

Application of Southern California Gas Company  
for authority to update its gas revenue requirement  
and base rates effective on January 1, 2012.  
(U904G)

Application No. 10-12-\_\_\_\_  
Exhibit No.: (SCG-37-WP)

WORKPAPERS TO  
PREPARED DIRECT TESTIMONY  
OF MARK LOWRY  
ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

DECEMBER 2010



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## Notes to PEG working papers

Attached are the working papers that support Dr. Lowry's productivity testimony in this proceeding.

They consist of computer code and data. There is separate code and data for the gas and electric work.

The computer code files calculate individual company and summary productivity results. They are written in command line format in the SST programming language. A reviewer familiar with a command line statistical program such as SAS should be able to follow the code without difficulty.

The data are in Excel format and contain individual company indexing results from which the overall indexes may be calculated.

Additional data are provided that will allow the reviewer to calculate the individual company index results if desired.

Electric files

PEG Power TFP Code.txt

PEG Power Data and Company Results.xls

### Power Variables and Descriptions

pegid	ID Number
Year	Year
tfpndx	TFP Index
yndx	Output Quantity Index
xndx	Input Quantity Index
yn	Number of Customers
xl	Labor Quantity
xm	M&S Quantity
xkd	Distribution Capital Quantity Index
xkg	General Capital Quantity Index
sl	Labor Cost / Total Cost
sm	M&S cost / Total Cost
skd	Dx Capital Cost / Total Cost
skg	General Capital Cost / Total Cost
cl	Labor Cost
cm	M&S cost
ckd	Dx Capital Cost
ckg	General Capital Cost

## Gas files

PEG Gas TFP Code.txt

PEG Gas Data and Company Results.xls

## Gas Variables and Descriptions

Year	Year
id	ID Number
PEGID	Alternate ID Number
tfpndx	TFP Index
dtfp	Growth in TFP
yndx	Output Quantity Index
dyndx	Growth in Output Quantity
xndx	Input Quantity Index
dx	Growth in Input Quantity
dxom	Growth in O&M Quantity
dxk	Growth in Capital Quantity
som	O&M Cost / Total Cost
scap	Capital Cost / Total Cost
yn	Number of Custotmers
com	O&M Cost
ck	Capital Cost
c	Total Cost
xdst	Distribution O&M Quantity Index
xccc	Customer Care O&M Quantity Index
xage	A&G O&M Quantity Index
sdst	Distribution O&M / (Dx + CCC + AGE O&M)
sccc	Customer Care O&M / (Dx + CCC + AGE O&M)
sage	A&G O&M / (Dx + CCC + AGE O&M)
cdst	Distribution O&M Cost
cccc	Net Customer Care O&M cost
cage	Net A&G O&M Cost

**PEG INDEX RESULTS AND DATA FOR GAS TFP**

These data are the intellectual property of Pacific Economics Group Research LLC and are provided for the sole use of evaluating our work in the regulatory proceeding in which they were provided.

company	Year	id	PEGID	tfpndx	dtfp	yndx	dyndx	xndx	dx	dxom	dxk	som
Alabama Gas Corporation	1998	1	1	1		1		1				0.47438
Alabama Gas Corporation	1999	1	1	1.00817	0.00813	1.00829	0.00825	1.00012	0.00012	-0.03761	0.0345	0.47914
Alabama Gas Corporation	2000	1	1	0.98861	-0.01959	1.01564	0.00727	1.02734	0.02685	0.02339	0.03006	0.48271
Alabama Gas Corporation	2001	1	1	0.96163	-0.02767	1.01066	-0.00492	1.05098	0.02275	0.00073	0.04199	0.45001
Alabama Gas Corporation	2002	1	1	0.92869	-0.03486	1.00599	-0.00462	1.08324	0.03023	-0.01361	0.06661	0.45685
Alabama Gas Corporation	2003	1	1	0.88738	-0.0455	1.00958	0.00356	1.1377	0.04905	0.07149	0.0299	0.46413
Alabama Gas Corporation	2004	1	1	0.87728	-0.01145	1.00532	-0.00423	1.14595	0.00722	-0.01421	0.03073	0.58198
Alabama Gas Corporation	2005	1	1	0.83371	-0.05094	1.00341	-0.0019	1.20354	0.04904	0.0598	0.02818	0.73738
Alabama Gas Corporation	2006	1	1	0.8265	-0.00868	0.99243	-0.011	1.20076	-0.00232	-0.01124	0.02527	0.77394
Alabama Gas Corporation	2007	1	1	0.81471	-0.01437	0.98404	-0.00849	1.20784	0.00589	-0.00688	0.02863	0.50711
Alabama Gas Corporation	2008	1	1	0.81731	0.00318	0.97509	-0.00914	1.19305	-0.01232	-0.04787	0.02388	0.50205
Baltimore Gas and Electric Company	1998	3	9	1		1		1				0.31891
Baltimore Gas and Electric Company	1999	3	9	0.97874	-0.02149	1.0182	0.01804	1.04032	0.03953	0.04437	0.0373	0.31231
Baltimore Gas and Electric Company	2000	3	9	0.10963	0.04093	1.03807	0.01933	1.01809	-0.0216	-0.0958	0.01382	0.33408
Baltimore Gas and Electric Company	2001	3	9	0.96056	-0.05968	1.04378	0.00549	1.08664	0.06516	0.18134	0.00568	0.34316
Baltimore Gas and Electric Company	2002	3	9	1.03465	0.0743	1.06264	0.01791	1.02706	-0.05639	-0.16852	0.00203	0.34195
Baltimore Gas and Electric Company	2003	3	9	1.03828	0.0035	1.07701	0.01343	1.0373	0.00992	0.03736	-0.00365	0.31987
Baltimore Gas and Electric Company	2004	3	9	0.99182	-0.04579	1.0897	0.01171	1.09869	0.0575	0.16319	-0.00542	0.42641
Baltimore Gas and Electric Company	2005	3	9	0.97177	-0.02042	1.10573	0.01461	1.13785	0.03502	0.07289	-0.00434	0.59309
Baltimore Gas and Electric Company	2006	3	9	0.94989	-0.02278	1.1171	0.01023	1.17604	0.03301	0.05738	-0.00815	0.66322
Baltimore Gas and Electric Company	2007	3	9	0.9271	-0.02428	1.12688	0.00871	1.21549	0.03299	0.06644	-0.00974	0.4586
Baltimore Gas and Electric Company	2008	3	9	0.97265	0.04796	1.13167	0.00424	1.1635	-0.04371	-0.08806	-0.00883	0.42197
Boston Gas Company	1998	4	19	1		1		1				0.42696
Boston Gas Company	1999	4	19	0.96734	-0.0332	1.00195	0.00194	1.03577	0.03514	0.06	0.01532	0.46036
Boston Gas Company	2000	4	19	0.81698	-0.16894	1.01416	0.01212	1.24135	0.18106	0.34965	0.0095	0.54837
Boston Gas Company	2001	4	19	0.95285	0.15384	1.02649	0.01208	1.07728	-0.14176	-0.2955	0.0198	0.47645
Boston Gas Company	2002	4	19	0.96224	0.00981	1.03427	0.00755	1.07485	-0.00226	-0.04813	0.05153	0.60296
Boston Gas Company	2003	4	19	0.94261	-0.02062	1.05591	0.02071	1.1202	0.04133	0.03947	0.0439	0.55707
Boston Gas Company	2004	4	19	0.94971	0.00751	1.09772	0.03883	1.15585	0.03132	0.02467	0.03893	0.50968
Boston Gas Company	2005	4	19	0.90847	-0.0444	1.09096	-0.00618	1.20088	0.03822	0.03971	0.03617	0.64927
Boston Gas Company	2006	4	19	0.92506	0.0181	1.08523	-0.00527	1.17314	-0.02337	-0.03633	0.00844	0.77185
Boston Gas Company	2007	4	19	0.92545	0.00041	1.10054	0.01401	1.1892	0.0136	0.01185	0.01695	0.54229
Boston Gas Company	2008	4	19	0.92773	0.00247	1.14968	0.04368	1.23924	0.04121	0.06594	0.01451	0.49614
Brooklyn Union Gas Company	1998	5	20	1		1		1				0.38233
Brooklyn Union Gas Company	1999	5	20	1.03936	0.03861	1.00659	0.00656	0.96846	-0.03204	-0.08444	-0.00099	0.36189
Brooklyn Union Gas Company	2000	5	20	1.04202	0.00256	1.01675	0.01004	0.97574	0.00749	0.0093	0.00647	0.35673
Brooklyn Union Gas Company	2001	5	20	1.12116	0.0732	1.065	0.04636	0.9499	-0.02684	-0.09137	0.00853	0.35131
Brooklyn Union Gas Company	2002	5	20	1.12454	0.003	1.0623	-0.00253	0.94466	-0.00554	-0.0051	-0.00577	0.34538
Brooklyn Union Gas Company	2003	5	20	1.06823	-0.05137	1.01536	-0.0452	0.95051	0.00617	-0.00332	0.01154	0.37729
Brooklyn Union Gas Company	2004	5	20	1.05014	-0.01708	0.98543	-0.02992	0.93838	-0.01284	-0.05288	0.01337	0.41395
Brooklyn Union Gas Company	2005	5	20	1.04617	-0.00379	0.99405	0.00871	0.95018	0.01249	0.01154	0.01333	0.51924
Brooklyn Union Gas Company	2006	5	20	1.09683	0.04729	1.00389	0.00985	0.91527	-0.03743	-0.06439	-0.00208	0.61549
Brooklyn Union Gas Company	2007	5	20	1.13403	0.03335	1.01061	0.00667	0.89117	-0.02669	-0.05353	0.00039	0.38879
Brooklyn Union Gas Company	2008	5	20	1.13017	-0.00341	1.01665	0.00596	0.89956	0.00938	0.01582	0.00541	0.37294
Cascade Natural Gas Corporation	1998	6	21	1		1		1				0.30279
Cascade Natural Gas Corporation	1999	6	21	1.12091	0.11415	1.09906	0.09445	0.9805	-0.01969	-0.11922	0.02151	0.28272
Cascade Natural Gas Corporation	2000	6	21	1.14456	0.02087	1.14588	0.04172	1.00116	0.02085	0.04986	0.00956	0.27739
Cascade Natural Gas Corporation	2001	6	21	1.14366	-0.00078	1.18069	0.02993	1.03238	0.03071	0.10229	0.00211	0.29361
Cascade Natural Gas Corporation	2002	6	21	1.21242	0.05839	1.21455	0.02827	1.00175	-0.03011	-0.10957	0.00304	0.29524
Cascade Natural Gas Corporation	2003	6	21	1.24062	0.02299	1.26018	0.03689	1.01577	0.01389	0.04705	-0.00066	0.31481
Cascade Natural Gas Corporation	2004	6	21	1.26575	0.02005	1.2893	0.02284	1.01861	0.00279	-0.01199	0.0108	0.38806
Cascade Natural Gas Corporation	2005	6	21	1.26382	-0.00152	1.35389	0.04888	1.07126	0.05041	0.0975	0.01319	0.49479
Cascade Natural Gas Corporation	2006	6	21	1.25783	-0.00476	1.41095	0.04128	1.12173	0.04604	0.09683	-0.00194	0.47664
Cascade Natural Gas Corporation	2007	6	21	1.3321	0.05737	1.45916	0.0336	1.09538	-0.02378	-0.04939	-0.00722	0.30861

Cascade Natural Gas Corporation	2008	6	21	1.43338	0.07327	1.49341	0.0232	1.04188	-0.05007	-0.17328	0.00097	0.27726
Central Hudson Gas & Electric Corp	1998	7	23	1		1		1				0.26757
Central Hudson Gas & Electric Corp	1999	7	23	1.02309	0.02283	1.00807	0.00803	0.98532	-0.01479	-0.07626	0.00729	0.26111
Central Hudson Gas & Electric Corp	2000	7	23	1.02027	-0.00276	1.02815	0.01972	1.00772	0.02248	0.07083	0.004	0.29181
Central Hudson Gas & Electric Corp	2001	7	23	1.05966	0.03788	1.05926	0.02981	0.99962	-0.00807	-0.04394	0.00597	0.27061
Central Hudson Gas & Electric Corp	2002	7	23	1.04487	-0.01406	1.07492	0.01468	1.02877	0.02874	0.07934	0.01008	0.2682
Central Hudson Gas & Electric Corp	2003	7	23	1.05646	0.01104	1.09355	0.01718	1.03511	0.00615	-0.00171	0.00896	0.25909
Central Hudson Gas & Electric Corp	2004	7	23	1.03858	-0.01707	1.11234	0.01704	1.07103	0.03411	0.0774	0.01466	0.36096
Central Hudson Gas & Electric Corp	2005	7	23	1.01603	-0.02195	1.13864	0.02336	1.12067	0.04531	0.06247	0.03224	0.504
Central Hudson Gas & Electric Corp	2006	7	23	1.04048	0.02378	1.15972	0.01834	1.1146	-0.00544	-0.01442	0.0082	0.70155
Central Hudson Gas & Electric Corp	2007	7	23	0.96602	-0.07425	1.17885	0.01636	1.22031	0.09061	0.15026	0.00695	0.46606
Central Hudson Gas & Electric Corp	2008	7	23	0.91758	-0.05144	1.19411	0.01287	1.30137	0.06431	0.13593	0.00567	0.43424
NSTAR Gas Company	1998	9	111	1		1		1				0.51889
NSTAR Gas Company	1999	9	111	1.03162	0.03113	1.0128	0.01272	0.98176	-0.01841	-0.03938	0.00724	0.58172
NSTAR Gas Company	2000	9	111	1.06768	0.03436	1.02855	0.01543	0.96334	-0.01893	-0.04116	0.0067	0.48938
NSTAR Gas Company	2001	9	111	1.10936	0.03829	1.04041	0.01147	0.93784	-0.02683	-0.03725	-0.01484	0.5809
NSTAR Gas Company	2002	9	111	1.15107	0.03691	1.04914	0.00836	0.91145	-0.02855	-0.07554	0.02558	0.4897
NSTAR Gas Company	2003	9	111	1.19118	0.03425	1.05463	0.00522	0.88537	-0.02903	-0.10945	0.04399	0.46208
NSTAR Gas Company	2004	9	111	1.23409	0.03539	1.06534	0.0101	0.86325	-0.02529	-0.06032	0.00741	0.50357
NSTAR Gas Company	2005	9	111	1.21617	-0.01463	1.07307	0.00723	0.88234	0.02186	0.0232	0.02001	0.65781
NSTAR Gas Company	2006	9	111	1.2502	0.0276	1.08421	0.01033	0.86723	-0.01727	-0.03031	0.01177	0.7225
NSTAR Gas Company	2007	9	111	1.27145	0.01685	1.09403	0.00901	0.86046	-0.00784	-0.01725	0.00743	0.51464
NSTAR Gas Company	2008	9	111	1.2685	-0.00232	1.09842	0.00401	0.86592	0.00632	-0.00289	0.01505	0.4584
Southern Connecticut Gas Company	1998	10	143	1		1		1				0.3478
Southern Connecticut Gas Company	1999	10	143	0.99631	-0.0037	1.02106	0.02084	1.02484	0.02454	0.05293	0.00644	0.43073
Southern Connecticut Gas Company	2000	10	143	1.04758	0.05018	1.05707	0.03466	1.00906	-0.01552	-0.06177	0.01475	0.36051
Southern Connecticut Gas Company	2001	10	143	1.11971	0.06658	1.06083	0.00355	0.94741	-0.06304	-0.14495	-0.021	0.31772
Southern Connecticut Gas Company	2002	10	143	1.11723	-0.00221	1.07629	0.01447	0.96335	0.01669	0.00227	0.02358	0.32963
Southern Connecticut Gas Company	2003	10	143	1.12378	0.00584	1.08098	0.00435	0.96191	-0.00149	-0.02185	0.00825	0.318
Southern Connecticut Gas Company	2004	10	143	1.09001	-0.03051	1.08581	0.00446	0.99615	0.03497	0.09757	0.0021	0.37067
Southern Connecticut Gas Company	2005	10	143	1.11044	0.01857	1.10375	0.01639	0.99398	-0.00218	0.00002	-0.00407	0.55206
Southern Connecticut Gas Company	2006	10	143	1.1143	0.00347	1.10706	0.003	0.99351	-0.00047	0.00601	-0.00746	0.48568
Southern Connecticut Gas Company	2007	10	143	1.11305	-0.00112	1.10978	0.00245	0.99706	0.00357	0.01519	-0.00541	0.38635
Southern Connecticut Gas Company	2008	10	143	1.13093	0.01594	1.11266	0.00259	0.98384	-0.01335	-0.0291	-0.0043	0.34346
Connecticut Natural Gas Corporation	1998	11	41	1		1		1				0.36467
Connecticut Natural Gas Corporation	1999	11	41	1.01951	0.01933	1.00922	0.00918	0.9899	-0.01015	-0.04073	0.00668	0.34522
Connecticut Natural Gas Corporation	2000	11	41	1.10066	0.07659	1.10099	0.08704	1.0003	0.01045	0.02519	0.00249	0.35606
Connecticut Natural Gas Corporation	2001	11	41	1.08433	-0.01495	1.03945	-0.05752	0.95861	-0.04257	-0.13424	0.00085	0.28676
Connecticut Natural Gas Corporation	2002	11	41	1.06125	-0.02152	1.04788	0.00808	0.98741	0.0296	0.0778	0.00692	0.35295
Connecticut Natural Gas Corporation	2003	11	41	1.11743	0.05158	1.06778	0.01881	0.95557	-0.03277	-0.10408	0.00247	0.30855
Connecticut Natural Gas Corporation	2004	11	41	1.05711	-0.05549	1.06906	0.0012	1.01131	0.05669	0.17184	-0.00212	0.36764
Connecticut Natural Gas Corporation	2005	11	41	1.08002	0.02144	1.08217	0.01219	1.00199	-0.00925	-0.01632	-0.00365	0.51734
Connecticut Natural Gas Corporation	2006	11	41	1.09334	0.01226	1.08849	0.00582	0.99557	-0.00644	-0.00722	-0.00558	0.53107
Connecticut Natural Gas Corporation	2007	11	41	1.08792	-0.00496	1.08605	-0.00224	0.99827	0.00272	0.01249	-0.00582	0.40144
Connecticut Natural Gas Corporation	2008	11	41	1.10696	0.01734	1.10774	0.01977	1.0007	0.00243	0.00627	0.00028	0.31616
Consolidated Edison Company of New York, Inc.	1998	12	42	1		1		1				0.30319
Consolidated Edison Company of New York, Inc.	1999	12	42	1.01217	0.01209	1.00491	0.0049	0.99283	-0.0072	-0.05245	0.01211	0.29486
Consolidated Edison Company of New York, Inc.	2000	12	42	0.99419	-0.01792	1.01003	0.00508	1.01592	0.02299	0.05341	0.00989	0.30732
Consolidated Edison Company of New York, Inc.	2001	12	42	0.99972	0.00554	1.01003	0	1.01031	-0.00554	-0.03077	0.00458	0.26539
Consolidated Edison Company of New York, Inc.	2002	12	42	1.02904	0.02891	1.01043	0.0004	0.98191	-0.02851	-0.12372	0.00606	0.26741
Consolidated Edison Company of New York, Inc.	2003	12	42	1.04854	0.01877	1.01271	0.00226	0.96583	-0.01651	-0.09865	0.0139	0.27296
Consolidated Edison Company of New York, Inc.	2004	12	42	1.03297	-0.01496	1.00338	-0.00926	0.97135	0.0057	-0.03931	0.02466	0.31971
Consolidated Edison Company of New York, Inc.	2005	12	42	1.00641	-0.02605	1.01635	0.01285	1.00988	0.03889	0.07962	0.01593	0.40138
Consolidated Edison Company of New York, Inc.	2006	12	42	1.08066	0.07118	1.10652	0.08499	1.02393	0.01381	0.02027	0.00858	0.49466
Consolidated Edison Company of New York, Inc.	2007	12	42	1.11786	0.03384	1.14094	0.03064	1.02065	-0.0032	-0.02201	0.00991	0.32689
Consolidated Edison Company of New York, Inc.	2008	12	42	0.96981	-0.14207	1.02965	-0.10264	1.0617	0.03943	0.11127	0.00691	0.2964
Consumers Energy Company	1998	13	43	1		1		1				0.34302
Consumers Energy Company	1999	13	43	1.00079	0.00079	1.01638	0.01625	1.01558	0.01546	0.03765	0.00376	0.34726
Consumers Energy Company	2000	13	43	1.0323	0.031	1.03374	0.01693	1.00139	-0.01407	-0.04685	0.00396	0.36231

Consumers Energy Company	2001	13	43	1.01329	-0.01859	1.04852	0.0142	1.03478	0.0328	0.07441	0.00559	0.42837
Consumers Energy Company	2002	13	43	1.02984	0.0162	1.07123	0.02142	1.04019	0.00521	0.01033	0.00136	0.43101
Consumers Energy Company	2003	13	43	1.00929	-0.02015	1.08334	0.01124	1.07336	0.0314	0.01093	0.04748	0.44887
Consumers Energy Company	2004	13	43	0.96756	-0.04223	1.09623	0.01183	1.13299	0.05406	0.10151	0.01012	0.5127
Consumers Energy Company	2005	13	43	0.92555	-0.04438	1.09989	0.00334	1.18836	0.04772	0.07323	0.00478	0.74195
Consumers Energy Company	2006	13	43	1.04541	0.12178	1.10714	0.00657	1.05905	-0.11521	-0.15502	0.00199	0.75092
Consumers Energy Company	2007	13	43	1.03913	-0.00603	1.10776	0.00055	1.06604	0.00658	0.01086	-0.00015	0.47214
Consumers Energy Company	2008	13	43	1.00851	-0.02991	1.10621	-0.00139	1.09687	0.02852	0.04902	0.01108	0.4471
East Ohio Gas Company	1998	15	52	1		1		1				0.35421
East Ohio Gas Company	1999	15	52	0.90206	-0.10308	1.02548	0.02516	1.13683	0.12824	0.31789	0.00092	0.44919
East Ohio Gas Company	2000	15	52	1.04124	0.1435	1.05376	0.0272	1.01202	-0.11629	-0.27289	-0.00544	0.37977
East Ohio Gas Company	2001	15	52	1.01633	-0.02422	1.04239	-0.01085	1.02564	0.01336	0.03554	0.00104	0.33454
East Ohio Gas Company	2002	15	52	1.06188	0.04384	1.03579	-0.00635	0.97543	-0.0502	-0.14339	-0.00683	0.30058
East Ohio Gas Company	2003	15	52	1.07608	0.01328	1.03763	0.00178	0.96427	-0.0115	-0.06209	0.01005	0.29695
East Ohio Gas Company	2004	15	52	1.08766	0.01071	1.03898	0.0013	0.95524	-0.00941	-0.03995	0.00609	0.3763
East Ohio Gas Company	2005	15	52	1.04027	-0.04454	1.03996	0.00094	0.9997	0.04549	0.09466	0.00349	0.54509
East Ohio Gas Company	2006	15	52	1.02218	-0.01754	1.03765	-0.00222	1.01513	0.01532	0.02806	0.00039	0.53436
East Ohio Gas Company	2007	15	52	0.99177	-0.0302	1.03237	-0.0051	1.04094	0.0251	0.05246	-0.00146	0.45097
East Ohio Gas Company	2008	15	52	0.95878	-0.03383	1.02509	-0.00708	1.06916	0.02675	0.06973	-0.00173	0.34618
Niagara Mohawk Power Corporation	1998	21	100	1		1		1				0.3113
Niagara Mohawk Power Corporation	1999	21	100	1.02101	0.0208	1.01493	0.01482	0.99404	-0.00598	-0.02112	0.00114	0.3284
Niagara Mohawk Power Corporation	2000	21	100	1.00884	-0.012	1.02534	0.01021	1.01636	0.0222	0.03194	0.01718	0.35247
Niagara Mohawk Power Corporation	2001	21	100	1.01384	0.00494	1.03277	0.00722	1.01867	0.00228	0.00353	0.00161	0.3407
Niagara Mohawk Power Corporation	2002	21	100	1.03387	0.01957	1.0392	0.00621	1.00516	-0.01336	-0.02577	-0.00644	0.37488
Niagara Mohawk Power Corporation	2003	21	100	1.08141	0.04496	1.04944	0.0098	0.97043	-0.03516	-0.07959	-0.00949	0.35746
Niagara Mohawk Power Corporation	2004	21	100	1.16211	0.07197	1.05641	0.00662	0.90905	-0.06535	-0.22055	0.02184	0.36192
Niagara Mohawk Power Corporation	2005	21	100	1.24783	0.07117	1.06749	0.01043	0.85548	-0.06074	-0.1158	-0.01405	0.55571
Niagara Mohawk Power Corporation	2006	21	100	1.25622	0.0067	1.0694	0.00179	0.85128	-0.00491	-0.00954	0.00057	0.52815
Niagara Mohawk Power Corporation	2007	21	100	1.28078	0.01936	1.07589	0.00605	0.84002	-0.01332	-0.02473	-0.00507	0.31064
Niagara Mohawk Power Corporation	2008	21	100	1.28964	0.00689	1.08442	0.0079	0.84087	0.001	0.02235	-0.00961	0.35316
North Shore Gas Company	1998	22	102	1		1		1				0.2838
North Shore Gas Company	1999	22	102	1.01656	0.01643	1.02024	0.02003	1.00361	0.00361	0.01498	-0.00109	0.301
North Shore Gas Company	2000	22	102	0.9259	-0.09342	1.03713	0.01642	1.12013	0.10984	0.3203	0.00111	0.38027
North Shore Gas Company	2001	22	102	1.08535	0.15889	1.04534	0.00789	0.96313	-0.15101	-0.45243	0.00067	0.28924
North Shore Gas Company	2002	22	102	1.09031	0.00456	1.05463	0.00885	0.96727	0.00429	0.04163	-0.01194	0.31664
North Shore Gas Company	2003	22	102	1.1083	0.01636	1.06221	0.00717	0.95842	-0.0092	-0.01639	-0.00591	0.31026
North Shore Gas Company	2004	22	102	1.09353	-0.01342	1.07069	0.00795	0.97912	0.02137	0.07103	-0.00789	0.43124
North Shore Gas Company	2005	22	102	0.79872	-0.31415	1.08221	0.0107	1.35492	0.32485	0.57444	-0.01175	0.71718
North Shore Gas Company	2006	22	102	2.07598	0.95517	1.08917	0.00642	0.52466	-0.94876	-1.55383	-0.00605	0.50096
North Shore Gas Company	2007	22	102	1.30332	-0.46552	1.0987	0.00871	0.843	0.47423	1.06837	-0.01606	0.40327
North Shore Gas Company	2008	22	102	1.26833	-0.02722	1.10129	0.00235	0.8683	0.02957	0.08784	-0.01725	0.48775
Northern Illinois Gas Company	1998	23	103	1		1		1				0.18414
Northern Illinois Gas Company	1999	23	103	1.01475	0.01464	1.01634	0.0162	1.00157	0.00157	0.03564	-0.00634	0.19244
Northern Illinois Gas Company	2000	23	103	0.84328	-0.18509	1.03382	0.01706	1.22595	0.20215	0.77172	-0.00306	0.33728
Northern Illinois Gas Company	2001	23	103	1.09281	0.25921	1.04934	0.0149	0.96022	-0.24431	-0.94841	-0.00336	0.17264
Northern Illinois Gas Company	2002	23	103	1.10903	0.01473	1.06597	0.01573	0.96118	0.001	0.00176	0.00083	0.19503
Northern Illinois Gas Company	2003	23	103	1.10212	-0.00625	1.08355	0.01635	0.98315	0.0226	0.10537	-0.00083	0.24632
Northern Illinois Gas Company	2004	23	103	1.04906	-0.04934	1.10251	0.01735	1.05095	0.06669	0.22776	0.00513	0.30666
Northern Illinois Gas Company	2005	23	103	1.05853	0.00898	1.10995	0.00672	1.04858	-0.00226	0.00131	-0.00415	0.38737
Northern Illinois Gas Company	2006	23	103	1.0668	0.00778	1.13012	0.01801	1.05936	0.01023	0.03185	-0.00559	0.45771
Northern Illinois Gas Company	2007	23	103	1.13193	0.05927	1.13945	0.00822	1.00664	-0.05105	-0.12753	-0.0082	0.26044
Northern Illinois Gas Company	2008	23	103	1.12693	-0.00443	1.1451	0.00495	1.01613	0.00938	0.06133	-0.00775	0.23551
Northwest Natural Gas Company	1998	24	109	1		1		1				0.27123
Northwest Natural Gas Company	1999	24	109	1.08914	0.08538	1.05142	0.05014	0.96537	-0.03525	-0.18327	0.01544	0.23897
Northwest Natural Gas Company	2000	24	109	1.08756	-0.00144	1.09889	0.04416	1.01041	0.0456	0.06487	0.03933	0.25246
Northwest Natural Gas Company	2001	24	109	1.09989	0.01127	1.14386	0.04011	1.03998	0.02884	0.06788	0.01594	0.24413
Northwest Natural Gas Company	2002	24	109	1.1513	0.04568	1.18111	0.03205	1.0259	-0.01363	-0.08368	0.0098	0.25711
Northwest Natural Gas Company	2003	24	109	1.25739	0.08815	1.33092	0.11942	1.05848	0.03126	0.09178	0.00876	0.28504
Northwest Natural Gas Company	2004	24	109	1.10641	-0.12792	1.25781	-0.0565	1.13684	0.07142	0.15037	0.03005	0.40266

Northwest Natural Gas Company	2005	24	109	1.17742	0.06221	1.3276	0.054	1.12755	-0.00821	-0.07362	0.0526	0.56078
Northwest Natural Gas Company	2006	24	109	1.22594	0.04038	1.36926	0.03089	1.1169	-0.00949	-0.01725	-0.00052	0.51166
Northwest Natural Gas Company	2007	24	109	1.24577	0.01605	1.41354	0.03183	1.13468	0.01579	0.03286	0.00373	0.31631
Northwest Natural Gas Company	2008	24	109	1.31052	0.05067	1.42467	0.00784	1.0871	-0.04283	-0.1462	0.00387	0.30606
Orange and Rockland Utilities, Inc.	1998	26	115	1		1		1				0.40093
Orange and Rockland Utilities, Inc.	1999	26	115	0.70893	-0.344	0.98494	-0.01517	1.38934	0.32883	0.675	0.02057	0.54115
Orange and Rockland Utilities, Inc.	2000	26	115	0.88132	0.21767	1.0254	0.04025	1.16348	-0.17742	-0.37988	0.02434	0.4571
Orange and Rockland Utilities, Inc.	2001	26	115	1.01441	0.14064	1.034	0.00836	1.01931	-0.13228	-0.35191	0.02092	0.36473
Orange and Rockland Utilities, Inc.	2002	26	115	1.03285	0.01801	1.04686	0.01236	1.01356	-0.00566	-0.02899	0.00802	0.37461
Orange and Rockland Utilities, Inc.	2003	26	115	1.01779	-0.01468	1.0548	0.00756	1.03635	0.02224	0.04522	0.00779	0.39756
Orange and Rockland Utilities, Inc.	2004	26	115	0.99341	-0.02425	1.06755	0.01202	1.07462	0.03626	0.05613	0.01895	0.53379
Orange and Rockland Utilities, Inc.	2005	26	115	1.02287	0.02922	1.07205	0.00421	1.04808	-0.02502	-0.05375	0.0203	0.69006
Orange and Rockland Utilities, Inc.	2006	26	115	1.02744	0.00445	1.08177	0.00902	1.05288	0.00457	0.00089	0.01271	0.68755
Orange and Rockland Utilities, Inc.	2007	26	115	1.00059	-0.02648	1.09021	0.00777	1.08957	0.03425	0.00593	0.01643	0.52076
Orange and Rockland Utilities, Inc.	2008	26	115	1.00577	0.00517	1.10025	0.00917	1.09394	0.004	0.00328	0.00471	0.46499
Pacific Gas and Electric Company	1998	27	116	1		1		1				0.26305
Pacific Gas and Electric Company	1999	27	116	1.0408	0.03999	1.01636	0.01623	0.97652	-0.02376	-0.07512	-0.00476	0.27712
Pacific Gas and Electric Company	2000	27	116	0.98501	-0.0551	1.00259	-0.01364	1.01785	0.04146	0.14463	-0.00702	0.36227
Pacific Gas and Electric Company	2001	27	116	1.10912	0.11867	1.04558	0.04198	0.94271	-0.07669	-0.21988	-0.01022	0.27178
Pacific Gas and Electric Company	2002	27	116	1.09152	-0.01599	1.05396	0.00799	0.96559	0.02398	0.08561	-0.00283	0.33439
Pacific Gas and Electric Company	2003	27	116	1.0876	-0.0036	1.05824	0.00405	0.97301	0.00765	0.0171	0.00272	0.35188
Pacific Gas and Electric Company	2004	27	116	1.08811	0.00047	1.07849	0.01895	0.99115	0.01848	0.05278	-0.00676	0.49589
Pacific Gas and Electric Company	2005	27	116	0.91156	-0.17704	1.10478	0.02409	1.21197	0.20113	0.32694	-0.0073	0.75131
Pacific Gas and Electric Company	2006	27	116	1.21202	0.28489	1.13758	0.02925	0.93858	-0.25564	-0.33075	-0.00569	0.78653
Pacific Gas and Electric Company	2007	27	116	1.20954	-0.00205	1.152	0.0126	0.95242	0.01465	0.02905	-0.00921	0.46042
Pacific Gas and Electric Company	2008	27	116	1.24949	0.03249	1.16577	0.01188	0.93299	-0.02061	-0.04286	-0.00399	0.39492
PECO Energy Company	1998	28	117	1		1		1				0.24069
PECO Energy Company	1999	28	117	1.05766	0.05606	1.02306	0.0228	0.96728	-0.03326	-0.05102	-0.02855	0.17918
PECO Energy Company	2000	28	117	1.09016	0.03026	1.03551	0.0121	0.94987	-0.01816	0.02737	-0.02955	0.22096
PECO Energy Company	2001	28	117	0.96749	-0.11937	1.05379	0.0175	1.0892	0.13687	0.01297	0.17175	0.21834
PECO Energy Company	2002	28	117	0.91908	-0.05133	1.07936	0.02397	1.17439	0.0753	0.21947	0.02981	0.26139
PECO Energy Company	2003	28	117	0.93007	0.01188	1.09767	0.01682	1.1802	0.00494	0.04214	-0.00949	0.29761
PECO Energy Company	2004	28	117	0.93694	0.00737	1.11664	0.01714	1.19179	0.00977	0.0238	0.00283	0.36386
PECO Energy Company	2005	28	117	0.95615	0.02029	1.13435	0.01574	1.18637	-0.00456	-0.00362	-0.0056	0.6914
PECO Energy Company	2006	28	117	0.9644	0.00859	1.14293	0.00754	1.18512	-0.00105	0.00394	-0.01151	0.66175
PECO Energy Company	2007	28	117	0.96109	-0.00344	1.15702	0.01226	1.20387	0.01569	0.03854	-0.0094	0.38493
PECO Energy Company	2008	28	117	0.99246	0.03212	1.16191	0.00422	1.17074	-0.0279	-0.05686	-0.01181	0.3295
Peoples Gas Light and Coke Company	1998	29	118	1		1		1				0.31938
Peoples Gas Light and Coke Company	1999	29	118	1.034	0.03343	1.00531	0.00529	0.97225	-0.02814	-0.07245	-0.00797	0.30624
Peoples Gas Light and Coke Company	2000	29	118	1.05079	0.01611	1.00967	0.00433	0.96087	-0.01177	-0.02359	-0.00692	0.27603
Peoples Gas Light and Coke Company	2001	29	118	1.07829	0.02583	1.01577	0.00602	0.94202	-0.01981	-0.05697	-0.00536	0.28403
Peoples Gas Light and Coke Company	2002	29	118	1.08201	0.00344	1.00565	-0.01001	0.92943	-0.01346	-0.03868	-0.0028	0.30995
Peoples Gas Light and Coke Company	2003	29	118	1.0477	-0.03222	0.98345	-0.02232	0.93868	0.0099	0.05657	-0.01098	0.30815
Peoples Gas Light and Coke Company	2004	29	118	1.02298	-0.02388	0.97621	-0.00739	0.95429	0.01649	0.06048	-0.00918	0.42902
Peoples Gas Light and Coke Company	2005	29	118	0.89786	-0.13045	0.98068	0.00457	1.09224	0.13502	0.27656	-0.01339	0.59472
Peoples Gas Light and Coke Company	2006	29	118	1.00374	0.11147	0.98259	0.00194	0.97893	-0.10953	-0.17496	-0.01248	0.59995
Peoples Gas Light and Coke Company	2007	29	118	0.94346	-0.06193	0.99721	0.01477	1.05696	0.0767	0.15161	-0.00768	0.45947
Peoples Gas Light and Coke Company	2008	29	118	1.00475	0.06293	0.99672	-0.00049	0.99201	-0.06342	-0.12802	-0.0055	0.48607
Peoples Natural Gas Company	1998	30	120	1		1		1				0.35406
Peoples Natural Gas Company	1999	30	120	1.06276	0.06087	1.00532	0.00531	0.94595	-0.05556	-0.12409	-0.01345	0.40724
Peoples Natural Gas Company	2000	30	120	0.95504	-0.10687	1.0121	0.00672	1.05975	0.11359	0.26665	-0.00976	0.48529
Peoples Natural Gas Company	2001	30	120	0.98375	0.02962	1.01465	0.00252	1.03141	-0.0271	-0.07414	0.00501	0.32614
Peoples Natural Gas Company	2002	30	120	1.06768	0.08187	1.01394	-0.0007	0.94967	-0.08257	-0.24093	-0.00863	0.31046
Peoples Natural Gas Company	2003	30	120	1.05275	-0.01408	1.01486	0.00091	0.96401	0.015	0.03243	0.0065	0.34489
Peoples Natural Gas Company	2004	30	120	1.04923	-0.00334	1.01616	0.00128	0.96848	0.00462	0.00848	0.00207	0.44968
Peoples Natural Gas Company	2005	30	120	0.99007	-0.05804	1.01712	0.00094	1.02732	0.05898	0.08651	0.00495	0.87515
Peoples Natural Gas Company	2006	30	120	1.06919	0.07688	1.01813	0.001	0.95224	-0.07589	-0.1009	-0.00014	0.62834
Peoples Natural Gas Company	2007	30	120	1.09367	0.02263	1.02154	0.00334	0.93405	-0.01929	-0.03653	-0.00024	0.42152
Peoples Natural Gas Company	2008	30	120	1.08221	-0.01053	1.02161	0.00006	0.944	0.0106	0.0458	-0.01364	0.39401



Public Service Electric and Gas Company	1998	34	128	1		1		1					0.35578
Public Service Electric and Gas Company	1999	34	128	0.92146	-0.0818	0.98514	-0.01497	1.06911	0.06683	0.15879	0.01528		0.36261
Public Service Electric and Gas Company	2000	34	128	0.97771	0.05926	1.01729	0.03211	1.04049	-0.02714	-0.09344	0.01126		0.37102
Public Service Electric and Gas Company	2001	34	128	1.02416	0.04642	1.05373	0.03519	1.02887	-0.01122	-0.0442	0.01107		0.43562
Public Service Electric and Gas Company	2002	34	128	1.07158	0.04526	1.04524	-0.00809	0.97542	-0.05335	-0.15094	0.01144		0.36231
Public Service Electric and Gas Company	2003	34	128	1.05078	-0.0196	1.05028	0.00481	0.99953	0.02441	0.04747	0.01145		0.35738
Public Service Electric and Gas Company	2004	34	128	1.0523	0.00145	1.06242	0.01149	1.00962	0.01005	0.00808	0.0113		0.42115
Public Service Electric and Gas Company	2005	34	128	1.05093	-0.00131	1.07269	0.00961	1.02071	0.01092	0.01453	0.00682		0.64202
Public Service Electric and Gas Company	2006	34	128	1.18514	0.12019	1.07933	0.00617	0.91072	-0.11402	-0.17466	0.00823		0.69484
Public Service Electric and Gas Company	2007	34	128	1.18599	0.00071	1.08701	0.00709	0.91655	0.00638	0.00636	0.0064		0.42091
Public Service Electric and Gas Company	2008	34	128	1.22639	0.0335	1.09316	0.00564	0.89137	-0.02786	-0.07285	0.00204		0.37752
Public Service Company of North Carolina, Inc	1998	36	127	1		1		1					0.36792
Public Service Company of North Carolina, Inc	1999	36	127	0.99635	-0.00365	1.0508	0.04956	1.05465	0.05321	0.07917	0.03768		0.38077
Public Service Company of North Carolina, Inc	2000	36	127	1.03714	0.04012	1.09787	0.04382	1.05856	0.0037	-0.03928	0.02985		0.37583
Public Service Company of North Carolina, Inc	2001	36	127	1.06436	0.02591	1.12163	0.02141	1.05381	-0.0045	-0.01841	0.00372		0.36723
Public Service Company of North Carolina, Inc	2002	36	127	1.01602	-0.04648	1.12685	0.00464	1.10908	0.05112	0.02956	0.06359		0.36584
Public Service Company of North Carolina, Inc	2003	36	127	1.0388	0.02217	1.16163	0.0304	1.11824	0.00823	-0.01345	0.02058		0.36002
Public Service Company of North Carolina, Inc	2004	36	127	1.03939	0.00057	1.19942	0.03201	1.15396	0.03144	0.04842	0.01726		0.5503
Public Service Company of North Carolina, Inc	2005	36	127	1.0952	0.0523	1.25205	0.04294	1.14322	-0.00935	-0.01635	0.0101		0.92059
Public Service Company of North Carolina, Inc	2006	36	127	1.19954	0.091	1.31175	0.04658	1.09354	-0.04442	-0.04433	0.00911		1.08306
Public Service Company of North Carolina, Inc	2007	36	127	1.21489	0.01272	1.36374	0.03887	1.12252	0.02615	0.02548	0.02844		0.45936
Public Service Company of North Carolina, Inc	2008	36	127	1.23334	0.01507	1.40683	0.0311	1.14067	0.01604	-0.00145	0.02858		0.37628
Rochester Gas and Electric Corp	1998	37	134	1		1		1					0.39421
Rochester Gas and Electric Corp	1999	37	134	1.07067	0.06829	0.99862	-0.00138	0.9327	-0.06967	-0.19513	0.00353		0.34269
Rochester Gas and Electric Corp	2000	37	134	1.02788	-0.04079	0.99215	-0.00649	0.96524	0.03429	0.08764	0.00553		0.35788
Rochester Gas and Electric Corp	2001	37	134	1.08987	0.05855	0.99821	0.00608	0.9159	-0.05247	-0.15452	0.00179		0.33635
Rochester Gas and Electric Corp	2002	37	134	1.09442	0.00417	1.00575	0.00752	0.91898	0.00335	-0.01803	0.0139		0.32456
Rochester Gas and Electric Corp	2003	37	134	1.10176	0.00668	1.01208	0.00628	0.91861	-0.0004	0.00276	-0.00189		0.31462
Rochester Gas and Electric Corp	2004	37	134	1.06802	-0.0311	1.0178	0.00563	0.95298	0.03674	-0.12623	-0.01444		0.41304
Rochester Gas and Electric Corp	2005	37	134	1.07683	0.00822	1.02236	0.00447	0.94941	-0.00375	-0.03263	0.02287		0.54631
Rochester Gas and Electric Corp	2006	37	134	1.18445	0.09526	1.02488	0.00246	0.86527	-0.09279	-0.15364	-0.01376		0.58368
Rochester Gas and Electric Corp	2007	37	134	1.21627	0.0265	1.02868	0.00371	0.84577	-0.0228	-0.02992	-0.01592		0.39837
Rochester Gas and Electric Corp	2008	37	134	1.26447	0.03887	1.03322	0.0044	0.81712	-0.03447	-0.06966	-0.01416		0.33349
San Diego Gas & Electric Co.	1998	38	135	1		1		1					0.40102
San Diego Gas & Electric Co.	1999	38	135	1.04055	0.03975	1.01909	0.01891	0.97937	-0.02084	-0.04752	-0.00246		0.4148
San Diego Gas & Electric Co.	2000	38	135	1.1085	0.06326	1.03661	0.01705	0.93515	-0.04621	-0.13539	0.00838		0.34456
San Diego Gas & Electric Co.	2001	38	135	1.08491	-0.02151	1.05401	0.01665	0.97152	0.03816	0.10905	-0.00627		0.42591
San Diego Gas & Electric Co.	2002	38	135	1.07474	-0.00942	1.07268	0.01756	0.99809	0.02698	0.06215	0.00082		0.42707
San Diego Gas & Electric Co.	2003	38	135	0.99768	-0.0744	1.08959	0.01564	1.09213	0.09004	0.21559	-0.00085		0.41283
San Diego Gas & Electric Co.	2004	38	135	1.03751	0.03915	1.10454	0.01362	1.06461	-0.02552	-0.05471	0.00402		0.59322
San Diego Gas & Electric Co.	2005	38	135	1.15497	0.10725	1.12146	0.0152	0.97099	-0.09205	-0.14308	-0.00891		0.64601
San Diego Gas & Electric Co.	2006	38	135	1.0233	-0.12104	1.13513	0.01212	1.10929	0.13316	0.2103	-0.01252		0.66156
San Diego Gas & Electric Co.	2007	38	135	1.02768	0.00427	1.14465	0.00834	1.11382	0.00407	0.0126	-0.00848		0.52946
San Diego Gas & Electric Co.	2008	38	135	1.15319	0.11523	1.14989	0.00457	0.99714	-0.11066	-0.20532	-0.01346		0.48377
Southern California Gas Company	1998	40	142	1		1		1					0.39119
Southern California Gas Company	1999	40	142	1.11053	0.10483	1.01534	0.01522	0.91429	-0.08961	-0.2045	-0.0107		0.42314
Southern California Gas Company	2000	40	142	1.2023	0.07941	1.02958	0.01393	0.85634	-0.06548	-0.14656	-0.0111		0.3797
Southern California Gas Company	2001	40	142	1.14055	-0.05273	1.04102	0.01105	0.91273	0.06378	0.173	-0.0076		0.41077
Southern California Gas Company	2002	40	142	1.14237	0.00159	1.05737	0.01559	0.9256	0.01399	0.03581	-0.00196		0.43384
Southern California Gas Company	2003	40	142	1.13576	-0.0058	1.06857	0.01053	0.94084	0.01634	0.02612	0.00842		0.46028
Southern California Gas Company	2004	40	142	1.14656	0.00946	1.08255	0.013	0.94417	0.00353	-0.00273	0.00971		0.53298
Southern California Gas Company	2005	40	142	1.18832	0.03577	1.09535	0.01175	0.92176	-0.02402	-0.04077	0.00574		0.74681
Southern California Gas Company	2006	40	142	1.16199	-0.0224	1.10841	0.01186	0.95389	0.03426	0.04117	0.01433		0.73854
Southern California Gas Company	2007	40	142	1.16963	0.00656	1.11948	0.00993	0.95712	0.00338	-0.00074	0.01025		0.51259
Southern California Gas Company	2008	40	142	1.22332	0.04488	1.12388	0.00392	0.91871	-0.04096	-0.09024	0.00634		0.4669
Washington Gas Light Company	1998	42	165	1		1		1					0.36024
Washington Gas Light Company	1999	42	165	1.07636	0.07358	1.06977	0.06744	0.99388	-0.00614	-0.0565	0.0208		0.33683
Washington Gas Light Company	2000	42	165	1.0814	0.00468	1.05574	-0.0132	0.97627	-0.01788	-0.07793	0.01211		0.32925
Washington Gas Light Company	2001	42	165	1.09226	0.00999	1.10314	0.04392	1.00996	0.03393	0.06214	0.01942		0.34998

Washington Gas Light Company	2002	42	165	1.10016	0.00721	1.14446	0.03677	1.04027	0.02957	0.04635	0.02062	0.34536
Washington Gas Light Company	2003	42	165	1.08409	-0.01471	1.13753	-0.00607	1.0493	0.00864	-0.01771	0.0224	0.34068
Washington Gas Light Company	2004	42	165	1.11317	0.02647	1.19237	0.04708	1.07114	0.02061	0.04158	0.00809	0.40687
Washington Gas Light Company	2005	42	165	1.14739	0.03027	1.22116	0.02386	1.06429	-0.00641	-0.01218	-0.00103	0.55929
Washington Gas Light Company	2006	42	165	1.19315	0.03911	1.25336	0.02603	1.05046	-0.01308	-0.01953	-0.00494	0.55704
Washington Gas Light Company	2007	42	165	1.19974	0.00551	1.2739	0.01626	1.06181	0.01075	0.01587	0.00601	0.40351
Washington Gas Light Company	2008	42	165	1.1947	-0.00421	1.28325	0.00731	1.07411	0.01152	-0.00745	0.02261	0.33426
Puget Sound Energy, Inc.	1998	43	129	1		1		1				0.20878
Puget Sound Energy, Inc.	1999	43	129	1.03337	0.03283	1.04522	0.04423	1.01147	0.0114	-0.10484	0.03977	0.18352
Puget Sound Energy, Inc.	2000	43	129	1.02426	-0.00886	1.08951	0.0415	1.06371	0.05036	0.10717	0.0377	0.18088
Puget Sound Energy, Inc.	2001	43	129	1.03084	0.00641	1.12247	0.0298	1.08888	0.02339	-0.01825	0.03278	0.18707
Puget Sound Energy, Inc.	2002	43	129	1.01349	-0.01698	1.15194	0.02591	1.13661	0.04289	0.05264	0.04033	0.23019
Puget Sound Energy, Inc.	2003	43	129	1.01292	-0.00056	1.18975	0.0323	1.17457	0.03285	0.03789	0.03138	0.22156
Puget Sound Energy, Inc.	2004	43	129	1.03563	0.02217	1.24243	0.04333	1.19969	0.02116	0.01847	0.0221	0.29725
Puget Sound Energy, Inc.	2005	43	129	0.9794	-0.05582	1.28194	0.03131	1.3089	0.08713	0.1862	0.03508	0.3916
Puget Sound Energy, Inc.	2006	43	129	1.01253	0.03326	1.32037	0.02953	1.30403	-0.00373	-0.02948	0.01506	0.45199
Puget Sound Energy, Inc.	2007	43	129	1.01016	-0.00234	1.35557	0.02631	1.34194	0.02865	0.04359	0.02014	0.27383
Puget Sound Energy, Inc.	2008	43	129	0.98229	-0.02798	1.38532	0.02171	1.4103	0.04968	0.08999	0.03452	0.27289
Wisconsin Gas LLC	1998	44	170	1		1		1				0.35825
Wisconsin Gas LLC	1999	44	170	1.05336	0.05198	1.0172	0.01706	0.96568	-0.03493	-0.10705	0.00416	0.34473
Wisconsin Gas LLC	2000	44	170	1.0384	-0.0143	1.03773	0.01998	0.99935	0.03428	0.08603	0.00877	0.31563
Wisconsin Gas LLC	2001	44	170	1.1126	0.06902	1.05291	0.01452	0.94634	-0.0545	-0.19766	0.01046	0.30864
Wisconsin Gas LLC	2002	44	170	1.12475	0.01086	1.06861	0.0148	0.95009	0.00395	0.00588	0.00311	0.29365
Wisconsin Gas LLC	2003	44	170	1.12602	0.00113	1.08022	0.01081	0.95932	0.00968	-0.01524	0.02175	0.35917
Wisconsin Gas LLC	2004	44	170	1.03977	-0.0797	1.09579	0.01431	1.05388	0.094	0.09381	0.09416	0.52115
Wisconsin Gas LLC	2005	44	170	1.072	0.03053	1.10969	0.01261	1.03516	-0.01792	-0.02957	0.00201	0.74107
Wisconsin Gas LLC	2006	44	170	1.14684	0.06749	1.12128	0.01039	0.97771	-0.0571	-0.07514	-0.00219	0.76432
Wisconsin Gas LLC	2007	44	170	1.20546	0.04984	1.12907	0.00692	0.93663	-0.04293	-0.07741	0.0026	0.37371
Wisconsin Gas LLC	2008	44	170	1.20689	0.00119	1.13604	0.00616	0.94129	0.00496	0.01507	-0.0006	0.33667
Wisconsin Power and Light Company	1998	45	171	1		1		1				0.37677
Wisconsin Power and Light Company	1999	45	171	1.13075	0.12288	1.02199	0.02175	0.90382	-0.10113	-0.28659	-0.00541	0.30406
Wisconsin Power and Light Company	2000	45	171	1.12089	-0.00875	1.04261	0.01998	0.93016	0.02873	0.04878	0.01935	0.33342
Wisconsin Power and Light Company	2001	45	171	1.08579	-0.03182	1.0588	0.0154	0.97514	0.04722	0.09092	0.02415	0.35777
Wisconsin Power and Light Company	2002	45	171	1.04287	-0.04032	1.09897	0.03724	1.05379	0.07756	0.20591	0.00712	0.3509
Wisconsin Power and Light Company	2003	45	171	1.1361	0.08563	1.10822	0.00838	0.97546	-0.07724	-0.20929	-0.01204	0.31018
Wisconsin Power and Light Company	2004	45	171	1.125	-0.00982	1.12319	0.01342	0.99839	0.02324	0.0323	0.01862	0.36469
Wisconsin Power and Light Company	2005	45	171	1.26527	0.1175	1.14374	0.01813	0.90395	-0.09937	-0.23585	0.01834	0.56146
Wisconsin Power and Light Company	2006	45	171	1.17019	-0.07812	1.1603	0.01438	0.99155	0.0925	0.15061	0.00393	0.64618
Wisconsin Power and Light Company	2007	45	171	1.23528	0.05413	1.1606	0.00026	0.93955	-0.05387	-0.24021	0.10781	0.28299
Wisconsin Power and Light Company	2008	45	171	1.29013	0.04345	1.17252	0.01022	0.90884	-0.03323	-0.05809	-0.02396	0.2604
Questar Gas Company	1998	46	131	1		1		1				0.34272
Questar Gas Company	1999	46	131	1.00795	0.00792	1.03523	0.03462	1.02706	0.0267	0.03149	0.02398	0.38234
Questar Gas Company	2000	46	131	1.07676	0.06604	1.08847	0.05016	1.01087	-0.01589	-0.04954	0.00511	0.38616
Questar Gas Company	2001	46	131	1.08958	0.01183	1.113	0.02228	1.0215	0.01045	-0.04971	0.04496	0.3428
Questar Gas Company	2002	46	131	1.08099	-0.00791	1.1177	0.00421	1.03395	0.01212	0.00024	0.01833	0.34339
Questar Gas Company	2003	46	131	1.02059	-0.05749	1.1469	0.02579	1.12376	0.08329	0.18374	0.02506	0.39057
Questar Gas Company	2004	46	131	1.14731	0.11704	1.18105	0.02934	1.02941	-0.0877	-0.20171	0.00873	0.52589
Questar Gas Company	2005	46	131	1.22415	0.06483	1.2523	0.05858	1.02299	-0.00625	-0.01479	0.01068	0.80327
Questar Gas Company	2006	46	131	1.22633	0.00178	1.27012	0.01413	1.0357	0.01235	0.01526	-0.00342	0.885
Questar Gas Company	2007	46	131	1.25035	0.0194	1.31051	0.0313	1.04811	0.01191	0.01645	0.00357	0.40898
Questar Gas Company	2008	46	131	1.29759	0.03709	1.33904	0.02154	1.03194	-0.01554	-0.07982	0.02225	0.33156
New Jersey Natural Gas Company	1998	49	98	1		1		1				0.29305
New Jersey Natural Gas Company	1999	49	98	1.02885	0.02844	1.03023	0.02978	1.00134	0.00134	-0.03337	0.01474	0.26385
New Jersey Natural Gas Company	2000	49	98	1.0439	0.01453	1.06772	0.03574	1.02281	0.02121	0.04128	0.01296	0.31878
New Jersey Natural Gas Company	2001	49	98	1.0485	0.0044	1.09277	0.02319	1.04222	0.0188	0.02679	0.01528	0.29263
New Jersey Natural Gas Company	2002	49	98	1.10088	0.04875	1.12687	0.03073	1.02361	-0.01802	-0.07863	0.00658	0.28476
New Jersey Natural Gas Company	2003	49	98	1.08188	-0.01741	1.15142	0.02156	1.06428	0.03897	0.12458	0.00348	0.30137
New Jersey Natural Gas Company	2004	49	98	1.10159	0.01806	1.16984	0.01587	1.06195	-0.00219	-0.00931	0.00134	0.36177
New Jersey Natural Gas Company	2005	49	98	1.14272	0.03666	1.20013	0.02556	1.05024	-0.01109	-0.04677	0.01119	0.40709

New Jersey Natural Gas Company	2006	49	98	1.11485	-0.02469	1.22243	0.01841	1.09649	0.0431	0.08994	0.00125	0.53673
New Jersey Natural Gas Company	2007	49	98	1.03831	-0.07113	1.23876	0.01328	1.19306	0.08441	0.17559	-0.0026	0.43984
New Jersey Natural Gas Company	2008	49	98	1.06978	0.02986	1.25257	0.01108	1.17086	-0.01878	-0.05887	0.00705	0.34388
Louisville Gas and Electric Company	1998	53	79	1		1		1				0.47215
Louisville Gas and Electric Company	1999	53	79	1.03583	0.03521	1.0221	0.02186	0.98674	-0.01335	-0.01157	-0.01484	0.43718
Louisville Gas and Electric Company	2000	53	79	1.07355	0.03577	1.03791	0.01535	0.9668	-0.02042	-0.10098	0.05437	0.52561
Louisville Gas and Electric Company	2001	53	79	1.01982	-0.05135	1.05673	0.01797	1.03619	0.06932	0.0993	0.04064	0.45227
Louisville Gas and Electric Company	2002	53	79	0.98425	-0.03549	1.07482	0.01698	1.09202	0.05247	0.08129	0.0298	0.42848
Louisville Gas and Electric Company	2003	53	79	0.97344	-0.01105	1.08809	0.01227	1.11778	0.02332	0.00616	0.03615	0.42742
Louisville Gas and Electric Company	2004	53	79	0.93958	-0.0354	1.10259	0.01324	1.1735	0.04864	0.0413	0.05609	0.58007
Louisville Gas and Electric Company	2005	53	79	0.96043	0.02195	1.11652	0.01255	1.16252	-0.0094	-0.01395	0.00294	0.88114
Louisville Gas and Electric Company	2006	53	79	1.10108	0.13666	1.1265	0.0089	1.02309	-0.12776	-0.14695	0.0024	0.86185
Louisville Gas and Electric Company	2007	53	79	1.1158	0.01328	1.13484	0.00737	1.01706	-0.00591	-0.00622	-0.00512	0.58035
Louisville Gas and Electric Company	2008	53	79	1.05622	-0.05488	1.09399	-0.03666	1.03576	0.01822	0.02943	0.00674	0.431
Madison Gas and Electric Company	1998	57	80	1		1		1				0.3796
Madison Gas and Electric Company	1999	57	80	1.0358	0.03517	1.02837	0.02798	0.99283	-0.00719	0.00202	-0.01292	0.38663
Madison Gas and Electric Company	2000	57	80	1.03449	-0.00126	1.04952	0.02036	1.01453	0.02162	0.06466	-0.00611	0.397
Madison Gas and Electric Company	2001	57	80	1.06703	0.03097	1.08003	0.02865	1.01218	-0.00232	-0.01014	0.00286	0.39941
Madison Gas and Electric Company	2002	57	80	1.10304	0.03319	1.14759	0.06068	1.04039	0.02749	0.07917	-0.0099	0.44015
Madison Gas and Electric Company	2003	57	80	1.11092	0.00713	1.18817	0.03475	1.06953	0.02762	0.01717	0.03589	0.44282
Madison Gas and Electric Company	2004	57	80	1.06721	-0.04015	1.21454	0.02195	1.13805	0.0621	0.10796	0.01637	0.55568
Madison Gas and Electric Company	2005	57	80	1.15748	0.0812	1.24056	0.0212	1.07178	-0.06	-0.09478	-0.00103	0.70236
Madison Gas and Electric Company	2006	57	80	1.11725	-0.03537	1.26771	0.02165	1.13467	0.05703	0.07861	0.001	0.74152
Madison Gas and Electric Company	2007	57	80	1.08693	-0.02752	1.28334	0.01225	1.1807	0.03977	0.02173	0.0704	0.5172
Madison Gas and Electric Company	2008	57	80	1.09425	0.00671	1.30507	0.01679	1.19266	0.01008	0.03048	-0.00951	0.46247

scap	yn	com	ck	c	xdst	xccc	xage	sdst	sccc	sage	cdst	cccc	cage
0.52562	458484	101471.3281	112430.3047	213901.625	36300	21051.32617	28346	0.35774	0.20746	0.4348	36300	21051.32617	44120
0.52086	462284	100346.0938	109081.6953	209427.7813	36089.49219	18788.77734	27527.72656	0.36799	0.19154	0.44048	36926	19220.09375	44200
0.51729	465656	104653.8516	112152.3984	216806.25	36724.92969	18883.98242	28545.98047	0.37065	0.18974	0.43961	38790	19856.85156	46007
0.54999	463370	104736.5234	128005.625	232742.1563	37320.83594	17377.52148	29205.58594	0.3868	0.17926	0.43394	40512	18775.51953	45449
0.54315	461232	108269	128722.7344	236991.7344	36987.48438	17613.24414	28377.2832	0.37881	0.17948	0.44171	41013	19432	47824
0.53587	462875	115003	132779.0156	247782.0156	38643.39453	17955.61914	31874.54297	0.38087	0.1756	0.44354	43801	20194	51008
0.41802	460921	119996	86190.59375	206186.5938	37249.88281	15967.06055	33190.31641	0.36389	0.15295	0.48317	43665	18353	57978
0.26262	460046	127094	45264.08594	172358.0938	36811.04297	17097.74219	37049.83594	0.35356	0.15915	0.48729	44935	20227	61932
0.22606	455013	128672	37583.62891	166255.625	37688.78516	16333.85938	36090.60156	0.37122	0.1546	0.47418	47765	19893	61014
0.49289	451167	131922	128223.8203	260145.8125	38509.63281	15156.07813	35801.28906	0.38242	0.1443	0.47328	50450	19036	62436
0.49795	447062	131492	130418.1172	261910.125	38135.16797	14706.90625	32869.10938	0.39856	0.14568	0.45576	52407	19156	59929
0.68109	573428	82166.11719	175478.5156	257644.625	34828	16179.11328	16151	0.42387	0.19691	0.37922	34828	16179.11328	31159
0.68769	583866	84417.875	185882.8906	270300.75	35472.09375	16208.5918	17782.54883	0.4307	0.19662	0.37268	36359	16597.875	31461
0.66592	595260	92556.52344	184493.125	277049.6563	37144.67188	17723.27539	12438.70996	0.42499	0.20174	0.37326	39336	18672.52344	34548
0.65684	598535	91002.09375	174186.5625	265188.6563	43857.14453	21328.95898	15234.81152	0.52547	0.25401	0.22052	47819	23115.09766	20068
0.65805	609349	96266	185250.875	281516.875	31217.74805	15438.01172	17754.6543	0.36211	0.17761	0.46028	34859	17098	44309
0.68013	617586	92492	196662.6719	289154.6875	34011.07813	10976.3418	20142.37695	0.42253	0.13456	0.4429	39081	12446	40965
0.57359	624862	108795	146344.25	255139.25	38490.69141	11248.42871	25587.73828	0.42132	0.11997	0.45872	45837	13052	49906
0.40691	634057	119001	81644.4375	200645.4375	34906.3125	14271.95996	30265.50586	0.36353	0.14321	0.49326	43260	17042	58699
0.33678	640579	126875	64426.80469	191301.8125	34991.17578	13551.75781	34346.30078	0.35592	0.13146	0.51262	45157	16679	65039
0.5414	646186	136962	161689.3594	298651.375	36912.92188	14261.12402	37188.66406	0.35925	0.13205	0.5087	49204	18086	69672
0.57803	648934	133981	183530.9531	317511.9375	37999.64063	15473.70703	29541.09961	0.39612	0.15178	0.4521	53073	20335	60573
0.57304	535211	120715	162015.3438	282730.3438	51355	30271.99609	26280	0.42542	0.25077	0.3238	51355	30271.99609	39088
0.53964	536255	136501	160009.2969	296510.3125	57616.3125	31446.74023	26390.6875	0.43265	0.23591	0.33144	59057	32202	45242
0.45163	542792	182289	150133.5313	332422.5313	66572	36506.72266	53191.12109	0.38675	0.21099	0.40226	70500	38462	73327
0.52355	549389	148696.875	163399.4063	312096.2813	61849.53516	27006.30859	30988.36719	0.45351	0.19683	0.34966	67436	29267.88086	51993
0.39704	553551	144695	95277.57813	239972.5781	57259.25391	28798.41992	28645.95703	0.4418	0.22043	0.33777	63926	31895	48874
0.44293	565136	140263	111524.6875	251787.6875	47544.40234	30787.73047	38246.44531	0.3895	0.24889	0.36161	54632	34910	50721
0.49032	587513	151882	146112.3438	297994.3438	54111.07422	30206.66797	35793.24219	0.42441	0.23077	0.34481	64461	35050	52371
0.35073	583896	159661	86248.36719	245909.375	58798.88672	28248.29688	37740.55469	0.4564	0.21127	0.33233	72870	33731	53060
0.22815	580827	159662	47194.98438	206856.9844	56383.81641	27406.58008	36534.43359	0.45641	0.21127	0.33233	72871	33731	53060
0.45771	589022	182163	153752.5156	335915.5	54426.22656	26509.95117	39959.74609	0.39912	0.18456	0.41632	72705	33620	75838
0.50386	615321	204229	207410	411639	63206.68359	26100.22852	40596.54688	0.43323	0.16795	0.39882	88479	34300	81450
0.61767	1172083	292939.8125	473257.9063	766197.75	101657	60039.82031	107301	0.34702	0.20496	0.45201	101657	60039.82031	132413
0.63811	1179802	268125.8438	472775.75	740901.625	93206.14844	56133.67969	98077.41406	0.35632	0.21438	0.43386	95539	57481.84766	116328
0.64327	1191711	287314.9063	518103.75	805418.625	87264.1875	55544.00781	105623.8672	0.32165	0.20368	0.47911	92415	58518.91406	137655
0.64869	1248264	238226.0469	439880.5625	678106.625	79446.40625	31049.85742	114858.5078	0.36362	0.14125	0.50143	86623	33650.04688	119453
0.65462	1245106	258553	490058.5625	748611.5625	72831.67969	31517.0918	119814.1094	0.31453	0.13501	0.55519	81323	34906	143546
0.62271	1190085	292037	482007.6563	774044.625	76070.4375	53330.41797	97876.08594	0.29929	0.20707	0.49936	87404	60471	145832
0.58605	1155008	278069	393684.1563	671753.125	76187.96094	47888.55859	91784.8125	0.3263	0.19983	0.47999	90735	55567	133470
0.48076	1165109	288627	267239.5313	555866.5	82018.13281	54043.67969	84241.27344	0.35225	0.22359	0.43123	101669	64533	124464
0.38451	1176645	279709	174741.5469	454450.5625	74365.90625	50356.57422	81470.14063	0.34319	0.22158	0.44214	95993	61977	123670
0.61121	1184516	265143	416823.5	681966.5	75230.64844	45751.35156	74769.60156	0.37833	0.21883	0.41026	100312	58022	108778
0.62706	1191602	301623	507153.5625	808776.5625	73377.54688	52361.77734	73829.17969	0.33996	0.22814	0.4397	102541	68812	132625
0.69721	168569	34628.60547	79737.98438	114366.5938	10921	4798.604	10834	0.31538	0.13857	0.54605	10921	4798.604	18909
0.71728	185267	32749.4668	83087.41406	115836.8828	9610.26465	4336.81152	9619.64453	0.30141	0.1358	0.56279	9871	4447.46582	18431
0.72261	193160	34372.73438	89543.24219	123915.9766	9466.77051	4346.15918	10580.44434	0.2936	0.13388	0.57252	10092	4601.73291	19679
0.70639	199028	37758.76563	90843.8125	128602.5781	8895.5	4589.56006	12797.21875	0.25965	0.13276	0.60759	9804	5012.76611	22942
0.70476	204735	38191	91166.65625	129357.6563	9450.05957	4956.86035	10160.22168	0.27923	0.14482	0.57595	10664	5531	21996
0.68519	212428	40692	88565.85156	129257.8516	8078.46973	5211.34277	11606.24902	0.23083	0.14642	0.62275	9393	5958	25341
0.61194	217336	36596	57709.64063	94305.64063	8379.04004	4832.82471	11415.19531	0.27582	0.15447	0.56971	10094	5653	20849
0.50521	228224	39013	39834.51953	78847.51563	8026.67041	3977.58667	14345.20605	0.25727	0.12255	0.62018	10037	4781	24195
0.52336	237842	42783	46975.98047	89758.98438	8409.33496	3709.42822	16630.17773	0.25562	0.10731	0.63708	10936	4591	27256
0.69139	245969	40491	90715.51563	131206.5156	8485.80469	3865.26343	15173.26953	0.28199	0.12185	0.59616	11418	4934	24139

0.72274	251742	37530	97830.32813	135360.3281	8507.24316	3760.40576	11259.4209	0.3202	0.13269	0.54711	12017	4980	20533
0.73243	62104	11474.91992	31410.85547	42885.77344	6313	1350.91992	3801	0.55016	0.11773	0.33212	6313	1350.91992	3811
0.73889	62605	11097	31402.37109	42499.37109	6283.18799	1336.89172	3019.47583	0.58034	0.12337	0.2963	6440	1369	3288
0.70819	63852	12842	31166.15039	44008.14844	6216.33447	1308.89624	3815.46851	0.51261	0.10738	0.38	6583	1379	4880
0.72939	65784	12276.77734	33090.04688	45366.82422	5910.28271	1443.86438	3520.51123	0.52473	0.12746	0.34781	6442	1564.77698	4270
0.7318	66757	12369	33749.15625	46118.15625	6021.13232	1583.70996	4181.021	0.54337	0.14181	0.31482	6721	1754	3894
0.74091	67914	12508	35768.4375	48276.4375	5721.54834	1762.07068	4308.67773	0.52542	0.15974	0.31484	6572	1998	3938
0.63904	69081	14346	25397.55078	39743.55078	6244.19531	1669.3385	4858.96338	0.5184	0.13502	0.34658	7437	1937	4972
0.496	70714	15768	15517.80859	31285.80859	7216.22314	1622.15625	4678.93799	0.56748	0.12284	0.30968	8948	1937	4883
0.29845	72023	17602	7488.27686	25090.27734	6962.18213	1738.75903	4629.6582	0.51079	0.12158	0.36763	8991	2140	6471
0.53394	73211	25012	28654.57031	53666.57031	6913.95752	1715.8136	6499.9458	0.36878	0.087	0.54422	9224	2176	13612
0.56576	74159	28109	36622.15234	64731.15234	7034.59131	1639.82483	8252.91797	0.34999	0.07667	0.57334	9838	2155	16116
0.48111	237086	73542	68186.89063	141728.8906	27795	16994	14441	0.37795	0.23108	0.39097	27795	16994	28753
0.41828	240120	72901.47656	52418.28125	125319.7578	27686.47266	15251.67383	13943.87695	0.38926	0.21423	0.3965	28377.75	15617.97461	28905.75
0.51062	243854	72224	75358.76563	147582.7656	26795.80078	14180.97559	13494.68457	0.39291	0.20686	0.40022	28377.75	14940.5	28905.75
0.4191	246666	71658	51698.34375	123356.3438	26035.22461	13263.76074	13088.92773	0.39602	0.2006	0.40338	28377.75	14374.5	28905.75
0.5103	248736	69412	72332.625	141744.625	27000.4707	8958.70605	12373.08105	0.43402	0.14294	0.42304	30126	9922	29364
0.53792	250038	69807	81263.625	151070.625	26569.93945	8730.98047	9791.50488	0.43692	0.14182	0.42126	30500	9900	29407
0.49643	252576	63021	62127.56641	125148.5625	24122.37305	7832.18848	9752.39355	0.45597	0.14421	0.39982	28736	9088	25197
0.34219	254409	67679	35205.84375	102884.8438	23333.05273	8666.015673	10312.74512	0.42805	0.1529	0.41905	28970	10348	28361
0.2775	257051	66721	25626.23242	92347.23438	21221.29297	8292.41797	10711.75781	0.41101	0.15297	0.43602	27423	10206	29092
0.48536	259378	66674	62881.14063	129555.1406	20112.26953	6864.83154	11482.7041	0.40263	0.13058	0.46679	26845	8706	31123
0.5416	260419	66703	78810.86719	145513.875	19591.125	7312.62939	11460.54395	0.41132	0.14407	0.44461	27436	9610	29657
0.6522	157317	42110.86719	78965.64063	121076.5078	11488	6058.86719	19404	0.2728	0.14388	0.58332	11488	6058.86719	24564
0.56927	160630	44719.54688	59103.3125	103822.8594	11169.01855	10564.80957	17798.14453	0.256	0.24192	0.50208	11448	10818.5459	22453
0.63949	166295	42673.97656	75698.67969	118372.6563	10772.89453	10368.63965	16146.64746	0.26733	0.25599	0.47668	11408	10923.97754	20342
0.68228	166886	38183.37891	81997.59375	120180.9688	9698.74121	9331.9043	13349.21484	0.27695	0.26486	0.45818	10575	10113.37988	17495
0.67037	169319	41570	84540.76563	126110.7656	8564.4707	5966.45117	16979.50195	0.23009	0.15896	0.61095	9565	6608	25397
0.682	170057	40899	87714.95313	128613.9531	7878.73926	5629.27783	17149.85352	0.2214	0.15607	0.62253	9055	6383	25461
0.62933	170817	41856	71065.125	112921.125	11347.1709	6598.06689	16292.65918	0.32292	0.18291	0.49417	13516	7656	20684
0.44794	173639	43614	35388.06641	79002.0625	11771.43848	6365.51855	16107.19141	0.33453	0.17428	0.4912	14590	7601	21423
0.51432	174160	44595	47224.77344	91819.77344	11403.17188	6616.22168	16429.16797	0.33015	0.1826	0.48725	14723	8143	21729
0.61365	174587	46736	74230.625	120966.625	10562.00977	8355.12891	16144.92871	0.30144	0.22672	0.47184	14088	10596	22052
0.65654	175040	47805	91381.42188	139186.4219	10163.30273	9094.75	14877.34766	0.29712	0.25002	0.45286	14204	11952	21649
0.63533	141364	42055.19922	73267.98438	115323.1875	9617	12017.2002	13901	0.22868	0.28575	0.48558	9617	12017.2002	20421
0.65478	142667	40344.39844	76520.00781	116864.4063	8769.83594	11923.04395	13400.50781	0.22278	0.30263	0.47459	8988	12209.40039	19147
0.64394	155641	45367.77734	82048.40625	127416.1875	9314.97168	11423.91895	14066.76953	0.21742	0.26529	0.51728	9864	12035.77734	23468
0.71324	146941	36671.58203	91210.14844	127881.7344	8430.07617	10798.30664	11524.91699	0.2506	0.31912	0.43028	9190	11702.58203	15779
0.64705	148133	44969	82438.48438	127407.4844	8387.01758	10112.62891	14085.35938	0.20812	0.24906	0.54282	9359	11200	24410
0.69145	150946	40837	91514.72656	132351.7188	7482.88232	7943.42871	13501.85156	0.21037	0.22056	0.56907	8591	9007	23239
0.63236	151127	42676	73403.6875	116079.6875	10618.86133	8575.07422	15325.07031	0.29604	0.23315	0.4708	12634	9950	20092
0.48266	152980	42655	39794.91016	82449.90625	12655.24609	8246.44922	13190.39844	0.36737	0.23085	0.40178	15670	9847	17138
0.46893	153873	43649	38541.375	82190.375	11727.76172	8547.54395	13567.7002	0.3464	0.24101	0.41259	15120	10520	18009
0.59856	153528	45881	68409.45313	114290.4531	12141.72852	8448.96289	13670.7207	0.35237	0.23354	0.41409	16167	10715	18999
0.68384	156594	48431	104754.3594	153185.3594	11565.76563	7648.2041	15150.60352	0.33318	0.20753	0.45929	16136	10051	22244
0.69681	1037951	190039.0469	436757.8125	626796.875	105067	32111.04297	32491	0.55287	0.16897	0.27816	105067	32111.04297	52861
0.70514	1043048	183642.3281	439173.9375	622816.25	105418.9766	32021.26172	26317.58789	0.58832	0.17856	0.23313	108040	32790.32031	42812
0.69268	1048357	176000.9375	396696.375	572697.3125	110020.4922	33911.64844	28670.25195	0.66195	0.203	0.13505	116504	35727.9375	23769
0.73461	1048357	168167.375	465492.5	633659.875	104302.6563	33882.94141	29913.36719	0.67597	0.21836	0.10567	113676	36720.37891	17771
0.73259	1048776	152409	417534.4063	569943.375	93660.08594	29061.16797	25302.38477	0.68576	0.21118	0.10306	104516	32186	15707
0.72704	1051147	155519	414237.0313	569756	82664.25	28044.96875	23553.125	0.61032	0.20448	0.1852	94917	31800	28802
0.68029	1041458	160892	342347.75	503239.75	81709.90625	26369	21249.13867	0.6046	0.19017	0.20522	97276	30597	33019
0.59862	1054926	188170	468807.5	93938.79688	26748.41016	20422.44727	0.61882	0.16974	0.21144	0.16443	116443	31940	39378
0.50534	1148510	201479	205830.2188	407309.2188	92040.76563	27534.14258	23075.66797	0.58958	0.1682	0.24222	118788	33888	48803
0.67311	1184245	209639	431683.4375	641322.4375	87861.375	26154.33008	24252.11719	0.55871	0.15822	0.28307	117128	33169	59342
0.7036	1068723	246109	584212.75	830321.75	99733.625	26949.4375	27447.11914	0.56631	0.1439	0.28979	139374	35416	71319
0.65698	1542448	191191.9688	366184.7188	557376.6875	83414	36581.96484	36881	0.43628	0.19134	0.37238	83414	36581.96484	71196
0.65274	1567712	202972.3438	381522.9063	584495.25	90090.42969	38095.69141	36428.21484	0.4557	0.19249	0.35181	92494	39070.34375	71408
0.63769	1594484	203973.7969	359001.125	562974.9375	91896.92188	37863.94922	30965.14453	0.4792	0.19628	0.32451	97745	40036.79688	66192

0.57163	1617294	224269.2813	299266.9063	523536.1875	98773.91406	38352.96094	34686.72266	0.48163	0.18587	0.3325	108014	41685.27344	74570
0.56899	1652309	237253	313202.3125	550455.3125	111685.8906	35071.09766	30998.40625	0.52766	0.16443	0.30791	125188	39012	73053
0.55113	1670989	267314	328215.875	595229.875	113266.1641	33619.41406	31961.97656	0.49222	0.14397	0.36381	131577	38486	97251
0.4873	1690874	265220	252076.875	517296.875	115508.9141	33411.78906	41675.30859	0.52002	0.14675	0.33323	137920	38920	88380
0.25805	1696524	311182	108227.2734	419409.2813	127545.2031	34919.80859	43654.58984	0.50971	0.13452	0.35577	158613	41860	110709
0.24908	1707708	295923	98156.4375	394079.4375	110331.2031	34706.42969	34837.01953	0.48137	0.14472	0.37391	142448	42826	110649
0.52786	1708656	300585	336054.1563	636639.125	107171.1563	31449.68555	38510.48438	0.4745	0.13288	0.39262	142627	39941	118017
0.5529	1706276	318369	393702.1875	712071.1875	109790.3125	31983.11914	42153.94141	0.48039	0.13209	0.38752	152942	42052	123375
0.64579	1171867	161507.4688	294455.9375	455963.4063	65911	23175.46875	67269	0.4081	0.14349	0.44841	65911	23175.46875	72421
0.55081	1201730	212834.0625	260984.6094	473818.6875	70628.5625	21335.20703	122743.6406	0.34062	0.10281	0.55657	72496	21881.05469	118457
0.62023	1234870	181227.6406	295980.625	477208.25	70384.76563	21031.7207	72325.42188	0.41301	0.12271	0.46428	74848	22238.64063	84141
0.66546	1221538	157418.6094	313130.7813	470549.375	63151.53516	23140.06836	84667.17188	0.43855	0.15977	0.40168	69036	25150.60352	63232
0.69942	1213805	111057	258420.375	369477.375	63611.36328	19459.37109	56048.14453	0.64152	0.19491	0.16357	71245	21646	18166
0.70305	1215966	127624	302163	429787	61548.96484	20706.60938	43265.24609	0.55976	0.18573	0.25451	71439	23704	32481
0.6237	1217546	131377	217752.8125	349129.8125	62288.46484	19850.48242	37157.69531	0.56553	0.176	0.25847	74297	23123	33957
0.45491	1218695	148904	124268.6875	273172.6875	72446.75	18413.40039	39971.54297	0.60447	0.14824	0.24729	90008	22073	36823
0.46564	1215988	161816	141004.25	302820.25	72277.47656	17704.93164	45540.44922	0.57572	0.13501	0.28927	93161	21847	46808
0.54903	1209803	160483	195376.3594	355859.375	72832.21875	19999.26367	51034.48047	0.60279	0.15827	0.23895	96737	25399	38347
0.65382	1201267	172892	326534.6875	499426.6875	78621.89063	21944.47266	52782.69531	0.63219	0.16688	0.20093	109300	28853	34739
0.6887	530634	112558.5703	249013.2969	361571.875	35825	10510.56641	44808	0.31828	0.09338	0.58834	53825	10510.56641	66223
0.6716	538554	113207.2578	231514.5313	344721.7813	34750.23438	12854.52832	42354.53516	0.31468	0.11628	0.56906	35624	13163.25684	64422
0.64753	544080	117011.7813	214960.7969	331972.5625	39240.67188	13213.09766	41436.26953	0.35517	0.11897	0.52586	41559	13920.7832	61532
0.6593	548021	123875.1953	239717.2969	363592.5	39802.7188	12117.45117	42080.53906	0.35039	0.10601	0.5436	43405	13132.19531	67339
0.62512	551436	138233	230503.0938	368736.0938	40604.85547	12132.44629	39692.10938	0.32814	0.09721	0.57465	45360	13437	79436
0.64254	556869	128020	230116.5156	358136.5	38175.64844	12602.59766	35478.1875	0.34282	0.11162	0.54556	43888	14290	69842
0.63808	560566	102872	181368.5	284240.5	42433.86719	9627.35156	21580.35547	0.49148	0.10859	0.39992	50560	11171	41141
0.44429	566446	93618	74847.20313	168465.2031	32078.14844	6948.38965	23861.11719	0.42482	0.08863	0.48655	39771	8297	45550
0.47185	567461	99914	89263.14063	189177.1406	34150.55078	6903.84814	22132.37109	0.44146	0.08504	0.4735	44108	8497	47309
0.68936	57092	95010	210846.7813	305856.7813	32941.23828	6559.67529	21940.46484	0.46264	0.08756	0.44981	43955	8319	42736
0.64684	575428	106087	194306.1406	300393.125	30481.76563	7360.56885	24134.16797	0.40172	0.09118	0.5071	42617	9673	53797
0.7162	143698	23835.78125	60151.98438	83987.76563	8792	3853.78101	9972	0.36886	0.16168	0.49262	8792	3853.78101	11742
0.699	146606	25056.42383	58186.69531	83243.11719	9099.30469	3923.0542	9959.13574	0.37304	0.16057	0.48965	9347	4023.42285	12269
0.61973	149033	34966.40625	56984.74609	91951.15625	14763.74121	4219.2793	12621.18164	0.44932	0.12759	0.44591	15711	4461.40527	15592
0.71076	150213	24649.45898	60570.78906	85220.25	4414.38818	4383.58887	11139.64844	0.19603	0.19329	0.65916	4832	4764.45898	16248
0.68336	151548	27997	60421.16406	88418.16406	8023.67188	4196.44922	9347.27441	0.32207	0.16673	0.54142	9017	4668	15158
0.68974	152638	29522	65631.59375	95153.59375	6778.36865	6334.97852	8487.3457	0.2677	0.24565	0.52744	7903	7252	15571
0.56876	153856	32270	42561.57031	74831.57031	6732.0791	6288.31836	9735.73242	0.24977	0.22699	0.55906	8060	7325	18041
0.28282	155511	50371	19863.54688	70234.54688	6647.74854	5511.59033	24624.97852	0.16442	0.13117	0.73552	8282	6607	37049
0.49904	156512	21789	21705.52148	43494.52344	6556.13574	5117.71143	1693.75085	0.38965	0.28983	0.4109	8490	6315	8953
0.59673	157881	37422	55375.47266	92797.46875	6709.91748	5023.63477	13128.29688	0.23943	0.17049	0.62958	8960	6380	23560
0.51225	158253	43273	45447.29297	88720.29688	7983.69092	5757.44824	13582.16699	0.25776	0.17494	0.61094	11154	7570	26437
0.81586	1898034	128922	571210.25	700132.25	49608	31862	43955	0.38479	0.24714	0.39326	49608	31862	50700
0.80756	1929041	138102	579520.5	717622.5	48179.40625	33827.54297	47540.33984	0.35818	0.25121	0.41211	49465	34693	56913
0.66272	1962235	288243	566356.625	854599.625	47898.78516	31974.14258	190600.6406	0.17675	0.11729	0.7166	50947	33809	206556
0.82736	1991684	121330.625	581455.5	702786.125	41384.63672	29875.8457	38237.96484	0.37299	0.26763	0.39793	45255	32471.62305	48281
0.80497	2023255	140263	578920.625	719183.625	48730.09766	29473.13477	33175.67969	0.38951	0.23374	0.40665	54634	32785	57038
0.75368	2056612	166105	508246.375	674351.375	51836.73047	28094.21484	40931.11719	0.36266	0.19362	0.47271	60239	32163	78520
0.69334	2092607	194710	440220.5313	634930.5	56087.26563	29334.03906	60465.56641	0.34397	0.17549	0.51116	66975	34170	99528
0.61263	2106726	203575	321958.875	525533.875	59057.23438	30143.98633	57924.5625	0.36076	0.1775	0.49858	73441	36135	101498
0.54229	2145015	214325	253926.2656	468251.25	71741.07031	29758.9043	52892.65625	0.43168	0.17133	0.4476	92519	36721	95932
0.73956	2162712	197586	561090.25	758676.25	64578.63281	28737.08203	44488.64453	0.43419	0.18471	0.42824	85790	36496	84614
0.76449	2173440	213004	691448.125	904452.125	59825.10156	32025.71094	52377.41016	0.39052	0.19769	0.45568	83183	42108	97062
0.72877	464997	73513.625	197527.3438	271040.9688	20552	17651.62891	26106	0.27957	0.24011	0.48032	20552	17651.62891	35310
0.76103	488905	64516.07813	205459.5781	269975.6563	19360.34961	13416.74805	21036.03516	0.30811	0.21327	0.47862	19878	13759.07715	30879
0.74754	510979	71670.85938	212217.4844	283888.3438	19054.28711	15044.19434	23057.8457	0.2833	0.22225	0.49445	20304	15928.86035	35438
0.75587	531891	76294.44531	236220.1719	312514.625	18918.33789	14710.94043	26731.66406	0.27303	0.2106	0.51637	20831	16067.44629	39396
0.74289	549213	77039	222597.0625	299636.0625	18606.9707	14620.54199	22989.61523	0.27208	0.21176	0.51615	20961	16314	39764
0.71496	618874	88794	222720.7656	311514.75	19699.34375	13563.66113	27200.98828	0.25744	0.17464	0.56792	22859	15507	50428
0.59734	584878	91250	135369.3281	226619.3281	28033.42578	19116.71484	25424.25977	0.36934	0.24505	0.38561	33702	22361	35187

0.43922	617332	103393	80979.4375	184372.4375	22844.83398	14750.59863	28067.41406	0.27585	0.17148	0.55267	28521	17730	57142
0.48834	636700	104984	100200.4219	205184.4219	21146.08594	14430.49121	28432.77148	0.26134	0.17012	0.56854	27436	17860	59688
0.68369	657294	111453	240903.3906	352356.375	22326.88672	14229.55957	29492.00781	0.26879	0.16297	0.56823	29958	18164	63331
0.69394	662467	103900	235571	339471	22644.94727	14397.52148	22230.74023	0.30701	0.18351	0.50948	31898	19067	52935
0.59907	115758	30672.3418	45830.52734	76502.86719	14035.9082	3803.43311	6763	0.45761	0.124	0.41839	14035.9082	3803.43311	12833
0.45885	114015	61309.45703	51984.60938	113294.0625	39881.30469	4129.28271	8554.53223	0.66619	0.06897	0.26484	40844	4228.45605	16237
0.5429	118698	41755.32813	49593.01172	91348.34375	22587.75391	4532.56543	7545.10059	0.57267	0.11436	0.31297	23912	4775.32715	13068
0.63527	119694	27647.77539	48156.26563	75804.03906	12357.97852	4561.09229	6806.80957	0.48686	0.17879	0.33435	13460.72559	4943.04883	9244
0.62539	121182	27752	46330.80859	74082.8125	11934.12695	4117.28467	6914.9707	0.47982	0.16431	0.35587	13316	4560	9876
0.60244	122101	29785	45135.40625	74920.40625	13315.66504	4177.64209	6685.55127	0.51335	0.15904	0.32761	15290	4737	9758
0.46621	123577	42371	37006.19922	79377.20313	13832.56445	4426.28955	7209.42432	0.38854	0.12121	0.49024	16463	5136	20772
0.30994	124098	40477	18180.42383	58657.42188	13165.03906	4378.23096	6732.19141	0.40282	0.12916	0.46802	16305	5228	18944
0.31245	125223	41660	18931.91406	60591.91406	13029.16113	4142.95898	6906.20264	0.4035	0.1224	0.4741	16810	5099	19751
0.47924	126200	47100	43344.07813	90444.07813	13093.18457	3866.10034	7661.49561	0.37053	0.1041	0.52537	17452	4903	24745
0.53501	127363	47107	54200.17578	101307.1719	12829.79395	3758.28076	7868.44434	0.38037	0.10485	0.51479	17918	4939	24250
0.73695	3737058	465532.7813	1304209.875	1769742.625	177813.7813	134483	135015	0.38196	0.28888	0.37136	177813.7813	134483	172882
0.72288	3798199	477290.4688	1245008	1722298.5	169078.75	137739.4688	114249.5938	0.36353	0.29595	0.38725	173508.5625	141253.9063	184829
0.63773	3746752	553888.1875	975055.375	1528943.5	172061.4531	140611.6875	157090.9219	0.33079	0.26879	0.44636	183219.8594	148880.2969	247234
0.72822	3907394	488258.8438	1308261.625	1796520.5	172173.1563	151285.6563	85383.07813	0.38741	0.33842	0.34858	189156.0313	165235.7969	170199
0.66561	3938727	556920	1108552.875	1665472.875	165781.2656	157425.7969	107871.625	0.33444	0.31541	0.38931	186258	175660	216813
0.64812	3954719	575013	1059112	1634125	169198.6563	166726.2344	105538.2188	0.34049	0.3315	0.37491	195784	190614	215577
0.50411	4030373	610171	620285.375	1230456.375	184371	154092.9844	119380.6797	0.36272	0.2954	0.39247	221324	180244	239476
0.24869	4128646	789070	261188.5938	1050258.625	200295.0938	152682.4219	235521.7813	0.31703	0.23258	0.49412	250161	183522	389894
0.21347	4251192	683814	185589.5625	869403.5625	179367.2031	146745.0156	128684.3984	0.34034	0.2656	0.44758	232730	181620	306063
0.53958	4305091	689946	808582.625	1498528.625	186522.9219	145618.75	133952.5	0.36275	0.26942	0.41786	250275	185882	288298
0.60508	4356537	712304.6875	1091346.625	1803651.25	202866.9688	119973.2109	125569.0234	0.40166	0.22306	0.42568	286102.1563	158883.5469	303217
0.75931	416087	59965.07031	189169.2656	249134.3438	20126	12453.07031	15385	0.33563	0.20767	0.4567	20126	12453.07031	27386
0.82082	425682	48729.91406	223236.5156	271966.4375	18737.97852	12248.73535	14599.33203	0.39407	0.2574	0.34853	19203	12542.91406	16984
0.77904	430862	53298.44922	187913.7344	241212.1875	22717.76563	12580.63672	12102.91113	0.45135	0.24868	0.29997	24056	13254.44824	15988
0.78166	438470	57482.80859	205785.9219	263268.7188	26519.59961	12532.32227	9773.81055	0.50292	0.23628	0.26081	28909	13581.80859	14992
0.73861	449108	74690	211046.9063	285736.9063	30611.81836	14166.70996	14805.33496	0.45733	0.21007	0.3326	34158	15690	24842
0.70239	456725	85098	200835.3906	285933.375	28429.07031	13643.25977	18267.7207	0.38353	0.18179	0.43468	32638	15470	36990
0.63614	464619	83446	145887.9375	229333.9375	24493.86523	12328.28516	22552.14844	0.34922	0.17143	0.47935	29141	14305	40000
0.3086	471988	86123	38440.73438	124563.7344	27603.38477	14328.90723	18987.29102	0.39687	0.19867	0.40446	34180	17110	34833
0.33825	475558	88381	45175.21094	133556.2188	27468.55664	13946.63477	19520.34375	0.40069	0.19422	0.4051	35413	17165	35803
0.61507	481422	93583	149533.0781	243116.0781	30048.30273	15529.84766	18510.00195	0.42755	0.21045	0.362	40011	19695	33877
0.6705	483457	93426	190114.8438	283540.8438	29899.29102	15371.74121	15929.125	0.4465	0.21622	0.33727	41715	20201	31510
0.68062	832509	189193.4375	403192.125	592385.5625	82613	35352.44531	70960	0.43666	0.18686	0.37648	82613	35352.44531	71228
0.69376	836928	178179.7969	403658.3438	581838.125	75715.89063	34397.75781	65602.53125	0.43632	0.19799	0.36569	77744	35277.80078	65158
0.72397	840561	162801.6563	427005.1563	589806.8125	75176.90625	35403.02734	60434.64844	0.49121	0.22994	0.27885	79969	37434.65625	45398
0.71597	845637	180763.8125	455650.8438	636414.625	61336.88281	35288.73828	66160.15625	0.37117	0.21218	0.41665	67094	38354.81641	75315
0.69005	837212	187799	418106.8125	605905.8125	57554.375	34029.17578	64895.70313	0.34383	0.20156	0.45461	64571	37853	85375
0.69185	818730	206624	463896.7188	670520.75	57793.36328	31964.91211	74708.42969	0.32538	0.17709	0.49752	67232	36592	102800
0.57098	812705	240178	319649.4063	559827.375	57307.64453	30828.64063	85061.1875	0.28514	0.14952	0.56534	68484	35911	135783
0.40528	816428	304325	207390.3594	511715.375	55895.12109	30223.23633	135974.8594	0.2285	0.11905	0.65245	69537	36230	198558
0.40005	818012	270914	180649.3594	451563.375	58267.47656	25715.79102	104354.1406	0.27787	0.11713	0.605	75280	31732	163902
0.54053	830184	322822	379779.375	702601.375	69457.65625	24749.66992	124168.6953	0.28654	0.09737	0.61609	92503	31432	198887
0.51393	829776	299212	316366.9063	615578.875	79176.20313	24641.42188	92048.07031	0.36877	0.10828	0.52295	110340	32399	156473
0.64594	349487	75242.6875	137273.4531	212516.1406	28460.01367	12176.67285	32284	0.37824	0.16183	0.45993	28460.01367	12176.67285	34606
0.59276	351346	64414.05469	93759.72656	158173.7813	16249.63086	11665.41211	36462.26563	0.25863	0.18545	0.55592	16659.47266	11945.58105	35809
0.51471	353715	82579.6875	87586	170165.6875	33647.51953	9427.91309	40123.25781	0.43152	0.12028	0.4482	35634.82422	9932.86621	37012
0.67386	354607	68300.15625	141117	209417.1563	35028.83594	4664.80469	37670.75	0.55894	0.07402	0.36704	38175.71094	5055.44629	25069
0.68954	354358	47273	104993.7266	152266.7188	27617.55664	3653.18726	29449.58789	0.65096	0.08559	0.26345	30773	4046	12454
0.65511	354681	59929	113833.4453	173762.4375	30872.38867	4427.22461	24601.71875	0.59042	0.08377	0.32582	35383	5020	19526
0.55032	355134	62706	76740.41406	139446.4063	32634.00781	5562.16357	21105.38672	0.61812	0.10292	0.27895	38760	6454	17492
0.12485	355469	72498	10343.01172	82841.01563	39228.17578	5874.76807	18239.54102	0.66936	0.09676	0.23388	48527	7015	16956
0.37166	355823	66060	39074.29688	105134.2969	33600	5923.96826	18294.45117	0.65397	0.11037	0.23566	43201	7291	15568
0.57848	357015	58383	80124.46094	138507.4688	31767.13281	6290.79102	17781.93555	0.72216	0.13665	0.14119	42162	7978	8243
0.60599	357038	70870	108999.6328	179869.625	34234.33203	6211.5498	17312.3457	0.67189	0.11518	0.21293	47617	8163	15090

0.64422	1593570	242163.5781	438487	680650.5625	89552	40233.57813	72599	0.3698	0.16614	0.46406	89552	40233.57813	112378
0.63739	1569893	270558.5938	475590.875	746149.5	74569.80469	44054.53125	108399.9688	0.28254	0.16674	0.55072	76443	45112.59375	149003
0.62898	1621128	262386.2813	444814.5938	707200.875	66144.50781	31473.58594	106319.9844	0.26698	0.12638	0.60664	70052	33159.29297	159175
0.56438	1679196	277352.1875	359335.9063	636688.125	81475.27344	51360.15625	75543.69531	0.32034	0.20069	0.47897	88847	55661.17969	132844
0.63769	1665668	255987	450559.8125	706546.8125	82496.46875	50583.00781	53894.94531	0.35998	0.21885	0.42117	92150	56022	107815
0.64262	1673702	289138	519921.5	809059.5	85354.95313	51763.25	57793.95313	0.33935	0.203	0.45766	98118	58694	132326
0.57885	1693048	293778	403786	697564	85656.21094	51026.42969	59050.69922	0.34738	0.20154	0.45108	102052	59208	132518
0.35798	1709399	300832	167742.2969	468574.3125	73271.85156	56826.55469	64706.82813	0.30197	0.22556	0.47247	90841	67856	142135
0.30516	1719986	271753	119347.6328	391100.625	58297.94531	49693.57031	55068.85547	0.27705	0.22506	0.49789	75290	61161	135302
0.57909	1732227	272353	374704.9688	647058	64651	44486.56641	55020.96875	0.31671	0.20715	0.47614	86258	56418	129677
0.62248	1742029	259687	428196.0625	687883.0625	57923.41797	43464.10938	51268.99609	0.31183	0.21995	0.46822	80978	57119	121590
0.63208	325844	62748.29688	107801.1953	170549.5	17591	12995.29492	22010	0.28034	0.2071	0.51256	17591	12995.29492	32162
0.61923	342398	67724.85156	110138.5078	177863.3594	17256.92188	9659.11719	28184.05273	0.26079	0.1459	0.59331	17662	9880.85156	40182
0.62417	357736	63659.83594	105725.125	169384.9688	18051.13477	8508.95117	25832.9375	0.29953	0.15707	0.5434	19068	9998.83496	34593
0.63277	365478	64044.35938	110353.7578	174398.125	17801.0957	10072.07324	24718.83398	0.30171	0.16992	0.52837	19323	10882.35742	33839
0.63416	367177	68161	118151.4688	186312.4688	17480.69922	13093.00586	24001.45898	0.28468	0.21192	0.5034	19404	14445	34312
0.63998	378511	70624	125542.4219	196166.4219	18687.60352	13727.68262	21986.61719	0.30025	0.18651	0.48114	21205	15439	33980
0.4497	390824	77136	63033.94531	140169.9375	19749.97656	14003.47656	23269.77734	0.30062	0.20867	0.4907	23189	16096	37851
0.07941	407973	77152	6655.04199	83807.03906	19942.68555	13439.31445	22755.64258	0.31608	0.20607	0.47785	24386	15899	36867
-0.08306	427426	77240	-5923.64258	71316.35938	20640.7207	12900.07813	20569.24219	0.33956	0.2034	0.45703	26228	15711	35301
0.54064	444368	81328	95716.4375	177044.4375	20264.97266	12022.31445	22642.0332	0.32748	0.18567	0.48686	26633	15100	39595
0.62372	458407	84465	140010.875	224475.875	20629.37891	11401.76758	22744.99023	0.33692	0.17582	0.48726	28458	14851	41156
0.60579	288204	59261.98438	91067.35938	150329.3438	17374	8542.98438	26628	0.29317	0.14416	0.56267	17374	8542.98438	33345
0.65731	287806	52102.92578	99937.19531	152040.125	16755.69141	8043.73926	19236.73242	0.32967	0.15809	0.51224	17177	8236.92676	26689
0.64212	285943	52521.875	94237.53125	146759.4063	17534.08984	10570.71582	20133.78906	0.35357	0.21204	0.43439	18570	11136.87695	22815
0.66365	287688	45683.87109	90137.88281	135821.75	17668.66211	9572.26563	14252.21484	0.42177	0.22708	0.35115	19268	10373.87012	16042
0.67544	289860	46682	97151.71094	143833.7188	16294.30957	8030.51074	16290.22949	0.38993	0.19052	0.41955	18202.5	8894	19585.5
0.68538	291686	48694	106078.6094	154772.6094	14906.49121	7432.79834	18210.57227	0.35193	0.17308	0.47499	17137	8428	23129
0.58696	293334	52039	73950.375	125989.375	19630.71875	9366.22168	16993.76172	0.44947	0.20884	0.34169	23390	10868	17781
0.45369	294647	53300	44262.80078	97562.79688	21499.24414	6136.89258	16869.61914	0.50009	0.13749	0.36242	26655	7328	19317
0.41632	295374	46018	32822.50781	78840.50781	18780.98438	6162.03223	13098.02441	0.52712	0.16481	0.30808	24257	7584	14177
0.60163	296471	47356	71518.11719	118874.1172	16078.30957	7281.16846	13756.95996	0.45304	0.19499	0.35197	21454	9234	16668
0.66651	297778	44566	89070.19531	133636.1875	14813.10938	7827.78564	11904.67676	0.4647	0.23083	0.30447	20710	10287	13569
0.59898	729508	92547.71094	138232.8125	230780.5313	28900	20743.71094	36214	0.31227	0.22414	0.54923	28900	20743.71094	50830
0.5852	743432	96616.46875	136305.3438	232921.8125	36652.59766	14825.20508	32035.61914	0.38936	0.15736	0.54068	37619	15203.47168	52239
0.65544	756215	79027.07031	150329.1875	229356.25	31331.7793	14901.77832	27855.25391	0.42225	0.19965	0.4986	33369	15778.07031	39403
0.57409	768911	93930.78125	126611.3906	220542.1719	34386.89844	15442.00488	31363.42773	0.40232	0.17956	0.57943	37789.86328	16865.92188	54426
0.57293	782530	103601	138985.375	242586.375	27373.70703	20651.04492	36326.62109	0.29709	0.22242	0.55721	30779	23043	57727
0.58717	794868	125812	178940.875	304752.875	29789.34766	21295.83203	49935.38672	0.27427	0.19352	0.60588	34506	24347	76227
0.40678	805772	113746	77998.20313	191744.2031	32698.30078	21917.41016	42539.10547	0.34523	0.22539	0.51191	39268	25637	58228
0.35399	818117	120220	65876.42188	186096.4219	38373.44531	19892.92578	29744.7168	0.39829	0.19889	0.50561	47882	23911	60785
0.33844	828089	144001	73667.60156	217668.5938	38299.05078	20413.57031	43680.37891	0.34501	0.17545	0.56757	49682	25265	81731
0.47054	835028	149632	132979.0938	282611.0938	39663.17578	20495.92383	43651.85156	0.35572	0.17485	0.5541	53227	26163	82911
0.51623	838855	134949	144003.3125	278952.3125	37657.26953	19219.59961	31518.90039	0.39339	0.18861	0.51571	53087	25453	69594
0.60881	4864772	766161.6875	1192364.25	1958526	258996	120762.6641	321306	0.33804	0.15762	0.55723	258996	120762.6641	426928
0.57686	4939388	664617.8125	906068.0625	1570685.875	244109.2031	109691.0391	234520.4844	0.37699	0.16925	0.50753	250554	112489.8125	337314
0.6203	5008662	617259.1875	1008400.25	1625659.5	238711.0156	107352.3594	178487.8594	0.41192	0.18414	0.47358	254260	113665.1641	292319
0.58923	5064323	728213.9375	1044578.813	1772792.75	261842.5156	114020.0547	230657.6875	0.39536	0.17101	0.50112	287910	124533.9141	364923
0.56616	5143877	785063	1024493.625	1809556.625	284051.5	122056.5234	226621.9219	0.40674	0.17348	0.46965	319320	136194	368701
0.53972	5198353	823540	965679.1875	1789219.25	284951.4688	132427.4063	231622.7656	0.40059	0.18384	0.4719	329898	151401	388628
0.46702	5266356	833841	730655	1564496	294403.9688	130788.9063	224810.8438	0.42369	0.18347	0.45871	353289	152985	382493
0.25319	5328609	866389	293724.3125	1160113.25	306896.0938	140462.6406	191153.2656	0.44175	0.19487	0.43222	382729	168834	374474
0.26146	5392165	904770	320314.8125	1225084.75	310002.4063	142944.2813	206581.2031	0.4439	0.19554	0.42554	401625	176916	385013
0.48741	5445996	949207	902560.875	1851767.875	321240.25	144336.3281	197629.5938	0.45339	0.1941	0.4143	430360	184245	393255
0.5331	5467401	910388	1039464.938	1949853	289095.4375	135260.5781	184050	0.44683	0.19676	0.4311	406790	179129	392464
0.63976	822623	184792.1719	328171.2188	512963.375	61889	30452.17578	63211	0.33491	0.16479	0.5003	61889	30452.17578	92451
0.66317	880014	174553.0313	343665.3125	518218.3438	56010.66016	26799.81836	62858.24219	0.32841	0.15706	0.51453	57325	27415.03516	89813
0.67075	868474	169467.375	345246.125	514713.5	53819.83203	24647.58008	56832.27344	0.33547	0.15293	0.51159	56852	25917.37891	86698
0.65002	907465	174657.7656	324393.125	499050.875	55964.72656	23571.46484	63374.55469	0.34786	0.14582	0.50633	60756	25467.75781	88434



0.65464	941456	193497	366776.125	560273.125	56923.36328	21266.05078	70230.85156	0.32654	0.12125	0.5522	63185	23462	106850
0.65932	935761	202650	392187.9688	594838	58141.1875	23126.0625	65885.84375	0.32554	0.12834	0.54611	65971	26009	110670
0.59313	980868	213879	311792.9375	525671.9375	60255.77734	21977.87109	70371.1875	0.33069	0.11811	0.55119	70728	25262	117889
0.44071	1004553	223245	175911.75	399156.75	56234.5	23729.91211	70436.86719	0.30788	0.12575	0.56637	68732	28073	126440
0.44296	1031040	225171	179057.125	404228.125	51889.54688	24231.0625	70675.90625	0.29265	0.13106	0.57629	65896	29511	129764
0.59649	1047937	235249	347763.0938	583012.125	52998.86328	22576.47266	72972.51563	0.29585	0.12054	0.58361	69599	28356	137294
0.66574	1055630	231082	460246.7813	691328.75	53744.80078	20491.85938	72931.29688	0.32049	0.1155	0.56401	74059	26691	130332
0.79122	532616	58931.33984	223339.9063	282271.25	26599	9351.33789	18688	0.45136	0.15868	0.38996	26599	9351.33789	22981
0.81648	556703	54520.78516	242561.4688	297082.25	20313.67188	11075.19922	17621.73242	0.38266	0.20832	0.40902	20863	11357.78418	22300
0.81912	580292	61196.16016	277125.3438	338321.5	24151.54297	13186.7207	17602.09766	0.42066	0.22815	0.35118	25743	13962.15918	21491
0.81293	597845	61025.90625	265188.875	326214.7813	22333.65039	14242.58887	17368.88867	0.40309	0.25491	0.342	24599	15555.90723	20871
0.76981	613540	66535	225203.0156	289038	22511.48633	15381.41211	18906.57031	0.3815	0.25795	0.36055	25383	17163	23989
0.77844	633678	72328	254122.3906	326450.375	22606.87109	16428.23828	19920.91602	0.36311	0.25968	0.37721	26263	18782	27283
0.70275	661739	183534.2031	261164.2031	261164.2031	23404.47461	16981.99609	19781.48828	0.36229	0.25588	0.38122	28172	19864	29594
0.6084	682783	97175	150972.9375	248147.9375	30845.44336	17115.02148	24301.80664	0.39668	0.2117	0.39162	38547	20572	38056
0.54801	703249	98769	119751.7734	218520.7813	30299.91406	17919.3418	22336.71875	0.39863	0.22454	0.37683	39372	22178	37219
0.7617	721999	106937	283591.4063	390528.4063	32973.125	17615.38672	23118.74805	0.41452	0.21027	0.37521	44327	22486	40124
0.72711	737842	120988	322371.9375	443359.9375	37488.20313	18159.4375	25013.52344	0.4373	0.19877	0.36393	52908	24049	44031
0.64175	521020	63474.19922	113705.1875	177179.3906	26622	21267.19922	14960	0.41941	0.33505	0.24553	26622	21267.19922	15585
0.65527	529984	61856.39844	117576.9766	179433.375	26447.35594	21215.61328	9492.68164	0.43919	0.35176	0.20905	27167	21758.40039	12931
0.68437	540679	63811.92188	138360.625	202172.5469	27740.42188	20807.85156	13470.18555	0.46261	0.34479	0.19824	29520	22001.92383	12650
0.69136	548586	42554.80078	95325.74219	137880.5469	22447.37891	13612.10645	20504.58789	0.57737	0.34766	0.08434	24570	14794.80078	3589
0.70635	556768	54722	131630.3438	186352.3438	22705.83789	10430.8916	29580.91602	0.46627	0.21204	0.3217	25515	11603	17604
0.64083	562817	62074	110751.4688	172825.4688	22085.16016	10721.06934	28868.16016	0.41478	0.19772	0.38751	25747	12273	24054
0.47885	570927	78759	72365.96094	151124.9688	21860.96484	18606.55469	26543.60742	0.33229	0.27519	0.39251	26171	21674	30914
0.25893	578172	87570	30596.82031	118166.82031	22022.36133	17979.61328	25117.29883	0.31328	0.24612	0.4406	27434	21553	38583
0.23568	584211	82816	25537.05078	108353.0469	23250.86328	15689.45215	21743.56641	0.36354	0.23377	0.40269	30107	19360	33349
0.62629	588266	78034	130773.5469	208807.5469	23978.74609	15507.12598	17211.14648	0.4103	0.25238	0.33733	32017	19694	26323
0.66333	591898	81943	161451.3125	243394.3125	24822.53711	15400.60352	17334.35938	0.42317	0.24711	0.32972	34676	20249	27018
0.62323	150657	21877.40625	36188.54297	58065.94922	6247	3317.40601	9078	0.28555	0.15164	0.56282	6247	3317.40601	12313
0.69594	153970	17022.33594	38961.39453	55983.73047	4966.78955	3640.20288	5767.86523	0.29972	0.21932	0.48096	5102	3733.33496	8187
0.66658	157077	18259.43164	36504.19531	54763.625	5583.73193	3946.93457	5694.54443	0.32542	0.22856	0.44602	5942	4173.43213	8144
0.64223	159515	20255.88086	36361.83984	56617.71875	6012.19824	4078.51611	6479.55566	0.32489	0.21884	0.47606	6581	4432.87988	9643
0.6491	165567	25320	46838.05469	72158.05469	6786.74268	3828.76563	9269.16602	0.30122	0.16821	0.53057	7627	4259	13434
0.68982	166961	23129	51437.54688	74566.54688	6564.73877	3174.47778	6711.58496	0.33093	0.15712	0.51195	7654	3634	11841
0.63531	169216	24053	41901.07813	65954.07813	5465.85889	2432.91382	8373.31738	0.27207	0.11782	0.61011	6544	2834	14675
0.43854	172312	20692	16162.17383	36854.17188	3470.04102	2187.28467	7006.4126	0.20892	0.12672	0.66436	4323	2622	13747
0.35382	174808	23492	12862.98926	36354.98828	3274.99072	2331.53687	8784.16406	0.18053	0.12247	0.697	4241	2877	16374
0.71701	174853	18781	47585.48438	66366.48438	1693.21497	2665.36108	6973.12012	0.12039	0.18024	0.69938	2261	3385	13135
0.7396	176649	18970	53879.66406	72849.66406	2457.31348	2528.86597	5965.0415	0.18097	0.17528	0.64375	3433	3325	12212
0.65728	658360	91808	176073.875	267881.875	40443.71484	13738.28418	37596	0.44052	0.14964	0.40983	40443.71484	13738.28418	37626
0.61766	681552	97503.01563	157514.0625	255017.0781	38714.20313	13360.56152	42624.23828	0.40783	0.14052	0.45165	39764.55859	13701.45703	44037
0.61384	716608	96248.15625	152993.625	249241.7813	29131.22852	13397.1543	47576.26172	0.32266	0.14738	0.52996	31055.19141	14184.96777	51008
0.6572	732756	94947.60156	182030.3906	276978	28792.69336	12598.5791	44350.94141	0.33422	0.14493	0.52086	31733.29688	13760.30176	49454
0.65661	735847	97669	186760.3438	284429.3438	34626.88672	12335.24219	38881.51563	0.40008	0.14092	0.459	39075	13764	44830
0.60943	755075	119793	186920.2188	306713.2188	35830.63672	22909.61523	44441.94922	0.34777	0.21864	0.43358	41661	26192	51940
0.47411	777555	101038	91089.23438	192127.2344	31993.76172	19528.7832	32843.67578	0.38146	0.22608	0.39246	38542	22843	39653
0.19673	824463	102983	25220.94922	128203.9531	33858.05078	17798.05664	31422.83203	0.41112	0.20773	0.38115	42338	21393	39252
0.115	836193	108667	14120.13867	122787.1406	35103.75	17061.26953	32147.68945	0.4201	0.19432	0.38558	45651	21116	41900
0.59102	862784	114164	164977.1875	279141.1875	34823.91016	17080.32813	33792.03906	0.41044	0.19098	0.39858	46857	21803	45504
0.66844	881572	110013	221794.9531	331807.9375	35123.44531	16362.29492	27658.48633	0.45098	0.19697	0.35205	49614	21669	38730
0.70695	388074	63754.07422	153801.7188	217555.7969	17846	14329.07324	26017	0.27992	0.22476	0.49533	17846	14329.07324	31579
0.73615	399805	64744.60156	180642.0625	245386.6563	17304.81641	13382.20215	25510.57617	0.27391	0.21166	0.51444	17734	13703.60352	33307
0.68122	414353	69545.44531	148615.1563	218160.5938	18633.55859	14224.58301	25896.13672	0.28371	0.21549	0.50079	19731	14986.44336	34828
0.70737	424076	70884.4375	171344.2813	242228.7188	21557.64844	14094.15918	25038.8125	0.33144	0.21548	0.45308	23494	15274.4375	32116
0.71524	437308	68818	172855.0313	241673.0313	20494.26367	12434.92188	23164.70703	0.3323	0.20012	0.46758	22868	13772	32178
0.69863	446837	79758	184894.9063	264652.9063	21247.58984	13928.11914	27950.12305	0.30586	0.19801	0.49613	24395	15793	39570
0.63823	453983	83157	146707.2656	229864.2656	22395.96094	17413.00195	23795.4707	0.32057	0.24297	0.43645	26658	20205	36294
0.59291	465738	82923	120773.3281	203696.3281	21345.91992	18527.92188	21294.14258	0.31902	0.2668	0.41418	26454	22124	34345

0.46327	474392	93236	80473.82031	173709.8125	22410.10742	18839.53516	25100.4043	0.31014	0.24869	0.44117	28916	23187	41133
0.56016	480732	114092	145299.6875	259391.6875	24317.87109	25984.79883	29147.10938	0.28407	0.28884	0.42709	32410	32954	48728
0.65612	486089	109848	209584.5313	319432.5313	22854.56836	23594.45313	28241.8457	0.29069	0.28227	0.42704	31932	31007	46909
0.52785	286879	37028	41396.36719	78424.36719	19610	5957	7743	0.5296	0.16088	0.32435	19610	5957	12010
0.56282	293218	36184.67969	46584.42188	82769.10156	18731.28711	6414.43115	7744.27588	0.52964	0.18134	0.30054	19165	6561.68115	10875
0.47439	297754	32853	29650.98047	62503.98047	17616.27344	4733.15625	7320.40234	0.5664	0.15149	0.2951	18608	4977	9695
0.54773	303153	37629.85547	45572.00781	83201.85938	16999.71094	2563.61646	12115.60156	0.49033	0.07361	0.44776	18451	2769.85596	16849
0.57152	308344	41778	55725.33984	97503.34375	16700.50586	3190.54224	14150.72656	0.44301	0.08425	0.4836	18508	3520	20204
0.57258	312151	44270	59303.88672	103573.8906	16626.74414	5164.21924	12888.43652	0.42548	0.13119	0.45372	18836	5808	20086
0.41993	316311	47463	34359.47656	81822.47656	19373.44141	5032.06445	12177.28516	0.47829	0.12186	0.40977	22701	5784	19449
0.11886	320305	49473	6673.78076	56146.78125	18821.64063	4950.03613	12225.19824	0.46448	0.11837	0.42708	22979	5856	21129
0.13815	323170	47659	7639.79395	55298.79297	19949.12695	4928.97803	7805.60889	0.52997	0.12596	0.35462	25258	6003	16901
0.41965	325562	48000	34709.16016	82709.15625	21007.02539	4878.19336	7060.2207	0.57242	0.12765	0.31062	27476	6127	14910
0.569	313842	52662	69524.89844	122186.8984	23728.28125	4793.02637	6137.01953	0.61824	0.11855	0.27335	32558	6243	14395
0.6204	108415	15378.78223	25134.31445	40513.09766	4855	2925.78198	6052	0.31569	0.19025	0.49406	4855	2925.78198	7598
0.61337	111491	16062.5	25482.72266	41545.22266	4825.63232	2899.32275	6120.38379	0.30861	0.18512	0.50627	4957	2973.5	8132
0.603	113784	17213	26144.48438	43357.48438	5158.04492	2889.20117	6682.854	0.31889	0.17748	0.50363	5489	3055	8669
0.60059	117091	18291.5	27504.76172	45796.26172	5181.76416	3150.74609	6328.84717	0.31009	0.18722	0.50269	5672	3424.5	9195
0.55985	124416	21391	27208.29688	48599.29688	5160.12891	3416.13281	7168.22656	0.2711	0.17764	0.55126	5799	3800	11792
0.55718	128815	23966	30154.76953	54120.76953	5413.71631	3376.26758	7249.30322	0.26337	0.16127	0.57536	6312	3865	13789
0.44432	131674	26107	20875.04688	46982.04688	5656.29688	3334.31104	8581.37012	0.25939	0.14877	0.59183	6772	3884	15451
0.29764	134495	25282	10713.99316	35995.99219	5310.61719	3280.927	7541.04834	0.26169	0.15557	0.58275	6616	3933	14733
0.25848	137439	27739	9669.45215	37408.45313	5239.52344	3405.32422	8575.99414	0.2446	0.15148	0.60392	6785	4202	16752
0.4828	139133	28475	26580.74414	55055.74219	5644.30176	3444.89063	8590.69531	0.26469	0.15364	0.58167	7537	4375	16563
0.53753	141489	30245	35153.64063	65398.64063	6029.12256	3472.72241	8761.5	0.27849	0.15097	0.57054	8423	4566	17256

```
spool file[tfpgaswp.out]
```

```
load file[c:/users/dave hovde/documents/peg office/dave/g/maps/mapfull.sav]
match file[c:/users/dave hovde/documents/peg office/dave/g/maps/pegid.sav] key[snlid]
match file[c:/users/dave hovde/documents/peg office/dave/g/form2/om/om.sav] key[snlid
year]
match file[c:/users/dave hovde/documents/peg office/dave/g/176/176.sav] key[snlid year]
match file[c:/users/dave hovde/documents/peg office/dave/w/materials/gidatgas.sav]
key[year]
match file[c:/users/dave hovde/documents/peg office/dave/g/maps/gasmap.sav]
key[pegid]
match file[c:/users/dave hovde/documents/peg office/dave/g/TFP/oldpen.sav] key[id year]
var[penopmn]
match file[c:/users/dave hovde/documents/peg office/dave/g/TFP/gasdata04.sav] key[id
year] var[custot cgtot conm cagefr]
match file[c:/users/dave hovde/documents/peg office/dave/w/materials/wagex926.sav]
key[year] var[wagex926]
match file[c:/users/dave hovde/documents/peg office/dave/g/ctrstcog.sav] key[pegid
year] var[ctrstcog]
match file[c:/users/dave hovde/documents/peg office/dave/g/ccaeuncg.sav] key[pegid
year] var[ccaeuncg]
match file[c:/users/dave hovde/documents/peg office/dave/g/form2/plant/plnsrv.sav]
key[snlid year]
match file[c:/users/dave hovde/documents/peg office/dave/g/xkgd/xkgd.sav] key[pegid
year] var[xkgd wkogd ckogd wka ptotadd]
match file[c:/users/dave hovde/documents/peg office/dave/g/form2/income/f2p114.sav]
key[snlid year] var[ctaxothg cxfedig ctxstaig]
match file[regions8] key[id] var[region]
match file[gasgisem] key[year] var[jgusomms jgtomms]
```

```
rem Set Sample
```

```
rem Old Sempra Sample
```

```
range
range if[year>1997]
set samp = 0
range if[
id==1|id==2|id==3|id==4|id==5|id==6|id==7|id==9|id==10|id==11|id==12|id==13|id==1
5\
id==16|id==17|id==21|id==22|id==23|id==24|id==26|id==27|id==28|id==29|id==30\
id==31|id==34|id==36|id==37|id==38|id==40|id==41|id==42|id==43|id==44|id==45\
id==46|id==49|id==53|id==57]
set samp = 1
rem Remove: TXU; PG; SW gas; AGL ; IL Power
range if[id==16|id==31|id==41|id==2|id==17]
set samp = 0
```

rem Add PGE data for 2008 from CPUC report

range

range if[year==2008&pegid==116]

set cdst= 166201

set ccae = 165499

set ccsi= 123008

set csal= 8514

set cage = 303217

set cagepen = 96030

set ccaeunc = 15129.446

set ctrs = 347932.902

set ctrstco = 245014.367

set cstc = 16982.618

set cagefrc = 35898.022

rem Patch in Data for Selected Variables for Years Befor 2002 from previous PEG Dataset (Source: GasDat and LDC filings)

range

range if[year<2002]

set cagepen = penopmn

set ccaeunc = ccaeuncg/1000

set ctrstco = ctrstcog/1000

rem Impute Observations Missing from SNL Database

rem ctrs ctrstco cstc

array vars = (cdst ccae ccsi csal cage cagepen ctrs cstc)

foreach (v,\$vars) {

range

range if[pegid==117&year==2000]

set  $\{v\} = \{v\}[-1]/2 + \{v\}[+1]/2$

range

range if[pegid==120&year==1999]

set  $\{v\} = \{v\}[-1]/2 + \{v\}[+1]/2$

range

range if[pegid==134&year==2002]

set  $\{v\} = \{v\}[-1]/2 + \{v\}[+1]/2$

range

range if[pegid==37&year==2000]

set  $\{v\} = \{v\}[-1]/2 + \{v\}[+1]/2$

range

range if[pegid==155&year==1999]

set  $\{v\} = \{v\}[-1]/2 + \{v\}[+1]/2$

range

range if[pegid==156&year==1999]

```

set ${v} = ${v}[-1]/2 + ${v}[+1]/2
range
range if[pegid==39&year==1999]
set ${v} = ${v}[-1]/2 + ${v}[+1]/2
range
range if[pegid==37&year==2000]
set ${v} = ${v}[-1]/2 + ${v}[+1]/2
range
range if[pegid==143&year==1999]
set ${v} = ${v}[-1]/2 + ${v}[+1]/2

range
range if[pegid==111&year==1999]
set ${v} = ${v}[-1] + (${v}[+3] - ${v}[-1]) / 4
range
range if[pegid==111&year==2000]
set ${v} = ${v}[-2] + (${v}[+2] - ${v}[-2]) / 4
range
range if[pegid==111&year==2001]
set ${v} = ${v}[-3] + (${v}[+1] - ${v}[-3]) / 4

range
range if[pegid==62&year==1999]
set ${v} = ${v}[-1]/2 + ${v}[+1]/2
range
range if[pegid==62&year==2003]
set ${v} = ${v}[-1]/2 + ${v}[+1]/2
range
range if[pegid==126&year==2002]
set ${v} = ${v}[-1]/2 + ${v}[+1]/2
range
range if[pegid==137&year==2001]
set ${v} = ${v}[-1]/2 + ${v}[+1]/2
range
range if[pegid==138&year==2002]
set ${v} = ${v}[-1]/2 + ${v}[+1]/2
range
range if[pegid==140&year==2002]
set ${v} = ${v}[-1]/2 + ${v}[+1]/2
}

rem Questar
range
range if[id==46&year==2007]
set csal = 0

```

```
rem fix entry issue
range
range if[year==2003]
set wagex926 = 0.8387
```

```
range
range if[year<1995]
set ntot1 = custot
```

```
range
range if[pegid==10&year==1990]
set ntot1 = 0.9838*ntot1[+1]
```

```
range
range if[id==16&year==2004]
set ntot1 = ntot1[-1]*exp(log(ntot1[-1]/ntot1[-4])/3)
```

```
range
range if[samp==1]
range if[miss(ctrstco)]
set ctrstco = 0
```

```
range
range if[pegid==62&year==2003]
set ccaeunc = ccaeunc[+1]/2 + ccaeunc[-1]/2
```

```
range
range if[pegid==144&year==2001]
set ccaeunc = ccaeunc[+1]/2 + ccaeunc[-1]/2
```

```
range
range if[pegid==144&year==2001]
set cagepen = cagepen[-1]/2 + cagepen[+1]/2
```

```
range
range if[year>2001]
range if[miss(ctr)]
set ctrs = ctrs[-1]/2 + ctrs[+1]/2
set ctrstco = ctrstco[+1]
```

```
range
range if[year>2001]
range if[miss(ccaeunc)]
set ccaeunc = ccaeunc[+1]
```

```
range
```

```
range if[year>2001]
range if[miss(csto)]
set cstc = cstc[+1]
```

```
rem adjust for change in TCO treatment
range
range if[year>2001]
range if[pegid==7]
set ctrstmp = ctrs
set ctrs = ctrstmp - ctrstco
```

```
rem
```

```
=====
=====
```

```
rem Calculate O&M Materials and Services ("MS") Input Price Indexes
```

```
rem
```

```
=====
=====
```

```
rem Calculate M&S Input Price Index for Distribution O&M
```

```
rem Assign Global Insight M&S price indexes to detailed Dx cost categories
```

```
range
range if[samp==1]
set wdxcmp = jgd872ms
set wdxcmpm = jgd888ms
set wdxeng = js_ems
set wdxdsp = jgd871ms
set wdxful = jgd873ms
set wdxengm = js_ems
set wdxins = jgd879ms
set wdxmns = jgd874ms
set wdxmnsm = jgd887ms
set wdxmtr = jgd878ms
set wdxmtrm = jgd893ms
set wdxoth = jgd880ms
set wdxothm = jgd894ms
set wdxrnt = jrent
set wdxstrm = jgd886ms
set wdxsvcm = jgd892ms
set wdxmea = jgd875_6
set wdxmeam = jgd889_9
```

```
rem Assign Weights Base on Average Dx Cost Shares in SNL Database 2002-2008
```

```

set wtdxcmp = 0.0026
set wtdxcmpm = 0.0007
set wtdxeng = 0.0879
set wtdxdsp = 0.0187
set wtdxful = 0.0005
set wtdxengm = 0.0245
set wtdxins = 0.0915
set wtdxmns = 0.1857
set wtdxmnsm = 0.1433
set wtdxmtr = 0.1192
set wtdxmtrm = 0.0371
set wtdxoth = 0.1320
set wtdxothm = 0.0105
set wtdxrnt = 0.0068
set wtdxstrm = 0.0072
set wtdxsvcm = 0.0778
set wtdxmea = 0.0210 + 0.0041 + 0.0035
set wtdxmeam = 0.0165 + 0.0063 + 0.0025

set dwdx = wtdxcmp*log(wdxcmp/wdxcmp[-1]) +
wtdxcmpm*log(wdxcmpm/wdxcmpm[-1]) + wtdxdsp*log(wtdxdsp/wtdxdsp[-1]) +
wtdxeng*log(wdxeng/wdxeng[-1]) + \
wtdxengm*log(wdxengm/wdxengm[-1]) +
wtdxful*log(wdxful/wdxful[-1]) + wtdxins*log(wdxins/wdxins[-1]) + \
wtdxmns*log(wdxmns/wdxmns[-1]) +
wtdxmnsm*log(wdxmnsm/wdxmnsm[-1]) + wtdxmtr*log(wdxmtr/wdxmtr[-1]) + \
wtdxmtrm*log(wdxmtrm/wdxmtrm[-1]) +
wtdxoth*log(wdxoth/wdxoth[-1]) + wtdxothm*log(wdxothm/wdxothm[-1]) +
wtdxrnt*log(wtdxrnt/wtdxrnt[-1]) + \
wtdxstrm*log(wdxstrm/wdxstrm[-1]) +
wtdxsvcm*log(wdxsvcm/wdxsvcm[-1]) + wtdxmea*log(wdxmea/wdxmea[-1])
+ wtdxmeam*log(wdxmeam/wdxmeam[-1])

array yrs = ( 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008)

range
range if[year==1998]
set wdstndx = 1
foreach (y;$yrs) {
    range
    range if[samp==1&year==${y}]
    set wdstndx = wdstndx[-1]*exp(dwdx)
}

rem O&M Cost, Quantity, and Price by Category

```



```

rem Assign M&S Input Price Indexes to Major O&M Functions

range
range if[samp==1]

set wmsto = jgusomms
set wmtrs = jgtomms
set wmdst = wdstndx
set wmccc = jgcaoms
set wmage = wagex926

rem
rem Import regionalized salaries and wages indexes
rem
match file[c:\users\Dave Hovde\Documents\PEG Office\Dave\W\labor\ecireg09.sav]
key[year]

rem
rem Assign one of four regionalized salaries and wage (S&W) labor price indexes
derived from BLS employment cost indexes
rem

range
range if[region==1]
set ecisw = eciswne

range
range if[region==2|region==4|region==5]
set ecisw = eciswso

range
range if[region==3]
set ecisw = eciswmw

range
range if[region==6|region==7|region==8]
set ecisw = eciswwe

rem
rem Import Labor Cost Shares by Major O&M Category Calculated Elsewhere
rem
range
range if[samp==1]
match file[slgas] key[year] var[sldst slccc slage sltrs slsto slccc2]

rem

```

```
rem Assign Labor Share for Customer Care to Correspond to Customer Accounts + Sales
rem
set slccc = slccc2
```

```
rem
rem Use the same regionalized labor price index for each O&M functions
rem
```

```
range
range if[samp==1]
```

```
set wldst = ecisw
set wlccc = ecisw
set wlage = ecisw
set wlsto = ecisw
set wltrs = ecisw
```

```
rem Assign Tornqvist Weights based on imported cost shares which are time-varying
sample averages for
rem a national sample of utilities with quality data on salaries and wages available from
the SNL database
```

```
set sldstm = 0.5*(sldst + sldst[-1])
set slcccm = 0.5*(slccc + slccc[-1])
set slagem = 0.5*(slage + slage[-1])
set slstom = 0.5*(slsto + slsto[-1])
set sltrsm = 0.5*(sltrs + sltrs[-1])
```

```
set dwdst = sldstm*log(wldst/wldst[-1])+(1-sldstm)*log(wmdst/wmdst[-1])
set dwccc = slcccm*log(wlccc/wlccc[-1])+(1-slcccm)*log(wmccc/wmccc[-1])
set dwage = slagem*log(wlage/wlage[-1])+(1-slagem)*log(wmage/wmage[-1])
set dwsto = slstom*log(wlsto/wlsto[-1])+(1-slstom)*log(wmsto/wmsto[-1])
set dwtrs = sltrsm*log(wltrs/wltrs[-1])+(1-sltrsm)*log(wmtrs/wmtrs[-1])
```

```
rem Create cost shares for S T and D in total Storage, Transmission and Distribution
(STD)
```

```
set cstd = cstc + ctrs - ctrstco + cdst
set ssstd = cstc / cstd
set ststd = (ctrs - ctrstco) / cstd
set sdstd = cdst / cstd
```

```
rem create a price index for combined STD inputs to deflate total STD cost
set dwstd = 0.5*(sdstd+sdstd[-1])*dwdst + 0.5*(ststd+ststd[-1])*dwtrs +
0.5*(ssstd+ssstd[-1])*dwsto
```

```
rem re-label "dwstd" to now include DST + TRS + STO
```

```

set dwdst = dwstd

rem
rem Compute company-specific O&M price indexes
rem

range
range if[year==1998]
range if[samp==1]
set wdstndx = 1
set wcccndx = 1
set wagendx = 1

foreach (y;$yrs) {
    range
    range if[samp==1 & year==${y}]
    set wdstndx = wdstndx[-1]*exp(dwdst)
    set wcccndx = wcccndx[-1]*exp(dwccc)
    set wagendx = wagendx[-1]*exp(dwage)
}

rem
rem Specify Total Cost and Major Cost Categories
rem Re-label cdst to include storage and transmission
rem Define customer care as customer accounts plus sales O&M net of uncollectible
accounts
rem Define total taxes and treat franchise fees as a tax item
rem Define total capital cost as the sum of non-tax capital cost (calculated elsewhere) and
total taxes

range
range if[year>1997]
range if[samp==1]

set cdsttmp = cdst
set cdst = cdsttmp + cstc + ctrs - ctrstco
set cccc = (ccae-ccaeunc) + csal
set com = cdst + (ccae-ccaeunc) + csal + (cage-cagefr)
set taxtot = ctaxothg + ctxfedig + ctxstaig + cagefr
set ck = ckogd + taxtot
set c = com + ck

rem
rem Calculate input price and quantity indexes for each major O&M function
rem
array cats = (dst ccc age)

```

```

foreach(i;$cats) {
    set w${i} = w${i}ndx
    set x${i} = c${i}/w${i}ndx
    set s${i} = c${i}/com
}

rem Exception: remove pensions from A&G quantity calculation but allow pensions to
contribute to the weight labor receivies
set xage = (cage - cagepen - cagefrc) / wagendx

rem
rem Calculate summary O&M input quantity and price indexes
rem

set dxom      =      0.5*(sdst+sdst[-1])*log(xdst/xdst[-1])+0.5*(sccc+sccc[-
1])*log(xccc/xccc[-1])+ 0.5*(sage+sage[-1])*log(xage/xage[-1])
set dwom      =      0.5*(sdst+sdst[-1])*dwdst+0.5*(sccc+sccc[-1])*dwccc+
0.5*(sage+sage[-1])*dwage

rem Calculate summary input quantity index

set som = com / c
set scap = 1 - som
set xk = xkgd
set dxk = log(xk/xk[-1])
set dx = 0.5*(som+som[-1])*dxom + 0.5*(scap+scap[-1])*log(xk/xk[-1])
set dc = log(c/c[-1])

rem Assign Output as Number of Customers
set yn = ntot1
set dyndx = log(yn/yn[-1])

rem
rem Compute Summary Index Levels with 1998 Base Year
rem

range
range if[year==1998]

range if[samp==1]
set xom = 1
set xndx = 1
set yndx = 1
set tfpndx = 1

foreach(y;$yrs) {

```

```

    range
    range if[year==${y}&samp==1]
    set xom = xom[-1]*exp(dxom)
    set xndx = xndx[-1]*exp(dx)
    set yndx = yndx[-1]*exp(dyndx)
    set dtfp = dyndx - dx
    set tfpndx = tfpndx[-1]*exp(dtfp)
}

rem export company level results for working papers
range
range if[samp==1]
save file[resgaswp] var[id year tfpndx yndx xndx dtfp dyndx dx dxom dxk som scap com
ck c xdst xccc xage xk sdst sccc sage cdst cccc cage yn] if[samp==1]

rem *****
rem Aggregate Results
rem *****

range
range if[samp==1]

aggregate var[c] to[ca] by[year] sum
set cwt = 0.5*(c/ca+c[-1]/ca[-1])

set cxdy      = cwt*dyndx
set cxdtfp    = cwt*dtfp
set cxdx      = cwt*dx
set cxdxom    = cwt*dxom
set cxdxk     = cwt*dxk

aggregate var[cxdtfp cxdy cxdx cxdxom cxdxk ] to[cxdtfpa cxdya cxdxa cxdxoma
cxdxka] by[year] sum
aggregate var[c ] to[ca ] by[year] sum

set dtfpa = cxdtfpa
set dya = cxdya
set dxa = cxdxa
set dxoma = cxdxoma
set dxka = cxdxka

range
range if[pegid==135&year==1998]
set tfpndx = 1
set yndx = 1

```

```
set xndx      = 1
set xoma      = 1
set xka       = 1
```

```
foreach(y,$yrs) {
  range
  range if[year==${y}&pegid==135]
  set xoma = xoma[-1]*exp(dxoma)
  set xka  = xka[-1]*exp(dxka)
  set xndx = xndx[-1]*exp(dxa)
  set yndx = yndx[-1]*exp(dya)
  set tfpndx = tfpndx[-1]*exp(dtfa)
}
```

```
range
range if[year>1997]
range if[pegid==135]
```

```
echo Aggregate Results
print var[year yndx xndx tfpndx xoma xka]
```

```
echo Results for California Companies SDGE = 135; SocalGas = 142 PGE = 116
```

```
range
range if[year>1997]
range if[pegid==135|pegid==142|pegid==116]
print var[pegid id year tfpndx yndx xndx xom xk c]
```

```
clear
load file[resgaswp]
save file[resgaswp.dbf] dbase
```

```
quit
```