mining		2	3,393	0.45333
15	Misc		2	3,393	0.48889
16	Petroleum		2	3,016	0.4575
17	Prim_Metal		2	3,016	0.445
18	Stone		2	3,016	0.40125
19	Textile		2	3,016	0.485
20	Transport		2	3,393	0.48889
21	Wood_Paper		2	3,016	0.41
22	Chemical	AC	3	377	0.74
23	Chemical	Dryer	3	377	0.12
24	Chemical	Engine	3	377	0.7
25	Chemical	Fire_Tube_Boiler	3	377	0.14
26	Chemical	Furnace_Oven_Kiln	3	377	0.1
27	Chemical	Other	3	377	1
28	Chemical	Space_Heat	3	377	0.73
29	Chemical	Water_Heat	3	377	0.73
30	Chemical	Water_Tube_Boiler	3	377	0.14
31	Fab_Metal	AC	3	377	0.68
32	Fab_Metal	Dryer	3	377	0.15
33	Fab_Metal	Engine	3	377	0.86
34	Fab_Metal	Fire_Tube_Boiler	3	377	0.07
35	Fab_Metal	Furnace_Oven_Kiln	3	377	0.1
36	Fab_Metal	Other	3	377	1
37	Fab_Metal	Space_Heat	3	377	0.73
38	Fab_Metal	Water_Heat	3	377	0.76
39	Fab_Metal	Water_Tube_Boiler	3	377	0.07
40	Food	AC	3	377	0.73
41	Food	Dryer	3	377	0.12
42	Food	Engine	3	377	0.7
43	Food	Fire_Tube_Boiler	3	377	0.45
44	Food	Furnace_Oven_Kiln	3	377	0.33

Noncore Industrial Market
Gas Saturation by Busineses and Equipment Types

Obs	bName	nName	_TYPE_	_FREQ_	Avg_Saturation
45	Food	Other	3	377	1
46	Food	Space_Heat	3	377	0.6
47	Food	Water_Heat	3	377	0.85
48	Food	Water_Tube_Boiler	3	377	0.45
49	Mining	AC	3	377	0.64
50	Mining	Dryer	3	377	0.03
51	Mining	Engine	3	377	0.87
52	Mining	Fire_Tube_Boiler	3	377	0.01
53	Mining	Furnace_Oven_Kiln	3	377	0.06
54	Mining	Other	3	377	1
55	Mining	Space_Heat	3	377	0.73
56	Mining	Water_Heat	3	377	0.73
57	Mining	Water_Tube_Boiler	3	377	0.01
58	Misc	AC	3	377	0.74
59	Misc	Dryer	3	377	0.12
60	Misc	Engine	3	377	0.7
61	Misc	Fire_Tube_Boiler	3	377	0.14
62	Misc	Furnace_Oven_Kiln	3	377	0.1
63	Misc	Other	3	377	1
64	Misc	Space_Heat	3	377	0.73
65	Misc	Water_Heat	3	377	0.73
66	Misc	Water_Tube_Boiler	3	377	0.14
67	Petroleum	Dryer	3	377	0.12
68	Petroleum	Engine	3	377	0.7
69	Petroleum	Fire_Tube_Boiler	3	377	0.14
70	Petroleum	Furnace_Oven_Kiln	3	377	0.1
71	Petroleum	Other	3	377	1
72	Petroleum	Space_Heat	3	377	0.73
73	Petroleum	Water_Heat	3	377	0.73
74	Petroleum	Water_Tube_Boiler	3	377	0.14
75	Prim_Metal	AC	3	377	0.68
76	Prim_Metal	Dryer	3	377	0.15
77	Prim_Metal	Fire_Tube_Boiler	3	377	0.07
78	Prim_Metal	Furnace_Oven_Kiln	3	377	0.1
79	Prim_Metal	Other	3	377	1
80	Prim_Metal	Space_Heat	3	377	0.73
81	Prim_Metal	Water_Heat	3	377	0.76
82	Prim_Metal	Water_Tube_Boiler	3	377	0.07
83	Stone	AC	3	377	0.64
84	Stone	Dryer	3	377	0.03
85	Stone	Fire_Tube_Boiler	3	377	0.01
86	Stone	Furnace_Oven_Kiln	3	377	0.06
87	Stone	Other	3	377	1
88	Stone	Space_Heat	3	377	0.73

Noncore Industrial Market
Gas Saturation by Busineses and Equipment Types

Obs	bName	nName	_TYPE_	_FREQ_	Avg_Saturation
89	Stone	Water_Heat	3	377	0.73
90	Stone	Water_Tube_Boiler	3	377	0.01
91	Textile	AC	3	377	0.72
92	Textile	Dryer	3	377	0.14
93	Textile	Fire_Tube_Boiler	3	377	0.26
94	Textile	Furnace_Oven_Kiln	3	377	0.09
95	Textile	Other	3	377	1
96	Textile	Space_Heat	3	377	0.7
97	Textile	Water_Heat	3	377	0.71
98	Textile	Water_Tube_Boiler	3	377	0.26
99	Transport	AC	3	377	0.74
100	Transport	Dryer	3	377	0.12
101	Transport	Engine	3	377	0.7
102	Transport	Fire_Tube_Boiler	3	377	0.14
103	Transport	Furnace_Oven_Kiln	3	377	0.1
104	Transport	Other	3	377	1
105	Transport	Space_Heat	3	377	0.73
106	Transport	Water_Heat	3	377	0.73
107	Transport	Water_Tube_Boiler	3	377	0.14
108	Wood_Paper	AC	3	377	0.71
109	Wood_Paper	Dryer	3	377	0.09
110	Wood_Paper	Fire_Tube_Boiler	3	377	0.01
111	Wood_Paper	Furnace_Oven_Kiln	3	377	0.07
112	Wood_Paper	Other	3	377	1
113	Wood_Paper	Space_Heat	3	377	0.62
114	Wood_Paper	Water_Heat	3	377	0.77
115	Wood_Paper	Water_Tube_Boiler	3	377	0.01

Noncore Commercial Market
Efficiency Shares by End Uses and Fuels

Obs	nName	fName	eName	_TYPE_	_FREQ_	Avg_EShare
1	All	All	All	0	343	0.51603
2			High	1	83	0.03
3			Low	1	177	0.84525
4			Standard	1	83	0.3
5		Electric		2	83	1
6		Natural_Gas		2	260	0.36154
7		Electric	Low	3	83	1
8		Natural_Gas	High	3	83	0.03
9		Natural_Gas	Low	3	94	0.70862
10		Natural_Gas	Standard	3	83	0.3
11	AC			4	40	0.5
12	Dryer			4	44	0.5
13	Engine			4	28	0.5
14	Fire_Tube_Boiler			4	44	0.5
15	Furnace_Oven_Kiln			4	44	0.5
16	Other			4	11	1
17	Space_Heat			4	44	0.5
18	Water_Heat			4	44	0.5
19	Water_Tube_Boiler			4	44	0.5
20	AC		High	5	10	0.03
21	AC		Low	5	20	0.835
22	AC		Standard	5	10	0.3
23	Dryer		High	5	11	0.03
24	Dryer		Low	5	22	0.835
25	Dryer		Standard	5	11	0.3
26	Engine		High	5	7	0.03
27	Engine		Low	5	14	0.835
28	Engine		Standard	5	7	0.3
29	Fire_Tube_Boiler		High	5	11	0.03
30	Fire_Tube_Boiler		Low	5	22	0.835
31	Fire_Tube_Boiler		Standard	5	11	0.3
32	Furnace_Oven_Kiln		High	5	11	0.03
33	Furnace_Oven_Kiln		Low	5	22	0.835
34	Furnace_Oven_Kiln		Standard	5	11	0.3
35	Other		Low	5	11	1
36	Space_Heat		High	5	11	0.03
37	Space_Heat		Low	5	22	0.835
38	Space_Heat		Standard	5	11	0.3
39	Water_Heat		High	5	11	0.03
40	Water_Heat		Low	5	22	0.835
41	Water_Heat		Standard	5	11	0.3
42	Water_Tube_Boiler		High	5	11	0.03
43	Water_Tube_Boiler		Low	5	22	0.835
44	Water_Tube_Boiler		Standard	5	11	0.3

Noncore Commercial Market
Efficiency Shares by End Uses and Fuels

Obs	nName	fName	eName	_TYPE_	_FREQ_	Avg_EShare
45	AC	Electric		6	10	1
46	AC	Natural_Gas		6	30	0.33333
47	Dryer	Electric		6	11	1
48	Dryer	Natural_Gas		6	33	0.33333
49	Engine	Electric		6	7	1
50	Engine	Natural_Gas		6	21	0.33333
51	Fire_Tube_Boiler	Electric		6	11	1
52	Fire_Tube_Boiler	Natural_Gas		6	33	0.33333
53	Furnace_Oven_Kiln	Electric		6	11	1
54	Furnace_Oven_Kiln	Natural_Gas		6	33	0.33333
55	Other	Natural_Gas		6	11	1
56	Space_Heat	Electric		6	11	1
57	Space_Heat	Natural_Gas		6	33	0.33333
58	Water_Heat	Electric		6	11	1
59	Water_Heat	Natural_Gas		6	33	0.33333
60	Water_Tube_Boiler	Electric		6	11	1
61	Water_Tube_Boiler	Natural_Gas		6	33	0.33333
62	AC	Electric	Low	7	10	1
63	AC	Natural_Gas	High	7	10	0.03
64	AC	Natural_Gas	Low	7	10	0.67
65	AC	Natural_Gas	Standard	7	10	0.3
66	Dryer	Electric	Low	7	11	1
67	Dryer	Natural_Gas	High	7	11	0.03
68	Dryer	Natural_Gas	Low	7	11	0.67
69	Dryer	Natural_Gas	Standard	7	11	0.3
70	Engine	Electric	Low	7	7	1
71	Engine	Natural_Gas	High	7	7	0.03
72	Engine	Natural_Gas	Low	7	7	0.67
73	Engine	Natural_Gas	Standard	7	7	0.3
74	Fire_Tube_Boiler	Electric	Low	7	11	1
75	Fire_Tube_Boiler	Natural_Gas	High	7	11	0.03
76	Fire_Tube_Boiler	Natural_Gas	Low	7	11	0.67
77	Fire_Tube_Boiler	Natural_Gas	Standard	7	11	0.3
78	Furnace_Oven_Kiln	Electric	Low	7	11	1
79	Furnace_Oven_Kiln	Natural_Gas	High	7	11	0.03
80	Furnace_Oven_Kiln	Natural_Gas	Low	7	11	0.67
81	Furnace_Oven_Kiln	Natural_Gas	Standard	7	11	0.3
82	Other	Natural_Gas	Low	7	11	1
83	Space_Heat	Electric	Low	7	11	1
84	Space_Heat	Natural_Gas	High	7	11	0.03
85	Space_Heat	Natural_Gas	Low	7	11	0.67
86	Space_Heat	Natural_Gas	Standard	7	11	0.3
87	Water_Heat	Electric	Low	7	11	1
88	Water_Heat	Natural_Gas	High	7	11	0.03

Noncore Commercial Market
Efficiency Shares by End Uses and Fuels

Obs	nName	fName	eName	_TYPE_	_FREQ_	Avg_EShare
89	Water_Heat	Natural_Gas	Low	7	11	0.67
90	Water_Heat	Natural_Gas	Standard	7	11	0.3
91	Water_Tube_Boiler	Electric	Low	7	11	1
92	Water_Tube_Boiler	Natural_Gas	High	7	11	0.03
93	Water_Tube_Boiler	Natural_Gas	Low	7	11	0.67
94	Water_Tube_Boiler	Natural_Gas	Standard	7	11	0.3

Noncore Industrial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
1	All	All	All	0	177	0.53107
2			Electric	1	83	0.49578
3			Natural_Gas	1	94	0.56223
4		AC		2	20	0.5
5		Dryer		2	22	0.5
6		Engine		2	14	0.5
7		Fire_Tube_Boiler		2	22	0.5
8		Furnace_Oven_Kiln		2	22	0.5
9		Other		2	11	1
10		Space_Heat		2	22	0.5
11		Water_Heat		2	22	0.5
12		Water_Tube_Boiler		2	22	0.5
13		AC	Electric	3	10	0.89
14		AC	Natural_Gas	3	10	0.11
15		Dryer	Electric	3	11	0.68
16		Dryer	Natural_Gas	3	11	0.32
17		Engine	Electric	3	7	0.99
18		Engine	Natural_Gas	3	7	0.01
19		Fire_Tube_Boiler	Electric	3	11	0.22091
20		Fire_Tube_Boiler	Natural_Gas	3	11	0.77909
21		Furnace_Oven_Kiln	Electric	3	11	0.38
22		Furnace_Oven_Kiln	Natural_Gas	3	11	0.62
23		Other	Natural_Gas	3	11	1
24		Space_Heat	Electric	3	11	0.39
25		Space_Heat	Natural_Gas	3	11	0.61
26		Water_Heat	Electric	3	11	0.41
27		Water_Heat	Natural_Gas	3	11	0.59
28		Water_Tube_Boiler	Electric	3	11	0.22091
29		Water_Tube_Boiler	Natural_Gas	3	11	0.77909
30	Chemical			4	17	0.52941
31	Fab_Metal			4	17	0.52941
32	Food			4	17	0.52941
33	Mining			4	17	0.52941
34	Misc			4	17	0.52941
35	Petroleum			4	15	0.53333
36	Prim_Metal			4	15	0.53333
37	Stone			4	15	0.53333
38	Textile			4	15	0.53333
39	Transport			4	17	0.52941
40	Wood_Paper			4	15	0.53333
41	Chemical		Electric	5	8	0.52
42	Chemical		Natural_Gas	5	9	0.53778
43	Fab_Metal		Electric	5	8	0.52
44	Fab_Metal		Natural_Gas	5	9	0.53778

Noncore Industrial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
45	Food		Electric	5	8	0.52
46	Food		Natural_Gas	5	9	0.53778
47	Mining		Electric	5	8	0.53
48	Mining		Natural_Gas	5	9	0.52889
49	Misc		Electric	5	8	0.52
50	Misc		Natural_Gas	5	9	0.53778
51	Petroleum		Electric	5	7	0.46714
52	Petroleum		Natural_Gas	5	8	0.59125
53	Prim_Metal		Electric	5	7	0.45286
54	Prim_Metal		Natural_Gas	5	8	0.60375
55	Stone		Electric	5	7	0.45286
56	Stone		Natural_Gas	5	8	0.60375
57	Textile		Electric	5	7	0.45286
58	Textile		Natural_Gas	5	8	0.60375
59	Transport		Electric	5	8	0.53
60	Transport		Natural_Gas	5	9	0.52889
61	Wood_Paper		Electric	5	7	0.46429
62	Wood_Paper		Natural_Gas	5	8	0.59375
63	Chemical	AC		6	2	0.5
64	Chemical	Dryer		6	2	0.5
65	Chemical	Engine		6	2	0.5
66	Chemical	Fire_Tube_Boiler		6	2	0.5
67	Chemical	Furnace_Oven_Kiln		6	2	0.5
68	Chemical	Other		6	1	1
69	Chemical	Space_Heat		6	2	0.5
70	Chemical	Water_Heat		6	2	0.5
71	Chemical	Water_Tube_Boiler		6	2	0.5
72	Fab_Metal	AC		6	2	0.5
73	Fab_Metal	Dryer		6	2	0.5
74	Fab_Metal	Engine		6	2	0.5
75	Fab_Metal	Fire_Tube_Boiler		6	2	0.5
76	Fab_Metal	Furnace_Oven_Kiln		6	2	0.5
77	Fab_Metal	Other		6	1	1
78	Fab_Metal	Space_Heat		6	2	0.5
79	Fab_Metal	Water_Heat		6	2	0.5
80	Fab_Metal	Water_Tube_Boiler		6	2	0.5
81	Food	AC		6	2	0.5
82	Food	Dryer		6	2	0.5
83	Food	Engine		6	2	0.5
84	Food	Fire_Tube_Boiler		6	2	0.5
85	Food	Furnace_Oven_Kiln		6	2	0.5
86	Food	Other		6	1	1
87	Food	Space_Heat		6	2	0.5
88	Food	Water_Heat		6	2	0.5

Noncore Industrial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
89	Food	Water_Tube_Boiler		6	2	0.5
90	Mining	AC		6	2	0.5
91	Mining	Dryer		6	2	0.5
92	Mining	Engine		6	2	0.5
93	Mining	Fire_Tube_Boiler		6	2	0.5
94	Mining	Furnace_Oven_Kiln		6	2	0.5
95	Mining	Other		6	1	1
96	Mining	Space_Heat		6	2	0.5
97	Mining	Water_Heat		6	2	0.5
98	Mining	Water_Tube_Boiler		6	2	0.5
99	Misc	AC		6	2	0.5
100	Misc	Dryer		6	2	0.5
101	Misc	Engine		6	2	0.5
102	Misc	Fire_Tube_Boiler		6	2	0.5
103	Misc	Furnace_Oven_Kiln		6	2	0.5
104	Misc	Other		6	1	1
105	Misc	Space_Heat		6	2	0.5
106	Misc	Water_Heat		6	2	0.5
107	Misc	Water_Tube_Boiler		6	2	0.5
108	Petroleum	Dryer		6	2	0.5
109	Petroleum	Engine		6	2	0.5
110	Petroleum	Fire_Tube_Boiler		6	2	0.5
111	Petroleum	Furnace_Oven_Kiln		6	2	0.5
112	Petroleum	Other		6	1	1
113	Petroleum	Space_Heat		6	2	0.5
114	Petroleum	Water_Heat		6	2	0.5
115	Petroleum	Water_Tube_Boiler		6	2	0.5
116	Prim_Metal	AC		6	2	0.5
117	Prim_Metal	Dryer		6	2	0.5
118	Prim_Metal	Fire_Tube_Boiler		6	2	0.5
119	Prim_Metal	Furnace_Oven_Kiln		6	2	0.5
120	Prim_Metal	Other		6	1	1
121	Prim_Metal	Space_Heat		6	2	0.5
122	Prim_Metal	Water_Heat		6	2	0.5
123	Prim_Metal	Water_Tube_Boiler		6	2	0.5
124	Stone	AC		6	2	0.5
125	Stone	Dryer		6	2	0.5
126	Stone	Fire_Tube_Boiler		6	2	0.5
127	Stone	Furnace_Oven_Kiln		6	2	0.5
128	Stone	Other		6	1	1
129	Stone	Space_Heat		6	2	0.5
130	Stone	Water_Heat		6	2	0.5
131	Stone	Water_Tube_Boiler		6	2	0.5
132	Textile	AC		6	2	0.5

Noncore Industrial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
133	Textile	Dryer		6	2	0.5
134	Textile	Fire_Tube_Boiler		6	2	0.5
135	Textile	Furnace_Oven_Kiln		6	2	0.5
136	Textile	Other		6	1	1
137	Textile	Space_Heat		6	2	0.5
138	Textile	Water_Heat		6	2	0.5
139	Textile	Water_Tube_Boiler		6	2	0.5
140	Transport	AC		6	2	0.5
141	Transport	Dryer		6	2	0.5
142	Transport	Engine		6	2	0.5
143	Transport	Fire_Tube_Boiler		6	2	0.5
144	Transport	Furnace_Oven_Kiln		6	2	0.5
145	Transport	Other		6	1	1
146	Transport	Space_Heat		6	2	0.5
147	Transport	Water_Heat		6	2	0.5
148	Transport	Water_Tube_Boiler		6	2	0.5
149	Wood_Paper	AC		6	2	0.5
150	Wood_Paper	Dryer		6	2	0.5
151	Wood_Paper	Fire_Tube_Boiler		6	2	0.5
152	Wood_Paper	Furnace_Oven_Kiln		6	2	0.5
153	Wood_Paper	Other		6	1	1
154	Wood_Paper	Space_Heat		6	2	0.5
155	Wood_Paper	Water_Heat		6	2	0.5
156	Wood_Paper	Water_Tube_Boiler		6	2	0.5
157	Chemical	AC	Electric	7	1	0.89
158	Chemical	AC	Natural_Gas	7	1	0.11
159	Chemical	Dryer	Electric	7	1	0.68
160	Chemical	Dryer	Natural_Gas	7	1	0.32
161	Chemical	Engine	Electric	7	1	0.99
162	Chemical	Engine	Natural_Gas	7	1	0.01
163	Chemical	Fire_Tube_Boiler	Electric	7	1	0.21
164	Chemical	Fire_Tube_Boiler	Natural_Gas	7	1	0.79
165	Chemical	Furnace_Oven_Kiln	Electric	7	1	0.38
166	Chemical	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62
167	Chemical	Other	Natural_Gas	7	1	1
168	Chemical	Space_Heat	Electric	7	1	0.39
169	Chemical	Space_Heat	Natural_Gas	7	1	0.61
170	Chemical	Water_Heat	Electric	7	1	0.41
171	Chemical	Water_Heat	Natural_Gas	7	1	0.59
172	Chemical	Water_Tube_Boiler	Electric	7	1	0.21
173	Chemical	Water_Tube_Boiler	Natural_Gas	7	1	0.79
174	Fab_Metal	AC	Electric	7	1	0.89
175	Fab_Metal	AC	Natural_Gas	7	1	0.11
176	Fab_Metal	Dryer	Electric	7	1	0.68

Noncore Industrial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
177	Fab_Metal	Dryer	Natural_Gas	7	1	0.32
178	Fab_Metal	Engine	Electric	7	1	0.99
179	Fab_Metal	Engine	Natural_Gas	7	1	0.01
180	Fab_Metal	Fire_Tube_Boiler	Electric	7	1	0.21
181	Fab_Metal	Fire_Tube_Boiler	Natural_Gas	7	1	0.79
182	Fab_Metal	Furnace_Oven_Kiln	Electric	7	1	0.38
183	Fab_Metal	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62
184	Fab_Metal	Other	Natural_Gas	7	1	1
185	Fab_Metal	Space_Heat	Electric	7	1	0.39
186	Fab_Metal	Space_Heat	Natural_Gas	7	1	0.61
187	Fab_Metal	Water_Heat	Electric	7	1	0.41
188	Fab_Metal	Water_Heat	Natural_Gas	7	1	0.59
189	Fab_Metal	Water_Tube_Boiler	Electric	7	1	0.21
190	Fab_Metal	Water_Tube_Boiler	Natural_Gas	7	1	0.79
191	Food	AC	Electric	7	1	0.89
192	Food	AC	Natural_Gas	7	1	0.11
193	Food	Dryer	Electric	7	1	0.68
194	Food	Dryer	Natural_Gas	7	1	0.32
195	Food	Engine	Electric	7	1	0.99
196	Food	Engine	Natural_Gas	7	1	0.01
197	Food	Fire_Tube_Boiler	Electric	7	1	0.21
198	Food	Fire_Tube_Boiler	Natural_Gas	7	1	0.79
199	Food	Furnace_Oven_Kiln	Electric	7	1	0.38
200	Food	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62
201	Food	Other	Natural_Gas	7	1	1
202	Food	Space_Heat	Electric	7	1	0.39
203	Food	Space_Heat	Natural_Gas	7	1	0.61
204	Food	Water_Heat	Electric	7	1	0.41
205	Food	Water_Heat	Natural_Gas	7	1	0.59
206	Food	Water_Tube_Boiler	Electric	7	1	0.21
207	Food	Water_Tube_Boiler	Natural_Gas	7	1	0.79
208	Mining	AC	Electric	7	1	0.89
209	Mining	AC	Natural_Gas	7	1	0.11
210	Mining	Dryer	Electric	7	1	0.68
211	Mining	Dryer	Natural_Gas	7	1	0.32
212	Mining	Engine	Electric	7	1	0.99
213	Mining	Engine	Natural_Gas	7	1	0.01
214	Mining	Fire_Tube_Boiler	Electric	7	1	0.25
215	Mining	Fire_Tube_Boiler	Natural_Gas	7	1	0.75
216	Mining	Furnace_Oven_Kiln	Electric	7	1	0.38
217	Mining	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62
218	Mining	Other	Natural_Gas	7	1	1
219	Mining	Space_Heat	Electric	7	1	0.39
220	Mining	Space_Heat	Natural_Gas	7	1	0.61

Noncore Industrial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
221	Mining	Water_Heat	Electric	7	1	0.41
222	Mining	Water_Heat	Natural_Gas	7	1	0.59
223	Mining	Water_Tube_Boiler	Electric	7	1	0.25
224	Mining	Water_Tube_Boiler	Natural_Gas	7	1	0.75
225	Misc	AC	Electric	7	1	0.89
226	Misc	AC	Natural_Gas	7	1	0.11
227	Misc	Dryer	Electric	7	1	0.68
228	Misc	Dryer	Natural_Gas	7	1	0.32
229	Misc	Engine	Electric	7	1	0.99
230	Misc	Engine	Natural_Gas	7	1	0.01
231	Misc	Fire_Tube_Boiler	Electric	7	1	0.21
232	Misc	Fire_Tube_Boiler	Natural_Gas	7	1	0.79
233	Misc	Furnace_Oven_Kiln	Electric	7	1	0.38
234	Misc	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62
235	Misc	Other	Natural_Gas	7	1	1
236	Misc	Space_Heat	Electric	7	1	0.39
237	Misc	Space_Heat	Natural_Gas	7	1	0.61
238	Misc	Water_Heat	Electric	7	1	0.41
239	Misc	Water_Heat	Natural_Gas	7	1	0.59
240	Misc	Water_Tube_Boiler	Electric	7	1	0.21
241	Misc	Water_Tube_Boiler	Natural_Gas	7	1	0.79
242	Petroleum	Dryer	Electric	7	1	0.68
243	Petroleum	Dryer	Natural_Gas	7	1	0.32
244	Petroleum	Engine	Electric	7	1	0.99
245	Petroleum	Engine	Natural_Gas	7	1	0.01
246	Petroleum	Fire_Tube_Boiler	Electric	7	1	0.21
247	Petroleum	Fire_Tube_Boiler	Natural_Gas	7	1	0.79
248	Petroleum	Furnace_Oven_Kiln	Electric	7	1	0.38
249	Petroleum	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62
250	Petroleum	Other	Natural_Gas	7	1	1
251	Petroleum	Space_Heat	Electric	7	1	0.39
252	Petroleum	Space_Heat	Natural_Gas	7	1	0.61
253	Petroleum	Water_Heat	Electric	7	1	0.41
254	Petroleum	Water_Heat	Natural_Gas	7	1	0.59
255	Petroleum	Water_Tube_Boiler	Electric	7	1	0.21
256	Petroleum	Water_Tube_Boiler	Natural_Gas	7	1	0.79
257	Prim_Metal	AC	Electric	7	1	0.89
258	Prim_Metal	AC	Natural_Gas	7	1	0.11
259	Prim_Metal	Dryer	Electric	7	1	0.68
260	Prim_Metal	Dryer	Natural_Gas	7	1	0.32
261	Prim_Metal	Fire_Tube_Boiler	Electric	7	1	0.21
262	Prim_Metal	Fire_Tube_Boiler	Natural_Gas	7	1	0.79
263	Prim_Metal	Furnace_Oven_Kiln	Electric	7	1	0.38
264	Prim_Metal	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62

Noncore Industrial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
265	Prim_Metal	Other	Natural_Gas	7	1	1
266	Prim_Metal	Space_Heat	Electric	7	1	0.39
267	Prim_Metal	Space_Heat	Natural_Gas	7	1	0.61
268	Prim_Metal	Water_Heat	Electric	7	1	0.41
269	Prim_Metal	Water_Heat	Natural_Gas	7	1	0.59
270	Prim_Metal	Water_Tube_Boiler	Electric	7	1	0.21
271	Prim_Metal	Water_Tube_Boiler	Natural_Gas	7	1	0.79
272	Stone	AC	Electric	7	1	0.89
273	Stone	AC	Natural_Gas	7	1	0.11
274	Stone	Dryer	Electric	7	1	0.68
275	Stone	Dryer	Natural_Gas	7	1	0.32
276	Stone	Fire_Tube_Boiler	Electric	7	1	0.21
277	Stone	Fire_Tube_Boiler	Natural_Gas	7	1	0.79
278	Stone	Furnace_Oven_Kiln	Electric	7	1	0.38
279	Stone	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62
280	Stone	Other	Natural_Gas	7	1	1
281	Stone	Space_Heat	Electric	7	1	0.39
282	Stone	Space_Heat	Natural_Gas	7	1	0.61
283	Stone	Water_Heat	Electric	7	1	0.41
284	Stone	Water_Heat	Natural_Gas	7	1	0.59
285	Stone	Water_Tube_Boiler	Electric	7	1	0.21
286	Stone	Water_Tube_Boiler	Natural_Gas	7	1	0.79
287	Textile	AC	Electric	7	1	0.89
288	Textile	AC	Natural_Gas	7	1	0.11
289	Textile	Dryer	Electric	7	1	0.68
290	Textile	Dryer	Natural_Gas	7	1	0.32
291	Textile	Fire_Tube_Boiler	Electric	7	1	0.21
292	Textile	Fire_Tube_Boiler	Natural_Gas	7	1	0.79
293	Textile	Furnace_Oven_Kiln	Electric	7	1	0.38
294	Textile	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62
295	Textile	Other	Natural_Gas	7	1	1
296	Textile	Space_Heat	Electric	7	1	0.39
297	Textile	Space_Heat	Natural_Gas	7	1	0.61
298	Textile	Water_Heat	Electric	7	1	0.41
299	Textile	Water_Heat	Natural_Gas	7	1	0.59
300	Textile	Water_Tube_Boiler	Electric	7	1	0.21
301	Textile	Water_Tube_Boiler	Natural_Gas	7	1	0.79
302	Transport	AC	Electric	7	1	0.89
303	Transport	AC	Natural_Gas	7	1	0.11
304	Transport	Dryer	Electric	7	1	0.68
305	Transport	Dryer	Natural_Gas	7	1	0.32
306	Transport	Engine	Electric	7	1	0.99
307	Transport	Engine	Natural_Gas	7	1	0.01
308	Transport	Fire_Tube_Boiler	Electric	7	1	0.25

Noncore Industrial Market
Fuel Shares by Business and End Uses

Obs	bName	nName	fName	_TYPE_	_FREQ_	Avg_FShare
309	Transport	Fire_Tube_Boiler	Natural_Gas	7	1	0.75
310	Transport	Furnace_Oven_Kiln	Electric	7	1	0.38
311	Transport	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62
312	Transport	Other	Natural_Gas	7	1	1
313	Transport	Space_Heat	Electric	7	1	0.39
314	Transport	Space_Heat	Natural_Gas	7	1	0.61
315	Transport	Water_Heat	Electric	7	1	0.41
316	Transport	Water_Heat	Natural_Gas	7	1	0.59
317	Transport	Water_Tube_Boiler	Electric	7	1	0.25
318	Transport	Water_Tube_Boiler	Natural_Gas	7	1	0.75
319	Wood_Paper	AC	Electric	7	1	0.89
320	Wood_Paper	AC	Natural_Gas	7	1	0.11
321	Wood_Paper	Dryer	Electric	7	1	0.68
322	Wood_Paper	Dryer	Natural_Gas	7	1	0.32
323	Wood_Paper	Fire_Tube_Boiler	Electric	7	1	0.25
324	Wood_Paper	Fire_Tube_Boiler	Natural_Gas	7	1	0.75
325	Wood_Paper	Furnace_Oven_Kiln	Electric	7	1	0.38
326	Wood_Paper	Furnace_Oven_Kiln	Natural_Gas	7	1	0.62
327	Wood_Paper	Other	Natural_Gas	7	1	1
328	Wood_Paper	Space_Heat	Electric	7	1	0.39
329	Wood_Paper	Space_Heat	Natural_Gas	7	1	0.61
330	Wood_Paper	Water_Heat	Electric	7	1	0.41
331	Wood_Paper	Water_Heat	Natural_Gas	7	1	0.59
332	Wood_Paper	Water_Tube_Boiler	Electric	7	1	0.25
333	Wood_Paper	Water_Tube_Boiler	Natural_Gas	7	1	0.75

2006 CALIFORNIA GAS REPORT

NATURAL GAS VEHICLES
JULY 2006

A Sempra Energy utility™

Natural Gas Vehicles

YEAR	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12	TOTAL	RATE	DELCODE	NGVTYPE
2005	12.8	12.4	13.4	6.1	13.4	13.1	14.1	15.1	13.8	14.3	9	8.2	132.9	GNV	N	C
2006	14.1	13.7	14.7	7.4	14.7	14.4	15.4	16.4	15.1	15.6	10.3	9.5	161.3	GNV	N	C
2007	15.4	15	16	8.7	16	15.7	16.7	17.7	16.4	16.9	11.6	10.8	176.9	GNV	N	C
2008	16.7	16.3	17.3	10	17.3	17	18	19	17.7	18.2	12.9	12.1	192.5	GNV	N	C
2009	18	17.6	18.6	11.3	18.6	18.3	19.3	20.3	19	19.5	14.2	13.4	208.1	GNV	N	C
2010	19.3	18.9	19.9	12.6	19.9	19.6	20.6	21.6	20.3	20.8	15.5	14.7	223.7	GNV	N	C
2011	20.6	20.2	21.2	13.9	21.2	20.9	21.9	22.9	21.6	22.1	16.8	16	239.3	GNV	N	C
2012	21.9	21.5	22.5	15.2	22.5	22.2	23.2	24.2	22.9	23.4	18.1	17.3	254.9	GNV	N	C
2013	23.2	22.8	23.8	16.5	23.8	23.5	24.5	25.5	24.2	24.7	19.4	18.6	270.5	GNV	N	C
2014	24.5	24.1	25.1	17.8	25.1	24.8	25.8	26.8	25.5	26	20.7	19.9	286.1	GNV	N	C
2015	25.8	25.4	26.4	19.1	26.4	26.1	27.1	28.1	26.8	27.3	22	21.2	301.7	GNV	N	C
2016	27.1	26.7	27.7	20.4	27.7	27.4	28.4	29.4	28.1	28.6	23.3	22.5	317.3	GNV	N	C
2017	28.4	28	29	21.7	29	28.7	29.7	30.7	29.4	29.9	24.6	23.8	332.9	GNV	N	C
2018	29.7	29.3	30.3	23	30.3	30	31	32	30.7	31.2	25.9	25.1	348.5	GNV	N	C
2019	31	30.6	31.6	24.3	31.6	31.3	32.3	33.3	32	32.5	27.2	26.4	364.1	GNV	N	C
2020	32.3	31.9	32.9	25.6	32.9	32.6	33.6	34.6	33.3	33.8	28.5	27.7	379.7	GNV	N	C
2021	33.6	33.2	34.2	26.9	34.2	33.9	34.9	35.9	34.6	35.1	29.8	29	395.3	GNV	N	C
2022	34.9	34.5	35.5	28.2	35.5	35.2	36.2	37.2	35.9	36.4	31.1	30.3	410.9	GNV	N	C
2023	36.2	35.8	36.8	29.5	36.8	36.5	37.5	38.5	37.2	37.7	32.4	31.6	426.5	GNV	N	C
2024	37.5	37.1	38.1	30.8	38.1	37.8	38.8	39.8	38.5	39	33.7	32.9	442.1	GNV	N	C
2025	38.8	38.4	39.4	32.1	39.4	39.1	40.1	41.1	39.8	40.3	35	34.2	457.7	GNV	N	C
2005	534.2	514.6	586.6	589.9	587.6	587.9	584.9	607.9	615.2	583.7	592	592.8	6977.3	GNV	N	U
2006	550.5	530.9	602.9	606.2	603.9	604.2	601.2	624.2	631.5	600	608.3	609.1	7172.9	GNV	N	U
2007	589.4	569.8	641.8	645.1	642.8	643.1	640.1	663.1	670.4	638.9	647.2	648	7639.7	GNV	N	U
2008	634.2	614.6	686.6	689.9	687.6	687.9	684.9	707.9	715.2	683.7	692	692.8	8177.3	GNV	N	U
2009	665.9	646.3	718.3	721.6	719.3	719.6	716.6	739.6	746.9	715.4	723.7	724.5	8557.7	GNV	N	U
2010	683.8	664.2	736.2	739.5	737.2	737.5	734.5	757.5	764.8	733.3	741.6	742.4	8772.5	GNV	N	U
2011	701.7	682.1	754.1	757.4	755.1	755.4	752.4	775.4	782.7	751.2	759.5	760.3	8987.3	GNV	N	U
2012	719.6	700	772	775.3	773	773.3	770.3	793.3	800.6	769.1	777.4	778.2	9202.1	GNV	N	U
2013	737.5	717.9	789.9	793.2	790.9	791.2	788.2	811.2	818.5	787	795.3	796.1	9416.9	GNV	N	U
2014	755.4	735.8	807.8	811.1	808.8	809.1	806.1	829.1	836.4	804.9	813.2	814	9631.7	GNV	N	U
2015	773.3	753.7	825.7	829	826.7	827	824	847	854.3	822.8	831.1	831.9	9846.5	GNV	N	U
2016	791.2	771.6	843.6	846.9	844.6	844.9	841.9	864.9	872.2	840.7	849	849.8	10061.3	GNV	N	U
2017	809.1	789.5	861.5	864.8	862.5	862.8	859.8	882.8	890.1	858.6	866.9	867.7	10276.1	GNV	N	U
2018	827	807.4	879.4	882.7	880.4	880.7	877.7	900.7	908	876.5	884.8	885.6	10490.9	GNV	N	U
2019	844.9	825.3	897.3	900.6	898.3	898.6	895.6	918.6	925.9	894.4	902.7	903.5	10705.7	GNV	N	U
2020	862.8	843.2	915.2	918.5	916.2	916.5	913.5	936.5	943.8	912.3	920.6	921.4	10920.5	GNV	N	U
2021	880.7	861.1	933.1	936.4	934.1	934.4	931.4	954.4	961.7	930.2	938.5	939.3	11135.3	GNV	N	U
2022	898.6	879	951	954.3	952	952.3	949.3	972.3	979.6	948.1	956.4	957.2	11350.1	GNV	N	U

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Natural Gas Vehicles

YEAR	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12	TOTAL	RATE	DELCODE	NGVTYPE
2023	916.5	896.9	968.9	972.2	969.9	970.2	967.2	990.2	997.5	966	974.3	975.1	11564.9	GNV	N	U
2024	934.4	914.8	986.8	990.1	987.8	988.1	985.1	1008.1	1015.4	983.9	992.2	993	11779.7	GNV	N	U
2025	952.3	932.7	1004.7	1008	1005.7	1006	1003	1026	1033.3	1001.8	1010.1	1010.9	11994.5	GNV	N	U
2005	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2006	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2007	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2008	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2009	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2010	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2011	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2012	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2013	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2014	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2015	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2016	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2017	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2018	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2019	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2020	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2021	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2022	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2023	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2024	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U
2025	0	0	0	0	0	0	0	0	0	0	0	0	0.0	GNV	T	U

File: [2006CGR.xls] ngv SES

2006 CGR

Compressed:
2005 throughput is actual received from Debbie Liou.
Throughput forecast increased at the rate of 1.0 % per year 2006 through 2025.

Uncompressed:
2005 throughput is actual received from Debbie Liou.
Uncompressed throughput forecast is expected to grow at the rate of 5.2% for the next four years because of trnsit bus load. The overall growth then decreases to 2.6% through 2025 as the transit bus market becomes saturated. Transits account for approximately 81% of the total uncompressed load.
Throughput increase over the next 20 years is expected to reach a total load of 12,000 Mdtherms. This throughput increase is expected to come from a smaller amount of additional transits and Port trucks which serve the LA and Long Beach Ports. CARB and the Ports are seeking ways to reduce emissions resulting from an estimated 18,000 trucks which will be serving the two Ports by 2020. NGVs are expected to play a significant role in the conversion of these trucks.

NGV stations are expected to grow from a 2005 level of 207 to approximately 500 by 2025, an average growth rate of 5% per year to accommodate the throughput growth.

7.54%	Station growth rate 2003 through 2005
4.52%	Station growth rate 2005 through 2012

2006 CALIFORNIA GAS REPORT

ENERGY EFFICIENCY
JULY 2006

Energy Efficiency

	2005 therms	2006 therms	2007 therms	2008 therms						
SoCalGas EE Program TOTAL	**15,384,279**	**18,126,925**	**23,305,854**	**26,672,877**						
PUC Goal	**9,600,000**	**14,700,000**	**19,300,000**	**23,300,000**	**27,200,000**	**28,300,000**	**29,900,000**	**32,300,000**	**35,800,000**	35,800,000
Difference	**5,784,279**	**3,426,925**	**4,005,854**	**3,372,877**						

SoCalGas	2005 therms	2006 therms	2007 therms	2008 therms	Avg. Wt.	
Core Residential	6,329,462	4,373,887	4,823,502	5,333,331	21%	**Commercial**
Core Commercial	5,647,009	8,517,078	11,521,439	13,373,330	49%	62%
Core Industrial	2,287,843	3,535,960	4,728,940	5,271,658	20%	25%
NonCore Commercial	138,349	210,000	275,714	332,857	1%	2%
NonCore Industrial retail	322,813	490,000	643,334	776,667	3%	4%
NonCore Industrial refinery	658,803	1,000,000	1,312,925	1,585,034	6%	7%
Total	**15,384,279**	**18,126,924**	**23,305,854**	**26,672,877**		

Proportionally scale it down to match PUC Goal for 2006, 2007, and 2008

ANNUAL NET SAVINGS	2005 Mdth	2006 Mdth	2007 Mdth	2008 Mdth	2009 Mdth	2010 Mdth	2011 Mdth	2012 Mdth	2013 Mdth	2014 Mdth
Core Residential	633	355	399	466	544	566	598	646	716	716
Core Commercial	565	691	954	1,168	1,364	1,419	1,499	1,619	1,795	1,795
Core Industrial	229	287	392	461	538	559	591	638	708	708
NonCore Commercial	14	17	23	29	34	35	37	40	45	45
NonCore Industrial retail	32	40	53	68	79	82	87	94	104	104
NonCore Industrial refinery	66	81	109	138	162	168	178	192	213	213
Total	**1,538**	**1,470**	**1,930**	**2,330**	**2,720**	**2,830**	**2,990**	**3,230**	**3,580**	**3,580**

Cumulative Savings Mdth	2005 Mdth	2006 Mdth	2007 Mdth	2008 Mdth	2009 Mdth	2010 Mdth	2011 Mdth	2012 Mdth	2013 Mdth	2014 Mdth
Core Residential	**633**	**988**	**1,387**	**1,853**	**2,397**	**2,963**	**3,561**	**4,206**	**4,922**	**5,638**
Core Commercial	**565**	**1,255**	**2,210**	**3,378**	**4,741**	**6,160**	**7,660**	**9,279**	**11,074**	**12,869**
Core Industrial	**229**	**516**	**907**	**1,368**	**1,905**	**2,465**	**3,056**	**3,694**	**4,401**	**5,109**
NonCore Commercial	**14**	**31**	**54**	**83**	**117**	**152**	**189**	**230**	**274**	**319**
NonCore Industrial regular	**32**	**72**	**125**	**193**	**272**	**355**	**442**	**536**	**640**	**744**
NonCore Industrial refinery	**66**	**147**	**256**	**394**	**556**	**724**	**902**	**1,094**	**1,306**	**1,519**
Total Load Impacts	**1,538**	**3,008**	**4,938**	**7,268**	**9,988**	**12,818**	**15,808**	**19,038**	**22,618**	**26,198**

MMCF factor: 1.0258

Cumulative Savings MMCF	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Core Residential	617	963	1,352	1,806	2,337	2,888	3,471	4,101	4,798	5,496
Core Commercial	550	1,224	2,154	3,293	4,622	6,005	7,467	9,046	10,795	12,545
Core Industrial	223	503	884	1,333	1,857	2,403	2,979	3,601	4,291	4,980
NonCore Commercial	13	30	52	81	114	148	185	224	267	311
NonCore Industrial	96	213	371	573	807	1,052	1,310	1,588	1,897	2,206
Total Cumulative Load	**1,500**	**2,933**	**4,814**	**7,086**	**9,737**	**12,496**	**15,411**	**18,560**	**22,050**	**25,540**

Energy Efficiency

SoCalGas EE Program TOTAL											
PUC Goal	35,800,000	35,800,000	35,800,000	35,800,000	35,800,000	35,800,000	35,800,000	35,800,000	35,800,000	35,800,000	35,800,000
Difference											

SoCalGas

Core Residential
Core Commercial
Core Industrial
NonCore Commercial
NonCore Industrial retail
NonCore Industrial refinery
Total

Proportionally scale it down to ma

ANNUAL NET SAVINGS	2015 Mdth	2016 Mdth	2017 Mdth	2018 Mdth	2019 Mdth	2020 Mdth	2021 Mdth	2022 Mdth	2023 Mdth	2024 Mdth	2025 Mdth
Core Residential	716	716	716	716	716	716	716	716	716	716	716
Core Commercial	1,795	1,795	1,795	1,795	1,795	1,795	1,795	1,795	1,795	1,795	1,795
Core Industrial	708	708	708	708	708	708	708	708	708	708	708
NonCore Commercial	45	45	45	45	45	45	45	45	45	45	45
NonCore Industrial retail	104	104	104	104	104	104	104	104	104	104	104
NonCore Industrial refinery	213	213	213	213	213	213	213	213	213	213	213
Total	**3,580**	**3,580**	**3,580**	**3,580**	**3,580**	**3,580**	**3,580**	**3,580**	**3,580**	**3,580**	**3,580**

Cumulative Savings Mdth	2015 Mdth	2016 Mdth	2017 Mdth	2018 Mdth	2019 Mdth	2020 Mdth	2021 Mdth	2022 Mdth	2023 Mdth	2024 Mdth	2025 Mdth
Core Residential	**6,354**	**7,070**	**7,786**	**8,501**	**9,217**	**9,300**	**9,661**	**9,978**	**10,228**	**10,400**	**10,550**
Core Commercial	**14,664**	**16,459**	**18,254**	**20,049**	**21,844**	**23,074**	**24,178**	**25,019**	**25,646**	**26,077**	**26,453**
Core Industrial	**5,817**	**6,524**	**7,232**	**7,939**	**8,647**	**9,126**	**9,546**	**9,862**	**10,109**	**10,279**	**10,428**
NonCore Commercial	**364**	**408**	**453**	**498**	**542**	**573**	**601**	**623**	**638**	**649**	**658**
NonCore Industrial regular	**849**	**953**	**1,057**	**1,161**	**1,266**	**1,338**	**1,402**	**1,453**	**1,489**	**1,514**	**1,536**
NonCore Industrial refinery	**1,732**	**1,945**	**2,157**	**2,370**	**2,583**	**2,730**	**2,861**	**2,965**	**3,040**	**3,091**	**3,135**
Total Load Impacts	**29,778**	**33,358**	**36,938**	**40,518**	**44,098**	**46,140**	**48,250**	**49,900**	**51,150**	**52,010**	**52,760**

Cumulative Savings MMCF	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Core Residential	6,194	6,892	7,590	8,288	8,985	9,066	9,418	9,727	9,970	10,138	10,284
Core Commercial	14,295	16,045	17,795	19,544	21,294	22,494	23,570	24,390	25,001	25,421	25,788
Core Industrial	5,670	6,360	7,050	7,740	8,429	8,896	9,306	9,614	9,855	10,021	10,165
NonCore Commercial	355	398	442	485	529	559	586	607	622	633	642
NonCore Industrial	2,516	2,825	3,134	3,443	3,752	3,965	4,156	4,307	4,415	4,489	4,554
Total Cumulative Load	**29,029**	**32,519**	**36,009**	**39,499**	**42,989**	**44,980**	**47,036**	**48,645**	**49,864**	**50,702**	**51,433**

2006 CALIFORNIA GAS REPORT

EXCHANGE DEMAND FORECAST
JULY 2006

2006 California Gas Report
Gas Exchange Demand Forecast

Overview

An interutility gas exchange agreement allows each utility to fulfill gas demand from gas provided by the other utility company. In the case of Pacific Gas and Electric Company (PG&E) and Southern California Gas Company (SCG) such an exchange agreement is contained in the Master Exchange Agreement (MEA).

Interutility Exchange Demand Forecasts

The exchange of gas between SCG and PG&E has been in practice since 1949. With the termination of the General Service Mutual Assistance Agreement between the two companies in May 5, 1988, the CPUC ordered the two companies to renegotiate a uniform procedure for exchanging gas. This instrument is now called the Master Exchange Agreement, which the CPUC approved on February 7, 1990.

The primary purpose of the MEA exchange forecast is to establish the net revenues/costs resulting from the services mutually provided by PG&E and SoCalGas. Monthly gas load under the MEA from 2004 to 2005 formed the forecasts for the exchange gas load. Exchange load is expected to remain stable as has been in the past years. Table 1 summarizes the forecast for SCG gas deliveries under the Master Exchange Agreement.

Table 1
MEA - SoCalGas to PG&E Delivery Forecast (Mdth)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2005	84	55	36	28	22	18	17	17	18	23	41	69	428
2006	84	55	36	28	22	18	17	17	18	23	41	69	428
2007	84	55	36	28	22	18	17	17	18	23	41	69	428
2008	84	55	36	28	22	18	17	17	18	23	41	69	428
2009	84	55	36	28	22	18	17	17	18	23	41	69	428
2010	84	55	36	28	22	18	17	17	18	23	41	69	428
2011	84	55	36	28	22	18	17	17	18	23	41	69	428
2012	84	55	36	28	22	18	17	17	18	23	41	69	428
2013	84	55	36	28	22	18	17	17	18	23	41	69	428
2014	84	55	36	28	22	18	17	17	18	23	41	69	428
2015	84	55	36	28	22	18	17	17	18	23	41	69	428
2016	84	55	36	28	22	18	17	17	18	23	41	69	428
2017	84	55	36	28	22	18	17	17	18	23	41	69	428
2018	84	55	36	28	22	18	17	17	18	23	41	69	428
2019	84	55	36	28	22	18	17	17	18	23	41	69	428
2020	84	55	36	28	22	18	17	17	18	23	41	69	428
2021	84	55	36	28	22	18	17	17	18	23	41	69	428
2022	84	55	36	28	22	18	17	17	18	23	41	69	428
2023	84	55	36	28	22	18	17	17	18	23	41	69	428
2024	84	55	36	28	22	18	17	17	18	23	41	69	428
2025	84	55	36	28	22	18	17	17	18	23	41	69	428

2006 CALIFORNIA GAS REPORT

EOR STEAMING
JULY 2006

ENHANCED OIL RECOVERY - STEAMING

FORECAST METHODOLOGY FOR THE 2006 CALIFORNIA GAS REPORT

Southern California Gas' ("SoCalGas") forecast of enhanced oil recovery ("EOR") steaming gas requirements as reported in the *2006 California Gas Report* ("CGR") is based on customer-specific historical data and market analysis. The major steps in developing this forecast are outlined below and described in detail in the following pages.

- Analyze Historical Gas Demand
- Evaluate Market Potential
- Calculate Effect of Bypass

A. Analyze Historical Gas Demand

Historical customer gas demand data for the period 2003 through 2005 were analyzed in order to determine typical throughput volumes over the past few years. FERC reports from Kern River Transmission Company and the Mojave Pipeline Company ("Kern/Mojave"), Format NO. FERC 567, from the same time period were studied in order to determine bypass trends.

B. Evaluate Market Potential

Potential EOR gas demand was determined by considering market information given the following assumptions:

1. Oil prices will be high enough for EOR production to be economically desirable.
2. SoCalGas has no capacity or supply constraints.
3. Air quality regulations will continue to either require or encourage the use of gas, rather than oil, in all areas.

Although the CGR oil price scenario is favorable for EOR production, the EOR steaming forecast assumes no major production projects will start up during the forecast time period. However, it does assume that production from new smaller projects will replace production from wells that will be depleted during this time period.

C. Calculate Effect of Bypass

The Kern/Mojave pipelines began operating in February, 1992. At that time, many of SoCalGas' customers began taking service directly from the pipelines, thereby bypassing SoCalGas' distribution system.

Several factors were taken into consideration in order to forecast future bypass volumes. These factors were: the customer's geographical location, the

amount of natural gas a customer has contracted to move on the Kern/Mojave pipelines; the quantities of gas the customer has under its long-term contract with SoCalGas; the amount of Kern/Mojave gas available from marketers who have no designated end-users; and the amount of gas currently bypassing SoCalGas' distribution system.

Based on these considerations, the following assumptions were made:

1. EOR demand for customers located in the Los Angeles Basin and Santa Barbara and Ventura areas will not bypass SoCalGas' distribution system.
2. Customers who have already bypassed SoCalGas' system will continue to bypass at their current levels.
3. Customers located in the San Joaquin Valley who have long-term transportation contracts with SoCalGas will increase their level of bypass when their contracts expire during 2008 and 2009.

The forecast of gas demand for EOR steaming is shown in the following table.

2006 CALIFORNIA GAS REPORT - EOR STEAMING FORECAST (2006 - 2025)
(MMCFD)

	HISTORICAL			FORECAST																			
SOCALGAS DELIVERIES	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Long-Term Contract Customers	26	20	19	18	18	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-Term Contract Customers	16	15	15	16	16	17	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
Total Deliveries	42	35	34	34	34	29	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19

2006 CALIFORNIA GAS REPORT

ELECTRIC GENERATION
JULY 2006

2006 CALIFORNIA GAS REPORT

NON-COGENERATION ELECTRIC GENERATION
JULY 2006

Non-cogeneration Electric Generation (EG)

The MARKETSYM production cost model was used to prepare the natural gas demand for SoCalGas' EG customers through 2025.

SoCalGas performed a dry hydro sensitivity, 1-in-10 dry hydro year, as defined by the CEC. The attached detail summarizes by year and by month the gas demand through 2025 and by year for years 2006 through 2025, including the sensitivities.

Non-cogeneration Electric Generation (EG)
Mdth

	Average Hydro	Dry Hydro
2006	170,379	185,182
2007	183,906	200,444
2008	204,493	222,781
2009	172,802	183,933
2010	154,945	168,159
2011	156,465	168,055
2012	160,091	172,335
2013	162,654	174,803
2014	165,217	177,271
2015	167,858	179,814
2016	172,030	184,177
2017	180,182	192,709
2018	180,375	192,902
2019	184,547	197,265
2020	188,719	201,628
2021	196,898	212,614
2022	212,838	233,846
2023	213,256	234,587
2024	221,435	245,573
2025	229,613	256,560

Non-cogeneration Electric Generation (EG) - Average
Mdth

	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12
2006	9,440	8,861	10,006	12,591	12,576	15,118	20,784	21,258	18,583	13,972	13,360	13,829
2007	13,429	12,067	13,831	12,434	12,715	15,473	21,319	21,782	19,012	14,044	13,651	14,150
2008	13,588	12,353	14,084	13,029	13,142	17,274	23,610	24,667	20,737	17,673	16,958	17,378
2009	13,660	12,282	13,981	12,781	13,046	13,264	18,429	18,915	16,087	13,680	13,076	13,601
2010	11,997	10,642	11,997	10,810	10,997	12,025	16,951	17,561	14,675	12,809	12,071	12,410
2011	12,130	10,905	12,040	11,129	11,134	12,254	17,112	17,757	14,763	12,860	11,985	12,397
2012	12,209	11,114	12,547	11,378	11,169	12,619	17,527	18,170	15,426	13,248	12,042	12,642
2013	12,367	11,201	12,657	11,623	11,448	12,840	17,905	18,680	15,695	13,407	12,125	12,706
2014	12,525	11,288	12,767	11,868	11,726	13,061	18,282	19,191	15,964	13,567	12,208	12,770
2015	12,688	11,378	12,880	12,120	12,014	13,289	18,670	19,718	16,240	13,731	12,294	12,836
2016	12,881	11,590	13,111	12,331	12,242	13,666	19,118	20,310	16,625	13,984	12,720	13,453
2017	13,073	12,014	13,572	12,754	12,699	14,420	20,014	21,495	17,393	14,490	13,571	14,687
2018	13,266	12,014	13,572	12,754	12,699	14,420	20,014	21,495	17,393	14,490	13,571	14,687
2019	13,459	12,226	13,803	12,966	12,927	14,796	20,462	22,087	17,778	14,743	13,996	15,304
2020	13,651	12,438	14,034	13,177	13,156	15,173	20,910	22,679	18,162	14,996	14,421	15,921
2021	14,069	12,789	14,276	13,506	13,652	16,048	22,317	23,972	19,126	15,542	15,047	16,555
2022	14,487	13,491	14,760	14,164	14,645	17,798	25,130	26,556	21,053	16,633	16,298	17,821
2023	14,905	13,491	14,760	14,164	14,645	17,798	25,130	26,556	21,053	16,633	16,298	17,821
2024	15,323	13,841	15,002	14,494	15,141	18,673	26,537	27,849	22,017	17,179	16,924	18,454
2025	15,741	14,192	15,244	14,823	15,638	19,548	27,944	29,141	22,981	17,725	17,549	19,087

Non-cogeneration Electric Generation (EG) - Dry Hydro
Mdth

	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12
2006	9,440	8,861	10,006	13,688	14,110	17,212	24,054	24,421	20,663	14,651	13,656	14,420
2007	14,431	12,928	14,603	13,673	14,095	17,571	24,618	24,934	20,710	14,553	13,848	14,482
2008	14,592	13,274	14,736	14,206	14,754	19,485	26,997	28,133	22,660	18,397	17,476	18,070
2009	14,240	12,789	14,475	14,087	14,244	14,556	20,381	20,959	17,168	14,089	13,110	13,837
2010	12,702	11,440	13,041	12,731	12,711	13,539	18,979	19,154	15,514	13,373	12,292	12,684
2011	12,743	11,305	12,817	12,684	12,584	13,690	19,232	19,389	15,526	13,241	12,055	12,788
2012	12,680	11,574	13,059	12,749	12,794	14,010	19,644	20,296	16,628	13,691	12,167	13,044
2013	12,799	11,670	13,090	12,892	12,948	14,274	20,095	20,858	16,878	13,931	12,250	13,117
2014	12,918	11,765	13,122	13,036	13,103	14,538	20,545	21,421	17,127	14,171	12,334	13,191
2015	13,040	11,864	13,155	13,184	13,262	14,811	21,009	22,001	17,384	14,419	12,420	13,266
2016	13,234	12,045	13,385	13,336	13,482	15,216	21,437	22,545	17,744	14,664	13,085	14,003
2017	13,428	12,408	13,846	13,640	13,921	16,028	22,292	23,633	18,464	15,156	14,417	15,477
2018	13,622	12,408	13,846	13,640	13,921	16,028	22,292	23,633	18,464	15,156	14,417	15,477
2019	13,815	12,590	14,076	13,792	14,141	16,434	22,720	24,177	18,823	15,401	15,082	16,214
2020	14,009	12,771	14,306	13,944	14,361	16,839	23,148	24,720	19,183	15,647	15,748	16,951
2021	14,750	13,349	14,793	14,358	15,000	18,129	25,008	26,535	20,359	16,319	16,334	17,680
2022	15,490	14,503	15,769	15,186	16,278	20,709	28,728	30,165	22,709	17,663	17,506	19,139
2023	16,231	14,503	15,769	15,186	16,278	20,709	28,728	30,165	22,709	17,663	17,506	19,139
2024	16,971	15,081	16,256	15,600	16,917	21,999	30,588	31,980	23,885	18,335	18,092	19,869
2025	17,712	15,658	16,744	16,014	17,556	23,289	32,449	33,795	25,060	19,006	18,678	20,598

2006 CALIFORNIA GAS REPORT

INDUSTRIAL/COMMERCIAL COGENERATION < 20MW
JULY 2006

Commercial/Industrial Cogeneration < 20 MW
Demand Forecast

Overview

The small electric generation (EG) demand forecast describes in this workpapers is for electric generation customers who have installed equipment primarily to generate electricity for their own use rather than to sell the power to an electric utility. The generating capacity for the customers in this market is less than 20 megawatt.

The forecast of small EG demand is estimated as total demand from SoCalGas' existing small EG customers plus the new added load due to expected participation in the CPUC-authorized Self-Generation Incentive Program (SGIP).

Forecast Methodology

A. Demand Forecast for Small EG (Non-SGIP)

Demand forecast for the Small EG (Non-SGIP) load are estimated individually. Demand for each customer is projected to grow from the previous year's level by the anticipated employment growth of the business. The employment growth for each business sector (classified by NAICS – North American Industry Classification System) is based on Global Insight's Winter 2005/2006 forecast shown in section Service Area Economic Forecast of these workpapers.

In another word, gas demand for individual facility is determined as following:

$$Use_{(Year, NAICS)} = Use_{(Year-1, NAICS)} * Growth_{(Year, NAICS)}$$

Table 1 shows monthly demand forecast for the small EG (Non-SGIP) to 2025.

B. Demand Forecast for SGIP

The Self-Generation Incentive Program (SGIP) is the successor of the AB970 program that was signed into law on September 6, 2000 and required the CPUC to initiate activities in the area of load control and distributed generation. The CPUC issued Decision D. 01-03-073 on March 27, 2001 that authorized a self-generation incentive program to be applied across utility service areas. The term self-generation as used here refers to distributed generation technologies (small gas turbines and internal combustion engine, wind turbine, photovoltaics and fuel cells) installed on the customer's side of the meter. These technologies are required to provide a portion or the customer's entire electric load and for those using natural gas waste heat recovery from the electric power generation system is required. SoCalGas launched its portion of the program on July 9, 2001.

SoCalGas' SGIP provides businesses financial incentives to encourage the installation of various electric generation technologies. The gas demand forecast for the SGIP program refers to added load from:

1) Non-Renewable fuel cells,
2) Non-Renewable & Waste Gas fuel microturbines and small gas turbines, and
3) Non-Renewable & Waste Gas fuel internal combustion engines and large gas turbines.

Where large gas turbines are ≥ 1 MW in capacity, and small gas turbines and microturbines are < 1 MW in capacity.

In determining the amount of added load from the SGIP, SoCalGas averages the added load from 2004 and 2005, and projects the same amount of added load each year to 2017 under the assumption that funding for the SGIP would continue to 2017. After 2017, the amount of added load is expected to remain constant. The forecast for SGIP under the G50 rate is included in the large EG forecast and the SGIP forecast under the G10 rate is included in the core commercial and industrial forecast.

Table 2 shows monthly demand forecast for SoCalGas' SGIP to 2025.

Table 1
Small Cogeneration Demand Forecast (Excluding Self-Generation Incentive Program) in MDth

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2006	1,524	1,323	1,506	1,469	1,559	1,639	1,705	1,728	1,596	1,528	1,398	1,460	18,436
2007	1,547	1,342	1,528	1,490	1,582	1,663	1,730	1,754	1,620	1,551	1,418	1,481	18,707
2008	1,562	1,356	1,544	1,506	1,598	1,680	1,748	1,772	1,637	1,567	1,433	1,496	18,898
2009	1,577	1,369	1,559	1,520	1,613	1,696	1,765	1,788	1,652	1,582	1,447	1,510	19,079
2010	1,590	1,380	1,572	1,533	1,626	1,710	1,779	1,803	1,666	1,595	1,459	1,523	19,236
2011	1,600	1,388	1,581	1,542	1,636	1,720	1,790	1,814	1,675	1,604	1,467	1,532	19,348
2012	1,608	1,396	1,590	1,550	1,645	1,730	1,800	1,824	1,685	1,613	1,475	1,540	19,456
2013	1,618	1,404	1,599	1,559	1,655	1,740	1,811	1,835	1,695	1,623	1,484	1,550	19,573
2014	1,627	1,412	1,608	1,568	1,664	1,750	1,820	1,845	1,704	1,631	1,492	1,558	19,678
2015	1,634	1,418	1,615	1,575	1,671	1,757	1,828	1,853	1,712	1,639	1,499	1,565	19,766
2016	1,643	1,426	1,624	1,583	1,680	1,767	1,838	1,863	1,721	1,647	1,507	1,573	19,870
2017	1,654	1,435	1,634	1,594	1,691	1,778	1,850	1,875	1,732	1,658	1,517	1,584	20,002
2018	1,664	1,444	1,644	1,603	1,701	1,789	1,862	1,887	1,743	1,668	1,526	1,593	20,124
2019	1,673	1,452	1,654	1,613	1,711	1,800	1,872	1,898	1,753	1,678	1,535	1,603	20,242
2020	1,685	1,463	1,666	1,624	1,724	1,813	1,886	1,911	1,765	1,690	1,546	1,614	20,387
2021	1,694	1,470	1,675	1,633	1,733	1,822	1,896	1,921	1,775	1,699	1,554	1,623	20,495
2022	1,705	1,480	1,686	1,644	1,744	1,834	1,908	1,934	1,786	1,710	1,564	1,633	20,629
2023	1,717	1,490	1,697	1,655	1,756	1,847	1,921	1,947	1,799	1,722	1,575	1,644	20,769
2024	1,729	1,500	1,709	1,666	1,768	1,859	1,934	1,960	1,811	1,734	1,586	1,656	20,912
2025	1,741	1,511	1,721	1,678	1,780	1,872	1,948	1,974	1,824	1,746	1,597	1,667	21,058

Table 2
Small Generation Demand Forecast for the Self-Generation Incentive Program in MDth

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2006	0.28	0.56	0.85	1.13	1.41	1.69	1.97	2.26	2.54	2.82	3.10	3.38	22.00
2007	0.56	1.13	1.69	2.26	2.82	3.38	3.95	4.51	5.08	5.64	6.21	6.77	44.00
2008	0.85	1.69	2.54	3.38	4.23	5.08	5.92	6.77	7.62	8.46	9.31	10.15	66.00
2009	1.13	2.26	3.38	4.51	5.64	6.77	7.90	9.03	10.15	11.28	12.41	13.54	88.00
2010	1.41	2.82	4.23	5.64	7.05	8.46	9.87	11.28	12.69	14.10	15.51	16.92	110.00
2011	1.69	3.38	5.08	6.77	8.46	10.15	11.85	13.54	15.23	16.92	18.62	20.31	132.00
2012	1.97	3.95	5.92	7.90	9.87	11.85	13.82	15.79	17.77	19.74	21.72	23.69	154.00
2013	2.26	4.51	6.77	9.03	11.28	13.54	15.79	18.05	20.31	22.56	24.82	27.08	176.00
2014	2.54	5.08	7.62	10.15	12.69	15.23	17.77	20.31	22.85	25.38	27.92	30.46	198.00
2015	2.82	5.64	8.46	11.28	14.10	16.92	19.74	22.56	25.38	28.21	31.03	33.85	220.00
2016	3.10	6.21	9.31	12.41	15.51	18.62	21.72	24.82	27.92	31.03	34.13	37.23	242.00
2017	3.38	6.77	10.15	13.54	16.92	20.31	23.69	27.08	30.46	33.85	37.23	40.62	264.00
2018	3.38	6.77	10.15	13.54	16.92	20.31	23.69	27.08	30.46	33.85	37.23	40.62	264.00
2019	3.38	6.77	10.15	13.54	16.92	20.31	23.69	27.08	30.46	33.85	37.23	40.62	264.00
2020	3.38	6.77	10.15	13.54	16.92	20.31	23.69	27.08	30.46	33.85	37.23	40.62	264.00
2021	3.38	6.77	10.15	13.54	16.92	20.31	23.69	27.08	30.46	33.85	37.23	40.62	264.00
2022	3.38	6.77	10.15	13.54	16.92	20.31	23.69	27.08	30.46	33.85	37.23	40.62	264.00
2023	3.38	6.77	10.15	13.54	16.92	20.31	23.69	27.08	30.46	33.85	37.23	40.62	264.00
2024	3.38	6.77	10.15	13.54	16.92	20.31	23.69	27.08	30.46	33.85	37.23	40.62	264.00
2025	3.38	6.77	10.15	13.54	16.92	20.31	23.69	27.08	30.46	33.85	37.23	40.62	264.00

2006 CALIFORNIA GAS REPORT

INDUSTRIAL/COMMERCIAL COGENERATION > 20 MW
JULY 2006

Industrial/Commercial Cogeneration (>20 MW)

The MARKETSYM production cost model was used to prepare the natural gas demand through 2025. The attached detail summarizes by year and by month the gas demand through 2025.

Industrial/Commercial Cogeneration (>20 MW) - Average Hydro
Mdth

YEAR	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12	TOTAL
2006	5,223	4,442	4,486	4,529	4,519	4,744	5,146	5,111	4,844	4,851	4,556	4,735	57,186
2007	4,596	4,034	4,530	4,503	4,616	4,709	5,161	5,099	4,877	4,852	4,508	4,785	56,269
2008	4,589	4,193	4,555	4,494	4,589	4,761	5,124	5,171	4,899	4,843	4,519	4,758	56,495
2009	4,554	4,056	4,555	4,498	4,553	4,802	5,093	5,169	4,882	4,861	4,504	4,760	56,288
2010	4,559	4,040	4,516	4,486	4,546	4,659	5,080	5,102	4,789	4,893	4,496	4,714	55,879
2011	2,310	2,030	2,297	2,232	2,269	2,372	2,595	2,577	2,460	2,428	2,290	2,381	28,242
2012	2,308	2,089	2,316	2,246	2,295	2,378	2,617	2,597	2,469	2,437	2,269	2,403	28,424
2013	2,303	2,071	2,314	2,243	2,297	2,392	2,616	2,613	2,472	2,450	2,265	2,398	28,434
2014	2,298	2,053	2,312	2,240	2,299	2,406	2,616	2,629	2,475	2,463	2,261	2,393	28,444
2015	2,293	2,035	2,310	2,237	2,300	2,420	2,616	2,645	2,478	2,476	2,257	2,387	28,454
2016	2,297	2,053	2,313	2,234	2,306	2,421	2,627	2,651	2,492	2,477	2,267	2,390	28,527
2017	2,300	2,089	2,318	2,229	2,317	2,423	2,649	2,662	2,520	2,479	2,287	2,397	28,670
2018	2,304	2,089	2,318	2,229	2,317	2,423	2,649	2,662	2,520	2,479	2,287	2,397	28,673
2019	2,307	2,107	2,321	2,226	2,322	2,424	2,660	2,668	2,534	2,480	2,298	2,400	28,746
2020	2,311	2,125	2,323	2,223	2,328	2,425	2,672	2,674	2,548	2,481	2,308	2,403	28,819
2021	2,318	2,120	2,325	2,241	2,329	2,450	2,693	2,707	2,564	2,501	2,311	2,417	28,976
2022	2,325	2,111	2,330	2,276	2,332	2,499	2,735	2,774	2,596	2,543	2,316	2,446	29,282
2023	2,332	2,111	2,330	2,276	2,332	2,499	2,735	2,774	2,596	2,543	2,316	2,446	29,289
2024	2,339	2,106	2,332	2,294	2,333	2,524	2,756	2,808	2,612	2,564	2,319	2,460	29,446
2025	2,345	2,101	2,334	2,311	2,335	2,549	2,777	2,841	2,627	2,585	2,322	2,474	29,602

Industrial/Commercial Cogeneration (>20 MW) - Dry Hydro
Mdth

YEAR	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12	TOTAL
2006	5,223	4,442	4,486	4,577	4,605	4,861	5,307	5,296	4,960	4,891	4,583	4,773	58,003
2007	4,630	4,067	4,566	4,543	4,692	4,828	5,313	5,274	4,978	4,877	4,519	4,825	57,112
2008	4,644	4,235	4,587	4,548	4,677	4,878	5,274	5,344	4,998	4,876	4,572	4,813	57,446
2009	4,582	4,083	4,588	4,552	4,624	4,900	5,221	5,319	4,976	4,897	4,513	4,785	57,040
2010	4,577	4,061	4,543	4,509	4,595	4,719	5,200	5,213	4,843	4,910	4,508	4,727	56,404
2011	2,324	2,044	2,326	2,242	2,310	2,443	2,711	2,691	2,512	2,453	2,297	2,398	28,750
2012	2,317	2,105	2,343	2,268	2,336	2,454	2,731	2,725	2,547	2,460	2,277	2,422	28,985
2013	2,313	2,088	2,340	2,269	2,334	2,466	2,728	2,734	2,550	2,472	2,274	2,417	28,985
2014	2,310	2,070	2,338	2,269	2,331	2,478	2,725	2,743	2,554	2,484	2,270	2,411	28,984
2015	2,307	2,052	2,335	2,270	2,329	2,490	2,722	2,753	2,558	2,496	2,266	2,405	28,983
2016	2,308	2,067	2,333	2,260	2,329	2,477	2,712	2,737	2,556	2,493	2,274	2,405	28,950
2017	2,309	2,096	2,328	2,242	2,328	2,451	2,692	2,705	2,552	2,487	2,291	2,404	28,884
2018	2,309	2,096	2,328	2,242	2,328	2,451	2,692	2,705	2,552	2,487	2,291	2,404	28,885
2019	2,310	2,110	2,326	2,232	2,328	2,438	2,682	2,690	2,550	2,484	2,299	2,403	28,852
2020	2,311	2,125	2,323	2,223	2,328	2,425	2,672	2,674	2,548	2,481	2,308	2,403	28,819
2021	2,321	2,124	2,329	2,245	2,346	2,465	2,709	2,725	2,575	2,507	2,317	2,428	29,092
2022	2,331	2,123	2,340	2,288	2,382	2,546	2,783	2,828	2,630	2,561	2,336	2,478	29,627
2023	2,342	2,123	2,340	2,288	2,382	2,546	2,783	2,828	2,630	2,561	2,336	2,478	29,637
2024	2,352	2,122	2,345	2,310	2,401	2,586	2,821	2,880	2,657	2,587	2,346	2,503	29,910
2025	2,362	2,122	2,351	2,331	2,419	2,626	2,858	2,931	2,684	2,614	2,355	2,529	30,182

2006 CALIFORNIA GAS REPORT

EOR RELATED COGENERATION
JULY 2006

A Sempra Energy utility™

ENHANCED OIL RECOVERY - COGENERATION

FORECAST METHODOLOGY FOR THE 2006 CALIFORNIA GAS REPORT

Southern California Gas' ("SoCalGas") forecast of enhanced oil recovery ("EOR") cogeneration gas requirements as reported in the *2006 California Gas Report* ("CGR") is based on customer-specific historical data and market analysis. The major steps in developing this forecast are outlined below and described in detail in the following pages.

- Analyze Historical Gas Demand
- Evaluate Market Potential
- Calculate Effect of Bypass

A. Analyze Historical Gas Demand

Historical customer gas demand data for the period 2003 through 2005 were analyzed in order to determine typical throughput volumes over the past few years. FERC reports from Kern River Transmission Company and the Mojave Pipeline Company ("Kern/Mojave"), Format NO. FERC 567, from the same time period were studied in order to determine bypass trends.

B. Evaluate Market Potential

Potential EOR gas demand was determined by considering market information given the following assumptions:

1. Oil prices will be high enough for EOR production to be economically desirable.
2. SoCalGas has no capacity or supply constraints.
3. Air quality regulations will continue to either require or encourage the use of gas, rather than oil, in all areas.
4. Most cogeneration facilities are not alternate fuel capable.

No additional EOR congeneration projects are scheduled to start up during the forecast period.

C. Calculate Effect of Bypass

The Kern/Mojave pipelines began operating in February, 1992. At that time, many of SoCalGas' customers began taking service directly from the pipelines, thereby bypassing SoCalGas' distribution system.

Several factors were taken into consideration in order to forecast future bypass volumes. These factors were: the customer's geographical location, the amount of natural gas a customer has contracted to move on the Kern/Mojave pipelines; the quantities of gas the customer has under its long-term contract with SoCalGas; the amount of Kern/Mojave gas available from marketers who

have no designated end-users; and the amount of gas currently bypassing SoCalGas' distribution system.

Based on these considerations, the following assumptions were made:

1. EOR demand for customers located in the Los Angeles Basin and Santa Barbara and Ventura areas will not bypass SoCalGas' distribution system.
2. Customers who have already bypassed SoCalGas' system will continue to bypass at their current levels.
3. Customers located in the San Joaquin Valley who have long-term transportation contracts with SoCalGas will increase their level of bypass when their contracts expire during 2008 and 2009.

The forecast of gas demand for EOR cogeneration is shown in the following table.

2006 CALIFORNIA GAS REPORT - EOR COGENERATION FORECAST (2006 - 2025)
(MMCFD)

	HISTORICAL			FORECAST																			
SOCALGAS DELIVERIES	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Long-Term Contract Customers	36	30	30	30	30	30	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Short-Term Contract Customers	12	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Total Deliveries	48	40	40	40	40	40	15	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

2006 CALIFORNIA GAS REPORT

REFINERY-RELATED COGENERATION
JULY 2006

Southern California Gas Company
Refinery Segment Gas Demand Forecast
Workpaper in Support of CGR 2006

I. OVERVIEW

These workpapers document the forecasting methodology for refinery segment gas demand. SoCalGas' refinery segment consists of 15 petroleum refining customers classified in SIC2911, 9 refinery-related cogenerators, 3 hydrogen producers and 1 petroleum refined product transporters. These customers are characterized by a complex interaction of refinery operations, on-site generation of alternate fuels, and changing regulatory requirements impacting the production of petroleum products. Therefore, the demand forecasts for the refinery market incorporate factors such as refinery operations, alternate fuels competition and gasoline/environmental regulations.

II. FORECASTING METHODOLOGY FOR REFINERY SEGMENT GAS DEMAND

The refinery segment gas demand forecast is developed by the following procedures.

A). Develop an econometric model to forecast total gas demand for refinery segment customers.

B). Incorporate the incremental petroleum coke fuel switching volumes to the econometric model output.

C). Incorporate savings due to the CPUC mandated energy efficiency programs to the econometric model output.

D). Split the final gas demand forecast by G30 and EG rate class categories.

A) ECONOMETRIC MODEL

1. Introduction

The refinery market is first forecasted by an econometric model with monthly historic data. The refinery segment gas demand model is a multiple log-linear regression model. The model includes a binary variable to reflect increased noncore demand beginning November 1999 due to one additional customer coming on line.

The refinery segment demand forecast model is developed using historical data from January 1998 through December 2005. The forecast period is from January 2006 through December 2025. Section 2 provides an overview of the input data sets. Section 3 describes the formulation and estimation results of the model. Section 4 shows the econometric forecast result and comparison with the historic data from January 1998 through December 2005.

2. Input Data

The refinery segment gas demand model is calibrated using monthly data from the historical database for the period January 1998 through December 2005. The endogenous (dependent variable) variable is the total refinery segment gas usage. The exogenous variables are monthly gas prices, butane prices and a binary variable. Descriptions for each of these data components are listed below. The input data are listed in the Appendix.

* Historic Gas Usage

Historic monthly gas usage data for refinery segment customers are obtained from SoCalGas Customer Billing Records for the period January 1998 through December 2005. The monthly usage data are then further divided by the number of days for each month to come up with the average daily usage by month.

* Gas Prices

The gas prices are the burner tip gas prices which consist of gas cost, transportation rate, municipal surcharge and PPP (Public Purpose Programs) surcharge. The California Border Spot Prices (CBSP) are used as a proxy for gas cost. The monthly transportation rates for the historic period are generated by taking the monthly recorded revenues divided by the actual throughput. For the forecast period, the forecast weighted average tariff rate is used as transportation rate. The weights are derived from historical usage data by rate category for period Jan 2005 to December 2005. The municipal surcharges are 2% of the gas cost for customers located in the city of Los Angeles and 1.48% for those in other cities.

* One Binary Variable

A binary variable is used in the model. The binary variable, NEW, which equals one for November, 1999 forward, and zero otherwise is designed to reflect the addition of one new customer in November 1999.

3. Model Specification and Estimation Results

* Specification of Equation

A single equation is estimated for the refinery segment gas demand forecast.

The equation is in the following form:

$\ln(USE_Day_t) = a + b * \ln(GAS/BUTANE) + c * NEW_t + E_t$

Where:

t = Month, for January 1998, t = 1;

$\ln(USE_Day_t)$ = Natural logarithm of the average daily refinery load (Mdth/day) in month t;

ln(GAS/BUTANE) = Natural logarithm of the ratio of burner tip gas prices to butane prices in month t. The gas and butane prices are the average prices of the month t and month t-1;

NEW_t = New customer dummy variable, for November 1999 and after, NEW=1; otherwise NEW=0;

E_t = Error term

The estimated parameters are the lower case letters a, b, and c.

* Estimation Results

The equation is estimated using EXCEL function LINEST for multiple linear regression. The results of the regression are shown in Table I below. All the coefficients are statistically significant with correct signs. The overall R-squared value equals 0.762. The coefficient b represents the effect of the ratio of gas to butane prices on gas demand. The coefficient c reflects the effect of new customers on gas demand.

Table I. Econometric Model Estimation Results

Parameter	Variable	Parameter Estimate	Standard Error	P Value
a	Intercept	5.222	0.012	0.0001
b	LN(GAS/BUTANE)	-0.151	0.017	0.0001
c	NEW	0.189	0.013	0.0001

$R^2 = 0.762$

F = 148.91; SE (y) = 0.054

df = 93

4. Comparison of Forecast vs. Actual Usage

Table II shows the actual gas usage, predicted gas demand and percentage error for years 1998 through December 2005.

Table II. Econometric Model Results - Actual and Predicted Usage

Year	Actual Mdth	Predicted Mdth	Percent Error
1998	67,363	66,390	-1.44 %
1999	69,306	70,845	2.22 %
2000	79,524	81,760	2.81 %
2001	74,607	77,835	4.33 %
2002	84,674	81,317	- 3.97%
2003	84,084	80,760	- 3.95%
2004	84,138	83,680	-0.54%
2005	83,224	83,585	0.43%

B). INCREMENTAL PETROLEUM COKE FUEL SWITCHING

The forecast volumes derived from the econometric model do not account for the impact of petroleum coke fuel switching. Due to the anticipation of Federal Carbon (CO2) regulation in 2009, the Integrated Gasification Combined Cycle (IGCC) technology has received greater attention. IGCC gasifies coal or petroleum coke into a syngas that can either directly fuel, or be used to produce hydrogen and steam to fuel turbines for electricity. For refining, the syngas can be used to produce hydrogen, transportation fuels and chemicals. IGCC strips out the carbon before combustion, which can be sequestered or sold for enhanced oil recovery.

In February 2006, Edison International and British Petroleum (BP) announced a plan to jointly develop a $1-billion power plant capable of producing 500 megawatts of electricity with the IGCC technology at BP's Carson oil refinery. The 500-megawatt plant would take petroleum coke, a byproduct of the refining process, and convert it into a hydrogen gas that would be burned to make electricity. The partners intend to capture carbon dioxide resulting from the combustion process. Rather than allow it to disperse in the air, which is a major contributor to global warming, the carbon dioxide would instead be transported to oilfields where it would be injected into the ground to enhance oil recovery. The estimated in-service date for the power plant will be after 2011. The amount of natural gas in the Refinery Segment that will be displaced by petroleum coke is estimated to be about 10 Mdth/day, or 3,650 Mdth per year from 2011 to 2025.

C). CPUC MANDATED ENERGY EFFICIENCY SAVINGS

The CPUC in its Decision D.04-09-060 set the savings and goals for various energy efficiency programs for SoCalGas. Details of SoCalGas' 2006-2008 Energy efficiency program portfolios are contained in SoCalGas' Advise Letter 3588 which was submitted on February 1, 2006 and became effective March 3, 2006. The forecasted savings due to the CPUC mandated energy efficiency programs for the Refinery Segment were derived based on the adopted CPUC goals by SoCalGas' Demand Forecasting Group. The cumulative energy efficiency savings for the Refinery Segment are shown in Section II of the Appendix.

D). SPLIT THE REFINERY GAS DEMAND FORECAST BY G30 AND EG RATE-CLASS

The refinery G30 and refinery-related EG forecast volumes were developed by taking the total refinery gas demand multiplying by the percent of G30 volumes relative to total refinery volumes based on refinery billing records for the months of June 2000 through December 2005. These percentages, 79% and 21%, are reasonably predictive of the allocation of refinery gas volumes for rate-class G30 and EG customers in 2006 through 2025.

Appendix
Input and Output Data

Section I: Model Inputs
Refinery Segment Econometric Model

Year	Gas Burner Tip$/Dth Jan	Gas Burner Tip$/Dth Feb	Gas Burner Tip$/Dth Mar	Gas Burner Tip$/Dth Apr	Gas Burner Tip$/Dth May	Gas Burner Tip$/Dth Jun	Gas Burner Tip$/Dth Jul	Gas Burner Tip$/Dth Aug	Gas Burner Tip$/Dth Sep	Gas Burner Tip$/Dth Oct	Gas Burner Tip$/Dth Nov	Gas Burner Tip$/Dth Dec	Gas Burner Tip$/Dth Total
2005	$ 6.241	$ 6.264	$ 7.040	$ 7.265	$ 6.450	$ 6.704	$ 7.294	$ 8.579	$ 10.318	$ 11.655	$ 8.432	$ 12.194	$ 8.203
2006	$ 8.422	$ 7.510	$ 7.139	$ 6.898	$ 7.014	$ 7.136	$ 7.212	$ 7.322	$ 7.406	$ 7.356	$ 8.352	$ 9.307	$ 7.590
2007	$ 9.816	$ 9.824	$ 9.633	$ 8.308	$ 8.125	$ 8.185	$ 8.259	$ 8.328	$ 8.347	$ 8.422	$ 8.807	$ 9.387	$ 8.787
2008	$ 9.816	$ 9.821	$ 9.645	$ 7.858	$ 7.675	$ 7.728	$ 7.787	$ 7.842	$ 7.867	$ 7.928	$ 8.489	$ 9.073	$ 8.461
2009	$ 9.512	$ 9.512	$ 9.318	$ 7.330	$ 7.135	$ 7.204	$ 7.268	$ 7.324	$ 7.351	$ 7.419	$ 8.015	$ 8.601	$ 7.999
2010	$ 9.361	$ 9.359	$ 9.168	$ 7.182	$ 6.996	$ 7.046	$ 7.101	$ 7.151	$ 7.166	$ 7.240	$ 7.831	$ 8.419	$ 7.835
2011	$ 8.888	$ 8.890	$ 8.713	$ 6.750	$ 6.579	$ 6.641	$ 6.705	$ 6.768	$ 6.773	$ 6.828	$ 7.377	$ 7.925	$ 7.403
2012	$ 8.482	$ 8.484	$ 8.322	$ 6.636	$ 6.476	$ 6.527	$ 6.582	$ 6.633	$ 6.649	$ 6.707	$ 7.222	$ 7.725	$ 7.204
2013	$ 8.244	$ 8.246	$ 8.088	$ 6.448	$ 6.292	$ 6.343	$ 6.396	$ 6.446	$ 6.461	$ 6.518	$ 7.018	$ 7.508	$ 7.001
2014	$ 7.999	$ 8.001	$ 7.848	$ 6.255	$ 6.103	$ 6.152	$ 6.204	$ 6.252	$ 6.267	$ 6.322	$ 6.808	$ 7.284	$ 6.791
2015	$ 7.765	$ 7.767	$ 7.619	$ 6.071	$ 5.924	$ 5.972	$ 6.022	$ 6.069	$ 6.083	$ 6.137	$ 6.609	$ 7.071	$ 6.593
2016	$ 7.816	$ 7.818	$ 7.668	$ 6.111	$ 5.963	$ 6.011	$ 6.062	$ 6.109	$ 6.123	$ 6.177	$ 6.652	$ 7.117	$ 6.636
2017	$ 8.048	$ 8.050	$ 7.897	$ 6.296	$ 6.144	$ 6.192	$ 6.245	$ 6.293	$ 6.308	$ 6.363	$ 6.852	$ 7.330	$ 6.835
2018	$ 8.615	$ 8.617	$ 8.453	$ 6.745	$ 6.583	$ 6.635	$ 6.691	$ 6.743	$ 6.759	$ 6.818	$ 7.339	$ 7.849	$ 7.321
2019	$ 9.170	$ 9.172	$ 8.998	$ 7.184	$ 7.011	$ 7.067	$ 7.126	$ 7.181	$ 7.198	$ 7.260	$ 7.814	$ 8.356	$ 7.795
2020	$ 9.598	$ 9.600	$ 9.418	$ 7.524	$ 7.344	$ 7.402	$ 7.464	$ 7.521	$ 7.539	$ 7.604	$ 8.182	$ 8.748	$ 8.162
2021	$ 10.013	$ 10.015	$ 9.826	$ 7.854	$ 7.666	$ 7.727	$ 7.791	$ 7.850	$ 7.869	$ 7.937	$ 8.539	$ 9.128	$ 8.518
2022	$ 10.481	$ 10.483	$ 10.285	$ 8.226	$ 8.030	$ 8.093	$ 8.161	$ 8.223	$ 8.242	$ 8.313	$ 8.942	$ 9.556	$ 8.920
2023	$ 10.954	$ 10.957	$ 10.750	$ 8.602	$ 8.398	$ 8.464	$ 8.534	$ 8.599	$ 8.619	$ 8.693	$ 9.349	$ 9.990	$ 9.326
2024	$ 11.430	$ 11.433	$ 11.218	$ 8.980	$ 8.768	$ 8.836	$ 8.909	$ 8.977	$ 8.998	$ 9.075	$ 9.758	$ 10.426	$ 9.734
2025	$ 11.930	$ 11.933	$ 11.709	$ 9.378	$ 9.156	$ 9.227	$ 9.303	$ 9.374	$ 9.396	$ 9.476	$ 10.188	$ 10.884	$ 10.163

Section I: Model Inputs
Refinery Segment Econometric Model

Year	CBSP $/Dt Jan	CBSP $/Dt Feb	CBSP $/Dt Mar	CBSP $/Dt Apr	CBSP $/Dt May	CBSP $/Dt Jun	CBSP $/Dt Jul	CBSP $/Dt Aug	CBSP $/Dt Sep	CBSP $/Dt Oct	CBSP $/Dt Nov	CBSP $/Dt Dec	CBSP $/Dt Total
2005	$ 5.710	$ 5.733	$ 6.497	$ 6.718	$ 5.916	$ 6.165	$ 6.747	$ 8.012	$ 9.723	$ 11.040	$ 7.867	$ 11.570	$ 7.641
2006	$ 7.713	$ 6.816	$ 6.450	$ 6.213	$ 6.327	$ 6.447	$ 6.522	$ 6.630	$ 6.713	$ 6.663	$ 7.644	$ 8.585	$ 6.894
2007	$ 9.116	$ 9.124	$ 8.936	$ 7.632	$ 7.451	$ 7.511	$ 7.583	$ 7.651	$ 7.670	$ 7.744	$ 8.122	$ 8.694	$ 8.103
2008	$ 9.120	$ 9.125	$ 8.952	$ 7.193	$ 7.013	$ 7.065	$ 7.123	$ 7.177	$ 7.201	$ 7.262	$ 7.814	$ 8.389	$ 7.786
2009	$ 8.836	$ 8.836	$ 8.645	$ 6.689	$ 6.496	$ 6.565	$ 6.628	$ 6.682	$ 6.709	$ 6.776	$ 7.362	$ 7.939	$ 7.347
2010	$ 8.708	$ 8.706	$ 8.518	$ 6.564	$ 6.380	$ 6.430	$ 6.484	$ 6.533	$ 6.547	$ 6.620	$ 7.202	$ 7.781	$ 7.206
2011	$ 8.234	$ 8.235	$ 8.061	$ 6.129	$ 5.961	$ 6.022	$ 6.085	$ 6.147	$ 6.152	$ 6.206	$ 6.746	$ 7.286	$ 6.772
2012	$ 7.830	$ 7.833	$ 7.673	$ 6.013	$ 5.856	$ 5.906	$ 5.960	$ 6.010	$ 6.026	$ 6.083	$ 6.590	$ 7.086	$ 6.572
2013	$ 7.596	$ 7.598	$ 7.443	$ 5.829	$ 5.675	$ 5.725	$ 5.777	$ 5.826	$ 5.841	$ 5.897	$ 6.390	$ 6.871	$ 6.372
2014	$ 7.361	$ 7.363	$ 7.213	$ 5.644	$ 5.495	$ 5.543	$ 5.594	$ 5.641	$ 5.656	$ 5.710	$ 6.189	$ 6.657	$ 6.172
2015	$ 7.127	$ 7.129	$ 6.983	$ 5.459	$ 5.315	$ 5.361	$ 5.411	$ 5.457	$ 5.471	$ 5.524	$ 5.989	$ 6.443	$ 5.972
2016	$ 7.175	$ 7.177	$ 7.030	$ 5.498	$ 5.352	$ 5.399	$ 5.449	$ 5.495	$ 5.509	$ 5.562	$ 6.030	$ 6.488	$ 6.014
2017	$ 7.398	$ 7.400	$ 7.249	$ 5.673	$ 5.523	$ 5.571	$ 5.623	$ 5.670	$ 5.685	$ 5.739	$ 6.220	$ 6.691	$ 6.203
2018	$ 7.940	$ 7.942	$ 7.780	$ 6.099	$ 5.939	$ 5.991	$ 6.046	$ 6.096	$ 6.112	$ 6.170	$ 6.683	$ 7.185	$ 6.665
2019	$ 8.477	$ 8.479	$ 8.307	$ 6.522	$ 6.352	$ 6.407	$ 6.465	$ 6.519	$ 6.536	$ 6.597	$ 7.142	$ 7.675	$ 7.123
2020	$ 8.883	$ 8.885	$ 8.706	$ 6.842	$ 6.665	$ 6.722	$ 6.782	$ 6.839	$ 6.856	$ 6.921	$ 7.490	$ 8.046	$ 7.470
2021	$ 9.277	$ 9.279	$ 9.093	$ 7.152	$ 6.967	$ 7.026	$ 7.090	$ 7.148	$ 7.167	$ 7.234	$ 7.826	$ 8.406	$ 7.805
2022	$ 9.718	$ 9.721	$ 9.526	$ 7.499	$ 7.307	$ 7.369	$ 7.435	$ 7.496	$ 7.515	$ 7.585	$ 8.204	$ 8.809	$ 8.182
2023	$ 10.168	$ 10.171	$ 9.968	$ 7.853	$ 7.652	$ 7.717	$ 7.786	$ 7.850	$ 7.870	$ 7.943	$ 8.588	$ 9.219	$ 8.565
2024	$ 10.620	$ 10.623	$ 10.411	$ 8.209	$ 8.000	$ 8.067	$ 8.139	$ 8.205	$ 8.226	$ 8.302	$ 8.974	$ 9.632	$ 8.951
2025	$ 11.095	$ 11.098	$ 10.878	$ 8.583	$ 8.365	$ 8.435	$ 8.510	$ 8.579	$ 8.601	$ 8.680	$ 9.380	$ 10.065	$ 9.356

Section I: Model Inputs
Refinery Segment Econometric Model

Year	$/Dth Transp Rat Jan	$/Dth Transp Rat Feb	$/Dth Transp Rat Mar	$/Dth Transp Rat Apr	$/Dth Transp Rat May	$/Dth Transp Rat Jun	$/Dth Transp Rat Jul	$/Dth Transp Rat Aug	$/Dth Transp Rat Sep	$/Dth Transp Rat Oct	$/Dth Transp Rat Nov	$/Dth Transp Rat Dec	$/Dth Transp Rat Total
2005	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296
2006	$ 0.332	$ 0.332	$ 0.332	$ 0.332	$ 0.332	$ 0.332	$ 0.332	$ 0.332	$ 0.332	$ 0.332	$ 0.332	$ 0.332	$ 0.332
2007	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325	$ 0.325
2008	$ 0.321	$ 0.321	$ 0.321	$ 0.321	$ 0.321	$ 0.321	$ 0.321	$ 0.321	$ 0.321	$ 0.321	$ 0.321	$ 0.321	$ 0.321
2009	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307
2010	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282
2011	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292
2012	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296
2013	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292
2014	$ 0.286	$ 0.286	$ 0.286	$ 0.286	$ 0.286	$ 0.286	$ 0.286	$ 0.286	$ 0.286	$ 0.286	$ 0.286	$ 0.286	$ 0.286
2015	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290
2016	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284
2017	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284	$ 0.284
2018	$ 0.289	$ 0.289	$ 0.289	$ 0.289	$ 0.289	$ 0.289	$ 0.289	$ 0.289	$ 0.289	$ 0.289	$ 0.289	$ 0.289	$ 0.289
2019	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282	$ 0.282
2020	$ 0.287	$ 0.287	$ 0.287	$ 0.287	$ 0.287	$ 0.287	$ 0.287	$ 0.287	$ 0.287	$ 0.287	$ 0.287	$ 0.287	$ 0.287
2021	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292	$ 0.292
2022	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296	$ 0.296
2023	$ 0.302	$ 0.302	$ 0.302	$ 0.302	$ 0.302	$ 0.302	$ 0.302	$ 0.302	$ 0.302	$ 0.302	$ 0.302	$ 0.302	$ 0.302
2024	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307
2025	$ 0.312	$ 0.312	$ 0.312	$ 0.312	$ 0.312	$ 0.312	$ 0.312	$ 0.312	$ 0.312	$ 0.312	$ 0.312	$ 0.312	$ 0.312

Section I: Model Inputs
Refinery Segment Econometric Model

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
	PPP $/Dth	PPP $/Dth	PPP $/Dth	PPP $/Dth	PPP $/Dth	PPP $/Dth	PPP $/Dth	PPP $/Dth	PPP $/Dth	PPP $/Dth	PPP $/Dth	PPP $/Dth	PPP $/Dth
2005	$ 0.183	$ 0.183	$ 0.183	$ 0.183	$ 0.183	$ 0.183	$ 0.183	$ 0.183	$ 0.183	$ 0.183	$ 0.183	$ 0.183	$ 0.183
2006	$ 0.322	$ 0.322	$ 0.322	$ 0.322	$ 0.322	$ 0.322	$ 0.322	$ 0.322	$ 0.322	$ 0.322	$ 0.322	$ 0.322	$ 0.322
2007	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291
2008	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291	$ 0.291
2009	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290	$ 0.290
2010	$ 0.294	$ 0.294	$ 0.294	$ 0.294	$ 0.294	$ 0.294	$ 0.294	$ 0.294	$ 0.294	$ 0.294	$ 0.294	$ 0.294	$ 0.294
2011	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293
2012	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293	$ 0.293
2013	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297
2014	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297
2015	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297	$ 0.297
2016	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307	$ 0.307
2017	$ 0.315	$ 0.315	$ 0.315	$ 0.315	$ 0.315	$ 0.315	$ 0.315	$ 0.315	$ 0.315	$ 0.315	$ 0.315	$ 0.315	$ 0.315
2018	$ 0.330	$ 0.330	$ 0.330	$ 0.330	$ 0.330	$ 0.330	$ 0.330	$ 0.330	$ 0.330	$ 0.330	$ 0.330	$ 0.330	$ 0.330
2019	$ 0.350	$ 0.350	$ 0.350	$ 0.350	$ 0.350	$ 0.350	$ 0.350	$ 0.350	$ 0.350	$ 0.350	$ 0.350	$ 0.350	$ 0.350
2020	$ 0.363	$ 0.363	$ 0.363	$ 0.363	$ 0.363	$ 0.363	$ 0.363	$ 0.363	$ 0.363	$ 0.363	$ 0.363	$ 0.363	$ 0.363
2021	$ 0.376	$ 0.376	$ 0.376	$ 0.376	$ 0.376	$ 0.376	$ 0.376	$ 0.376	$ 0.376	$ 0.376	$ 0.376	$ 0.376	$ 0.376
2022	$ 0.394	$ 0.394	$ 0.394	$ 0.394	$ 0.394	$ 0.394	$ 0.394	$ 0.394	$ 0.394	$ 0.394	$ 0.394	$ 0.394	$ 0.394
2023	$ 0.408	$ 0.408	$ 0.408	$ 0.408	$ 0.408	$ 0.408	$ 0.408	$ 0.408	$ 0.408	$ 0.408	$ 0.408	$ 0.408	$ 0.408
2024	$ 0.423	$ 0.423	$ 0.423	$ 0.423	$ 0.423	$ 0.423	$ 0.423	$ 0.423	$ 0.423	$ 0.423	$ 0.423	$ 0.423	$ 0.423
2025	$ 0.438	$ 0.438	$ 0.438	$ 0.438	$ 0.438	$ 0.438	$ 0.438	$ 0.438	$ 0.438	$ 0.438	$ 0.438	$ 0.438	$ 0.438

Section I: Model Inputs
Refinery Segment Econometric Model

Year	Butane $/D Jan	Butane $/D Feb	Butane $/D Mar	Butane $/D Apr	Butane $/D May	Butane $/D Jun	Butane $/D Jul	Butane $/D Aug	Butane $/D Sep	Butane $/D Oct	Butane $/D Nov	Butane $/D Dec	Butane $/D Total
2005	$ 9.175	$ 8.747	$ 8.131	$ 8.243	$ 7.621	$ 7.245	$ 7.961	$ 8.022	$ 9.825	$ 12.063	$ 12.063	$ 12.670	$ 9.314
2006	$ 13.592	$ 10.847	$ 9.073	$ 9.213	$ 9.233	$ 9.242	$ 9.095	$ 9.412	$ 10.323	$ 10.228	$ 11.597	$ 12.357	$ 10.351
2007	$ 12.596	$ 11.416	$ 9.549	$ 9.341	$ 9.361	$ 9.370	$ 9.077	$ 9.393	$ 10.302	$ 10.197	$ 11.561	$ 12.319	$ 10.374
2008	$ 12.386	$ 11.226	$ 9.390	$ 8.991	$ 9.011	$ 9.020	$ 8.568	$ 8.866	$ 9.725	$ 9.785	$ 11.094	$ 11.821	$ 9.990
2009	$ 12.081	$ 10.949	$ 9.159	$ 8.690	$ 8.710	$ 8.718	$ 8.285	$ 8.573	$ 9.403	$ 9.552	$ 10.830	$ 11.540	$ 9.708
2010	$ 11.695	$ 10.600	$ 8.866	$ 8.327	$ 8.345	$ 8.353	$ 7.925	$ 8.201	$ 8.995	$ 9.232	$ 10.467	$ 11.153	$ 9.347
2011	$ 12.014	$ 10.888	$ 9.108	$ 8.553	$ 8.572	$ 8.580	$ 8.155	$ 8.439	$ 9.256	$ 9.504	$ 10.776	$ 11.482	$ 9.611
2012	$ 12.182	$ 11.041	$ 9.235	$ 8.785	$ 8.804	$ 8.813	$ 8.367	$ 8.658	$ 9.496	$ 9.751	$ 11.055	$ 11.780	$ 9.831
2013	$ 12.453	$ 11.286	$ 9.440	$ 8.991	$ 9.011	$ 9.020	$ 8.560	$ 8.858	$ 9.716	$ 9.986	$ 11.322	$ 12.064	$ 10.059
2014	$ 12.717	$ 11.525	$ 9.640	$ 9.192	$ 9.213	$ 9.222	$ 8.750	$ 9.055	$ 9.931	$ 10.220	$ 11.587	$ 12.347	$ 10.283
2015	$ 12.990	$ 11.773	$ 9.848	$ 9.402	$ 9.423	$ 9.432	$ 8.949	$ 9.260	$ 10.157	$ 10.466	$ 11.866	$ 12.644	$ 10.518
2016	$ 13.314	$ 12.067	$ 10.093	$ 9.655	$ 9.676	$ 9.685	$ 9.197	$ 9.518	$ 10.439	$ 10.764	$ 12.204	$ 13.004	$ 10.801
2017	$ 13.677	$ 12.396	$ 10.369	$ 9.927	$ 9.949	$ 9.958	$ 9.457	$ 9.786	$ 10.734	$ 11.056	$ 12.535	$ 13.357	$ 11.100
2018	$ 14.056	$ 12.739	$ 10.656	$ 10.205	$ 10.228	$ 10.238	$ 9.724	$ 10.063	$ 11.037	$ 11.342	$ 12.860	$ 13.703	$ 11.404
2019	$ 14.451	$ 13.098	$ 10.955	$ 10.496	$ 10.520	$ 10.530	$ 10.002	$ 10.350	$ 11.353	$ 11.641	$ 13.198	$ 14.063	$ 11.721
2020	$ 14.843	$ 13.453	$ 11.252	$ 10.786	$ 10.810	$ 10.820	$ 10.278	$ 10.636	$ 11.666	$ 11.944	$ 13.542	$ 14.430	$ 12.038
2021	$ 15.319	$ 13.884	$ 11.613	$ 11.139	$ 11.164	$ 11.175	$ 10.616	$ 10.986	$ 12.050	$ 12.319	$ 13.967	$ 14.883	$ 12.426
2022	$ 15.814	$ 14.332	$ 11.988	$ 11.505	$ 11.531	$ 11.542	$ 10.966	$ 11.348	$ 12.447	$ 12.704	$ 14.404	$ 15.348	$ 12.827
2023	$ 16.321	$ 14.792	$ 12.373	$ 11.881	$ 11.908	$ 11.919	$ 11.325	$ 11.720	$ 12.854	$ 13.101	$ 14.853	$ 15.827	$ 13.239
2024	$ 16.847	$ 15.269	$ 12.772	$ 12.271	$ 12.299	$ 12.310	$ 11.698	$ 12.106	$ 13.278	$ 13.511	$ 15.319	$ 16.323	$ 13.667
2025	$ 17.386	$ 15.757	$ 13.180	$ 12.670	$ 12.698	$ 12.710	$ 12.078	$ 12.499	$ 13.709	$ 13.930	$ 15.794	$ 16.829	$ 14.103

Section II: Petroleum Coke Fuel Switching and Energy Efficiency Savings

Petroleum Coke	Mdth	Mdth	Mdth	Mdth	Mdth	Mdth	Mdth	Mdth	Mdth	Mdth	Mdth	Mdth	Mdth
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	-	-	-	-	-	-	-	-	-	-	-	-	-
2006	-	-	-	-	-	-	-	-	-	-	-	-	-
2007	-	-	-	-	-	-	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	-	-	-	-	-
2009	-	-	-	-	-	-	-	-	-	-	-	-	-
2010	-	-	-	-	-	-	-	-	-	-	-	-	-
2011	310	280	310	300	310	300	310	310	300	310	300	310	3,650
2012	310	290	310	300	310	300	310	310	300	310	300	310	3,660
2013	310	280	310	300	310	300	310	310	300	310	300	310	3,650
2014	310	280	310	300	310	300	310	310	300	310	300	310	3,650
2015	310	280	310	300	310	300	310	310	300	310	300	310	3,650
2016	310	290	310	300	310	300	310	310	300	310	300	310	3,660
2017	310	280	310	300	310	300	310	310	300	310	300	310	3,650
2018	310	280	310	300	310	300	310	310	300	310	300	310	3,650
2019	310	280	310	300	310	300	310	310	300	310	300	310	3,650
2020	310	290	310	300	310	300	310	310	300	310	300	310	3,660
2021	310	280	310	300	310	300	310	310	300	310	300	310	3,650
2022	310	280	310	300	310	300	310	310	300	310	300	310	3,650
2023	310	280	310	300	310	300	310	310	300	310	300	310	3,650
2024	310	290	310	300	310	300	310	310	300	310	300	310	3,660
2025	310	280	310	300	310	300	310	310	300	310	300	310	3,650

Section II: Petroleum Coke Fuel Switching and Energy Efficiency Savings

EE_Savings

Year	Jan Mdth	Feb Mdth	Mar Mdth	Apr Mdth	May Mdth	Jun Mdth	Jul Mdth	Aug Mdth	Sep Mdth	Oct Mdth	Nov Mdth	Dec Mdth	Total Mdth
2005	-	-	-	-	-	-	-	-	-	-	-	-	-
2006	7	7	7	7	7	7	7	7	7	7	7	7	81
2007	16	16	16	16	16	16	16	16	16	16	16	16	190
2008	27	27	27	27	27	27	27	27	27	27	27	27	328
2009	41	41	41	41	41	41	41	41	41	41	41	41	490
2010	55	55	55	55	55	55	55	55	55	55	55	55	658
2011	70	70	70	70	70	70	70	70	70	70	70	70	836
2012	86	86	86	86	86	86	86	86	86	86	86	86	1,028
2013	103	103	103	103	103	103	103	103	103	103	103	103	1,240
2014	121	121	121	121	121	121	121	121	121	121	121	121	1,453
2015	139	139	139	139	139	139	139	139	139	139	139	139	1,666
2016	157	157	157	157	157	157	157	157	157	157	157	157	1,879
2017	174	174	174	174	174	174	174	174	174	174	174	174	2,091
2018	192	192	192	192	192	192	192	192	192	192	192	192	2,304
2019	210	210	210	210	210	210	210	210	210	210	210	210	2,517
2020	222	222	222	222	222	222	222	222	222	222	222	222	2,664
2021	233	233	233	233	233	233	233	233	233	233	233	233	2,795
2022	242	242	242	242	242	242	242	242	242	242	242	242	2,899
2023	248	248	248	248	248	248	248	248	248	248	248	248	2,974
2024	252	252	252	252	252	252	252	252	252	252	252	252	3,025
2025	256	256	256	256	256	256	256	256	256	256	256	256	3,069

Section III: Forecast Results (Refinery Segment)

Year	G30 Mdth Jan	G30 Mdth Feb	G30 Mdth Mar	G30 Mdth Apr	G30 Mdth May	G30 Mdth Jun	G30 Mdth Jul	G30 Mdth Aug	G30 Mdth Sep	G30 Mdth Oct	G30 Mdth Nov	G30 Mdth Dec	G30 Mdth Total
2005	5,972	5,443	5,482	5,433	5,718	5,301	5,064	5,435	5,350	4,762	5,212	5,297	64,471
2006	5,654	5,252	5,710	5,490	5,688	5,492	5,657	5,654	5,513	5,730	5,544	5,708	67,091
2007	5,665	5,065	5,504	5,307	5,549	5,377	5,537	5,531	5,400	5,610	5,455	5,671	65,672
2008	5,642	5,222	5,478	5,293	5,553	5,381	5,535	5,521	5,390	5,607	5,449	5,654	65,726
2009	5,628	5,033	5,471	5,297	5,571	5,399	5,551	5,537	5,405	5,626	5,467	5,667	65,653
2010	5,619	5,006	5,444	5,267	5,538	5,367	5,520	5,506	5,375	5,600	5,445	5,643	65,329
2011	5,324	4,772	5,184	5,019	5,288	5,124	5,268	5,252	5,130	5,349	5,204	5,396	62,309
2012	5,372	4,978	5,219	5,047	5,309	5,144	5,289	5,275	5,151	5,371	5,226	5,423	62,803
2013	5,399	4,825	5,244	5,071	5,337	5,169	5,316	5,301	5,177	5,399	5,253	5,451	62,941
2014	5,427	4,847	5,270	5,096	5,365	5,196	5,344	5,329	5,203	5,428	5,281	5,481	63,267
2015	5,455	4,870	5,296	5,122	5,393	5,223	5,372	5,357	5,230	5,457	5,309	5,511	63,596
2016	5,469	5,046	5,294	5,120	5,393	5,222	5,372	5,357	5,230	5,459	5,310	5,513	63,786
2017	5,459	4,847	5,275	5,100	5,373	5,203	5,353	5,338	5,211	5,439	5,290	5,492	63,380
2018	5,421	4,797	5,222	5,048	5,319	5,150	5,299	5,284	5,158	5,383	5,235	5,436	62,752
2019	5,369	4,752	5,174	5,001	5,271	5,102	5,251	5,236	5,110	5,334	5,185	5,386	62,171
2020	5,332	4,901	5,145	4,973	5,242	5,074	5,222	5,207	5,082	5,304	5,156	5,355	61,995
2021	5,308	4,705	5,125	4,954	5,222	5,054	5,202	5,187	5,062	5,283	5,134	5,334	61,571
2022	5,288	4,686	5,105	4,933	5,201	5,034	5,181	5,167	5,042	5,262	5,113	5,312	61,322
2023	5,270	4,670	5,088	4,917	5,184	5,017	5,164	5,150	5,025	5,244	5,095	5,294	61,115
2024	5,255	4,832	5,074	4,904	5,170	5,003	5,150	5,136	5,012	5,230	5,080	5,279	61,126
2025	5,241	4,644	5,061	4,891	5,157	4,990	5,137	5,123	4,999	5,215	5,066	5,264	60,787

Section III: Forecast Results (Refinery Segment)

Year	G50 Mdth Jan	G50 Mdth Feb	G50 Mdth Mar	G50 Mdth Apr	G50 Mdth May	G50 Mdth Jun	G50 Mdth Jul	G50 Mdth Aug	G50 Mdth Sep	G50 Mdth Oct	G50 Mdth Nov	G50 Mdth Dec	G50 Mdth Total
2005	1,639	1,485	1,408	1,536	1,479	1,592	1,678	1,603	1,519	1,605	1,707	1,502	18,753
2006	1,542	1,432	1,557	1,497	1,551	1,498	1,543	1,542	1,504	1,563	1,512	1,557	18,299
2007	1,548	1,384	1,504	1,450	1,516	1,469	1,513	1,511	1,475	1,533	1,490	1,549	17,942
2008	1,544	1,430	1,500	1,449	1,520	1,473	1,515	1,511	1,476	1,535	1,492	1,548	17,994
2009	1,544	1,382	1,502	1,454	1,529	1,482	1,523	1,519	1,484	1,544	1,500	1,555	18,018
2010	1,546	1,379	1,498	1,450	1,524	1,477	1,519	1,515	1,479	1,540	1,498	1,552	17,976
2011	1,554	1,395	1,516	1,468	1,544	1,496	1,538	1,534	1,498	1,561	1,518	1,573	18,196
2012	1,571	1,458	1,529	1,480	1,554	1,506	1,549	1,545	1,508	1,571	1,529	1,585	18,386
2013	1,583	1,419	1,541	1,491	1,566	1,518	1,561	1,557	1,520	1,583	1,541	1,598	18,478
2014	1,596	1,430	1,553	1,503	1,579	1,530	1,573	1,569	1,532	1,596	1,553	1,610	18,625
2015	1,608	1,441	1,565	1,515	1,591	1,542	1,586	1,582	1,544	1,609	1,566	1,624	18,773
2016	1,617	1,496	1,569	1,519	1,596	1,547	1,591	1,587	1,549	1,614	1,571	1,629	18,885
2017	1,619	1,444	1,569	1,519	1,596	1,547	1,590	1,586	1,549	1,614	1,570	1,628	18,830
2018	1,613	1,435	1,559	1,509	1,586	1,537	1,580	1,576	1,539	1,603	1,560	1,618	18,716
2019	1,604	1,428	1,551	1,501	1,577	1,529	1,572	1,568	1,531	1,595	1,551	1,609	18,616
2020	1,598	1,475	1,547	1,497	1,573	1,524	1,567	1,563	1,527	1,590	1,547	1,604	18,611
2021	1,594	1,422	1,544	1,495	1,570	1,522	1,565	1,561	1,524	1,587	1,544	1,601	18,529
2022	1,591	1,419	1,541	1,491	1,567	1,519	1,562	1,558	1,521	1,584	1,540	1,597	18,489
2023	1,587	1,416	1,538	1,489	1,564	1,516	1,559	1,555	1,518	1,580	1,537	1,594	18,453
2024	1,585	1,464	1,535	1,486	1,562	1,513	1,556	1,552	1,516	1,578	1,534	1,591	18,473
2025	1,582	1,411	1,533	1,484	1,559	1,511	1,553	1,550	1,513	1,575	1,531	1,588	18,390

Section III: Forecast Results (Refinery Segment)

G30+G50 Md30+G50 Mc30+G50 Mc30+G50 Mc30+G50 Mc30+G50 Md30+G50 Mc30+G50 Mc30+G50 Md

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2005	7,611	6,928	6,890	6,969	7,198	6,893	6,742	7,038	6,869	6,367	6,919	6,799	83,224
2006	7,196	6,684	7,267	6,987	7,240	6,990	7,200	7,196	7,017	7,293	7,056	7,265	85,390
2007	7,213	6,450	7,007	6,757	7,065	6,846	7,050	7,042	6,876	7,142	6,946	7,220	83,614
2008	7,186	6,652	6,977	6,743	7,073	6,855	7,050	7,033	6,866	7,142	6,941	7,202	83,720
2009	7,172	6,415	6,973	6,751	7,100	6,880	7,075	7,057	6,889	7,170	6,968	7,222	83,671
2010	7,165	6,385	6,942	6,717	7,061	6,844	7,038	7,020	6,854	7,141	6,943	7,195	83,304
2011	6,877	6,167	6,700	6,487	6,832	6,620	6,806	6,787	6,628	6,910	6,722	6,969	80,504
2012	6,943	6,436	6,748	6,526	6,864	6,650	6,838	6,819	6,659	6,943	6,754	7,007	81,189
2013	6,982	6,244	6,785	6,562	6,903	6,688	6,877	6,858	6,697	6,983	6,793	7,048	81,420
2014	7,022	6,277	6,823	6,599	6,944	6,726	6,917	6,898	6,735	7,024	6,834	7,091	81,892
2015	7,064	6,311	6,861	6,636	6,984	6,765	6,958	6,938	6,774	7,066	6,875	7,134	82,368
2016	7,086	6,543	6,864	6,639	6,989	6,769	6,963	6,944	6,779	7,073	6,881	7,141	82,671
2017	7,078	6,292	6,843	6,619	6,969	6,749	6,943	6,924	6,759	7,052	6,860	7,121	82,210
2018	7,034	6,232	6,781	6,557	6,905	6,687	6,879	6,860	6,697	6,987	6,795	7,054	81,468
2019	6,973	6,180	6,725	6,503	6,848	6,631	6,823	6,804	6,642	6,928	6,737	6,994	80,788
2020	6,930	6,376	6,692	6,471	6,815	6,598	6,789	6,771	6,609	6,894	6,702	6,959	80,606
2021	6,902	6,127	6,669	6,448	6,792	6,576	6,767	6,748	6,586	6,870	6,678	6,935	80,099
2022	6,879	6,104	6,646	6,425	6,768	6,552	6,743	6,724	6,563	6,845	6,653	6,909	79,811
2023	6,857	6,085	6,626	6,406	6,748	6,533	6,723	6,704	6,543	6,824	6,632	6,888	79,568
2024	6,839	6,296	6,610	6,390	6,732	6,517	6,707	6,688	6,528	6,807	6,614	6,870	79,598
2025	6,823	6,055	6,594	6,374	6,716	6,501	6,690	6,672	6,512	6,790	6,597	6,852	79,177

2006 CALIFORNIA GAS REPORT

WHOLESALE REQUIREMENTS
JULY 2006

2006 CALIFORNIA GAS REPORT

SAN DIEGO GAS & ELECTRIC COMPANY
JULY 2006

San Diego Gas and Electric Company

The estimated non-electric and cogeneration gas demand for San Diego Gas & Electric Company (SDG&E) for the years 2006 through 2025 for normal, cold and hot temperatures is attached. The MARKETSYM production cost model was used to prepare the natural gas demand for the EG customers through 2025. SoCalGas performed a dry hydro sensitivity, 1-in-10 dry hydro year, as defined by the CEC. The attached detail summarizes by year and by month the gas demand through 2025.

REDACTED

2006 CALIFORNIA GAS REPORT

CITY OF LONG BEACH OIL AND GAS DEPARTMENT
JULY 2006

City of Long Beach Municipal Gas Department

The estimated gas demand for the City of Long Beach Gas Department (Long Beach) for the years 2006 through 2025 are shown on the attachments for normal and cold temperatures. All forecasted requirements were prepared by Long Beach.

REDACTED

2006 CALIFORNIA GAS REPORT

SOUTHWEST GAS CORPORATION
JULY 2006

SOUTHWEST GAS CORPORATION

Projected annual requirements for Southwest Gas Corporation (SWGas) for 2006 to 2025 are shown in the attachments for normal and cold temperature conditions. This load reflects only that portion for the requirements served by Southern California Gas Company (SoCalGas). Total Southwest Gas California load forecast was provided by Southwest Gas.

REDACTED

2006 CALIFORNIA GAS REPORT

CITY OF VERNON
JULY 2006

City of Vernon

The MARKETSYM production cost model was used to prepare the natural gas demand for the EG customers through 2025.

The attached detail summarizes by year and by month the gas demand through 2025.

REDACTED

2006 CALIFORNIA GAS REPORT

MEXICALI
JULY 2006

Mexicali

SoCalGas used the forecast prepared by Ecogas, Mexicali, for this report. The attached detail summarizes by year and by month the gas demand through 2025.

REDACTED

2006 CALIFORNIA GAS REPORT

PEAKDAY FORECAST
JULY 2006

A Sempra Energy utility™

2006-CGR Sales + Transport + Exchange for Month of DECEMBER (S:\California Gas Reports\2006cgr\BMWfiles\Out-Excel\, units=Mdth/Day) Temp=January, Peak-Day

No.	"CGR_B"	CLASS	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1	RESIDEN		2,860	2,900	2,898	2,924	2,951	2,968	2,996	3,021	3,048	3,074	3,100	3,125	3,145	3,159	3,175	3,192	3,210	3,230	3,248	3,266	3,284
2	Com G10		584	593	594	602	612	617	622	625	629	632	636	638	640	641	641	643	644	646	647	649	650
2	GAC 2/		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	GEN 2/		3	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
3	Ind G10		110	112	111	112	113	114	114	115	116	116	117	117	118	118	117	117	117	117	117	117	117
4	NGV 2/		26	27	28	30	32	33	33	34	35	36	37	38	38	39	40	41	42	43	43	44	45
Total:	MDth/day		3,584	3,636	3,635	3,671	3,711	3,735	3,770	3,799	3,831	3,862	3,894	3,922	3,945	3,960	3,977	3,997	4,017	4,039	4,059	4,079	4,099
	MMcf/day 4/		3,486	3,537	3,536	3,571	3,610	3,633	3,667	3,695	3,727	3,757	3,788	3,815	3,837	3,852	3,869	3,888	3,908	3,929	3,948	3,968	3,987
	Days per Mo		31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
	Pk-Day Temp. (deg-F) =		38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0
	Hdd: December--ColdYr =		372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0
	"Wkday/Wkend" Factor-Res:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	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%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Zero-HDD Load/Day Seasonal "Scale-Up":			133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%

Use this Methodology for the 2006-CGR Res and C&I Calculations

Notes:

1/ =("Cold-Dec" / 31 days)+[("Cold-Dec" - "Base-Dec") / "Cold-Dec_Hdd"]*(65 degF - 38 degF)

2/ "Non-temperature" sensitive market segment.

3/ "Weekday/Weekend" Factor applies to the "raw" estimate.

4/ Dth/Mcf= 1.0280

File: [NewByTable-PeakDayDmd4PeakMo(22May2006).xls] Temp=PkDay(by Detail_Market)

2006-CGR Sales + Transport + Exchange for Month of DECEMBER (S:\California Gas Reports\2006cgr\BMWfiles\Out-Excel\, units=Mdth/Day) Temp=January, Peak-Day

CGR_B	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Residen	2,860	2,900	2,898	2,924	2,951	2,968	2,996	3,021	3,048	3,074	3,100	3,125	3,145	3,159	3,175	3,192	3,210	3,230	3,248	3,266	3,284
Com-core 4/	588	598	598	606	616	621	626	629	633	636	640	642	644	645	645	647	648	649	651	652	654
Ind-core	110	112	111	112	113	114	114	115	116	116	117	117	118	118	117	117	117	117	117	117	117
NGV 2/	26	27	28	30	32	33	33	34	35	36	37	38	38	39	40	41	42	43	43	44	45
Total: MDth/day	3,584	3,636	3,635	3,671	3,711	3,735	3,770	3,799	3,831	3,862	3,894	3,922	3,945	3,960	3,977	3,997	4,017	4,039	4,059	4,079	4,099
Peak-Day Dmd: MMcf/day 5/	3,486	3,537	3,536	3,571	3,610	3,633	3,667	3,695	3,727	3,757	3,788	3,815	3,837	3,852	3,869	3,888	3,908	3,929	3,948	3,968	3,987
Firm Storage Wdrl 6/ & 7/ : MMcf/day	1,935	1,963	1,962	1,982	2,004	2,016	2,035	2,051	2,069	2,085	2,102	2,117	2,130	2,138	2,147	2,158	2,169	2,181	2,191	2,202	2,213
Req. Flowing Supplies 8/ : MMcf/day	1,551	1,574	1,573	1,589	1,606	1,617	1,632	1,644	1,658	1,672	1,686	1,698	1,707	1,714	1,722	1,730	1,739	1,748	1,757	1,766	1,774
Days per Mo	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Pk-Day Temp. (deg-F) =	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0
Hdd: December--ColdYr =	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0	372.0
"Wkday/Wkend" Factor-Res:	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	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%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Zero-HDD Load/Day Seasonal "Scale-Up":	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%	133.5%

Use this Methodology for the 2006-CGR Res and C&I Calculations

Notes:

1/ =("Cold-Dec" / 31 days)+[("Cold-Dec" - "Base-Dec") / "Cold-Dec_Hdd"]*(65 degF - 38 degF)

2/ "Non-temperature" sensitive market segment.

3/ "Weekday/Weekend" Factor applies to the "raw" estimate.

4/ Includes GAC **2/** and GEN **2/** market segments.

5/ Dth/Mcf= 1.028

6/ Allocated Core firm withdrawal rights for years 2002 through 2005 per term of Comprehensive Settlement Agreement for GIR.

7/ For 2006 and afterwards, growth is in proportion to the annual growth in "Peak-Day" demand.

8/ Calculated as the difference of "Peak-Day" demand and "Allocated Core firm withdrawal rights" for each respective year.

File: [NewByTable-PeakDayDmd4PeakMo(22May2006).xls] Temp=PkDay(by CGR_Mkt)

4:10 PM Friday, May 19, 2006 2006-CGR Sales + Transport + Exchange for Month of DECEMBER (units=mdth)
Temp=December, Cold Year

CLASS	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Residen	44,181.8	44,798.3	44,768.2	45,173.7	45,586.7	45,854.8	46,295.7	46,667.7	47,091.6	47,494.9	47,902.6	48,280.2	48,583.7	48,805.2	49,048.9	49,319.2	49,596.8	49,907.3	50,178.9	50,454.6	50,731.9
Com G10	10,017.3	10,172.9	10,186.2	10,317.5	10,491.9	10,578.9	10,662.0	10,716.0	10,781.9	10,843.1	10,906.2	10,945.5	10,976.0	10,985.7	10,997.6	11,023.6	11,044.8	11,070.1	11,095.4	11,120.9	11,143.8
GAC	8.7	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
GEN	80.0	92.1	83.6	81.2	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3
Ind G10	2,236.3	2,262.4	2,246.0	2,262.0	2,288.3	2,299.6	2,315.5	2,329.5	2,341.6	2,352.9	2,367.8	2,375.9	2,380.7	2,379.7	2,377.5	2,374.3	2,371.9	2,369.0	2,367.0	2,364.6	2,360.9
NGV	601.0	618.6	658.8	704.9	737.9	757.1	776.3	795.5	814.7	833.9	853.1	872.3	891.5	910.7	929.9	949.1	968.3	987.5	1,006.7	1,025.9	1,045.1
	57,125.2	57,953.0	57,951.5	58,547.9	59,194.7	59,580.3	60,139.5	60,598.7	61,119.8	61,614.7	62,119.6	62,563.8	62,922.0	63,171.3	63,443.9	63,756.2	64,071.8	64,423.9	64,738.0	65,056.0	65,371.6

File: [NewByTable-PeakDayDmd4PeakMo(22May2006).xls] Temp=Col(by Detail_Market)

4:10 PM Friday, May 19, 2006 2006-CGR Sales + Transport + Exchange for Month of DECEMBER (units=mdth)
Temp=December, Cold Year

CGR_B	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Residen	44,181.8	44,798.3	44,768.2	45,173.7	45,586.7	45,854.8	46,295.7	46,667.7	47,091.6	47,494.9	47,902.6	48,280.2	48,583.7	48,805.2	49,048.9	49,319.2	49,596.8	49,907.3	50,178.9	50,454.6	50,731.9
Com-core	10,106.1	10,273.7	10,278.4	10,407.3	10,581.8	10,668.9	10,752.0	10,806.0	10,871.9	10,933.1	10,996.1	11,035.4	11,066.0	11,075.7	11,087.6	11,113.6	11,134.8	11,160.1	11,185.3	11,210.8	11,233.8
Ind-core	2,236.3	2,262.4	2,246.0	2,262.0	2,288.3	2,299.6	2,315.5	2,329.5	2,341.6	2,352.9	2,367.8	2,375.9	2,380.7	2,379.7	2,377.5	2,374.3	2,371.9	2,369.0	2,367.0	2,364.6	2,360.9
NGV	601.0	618.6	658.8	704.9	737.9	757.1	776.3	795.5	814.7	833.9	853.1	872.3	891.5	910.7	929.9	949.1	968.3	987.5	1,006.7	1,025.9	1,045.1
	57,125.2	57,953.0	57,951.5	58,547.9	59,194.7	59,580.3	60,139.5	60,598.7	61,119.8	61,614.7	62,119.6	62,563.8	62,922.0	63,171.3	63,443.9	63,756.2	64,071.8	64,423.9	64,738.0	65,056.0	65,371.6

File: [NewByTable-PeakDayDmd4PeakMo(22May2006).xls] Temp=Col(by CGR_Mkt)

4:10 PM Friday, May 19, 2006 2006-CGR Sales + Transport + Exchange for Month of DECEMBER (units=mdth)
Temp=December, "Base/Zero-Hdd" Year

CLASS	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Residen	11,760.6	11,924.7	11,916.7	12,024.6	12,134.6	12,205.9	12,323.3	12,422.3	12,535.2	12,642.5	12,751.1	12,851.6	12,932.4	12,991.3	13,056.2	13,128.1	13,202.0	13,284.7	13,357.0	13,430.4	13,504.2
Com G10	4,840.0	4,915.2	4,921.6	4,985.0	5,069.3	5,111.3	5,151.5	5,177.6	5,209.4	5,239.0	5,269.5	5,288.5	5,303.2	5,307.9	5,313.7	5,326.2	5,336.5	5,348.7	5,360.9	5,373.2	5,384.3
GAC	8.7	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
GEN	80.0	92.1	83.6	81.2	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3	81.3
Ind G10	1,756.0	1,776.4	1,763.6	1,776.2	1,796.8	1,805.7	1,818.2	1,829.1	1,838.6	1,847.5	1,859.2	1,865.6	1,869.4	1,868.6	1,866.9	1,864.4	1,862.5	1,860.2	1,858.6	1,856.7	1,853.8
NGV	601.0	618.6	658.8	704.9	737.9	757.1	776.3	795.5	814.7	833.9	853.1	872.3	891.5	910.7	929.9	949.1	968.3	987.5	1,006.7	1,025.9	1,045.1
	19,046.4	19,335.7	19,353.0	19,580.6	19,828.6	19,970.1	20,159.3	20,314.6	20,487.9	20,652.9	20,822.8	20,967.9	21,086.5	21,168.5	21,256.6	21,357.8	21,459.2	21,571.0	21,673.2	21,776.2	21,877.3

File: [NewByTable-PeakDayDmd4PeakMo(22May2006).xls] Temp=Bas(by Detail_Market)

4:10 PM Friday, May 19, 2006 2006-CGR Sales + Transport + Exchange for Month of DECEMBER (units=mdth)
Temp=December, "Base/Zero-Hdd" Year

CGR_B	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Residen	11,760.6	11,924.7	11,916.7	12,024.6	12,134.6	12,205.9	12,323.3	12,422.3	12,535.2	12,642.5	12,751.1	12,851.6	12,932.4	12,991.3	13,056.2	13,128.1	13,202.0	13,284.7	13,357.0	13,430.4	13,504.2
Com-core	4,928.8	5,015.9	5,013.8	5,074.8	5,159.3	5,201.3	5,241.5	5,267.6	5,299.4	5,329.0	5,359.5	5,378.4	5,393.2	5,397.9	5,403.6	5,416.2	5,426.4	5,438.7	5,450.9	5,463.2	5,474.3
Ind-core	1,756.0	1,776.4	1,763.6	1,776.2	1,796.8	1,805.7	1,818.2	1,829.1	1,838.6	1,847.5	1,859.2	1,865.6	1,869.4	1,868.6	1,866.9	1,864.4	1,862.5	1,860.2	1,858.6	1,856.7	1,853.8
NGV	601.0	618.6	658.8	704.9	737.9	757.1	776.3	795.5	814.7	833.9	853.1	872.3	891.5	910.7	929.9	949.1	968.3	987.5	1,006.7	1,025.9	1,045.1
	19,046.4	19,335.7	19,353.0	19,580.6	19,828.6	19,970.1	20,159.3	20,314.6	20,487.9	20,652.9	20,822.8	20,967.9	21,086.5	21,168.5	21,256.6	21,357.8	21,459.2	21,571.0	21,673.2	21,776.2	21,877.3

File: [NewByTable-PeakDayDmd4PeakMo(22May2006).xls] Temp=Bas(by CGR_Mkt)

2006 CGR Heating Degree Day Designs

	Average	Cold	Hot
January	290	358	222
February	227	280	174
March	190	235	146
April	114	141	87
May	53	66	41
June	16	19	12
July	2	2	1
August	2	2	1
September	5	6	4
October	32	39	24
November	153	188	117
December	302	372	231
	1,386	1,708	1,060

File: S:\California Gas Reports\2004cgr\BMWfiles\
Out-Excel\NewByTable-PeakDayDmd4PeakMo(22May2006).xls(Hdd(2006CGR)); BMW

2006 CALIFORNIA GAS REPORT

SUPPORTING DATA
JULY 2006

2006 CALIFORNIA GAS REPORT

WEATHER: HEATING DEGREE DAYS – AVERAGE AND "COLD" YEAR DESIGNS; AND WINTER PEAK DAY DESIGN TEMPERATURES

JULY 2006

Weather

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

Temperature Zone	Weight	Station Location
1. High mountain	0.0062	Lake Arrowhead
2. Low desert	0.0332	Palm Springs
		Brawley
3. Coastal	0.1998	Los Angeles Airport
		Newport Beach Harbor
		Santa Barbara Airport
4. High desert	0.0662	Bakersfield Airport
		Palmdale
		Visalia
5. Interior valleys	0.3807	Burbank
		Pasadena
		Pomona Cal Poly
		Redlands
6. Basin	0.3139	Los Angeles Civic Center
		Santa Ana

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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 calendar year 2002 customer counts. These weights are used for the dataset from January 1983 to December 2002.

Daily weather temperatures are from the National Climatic Data Center or from preliminary data that SoCalGas captures each day and posts on its web-site: http://www.socalgas.com/business/weather/ for various individual weather stations as well as for its system average values of HDD. Annual HDDs for the entire service area from 1983 to 2002 are listed in Table 2, below.

Table 2

Calendar Month Heating Degree-Days (Jan. 1983 through Dec. 2002)

Year	Month Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total "Cal-Year"
1983	264	200	200	173	59	18	1	0	3	9	179	281	1387
1984	239	205	117	117	19	6	0	0	0	45	218	367	1333
1985	354	256	280	91	65	13	1	2	6	30	238	254	1590
1986	154	201	157	109	50	9	2	3	31	31	81	267	1095
1987	350	227	213	61	43	13	7	2	3	18	160	406	1503
1988	301	160	143	121	65	32	2	3	12	16	176	342	1373
1989	366	316	155	62	55	19	1	4	9	41	105	234	1367
1990	297	299	208	73	58	10	1	1	1	11	121	368	1448
1991	283	118	316	120	102	27	4	3	4	45	114	276	1412
1992	282	182	202	41	15	15	1	1	1	11	127	371	1249
1993	337	258	117	52	17	11	0	0	3	11	128	275	1209
1994	231	259	131	113	81	6	3	0	2	42	292	309	1469
1995	317	136	180	130	111	41	2	2	2	15	69	245	1250
1996	263	201	171	58	14	3	1	0	1	68	144	261	1185
1997	282	205	115	98	5	4	1	0	0	27	120	295	1152
1998	268	282	187	186	88	21	0	0	5	44	167	320	1568
1999	264	245	285	235	79	40	1	2	6	9	128	244	1538
2000	246	243	210	82	27	5	2	1	3	65	247	241	1372
2001	379	338	197	210	28	7	4	3	4	22	146	358	1696
2002	333	203	227	151	81	11	2	4	8	79	96	318	1513
20-Yr-Avg (Jan1983-Dec2002)													
Avg.	**290.5**	**226.7**	**190.6**	**114.2**	**53.1**	**15.6**	**1.8**	**1.6**	**5.2**	**32.0**	**152.8**	**301.6**	**1385.5**
St.Dev.	**54.1**	**57.2**	**56.5**	**54.1**	**31.4**	**11.4**	**1.7**	**1.4**	**6.8**	**21.2**	**58.3**	**52.1**	**160.121**
Min.	**154.0**	**118.0**	**115.0**	**41.0**	**5.0**	**3.0**	**0.0**	**0.0**	**0.0**	**9.0**	**69.0**	**234.0**	**1095.0**
Max.	**379.0**	**338.0**	**316.0**	**235.0**	**111.0**	**41.0**	**7.0**	**4.0**	**31.0**	**79.0**	**292.0**	**406.0**	**1696.0**

Weather

II. Calculating the Average-Temperature Year

The simple average of the 20-year period (January 1983 through December 2002) was used to represent the Average Year Hdd total and the individual monthly values. The standard deviation of these 20 years of annual Hdd was used to design the two Cold Years based on a "1-in-10" and "1-in-35" chance that the respective annual "Cold Year" hdd value would be exceeded.

III. Calculating the Cold-Temperature Year Weather Designs

For SoCalGas cold-temperature-year weather designs are traditionally developed with a 1-in-35 year 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 away from an average-year based on a t-statistic with 19 degrees of freedom. Using the standard deviation of 160.1 HDD from the last 20 years of data, these equations yield values of about 1,708 HDD for a "1-in-35" cold year and 1,598 as the number of 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 away from 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 = 1,708 which equals approximately 1,386 average-year HDDs + 2.025 * 160.1

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Table 3 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 1983 to 2002, as shown as the bottom of Table 2, above. For example, the average-year December value of 302 HDD equals the simple average of the 20 December HDD figures from 1983 to 2002, and represents 21.8 percent of the HDDs in an average-year. SoCalGas calculates the cold--temperature-year monthly HDD values using the same shape of the average-year HDDs. For example, since 21.8 percent of average-temperature-year HDDs occurred in December, the expected number of HDDs during December for a cold-year is equal to 1,708 HDDs multiplied by 21.8 percent, or 372 HDDs.

Table 3

Calendar Month Heating Degree-Day Designs

SoCalGas Heating Degree Day (HDD) Weather Designs

(Calendar Based)

	Cold		Average
	1-in-35 exceedance	1-in-10 exceedance	
January	358	335	290
February	280	261	227
March	235	220	190
April	141	132	114
May	66	61	53
June	19	18	16
July	2	2	2
August	2	2	2
September	6	6	5
October	39	37	32
November	188	176	153
December	372	348	302
	1708	1598	1386

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IV. Calculating the Peak-Day Design Temperature

SoCalGas' Peak-Day design temperature of 38 degrees Fahrenheit, denoted "Deg-F," is determined from a statistical analysis of observed daily system average heating degree-days constructed from daily temperature recordings from fifteen U.S. Weather Bureau weather stations. Since the data are daily we really have a time series of data that measure heating degree-days per day, or heating degrees. The following notation will be used for the remainder of this discussion:

(1) $HD_{y,d}$ = system average value of Heating Degrees for calendar year "y" and day "d".

The calendar year, y, can range from 1950 through 2002, 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 heating degrees defined in equation (1) above:

(2) $MaxHD_y = \max_{d=1}^{n(y)}\{ HD_{y,d} \}$, for y=1950, 1951, …, 2002.

The statistical tools we use to analyze this data are 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 Americal 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

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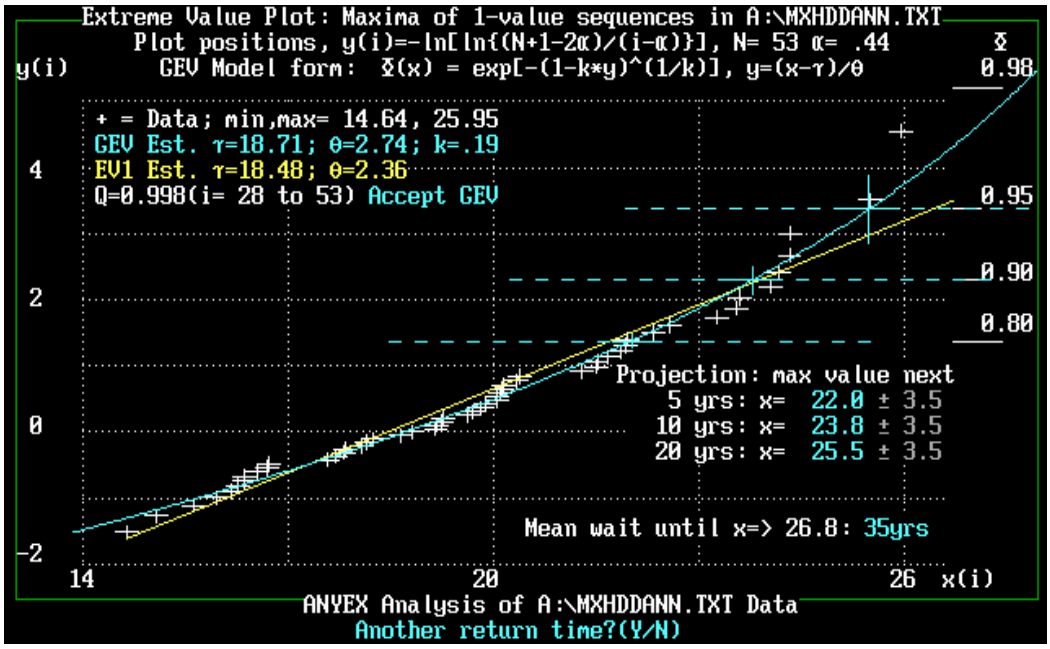
the paper, Dr. Lehman was with the Climate Analysis Center, National Weather Service/NOAA in Washington, D.C., zip code 20233.

Dr. Lehman's ANYEX software programs not only "fit" an extreme value probability model (labeled GEV or EV1 in Dr. Lehman's software) to a specified set of data, but they also perform calculations using the fitted model. For example, the software will calculate the value "hd", for a specified probability, δ, in the equation below:

(3) $\delta = \text{Prob}\{ \text{MaxHD}_y \leq \text{hd} \}$,

where the cumulative distribution function, CDF, for the random variable MaxHD_y is the fitted extreme value probability model. Figure 4 below is an example of the output "window" provided by Dr. Lehman's program based on our 53 observations of the variable MaxHD_y that we used for our 2005 BCAP work. The data analyzed are shown in Table 4, below.

Figure 4



Weather

In terms of our random variable $MaxHD_y$, the Generalized Extreme Value (GEV) model can be written as the following equation:

(4) $\text{Prob}\{ MaxHD_y \leq hd \} = \exp[-((1- k \cdot z)^{(1/k)})]$,

where "exp[.]" is the exponential function and

(5) $z = (hd - \gamma) / \theta$,

with the parameters "k", "γ" and "θ" are the parameters estimated for the GEV model. The Complementary Cumulative Distribution function, CCDF, is obtained from the following probability statement with the GEV probability model:

(6) $\text{Prob}\{ MaxHD_y > hd \} = 1 - \exp[-((1- k \cdot z)^{(1/k)})]$,

where "z" is given in equation (5), above.

A plot of the CCDF for $MaxHD_y$, is shown as Figure 5 (below) and is based on the estimated GEV parameter values of "k", "γ" and "θ" shown in Figure 4 (above).

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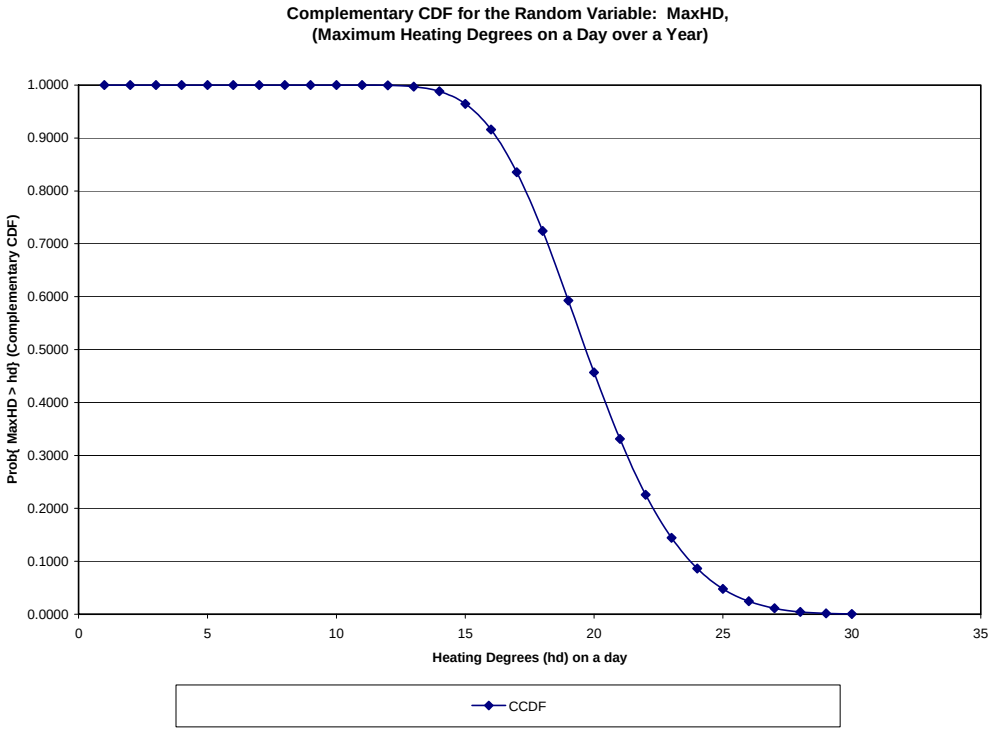
Figure 5



To calculate the minimum daily (system average) temperature to define our extreme weather event (i.e., COLDEST-Day of a calendar year), we start with the fitted probability model for the variable $MaxHD_y$. We specify that this COLDEST-Day be one where the temperature, MinT=65 – hd, where the value of hd would be exceeded only "1-in-35" years. This criteria translates into two equations to be solved based on equations (5) and (6) above:

(7) solve for "z" from $1/35 = 0.029 = 1 - \exp[-((1- k \cdot z)^{(1/k)})]$, which

equals $Prob\{ MaxHD_y > hd \}$, and since

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(8) $z = (hd - \gamma) / \theta$,

(9) solve for "hd" from $hd = \gamma + \theta \cdot z$.

The value of $z = 2.95$ and $hd = \gamma + \theta \cdot z = 27$, with values for "k", "γ" and "θ" for the GEV estimates shown in Figure 4, above. The corresponding minimum daily temperature is MinT=65 – 27=38 Deg-F.

SoCalGas' Peak-Day design temperature of 41 degrees Fahrenheit, is calculated in a methodologically similar way as for the 38 degree peak day temperature. The criteria specified in equation (7) above for a "1-in-35" likelihood would be replaced by a "1-in-10" likelihood.

(7') solve for "z" from $1/10 = 0.100 = 1 - \exp[-((1- k \cdot z)^{(1/k)})]$, which yields

a "z" value of $z = 1.86$ and $hd = \gamma + \theta \cdot z = 24$, approximately, with values for "k", "γ" and "θ" for the GEV estimates shown in Figure 4, above. The corresponding minimum daily temperature is MinT=65 – 24=41 Deg-F.

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Table 4

YEAR	MX_HD	Month(MxHdd)
1950	24.04	Jan
1951	20.38	Dec
1952	21.86	Jan
1953	19.26	Feb
1954	19.25	Dec
1955	19.16	Dec
1956	20.05	Feb
1957	25.48	Jan
1958	18.64	Nov
1959	16.70	Feb
1960	22.58	Jan
1961	17.69	Dec
1962	21.51	Jan
1963	22.32	Jan
1964	19.69	Nov
1965	20.14	Jan
1966	18.24	Jan
1967	24.16	Dec
1968	24.32	Dec
1969	20.13	Jan
1970	18.14	Dec
1971	21.96	Jan
1972	23.54	Dec
1973	19.87	Jan
1974	21.93	Jan
1975	20.34	Jan
1976	20.09	Jan
1977	16.55	Jan
1978	23.25	Dec
1979	23.60	Jan
1980	14.64	Jan
1981	15.62	Jan
1982	19.62	Jan
1983	16.27	Jan
1984	18.07	Dec
1985	19.81	Feb
1986	16.35	Feb
1987	21.49	Dec
1988	21.66	Dec
1989	24.34	Feb
1990	25.95	Dec
1991	16.36	Mar
1992	17.57	Dec
1993	18.82	Jan
1994	17.82	Nov
1995	15.07	Dec
1996	20.04	Feb
1997	16.71	Jan
1998	21.29	Dec
1999	15.95	Jan
2000	16.17	Mar
2001	17.84	Feb
2002	19.17	Jan

2006 CALIFORNIA GAS REPORT

GAS PRICE FORECAST
JULY 2006

The Gas Company

A Sempra Energy utility™

LONG TERM OUTLOOK for "SPOT" Gas: San Juan Basin
($/Dth, @San Juan Basin into EPNG's System-Non-Bondad Receipt Points)
($/Dth Difference, San Juan Basin Basis Swap to Price at Henry Hub)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR. AVG.
2000 Price	2.25	2.41	2.64	2.75	3.16	3.99	3.66	3.45	4.23	4.65	5.21	8.18	**3.88**
Difference	-0.14	-0.25	-0.14	-0.27	-0.36	-0.31	-0.34	-0.93	-0.81	-0.41	-0.21	-0.52	-0.39
2001 Price	8.10	5.56	4.87	4.62	3.50	2.67	2.46	2.61	1.78	2.09	2.13	2.26	**3.55**
Difference	-0.29	-0.04	-0.29	-0.59	-0.73	-1.08	-0.63	-0.40	-0.43	-0.32	-0.30	-0.11	-0.44
2002 Price	2.08	2.13	2.82	2.56	2.42	2.37	2.52	2.43	2.43	2.99	3.38	4.13	**2.69**
Difference	-0.21	-0.16	-0.18	-0.85	-1.10	-0.86	-0.48	-0.65	-1.05	-1.13	-0.68	-0.64	-0.66
2003 Price	4.48	5.29	5.10	3.76	4.53	4.95	4.55	4.60	4.24	4.29	4.15	5.38	**4.61**
Difference	-0.90	-2.14	-1.11	-1.49	-1.25	-0.90	-0.51	-0.38	-0.39	-0.36	-0.27	-0.71	-0.87
2004 Price	5.44	4.85	4.76	5.12	5.42	5.47	5.33	5.01	4.44	5.23	5.77	6.08	**5.25**
Difference	-0.69	-0.55	-0.61	-0.58	-0.85	-0.82	-0.61	-0.44	-0.64	-1.14	-0.38	-0.54	-0.65
2005 Price	5.46	5.49	6.18	6.36	5.58	5.80	6.33	7.62	9.23	10.48	7.50	11.03	**7.26**
Difference	-0.69	-0.62	-0.75	-0.84	-0.91	-1.35	-1.27	-1.58	-4.57	-3.02	-2.82	-2.13	-1.71
2006 Price	7.33	6.53	6.10	**5.86**	**5.96**	**6.09**	**6.19**	**6.30**	**6.38**	**6.29**	**7.20**	**8.14**	**6.53**
Difference	-1.39	-1.11	-1.03	-1.25	-1.32	-1.35	-1.40	-1.40	-1.40	-1.60	-1.70	-1.70	-1.39
2007 Price	**8.76**	**8.77**	**8.58**	**7.08**	**6.90**	**6.96**	**7.03**	**7.10**	**7.11**	**7.19**	**7.72**	**8.29**	**7.62**
Difference	-1.70	-1.70	-1.70	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.50	-1.59	-1.59	-1.56
2008 Price	**8.71**	**8.72**	**8.54**	**6.76**	**6.58**	**6.63**	**6.69**	**6.75**	**6.77**	**6.83**	**7.24**	**7.82**	**7.34**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2009 Price	**8.27**	**8.27**	**8.07**	**6.31**	**6.11**	**6.18**	**6.25**	**6.30**	**6.33**	**6.39**	**6.81**	**7.39**	**6.89**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2010 Price	**7.83**	**7.83**	**7.64**	**5.88**	**5.69**	**5.74**	**5.80**	**5.84**	**5.86**	**5.93**	**6.34**	**6.92**	**6.44**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2011 Price	**7.36**	**7.36**	**7.18**	**5.44**	**5.27**	**5.33**	**5.40**	**5.46**	**5.46**	**5.52**	**5.89**	**6.43**	**6.01**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2012 Price	**6.95**	**6.96**	**6.80**	**5.32**	**5.17**	**5.22**	**5.27**	**5.32**	**5.34**	**5.39**	**5.73**	**6.23**	**5.81**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2013 Price	**6.72**	**6.72**	**6.57**	**5.14**	**4.99**	**5.04**	**5.09**	**5.14**	**5.15**	**5.21**	**5.53**	**6.01**	**5.61**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2014 Price	**6.48**	**6.49**	**6.34**	**4.96**	**4.81**	**4.85**	**4.91**	**4.95**	**4.97**	**5.02**	**5.33**	**5.80**	**5.41**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2015 Price	**6.25**	**6.25**	**6.11**	**4.77**	**4.63**	**4.67**	**4.72**	**4.77**	**4.78**	**4.84**	**5.13**	**5.58**	**5.21**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2016 Price	**6.30**	**6.30**	**6.15**	**4.81**	**4.66**	**4.71**	**4.76**	**4.81**	**4.82**	**4.87**	**5.17**	**5.63**	**5.25**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2017 Price	**6.52**	**6.52**	**6.37**	**4.98**	**4.83**	**4.88**	**4.93**	**4.98**	**5.00**	**5.05**	**5.36**	**5.83**	**5.44**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2018 Price	**7.06**	**7.06**	**6.90**	**5.41**	**5.25**	**5.30**	**5.36**	**5.41**	**5.42**	**5.48**	**5.82**	**6.33**	**5.90**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2019 Price	**7.60**	**7.60**	**7.43**	**5.83**	**5.66**	**5.72**	**5.78**	**5.83**	**5.85**	**5.91**	**6.28**	**6.82**	**6.36**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2020 Price	**8.01**	**8.01**	**7.83**	**6.15**	**5.98**	**6.03**	**6.09**	**6.15**	**6.17**	**6.23**	**6.63**	**7.19**	**6.71**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2021 Price	**8.40**	**8.40**	**8.22**	**6.46**	**6.28**	**6.34**	**6.40**	**6.46**	**6.48**	**6.55**	**6.97**	**7.55**	**7.04**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2022 Price	**8.84**	**8.84**	**8.65**	**6.81**	**6.62**	**6.68**	**6.75**	**6.81**	**6.83**	**6.90**	**7.34**	**7.95**	**7.42**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2023 Price	**9.29**	**9.29**	**9.09**	**7.16**	**6.96**	**7.03**	**7.10**	**7.16**	**7.18**	**7.25**	**7.73**	**8.36**	**7.80**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2024 Price	**9.74**	**9.75**	**9.53**	**7.52**	**7.31**	**7.38**	**7.45**	**7.52**	**7.54**	**7.61**	**8.11**	**8.77**	**8.19**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47
2025 Price	**10.22**	**10.22**	**10.00**	**7.89**	**7.68**	**7.75**	**7.82**	**7.89**	**7.91**	**7.99**	**8.52**	**9.21**	**8.59**
Difference	-1.59	-1.59	-1.59	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.40	-1.57	-1.57	-1.47

NOTES:

1/ Jan.'00-Feb.'06 monthly actuals are simple averages of mid-range estimate of the low and high prices reported each business day by Gas Daily in their "Daily Price Survey." Mar.'06 was estimated as the First-Of-the-Month Index (FOMI) price from Gas Daily's "Monthly Contract Index" survey.

2/ Forecasted price levels for Apr.'06 through Dec.'25 are the sum of Henry Hub projected price plus basis swap from NYMEX Clearport(sm).

3/ Source for gas price data: Gas Daily's "Daily Price Survey" for REGION--"New Mexico-San Juan Basin" and LOCATION--"El Paso, San Juan Basin". Monthly prices are calculated from data reported in Platts Gas Daily--published by the McGraw-Hill Companies, Inc. From the daily low and high prices reported under the heading "Common," the mid-range, or simple average, of these was calculated for each day. These daily mid-range values were subsequently averaged over the number of days reported for each respective calendar month to arrive at the monthly historical prices used for each price series.

File: PrcFcstWacog_Workpapers.xls(Spot)
Last Update: 3/28/2006

Date: 06/30/2006 LXN

LONG TERM OUTLOOK for "SPOT" Gas: Permian Basin/West Texas @Waha
($/Dth Price, @Permian/West Texas at Waha Receipt Points into INTRA-State P/L's)
($/Dth Difference, Waha Basis Swap to Price at Henry Hub)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR. AVG.
2000 Price	2.30	2.50	2.73	2.90	3.39	4.22	4.01	4.38	5.01	5.00	5.44	8.79	**4.22**
Difference	-0.09	-0.16	-0.06	-0.12	-0.13	-0.08	0.01	0.00	-0.03	-0.05	0.01	0.10	-0.05
2001 Price	8.28	5.59	5.13	5.11	4.13	3.67	3.07	2.94	2.03	2.22	2.28	2.30	**3.90**
Difference	-0.11	0.00	-0.03	-0.10	-0.10	-0.09	-0.02	-0.07	-0.18	-0.20	-0.15	-0.07	-0.09
2002 Price	2.15	2.19	2.88	3.22	3.18	3.00	2.88	2.89	3.27	3.88	3.82	4.43	**3.15**
Difference	-0.14	-0.09	-0.11	-0.18	-0.34	-0.23	-0.12	-0.18	-0.21	-0.24	-0.23	-0.34	-0.20
2003 Price	5.02	7.54	5.91	4.94	5.47	5.52	4.95	4.89	4.36	4.40	4.22	5.60	**5.24**
Difference	-0.36	0.11	-0.30	-0.31	-0.31	-0.33	-0.11	-0.08	-0.27	-0.25	-0.21	-0.49	-0.24
2004 Price	5.59	4.97	4.91	5.25	5.85	5.84	5.66	5.24	4.64	5.43	5.81	6.19	**5.45**
Difference	-0.54	-0.43	-0.47	-0.45	-0.43	-0.45	-0.28	-0.21	-0.45	-0.94	-0.34	-0.42	-0.45
2005 Price	5.53	5.64	6.36	6.57	5.87	6.58	7.02	8.45	10.10	10.99	7.55	11.15	**7.65**
Difference	-0.62	-0.47	-0.57	-0.63	-0.62	-0.57	-0.58	-0.75	-3.71	-2.51	-2.77	-2.00	-1.32
2006 Price	7.35	6.76	6.21	**6.22**	**6.37**	**6.54**	**6.95**	**7.10**	**7.10**	**6.75**	**7.52**	**8.46**	**6.95**
Difference	-1.37	-0.88	-0.92	-0.89	-0.91	-0.90	-0.64	-0.60	-0.68	-1.14	-1.37	-1.37	-0.97
2007 Price	**9.09**	**9.10**	**8.91**	**7.66**	**7.48**	**7.54**	**7.98**	**8.04**	**8.06**	**8.11**	**8.22**	**8.79**	**8.25**
Difference	-1.37	-1.37	-1.37	-0.92	-0.92	-0.92	-0.55	-0.55	-0.55	-0.58	-1.08	-1.08	-0.94
2008 Price	**9.22**	**9.22**	**9.05**	**7.48**	**7.30**	**7.35**	**7.41**	**7.47**	**7.49**	**7.55**	**7.82**	**8.40**	**7.98**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2009 Price	**8.77**	**8.77**	**8.58**	**7.03**	**6.84**	**6.90**	**6.97**	**7.02**	**7.05**	**7.11**	**7.39**	**7.97**	**7.53**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2010 Price	**8.34**	**8.34**	**8.15**	**6.60**	**6.41**	**6.46**	**6.52**	**6.57**	**6.58**	**6.65**	**6.92**	**7.50**	**7.09**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2011 Price	**7.86**	**7.87**	**7.69**	**6.16**	**5.99**	**6.05**	**6.12**	**6.18**	**6.18**	**6.24**	**6.47**	**7.01**	**6.65**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2012 Price	**7.46**	**7.46**	**7.30**	**6.05**	**5.89**	**5.94**	**5.99**	**6.04**	**6.06**	**6.12**	**6.31**	**6.81**	**6.45**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2013 Price	**7.23**	**7.23**	**7.07**	**5.86**	**5.71**	**5.76**	**5.81**	**5.86**	**5.87**	**5.93**	**6.11**	**6.59**	**6.25**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2014 Price	**6.99**	**6.99**	**6.84**	**5.68**	**5.53**	**5.58**	**5.63**	**5.67**	**5.69**	**5.74**	**5.91**	**6.38**	**6.05**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2015 Price	**6.76**	**6.76**	**6.61**	**5.49**	**5.35**	**5.39**	**5.44**	**5.49**	**5.50**	**5.56**	**5.71**	**6.16**	**5.85**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2016 Price	**6.81**	**6.81**	**6.66**	**5.53**	**5.38**	**5.43**	**5.48**	**5.53**	**5.54**	**5.59**	**5.75**	**6.21**	**5.89**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2017 Price	**7.03**	**7.03**	**6.88**	**5.71**	**5.56**	**5.60**	**5.65**	**5.70**	**5.72**	**5.77**	**5.94**	**6.41**	**6.08**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2018 Price	**7.57**	**7.57**	**7.41**	**6.13**	**5.97**	**6.02**	**6.08**	**6.13**	**6.14**	**6.20**	**6.40**	**6.91**	**6.54**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2019 Price	**8.11**	**8.11**	**7.94**	**6.55**	**6.38**	**6.44**	**6.50**	**6.55**	**6.57**	**6.63**	**6.86**	**7.40**	**7.00**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2020 Price	**8.51**	**8.52**	**8.34**	**6.87**	**6.70**	**6.75**	**6.81**	**6.87**	**6.89**	**6.95**	**7.21**	**7.77**	**7.35**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2021 Price	**8.91**	**8.91**	**8.72**	**7.18**	**7.00**	**7.06**	**7.12**	**7.18**	**7.20**	**7.27**	**7.55**	**8.13**	**7.68**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2022 Price	**9.35**	**9.35**	**9.16**	**7.53**	**7.34**	**7.40**	**7.47**	**7.53**	**7.55**	**7.62**	**7.92**	**8.53**	**8.06**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2023 Price	**9.80**	**9.80**	**9.60**	**7.89**	**7.68**	**7.75**	**7.82**	**7.88**	**7.90**	**7.97**	**8.31**	**8.94**	**8.44**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2024 Price	**10.25**	**10.25**	**10.04**	**8.24**	**8.03**	**8.10**	**8.17**	**8.24**	**8.26**	**8.33**	**8.69**	**9.35**	**8.83**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83
2025 Price	**10.72**	**10.73**	**10.51**	**8.62**	**8.40**	**8.47**	**8.54**	**8.61**	**8.63**	**8.71**	**9.10**	**9.79**	**9.24**
Difference	-1.08	-1.08	-1.08	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.68	-0.99	-0.99	-0.83

NOTES:
1/ Jan.'00-Feb.'06 monthly actuals are simple averages of mid-range estimate of the low and high prices reported each business day by Gas Daily in their "Daily Price Survey." Mar.'06 was estimated as the First-Of-the-Month Index (FOMI) price from Gas Daily's "Monthly Contract Index" survey.
2/ Forecasted price levels for Apr.'06 through Dec.'25 are the sum of Henry Hub projected price plus basis swap from NYMEX Clearport(sm).
3/ Source for gas price data: Gas Daily's "Daily Price Survey" for REGION--"Permian Basin Area" and LOCATION--"Tex Intras, Waha area".
Monthly prices are calculated from data reported in Platts Gas Daily--published by the McGraw-Hill Companies, Inc.
From the daily low and high prices reported under the heading "Common," the mid-range, or simple average, of these was calculated for each day.
These daily mid-range values were subsequently averaged over the number of days reported for each respective calendar month to arrive at the monthly historical prices used for each price series.

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Last Update: 3/28/2006

Date: 06/30/2006 LXN

LONG TERM OUTLOOK for "SPOT" Gas: Alberta Canada/AECO-C
(US-$/Dth Price, @NOVA/AECO-C Hub, Western Canada)
($/Dth Difference, Alberta Basis Swap to Price at Henry Hub)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR. AVG.
2000 Price	2.05	2.25	2.53	2.71	3.04	3.66	3.19	3.21	4.48	4.53	4.89	8.14	**3.72**
Difference	-0.34	-0.41	-0.25	-0.31	-0.48	-0.65	-0.81	-1.16	-0.57	-0.52	-0.54	-0.55	-0.55
2001 Price	7.47	5.41	4.98	4.96	3.90	3.18	2.34	2.48	1.69	2.03	2.16	2.21	**3.57**
Difference	-0.93	-0.19	-0.18	-0.25	-0.34	-0.58	-0.75	-0.52	-0.52	-0.39	-0.27	-0.16	-0.42
2002 Price	1.96	2.01	2.72	2.95	2.49	2.14	1.43	1.96	2.69	3.39	3.47	3.99	**2.60**
Difference	-0.33	-0.27	-0.27	-0.46	-1.03	-1.09	-1.57	-1.11	-0.79	-0.72	-0.58	-0.79	-0.75
2003 Price	4.45	5.89	5.88	4.62	4.95	5.02	4.29	4.34	4.19	4.21	4.05	5.03	**4.74**
Difference	-0.93	-1.55	-0.33	-0.64	-0.83	-0.84	-0.78	-0.64	-0.44	-0.45	-0.38	-1.06	-0.74
2004 Price	5.37	4.64	4.67	4.92	5.37	5.13	5.16	4.84	4.32	5.31	5.54	5.67	**5.08**
Difference	-0.76	-0.76	-0.71	-0.78	-0.90	-1.16	-0.78	-0.61	-0.76	-1.06	-0.61	-0.95	-0.82
2005 Price	5.31	5.30	6.06	6.33	5.60	5.91	6.18	7.63	9.48	10.74	7.98	10.95	**7.29**
Difference	-0.83	-0.81	-0.87	-0.87	-0.89	-1.24	-1.43	-1.57	-4.32	-2.76	-2.35	-2.20	-1.68
2006 Price	7.51	6.52	6.48	**6.03**	**6.09**	**6.15**	**6.26**	**6.35**	**6.43**	**6.52**	**7.34**	**8.28**	**6.66**
Difference	-1.21	-1.12	-0.65	-1.07	-1.19	-1.29	-1.33	-1.35	-1.35	-1.37	-1.55	-1.55	-1.25
2007 Price	**8.91**	**8.92**	**8.73**	**7.50**	**7.32**	**7.37**	**7.45**	**7.51**	**7.53**	**7.61**	**7.96**	**8.53**	**7.95**
Difference	-1.55	-1.55	-1.55	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-1.08	-1.34	-1.34	-1.24
2008 Price	**8.96**	**8.96**	**8.79**	**7.23**	**7.05**	**7.10**	**7.16**	**7.22**	**7.24**	**7.30**	**7.60**	**8.17**	**7.73**
Difference	-1.34	-1.34	-1.34	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.08
2009 Price	**8.64**	**8.64**	**8.50**	**6.78**	**6.59**	**6.65**	**6.72**	**6.77**	**6.80**	**6.86**	**7.16**	**7.74**	**7.32**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2010 Price	**8.20**	**8.20**	**8.07**	**6.35**	**6.16**	**6.21**	**6.27**	**6.32**	**6.33**	**6.40**	**6.70**	**7.27**	**6.87**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2011 Price	**7.73**	**7.73**	**7.61**	**5.91**	**5.74**	**5.81**	**5.87**	**5.93**	**5.94**	**5.99**	**6.24**	**6.78**	**6.44**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2012 Price	**7.32**	**7.33**	**7.22**	**5.80**	**5.64**	**5.69**	**5.74**	**5.79**	**5.81**	**5.87**	**6.08**	**6.58**	**6.24**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2013 Price	**7.09**	**7.09**	**6.99**	**5.61**	**5.46**	**5.51**	**5.56**	**5.61**	**5.62**	**5.68**	**5.88**	**6.36**	**6.04**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2014 Price	**6.85**	**6.86**	**6.76**	**5.43**	**5.28**	**5.33**	**5.38**	**5.42**	**5.44**	**5.49**	**5.68**	**6.15**	**5.84**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2015 Price	**6.62**	**6.62**	**6.53**	**5.24**	**5.10**	**5.14**	**5.19**	**5.24**	**5.25**	**5.31**	**5.48**	**5.94**	**5.64**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2016 Price	**6.67**	**6.67**	**6.58**	**5.28**	**5.13**	**5.18**	**5.23**	**5.28**	**5.29**	**5.35**	**5.52**	**5.98**	**5.68**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2017 Price	**6.89**	**6.89**	**6.80**	**5.46**	**5.31**	**5.35**	**5.41**	**5.45**	**5.47**	**5.52**	**5.71**	**6.18**	**5.87**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2018 Price	**7.43**	**7.44**	**7.33**	**5.88**	**5.72**	**5.77**	**5.83**	**5.88**	**5.90**	**5.95**	**6.18**	**6.68**	**6.33**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2019 Price	**7.97**	**7.97**	**7.86**	**6.30**	**6.14**	**6.19**	**6.25**	**6.30**	**6.32**	**6.38**	**6.64**	**7.17**	**6.79**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2020 Price	**8.38**	**8.38**	**8.25**	**6.62**	**6.45**	**6.50**	**6.57**	**6.62**	**6.64**	**6.70**	**6.98**	**7.54**	**7.14**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2021 Price	**8.77**	**8.77**	**8.64**	**6.93**	**6.75**	**6.81**	**6.87**	**6.93**	**6.95**	**7.02**	**7.32**	**7.90**	**7.47**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2022 Price	**9.21**	**9.21**	**9.07**	**7.28**	**7.09**	**7.15**	**7.22**	**7.28**	**7.30**	**7.37**	**7.70**	**8.30**	**7.85**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2023 Price	**9.66**	**9.66**	**9.52**	**7.64**	**7.44**	**7.50**	**7.57**	**7.63**	**7.65**	**7.73**	**8.08**	**8.71**	**8.23**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2024 Price	**10.11**	**10.12**	**9.96**	**7.99**	**7.78**	**7.85**	**7.92**	**7.99**	**8.01**	**8.09**	**8.47**	**9.13**	**8.62**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04
2025 Price	**10.59**	**10.59**	**10.43**	**8.37**	**8.15**	**8.22**	**8.29**	**8.36**	**8.38**	**8.46**	**8.87**	**9.56**	**9.02**
Difference	-1.21	-1.21	-1.16	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-0.92	-1.21	-1.21	-1.04

NOTES:
1/ Jan.'00-Feb.'06 monthly actuals are simple averages of mid-range estimate of the low and high prices reported each business day by Gas Daily in their "Daily Price Survey." Mar.'06 was estimated as the First-Of-the-Month Index (FOMI) price from Gas Daily's "Monthly Contract Index" survey.
2/ Forecasted price levels for Apr.'06 through Dec.'25 are the sum of Henry Hub projected price plus basis swap from NYMEX Clearport(sm).
3/ Source for gas price data: Gas Daily's "Daily Price Survey" for REGION--"Canadian Gas" and LOCATION--"NOVA (AECO-C, NIT)".
Monthly prices are calculated from data reported in Platts Gas Daily--published by the McGraw-Hill Companies, Inc.
From the daily low and high prices reported under the heading "Common," the mid-range, or simple average, of these was calculated for each day.
These daily mid-range values were subsequently averaged over the number of days reported for each respective calendar month to arrive at the monthly historical prices used for each price series.

LONG TERM OUTLOOK for "SPOT" Gas: Rocky Mountains
($/Dth Price, Rockies @ Kern River/Opal Plant)
(US-$/Dth Difference, Rockies Basis Swap to Price at Henry Hub)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR. AVG.
2000 Price	2.23	2.38	2.57	2.70	3.04	3.77	3.40	3.23	4.06	4.62	5.17	8.12	**3.77**
Difference	-0.16	-0.28	-0.21	-0.32	-0.48	-0.53	-0.60	-1.15	-0.98	-0.44	-0.25	-0.57	-0.50
2001 Price	7.98	5.57	4.82	4.52	3.31	2.58	2.34	2.48	1.68	1.98	1.97	2.21	**3.45**
Difference	-0.41	-0.03	-0.34	-0.69	-0.92	-1.17	-0.75	-0.53	-0.53	-0.43	-0.46	-0.16	-0.54
2002 Price	1.99	2.00	2.72	1.86	1.79	1.29	1.29	1.34	1.39	2.03	3.03	3.11	**1.99**
Difference	-0.30	-0.29	-0.27	-1.55	-1.73	-1.94	-1.71	-1.74	-2.09	-2.08	-1.03	-1.66	-1.37
2003 Price	3.10	4.59	4.45	3.39	4.68	4.84	4.43	4.59	4.32	4.28	4.18	5.37	**4.35**
Difference	-2.28	-2.85	-1.76	-1.86	-1.10	-1.01	-0.63	-0.38	-0.31	-0.37	-0.24	-0.72	-1.13
2004 Price	5.53	4.84	4.78	5.04	5.38	5.34	5.32	5.03	4.49	5.32	5.86	6.12	**5.25**
Difference	-0.60	-0.56	-0.60	-0.66	-0.89	-0.95	-0.61	-0.43	-0.60	-1.05	-0.28	-0.50	-0.64
2005 Price	5.47	5.51	6.25	6.48	5.68	5.95	6.44	7.69	9.43	10.69	7.57	10.66	**7.32**
Difference	-0.67	-0.60	-0.67	-0.73	-0.81	-1.20	-1.17	-1.52	-4.37	-2.81	-2.76	-2.50	-1.65
2006 Price	7.37	6.54	6.11	**5.81**	**5.88**	**5.98**	**6.08**	**6.21**	**6.26**	**6.18**	**7.06**	**8.00**	**6.46**
Difference	-1.35	-1.10	-1.02	-1.29	-1.40	-1.46	-1.51	-1.49	-1.53	-1.71	-1.83	-1.83	-1.46
2007 Price	**8.63**	**8.64**	**8.45**	**6.69**	**6.51**	**6.57**	**6.95**	**7.01**	**7.03**	**6.77**	**7.55**	**8.13**	**7.41**
Difference	-1.83	-1.83	-1.83	-1.89	-1.89	-1.89	-1.58	-1.58	-1.58	-1.92	-1.75	-1.75	-1.78
2008 Price	**8.55**	**8.56**	**8.38**	**6.67**	**6.49**	**6.54**	**6.60**	**6.66**	**6.68**	**6.74**	**7.33**	**7.90**	**7.26**
Difference	-1.75	-1.75	-1.75	-1.48	-1.48	-1.48	-1.48	-1.48	-1.48	-1.48	-1.48	-1.48	-1.55
2009 Price	**8.58**	**8.58**	**8.39**	**6.43**	**6.24**	**6.31**	**6.37**	**6.42**	**6.45**	**6.52**	**7.10**	**7.68**	**7.09**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2010 Price	**8.14**	**8.14**	**7.95**	**6.00**	**5.82**	**5.87**	**5.92**	**5.97**	**5.98**	**6.06**	**6.64**	**7.22**	**6.64**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2011 Price	**7.67**	**7.67**	**7.50**	**5.57**	**5.40**	**5.46**	**5.52**	**5.58**	**5.59**	**5.64**	**6.18**	**6.72**	**6.21**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2012 Price	**7.27**	**7.27**	**7.11**	**5.45**	**5.29**	**5.34**	**5.40**	**5.45**	**5.46**	**5.52**	**6.03**	**6.52**	**6.01**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2013 Price	**7.03**	**7.03**	**6.88**	**5.26**	**5.11**	**5.16**	**5.21**	**5.26**	**5.28**	**5.33**	**5.83**	**6.31**	**5.81**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2014 Price	**6.80**	**6.80**	**6.65**	**5.08**	**4.93**	**4.98**	**5.03**	**5.08**	**5.09**	**5.15**	**5.63**	**6.09**	**5.61**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2015 Price	**6.56**	**6.56**	**6.42**	**4.90**	**4.75**	**4.80**	**4.85**	**4.89**	**4.91**	**4.96**	**5.42**	**5.88**	**5.41**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2016 Price	**6.61**	**6.61**	**6.47**	**4.93**	**4.79**	**4.83**	**4.88**	**4.93**	**4.95**	**5.00**	**5.47**	**5.92**	**5.45**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2017 Price	**6.83**	**6.84**	**6.68**	**5.11**	**4.96**	**5.01**	**5.06**	**5.11**	**5.12**	**5.18**	**5.66**	**6.13**	**5.64**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2018 Price	**7.38**	**7.38**	**7.22**	**5.54**	**5.38**	**5.43**	**5.48**	**5.53**	**5.55**	**5.61**	**6.12**	**6.62**	**6.10**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2019 Price	**7.91**	**7.91**	**7.74**	**5.96**	**5.79**	**5.84**	**5.90**	**5.95**	**5.97**	**6.03**	**6.58**	**7.11**	**6.56**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2020 Price	**8.32**	**8.32**	**8.14**	**6.28**	**6.10**	**6.16**	**6.22**	**6.27**	**6.29**	**6.36**	**6.93**	**7.48**	**6.91**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2020 Price	**8.71**	**8.72**	**8.53**	**6.59**	**6.40**	**6.46**	**6.53**	**6.58**	**6.60**	**6.67**	**7.26**	**7.84**	**7.24**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2020 Price	**9.15**	**9.16**	**8.96**	**6.94**	**6.74**	**6.80**	**6.87**	**6.93**	**6.95**	**7.02**	**7.64**	**8.24**	**7.62**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2020 Price	**9.60**	**9.61**	**9.40**	**7.29**	**7.09**	**7.15**	**7.22**	**7.29**	**7.31**	**7.38**	**8.02**	**8.66**	**8.00**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2020 Price	**10.06**	**10.06**	**9.85**	**7.65**	**7.44**	**7.50**	**7.57**	**7.64**	**7.66**	**7.74**	**8.41**	**9.07**	**8.39**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27
2020 Price	**10.53**	**10.53**	**10.31**	**8.02**	**7.80**	**7.87**	**7.95**	**8.02**	**8.04**	**8.12**	**8.82**	**9.50**	**8.79**
Difference	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27	-1.27

NOTES:
1/ Jan.'00-Feb.'06 monthly actuals are simple averages of mid-range estimate of the low and high prices reported each business day by Gas Daily in their "Daily Price Survey." Mar.'06 was estimated as the First-Of-the-Month Index (FOMI) price from Gas Daily's "Monthly Contract Index" survey.
2/ Forecasted price levels for Apr.'06 through Dec.'25 are the sum of Henry Hub projected price plus basis swap from NYMEX Clearport(sm).
3/ Source for gas price data: Gas Daily's "Daily Price Survey" for REGION--"Rockies" and LOCATION--"Kern River/Opal Plant".
Monthly prices are calculated from data reported in Platts Gas Daily--published by the McGraw-Hill Companies, Inc.
From the daily low and high prices reported under the heading "Common," the mid-range, or simple average, of these was calculated for each day.
These daily mid-range values were subsequently averaged over the number of days reported for each respective calendar month to arrive at the monthly historical prices used for each price series.

File: PrcFcstWacog_Workpapers.xls(Spot)
Last Update: 3/28/2006

Date: 06/30/2006 LXN

LONG TERM OUTLOOK for "SPOT" Gas: Northern California @ Malin, Oregon
($/Dth Price, @PG&E's Line #400 at Ca./Or. Border)
(US-$/Dth Difference, Malin Basis Swap to Price at Henry Hub)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR. AVG.
2000 Price	2.38	2.49	2.74	2.90	3.27	4.20	3.95	4.44	5.38	5.31	9.04	19.75	**5.49**
Difference	-0.02	-0.17	-0.04	-0.12	-0.25	-0.10	-0.05	0.06	0.33	0.25	3.61	11.06	1.21
2001 Price	10.18	9.74	7.17	9.20	5.28	3.47	2.90	3.02	1.90	2.19	2.36	2.58	**5.00**
Difference	1.79	4.14	2.01	3.99	1.04	-0.28	-0.19	0.01	-0.31	-0.22	-0.06	0.21	1.01
2002 Price	2.18	2.24	2.24	2.71	2.73	2.62	2.65	2.71	2.71	3.68	3.77	4.34	**2.88**
Difference	-0.12	-0.05	-0.75	-0.70	-0.80	-0.61	-0.35	-0.36	-0.77	-0.44	-0.28	-0.43	-0.47
2003 Price	4.66	5.90	5.93	4.71	5.13	5.08	4.58	4.65	4.43	4.37	4.30	5.38	**4.93**
Difference	-0.72	-1.53	-0.28	-0.55	-0.65	-0.77	-0.48	-0.32	-0.20	-0.29	-0.12	-0.71	-0.55
2004 Price	5.61	4.92	4.90	5.27	5.64	5.52	5.52	5.22	4.62	5.52	5.96	6.19	**5.41**
Difference	-0.52	-0.48	-0.48	-0.43	-0.64	-0.77	-0.41	-0.24	-0.46	-0.85	-0.19	-0.43	-0.49
2005 Price	5.66	5.66	6.44	6.65	5.83	6.07	6.54	7.98	9.75	11.03	8.25	11.55	**7.62**
Difference	-0.48	-0.46	-0.49	-0.55	-0.66	-1.09	-1.06	-1.22	-4.05	-2.46	-2.08	-1.60	-1.35
2006 Price	7.79	6.74	6.40	**6.19**	**6.29**	**6.41**	**6.50**	**6.61**	**6.69**	**6.73**	**7.71**	**8.65**	**6.89**
Difference	-0.93	-0.90	-0.73	-0.92	-0.99	-1.03	-1.10	-1.10	-1.10	-1.16	-1.18	-1.18	-1.03
2007 Price	**9.23**	**9.23**	**9.05**	**7.71**	**7.53**	**7.59**	**7.66**	**7.73**	**7.75**	**7.82**	**8.25**	**8.82**	**8.20**
Difference	-1.23	-1.23	-1.23	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-0.86	-1.05	-1.05	-0.99
2008 Price	**9.25**	**9.25**	**9.08**	**7.42**	**7.24**	**7.29**	**7.35**	**7.41**	**7.43**	**7.49**	**7.95**	**8.53**	**7.97**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2009 Price	**8.80**	**8.80**	**8.61**	**6.97**	**6.78**	**6.84**	**6.91**	**6.96**	**6.99**	**7.06**	**7.52**	**8.09**	**7.53**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2010 Price	**8.36**	**8.36**	**8.17**	**6.54**	**6.35**	**6.40**	**6.46**	**6.51**	**6.52**	**6.59**	**7.05**	**7.63**	**7.08**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2011 Price	**7.89**	**7.89**	**7.72**	**6.10**	**5.93**	**6.00**	**6.06**	**6.12**	**6.13**	**6.18**	**6.59**	**7.13**	**6.65**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2012 Price	**7.49**	**7.49**	**7.33**	**5.99**	**5.83**	**5.88**	**5.93**	**5.98**	**6.00**	**6.06**	**6.44**	**6.93**	**6.45**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2013 Price	**7.25**	**7.25**	**7.10**	**5.80**	**5.65**	**5.70**	**5.75**	**5.80**	**5.81**	**5.87**	**6.24**	**6.72**	**6.25**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2014 Price	**7.02**	**7.02**	**6.87**	**5.62**	**5.47**	**5.52**	**5.57**	**5.61**	**5.63**	**5.68**	**6.04**	**6.51**	**6.05**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2015 Price	**6.78**	**6.78**	**6.64**	**5.43**	**5.29**	**5.33**	**5.38**	**5.43**	**5.44**	**5.50**	**5.84**	**6.29**	**5.85**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2016 Price	**6.83**	**6.83**	**6.69**	**5.47**	**5.33**	**5.37**	**5.42**	**5.47**	**5.48**	**5.54**	**5.88**	**6.34**	**5.89**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2017 Price	**7.05**	**7.06**	**6.90**	**5.65**	**5.50**	**5.54**	**5.60**	**5.64**	**5.66**	**5.71**	**6.07**	**6.54**	**6.08**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2018 Price	**7.60**	**7.60**	**7.44**	**6.07**	**5.91**	**5.96**	**6.02**	**6.07**	**6.09**	**6.14**	**6.53**	**7.03**	**6.54**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2019 Price	**8.13**	**8.13**	**7.96**	**6.50**	**6.33**	**6.38**	**6.44**	**6.49**	**6.51**	**6.57**	**6.99**	**7.52**	**7.00**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2019 Price	**8.54**	**8.54**	**8.36**	**6.82**	**6.64**	**6.70**	**6.76**	**6.81**	**6.83**	**6.89**	**7.34**	**7.89**	**7.34**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2020 Price	**8.93**	**8.93**	**8.75**	**7.13**	**6.94**	**7.00**	**7.06**	**7.12**	**7.14**	**7.21**	**7.67**	**8.25**	**7.68**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2020 Price	**9.37**	**9.38**	**9.18**	**7.47**	**7.28**	**7.34**	**7.41**	**7.47**	**7.49**	**7.56**	**8.05**	**8.66**	**8.05**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2020 Price	**9.82**	**9.83**	**9.62**	**7.83**	**7.63**	**7.69**	**7.76**	**7.82**	**7.84**	**7.92**	**8.44**	**9.07**	**8.44**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2020 Price	**10.28**	**10.28**	**10.07**	**8.18**	**7.97**	**8.04**	**8.11**	**8.18**	**8.20**	**8.28**	**8.82**	**9.48**	**8.82**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83
2020 Price	**10.75**	**10.75**	**10.53**	**8.56**	**8.34**	**8.41**	**8.48**	**8.55**	**8.57**	**8.65**	**9.23**	**9.91**	**9.23**
Difference	-1.05	-1.05	-1.05	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.73	-0.86	-0.86	-0.83

NOTES:
1/ Jan.'00-Feb.'06 monthly actuals are simple averages of mid-range estimate of the low and high prices reported each business day by Gas Daily in their "Daily Price Survey." Mar.'06 was estimated as the First-Of-the-Month Index (FOMI) price from Gas Daily's "Monthly Contract Index" survey.
2/ Forecasted price levels for Apr.'06 through Dec.'25 are the sum of Henry Hub projected price plus basis swap from NYMEX Clearport(sm).
3/ Source for gas price data: Gas Daily's "Daily Price Survey" for REGION--"Others" and LOCATION--"Malin".
Monthly prices are calculated from data reported in Platts Gas Daily--published by the McGraw-Hill Companies, Inc.
From the daily low and high prices reported under the heading "Common," the mid-range, or simple average, of these was calculated for each day.
These daily mid-range values were subsequently averaged over the number of days reported for each respective calendar month to arrive at the monthly historical prices used for each price series.

File: PrcFcstWacog_Workpapers.xls(Spot)
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Date: 06/30/2006 LXN

LONG TERM OUTLOOK for "SPOT" Gas: U.S. Gulf Coast/South Louisiana @ Henry Hub, Louisiana
($/Dth Price, @Henry Hub, So. Louisiana)

YEAR		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR. AVG.
2000	Price	2.39	2.66	2.78	3.02	3.52	4.30	4.00	4.38	5.04	5.06	5.43	8.69	4.27
2001	Price	8.39	5.60	5.16	5.21	4.23	3.75	3.09	3.01	2.21	2.41	2.43	2.37	3.99
2002	Price	2.29	2.29	2.99	3.41	3.52	3.23	3.00	3.08	3.48	4.11	4.05	4.77	3.35
2003	Price	5.38	7.43	6.21	5.25	5.78	5.85	5.06	4.98	4.63	4.66	4.42	6.09	5.48
2004	Price	6.13	5.40	5.38	5.70	6.27	6.29	5.93	5.45	5.08	6.37	6.15	6.62	5.90
2005	Price	6.15	6.11	6.93	7.20	6.49	7.15	7.60	9.20	13.80	13.50	10.33	13.16	8.97
2006	Price	8.72	7.64	7.13	**7.11**	**7.28**	**7.44**	**7.59**	**7.70**	**7.78**	**7.89**	**8.89**	**9.83**	**7.92**
2007	Price	**10.46**	**10.47**	**10.28**	**8.58**	**8.40**	**8.46**	**8.53**	**8.60**	**8.61**	**8.69**	**9.30**	**9.87**	**9.19**
2008	Price	**10.30**	**10.30**	**10.13**	**8.16**	**7.98**	**8.03**	**8.09**	**8.14**	**8.17**	**8.23**	**8.81**	**9.39**	**8.81**
2009	Price	**9.85**	**9.85**	**9.66**	**7.70**	**7.51**	**7.58**	**7.64**	**7.70**	**7.72**	**7.79**	**8.38**	**8.95**	**8.36**
2010	Price	**9.42**	**9.41**	**9.23**	**7.27**	**7.09**	**7.14**	**7.19**	**7.24**	**7.26**	**7.33**	**7.91**	**8.49**	**7.91**
2011	Price	**8.94**	**8.94**	**8.77**	**6.84**	**6.67**	**6.73**	**6.79**	**6.86**	**6.86**	**6.91**	**7.45**	**7.99**	**7.48**
2012	Price	**8.54**	**8.54**	**8.38**	**6.72**	**6.56**	**6.61**	**6.67**	**6.72**	**6.73**	**6.79**	**7.30**	**7.79**	**7.28**
2013	Price	**8.30**	**8.31**	**8.15**	**6.54**	**6.38**	**6.43**	**6.49**	**6.53**	**6.55**	**6.60**	**7.10**	**7.58**	**7.08**
2014	Price	**8.07**	**8.07**	**7.92**	**6.35**	**6.20**	**6.25**	**6.30**	**6.35**	**6.36**	**6.42**	**6.90**	**7.37**	**6.88**
2015	Price	**7.83**	**7.84**	**7.69**	**6.17**	**6.02**	**6.07**	**6.12**	**6.16**	**6.18**	**6.23**	**6.70**	**7.15**	**6.68**
2016	Price	**7.88**	**7.89**	**7.74**	**6.21**	**6.06**	**6.11**	**6.16**	**6.20**	**6.22**	**6.27**	**6.74**	**7.20**	**6.72**
2017	Price	**8.11**	**8.11**	**7.96**	**6.38**	**6.23**	**6.28**	**6.33**	**6.38**	**6.39**	**6.45**	**6.93**	**7.40**	**6.91**
2018	Price	**8.65**	**8.65**	**8.49**	**6.81**	**6.65**	**6.70**	**6.75**	**6.80**	**6.82**	**6.88**	**7.39**	**7.89**	**7.37**
2019	Price	**9.18**	**9.19**	**9.02**	**7.23**	**7.06**	**7.11**	**7.17**	**7.23**	**7.24**	**7.31**	**7.85**	**8.38**	**7.83**
2020	Price	**9.59**	**9.59**	**9.41**	**7.55**	**7.37**	**7.43**	**7.49**	**7.55**	**7.56**	**7.63**	**8.20**	**8.75**	**8.18**
2021	Price	**9.98**	**9.99**	**9.80**	**7.86**	**7.68**	**7.73**	**7.80**	**7.86**	**7.87**	**7.94**	**8.53**	**9.11**	**8.51**
2022	Price	**10.43**	**10.43**	**10.23**	**8.21**	**8.01**	**8.08**	**8.14**	**8.20**	**8.22**	**8.29**	**8.91**	**9.52**	**8.89**
2023	Price	**10.88**	**10.88**	**10.68**	**8.56**	**8.36**	**8.42**	**8.49**	**8.56**	**8.58**	**8.65**	**9.30**	**9.93**	**9.27**
2024	Price	**11.33**	**11.33**	**11.12**	**8.92**	**8.71**	**8.78**	**8.85**	**8.91**	**8.93**	**9.01**	**9.68**	**10.34**	**9.66**
2025	Price	**11.80**	**11.81**	**11.59**	**9.29**	**9.07**	**9.14**	**9.22**	**9.29**	**9.31**	**9.39**	**10.09**	**10.77**	**10.06**
Assumed Ratios (see 3/ below) of Monthly to Year														
Average:		1.173	1.173	1.151	0.923	0.902	0.909	0.916	0.923	0.925	0.933	1.002	1.071	1.000

NOTES

1/ Jan.'00-Feb.'06 monthly actuals are simple averages of mid-range estimate of the low and high prices reported each business day by Gas Daily in their "Daily Price Survey." Mar.'06 was estimated as the First-Of-the-Month Index (FOMI) price from Gas Daily's "Monthly Contract Index" survey.

2/ Source for gas price data: Gas Daily's "Daily Price Survey" for REGION--"Louisiana-Onshore South" and LOCATION--"Henry Hub".
Monthly prices are calculated from data reported in Platts Gas Daily--published by the McGraw-Hill Companies, Inc.
From the daily low and high prices reported under the heading "Common," the mid-range, or simple average, of these was calculated for each day.
These daily mid-range values were subsequently averaged over the number of days reported for each respective calendar month to arrive at the monthly historical prices used for each price series.

3/ Monthly factors are estimated as the ratio of the respective month futures prices to annual futures prices for years 2007 and 2011.

File: PrcFcstWacog_Workpapers.xls(Spot)
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Date: 06/30/2006 LXN

LONG TERM OUTLOOK for "SPOT" Gas: Sumas
($/Dth Price, Northwest Pipeline Corporation - Canadian Border @ Sumas
(US-$/Dth Difference, Sumas Basis Swap to Price at Henry Hub)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR. AVG.
2000 Price	2.26	2.36	2.58	2.71	3.03	3.70	3.39	3.18	4.54	4.75	9.02	17.49	**4.92**
Difference	-0.13	-0.30	-0.20	-0.31	-0.49	-0.60	-0.61	-1.20	-0.51	-0.31	3.59	8.80	0.64
2001 Price	7.98	6.03	5.16	5.27	4.10	3.17	2.31	2.50	1.68	2.08	2.26	2.44	**3.75**
Difference	-0.41	0.44	0.00	0.06	-0.13	-0.58	-0.78	-0.51	-0.53	-0.33	-0.17	0.07	-0.24
2002 Price	2.06	2.07	2.88	2.96	2.73	2.07	1.38	2.09	2.76	3.43	3.62	4.18	**2.69**
Difference	-0.23	-0.22	-0.11	-0.45	-0.79	-1.16	-1.61	-0.99	-0.72	-0.68	-0.44	-0.60	-0.67
2003 Price	4.53	5.79	5.73	4.49	4.79	4.78	4.33	4.39	4.22	4.19	4.19	5.27	**4.73**
Difference	-0.85	-1.64	-0.48	-0.76	-0.99	-1.08	-0.73	-0.58	-0.41	-0.47	-0.23	-0.82	-0.75
2004 Price	5.55	4.78	4.68	4.94	5.29	5.17	5.22	4.98	4.46	5.27	5.87	6.09	**5.19**
Difference	-0.58	-0.62	-0.70	-0.76	-0.98	-1.12	-0.71	-0.47	-0.62	-1.10	-0.28	-0.53	-0.71
2005 Price	5.64	5.51	6.20	6.45	5.64	5.87	6.26	7.58	9.44	10.73	8.39	11.61	**7.44**
Difference	-0.50	-0.61	-0.73	-0.75	-0.85	-1.29	-1.34	-1.63	-4.37	-2.77	-1.93	-1.55	-1.53
2006 Price	7.73	6.80	6.39	**5.94**	**6.04**	**6.15**	**6.22**	**6.33**	**6.41**	**6.53**	**7.69**	**8.63**	**6.74**
Difference	-0.99	-0.85	-0.74	-1.17	-1.24	-1.29	-1.37	-1.37	-1.37	-1.36	-1.21	-1.21	-1.18
2007 Price	**9.25**	**9.26**	**9.07**	**7.49**	**7.31**	**7.37**	**7.44**	**7.51**	**7.53**	**7.60**	**8.26**	**8.83**	**8.08**
Difference	-1.21	-1.21	-1.21	-1.09	-1.09	-1.09	-1.09	-1.09	-1.09	-1.09	-1.04	-1.04	-1.11
2008 Price	**9.26**	**9.26**	**9.09**	**7.12**	**6.94**	**6.99**	**7.05**	**7.10**	**7.12**	**7.18**	**7.77**	**8.34**	**7.77**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2009 Price	**8.81**	**8.81**	**8.62**	**6.66**	**6.47**	**6.54**	**6.60**	**6.65**	**6.68**	**6.75**	**7.33**	**7.91**	**7.32**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2010 Price	**8.37**	**8.37**	**8.18**	**6.23**	**6.05**	**6.10**	**6.15**	**6.20**	**6.21**	**6.29**	**6.87**	**7.45**	**6.87**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2011 Price	**7.90**	**7.90**	**7.73**	**5.80**	**5.63**	**5.69**	**5.75**	**5.81**	**5.82**	**5.87**	**6.41**	**6.95**	**6.44**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2012 Price	**7.50**	**7.50**	**7.34**	**5.68**	**5.52**	**5.57**	**5.63**	**5.68**	**5.69**	**5.75**	**6.26**	**6.75**	**6.24**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2013 Price	**7.26**	**7.26**	**7.11**	**5.49**	**5.34**	**5.39**	**5.44**	**5.49**	**5.51**	**5.56**	**6.06**	**6.54**	**6.04**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2014 Price	**7.03**	**7.03**	**6.88**	**5.31**	**5.16**	**5.21**	**5.26**	**5.31**	**5.32**	**5.38**	**5.86**	**6.32**	**5.84**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2015 Price	**6.79**	**6.79**	**6.65**	**5.13**	**4.98**	**5.03**	**5.08**	**5.12**	**5.14**	**5.19**	**5.65**	**6.11**	**5.64**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2016 Price	**6.84**	**6.84**	**6.70**	**5.16**	**5.02**	**5.06**	**5.11**	**5.16**	**5.18**	**5.23**	**5.70**	**6.15**	**5.68**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2017 Price	**7.06**	**7.07**	**6.91**	**5.34**	**5.19**	**5.24**	**5.29**	**5.34**	**5.35**	**5.41**	**5.89**	**6.36**	**5.87**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2018 Price	**7.61**	**7.61**	**7.45**	**5.77**	**5.61**	**5.66**	**5.71**	**5.76**	**5.78**	**5.84**	**6.35**	**6.85**	**6.33**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2019 Price	**8.14**	**8.14**	**7.97**	**6.19**	**6.02**	**6.07**	**6.13**	**6.18**	**6.20**	**6.26**	**6.81**	**7.34**	**6.79**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2020 Price	**8.55**	**8.55**	**8.37**	**6.51**	**6.33**	**6.39**	**6.45**	**6.50**	**6.52**	**6.59**	**7.16**	**7.71**	**7.14**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2021 Price	**8.94**	**8.95**	**8.76**	**6.82**	**6.63**	**6.69**	**6.76**	**6.81**	**6.83**	**6.90**	**7.49**	**8.07**	**7.47**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2022 Price	**9.38**	**9.39**	**9.19**	**7.17**	**6.97**	**7.03**	**7.10**	**7.16**	**7.18**	**7.25**	**7.87**	**8.47**	**7.85**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2023 Price	**9.83**	**9.84**	**9.63**	**7.52**	**7.32**	**7.38**	**7.45**	**7.52**	**7.54**	**7.61**	**8.25**	**8.89**	**8.23**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2024 Price	**10.29**	**10.29**	**10.08**	**7.88**	**7.67**	**7.73**	**7.80**	**7.87**	**7.89**	**7.97**	**8.64**	**9.30**	**8.62**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04
2025 Price	**10.76**	**10.76**	**10.54**	**8.25**	**8.03**	**8.10**	**8.18**	**8.25**	**8.27**	**8.35**	**9.05**	**9.73**	**9.02**
Difference	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04	-1.04

NOTES:
1/ Jan.'00-Feb.'06 monthly actuals are simple averages of mid-range estimate of the low and high prices reported each business day by Gas Daily in their "Daily Price Survey." Mar.'06 was estimated as the First-Of-the-Month Index (FOMI) price from Gas Daily's "Monthly Contract Index" survey.
2/ Forecasted price levels for Apr.'06 through Dec.'25 are the sum of Henry Hub projected price plus basis swap from NYMEX Clearport(sm).
3/ Source for gas price data: Gas Daily's "Daily Price Survey" for REGION--"Others" and LOCATION--"Northwest, Can. Bdr. (Sumas)."
Monthly prices are calculated from data reported in Platts Gas Daily--published by the McGraw-Hill Companies, Inc.
From the daily low and high prices reported under the heading "Common," the mid-range, or simple average, of these was calculated for each day.
These daily mid-range values were subsequently averaged over the number of days reported for each respective calendar month to arrive at the monthly historical prices used for each price series.

LONG TERM OUTLOOK for "SPOT" Gas: Stanfield
($/Dth Price, Interconnect between Northwest and PG&E GT-NW @ Stanfield, OR.
(US-$/Dth Difference, Stanfield Basis to Henry Hub)

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR. AVG.
2000 Price	2.27	2.39	2.62	2.80	3.14	3.83	3.46	3.36	4.66	4.88	9.16	18.04	**5.05**
Difference	-0.12	-0.27	-0.16	-0.22	-0.38	-0.47	-0.54	-1.02	-0.38	-0.18	3.74	9.35	0.78
2001 Price	8.29	6.10	5.18	5.33	4.21	3.30	2.49	2.62	1.77	2.14	2.27	2.48	**3.85**
Difference	-0.11	0.50	0.02	0.12	-0.03	-0.45	-0.61	-0.39	-0.44	-0.28	-0.16	0.11	-0.14
2002 Price	2.08	2.11	2.90	3.01	2.87	2.28	1.56	2.19	2.88	3.56	3.67	4.22	**2.78**
Difference	-0.21	-0.18	-0.09	-0.40	-0.65	-0.95	-1.43	-0.88	-0.60	-0.55	-0.39	-0.55	-0.57
2003 Price	4.61	5.86	5.86	4.70	5.04	5.01	4.49	4.55	4.35	4.30	4.24	5.30	**4.86**
Difference	-0.77	-1.57	-0.35	-0.55	-0.74	-0.84	-0.57	-0.42	-0.28	-0.36	-0.18	-0.79	-0.62
2004 Price	5.54	4.84	4.82	5.11	5.51	5.33	5.37	5.09	4.53	5.37	5.88	6.10	**5.29**
Difference	-0.59	-0.56	-0.56	-0.59	-0.76	-0.96	-0.56	-0.37	-0.55	-1.00	-0.27	-0.52	-0.61
2005 Price	5.60	5.57	6.33	6.39	5.77	6.01	6.42	7.87	9.36	10.49	8.19	11.47	**7.46**
Difference	-0.55	-0.54	-0.59	-0.81	-0.72	-1.14	-1.18	-1.33	-4.45	-3.01	-2.13	-1.68	-1.51
2006 Price	7.48	6.52	6.39	**6.02**	**6.13**	**6.25**	**6.34**	**6.44**	**6.53**	**6.57**	**7.55**	**8.49**	**6.73**
Difference	-1.24	-1.13	-0.74	-1.08	-1.15	-1.19	-1.26	-1.26	-1.26	-1.32	-1.34	-1.34	-1.19
2007 Price	**9.06**	**9.07**	**8.88**	**7.55**	**7.37**	**7.43**	**7.50**	**7.57**	**7.59**	**7.66**	**8.09**	**8.66**	**8.04**
Difference	-1.40	-1.40	-1.40	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-1.03	-1.21	-1.21	-1.15
2008 Price	**9.08**	**9.09**	**8.92**	**7.26**	**7.08**	**7.13**	**7.19**	**7.25**	**7.27**	**7.33**	**7.79**	**8.37**	**7.81**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2009 Price	**8.64**	**8.64**	**8.45**	**6.81**	**6.62**	**6.68**	**6.75**	**6.80**	**6.83**	**6.89**	**7.36**	**7.93**	**7.37**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2010 Price	**8.20**	**8.20**	**8.01**	**6.38**	**6.19**	**6.24**	**6.30**	**6.35**	**6.36**	**6.43**	**6.89**	**7.47**	**6.92**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2011 Price	**7.73**	**7.73**	**7.56**	**5.94**	**5.77**	**5.83**	**5.90**	**5.96**	**5.96**	**6.02**	**6.43**	**6.97**	**6.48**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2012 Price	**7.33**	**7.33**	**7.17**	**5.83**	**5.67**	**5.72**	**5.77**	**5.82**	**5.84**	**5.90**	**6.28**	**6.77**	**6.28**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2013 Price	**7.09**	**7.09**	**6.94**	**5.64**	**5.49**	**5.54**	**5.59**	**5.64**	**5.65**	**5.71**	**6.08**	**6.56**	**6.08**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2014 Price	**6.86**	**6.86**	**6.71**	**5.46**	**5.31**	**5.36**	**5.41**	**5.45**	**5.47**	**5.52**	**5.88**	**6.34**	**5.88**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2015 Price	**6.62**	**6.62**	**6.48**	**5.27**	**5.13**	**5.17**	**5.22**	**5.27**	**5.28**	**5.34**	**5.68**	**6.13**	**5.68**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2016 Price	**6.67**	**6.67**	**6.52**	**5.31**	**5.16**	**5.21**	**5.26**	**5.31**	**5.32**	**5.37**	**5.72**	**6.17**	**5.73**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2017 Price	**6.89**	**6.89**	**6.74**	**5.49**	**5.34**	**5.38**	**5.43**	**5.48**	**5.50**	**5.55**	**5.91**	**6.38**	**5.92**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2018 Price	**7.43**	**7.44**	**7.27**	**5.91**	**5.75**	**5.80**	**5.86**	**5.91**	**5.92**	**5.98**	**6.37**	**6.87**	**6.38**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2019 Price	**7.97**	**7.97**	**7.80**	**6.33**	**6.16**	**6.22**	**6.28**	**6.33**	**6.35**	**6.41**	**6.83**	**7.36**	**6.84**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2020 Price	**8.38**	**8.38**	**8.20**	**6.65**	**6.48**	**6.53**	**6.59**	**6.65**	**6.67**	**6.73**	**7.18**	**7.73**	**7.18**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2021 Price	**8.77**	**8.77**	**8.59**	**6.96**	**6.78**	**6.84**	**6.90**	**6.96**	**6.98**	**7.05**	**7.51**	**8.09**	**7.52**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2022 Price	**9.21**	**9.22**	**9.02**	**7.31**	**7.12**	**7.18**	**7.25**	**7.31**	**7.33**	**7.40**	**7.89**	**8.50**	**7.89**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2023 Price	**9.66**	**9.67**	**9.46**	**7.67**	**7.46**	**7.53**	**7.60**	**7.66**	**7.68**	**7.76**	**8.27**	**8.91**	**8.28**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2024 Price	**10.11**	**10.12**	**9.91**	**8.02**	**7.81**	**7.88**	**7.95**	**8.02**	**8.04**	**8.11**	**8.66**	**9.32**	**8.66**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00
2025 Price	**10.59**	**10.59**	**10.37**	**8.40**	**8.18**	**8.25**	**8.32**	**8.39**	**8.41**	**8.49**	**9.07**	**9.75**	**9.07**
Difference	-1.21	-1.21	-1.21	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-0.90	-1.02	-1.02	-1.00

NOTES:
1/ Jan.'00-Feb.'06 monthly actuals are simple averages of mid-range estimate of the low and high prices reported each business day by Gas Daily in their "Daily Price Survey." Mar.'06 was estimated as the First-Of-the-Month Index (FOMI) price from Gas Daily's "Monthly Contract Index" survey.
2/ Forecasted price levels for Apr.'06 through Dec.'25 are the sum of Henry Hub projected price plus basis swap from NYMEX Clearport(sm). -$0.16
3/ Source for gas price data: Gas Daily's "Daily Price Survey" for REGION--"Others" and LOCATION--"Stanfield, OR"
Monthly prices are calculated from data reported in Platts Gas Daily--published by the McGraw-Hill Companies, Inc.
From the daily low and high prices reported under the heading "Common," the mid-range, or simple average, of these was calculated for each day.
These daily mid-range values were subsequently averaged over the number of days reported for each respective calendar month to arrive at the monthly historical prices used for each price series.

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Last Update: 3/28/2006
Date: 06/30/2006 LXN

LONG TERM OUTLOOK for "SPOT" Gas: Southern California Gas
($/Dth Price @ California Border Spot Price)
($/Dth Difference, SoCal Border Basis to Price at Henry Hub

YEAR		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR. AVG.
2000	Price	2.42	2.62	2.85	3.03	3.60	4.68	4.64	5.25	6.06	5.62	9.49	25.71	**6.33**
	Difference	0.03	-0.04	0.07	0.01	0.08	0.38	0.64	0.87	1.02	0.56	4.06	17.02	2.06
2001	Price	12.67	19.11	14.30	13.83	12.00	6.65	4.37	3.27	2.11	2.35	2.38	2.58	**7.97**
	Difference	4.28	13.51	9.14	8.62	7.77	2.89	1.28	0.26	-0.10	-0.07	-0.05	0.21	3.98
2002	Price	2.21	2.25	2.99	3.24	3.12	3.05	3.03	2.84	3.23	3.73	3.87	4.45	**3.17**
	Difference	-0.08	-0.04	0.00	-0.17	-0.40	-0.18	0.03	-0.23	-0.25	-0.39	-0.18	-0.32	-0.18
2003	Price	4.76	5.96	6.07	4.96	5.35	5.42	4.99	4.90	4.56	4.57	4.38	5.58	**5.13**
	Difference	-0.62	-1.48	-0.15	-0.29	-0.42	-0.43	-0.07	-0.07	-0.07	-0.08	-0.04	-0.51	-0.35
2004	Price	5.66	5.02	5.02	5.43	5.95	5.83	5.75	5.38	4.76	5.62	6.16	6.40	**5.58**
	Difference	-0.47	-0.38	-0.36	-0.27	-0.32	-0.47	-0.18	-0.08	-0.33	-0.75	0.01	-0.22	-0.32
2005	Price	5.71	5.73	6.50	6.72	5.92	6.17	6.75	8.01	9.72	11.04	7.87	11.57	**7.64**
	Difference	-0.44	-0.38	-0.43	-0.49	-0.57	-0.99	-0.86	-1.19	-4.08	-2.46	-2.46	-1.59	-1.33
2006	Price	7.71	6.82	6.45	**6.21**	**6.33**	**6.45**	**6.52**	**6.63**	**6.71**	**6.66**	**7.64**	**8.58**	**6.89**
	Difference	-1.01	-0.83	-0.68	-0.89	-0.96	-0.99	-1.07	-1.07	-1.07	-1.23	-1.25	-1.25	-1.02
2007	Price	**9.12**	**9.12**	**8.94**	**7.63**	**7.45**	**7.51**	**7.58**	**7.65**	**7.67**	**7.74**	**8.12**	**8.69**	**8.10**
	Difference	-1.34	-1.34	-1.34	-0.94	-0.94	-0.94	-0.94	-0.94	-0.94	-0.94	-1.18	-1.18	-1.08
2008	Price	**9.12**	**9.12**	**8.95**	**7.19**	**7.01**	**7.06**	**7.12**	**7.18**	**7.20**	**7.26**	**7.81**	**8.39**	**7.79**
	Difference	-1.18	-1.18	-1.18	-0.96	-0.96	-0.96	-0.96	-0.96	-0.96	-0.96	-1.00	-1.00	-1.02
2009	Price	**8.84**	**8.84**	**8.64**	**6.69**	**6.50**	**6.56**	**6.63**	**6.68**	**6.71**	**6.78**	**7.36**	**7.94**	**7.35**
	Difference	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01	-1.01
2010	Price	**8.71**	**8.71**	**8.52**	**6.56**	**6.38**	**6.43**	**6.48**	**6.53**	**6.55**	**6.62**	**7.20**	**7.78**	**7.21**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2011	Price	**8.23**	**8.24**	**8.06**	**6.13**	**5.96**	**6.02**	**6.09**	**6.15**	**6.15**	**6.21**	**6.75**	**7.29**	**6.77**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2012	Price	**7.83**	**7.83**	**7.67**	**6.01**	**5.86**	**5.91**	**5.96**	**6.01**	**6.03**	**6.08**	**6.59**	**7.09**	**6.57**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2013	Price	**7.60**	**7.60**	**7.44**	**5.83**	**5.68**	**5.72**	**5.78**	**5.83**	**5.84**	**5.90**	**6.39**	**6.87**	**6.37**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2014	Price	**7.36**	**7.36**	**7.21**	**5.64**	**5.49**	**5.54**	**5.59**	**5.64**	**5.66**	**5.71**	**6.19**	**6.66**	**6.17**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2015	Price	**7.13**	**7.13**	**6.98**	**5.46**	**5.31**	**5.36**	**5.41**	**5.46**	**5.47**	**5.52**	**5.99**	**6.44**	**5.97**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2016	Price	**7.18**	**7.18**	**7.03**	**5.50**	**5.35**	**5.40**	**5.45**	**5.49**	**5.51**	**5.56**	**6.03**	**6.49**	**6.01**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2017	Price	**7.40**	**7.40**	**7.25**	**5.67**	**5.52**	**5.57**	**5.62**	**5.67**	**5.68**	**5.74**	**6.22**	**6.69**	**6.20**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2018	Price	**7.94**	**7.94**	**7.78**	**6.10**	**5.94**	**5.99**	**6.05**	**6.10**	**6.11**	**6.17**	**6.68**	**7.19**	**6.67**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2019	Price	**8.48**	**8.48**	**8.31**	**6.52**	**6.35**	**6.41**	**6.46**	**6.52**	**6.54**	**6.60**	**7.14**	**7.68**	**7.12**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2020	Price	**8.88**	**8.89**	**8.71**	**6.84**	**6.66**	**6.72**	**6.78**	**6.84**	**6.86**	**6.92**	**7.49**	**8.05**	**7.47**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2021	Price	**9.28**	**9.28**	**9.09**	**7.15**	**6.97**	**7.03**	**7.09**	**7.15**	**7.17**	**7.23**	**7.83**	**8.41**	**7.81**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2022	Price	**9.72**	**9.72**	**9.53**	**7.50**	**7.31**	**7.37**	**7.43**	**7.50**	**7.51**	**7.58**	**8.20**	**8.81**	**8.18**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2023	Price	**10.17**	**10.17**	**9.97**	**7.85**	**7.65**	**7.72**	**7.79**	**7.85**	**7.87**	**7.94**	**8.59**	**9.22**	**8.57**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2024	Price	**10.62**	**10.62**	**10.41**	**8.21**	**8.00**	**8.07**	**8.14**	**8.21**	**8.23**	**8.30**	**8.97**	**9.63**	**8.95**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71
2025	Price	**11.10**	**11.10**	**10.88**	**8.58**	**8.37**	**8.44**	**8.51**	**8.58**	**8.60**	**8.68**	**9.38**	**10.07**	**9.36**
	Difference	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71	-0.71

NOTES:
1/ Jan.'00-Feb.'06 monthly actuals are simple averages of mid-range estimate of the low and high prices reported each business day by Gas Daily in their "Daily Price Survey." Mar.'06 was estimated as the First-Of-the-Month Index (FOMI) price from Gas Daily's "Monthly Contract Index" survey.
2/ Forecasted price levels for Apr.'06 through Dec.'25 are the sum of Henry Hub projected price plus basis swap from NYMEX Clearport(sm).
3/ Source for gas price data: Gas Daily's "Daily Price Survey" for REGION--"Others" and LOCATION--"SoCal gas, large pkgs".
Monthly prices are calculated from data reported in Platts Gas Daily--published by the McGraw-Hill Companies, Inc. From the daily low and high prices under the heading "Common," the mid-range, or simple average, of these was calculated for each day. These daily mid-range values were subsequently averaged over the number of days reported for each respective calendar month to arrive at the monthly historical prices used for each price series.

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Date: 06/30/2006 LXN

SoCalGas Retail CORE Commodity Weighted-Average-Cost-of-Gas (WACOG) for Purchases
($/Dth @ Ca/Az Border)

YEAR	Supply Component	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YR. AVG.
2000	Wacog for Purchase	2.53	2.55	2.55	2.93	2.98	4.03	4.50	3.83	5.52	5.05	4.98	7.73	4.10
2001	Wacog for Purchase	10.47	7.80	7.39	7.48	6.86	5.09	3.16	2.83	2.37	1.54	2.82	2.45	5.02
2002	Wacog for Purchase	2.85	1.99	2.28	3.29	3.01	2.45	2.93	2.77	2.71	2.95	3.80	3.94	2.91
2003	Wacog for Purchase	4.64	4.91	6.76	4.33	4.55	5.47	5.07	4.47	4.71	4.18	4.19	4.50	4.82
2004	Wacog for Purchase	5.46	5.30	4.64	4.77	5.41	6.10	5.74	5.68	4.70	4.81	7.04	6.04	5.47
2005	Wacog for Purchase	5.85	5.78	5.64	6.53	6.60	5.71	6.49	6.40	8.49	10.04	10.65	8.38	7.21
2006	Wacog for Purchase	9.12	7.06	6.36	**6.01**	**6.13**	**6.26**	**6.40**	**6.52**	**6.59**	**6.46**	**7.36**	**8.30**	**6.88**
2007	Wacog for Purchase	**8.91**	**8.92**	**8.73**	**7.28**	**7.10**	**7.16**	**7.30**	**7.37**	**7.39**	**7.44**	**7.90**	**8.47**	**7.83**
2008	Wacog for Purchase	**8.94**	**8.94**	**8.77**	**7.02**	**6.84**	**6.90**	**6.95**	**7.01**	**7.03**	**7.09**	**7.54**	**8.12**	**7.60**
2009	Wacog for Purchase	**8.57**	**8.57**	**8.38**	**6.56**	**6.37**	**6.44**	**6.50**	**6.56**	**6.58**	**6.65**	**7.11**	**7.69**	**7.16**
2010	Wacog for Purchase	**8.24**	**8.24**	**8.05**	**6.24**	**6.05**	**6.10**	**6.16**	**6.21**	**6.22**	**6.29**	**6.75**	**7.33**	**6.82**
2011	Wacog for Purchase	**7.77**	**7.77**	**7.59**	**5.80**	**5.64**	**5.70**	**5.76**	**5.82**	**5.83**	**5.88**	**6.30**	**6.84**	**6.39**
2012	Wacog for Purchase	**7.37**	**7.37**	**7.21**	**5.69**	**5.53**	**5.58**	**5.64**	**5.69**	**5.70**	**5.76**	**6.14**	**6.64**	**6.19**
2013	Wacog for Purchase	**7.13**	**7.13**	**6.98**	**5.51**	**5.35**	**5.40**	**5.46**	**5.50**	**5.52**	**5.57**	**5.95**	**6.43**	**5.99**
2014	Wacog for Purchase	**6.90**	**6.90**	**6.75**	**5.32**	**5.17**	**5.22**	**5.27**	**5.32**	**5.34**	**5.39**	**5.75**	**6.21**	**5.80**
2015	Wacog for Purchase	**6.67**	**6.67**	**6.52**	**5.14**	**5.00**	**5.04**	**5.09**	**5.14**	**5.15**	**5.20**	**5.55**	**6.00**	**5.60**
2016	Wacog for Purchase	**6.72**	**6.72**	**6.57**	**5.18**	**5.03**	**5.08**	**5.13**	**5.18**	**5.19**	**5.25**	**5.59**	**6.05**	**5.64**
2017	Wacog for Purchase	**6.94**	**6.94**	**6.79**	**5.36**	**5.21**	**5.26**	**5.31**	**5.35**	**5.37**	**5.42**	**5.78**	**6.25**	**5.83**
2018	Wacog for Purchase	**7.48**	**7.49**	**7.33**	**5.79**	**5.63**	**5.68**	**5.73**	**5.78**	**5.80**	**5.86**	**6.25**	**6.75**	**6.30**
2019	Wacog for Purchase	**8.02**	**8.03**	**7.85**	**6.21**	**6.04**	**6.10**	**6.15**	**6.21**	**6.22**	**6.29**	**6.71**	**7.24**	**6.76**
2020	Wacog for Purchase	**8.43**	**8.43**	**8.26**	**6.53**	**6.36**	**6.41**	**6.47**	**6.53**	**6.55**	**6.61**	**7.06**	**7.61**	**7.10**
2021	Wacog for Purchase	**8.83**	**8.83**	**8.64**	**6.84**	**6.66**	**6.72**	**6.78**	**6.84**	**6.86**	**6.93**	**7.40**	**7.98**	**7.44**
2022	Wacog for Purchase	**9.27**	**9.27**	**9.08**	**7.19**	**7.00**	**7.06**	**7.13**	**7.19**	**7.21**	**7.28**	**7.78**	**8.38**	**7.82**
2023	Wacog for Purchase	**9.72**	**9.73**	**9.52**	**7.55**	**7.35**	**7.41**	**7.48**	**7.55**	**7.57**	**7.64**	**8.16**	**8.79**	**8.21**
2024	Wacog for Purchase	**10.18**	**10.18**	**9.97**	**7.91**	**7.70**	**7.77**	**7.84**	**7.90**	**7.92**	**8.00**	**8.55**	**9.21**	**8.59**
2025	Wacog for Purchase	**10.65**	**10.66**	**10.44**	**8.28**	**8.07**	**8.14**	**8.21**	**8.28**	**8.30**	**8.38**	**8.96**	**9.64**	**9.00**

NOTES:
1/ "Wacog for Purchases" projections based on the equation: WACOG_Purch@Ca/Az =
(SJ_Spot-Commodity@Ca/Az) x (SJ %) + (Permian_Spot-Commodity@Ca/Az) x (Permian %) + (CBSP) x (CBSP %) + (Rockies) * (Rockies %)
where the %s are based on SoCalGas' actual purchasing mix for GCIM year 11th.
2/ Source: Jan.'00-Mar.'06 data of SoCalGas' Weighted Average Cost of Gas is from Gas Accounting's PGA Reports (Adjusted Single Porfolio WACOG to Price gas costs for PGA Balancing Accounts.) Interstate pipeline DEMAND or Capacity Reservation charges are included in this data. Values for Months PRIOR to calendar 2000 are not included in our analysis. This choice of starting date to represent our historical WACOG values was done to emphasize that the historical data used in our analysis is based on gas costs/prices that represent SoCalGas' behavior under the CPUC-approved Gas Cost Incentive Mechanism (GCIM) regulatory framework.

2006 CALIFORNIA GAS REPORT

SERVICE AREA ECONOMIC FORECAST
JULY 2006

SOUTHERN CALIFORNIA GAS COMPANY SERVICE AREA ECONOMIC FORECAST

(based on Global Insight's "Winter 2006" and "Autumn 2005 Long Term" Regional Forecasts)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
EMPLOYMENT (1000's)												
Total	7,913.4	7,940.0	8,051.3	8,199.0	8,332.0	8,462.2	8,574.3	8,675.4	8,752.1	8,813.5	8,869.0	8,937.1
Agriculture	210.6	214.3	206.8	213.6	223.1	230.3	236.4	242.4	247.5	252.0	256.8	261.9
Total Non-farm	7,702.8	7,725.7	7,844.5	7,985.5	8,108.9	8,232.0	8,337.9	8,433.1	8,504.6	8,561.5	8,612.2	8,675.2
Mining	8.8	8.5	8.7	9.0	9.5	9.9	10.0	9.5	9.0	8.5	8.1	7.9
Construction	373.3	389.6	422.4	455.7	478.5	490.4	498.2	501.8	504.7	508.6	514.9	522.8
Manufacturing	955.1	914.0	902.9	888.4	889.9	884.4	884.8	886.4	886.4	886.1	888.3	890.4
Transportation, Information, Utilities	546.1	536.4	548.6	549.4	557.0	570.2	582.2	594.6	606.5	618.2	628.9	638.6
Trade	1,338.3	1,346.3	1,373.4	1,413.1	1,430.3	1,452.5	1,469.1	1,477.7	1,480.9	1,480.6	1,477.3	1,476.2
Retail	921.5	930.2	951.5	981.6	995.6	1,013.5	1,027.4	1,036.7	1,041.1	1,044.1	1,046.0	1,049.4
Wholesale (including warehousing)	416.8	416.0	421.9	431.5	434.7	438.9	441.8	441.0	439.8	436.5	431.3	426.8
Restaurants	523.8	536.2	556.5	572.6	580.8	591.2	599.3	604.7	607.3	609.1	610.2	612.2
Finance, Insurance & Real Estate	446.6	470.1	486.4	498.4	502.4	501.0	502.7	507.0	514.9	521.3	523.3	524.9
Services	2,108.9	2,128.9	2,164.5	2,204.5	2,251.0	2,308.6	2,363.1	2,409.6	2,440.7	2,468.4	2,495.9	2,529.1
Accomodation	86.9	89.0	92.1	93.3	95.0	96.5	97.7	98.9	100.0	100.9	101.4	101.9
Personal & Laundry Services	74.2	74.7	74.8	76.0	76.0	76.8	77.5	77.8	78.3	78.7	79.0	79.2
Professional & Business Services	1,039.3	1,037.4	1,054.2	1,086.3	1,117.5	1,155.4	1,191.6	1,224.3	1,245.6	1,263.4	1,280.7	1,304.6
Health & Social Services	665.8	684.7	698.8	705.1	718.9	733.9	747.9	759.1	765.9	773.3	781.5	789.3
Misc. Services	242.7	243.1	244.5	243.7	243.7	246.1	248.5	249.5	250.9	252.2	253.3	254.0
Government & Education	1,401.8	1,395.7	1,381.1	1,394.2	1,409.6	1,423.7	1,428.5	1,441.8	1,454.2	1,460.8	1,465.4	1,473.1
OTHER INDICATORS												
Los Angeles Area Consumer Inflation	2.8%	2.6%	3.3%	4.5%	2.8%	1.7%	1.8%	1.8%	1.7%	1.9%	2.4%	2.5%

SOUTHERN CALIFORNIA GAS COMPANY SERVICE AREA ECONOMIC FORECAST

(based on Global Insight's "Winter 2006" and "Autumn 2005 Long Term" Regional Forecasts)

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
EMPLOYMENT (1000's)												
Total	9,010.5	9,086.2	9,165.4	9,248.1	9,332.7	9,416.5	9,501.7	9,580.8	9,668.9	9,761.5	9,855.9	9,950.6
Agriculture	267.3	272.9	278.9	285.0	291.4	297.6	304.1	310.5	317.1	323.9	330.6	337.6
Total Non-farm	8,743.2	8,813.2	8,886.5	8,963.1	9,041.4	9,118.9	9,197.6	9,270.3	9,351.8	9,437.6	9,525.2	9,613.0
Mining	7.6	7.4	7.1	6.8	6.6	6.3	6.0	5.8	5.6	5.4	5.2	5.1
Construction	532.4	543.0	554.2	565.1	576.0	586.5	597.2	607.5	618.1	628.7	639.6	651.2
Manufacturing	892.8	896.2	899.6	902.6	905.2	907.1	907.5	907.9	908.3	909.3	910.1	910.3
Transportation, Information, Utilities	646.7	653.3	660.8	670.1	679.5	689.4	698.9	709.3	719.6	730.2	741.0	751.5
Trade	1,474.6	1,474.0	1,473.5	1,473.9	1,475.8	1,478.0	1,479.7	1,480.3	1,482.1	1,483.6	1,484.8	1,485.3
Retail	1,051.7	1,054.8	1,057.1	1,059.5	1,062.9	1,066.3	1,069.8	1,072.7	1,076.0	1,079.0	1,081.7	1,083.7
Wholesale (including warehousing)	422.8	419.1	416.4	414.4	412.9	411.6	409.9	407.6	406.1	404.6	403.2	401.6
Restaurants	613.5	615.4	616.7	618.1	620.0	622.0	624.1	625.8	627.7	629.4	631.0	632.2
Finance, Insurance & Real Estate	527.1	529.5	532.0	533.5	533.1	532.1	530.3	528.3	526.8	524.3	521.9	520.0
Services	2,567.9	2,608.4	2,652.5	2,699.1	2,751.7	2,805.4	2,856.1	2,910.0	2,966.0	3,026.7	3,088.3	3,149.3
Accomodation	102.4	102.8	103.4	104.0	104.8	105.6	106.5	107.2	107.9	108.6	109.2	109.7
Personal & Laundry Services	79.4	79.7	80.3	81.1	82.0	82.7	83.3	84.1	84.8	85.5	86.2	86.8
Professional & Business Services	1,334.6	1,365.0	1,395.3	1,423.6	1,456.5	1,491.7	1,524.1	1,557.2	1,592.3	1,632.3	1,673.8	1,716.1
Health & Social Services	797.1	805.3	816.1	830.3	845.5	860.4	875.3	892.1	909.2	926.3	943.0	958.6
Misc. Services	254.5	255.6	257.3	260.1	262.9	265.0	267.0	269.5	271.8	274.1	276.2	278.1
Government & Education	1,480.4	1,486.1	1,490.0	1,493.8	1,493.5	1,492.1	1,497.8	1,495.5	1,497.6	1,500.1	1,503.4	1,508.1
OTHER INDICATORS												
Los Angeles Area Consumer Inflation	2.5%	2.4%	2.6%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%