

2008 California Gas Report Workpapers

REDACTED

Prepared by



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2008 CALIFORNIA GAS REPORT

HISTORICAL DATA
JULY 2008



SDG&E Sources & Distribution Summary
2007 Recorded Data

MMCF/Day

<u>SDG&E</u>	<u>California Sources</u>	<u>El Paso</u>	<u>Transwestern</u>	<u>PGT / PG&E</u>	<u>Kern River</u>	<u>Mojave</u>	<u>Other</u>	<u>Total</u>
Core	6.3	50.2	40.8	26.0	15.1	0.5	10.1	149
Noncore	0.1	95.3	77.4	0.2	0.1	0.0	0.1	173
Total	6	145	118	26	15	0	10	322

Note: Recorded gas disposition by source represents the total actual deliveries by end-use including sales and transportation volumes. Transport volumes are assumed to be distributed as follows based on end-use sales from only these southwest basin pipeline
55% El Paso & 45% Transwestern
 "Other" category includes supplies made available from purchases from storage inventory or through imbalance trades.
 (Company Use & LUAF volumes are included in disposition to Core)

SDG&E Sources & Distribution Summary

2007 Recorded Data

WORK PAPER CALCULATIONS

2007 Recorded Data

(MMBtu)

	<u>California</u>	<u>El Paso</u>	<u>Transwestern</u>	<u>PGT / PG&E</u>	<u>Kern River</u>	<u>Mojave</u>	<u>Other</u>	<u>Total</u>
<u>End-Use Sales</u>								
<u>%/Source:</u>								
Portfolio	0.04379	0.33035	0.26855	0.17969	0.10484	0.00314	0.06964	1.00
<u>Volumes:</u>								
Portfolio	2,180,944	16,452,288	13,374,305	8,949,099	5,221,184	156,488	3,468,194	49,802,502
<u>Transportation</u>								
<u>%/Source:</u>								
	0	0.55160	0.44840	0	0	0	0	1.00

(MMCFD)

<u>SDG&E</u>	<u>California</u>	<u>El Paso</u>	<u>Transwestern</u>	<u>PGT / PG&E</u>	<u>Kern River</u>	<u>Storage</u>	<u>Other</u>	<u>Total</u>
<u>Core</u>	<u>6.3</u>	<u>50.2</u>	<u>40.8</u>	<u>26.0</u>	<u>15.1</u>	<u>0.5</u>	<u>10.1</u>	<u>149.0</u>
Sales w/LUAF	6.3	47.7	38.8	26.0	15.1	0.5	10.1	144.5
Transp	0.0	2.5	2.0	0.0	0.0	0.0	0.0	4.5
<u>Noncore</u>	<u>0.1</u>	<u>95.3</u>	<u>77.4</u>	<u>0.2</u>	<u>0.1</u>	<u>0.0</u>	<u>0.1</u>	<u>173.2</u>
Sales	0.1	0.4	0.3	0.2	0.1	0.0	0.1	1.2
Transp	0.0	94.9	77.1	0.0	0.0	0.0	0.0	172.0
<u>Total</u>	<u>6.4</u>	<u>145.5</u>	<u>118.3</u>	<u>26.2</u>	<u>15.3</u>	<u>0.5</u>	<u>10.1</u>	<u>322.2</u>

DATA SOURCE:

Transportation Volumes = h:\data1\calgasrp\Volumes.xls
 Total Recorded Core/Noncore Usage = h:\data1\calgasrp\HISTDATA.xls

2008 CALIFORNIA GAS REPORT

FORECAST OF REQUIREMENTS - SUMMARY
JULY 2008



2008 CALIFORNIA GAS REPORT

AVERAGE TEMPERATURE YEAR
JULY 2008



TABLE 1-SDGE

SAN DIEGO GAS & ELECTRIC COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2008 THRU 2012

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		2008	2009	2010	2011	2012	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}						
1	California Source Gas	0	0	0	0	0	1
	Out-of-State Gas						
2	El Paso Natural Gas Co.	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	5
6	Other	0	0	0	0	0	6
7	Total Out-of-State Gas	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	8
	GAS SUPPLY TAKEN						
9	California Source Gas	0	0	0	0	0	9
10	Out-of-State	330	326	345	317	316	10
11	TOTAL SUPPLY TAKEN	330	326	345	317	316	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	12
13	TOTAL THROUGHPUT	330	326	345	317	316	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}						
14	CORE ^{4/} Residential	86	86	86	86	86	14
15	Commercial	40	39	39	38	38	15
16	Industrial	5	5	5	5	5	16
17	NGV	3	3	4	5	5	17
18	Subtotal-CORE	134	133	134	134	134	18
19	NONCORE Commercial	7	7	7	7	7	19
20	Industrial	4	4	4	4	4	20
21	Electric Generation (EG)	181	178	196	168	167	21
22	Subtotal-NONCORE	192	189	207	179	178	22
23	Co. Use & LUAF	4	4	4	4	4	23
24	SYSTEM TOTAL THROUGHPUT	330	326	345	317	316	24
	TRANSPORTATION AND EXCHANGE						
25	CORE All End Uses	4	3	3	3	3	25
26	NONCORE Commercial/Industrial	10	11	11	11	11	26
27	Electric Generation (EG)	181	178	196	168	167	27
28	TOTAL TRANSPORTATION & EXCHANGE	195	192	210	182	181	28
	CURTAILMENT						
29	Core	0	0	0	0	0	29
30	Noncore	0	0	0	0	0	30
31	TOTAL - Curtailment	0	0	0	0	0	31

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d: 133 133 134 134 134

SAN DIEGO GAS & ELECTRIC COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2013 THRU 2030

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		2013	2015	2020	2025	2030	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}						
1	California Source Gas	0	0	0	0	0	1
	Out-of-State Gas						
2	El Paso Natural Gas Co.	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	5
6	Other	0	0	0	0	0	6
7	Total Out-of-State Gas	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	8
	GAS SUPPLY TAKEN						
9	California Source Gas	0	0	0	0	0	9
10	Out-of-State	337	345	353	360	369	10
11	TOTAL SUPPLY TAKEN	337	345	353	360	369	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	12
13	TOTAL THROUGHPUT	337	345	353	360	369	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}						
14	CORE ^{4/} Residential	87	87	88	90	93	14
15	Commercial	37	35	33	34	35	15
16	Industrial	5	4	4	4	4	16
17	NGV	5	6	8	10	13	17
18	Subtotal-CORE	134	132	133	138	145	18
19	NONCORE Commercial	7	7	7	7	8	19
20	Industrial	4	3	3	3	3	20
21	Electric Generation (EG)	188	199	206	208	209	21
22	Subtotal-NONCORE	199	209	216	218	220	22
23	Co. Use & LUAF	4	4	4	4	4	23
24	SYSTEM TOTAL THROUGHPUT	337	345	353	360	369	24
	TRANSPORTATION AND EXCHANGE						
25	CORE All End Uses	3	3	3	3	3	25
26	NONCORE Commercial/Industrial	11	11	10	10	11	26
27	Electric Generation (EG)	188	199	206	208	209	27
28	TOTAL TRANSPORTATION & EXCHANGE	202	213	219	221	223	28
	CURTAILMENT						
29	Core	0	0	0	0	0	29
30	Noncore	0	0	0	0	0	30
31	TOTAL - Curtailment	0	0	0	0	0	31

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d: 134 132 133 138 145

SAN DIEGO GAS & ELECTRIC COMPANY

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

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
FIRM CAPACITY AVAILABLE ^{1/ & 2/}															
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	6
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
GAS SUPPLY TAKEN															
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	434	369	311	262	245	264	347	380	369	284	290	385	330	10
11	TOTAL SUPPLY TAKEN	434	369	311	262	245	264	347	380	369	284	290	385	330	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	434	369	311	262	245	264	347	380	369	284	290	385	329	13
REQUIREMENTS FORECAST BY END-USE ^{3/}															
14	CORE	140	127	113	89	66	52	48	48	48	56	96	145	86	14
15	Residential	51	52	46	40	36	34	33	31	33	31	40	50	40	15
16	Commercial	6	6	6	5	5	4	4	4	4	4	5	5	5	16
17	Industrial	3	3	3	3	3	3	3	3	3	3	3	3	3	17
18	NGV	3	3	3	3	3	3	3	3	3	3	3	3	3	18
	Subtotal-CORE	199	188	168	136	109	93	88	85	88	94	143	203	133	
19	NONCORE	230	178	138	122	132	168	256	291	277	187	144	178	192	19
20	Subtotal-NONCORE	230	178	138	122	132	168	256	291	277	187	144	178	192	
	Co. Use & LUAF	5	4	4	3	3	3	4	4	4	3	3	4	4	20
21	SYSTEM TOTAL THROUGHPUT	434	369	311	262	245	264	347	380	369	284	290	385	329	21
TRANSPORTATION AND EXCHANGE															
22	CORE	5	5	4	4	3	3	3	3	3	3	4	4	4	22
	All End Uses	5	5	4	4	3	3	3	3	3	3	4	4	4	
23	NONCORE	229	177	137	121	132	168	256	291	277	187	144	178	192	23
24	TOTAL TRANSPORTATION & EXCHANGE	233	181	141	125	136	171	259	294	280	190	147	182	195	24
CURTAILMENT															
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d: 199 187 168 136 108 92 87 84 87 93 143 203 132

SAN DIEGO GAS & ELECTRIC COMPANY

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

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
FIRM CAPACITY AVAILABLE ^{1/ & 2/}															
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	6
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
GAS SUPPLY TAKEN															
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	379	343	306	250	257	265	321	348	332	315	360	427	326	10
11	TOTAL SUPPLY TAKEN	379	343	306	250	257	265	321	348	332	315	360	427	326	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	379	343	306	250	257	265	321	348	332	315	360	427	326	13
REQUIREMENTS FORECAST BY END-USE ^{3/}															
14	CORE ^{4/}														
	Residential	140	131	113	89	66	52	48	48	48	56	96	145	86	14
15	Commercial	50	53	46	39	36	33	33	30	33	31	39	49	39	15
16	Industrial	5	6	6	5	4	4	4	4	4	4	5	5	5	16
17	NGV	3	4	3	3	3	3	3	3	3	3	3	3	3	17
18	Subtotal-CORE	199	194	168	136	109	93	87	85	88	94	143	202	133	18
19	NONCORE														
	Subtotal-NONCORE	176	145	135	111	144	169	229	259	240	217	213	219	189	19
20	Co. Use & LUAF	4	4	3	3	3	3	4	4	4	4	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	379	343	306	250	257	265	321	348	332	315	360	427	326	21
TRANSPORTATION AND EXCHANGE															
22	CORE														
	All End Uses	4	5	4	4	3	3	3	3	3	3	3	4	3	22
23	NONCORE														
	All End Uses	176	145	135	111	144	169	229	259	240	217	213	219	189	23
24	TOTAL TRANSPORTATION & EXCHANGE	181	150	139	114	148	172	232	262	243	219	217	224	192	24
CURTAILMENT															
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

199	193	168	136	108	92	86	84	87	93	143	202	132
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SAN DIEGO GAS & ELECTRIC COMPANY

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

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	402	377	336	271	251	285	368	379	367	301	361	427	345	10
11	TOTAL SUPPLY TAKEN	402	377	336	271	251	285	368	379	367	301	361	427	345	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	402	377	336	271	251	285	368	379	367	301	361	427	344	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	140	131	114	89	66	52	48	48	48	56	96	145	86	14
15	Commercial	49	52	45	39	35	33	32	30	32	30	39	48	39	15
16	Industrial	5	6	5	5	4	4	4	4	4	4	5	5	5	16
17	NGV	4	4	4	4	4	4	4	4	4	4	4	4	4	17
18	Subtotal-CORE	199	194	168	136	109	93	88	85	88	94	143	202	133	18
19	NONCORE Subtotal-NONCORE	198	179	164	132	139	189	276	290	275	204	213	219	207	19
20	Co. Use & LUAF	5	4	4	3	3	3	4	4	4	3	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	402	377	336	271	251	285	368	379	367	301	361	427	344	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	4	5	4	3	3	3	3	3	3	3	3	4	3	22
23	NONCORE All End Uses	198	179	164	132	139	189	276	290	275	204	213	219	207	23
24	TOTAL TRANSPORTATION & EXCHANGE	202	183	168	135	142	192	279	293	278	207	217	224	210	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

199	193	168	136	108	92	87	84	87	93	143	202	132
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SAN DIEGO GAS & ELECTRIC COMPANY

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

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
FIRM CAPACITY AVAILABLE ^{1/ & 2/}															
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
GAS SUPPLY TAKEN															
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	386	369	340	272	248	262	300	298	298	279	335	394	317	10
11	TOTAL SUPPLY TAKEN	386	369	340	272	248	262	300	298	298	279	335	394	317	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	386	369	340	272	248	262	300	298	298	279	335	394	316	13
REQUIREMENTS FORECAST BY END-USE ^{3/}															
14	CORE ^{4/}	141	132	114	89	66	52	48	48	48	56	96	145	86	14
15	Residential	49	52	45	38	35	32	32	29	32	30	38	48	38	15
16	Commercial	5	6	5	5	4	4	4	4	4	4	5	5	5	16
17	Industrial	4	5	4	5	4	5	4	5	5	5	5	5	5	17
18	NGV	4	5	4	5	4	5	4	5	5	5	5	5	5	17
	Subtotal-CORE	199	194	168	137	110	93	88	85	89	95	144	203	133	18
19	NONCORE	183	171	167	132	136	165	209	210	206	182	188	187	178	19
23	Co. Use & LUAF	4	4	4	3	3	3	3	3	3	3	4	4	4	23
24	SYSTEM TOTAL THROUGHPUT	386	369	340	272	248	262	300	298	298	279	335	394	316	24
TRANSPORTATION AND EXCHANGE															
25	CORE All End Uses	4	5	4	3	3	3	3	3	3	3	3	4	3	25
23	NONCORE All End Uses	183	171	167	132	136	165	209	210	206	182	188	187	178	23
24	TOTAL TRANSPORTATION & EXCHANGE	187	176	171	136	139	168	212	213	209	184	191	191	182	24
CURTAILMENT															
29	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	29
30	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	30
31	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	31

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

199	194	168	136	109	93	87	84	88	94	143	203	133
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SAN DIEGO GAS & ELECTRIC COMPANY

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

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
FIRM CAPACITY AVAILABLE ^{1/ & 2/}															
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
GAS SUPPLY TAKEN															
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	381	370	341	278	253	260	298	297	297	275	325	394	316	10
11	TOTAL SUPPLY TAKEN	381	370	341	278	253	260	298	297	297	275	325	394	316	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	381	370	341	278	253	260	298	297	297	275	325	394	315	13
REQUIREMENTS FORECAST BY END-USE ^{3/}															
14	CORE ^{4/}	141	128	114	89	66	53	48	48	49	57	97	146	86	14
15	Residential	48	49	44	38	34	32	31	29	31	29	37	47	38	15
16	Commercial	5	6	5	5	4	4	4	3	4	4	5	5	5	16
17	Industrial	5	5	5	5	5	5	5	5	5	5	5	5	5	17
18	NGV	5	5	5	5	5	5	5	5	5	5	5	5	5	17
	Subtotal-CORE	199	188	168	137	110	93	88	85	88	94	144	203	133	18
19	NONCORE	178	178	168	138	141	163	207	209	206	177	178	187	178	19
	Subtotal-NONCORE														
20	Co. Use & LUAF	4	4	4	3	3	3	3	3	3	3	4	4	4	20
21	SYSTEM TOTAL THROUGHPUT	381	370	341	278	253	260	298	297	297	275	325	394	315	21
TRANSPORTATION AND EXCHANGE															
22	CORE	4	4	4	3	3	3	3	3	3	3	3	4	3	22
	All End Uses														
23	NONCORE	178	178	168	138	141	163	207	209	206	177	178	187	178	23
24	TOTAL TRANSPORTATION & EXCHANGE	182	183	172	142	144	166	210	212	209	180	181	191	181	24
	All End Uses														
CURTAILMENT															
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

199	187	168	136	109	93	87	84	88	94	143	203	132
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SAN DIEGO GAS & ELECTRIC COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2013

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	394	382	344	274	273	292	320	314	308	324	375	431	337	10
11	TOTAL SUPPLY TAKEN	394	382	344	274	273	292	320	314	308	324	375	431	337	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	394	382	344	274	273	292	320	314	308	324	375	431	336	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	142	133	115	90	67	53	48	48	49	57	97	147	87	14
15	Commercial	47	50	43	37	34	31	31	28	31	29	37	46	37	15
16	Industrial	5	6	5	5	4	4	4	3	4	4	5	5	5	16
17	NGV	5	5	5	5	5	5	5	5	5	5	5	5	5	17
18	Subtotal-CORE	199	194	168	137	109	93	88	85	88	94	144	203	133	18
19	NONCORE Subtotal-NONCORE	191	184	171	134	161	196	229	225	217	225	228	223	199	19
20	Co. Use & LUAF	4	4	4	3	3	3	4	4	3	4	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	394	382	344	274	273	292	320	314	308	324	375	431	336	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	4	4	4	3	3	3	3	3	3	3	3	4	3	22
23	NONCORE All End Uses	191	184	171	134	161	196	229	225	217	225	228	223	199	23
24	TOTAL TRANSPORTATION & EXCHANGE	195	188	175	138	164	199	231	228	219	228	231	227	202	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

199	194	168	136	109	93	87	84	87	94	143	203	133
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SAN DIEGO GAS & ELECTRIC COMPANY

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

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	415	412	366	288	286	300	320	319	313	322	373	439	345	10
11	TOTAL SUPPLY TAKEN	415	412	366	288	286	300	320	319	313	322	373	439	345	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	415	412	366	288	286	300	320	319	313	322	373	439	346	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	143	133	115	90	67	53	49	48	49	57	98	147	87	14
15	Commercial	45	48	41	36	32	30	30	27	30	28	35	44	35	15
16	Industrial	5	6	5	5	4	4	4	3	4	4	5	5	4	16
17	NGV	6	6	6	6	6	6	6	6	6	6	6	6	6	17
18	Subtotal-CORE	199	193	168	136	109	93	87	85	88	94	143	202	133	18
19	NONCORE Subtotal-NONCORE	212	214	195	149	174	204	229	230	221	224	226	232	209	19
20	Co. Use & LUAF	5	5	4	3	3	3	4	4	4	4	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	415	412	366	288	286	300	320	319	313	322	373	439	346	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	4	4	4	3	3	3	3	2	3	2	3	4	3	22
23	NONCORE All End Uses	212	214	195	149	174	204	229	230	221	224	226	232	209	23
24	TOTAL TRANSPORTATION & EXCHANGE	216	218	198	152	176	206	231	232	224	227	229	236	212	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

199	193	168	136	108	92	86	84	87	94	143	202	132
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SAN DIEGO GAS & ELECTRIC COMPANY

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

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	424	406	374	293	292	308	329	328	322	331	382	448	353	10
11	TOTAL SUPPLY TAKEN	424	406	374	293	292	308	329	328	322	331	382	448	353	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	424	406	374	293	292	308	329	328	322	331	382	448	353	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	144	130	117	91	68	54	49	49	50	58	99	149	88	14
15	Commercial	43	44	39	33	30	28	28	26	28	26	33	42	33	15
16	Industrial	5	6	5	5	4	4	3	3	3	4	4	5	4	16
17	NGV	8	8	8	8	8	8	8	8	8	8	8	8	8	17
18	Subtotal-CORE	199	187	168	137	110	94	88	86	89	95	144	203	133	18
19	NONCORE Subtotal-NONCORE	219	214	201	153	179	211	237	238	229	232	234	240	216	19
20	Co. Use & LUAF	5	5	4	3	3	3	4	4	4	4	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	424	406	374	293	292	308	329	328	322	331	382	448	353	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	4	4	4	3	3	3	2	2	2	2	3	4	3	22
23	NONCORE All End Uses	219	214	201	153	179	211	237	238	229	232	234	240	216	23
24	TOTAL TRANSPORTATION & EXCHANGE	223	218	205	156	182	213	239	241	232	235	237	244	219	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

200	188	168	137	109	93	87	85	88	95	144	204	133
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SAN DIEGO GAS & ELECTRIC COMPANY

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

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	432	429	381	300	298	314	334	334	328	337	389	456	360	10
11	TOTAL SUPPLY TAKEN	432	429	381	300	298	314	334	334	328	337	389	456	360	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	432	429	381	300	298	314	334	334	328	337	389	456	361	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	148	138	120	93	69	55	50	50	51	59	101	153	90	14
15	Commercial	43	46	40	34	31	29	28	26	28	27	34	42	34	15
16	Industrial	5	5	5	4	4	4	3	3	3	4	4	5	4	16
17	NGV	10	11	10	11	10	11	10	10	11	10	11	10	10	17
18	Subtotal-CORE	206	201	174	142	114	98	92	90	93	99	149	210	139	18
19	NONCORE Subtotal-NONCORE	221	223	203	155	181	212	238	240	231	234	235	242	218	19
20	Co. Use & LUAF	5	5	4	3	3	4	4	4	4	4	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	432	429	381	300	298	314	334	334	328	337	389	456	361	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	4	4	4	3	3	3	3	2	3	2	3	4	3	22
23	NONCORE All End Uses	221	223	203	155	181	212	238	240	231	234	235	242	218	23
24	TOTAL TRANSPORTATION & EXCHANGE	225	227	207	158	184	215	241	242	233	236	238	246	221	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

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

206	201	174	142	114	97	91	89	92	99	150	210	139
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SAN DIEGO GAS & ELECTRIC COMPANY

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

AVERAGE TEMPERATURE with BASE HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	441	438	389	308	305	321	341	340	334	344	396	465	369	10
11	TOTAL SUPPLY TAKEN	441	438	389	308	305	321	341	340	334	344	396	465	369	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	441	438	389	308	305	321	341	340	334	344	396	465	368	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	151	141	122	96	71	56	52	51	52	60	103	156	93	14
15	Commercial	44	47	41	35	32	30	29	27	29	27	35	43	35	15
16	Industrial	5	5	5	4	4	4	3	3	3	4	5	5	4	16
17	NGV	13	14	13	13	13	13	13	13	13	13	13	13	13	17
18	Subtotal-CORE	213	208	180	148	119	103	96	94	97	104	155	217	144	18
19	NONCORE Subtotal-NONCORE	223	225	205	157	183	214	240	242	233	236	237	244	220	19
20	Co. Use & LUAF	5	5	4	3	3	4	4	4	4	4	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	441	438	389	308	305	321	341	340	334	344	396	465	368	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	4	4	4	3	3	3	3	2	3	2	3	4	3	22
23	NONCORE All End Uses	223	225	205	157	183	214	240	242	233	236	237	244	220	23
24	TOTAL TRANSPORTATION & EXCHANGE	227	229	209	160	186	217	243	244	235	238	240	248	223	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

213	208	181	148	119	102	96	94	97	104	155	217	144
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2008 CALIFORNIA GAS REPORT

COLD TEMPERATURE YEAR
JULY 2008



TABLE 3-SDGE

SAN DIEGO GAS & ELECTRIC COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2008 THRU 2012

COLD TEMPERATURE YEAR & DRY HYDRO YEAR

LINE		2008	2009	2010	2011	2012	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}						
1	California Source Gas	0	0	0	0	0	1
	Out-of-State Gas						
2	El Paso Natural Gas Co.	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	5
6	Other	0	0	0	0	0	6
7	Total Out-of-State Gas	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	8
	GAS SUPPLY TAKEN						
9	California Source Gas	0	0	0	0	0	9
10	Out-of-State	343	349	373	343	339	10
11	TOTAL SUPPLY TAKEN	343	349	373	343	339	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	12
13	TOTAL THROUGHPUT	343	349	373	343	339	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}						
14	CORE ^{4/} Residential	97	97	97	98	98	14
15	Commercial	42	41	41	40	40	15
16	Industrial	5	5	5	5	5	16
17	NGV	3	3	4	5	5	17
18	Subtotal-CORE	147	146	147	148	148	18
19	NONCORE Commercial	7	7	7	7	7	19
20	Industrial	4	4	4	4	4	20
21	Electric Generation (EG)	181	188	211	180	176	21
22	Subtotal-NONCORE	192	199	222	191	187	22
23	Co. Use & LUAF	4	4	4	4	4	23
24	SYSTEM TOTAL THROUGHPUT	343	349	373	343	339	24
	TRANSPORTATION AND EXCHANGE						
25	CORE All End Uses	4	4	4	4	4	25
26	NONCORE Commercial/Industrial	10	11	11	11	11	26
27	Electric Generation (EG)	181	188	211	180	176	27
28	TOTAL TRANSPORTATION & EXCHANGE	195	203	226	195	191	28
	CURTAILMENT						
29	Core	0	0	0	0	0	29
30	Noncore	0	0	0	0	0	30
31	TOTAL - Curtailment	0	0	0	0	0	31

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

146 145 146 147 147

SAN DIEGO GAS & ELECTRIC COMPANY

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

COLD TEMPERATURE with DRY HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
FIRM CAPACITY AVAILABLE ^{1/ & 2/}															
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
GAS SUPPLY TAKEN															
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	465	398	333	274	251	265	363	380	370	286	307	418	343	10
11	TOTAL SUPPLY TAKEN	465	398	333	274	251	265	363	380	370	286	307	418	343	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	465	398	333	274	251	265	363	380	370	286	307	418	343	13
REQUIREMENTS FORECAST BY END-USE ^{3/}															
14	CORE ^{4/}														
15	Residential	165	149	131	98	71	53	63	48	49	57	111	171	97	14
16	Commercial	56	57	51	42	37	34	34	31	34	31	42	55	42	15
17	Industrial	6	7	6	5	5	4	4	4	4	4	5	6	5	16
18	NGV	3	3	3	3	3	3	3	3	3	3	3	3	3	17
18	Subtotal-CORE	230	216	191	149	116	95	103	85	89	96	160	235	147	18
19	NONCORE														
19	Subtotal-NONCORE	230	178	138	122	132	168	256	291	277	187	144	178	192	19
20	Co. Use & LUAF	5	5	4	3	3	3	4	4	4	3	3	5	4	20
21	SYSTEM TOTAL THROUGHPUT	465	398	333	274	251	265	363	380	370	286	307	418	343	21
TRANSPORTATION AND EXCHANGE															
22	CORE														
22	All End Uses	5	5	5	4	3	3	3	3	3	3	4	5	4	22
23	NONCORE														
23	All End Uses	229	177	137	121	132	168	256	291	277	187	144	178	192	23
24	TOTAL TRANSPORTATION & EXCHANGE	234	182	142	125	136	171	259	294	280	190	148	183	195	24
CURTAILMENT															
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d: 230 215 190 148 115 94 102 84 88 95 160 235 146

SAN DIEGO GAS & ELECTRIC COMPANY

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

COLD TEMPERATURE with DRY HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	415	375	334	277	266	279	359	362	348	323	382	469	349	10
11	TOTAL SUPPLY TAKEN	415	375	334	277	266	279	359	362	348	323	382	469	349	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	415	375	334	277	266	279	359	362	348	323	382	469	349	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	165	154	131	98	71	53	63	48	49	57	111	171	97	14
15	Commercial	55	58	50	41	37	34	34	30	33	31	41	54	41	15
16	Industrial	6	7	6	5	5	4	4	4	4	4	5	6	5	16
17	NGV	3	4	3	3	3	3	3	3	3	3	3	3	3	17
18	Subtotal-CORE	229	223	190	148	116	95	103	85	89	96	160	234	147	18
19	NONCORE Subtotal-NONCORE	180	148	140	126	148	181	252	273	255	223	218	230	198	19
20	Co. Use & LUAF	5	4	4	3	3	3	4	4	4	4	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	415	375	334	277	266	279	359	362	348	323	382	469	349	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	5	5	4	4	3	3	3	3	3	3	4	5	4	22
23	NONCORE All End Uses	180	148	140	126	148	181	252	273	255	223	218	230	198	23
24	TOTAL TRANSPORTATION & EXCHANGE	185	153	145	130	151	184	255	275	258	226	221	234	202	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

229	222	190	148	115	94	102	84	88	95	160	234	146
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SAN DIEGO GAS & ELECTRIC COMPANY

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

COLD TEMPERATURE with DRY HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	434	423	378	315	287	311	398	396	377	311	382	463	373	10
11	TOTAL SUPPLY TAKEN	434	423	378	315	287	311	398	396	377	311	382	463	373	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	434	423	378	315	287	311	398	396	377	311	382	463	372	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	165	154	131	99	71	53	63	48	49	57	111	172	97	14
15	Commercial	55	58	49	41	37	34	33	30	33	30	41	53	41	15
16	Industrial	6	7	6	5	5	4	4	3	4	4	5	6	5	16
17	NGV	4	4	4	4	4	4	4	4	4	4	4	4	4	17
18	Subtotal-CORE	229	223	190	149	116	95	103	85	89	96	160	234	147	18
19	NONCORE Subtotal-NONCORE	200	195	183	163	168	212	289	307	284	211	218	224	221	19
20	Co. Use & LUAF	5	5	4	4	3	4	5	4	4	4	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	434	423	378	315	287	311	398	396	377	311	382	463	372	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	5	5	4	4	3	3	3	3	3	3	4	5	4	22
23	NONCORE All End Uses	200	195	183	163	168	212	289	307	284	211	218	224	221	23
24	TOTAL TRANSPORTATION & EXCHANGE	204	200	188	167	172	215	292	309	287	214	222	228	225	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

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

229	222	190	148	115	94	102	84	88	95	160	234	147
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SAN DIEGO GAS & ELECTRIC COMPANY

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

COLD TEMPERATURE with DRY HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	432	418	378	305	279	279	327	311	305	288	356	431	343	10
11	TOTAL SUPPLY TAKEN	432	418	378	305	279	279	327	311	305	288	356	431	343	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	432	418	378	305	279	279	327	311	305	288	356	431	342	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	165	155	131	99	71	53	63	48	49	58	111	172	98	14
15	Commercial	54	57	49	40	36	33	33	29	32	30	40	53	40	15
16	Industrial	6	7	6	5	5	4	4	3	4	4	5	6	5	16
17	NGV	4	5	4	5	4	5	4	5	5	5	5	5	5	17
18	Subtotal-CORE	229	223	190	149	116	95	104	85	90	96	161	235	147	18
19	NONCORE Subtotal-NONCORE	198	190	183	153	160	181	219	222	212	189	191	191	191	19
20	Co. Use & LUAF	5	5	4	3	3	3	4	4	3	3	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	432	418	378	305	279	279	327	311	305	288	356	431	342	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	5	5	4	4	3	3	3	3	3	3	4	5	4	22
23	NONCORE All End Uses	198	190	183	153	160	181	219	222	212	189	191	191	191	23
24	TOTAL TRANSPORTATION & EXCHANGE	203	195	188	157	163	184	222	225	215	192	195	196	195	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

229	223	190	148	115	94	103	85	89	95	160	235	147
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SAN DIEGO GAS & ELECTRIC COMPANY

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

COLD TEMPERATURE with DRY HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	416	401	376	306	280	279	324	304	303	280	352	427	339	10
11	TOTAL SUPPLY TAKEN	416	401	376	306	280	279	324	304	303	280	352	427	339	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	416	401	376	306	280	279	324	304	303	280	352	427	338	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	166	150	132	99	71	54	63	48	49	58	111	173	98	14
15	Commercial	53	54	48	40	36	33	32	29	32	30	40	52	40	15
16	Industrial	6	6	6	5	5	4	4	3	4	4	5	6	5	16
17	NGV	5	5	5	5	5	5	5	5	5	5	5	5	5	17
18	Subtotal-CORE	230	215	191	149	116	95	104	85	89	96	161	235	147	18
19	NONCORE Subtotal-NONCORE	182	181	181	155	161	181	216	216	210	181	188	187	187	19
20	Co. Use & LUAF	5	5	4	3	3	3	4	3	3	3	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	416	401	376	306	280	279	324	304	303	280	352	427	338	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	5	5	4	4	3	3	3	3	3	3	4	5	4	22
23	NONCORE All End Uses	182	181	181	155	161	181	216	216	210	181	188	187	187	23
24	TOTAL TRANSPORTATION & EXCHANGE	186	186	185	158	164	184	219	218	213	184	191	192	190	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

230	215	190	148	115	94	103	84	89	95	160	235	147
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TABLE 4-SDGE

SAN DIEGO GAS & ELECTRIC COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED YEARS 2013 THRU 2030

COLD TEMPERATURE YEAR & DRY HYDRO YEAR

LINE		2013	2015	2020	2025	2030	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}						
1	California Source Gas	0	0	0	0	0	1
	Out-of-State Gas						
2	El Paso Natural Gas Co.	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	5
6	Other	0	0	0	0	0	6
7	Total Out-of-State Gas	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	8
	GAS SUPPLY TAKEN						
9	California Source Gas	0	0	0	0	0	9
10	Out-of-State	366	375	382	390	400	10
11	TOTAL SUPPLY TAKEN	366	375	382	390	400	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	12
13	TOTAL THROUGHPUT	366	375	382	390	400	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}						
14	CORE ^{4/} Residential	99	99	100	103	105	14
15	Commercial	39	38	35	36	37	15
16	Industrial	5	5	4	4	4	16
17	NGV	5	6	8	10	13	17
18	Subtotal-CORE	148	148	147	153	159	18
19	NONCORE Commercial	7	7	7	7	8	19
20	Industrial	4	3	3	3	3	20
21	Electric Generation (EG)	203	213	221	223	225	21
22	Subtotal-NONCORE	214	223	231	233	236	22
23	Co. Use & LUAF	4	4	4	4	5	23
24	SYSTEM TOTAL THROUGHPUT	366	375	382	390	400	24
	TRANSPORTATION AND EXCHANGE						
25	CORE All End Uses	4	3	3	3	3	25
26	NONCORE Commercial/Industrial	11	11	10	10	11	26
27	Electric Generation (EG)	203	213	221	223	225	27
28	TOTAL TRANSPORTATION & EXCHANGE	218	227	234	236	239	28
	CURTAILMENT						
29	Core	0	0	0	0	0	29
30	Noncore	0	0	0	0	0	30
31	TOTAL - Curtailment	0	0	0	0	0	31

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

147 148 147 153 159

SAN DIEGO GAS & ELECTRIC COMPANY

ANNUAL GAS SUPPLY AND REQUIREMENTS - MMCF/DAY
ESTIMATED FOR YEAR: 2013

COLD TEMPERATURE with DRY HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	431	427	383	313	312	316	348	334	325	330	397	475	366	10
11	TOTAL SUPPLY TAKEN	431	427	383	313	312	316	348	334	325	330	397	475	366	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	431	427	383	313	312	316	348	334	325	330	397	475	365	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	167	156	133	100	71	54	63	48	49	58	112	173	99	14
15	Commercial	52	55	47	39	35	32	32	28	31	29	39	51	39	15
16	Industrial	6	7	6	5	5	4	4	3	4	4	5	6	5	16
17	NGV	5	5	5	5	5	5	5	5	5	5	5	5	5	17
18	Subtotal-CORE	230	223	191	149	116	95	103	85	89	96	161	235	147	18
19	NONCORE Subtotal-NONCORE	196	198	188	160	192	217	240	245	231	230	232	235	214	19
20	Co. Use & LUAF	5	5	4	4	4	4	4	4	4	4	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	431	427	383	313	312	316	348	334	325	330	397	475	365	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	5	5	4	4	3	3	3	3	3	3	3	5	4	22
23	NONCORE All End Uses	196	198	188	160	192	217	240	245	231	230	232	235	214	23
24	TOTAL TRANSPORTATION & EXCHANGE	201	203	192	164	195	220	243	247	234	232	235	239	217	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

230	223	190	148	115	94	103	84	88	95	161	235	147
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SAN DIEGO GAS & ELECTRIC COMPANY

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

COLD TEMPERATURE with DRY HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	456	453	403	335	318	320	352	338	325	332	395	476	375	10
11	TOTAL SUPPLY TAKEN	456	453	403	335	318	320	352	338	325	332	395	476	375	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	456	453	403	335	318	320	352	338	325	332	395	476	375	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	168	157	133	100	72	54	64	49	50	58	112	174	99	14
15	Commercial	50	53	45	37	33	31	30	27	30	28	37	49	38	15
16	Industrial	6	7	6	5	4	4	4	3	4	4	5	6	5	16
17	NGV	6	6	6	6	6	6	6	6	6	6	6	6	6	17
18	Subtotal-CORE	229	222	190	148	115	95	103	85	89	96	160	234	147	18
19	NONCORE Subtotal-NONCORE	222	226	208	183	198	221	245	250	232	232	231	237	224	19
20	Co. Use & LUAF	5	5	5	4	4	4	4	4	4	4	4	5	4	20
21	SYSTEM TOTAL THROUGHPUT	456	453	403	335	318	320	352	338	325	332	395	476	375	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	4	5	4	3	3	3	3	2	3	2	3	4	3	22
23	NONCORE All End Uses	222	226	208	183	198	221	245	250	232	232	231	237	224	23
24	TOTAL TRANSPORTATION & EXCHANGE	226	230	213	186	201	224	248	252	235	235	234	242	227	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

229	222	190	148	115	94	103	84	88	95	160	235	147
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SAN DIEGO GAS & ELECTRIC COMPANY

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

COLD TEMPERATURE with DRY HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	464	446	411	342	325	329	362	349	335	341	406	487	382	10
11	TOTAL SUPPLY TAKEN	464	446	411	342	325	329	362	349	335	341	406	487	382	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	464	446	411	342	325	329	362	349	335	341	406	487	383	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	170	153	135	101	73	55	64	49	50	59	114	176	100	14
15	Commercial	47	48	43	35	32	29	29	26	28	26	35	46	35	15
16	Industrial	5	6	6	5	4	4	3	3	3	4	5	5	4	16
17	NGV	8	8	8	8	8	8	8	8	8	8	8	8	8	17
18	Subtotal-CORE	230	215	190	149	116	95	104	86	90	97	161	235	147	18
19	NONCORE Subtotal-NONCORE	230	226	216	189	205	229	254	259	241	241	240	246	231	19
20	Co. Use & LUAF	5	5	5	4	4	4	4	4	4	4	5	6	4	20
21	SYSTEM TOTAL THROUGHPUT	464	446	411	342	325	329	362	349	335	341	406	487	383	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	4	4	4	3	3	3	3	2	3	2	3	4	3	22
23	NONCORE All End Uses	230	226	216	189	205	229	254	259	241	241	240	246	231	23
24	TOTAL TRANSPORTATION & EXCHANGE	234	230	220	192	208	232	257	261	243	243	243	250	235	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

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

230	215	191	149	116	95	104	85	89	96	161	236	147
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SAN DIEGO GAS & ELECTRIC COMPANY

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

COLD TEMPERATURE with DRY HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	473	471	419	349	331	335	368	354	340	347	413	496	390	10
11	TOTAL SUPPLY TAKEN	473	471	419	349	331	335	368	354	340	347	413	496	390	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	473	471	419	349	331	335	368	354	340	347	413	496	391	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	174	163	138	104	74	56	66	50	51	60	116	181	103	14
15	Commercial	48	50	43	36	32	29	29	26	29	27	36	47	36	15
16	Industrial	5	6	5	5	4	4	3	3	3	4	4	5	4	16
17	NGV	10	11	10	11	10	11	10	10	11	10	11	10	10	17
18	Subtotal-CORE	237	230	197	155	121	100	108	90	94	101	167	242	153	18
19	NONCORE Subtotal-NONCORE	231	235	217	190	207	231	256	260	242	242	241	248	233	19
20	Co. Use & LUAF	5	5	5	4	4	4	4	4	4	4	5	6	4	20
21	SYSTEM TOTAL THROUGHPUT	473	471	419	349	331	335	368	354	340	347	413	496	391	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	4	5	4	3	3	3	3	2	3	2	3	4	3	22
23	NONCORE All End Uses	231	235	217	190	207	231	256	260	242	242	241	248	233	23
24	TOTAL TRANSPORTATION & EXCHANGE	236	240	221	193	210	234	258	263	245	245	244	252	237	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

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

238	230	197	155	120	99	108	89	93	101	167	243	153
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SAN DIEGO GAS & ELECTRIC COMPANY

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

COLD TEMPERATURE with DRY HYDRO YEAR

LINE		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg	LINE
	FIRM CAPACITY AVAILABLE ^{1/ & 2/}														
1	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	Out-of-State Gas														
2	El Paso Natural Gas Co.	50	50	50	50	50	50	50	50	50	50	50	50	50	2
3	Transwestern Pipeline Co.	33	33	33	33	33	33	33	33	33	33	33	33	33	3
4	Kern/Mojave	7	7	7	7	7	7	7	7	7	7	7	7	7	4
5	PGT/PG&E	51	51	51	51	51	51	51	51	51	51	51	51	51	5
6	Other	0	0	0	0	0	0	0	0	0	0	0	0	0	8
7	Total Out-of-State Gas	141	141	141	141	141	141	141	141	141	141	141	141	141	7
8	TOTAL FIRM CAPACITY AVAILABLE	141	141	141	141	141	141	141	141	141	141	141	141	141	8
	GAS SUPPLY TAKEN														
9	California Source Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	9
10	Out-of-State	483	480	428	357	338	341	375	360	347	354	421	506	400	10
11	TOTAL SUPPLY TAKEN	483	480	428	357	338	341	375	360	347	354	421	506	400	11
12	Net Underground Storage Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	12
13	TOTAL THROUGHPUT	483	480	428	357	338	341	375	360	347	354	421	506	399	13
	REQUIREMENTS FORECAST BY END-USE ^{3/}														
14	CORE ^{4/} Residential	178	166	141	106	76	57	67	52	53	62	119	185	105	14
15	Commercial	49	52	44	37	33	30	30	27	29	27	36	48	37	15
16	Industrial	5	6	5	4	4	4	3	3	3	4	4	5	4	16
17	NGV	13	14	13	13	13	13	13	13	13	13	13	13	13	17
18	Subtotal-CORE	245	238	204	160	126	104	113	94	98	105	173	250	159	18
19	NONCORE Subtotal-NONCORE	233	237	219	192	209	233	257	262	244	244	243	249	235	19
20	Co. Use & LUAF	5	5	5	4	4	4	4	4	4	4	5	6	5	20
21	SYSTEM TOTAL THROUGHPUT	483	480	428	357	338	341	375	360	347	354	421	506	399	21
	TRANSPORTATION AND EXCHANGE														
22	CORE All End Uses	4	5	4	3	3	3	3	2	3	2	3	4	3	22
23	NONCORE All End Uses	233	237	219	192	209	233	257	262	244	244	243	249	235	23
24	TOTAL TRANSPORTATION & EXCHANGE	238	242	223	195	212	236	260	265	247	247	246	254	239	24
	CURTAILMENT														
25	Core	0	0	0	0	0	0	0	0	0	0	0	0	0	25
26	Noncore	0	0	0	0	0	0	0	0	0	0	0	0	0	26
27	TOTAL - Curtailment	0	0	0	0	0	0	0	0	0	0	0	0	0	27

NOTES:

1/ Firm capacity under contract by SDG&E in 2008.

2/ For 2009 and after, assume capacity at same levels for 2008.

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

4/ Core end-use demand exclusive of core aggregation

transportation (CAT) in MDth/d:

245	238	204	161	125	104	113	94	98	105	173	251	159
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2008 CALIFORNIA GAS REPORT

FORECAST OF REQUIREMENTS – DETAIL
JULY 2008



2008 CALIFORNIA GAS REPORT

**CUSTOMER FORECAST
JULY 2008**



SAN DIEGO GAS and ELECTRIC COMPANY: CUSTOMER FORECAST
2008 CGR
(annual averages)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Residential	805,013	810,763	817,776	826,190	836,695	848,148	860,004	872,224	884,665	897,269	909,922	922,588
Core C/I	29,860	30,140	30,132	30,080	30,044	30,041	30,062	30,115	30,186	30,264	30,346	30,431
NGV	28	30	31	32	33	34	35	36	37	38	39	40
Non-Core C/I	57	56	56	56	56	56	56	56	56	56	57	57
Electric Generation	71	71	76	79	82	85	88	91	95	98	101	104
TOTAL	835,029	841,061	848,071	856,436	866,909	878,364	890,245	902,522	915,038	927,725	940,464	953,220

SAN DIEGO GAS and ELECTRIC COMPANY: CUSTOMER FORECAST
(annual averages)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Residential	935,293	948,008	960,689	973,311	985,859	998,358	1,010,882	1,023,542	1,036,301	1,049,038	1,061,681	1,074,322
Core C/I	30,517	30,604	30,686	30,769	30,857	30,947	31,037	31,128	31,222	31,314	31,404	31,494
NGV	41	42	43	44	45	46	47	48	49	50	51	53
Non-Core C/I	57	57	57	57	58	58	58	58	58	58	59	59
Electric Generation	108	111	114	117	121	124	127	130	134	137	140	143
TOTAL	966,015	978,822	991,589	1,004,298	1,016,939	1,029,532	1,042,151	1,054,907	1,067,764	1,080,597	1,093,335	1,106,071

2008 CALIFORNIA GAS REPORT

EUFORCASTER
JULY 2008



Refer to the 2008 California Gas Report workpapers of Southern California Gas Company for documentation of the EUForecaster model. This model is used to forecast gas demands for the residential, core commercial and core industrial markets.

2008 CALIFORNIA GAS REPORT

RESIDENTIAL DEMAND FORECAST
JULY 2008



Core Residential End-Use Model

2008 California Gas Report

Introduction:

SDG&E used the End Use Forecaster model to generate annual gas demand forecasts for the residential market from 2008 through 2030. The software's market segmentation and end-use modeling framework analyzes the impacts of competitive strategies (gas vs. electricity) and market scenarios on gas demand and market shares.

The model separates the residential market into four building types (B-level). These groups are identified by the premise code classification found in the company billing files. The four residential groups are:

- Single-Family (SF);
- Multi-Family (MF);
- Master Metered (MM); and
- Sub-Metered (SM).

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

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

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

- Natural gas; and
- Electricity.

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

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

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

A set of post-model adjustments were applied to the model's annual demand forecast. The first adjustment calibrates to the recorded 2007 weather adjusted demand. Next, the annual forecast was parceled out to a series of monthly forecasts by a process which involves two steps. The steps consist of (1) using the fitted equation¹ for customer demand to generate a forecast of use per customer that varies with the number of calendar days and heating degree days in a given month and (2) calculating a series of weights based on the customer's predicted monthly usage share in total annual consumption. The shares obtained from the latter step were then applied to annual totals to derive the stream of monthly forecasts which are conditional on the particular weather design specification for the year. A final adjustment to the forecast offsets the throughput by the energy efficiency savings. See Figure 2 for the annual demand forecast. Figures 3-6 illustrate the monthly forecasts for each weather scenario.

Data Sources:

The information used to perform the modeling and to generate the forecast includes historical 2007 consumption and customer counts; meter counts, growth, and decay; use per customer by vintage and unit energy consumption (UEC) values; fuel costs and price elasticity; equipment capital costs and availability; building and equipment lives and decay. The historical data were extracted from the billing tables housed within the Customer Information System (CIS). See Figure 7 for the 2007 historical data.

Meter Counts, Growth and Decay:

Regression equations were developed for each of the 4 building types. The meter count forecast is a company-specific forecast based on actual meter counts within the SDG&E service territory. Data on meter decay rates were obtained from the Energy Information Administration (EIA). See Figure 8 for the meter count forecast.

Use Per Customer by Vintage and UEC:

Use per customer and Unit Energy Consumption (UEC) data were based on company marketing data and the California Measurement Advisory Council. See Figure 9 for the appliance UEC's.

¹ SDGE Monthly Use Per Customer = (0.61) * Calendar Days + (0.14) * Heating Degree Days.

Fuel Costs and Price Elasticity:

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

For a given housing type, the average gas commodity rate was calculated using a pair of weights for the two consumption tiers applied to the simple average of each tier's monthly rate. The average commodity rate in each forecast year was developed using the same consumption tier weights, but with the forecasts of rates for each residential rate tier. The average gas price each year was then calculated by including the non-volumetric customer charges with the year's average gas commodity price. Figure 10 illustrates the gas price forecasts.

Electric Price Data:

The electricity price inputs consist of average prices (cents/kWh) and marginal prices (cents/kWh). The forecasts for the SDG&E residential customer class were developed by SDG&E's electricity rate analysis group for 2007 through 2030.

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

The marginal prices for each residential housing type were calculated by multiplying each year's respective average price by a ratio. These ratios were 1.513 for the SF and MF housing types, 1.034 for the MM housing type and 1.125 for the SM housing type. These various ratios were the same as those used to construct the marginal electricity prices for the SoCalGas residential end-use model. Figure 11 illustrates the electricity price forecasts.

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

Equipment Capital Costs and Availability:

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

Building and Equipment Lives and Decay:

Building decay rates are based on the building shell lifetimes, where the lifetime is defined as the length of time it takes for either a demolition or a major renovation to occur. For single-family residential buildings, an exponential rate of decay of 0.3% per year was assumed. See Figure 14 for the building decay rates.

Data on equipment lives and decay rates are based on EIA, RASS, Energy Star, and SDG&E company data. See Figure 15 for the average lifetimes of gas appliances.

Saturations, Fuel and Efficiency Shares:

Saturation values, fuel shares, and efficiency shares were extracted from SDG&E company data files and the most recent 2004 RASS Update. Please see Figures 16-19 for saturations, fuel, and efficiency shares.

RESIDENTIAL DATA

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Figure 1: Number of Efficiency Levels by End Use by Customer Segment

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

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Figure 2: Annual Demand Forecast (Mdtth)
 Before EE Adjustments

Year	Total	Single Family	Multi-Family	Master Meter	Sub Meter
2007	32,119	23,021	4,263	3,675	1,160
2008	32,092	22,949	4,244	3,757	1,142
2009	32,189	22,980	4,241	3,840	1,128
2010	32,370	23,084	4,250	3,921	1,116
2011	32,566	23,206	4,265	3,994	1,103
2012	32,877	23,423	4,293	4,068	1,093
2013	33,178	23,637	4,322	4,136	1,084
2014	33,484	23,859	4,353	4,198	1,074
2015	33,648	23,974	4,371	4,244	1,059
2016	33,792	24,077	4,388	4,283	1,045
2017	33,945	24,189	4,406	4,318	1,030
2018	34,109	24,314	4,427	4,351	1,017
2019	34,289	24,455	4,449	4,381	1,005
2020	34,475	24,602	4,472	4,408	993
2021	34,705	24,786	4,500	4,436	982
2022	34,865	24,918	4,522	4,455	970
2023	35,019	25,047	4,543	4,471	958
2024	35,171	25,177	4,563	4,484	947
2025	35,326	25,311	4,585	4,494	936
2026	35,519	25,478	4,611	4,505	926
2027	35,693	25,630	4,635	4,512	915
2028	35,763	25,703	4,649	4,509	903
2029	35,981	25,894	4,678	4,515	894
2030	36,118	26,022	4,699	4,514	883

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Figure 3: Average-Temperature Year Demand Forecast

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2007	4,460	3,768	3,607	2,727	2,094	1,606	1,520	1,516	1,483	1,783	2,951	4,603	32,119
2008	4,443	3,754	3,593	2,717	2,086	1,600	1,514	1,511	1,477	1,776	2,940	4,586	31,996
2009	4,440	3,752	3,591	2,715	2,085	1,599	1,513	1,510	1,476	1,775	2,938	4,583	31,977
2010	4,448	3,758	3,597	2,719	2,089	1,602	1,516	1,512	1,479	1,778	2,943	4,591	32,031
2011	4,456	3,765	3,604	2,724	2,092	1,605	1,518	1,515	1,481	1,781	2,948	4,599	32,088
2012	4,478	3,783	3,622	2,738	2,103	1,613	1,526	1,523	1,489	1,790	2,963	4,622	32,248
2013	4,497	3,800	3,637	2,750	2,112	1,620	1,532	1,529	1,495	1,798	2,976	4,642	32,387
2014	4,517	3,817	3,653	2,762	2,121	1,627	1,539	1,536	1,502	1,806	2,989	4,662	32,532
2015	4,518	3,817	3,654	2,762	2,121	1,627	1,539	1,536	1,502	1,806	2,989	4,663	32,534
2016	4,515	3,815	3,652	2,761	2,120	1,626	1,539	1,535	1,501	1,805	2,987	4,660	32,516
2017	4,514	3,814	3,651	2,760	2,120	1,626	1,538	1,535	1,501	1,805	2,987	4,659	32,507
2018	4,528	3,825	3,662	2,768	2,126	1,631	1,543	1,539	1,505	1,810	2,996	4,673	32,605
2019	4,546	3,841	3,677	2,780	2,135	1,637	1,549	1,546	1,512	1,817	3,008	4,692	32,740
2020	4,568	3,859	3,694	2,793	2,145	1,645	1,556	1,553	1,519	1,826	3,022	4,714	32,892
2021	4,596	3,883	3,717	2,810	2,158	1,655	1,566	1,563	1,528	1,837	3,041	4,744	33,100
2022	4,617	3,901	3,734	2,823	2,168	1,663	1,573	1,570	1,535	1,846	3,055	4,765	33,248
2023	4,638	3,919	3,751	2,836	2,178	1,670	1,580	1,577	1,542	1,854	3,069	4,787	33,402
2024	4,659	3,937	3,768	2,849	2,188	1,678	1,588	1,584	1,549	1,863	3,083	4,809	33,554
2025	4,681	3,955	3,786	2,862	2,198	1,686	1,595	1,592	1,556	1,871	3,097	4,831	33,709
2026	4,708	3,978	3,807	2,878	2,211	1,695	1,604	1,601	1,565	1,882	3,115	4,859	33,902
2027	4,732	3,998	3,827	2,893	2,222	1,704	1,612	1,609	1,573	1,892	3,131	4,884	34,076
2028	4,742	4,006	3,835	2,899	2,226	1,708	1,616	1,612	1,576	1,896	3,137	4,894	34,146
2029	4,772	4,032	3,859	2,918	2,241	1,719	1,626	1,622	1,586	1,908	3,157	4,925	34,364
2030	4,791	4,048	3,875	2,929	2,250	1,725	1,632	1,629	1,593	1,915	3,170	4,945	34,501

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Figure 4: Cold-Temperature Year Demand Forecast

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2007	5,243	4,430	4,167	3,029	2,244	1,637	1,990	1,521	1,501	1,823	3,402	5,447	36,434
2008	5,223	4,413	4,151	3,017	2,236	1,630	1,983	1,515	1,495	1,816	3,389	5,427	36,295
2009	5,220	4,410	4,149	3,015	2,234	1,629	1,981	1,514	1,494	1,815	3,387	5,423	36,273
2010	5,229	4,418	4,156	3,020	2,238	1,632	1,985	1,517	1,497	1,818	3,393	5,432	36,334
2011	5,238	4,425	4,163	3,026	2,242	1,635	1,988	1,519	1,499	1,821	3,399	5,442	36,398
2012	5,264	4,447	4,184	3,041	2,253	1,643	1,998	1,527	1,507	1,831	3,416	5,469	36,580
2013	5,287	4,467	4,202	3,054	2,263	1,650	2,007	1,534	1,513	1,838	3,430	5,493	36,738
2014	5,311	4,487	4,221	3,068	2,273	1,658	2,016	1,540	1,520	1,847	3,446	5,517	36,902
2015	5,311	4,487	4,221	3,068	2,273	1,658	2,016	1,541	1,520	1,847	3,446	5,518	36,905
2016	5,308	4,484	4,219	3,066	2,272	1,657	2,015	1,540	1,520	1,846	3,444	5,515	36,885
2017	5,307	4,483	4,217	3,065	2,271	1,656	2,014	1,539	1,519	1,845	3,443	5,513	36,874
2018	5,323	4,497	4,230	3,075	2,278	1,661	2,020	1,544	1,524	1,851	3,454	5,530	36,986
2019	5,345	4,515	4,248	3,087	2,288	1,668	2,029	1,550	1,530	1,858	3,468	5,553	37,139
2020	5,369	4,536	4,267	3,102	2,298	1,676	2,038	1,558	1,537	1,867	3,484	5,579	37,311
2021	5,403	4,565	4,294	3,121	2,313	1,687	2,051	1,567	1,547	1,879	3,506	5,614	37,546
2022	5,427	4,585	4,313	3,135	2,323	1,694	2,060	1,574	1,554	1,887	3,522	5,639	37,714
2023	5,453	4,607	4,334	3,150	2,334	1,702	2,070	1,582	1,561	1,896	3,538	5,665	37,889
2024	5,477	4,628	4,353	3,164	2,344	1,710	2,079	1,589	1,568	1,905	3,554	5,691	38,061
2025	5,503	4,649	4,373	3,179	2,355	1,718	2,089	1,596	1,575	1,913	3,570	5,717	38,238
2026	5,534	4,676	4,398	3,197	2,369	1,727	2,101	1,605	1,584	1,924	3,591	5,750	38,457
2027	5,563	4,700	4,421	3,213	2,381	1,736	2,111	1,614	1,592	1,934	3,609	5,779	38,653
2028	5,574	4,709	4,430	3,220	2,386	1,740	2,116	1,617	1,596	1,938	3,617	5,791	38,734
2029	5,610	4,739	4,458	3,240	2,401	1,751	2,129	1,627	1,606	1,951	3,640	5,828	38,980
2030	5,632	4,758	4,476	3,253	2,411	1,758	2,138	1,634	1,612	1,958	3,654	5,851	39,136

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Figure 5: Hot-Temperature Year Demand Forecast

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2007	3,663	3,134	3,041	2,356	1,925	1,563	1,524	1,521	1,492	1,680	2,588	3,782	28,269
2008	3,649	3,122	3,029	2,347	1,918	1,557	1,518	1,515	1,486	1,674	2,578	3,768	28,161
2009	3,646	3,120	3,028	2,345	1,916	1,556	1,517	1,514	1,485	1,673	2,577	3,766	28,144
2010	3,653	3,126	3,033	2,349	1,920	1,559	1,520	1,517	1,488	1,676	2,581	3,772	28,192
2011	3,659	3,131	3,038	2,353	1,923	1,561	1,522	1,519	1,490	1,679	2,586	3,779	28,242
2012	3,677	3,147	3,053	2,365	1,933	1,569	1,530	1,527	1,498	1,687	2,599	3,798	28,383
2013	3,693	3,161	3,066	2,375	1,941	1,576	1,537	1,534	1,504	1,694	2,610	3,814	28,506
2014	3,710	3,175	3,080	2,386	1,950	1,583	1,543	1,540	1,511	1,702	2,622	3,831	28,633
2015	3,710	3,175	3,080	2,386	1,950	1,583	1,544	1,541	1,511	1,702	2,622	3,831	28,635
2016	3,708	3,173	3,079	2,385	1,949	1,582	1,543	1,540	1,510	1,701	2,620	3,829	28,619
2017	3,707	3,172	3,078	2,384	1,948	1,582	1,542	1,539	1,510	1,701	2,620	3,828	28,611
2018	3,718	3,182	3,087	2,391	1,954	1,587	1,547	1,544	1,514	1,706	2,628	3,840	28,697
2019	3,734	3,195	3,100	2,401	1,962	1,593	1,553	1,550	1,521	1,713	2,638	3,856	28,816
2020	3,751	3,210	3,114	2,412	1,971	1,601	1,561	1,558	1,528	1,721	2,651	3,874	28,950
2021	3,774	3,230	3,134	2,427	1,984	1,611	1,570	1,567	1,537	1,732	2,667	3,898	29,132
2022	3,791	3,244	3,148	2,438	1,993	1,618	1,577	1,574	1,544	1,739	2,679	3,915	29,263
2023	3,809	3,260	3,163	2,450	2,002	1,625	1,585	1,582	1,551	1,748	2,692	3,934	29,399
2024	3,826	3,274	3,177	2,461	2,011	1,633	1,592	1,589	1,559	1,755	2,704	3,951	29,532
2025	3,844	3,290	3,192	2,472	2,020	1,640	1,599	1,596	1,566	1,764	2,717	3,970	29,669
2026	3,866	3,308	3,210	2,486	2,032	1,650	1,608	1,605	1,575	1,774	2,732	3,992	29,839
2027	3,886	3,325	3,226	2,499	2,042	1,658	1,617	1,614	1,583	1,783	2,746	4,013	29,992
2028	3,894	3,332	3,233	2,504	2,046	1,662	1,620	1,617	1,586	1,786	2,752	4,021	30,054
2029	3,919	3,353	3,254	2,520	2,060	1,672	1,630	1,627	1,596	1,798	2,769	4,047	30,245
2030	3,934	3,367	3,267	2,530	2,068	1,679	1,637	1,634	1,603	1,805	2,780	4,063	30,366

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Figure 6: Base-Temperature Year Demand Forecast

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2007	1,487	1,351	1,491	1,431	1,484	1,462	1,520	1,521	1,481	1,484	1,469	1,492	17,673
2008	1,481	1,346	1,485	1,425	1,479	1,457	1,515	1,515	1,475	1,478	1,463	1,487	17,605
2009	1,480	1,345	1,485	1,424	1,478	1,456	1,514	1,514	1,474	1,477	1,463	1,486	17,595
2010	1,483	1,347	1,487	1,427	1,480	1,458	1,516	1,517	1,476	1,480	1,465	1,488	17,624
2011	1,485	1,349	1,490	1,429	1,483	1,461	1,519	1,519	1,479	1,482	1,468	1,491	17,656
2012	1,493	1,356	1,497	1,436	1,490	1,468	1,527	1,527	1,487	1,490	1,475	1,498	17,744
2013	1,499	1,362	1,504	1,443	1,497	1,474	1,533	1,534	1,493	1,496	1,481	1,505	17,820
2014	1,506	1,368	1,510	1,449	1,503	1,481	1,540	1,540	1,500	1,503	1,488	1,511	17,900
2015	1,506	1,368	1,510	1,449	1,504	1,481	1,540	1,541	1,500	1,503	1,488	1,512	17,901
2016	1,505	1,367	1,510	1,448	1,503	1,480	1,539	1,540	1,499	1,502	1,487	1,511	17,891
2017	1,505	1,367	1,509	1,448	1,502	1,480	1,539	1,539	1,498	1,502	1,487	1,510	17,886
2018	1,509	1,371	1,514	1,452	1,507	1,484	1,543	1,544	1,503	1,506	1,491	1,515	17,940
2019	1,515	1,377	1,520	1,458	1,513	1,491	1,550	1,550	1,509	1,512	1,497	1,521	18,015
2020	1,522	1,383	1,527	1,465	1,520	1,497	1,557	1,558	1,516	1,519	1,504	1,528	18,098
2021	1,532	1,392	1,537	1,474	1,530	1,507	1,567	1,567	1,526	1,529	1,514	1,538	18,212
2022	1,539	1,398	1,544	1,481	1,537	1,514	1,574	1,574	1,533	1,536	1,521	1,545	18,294
2023	1,546	1,405	1,551	1,488	1,544	1,521	1,581	1,582	1,540	1,543	1,528	1,552	18,379
2024	1,553	1,411	1,558	1,495	1,551	1,528	1,588	1,589	1,547	1,550	1,535	1,559	18,462
2025	1,560	1,418	1,565	1,502	1,558	1,535	1,596	1,596	1,554	1,557	1,542	1,566	18,548
2026	1,569	1,426	1,574	1,510	1,567	1,543	1,605	1,605	1,563	1,566	1,551	1,575	18,654
2027	1,577	1,433	1,582	1,518	1,575	1,551	1,613	1,614	1,571	1,574	1,559	1,583	18,749
2028	1,581	1,436	1,585	1,521	1,578	1,555	1,616	1,617	1,574	1,577	1,562	1,586	18,788
2029	1,591	1,445	1,595	1,531	1,588	1,564	1,627	1,627	1,584	1,587	1,572	1,597	18,908
2030	1,597	1,451	1,602	1,537	1,594	1,571	1,633	1,634	1,590	1,594	1,578	1,603	18,984

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Figure 7: 2007 Historical Data

	Single Family	Multi-Family	Master Meter	Sub Meter
Total Therm Sales	230,212,255	42,625,037	36,750,991	11,602,247
Meter Count				
Pre-1979 Customers	554,149	141,750	11,672	482
1979 - 2004 Customers	68,753	22,959	146	1
2005-2007 Customers	3,245	1,844	1	-
TOTAL	626,147	166,554	11,831	482
Use Per Customer (UPC, therms)				
Pre-1979 Customers	363	261	3,047	24,010
1979 - 2004 Customers	410	228	7,984	21,892
2005-2007 Customers	330	205	12,640	1
Price Elasticity	-0.105	-0.071	-0.069	-0.105

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Figure 8: Meter Count Forecast

Year	Total	Single Family	Multi-Family	Master Meter	Sub Meter
2007	805,013	626,147	166,554	11,831	482
2008	810,763	630,732	167,718	11,831	482
2009	817,776	636,325	169,138	11,831	482
2010	826,189	643,035	170,842	11,831	482
2011	836,695	651,412	172,969	11,831	482
2012	848,148	660,546	175,288	11,831	482
2013	860,004	670,002	177,689	11,831	482
2014	872,224	679,748	180,163	11,831	482
2015	884,665	689,669	182,683	11,831	482
2016	897,269	699,721	185,235	11,831	482
2017	909,922	709,812	187,797	11,831	482
2018	922,587	719,912	190,362	11,831	482
2019	935,292	730,045	192,935	11,831	482
2020	948,007	740,185	195,509	11,831	482
2021	960,689	750,299	198,077	11,831	482
2022	973,311	760,365	200,633	11,831	482
2023	985,859	770,371	203,175	11,831	482
2024	998,357	780,339	205,706	11,831	482
2025	1,010,882	790,327	208,242	11,831	482
2026	1,023,542	800,422	210,806	11,831	482
2027	1,036,301	810,598	213,390	11,831	482
2028	1,049,037	820,755	215,969	11,831	482
2029	1,061,680	830,838	218,530	11,831	482
2030	1,074,321	840,919	221,090	11,831	482

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

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

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

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

Year	Price Deflator	Average Price				Marginal Price			
		Single Family	Multi-Family	Master Meter	Sub Meter	Single Family	Multi-Family	Master Meter	Sub Meter
2007	100.00	1.4205	1.4017	1.3844	1.3847	1.5873	1.5873	1.5873	1.5873
2008	102.16	1.4847	1.4656	1.4480	1.4483	1.6544	1.6544	1.6544	1.6544
2009	103.95	1.4839	1.4634	1.4443	1.4447	1.6671	1.6671	1.6671	1.6671
2010	105.84	1.4725	1.4521	1.4332	1.4336	1.6543	1.6543	1.6543	1.6543
2011	107.94	1.4817	1.4611	1.4421	1.4425	1.6646	1.6646	1.6646	1.6646
2012	110.22	1.4480	1.4280	1.4094	1.4098	1.6267	1.6267	1.6267	1.6267
2013	112.38	1.4210	1.4013	1.3831	1.3835	1.5962	1.5962	1.5962	1.5962
2014	114.59	1.3952	1.3759	1.3581	1.3584	1.5672	1.5672	1.5672	1.5672
2015	116.82	1.4432	1.4232	1.4047	1.4051	1.6211	1.6211	1.6211	1.6211
2016	119.03	1.5037	1.4828	1.4636	1.4639	1.6892	1.6892	1.6892	1.6892
2017	121.24	1.5607	1.5390	1.5190	1.5194	1.7533	1.7533	1.7533	1.7533
2018	123.49	1.6123	1.5900	1.5693	1.5697	1.8114	1.8114	1.8114	1.8114
2019	125.76	1.6564	1.6334	1.6121	1.6125	1.8610	1.8610	1.8610	1.8610
2020	128.18	1.6994	1.6758	1.6540	1.6544	1.9095	1.9095	1.9095	1.9095
2021	130.68	1.7197	1.6958	1.6737	1.6741	1.9321	1.9321	1.9321	1.9321
2022	133.17	1.7760	1.7513	1.7285	1.7289	1.9957	1.9957	1.9957	1.9957
2023	135.71	1.8350	1.8095	1.7859	1.7863	2.0620	2.0620	2.0620	2.0620
2024	138.30	1.8955	1.8691	1.8447	1.8452	2.1300	2.1300	2.1300	2.1300
2025	140.97	1.9555	1.9283	1.9032	1.9036	2.1974	2.1974	2.1974	2.1974
2026	143.71	1.9954	1.9674	1.9416	1.9421	2.2443	2.2443	2.2443	2.2443
2027	146.45	1.6905	1.6667	1.6445	1.6448	2.3049	2.3049	2.3049	2.3049
2028	149.20	1.7298	1.7055	1.6828	1.6832	2.4321	2.4321	2.4321	2.4321
2029	151.97	1.7699	1.7453	1.7220	1.7224	2.4635	2.4635	2.4635	2.4635
2030	154.80	1.8110	1.7859	1.7621	1.7625	2.5481	2.5481	2.5481	2.5481

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

Year	Price Deflator	Average Price				Marginal Price			
		Single Family	Multi Family	Master Meter	Sub Meter	Single Family	Multi Family	Master Meter	Sub Meter
2007	100.00	15.49	15.28	15.09	15.09	23.44	23.12	15.60	16.98
2008	102.16	19.04	18.81	18.59	18.59	28.82	28.46	19.22	20.92
2009	103.95	19.45	19.19	18.95	18.95	29.43	29.03	19.59	21.33
2010	105.84	18.80	18.54	18.30	18.31	28.45	28.06	18.92	20.60
2011	107.94	19.10	18.83	18.59	18.59	28.91	28.50	19.22	20.92
2012	110.22	18.65	18.38	18.13	18.13	28.21	27.81	18.74	20.40
2013	112.38	18.77	18.49	18.24	18.24	28.40	27.99	18.86	20.53
2014	114.59	18.90	18.61	18.35	18.36	28.60	28.17	18.98	20.66
2015	116.82	19.10	18.81	18.54	18.55	28.91	28.47	19.17	20.87
2016	119.03	19.48	19.18	18.90	18.90	29.47	29.02	19.54	21.27
2017	121.24	19.81	19.51	19.23	19.23	29.98	29.52	19.88	21.64
2018	123.49	20.24	19.93	19.64	19.64	30.63	30.15	20.31	22.11
2019	125.76	20.78	20.46	20.16	20.16	31.44	30.95	20.84	22.69
2020	128.18	21.33	20.99	20.69	20.69	32.27	31.77	21.39	23.28
2021	130.68	21.89	21.54	21.23	21.23	33.12	32.60	21.95	23.89
2022	133.17	22.46	22.11	21.78	21.79	33.98	33.45	22.53	24.52
2023	135.71	23.04	22.69	22.36	22.36	34.87	34.33	23.12	25.16
2024	138.30	23.64	23.28	22.94	22.95	35.78	35.23	23.72	25.83
2025	140.97	24.26	23.88	23.54	23.55	36.71	36.14	24.34	26.50
2026	143.71	19.83	19.55	19.28	19.29	30.00	29.58	19.94	21.71
2027	146.45	20.02	19.74	19.48	19.48	30.30	29.87	20.14	21.92
2028	149.20	20.22	19.94	19.67	19.68	30.60	30.17	20.34	22.14
2029	151.97	20.43	20.14	19.87	19.87	30.91	30.47	20.55	22.36
2030	154.80	20.63	20.34	20.07	20.07	31.22	30.78	20.75	22.59

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Figure 12: Gas Appliance Equipment Cost (Nominal \$)

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

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Figure 13: Electric Appliance Equipment Cost (Nominal \$)

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

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Figure 14: Building Lives and Decay Rate

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

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Figure 15: Gas Appliance Equipment Age (Years)

End-Use	Vintage	Single Family		Multi-Family		Master Meter		Sub Meter		
		Max	Average	Max	Average	Max	Average	Max	Average	Max
Space Heat	Pre-1979	17	17	17	15	15	16	16	16	16
	1979 - 2004	17	10	17	11	15	11	16	11	16
	2005-2007	17	3	17	4	15	4	16	4	16
Water Heat	Pre-1979	7	7	7	6	8	6	8	6	8
	1979 - 2004	7	7	7	8	8	8	8	8	8
	2005-2007	7	3	7	4	8	4	8	4	8
Cooking	Pre-1979	12	12	12	10	11	14	14	14	14
	1979 - 2004	12	10	12	11	11	11	14	11	14
	2005-2007	12	2	12	4	11	3	14	3	14
Drying	Pre-1979	8	8	8	6	8	8	8	8	8
	1979 - 2004	8	8	8	8	8	8	8	8	8
	2005-2007	8	6	8	3	8	4	8	4	8
Pool	Pre-1979	13	13	13	13	13	13	13	13	13
	1979 - 2004	13	9	13	9	13	9	13	9	13
	2005-2007	13	3	13	3	13	3	13	3	13
Spa	Pre-1979	11	11	11	11	11	11	11	11	11
	1979 - 2004	11	8	11	8	11	8	11	8	11
	2005-2007	11	3	11	3	11	3	11	3	11
Fireplace	Pre-1979	15	15	15	15	15	15	15	15	15
	1979 - 2004	15	15	15	15	15	15	15	15	15
	2005-2007	15	15	15	15	15	15	15	15	15
BBQ	Pre-1979	7	7	7	5	5	5	9	5	9
	1979 - 2004	7	7	7	5	5	9	9	9	9
	2005-2007	7	5	7	5	5	2	9	2	9
Other	Pre-1979	15	15	15	15	15	15	15	15	15
	1979 - 2004	15	15	15	15	15	15	15	15	15
	2005-2007	15	15	15	15	15	15	15	15	15

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Figure 16: End-Use Saturations

End-use	Vintage	Single Family	Multi-Family	Master Meter	Sub Meter
Space Heat	Pre-1979	0.9976	0.9664	0.9727	1.0000
	1979 - 2004	0.9969	1.0000	0.9183	1.0000
	2005-2007	0.9917	1.0000	1.0000	1.0000
Water Heat	Pre-1979	1.0000	0.9915	0.9561	1.0000
	1979 - 2004	1.0000	1.0000	0.9800	1.0000
	2005-2007	1.0000	1.0000	1.0000	1.0000
Cooking	Pre-1979	0.9892	0.9890	0.9745	0.6000
	1979 - 2004	0.9895	0.9788	0.9622	0.6000
	2005-2007	1.0000	1.0000	1.0000	1.0000
Drying	Pre-1979	0.8714	0.7781	0.9067	0.8000
	1979 - 2004	0.9301	0.8422	0.8679	0.8000
	2005-2007	0.9733	0.8672	0.5000	0.5000
Pool	Pre-1979	0.0711	0.1045	0.1179	0.1179
	1979 - 2004	0.1686	0.1941	0.0053	0.0053
	2005-2007	0.2414	0.1941	0.0053	0.0053
Spa	Pre-1979	0.1299	0.0668	0.1329	0.1329
	1979 - 2004	0.2802	0.2896	0.2012	0.2012
	2005-2007	0.2750	0.2896	0.2012	0.2012
Fireplace	Pre-1979	0.5493	0.1519	0.1894	0.1894
	1979 - 2004	0.7149	0.4775	0.4156	0.4156
	2005-2007	0.7149	0.4775	0.4156	0.4156
Barbecue	Pre-1979	0.5240	0.2706	0.1875	0.4000
	1979 - 2004	0.6040	0.3838	0.3600	0.0000
	2005-2007	0.6497	0.4576	0.0000	0.0000

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Figure 17: Gas Fuel Shares

End-use	Single Family	Multi-Family	Master Meter	Sub Meter
Space Heat	0.9399	0.8168	0.7710	0.7304
Water Heat	0.9878	0.9673	0.9356	0.7403
Cooking	0.6621	0.7440	0.5861	0.6871
Drying	0.7592	0.6962	0.8156	0.5469
Pool	0.7263	0.7263	0.7263	0.7263
Spa	0.5462	0.5819	0.5819	0.5819
Fireplace	0.5815	0.5816	0.5816	0.5816
Barbecue	0.2814	0.2344	0.3114	0.1364

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Figure 18: Gas Efficiency Shares

Gas End-use	Efficiency Level	Single Family		Multi-Family		Master Meter		Sub Meter	
		Existing	New	Existing	New	Existing	New	Existing	New
Space Heat	Stock	0.59	0.59	0.50	0.50	0.50	0.50	0.59	0.59
	Standard	0.34	0.34	0.48	0.48	0.48	0.48	0.34	0.34
	High	0.06	0.06	0.01	0.01	0.01	0.01	0.06	0.06
	Premium	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Water Heat	Stock	0.10	0.10	0.13	0.13	0.13	0.13	0.10	0.10
	Standard	0.68	0.68	0.76	0.76	0.76	0.76	0.68	0.68
	High	0.21	0.21	0.10	0.10	0.10	0.10	0.21	0.21
	Premium	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cooking	Stock	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
	Standard	0.10	0.10	0.05	0.05	0.05	0.05	0.05	0.05
Drying	Stock	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Standard	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Pool	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Spa	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fireplace	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Barbeque	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

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Figure 19: Electric Efficiency Shares**

Electric End-use	Efficiency Level	Single Family		Multi-Family		Master Meter		Sub Meter	
		Existing	New	Existing	New	Existing	New	Existing	New
Space Heat	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Water Heat	Stock	0.10	0.10	0.13	0.13	0.13	0.13	0.10	0.10
	Standard	0.68	0.68	0.76	0.76	0.76	0.76	0.68	0.68
	High	0.21	0.21	0.10	0.10	0.10	0.10	0.21	0.21
	Premium	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Cooking	Stock	0.90	0.90	0.95	0.95	0.95	0.95	0.95	0.95
	Standard	0.10	0.10	0.05	0.05	0.05	0.05	0.05	0.05
Drying	Stock	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	Standard	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Pool	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Spa	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fireplace	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Barbecue	Stock	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

2008 CALIFORNIA GAS REPORT

CORE COMMERCIAL AND INDUSTRIAL DEMAND FORECAST
JULY 2008



Introduction

The core commercial and Industrial GN-3 gas demand forecast used the EUForecaster model to generate annual gas demand forecasts for the years 2008 through 2030.

The model segments the core commercial and industrial GN-3 markets into 14 sectors and 11 sectors by type of business activity, respectively. Business activity is determined by the NAICS code assigned to the customer and carried on the customer's billing record. A second segmentation within each specific business type involved further disaggregation into end-uses.

The gas demand forecast that results from the EUForecaster model is at the annual design HDD total of 1,306 for an Average Year. The gas demand forecasts under Cold, Hot and Base temperature were then constructed based on Cold Year (Hdd = 1,654), Hot Year (Hdd=958) and Base Year (Hdd=0) annual assumptions.

This *end use* forecasts under the above four temperature scenarios are then reduced for the EE/DSM savings provided by the EE/DSM group. The post-model adjustments are summarized in tables that follow.

Data Sources

The key set of information used to perform the modeling and to generate the forecast includes historical year 2007 consumption and customer counts, employment forecasts, gas and electric energy use intensity (EUI) values, end-use saturations, fuel and efficiency shares, gas and electric price forecasts, equipment age, use per meter for existing and new customers, and equipment cost. A description of each component follows:

A. Historical Year 2007 Sales:

The historical data are extracted from the billing tables in the Customer Information System (CIS). The gas consumption by business type was adjusted to 1,306 Average Year Hdd.

B. Employment Data:

The level of employment in each business type is used as a measure of economic activity in the core commercial and industrial GN-3 demand forecast models. The employment data series matches the NAICS categories used to develop the historical consumption data. The employment data was compiled and totaled for the SDG&E' service territory. The forecast data comes from Global Insight's Spring 2008 Regional forecast released in June 2008 and based on Global Insight's May 2008 US Economic Forecast. The historical 2007 data comes from the California Employment Development Department.

C. Gas Price Data:

Average and marginal gas prices (\$/therm) were calculated from forecasts of the GN-3 rate components. We used underlying detailed consumption data to separate monthly consumption for customers by each business type into the respective GN-3 consumption tiers.

For a given business type, the average gas commodity rate for the 12-month period was calculated for each year. The average commodity rate in each forecast year was developed using the same monthly consumption pattern, but with the forecasts of rates for each GN-3 rate tier. The average gas price each year was then calculated by including the non-volumetric customer charges with the year's average gas commodity rate.

Each respective business type's marginal gas commodity rate (for each month) was calculated by "pricing" the entire month's consumption at the GN-3 rate's tier that was the last tier with non-zero consumption, the marginal consumption tier, for the customers of the given business type. The marginal gas price was then calculated as the simple average of the 12 monthly marginal commodity rates. The forecasts for each year used the same monthly consumption pattern, but used the projected GN-3 price of the marginal consumption tier.

D. Electric Price Data:

Both average prices (cents/kWh) and marginal prices (cents/kWh) were developed as electricity price inputs. Forecasts for the SDG&E retail electricity rates by customer class were developed from the CEC's July 2007 report CEC-200-2007-013-SD, Appendix B: Utility-Specific Retail Price Forecast Tables at page 4 for SDG&E. Forecasts for the SDG&E small/medium commercial and industrial customer classes were developed by SDG&E's electricity rate analysis group through 2030. These were the average electricity prices for the GN-3 core commercial and industrial markets.

The marginal prices were calculated by multiplying each year's respective average price by a ratio. These ratios, 1.000 for commercial and 0.789 for industrial, are the same as ratio used for the SoCalGas core commercial and industrial G-10 end-use models.

To impute the average and marginal electricity prices for each year, in each core commercial business type, we simply calculated the ratio of the average (or marginal) gas price to the overall core commercial gas price for each business type and then multiplied by the overall average (or marginal) electricity price.

E.. Building and Equipment Decay Rates:

Building decay rates are based on the building lifetimes, where the lifetime is defined as the length of time it takes for either a demolition or a major renovation where are major systems are replaced. For existing core buildings and facilities, an exponential rate of decay of 1% per year was assumed, consistent with an average remaining life for existing buildings of 100 years. A building decay rate concept is not relevant to large gas transport (non-core) customers. In both the commercial and industrial non-core models the existing building decay rate was set equal to zero.

Similarly, all new construction decay rates were assumed to be zero over the forecast horizon. This assumption was required because the growth of new buildings and facilities was tied directly to the econometric models.

End-Use lifetimes were derived from a variety of sources.

Commercial:

Space heat – 25 years
 Water heat – 15 years
 AC/compressor – 20 years
 All other commercial end-uses – 15 years

Industrial:

Fire-tube boiler – 25 years
 Water-tube boiler – 25 years
 Engine (motors) – 25 years
 All other industrial end-uses – 20 years

F. Equipment Saturations, Fuel Shares, and Efficiency Shares:

EUForecaster defines saturation as the percentage of customers in any segment that has a particular end use, independent of fuel shares. The commercial models developed saturation and fuel share estimates from our others end-use models. EUForecaster adjusted core commercial fuel shares according to a set of fuel-choice equations over the forecast horizon.

End-use saturations in the industrial model were initially set equal to 100%. Industrial end-use gas fuel shares were initially approximated. We then used an iterative procedure to further adjust industrial saturation and fuel shares such that the EUForecaster sales totals matched SDG&E industrial sales figures, and our estimates of electric usage by SDG&E customers. Finally, all commercial and industrial fuel shares were held constant over the forecast horizon.

Energy efficiency varied within the major gas end-uses/processes, including all boilers, space heat, and water heat. Four levels of efficiency were assigned to gas equipment: low, medium (standard) high, and premium for core commercial and three levels of efficiency were assigned to gas equipment: low, medium (standard), and high for core industrial market. California and federal standards have effectively eliminated the lowest efficiency alternatives for several gas end-uses from being purchased as new or replacement equipment. The lowest efficiency alternative for these end uses is, therefore, allowed to exist in the base year stock, but the customer must then purchase either medium (e.g., equipment that just meets Government standards), high or premium efficiency equipment as these units decay. The low efficiency share in the existing equipment stock was set equal to 50%. Medium ranged from 40% to 45%, and high from 5% to 10%.

EUForecaster's choice module prorates the low share proportionately to the medium, high and premium alternatives proportionate to their shares noted above. Therefore, replacement and new construction efficiency shares for medium range from 80% to 90%, and high ranges from 10% to 20%.

G. DSM Forecast:

The end-use gas demand forecast developed with EUForecaster does not capture the effects of SDG&E's EE/DSM programs. Energy savings goals from the CPUC's mandated energy efficiency/energy conservation programs for the core commercial and industrial were provided by SDG&E's DSM department. These savings are subtracted from the forecast generated by the core commercial and industrial forecasts generated by EUForecaster.

GN3 COMMERCIAL DATA TABLES

San Diego Gas and Electric Company
2008 California Gas Report - Commercial GN3
The Year the Equipment Was Installed by Business Types

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

**San Diego Gas and Electric Company
2008 California Gas Report- Commercial GN3
Incremental Meter Forecast by Business Types**

Year	Office	Restaurant	Retail	Laundry	Warehouse	School	College	Health	Lodging	Misc	Government	TCU	Construction	Agriculture
2006	41	-40	-32	3	-1	-3	-1	5	10	67	-6	17	26	5
2007	44	49	39	3	8	9	2	2	-3	68	8	-1	-15	-1
2008	59	57	31	6	6	9	3	7	9	52	13	6	7	1
2009	-2	-2	-1	0	0	0	0	0	0	-2	0	0	0	0
2010	-11	-11	-6	-1	-1	-2	-1	-1	-2	-10	-2	-1	-1	0
2011	-8	-7	-4	-1	-1	-1	0	-1	-1	-7	-2	-1	-1	0
2012	-1	-1	0	0	0	0	0	0	0	0	0	0	0	0
2013	4	4	2	0	0	1	0	1	1	4	1	0	1	0
2014	11	11	6	1	1	2	1	1	2	10	2	1	1	0
2015	15	14	8	2	1	2	1	2	2	13	3	2	2	0
2016	16	16	9	2	2	2	1	2	2	14	4	2	2	0
2017	17	17	9	2	2	3	1	2	3	15	4	2	2	0
2018	18	17	9	2	2	3	1	2	3	16	4	2	2	0
2019	18	17	9	2	2	3	1	2	3	16	4	2	2	0
2020	18	18	10	2	2	3	1	2	3	16	4	2	2	0
2021	17	17	9	2	2	3	1	2	3	15	4	2	2	0
2022	18	17	9	2	2	3	1	2	3	15	4	2	2	0
2023	19	18	10	2	2	3	1	2	3	16	4	2	2	0
2024	19	18	10	2	2	3	1	2	3	17	4	2	2	0
2025	19	18	10	2	2	3	1	2	3	17	4	2	2	0
2026	19	19	10	2	2	3	1	2	3	17	4	2	2	0
2027	20	19	10	2	2	3	1	2	3	17	4	2	2	0
2028	19	19	10	2	2	3	1	2	3	17	4	2	2	0
2029	19	18	10	2	2	3	1	2	3	17	4	2	2	0
2030	19	18	10	2	2	3	1	2	3	17	4	2	2	0

2008 California Gas Report- Commercial GN3

Electric Price Forecast

(Cent/KWH)

(a) Average Price Forecast

Year	Agriculture	College	Construction	Government	Health	Laundry	Lodging	Misc	Office	Restaurant	Retail	School	TCU	Warehouse
2007	15.59	16.96	16.03	16.49	15.63	16.46	14.82	15.52	15.35	16.98	14.73	15.02	14.81	14.85
2008	19.41	20.97	19.91	20.43	19.45	20.40	18.53	19.32	19.14	20.99	18.43	18.76	18.51	18.57
2009	19.82	21.37	20.41	20.76	19.89	20.82	18.82	19.61	19.40	21.68	18.78	19.25	19.02	18.83
2010	19.18	20.75	19.78	20.13	19.26	20.19	18.18	18.97	18.76	21.05	18.14	18.61	18.38	18.19
2011	19.65	21.30	20.28	20.65	19.73	20.72	18.60	19.44	19.21	21.62	18.56	19.06	18.81	18.61
2012	19.25	20.92	19.89	20.26	19.33	20.33	18.19	19.03	18.80	21.24	18.14	18.65	18.40	18.19
2013	19.54	21.27	20.21	20.59	19.62	20.66	18.44	19.31	19.08	21.61	18.39	18.91	18.65	18.44
2014	19.79	21.58	20.47	20.87	19.87	20.94	18.64	19.55	19.30	21.93	18.59	19.14	18.87	18.65
2015	20.13	22.00	20.85	21.26	20.22	21.34	18.94	19.88	19.63	22.36	18.89	19.45	19.17	18.95
2016	20.71	22.67	21.46	21.90	20.80	21.98	19.45	20.45	20.18	23.05	19.40	19.99	19.70	19.46
2017	21.21	23.19	21.97	22.41	21.30	22.49	19.94	20.94	20.67	23.58	19.88	20.49	20.19	19.95
2018	21.82	23.87	22.61	23.06	21.92	23.15	20.51	21.55	21.27	24.27	20.46	21.08	20.77	20.52
2019	22.40	24.54	23.22	23.70	22.50	23.78	21.03	22.11	21.82	24.96	20.97	21.62	21.30	21.04
2020	22.99	25.18	23.83	24.32	23.09	24.40	21.59	22.70	22.40	25.61	21.53	22.19	21.86	21.60
2021	23.59	25.85	24.46	24.96	23.70	25.05	22.15	23.29	22.98	26.29	22.08	22.77	22.43	22.16
2022	24.21	26.51	25.09	25.61	24.32	25.70	22.74	23.90	23.59	26.96	22.67	23.37	23.03	22.75
2023	24.84	27.19	25.74	26.26	24.96	26.36	23.35	24.53	24.21	27.64	23.28	23.99	23.64	23.36
2024	25.50	27.88	26.41	26.94	25.61	27.03	23.97	25.18	24.85	28.34	23.90	24.63	24.27	23.98
2025	26.16	28.61	27.10	27.64	26.27	27.74	24.59	25.83	25.50	29.08	24.52	25.27	24.90	24.61
2026	19.27	19.06	19.77	19.00	19.63	20.46	19.47	20.98	19.71	20.88	20.11	20.71	19.49	19.74
2027	19.47	19.26	19.97	19.19	19.83	20.67	19.68	21.19	19.91	21.10	20.32	20.92	19.69	19.94
2028	19.68	19.46	20.18	19.39	20.04	20.88	19.88	21.40	20.11	21.31	20.52	21.13	19.90	20.14
2029	19.88	19.66	20.39	19.60	20.24	21.10	20.09	21.62	20.32	21.53	20.73	21.35	20.10	20.35
2030	20.09	19.87	20.60	19.80	20.45	21.32	20.30	21.83	20.53	21.75	20.94	21.57	20.31	20.56

(b) Marginal Price Forecast

Year	Agriculture	College	Construction	Government	Health	Laundry	Lodging	Misc	Office	Restaurant	Retail	School	TCU	Warehouse
2007	15.56	16.85	15.93	16.26	15.55	16.35	14.93	15.49	15.38	16.85	14.95	15.09	15.08	14.96
2008	19.37	20.84	19.79	20.17	19.36	20.28	18.66	19.30	19.17	20.84	18.68	18.84	18.83	18.69
2009	19.75	21.21	20.19	20.54	19.77	20.62	19.11	19.63	19.53	21.22	19.14	19.30	19.31	19.13
2010	19.12	20.59	19.56	19.91	19.13	19.99	18.47	18.99	18.89	20.59	18.50	18.67	18.67	18.49
2011	19.59	21.13	20.05	20.42	19.60	20.50	18.91	19.46	19.35	21.14	18.94	19.11	19.12	18.93
2012	19.18	20.75	19.65	20.03	19.20	20.11	18.49	19.05	18.94	20.76	18.52	18.70	18.71	18.51
2013	19.47	21.10	19.96	20.35	19.49	20.44	18.75	19.33	19.22	21.11	18.79	18.97	18.98	18.77
2014	19.71	21.41	20.22	20.62	19.73	20.72	18.97	19.57	19.46	21.42	19.00	19.19	19.20	18.99
2015	20.05	21.82	20.58	21.00	20.07	21.10	19.28	19.91	19.79	21.83	19.31	19.51	19.52	19.30
2016	20.62	22.49	21.18	21.63	20.64	21.73	19.81	20.47	20.34	22.50	19.85	20.06	20.06	19.83
2017	21.12	23.01	21.69	22.14	21.14	22.24	20.30	20.97	20.84	23.02	20.34	20.55	20.56	20.32
2018	21.74	23.68	22.32	22.78	21.76	22.89	20.88	21.58	21.44	23.69	20.92	21.14	21.15	20.91
2019	22.31	24.34	22.91	23.40	22.33	23.51	21.42	22.14	22.00	24.35	21.46	21.69	21.70	21.44
2020	22.90	24.97	23.52	24.01	22.92	24.13	21.98	22.72	22.58	24.98	22.03	22.26	22.27	22.01
2021	23.50	25.64	24.13	24.65	23.52	24.77	22.56	23.32	23.17	25.65	22.60	22.84	22.85	22.58
2022	24.11	26.30	24.76	25.29	24.13	25.41	23.15	23.93	23.78	26.31	23.20	23.45	23.45	23.18
2023	24.74	26.96	25.41	25.94	24.77	26.06	23.77	24.56	24.41	26.98	23.82	24.07	24.08	23.80
2024	25.39	27.65	26.07	26.61	25.42	26.74	24.40	25.21	25.05	27.66	24.45	24.71	24.71	24.43
2025	26.05	28.37	26.75	27.30	26.08	27.43	25.04	25.86	25.71	28.39	25.09	25.35	25.36	25.07
2026	19.39	19.22	19.81	19.23	19.62	20.28	19.54	20.81	19.69	20.78	20.01	20.70	19.50	19.68
2027	19.59	19.42	20.02	19.43	19.82	20.49	19.75	21.02	19.90	20.99	20.22	20.91	19.70	19.89
2028	19.79	19.62	20.22	19.63	20.03	20.70	19.95	21.24	20.10	21.21	20.43	21.13	19.90	20.09
2029	20.00	19.82	20.43	19.83	20.23	20.91	20.16	21.46	20.31	21.42	20.64	21.34	20.11	20.30
2030	20.21	20.02	20.64	20.04	20.44	21.13	20.36	21.68	20.52	21.64	20.85	21.56	20.32	20.51

San Diego Gas and Electric Company
2008 California Gas Report - Commercial GN3

Gas Price Forecast

(\$/Therm)

(a) Average Price Forecast

Year	Price Deflator	Agriculture	College	Construction	Government	Health	Laundry	Lodging	Misc	Office	Restaurant	Retail	School	TCU	Warehouse
2007	100.00	0.9325	1.0271	0.9626	0.9943	0.9352	0.9929	0.8791	0.9273	0.9160	1.0286	0.8729	0.8931	0.8782	0.8814
2008	101.67	1.1572	1.2705	1.1949	1.2316	1.1614	1.2285	1.0983	1.1513	1.1384	1.2687	1.0937	1.1168	1.1043	1.0995
2009	103.41	1.1642	1.2233	1.1849	1.2014	1.1664	1.2022	1.1276	1.1581	1.1505	1.2306	1.1243	1.1402	1.1299	1.1287
2010	105.44	1.1466	1.2072	1.1678	1.1848	1.1489	1.1856	1.1095	1.1406	1.1329	1.2143	1.1060	1.1221	1.1117	1.1105
2011	107.46	1.1501	1.2121	1.1716	1.1892	1.1524	1.1899	1.1122	1.1440	1.1362	1.2189	1.1087	1.1250	1.1144	1.1133
2012	109.61	1.1098	1.1733	1.1318	1.1500	1.1122	1.1506	1.0713	1.1038	1.0958	1.1799	1.0677	1.0841	1.0734	1.0724
2013	111.72	1.0770	1.1420	1.0994	1.1182	1.0794	1.1187	1.0378	1.0710	1.0628	1.1483	1.0341	1.0507	1.0399	1.0389
2014	113.98	1.0443	1.1109	1.0671	1.0866	1.0467	1.0870	1.0044	1.0383	1.0300	1.1170	1.0005	1.0174	1.0064	1.0056
2015	116.32	1.0852	1.1535	1.1085	1.1287	1.0877	1.1290	1.0446	1.0793	1.0708	1.1593	1.0406	1.0577	1.0465	1.0458
2016	118.68	1.1398	1.2098	1.1636	1.1845	1.1423	1.1846	1.0984	1.1340	1.1253	1.2153	1.0944	1.1117	1.1003	1.0997
2017	121.09	1.1898	1.2615	1.2141	1.2357	1.1923	1.2357	1.1476	1.1840	1.1751	1.2667	1.1435	1.1610	1.1495	1.1490
2018	123.50	1.2344	1.3078	1.2592	1.2814	1.2370	1.2813	1.1915	1.2286	1.2196	1.3127	1.1872	1.2050	1.1933	1.1928
2019	125.90	1.2724	1.3474	1.2976	1.3206	1.2750	1.3204	1.2287	1.2666	1.2574	1.3521	1.2243	1.2423	1.2304	1.2301
2020	128.42	1.3080	1.3848	1.3338	1.3574	1.3107	1.3571	1.2635	1.3023	1.2929	1.3892	1.2590	1.2772	1.2652	1.2649
2021	131.02	1.3204	1.3991	1.3467	1.3711	1.3231	1.3707	1.2751	1.3147	1.3051	1.4032	1.2705	1.2889	1.2767	1.2766
2022	133.63	1.3704	1.4509	1.3972	1.4224	1.3731	1.4218	1.3242	1.3647	1.3549	1.4547	1.3195	1.3382	1.3257	1.3257
2023	136.28	1.4216	1.5040	1.4489	1.4749	1.4243	1.4741	1.3746	1.4159	1.4060	1.5074	1.3698	1.3886	1.3760	1.3761
2024	138.99	1.4741	1.5584	1.5020	1.5287	1.4769	1.5279	1.4262	1.4685	1.4583	1.5616	1.4213	1.4404	1.4276	1.4278
2025	141.80	1.5259	1.6122	1.5543	1.5818	1.5287	1.5809	1.4771	1.5203	1.5099	1.6150	1.4720	1.4914	1.4784	1.4787
2026	144.69	1.5572	1.6455	1.5862	1.6146	1.5601	1.6135	1.5075	1.5517	1.5411	1.6480	1.5023	1.5219	1.5087	1.5092
2027	147.63	1.6025	1.6929	1.6321	1.6613	1.6054	1.6601	1.5518	1.5970	1.5862	1.6950	1.5465	1.5664	1.5530	1.5536
2028	150.61	1.6589	1.7514	1.6891	1.7192	1.6619	1.7178	1.6073	1.6535	1.6425	1.7532	1.6019	1.6220	1.6084	1.6091
2029	153.65	1.7255	1.8201	1.7563	1.7873	1.7285	1.7857	1.6729	1.7200	1.7088	1.8216	1.6673	1.6878	1.6739	1.6747
2030	156.78	1.7916	1.8884	1.8230	1.8549	1.7946	1.8532	1.7380	1.7862	1.7748	1.8895	1.7323	1.7530	1.7389	1.7399

(b) Marginal Price Forecast

Year	Price Deflator	Agriculture	College	Construction	Government	Health	Laundry	Lodging	Misc	Office	Restaurant	Retail	School	TCU	Warehouse
2007	100.00	0.8769	0.9621	0.9013	0.9235	0.8766	0.9294	0.8359	0.8729	0.8652	0.9622	0.8368	0.8466	0.8455	0.8379
2008	101.67	1.0961	1.1940	1.1254	1.1488	1.0972	1.1541	1.0534	1.0879	1.0813	1.1945	1.0555	1.0665	1.0670	1.0545
2009	103.41	1.1245	1.1781	1.1401	1.1537	1.1246	1.1572	1.0994	1.1214	1.1170	1.1783	1.1002	1.1063	1.1059	1.1005
2010	105.44	1.1064	1.1612	1.1223	1.1363	1.1065	1.1398	1.0807	1.1032	1.0987	1.1614	1.0815	1.0877	1.0873	1.0818
2011	107.46	1.1092	1.1653	1.1255	1.1397	1.1093	1.1434	1.0829	1.1059	1.1013	1.1654	1.0837	1.0901	1.0897	1.0840
2012	109.61	1.0683	1.1257	1.0850	1.0995	1.0683	1.1033	1.0414	1.0650	1.0602	1.1258	1.0422	1.0487	1.0483	1.0425
2013	111.72	1.0348	1.0935	1.0519	1.0668	1.0349	1.0706	1.0073	1.0314	1.0265	1.0937	1.0082	1.0148	1.0144	1.0085
2014	113.98	1.0014	1.0615	1.0189	1.0341	1.0015	1.0380	0.9733	0.9979	0.9929	1.0617	0.9741	0.9810	0.9805	0.9745
2015	116.32	1.0417	1.1032	1.0595	1.0752	1.0417	1.0792	1.0129	1.0381	1.0330	1.1033	1.0137	1.0207	1.0203	1.0141
2016	118.68	1.0956	1.1585	1.1138	1.1298	1.0956	1.1339	1.0661	1.0919	1.0867	1.1587	1.0670	1.0741	1.0736	1.0673
2017	121.09	1.1448	1.2092	1.1635	1.1799	1.1449	1.1841	1.1147	1.1411	1.1357	1.2094	1.1156	1.1229	1.1224	1.1159
2018	123.50	1.1887	1.2546	1.2078	1.2246	1.1887	1.2289	1.1578	1.1849	1.1794	1.2547	1.1588	1.1662	1.1657	1.1591
2019	125.90	1.2259	1.2933	1.2455	1.2626	1.2260	1.2670	1.1944	1.2220	1.2164	1.2935	1.1953	1.2030	1.2025	1.1957
2020	128.42	1.2608	1.3297	1.2808	1.2983	1.2608	1.3028	1.2285	1.2568	1.2510	1.3299	1.2295	1.2373	1.2368	1.2299
2021	131.02	1.2724	1.3429	1.2929	1.3108	1.2725	1.3154	1.2394	1.2683	1.2624	1.3431	1.2404	1.2484	1.2479	1.2408
2022	133.63	1.3216	1.3937	1.3425	1.3608	1.3216	1.3655	1.2878	1.3174	1.3114	1.3939	1.2888	1.2970	1.2965	1.2892
2023	136.28	1.3719	1.4457	1.3934	1.4121	1.3720	1.4169	1.3374	1.3677	1.3615	1.4459	1.3385	1.3468	1.3463	1.3389
2024	138.99	1.4236	1.4990	1.4455	1.4647	1.4237	1.4696	1.3884	1.4193	1.4130	1.4992	1.3894	1.3980	1.3974	1.3898
2025	141.80	1.4746	1.5517	1.4970	1.5165	1.4746	1.5216	1.4385	1.4701	1.4637	1.5519	1.4396	1.4483	1.4477	1.4400
2026	144.69	1.5050	1.5839	1.5279	1.5480	1.5051	1.5531	1.4681	1.5004	1.4939	1.5841	1.4692	1.4782	1.4776	1.4697
2027	147.63	1.5494	1.6300	1.5728	1.5933	1.5495	1.5986	1.5116	1.5447	1.5380	1.6303	1.5128	1.5219	1.5213	1.5132
2028	150.61	1.6049	1.6874	1.6289	1.6498	1.6050	1.6552	1.5663	1.6001	1.5933	1.6876	1.5675	1.5768	1.5762	1.5679
2029	153.65	1.6705	1.7549	1.6951	1.7165	1.6706	1.7220	1.6311	1.6657	1.6586	1.7551	1.6323	1.6418	1.6412	1.6327
2030	156.78	1.7357	1.8220	1.7608	1.7827	1.7358	1.7883	1.6953	1.7307	1.7235	1.8222	1.6965	1.7063	1.7057	1.6970

**San Diego Gas and Electric Company
2008 California Gas Report - Commercial GN3
Historical Throughput and Customer Counts**

Segment	2007 Therm Sales	<u>2007 Meter</u>		<u>2007 Meter</u> Count New Customers	<u>Avg Use Per</u> Meter Existing Customers	<u>Avg Use Per</u> Meter New Customers	<u>Price</u> Elasticity	<u>Decay Rates</u>	<u>Employment</u> Elasticities
		<u>2007 Meter</u> Count	<u>Count,</u> <u>Existing/Old</u> <u>customers</u>						
Office	30,798,051	6,464	6,418	46	4,704	13,229	-0.072000	0	0.3267434
Restaurant	34,112,073	4,944	4,854	90	6,884	7,754	-0.001000	0	0.7372293
Retail	9,820,674	3,462	3,425	37	2,852	1,442	-0.032000	0	0.4336357
Laundry	5,808,225	515	512	3	11,271	12,412	-0.026000	0	0.2658749
Warehouse	2,792,220	650	648	2	4,201	34,905	-0.000010	0	0.3504214
School	3,996,892	772	763	9	5,174	5,473	-0.103000	0	0.0000000
College	5,075,829	293	287	6	17,456	10,972	-0.090000	0	0.4753826
Health	8,432,712	670	662	8	12,671	5,575	-0.052000	0	0.0866466
Lodging	15,945,590	760	738	22	21,251	11,913	-0.013000	0	0.2778638
Misc	12,653,802	5,207	5,059	148	2,416	2,930	-0.030000	0	0.0000000
Government	12,247,976	1,526	1,519	7	8,050	2,952	-0.061000	0	1.0951027
TCU	5,272,070	706	702	4	7,474	6,374	-0.062000	0	0.4683042
Construction	1,096,525	866	831	35	1,289	718	-0.179000	0	0.0688501
Agriculture	3,103,555	145	145	0	21,404	1	-0.059000	0	0.4328963

San Diego Gas and Electric Company
2008 California Gas Report - Commercial GN3
Average Use Per Meter therm

Sector	Space Heater	Water Heater	Cooktop	Griddle	Fryer	Other Cooking Equipment	Kitchen Equipment	AC	Dryer	Engine	Other	Total Building	
Office	1,932	802	98	33	25	101	22	33	33	96	28	1,926	5,096
Restaurant	2,976	1,236	151	50	38	156	33	51	148	42	2,968	7,850	
Retail	1,384	575	70	23	18	73	16	24	69	20	1,380	3,651	
Laundry	4,888	2,030	248	82	63	256	55	84	244	70	4,874	12,893	
Warehouse	1,988	825	101	33	26	104	22	34	99	28	1,982	5,243	
School	2,080	864	105	35	27	109	23	36	104	30	2,074	5,487	
College	8,228	3,416	417	139	106	431	92	141	410	117	8,204	21,701	
Health	5,307	2,203	269	89	68	278	60	91	265	76	5,292	13,997	
Lodging	9,006	3,739	456	152	116	472	101	154	449	128	8,980	23,753	
Misc	768	319	39	13	10	40	9	13	38	11	765	2,025	
Government	6,805	2,825	345	115	87	356	76	117	339	97	6,785	17,948	
TCU	741	308	38	12	10	39	8	13	37	11	739	1,954	
Construction	990	411	50	17	13	52	11	17	49	14	988	2,612	
Agriculture	8,746	3,631	443	147	112	458	98	150	436	125	8,721	23,068	

San Diego Gas and Electric Company
2008 California Gas Report - Commercial GN3
 Use Per Meter for New Customers therms

<u>Sector</u>	<u>Space</u>		<u>Water</u>		<u>Other</u>		<u>Cooking</u>	<u>Kitchen</u>	<u>AC</u>	<u>Dryer</u>	<u>Engine</u>	<u>Other</u>	<u>Total</u>
	<u>Heater</u>	<u>Heater</u>	<u>Cooktop</u>	<u>Griddle</u>	<u>Fryer</u>	<u>Equipment</u>	<u>Equipment</u>						
Office	5,400	17,920	708	3,655	3	1,461	270	3	3	3	3	32	29,446
Restaurant	2,225	7,385	292	1,506	1	602	111	1	1	1	1	13	12,135
Retail	1,871	6,209	245	1,266	1	506	93	1	1	1	1	11	10,202
Laundry	4,735	15,713	620	3,205	3	1,281	237	3	3	3	3	28	25,819
Warehouse	13,683	45,407	1,793	9,261	7	3,702	683	7	7	7	7	81	74,610
School	846	2,808	111	573	0	229	42	0	0	0	0	5	4,613
College	3,830	12,711	502	2,592	2	1,036	191	2	2	2	2	23	20,886
Health	0	1	0	0	0	0	0	0	0	0	0	0	1
Lodging	11,847	39,315	1,552	8,018	6	3,205	592	6	6	6	6	70	64,599
Misc	631	2,094	83	427	0	171	32	0	0	0	0	4	3,440
Government	11,138	36,961	1,459	7,538	6	3,013	556	6	6	6	6	66	60,732
TCU	64	213	8	43	0	17	3	0	0	0	0	0	349
Construction	0	1	0	0	0	0	0	0	0	0	0	0	1
Agriculture	0	1	0	0	0	0	0	0	0	0	0	0	1

San Diego Gas and Electric Company
2008 California Gas Report Commercial GN3
UEC, Equipment Cost and Efficiency Shares

Where Fuel = 1 (gas) and = 2 (electric), and
Efficiency =1 (stock), =2 (standard), =3 (high) and =4 (premium)

<u>Business Types</u>	<u>End Use</u>	<u>Fuel</u>	<u>Efficiency</u>	<u>uec</u> (therm/SqFt)	<u>Equipment Cost</u>	<u>efficiency shares</u>
Office	Space_Heat	1	1	0.3046	4.3149	0.65
Office	Space_Heat	1	2	0.2742	4.7464	0.3
Office	Space_Heat	1	3	0.2495	5.1779	0.04
Office	Space_Heat	1	4	0.2248	5.6094	0.01
Office	Space_Heat	2	1	6.2481	3.4519	1
Office	Space_Heat	2	2	5.6233	3.7971	0
Office	Space_Heat	2	3	5.1172	4.1423	0
Office	Space_Heat	2	4	4.6111	4.4875	0
Office	Water_Heat	1	1	0.0474	0.6712	0.4
Office	Water_Heat	1	2	0.0427	0.7384	0.5
Office	Water_Heat	1	3	0.0373	0.8055	0.08
Office	Water_Heat	1	4	0.032	0.8726	0.02
Office	Water_Heat	2	1	0.972	0.537	0.4
Office	Water_Heat	2	2	0.8748	0.5907	0.5
Office	Water_Heat	2	3	0.7654	0.6444	0.08
Office	Water_Heat	2	4	0.6561	0.6981	0.02
Office	Cooking	1	1	0.0346	0.4899	0.65
Office	Cooking	1	2	0.0311	0.5389	0.35
Office	Cooking	2	1	0.7094	0.3919	0.65
Office	Cooking	2	2	0.6385	0.4311	0.35
Office	AC_Compressor	1	1	0.1043	1.4773	0.65
Office	AC_Compressor	1	2	0.0939	1.6251	0.35
Office	AC_Compressor	2	1	2.1392	1.1819	0.65
Office	AC_Compressor	2	2	1.9253	1.3	0.35
Office	Other	1	1	0	0	1
Office	Other	2	1	0	0	0
Restaurant	Space_Heat	1	1	0.1177	1.5841	0.65
Restaurant	Space_Heat	1	2	0.1059	1.7425	0.3
Restaurant	Space_Heat	1	3	0.0964	1.9009	0.04
Restaurant	Space_Heat	1	4	0.0868	2.0593	0.01
Restaurant	Space_Heat	2	1	2.4134	1.2673	1
Restaurant	Space_Heat	2	2	2.1721	1.394	0
Restaurant	Space_Heat	2	3	1.9766	1.5207	0
Restaurant	Space_Heat	2	4	1.7811	1.6474	0
Restaurant	Water_Heat	1	1	0.8666	11.666	0.4
Restaurant	Water_Heat	1	2	0.7799	12.8326	0.5
Restaurant	Water_Heat	1	3	0.6824	13.9992	0.08
Restaurant	Water_Heat	1	4	0.5849	15.1658	0.02
Restaurant	Water_Heat	2	1	17.7736	9.3328	0.4
Restaurant	Water_Heat	2	2	15.9962	10.2661	0.5
Restaurant	Water_Heat	2	3	13.9967	11.1994	0.08
Restaurant	Water_Heat	2	4	11.9972	12.1327	0.02
Restaurant	Cook_top	1	1	1.1985	16.1343	0.65
Restaurant	Cook_top	1	2	1.0787	17.7477	0.35
Restaurant	Cook_top	2	1	24.5811	12.9074	0.65
Restaurant	Cook_top	2	2	22.123	14.1981	0.35
Restaurant	Fryer	1	1	1.0791	14.5274	0.65
Restaurant	Fryer	1	2	0.9712	15.9802	0.35
Restaurant	Fryer	2	1	22.133	11.622	0.65
Restaurant	Fryer	2	2	19.9197	12.7841	0.35
Restaurant	Griddle	1	1	0.9107	12.2603	0.65
Restaurant	Griddle	1	2	0.8197	13.4863	0.35
Restaurant	Griddle	2	1	18.6789	9.8082	0.65
Restaurant	Griddle	2	2	16.8111	10.789	0.35
Restaurant	Other_Cooking	1	1	0.9712	13.0747	0.65
Restaurant	Other_Cooking	1	2	0.8741	14.3822	0.35
Restaurant	Other_Cooking	2	1	19.9197	10.4598	0.65
Restaurant	Other_Cooking	2	2	17.9278	11.5057	0.35
Restaurant	AC_Compressor	1	1	0.2028	2.7306	0.65
Restaurant	AC_Compressor	1	2	0.1826	3.0036	0.35
Restaurant	AC_Compressor	2	1	4.1601	2.1844	0.65

<u>Business Types</u>	<u>End Use</u>	<u>Fuel</u>	<u>Efficiency</u>	<u>uec</u> (therm/SqFt)	<u>Equipment Cost</u>	<u>efficiency shares</u>
Restaurant	AC_Compressor	2	2	3.7441	2.4029	0.35
Restaurant	Other	1	1	0	0	1
Restaurant	Other	2	1	0	0	0
Retail	Space_Heat	1	1	0.2455	3.5122	0.65
Retail	Space_Heat	1	2	0.221	3.8634	0.3
Retail	Space_Heat	1	3	0.2011	4.2146	0.04
Retail	Space_Heat	1	4	0.1812	4.5658	0.01
Retail	Space_Heat	2	1	5.0356	2.8097	1
Retail	Space_Heat	2	2	4.532	3.0907	0
Retail	Space_Heat	2	3	4.1241	3.3717	0
Retail	Space_Heat	2	4	3.7163	3.6527	0
Retail	Water_Heat	1	1	0.1093	1.563	0.4
Retail	Water_Heat	1	2	0.0983	1.7193	0.5
Retail	Water_Heat	1	3	0.086	1.8756	0.08
Retail	Water_Heat	1	4	0.0738	2.0319	0.02
Retail	Water_Heat	2	1	2.2409	1.2504	0.4
Retail	Water_Heat	2	2	2.0168	1.3754	0.5
Retail	Water_Heat	2	3	1.7647	1.5004	0.08
Retail	Water_Heat	2	4	1.5126	1.6255	0.02
Retail	Cooking	1	1	0.3079	4.4039	0.65
Retail	Cooking	1	2	0.2771	4.8443	0.35
Retail	Cooking	2	1	6.3142	3.5231	0.65
Retail	Cooking	2	2	5.683	3.875	0.35
Retail	Other	1	1	0	0	1
Retail	Other	2	1	0	0	0
Laundry	Space_Heat	1	1	0.147	1.836	0.65
Laundry	Space_Heat	1	2	0.132	2.02	0.3
Laundry	Space_Heat	1	3	0.12	2.203	0.04
Laundry	Space_Heat	1	4	0.108	2.387	0.01
Laundry	Space_Heat	2	1	3.012	1.469	1
Laundry	Space_Heat	2	2	2.711	1.616	0
Laundry	Space_Heat	2	3	2.467	1.763	0
Laundry	Space_Heat	2	4	2.223	1.909	0
Laundry	Water_Heat	1	1	2.76	34.512	0.4
Laundry	Water_Heat	1	2	2.484	37.963	0.5
Laundry	Water_Heat	1	3	2.174	41.414	0.08
Laundry	Water_Heat	1	4	1.863	44.865	0.02
Laundry	Water_Heat	2	1	56.617	27.609	0.4
Laundry	Water_Heat	2	2	50.955	30.37	0.5
Laundry	Water_Heat	2	3	44.586	33.131	0.08
Laundry	Water_Heat	2	4	38.216	35.892	0.02
Laundry	Drying	1	1	14.937	186.738	0.65
Laundry	Drying	1	2	13.443	205.412	0.35
Laundry	Drying	2	1	306.348	149.39	0.65
Laundry	Drying	2	2	275.713	164.329	0.35
Laundry	Other	1	1	0	0	1
Laundry	Other	2	1	0	0	0
Warehouse	Space_Heat	1	1	0.621	7.909	0.65
Warehouse	Space_Heat	1	2	0.559	8.7	0.3
Warehouse	Space_Heat	1	3	0.509	9.491	0.04
Warehouse	Space_Heat	1	4	0.458	10.282	0.01
Warehouse	Space_Heat	2	1	12.739	6.327	1
Warehouse	Space_Heat	2	2	11.465	6.96	0
Warehouse	Space_Heat	2	3	10.433	7.593	0
Warehouse	Space_Heat	2	4	9.401	8.225	0
Warehouse	Water_Heat	1	1	0.205	2.608	0.4
Warehouse	Water_Heat	1	2	0.184	2.869	0.5
Warehouse	Water_Heat	1	3	0.161	3.13	0.08
Warehouse	Water_Heat	1	4	0.138	3.39	0.02
Warehouse	Water_Heat	2	1	4.2	2.086	0.4
Warehouse	Water_Heat	2	2	3.78	2.295	0.5
Warehouse	Water_Heat	2	3	3.308	2.504	0.08
Warehouse	Water_Heat	2	4	2.835	2.712	0.02
Warehouse	Engine	1	1	8.884	113.127	0.65
Warehouse	Engine	1	2	7.995	124.44	0.35
Warehouse	Engine	2	1	182.207	90.502	0.65
Warehouse	Engine	2	2	163.986	99.552	0.35
Warehouse	Other	1	1	0	0	1
Warehouse	Other	2	1	0	0	0
School	Space_Heat	1	1	0.092	1.225	0.65
School	Space_Heat	1	2	0.083	1.348	0.3

<u>Business Types</u>	<u>End Use</u>	<u>Fuel</u>	<u>Efficiency</u>	<u>uec</u> (therm/SqFt)	<u>Equipment Cost</u>	<u>efficiency shares</u>
School	Space_Heat	1	3	0.076	1.471	0.04
School	Space_Heat	1	4	0.068	1.593	0.01
School	Space_Heat	2	1	1.895	0.98	1
School	Space_Heat	2	2	1.705	1.078	0
School	Space_Heat	2	3	1.552	1.176	0
School	Space_Heat	2	4	1.398	1.274	0
School	Water_Heat	1	1	0.123	1.635	0.4
School	Water_Heat	1	2	0.111	1.799	0.5
School	Water_Heat	1	3	0.097	1.962	0.08
School	Water_Heat	1	4	0.083	2.126	0.02
School	Water_Heat	2	1	2.528	1.308	0.4
School	Water_Heat	2	2	2.276	1.439	0.5
School	Water_Heat	2	3	1.991	1.57	0.08
School	Water_Heat	2	4	1.707	1.701	0.02
School	Cook_top	1	1	0.046	0.61	0.65
School	Cook_top	1	2	0.041	0.671	0.35
School	Cook_top	2	1	0.943	0.488	0.65
School	Cook_top	2	2	0.849	0.537	0.35
School	Fryer	1	1	0.046	0.612	0.65
School	Fryer	1	2	0.041	0.673	0.35
School	Fryer	2	1	0.946	0.489	0.65
School	Fryer	2	2	0.851	0.538	0.35
School	Griddle	1	1	0.046	0.612	0.65
School	Griddle	1	2	0.041	0.673	0.35
School	Griddle	2	1	0.946	0.489	0.65
School	Griddle	2	2	0.851	0.538	0.35
School	Other_Cooking	1	1	0.046	0.61	0.65
School	Other_Cooking	1	2	0.041	0.671	0.35
School	Other_Cooking	2	1	0.943	0.488	0.65
School	Other_Cooking	2	2	0.849	0.537	0.35
School	AC_Compressor	1	1	0.065	0.866	0.65
School	AC_Compressor	1	2	0.059	0.953	0.35
School	AC_Compressor	2	1	1.339	0.693	0.65
School	AC_Compressor	2	2	1.205	0.762	0.35
School	Other	1	1	0	0	1
School	Other	2	1	0	0	0
College	Space_Heat	1	1	0.26643	3.14441	0.65
College	Space_Heat	1	2	0.23979	3.45885	0.3
College	Space_Heat	1	3	0.21821	3.77329	0.04
College	Space_Heat	1	4	0.19663	4.08773	0.01
College	Space_Heat	2	1	5.46443	2.51553	1
College	Space_Heat	2	2	4.91799	2.76708	0
College	Space_Heat	2	3	4.47537	3.01863	0
College	Space_Heat	2	4	4.03275	3.27018	0
College	Water_Heat	1	1	0.28715	3.38894	0.4
College	Water_Heat	1	2	0.25844	3.72784	0.5
College	Water_Heat	1	3	0.22613	4.06673	0.08
College	Water_Heat	1	4	0.19383	4.40563	0.02
College	Water_Heat	2	1	5.88939	2.71116	0.4
College	Water_Heat	2	2	5.30045	2.98227	0.5
College	Water_Heat	2	3	4.6379	3.25339	0.08
College	Water_Heat	2	4	3.97534	3.5245	0.02
College	Cook_top	1	1	0.0486	0.57358	0.65
College	Cook_top	1	2	0.04374	0.63093	0.35
College	Cook_top	2	1	0.99678	0.45886	0.65
College	Cook_top	2	2	0.8971	0.50475	0.35
College	Fryer	1	1	0.04857	0.57322	0.65
College	Fryer	1	2	0.04371	0.63055	0.35
College	Fryer	2	1	0.99616	0.45858	0.65
College	Fryer	2	2	0.89655	0.50444	0.35
College	Griddle	1	1	0.04857	0.57322	0.65
College	Griddle	1	2	0.04371	0.63055	0.35
College	Griddle	2	1	0.99616	0.45858	0.65
College	Griddle	2	2	0.89655	0.50444	0.35
College	Other_Cooking	1	1	0.0486	0.57358	0.65
College	Other_Cooking	1	2	0.04374	0.63093	0.35
College	Other_Cooking	2	1	0.99678	0.45886	0.65
College	Other_Cooking	2	2	0.8971	0.50475	0.35
College	AC_Compressor	1	1	0.11819	1.3949	0.65
College	AC_Compressor	1	2	0.10637	1.53439	0.35
College	AC_Compressor	2	1	2.4241	1.11592	0.65

<u>Business Types</u>	<u>End Use</u>	<u>Fuel</u>	<u>Efficiency</u>	<u>uec</u> (therm/SqFt)	<u>Equipment Cost</u>	<u>efficiency shares</u>
College	AC_Compressor	2	2	2.18169	1.22752	0.35
College	Other	1	1	0	0	1
College	Other	2	1	0	0	0
Health	Space_Heat	1	1	0.06894	0.8825	0.65
Health	Space_Heat	1	2	0.06205	0.97075	0.3
Health	Space_Heat	1	3	0.05646	1.059	0.04
Health	Space_Heat	1	4	0.05088	1.14725	0.01
Health	Space_Heat	2	1	1.41395	0.706	1
Health	Space_Heat	2	2	1.27255	0.7766	0
Health	Space_Heat	2	3	1.15802	0.8472	0
Health	Space_Heat	2	4	1.04349	0.9178	0
Health	Water_Heat	1	1	0.41709	5.33917	0.4
Health	Water_Heat	1	2	0.37538	5.87309	0.5
Health	Water_Heat	1	3	0.32846	6.407	0.08
Health	Water_Heat	1	4	0.28154	6.94092	0.02
Health	Water_Heat	2	1	8.55444	4.27134	0.4
Health	Water_Heat	2	2	7.699	4.69847	0.5
Health	Water_Heat	2	3	6.73662	5.1256	0.08
Health	Water_Heat	2	4	5.77425	5.55274	0.02
Health	Cook_top	1	1	0.26358	3.37409	0.65
Health	Cook_top	1	2	0.23722	3.7115	0.35
Health	Cook_top	2	1	5.40598	2.69927	0.65
Health	Cook_top	2	2	4.86538	2.9692	0.35
Health	Fryer	1	1	0.26358	3.37409	0.65
Health	Fryer	1	2	0.23722	3.7115	0.35
Health	Fryer	2	1	5.40598	2.69927	0.65
Health	Fryer	2	2	4.86538	2.9692	0.35
Health	Griddle	1	1	0.26358	3.37409	0.65
Health	Griddle	1	2	0.23722	3.7115	0.35
Health	Griddle	2	1	5.40598	2.69927	0.65
Health	Griddle	2	2	4.86538	2.9692	0.35
Health	Other_Cooking	1	1	0.02636	0.33743	0.65
Health	Other_Cooking	1	2	0.02372	0.37118	0.35
Health	Other_Cooking	2	1	0.54064	0.26995	0.65
Health	Other_Cooking	2	2	0.48657	0.29694	0.35
Health	Drying	1	1	0.14598	1.86871	0.65
Health	Drying	1	2	0.13138	2.05558	0.35
Health	Drying	2	1	2.99405	1.49497	0.65
Health	Drying	2	2	2.69465	1.64446	0.35
Health	AC_Compressor	1	1	0.11386	1.45749	0.65
Health	AC_Compressor	1	2	0.10247	1.60324	0.35
Health	AC_Compressor	2	1	2.3352	1.16599	0.65
Health	AC_Compressor	2	2	2.10168	1.28259	0.35
Health	Other	1	1	0	0	1
Health	Other	2	1	0	0	0
Lodging	Space_Heat	1	1	0.38698	4.85892	0.65
Lodging	Space_Heat	1	2	0.3483	5.3448	0.3
Lodging	Space_Heat	1	3	0.3169	5.8307	0.04
Lodging	Space_Heat	1	4	0.2856	6.3166	0.01
Lodging	Space_Heat	2	1	7.9369	3.8871	1
Lodging	Space_Heat	2	2	7.1432	4.2759	
Lodging	Space_Heat	2	3	6.5003	4.6646	
Lodging	Space_Heat	2	4	5.8574	5.0533	
Lodging	Water_Heat	1	1	0.6901	8.6651	0.4
Lodging	Water_Heat	1	2	0.6211	9.5317	0.5
Lodging	Water_Heat	1	3	0.5435	10.3982	0.08
Lodging	Water_Heat	1	4	0.4658	11.2647	0.02
Lodging	Water_Heat	2	1	14.1542	6.9321	0.4
Lodging	Water_Heat	2	2	12.7388	7.6253	0.5
Lodging	Water_Heat	2	3	11.1465	8.3185	0.08
Lodging	Water_Heat	2	4	9.5541	9.0118	0.02
Lodging	Cook_top	1	1	0.321	4.0305	0.65
Lodging	Cook_top	1	2	0.2889	4.4335	0.35
Lodging	Cook_top	2	1	6.5837	3.2244	0.65
Lodging	Cook_top	2	2	5.9253	3.5468	0.35
Lodging	Fryer	1	1	0.4183	5.2524	0.65
Lodging	Fryer	1	2	0.3765	5.7777	0.35
Lodging	Fryer	2	1	8.5797	4.2019	0.65
Lodging	Fryer	2	2	7.7217	4.6221	0.35
Lodging	Griddle	1	1	0.4183	5.2524	0.65
Lodging	Griddle	1	2	0.3765	5.7777	0.35

<u>Business Types</u>	<u>End Use</u>	<u>Fuel</u>	<u>Efficiency</u>	<u>uec</u> (therm/SqFt)	<u>Equipment Cost</u>	<u>efficiency shares</u>
Lodging	Griddle	2	1	8.5797	4.2019	0.65
Lodging	Griddle	2	2	7.7217	4.6221	0.35
Lodging	Other_Cooking	1	1	0.041	0.5148	0.65
Lodging	Other_Cooking	1	2	0.0369	0.5663	0.35
Lodging	Other_Cooking	2	1	0.8409	0.4118	0.65
Lodging	Other_Cooking	2	2	0.7568	0.453	0.35
Lodging	Drying	1	1	0.1725	2.1663	0.65
Lodging	Drying	1	2	0.1553	2.3829	0.35
Lodging	Drying	2	1	3.5386	1.733	0.65
Lodging	Drying	2	2	3.1847	1.9063	0.35
Lodging	AC_Compressor	1	1	0.057	0.7157	0.65
Lodging	AC_Compressor	1	2	0.0513	0.7872	0.35
Lodging	AC_Compressor	2	1	1.169	0.5725	0.65
Lodging	AC_Compressor	2	2	1.0521	0.6298	0.35
Lodging	Other	1	1	0	0	1
Lodging	Other	2	1	0	0	0
Misc	Space_Heat	1	1	0.1469	2.1455	0.65
Misc	Space_Heat	1	2	0.1322	2.36	0.3
Misc	Space_Heat	1	3	0.1203	2.5746	0.04
Misc	Space_Heat	1	4	0.1084	2.7891	0.01
Misc	Space_Heat	2	1	3.0121	1.7164	1
Misc	Space_Heat	2	2	2.7109	1.888	0
Misc	Space_Heat	2	3	2.4669	2.0597	0
Misc	Space_Heat	2	4	2.2229	2.2313	0
Misc	Water_Heat	1	1	0.2013	2.9412	0.4
Misc	Water_Heat	1	2	0.1812	3.2354	0.5
Misc	Water_Heat	1	3	0.1585	3.5295	0.08
Misc	Water_Heat	1	4	0.1359	3.8236	0.02
Misc	Water_Heat	2	1	4.1292	2.353	0.4
Misc	Water_Heat	2	2	3.7163	2.5883	0.5
Misc	Water_Heat	2	3	3.2518	2.8236	0.08
Misc	Water_Heat	2	4	2.7872	3.0589	0.02
Misc	Cook_top	1	1	0.043	0.6282	0.65
Misc	Cook_top	1	2	0.0387	0.691	0.35
Misc	Cook_top	2	1	0.8819	0.5025	0.65
Misc	Cook_top	2	2	0.7937	0.5528	0.35
Misc	Fryer	1	1	0.043	0.6285	0.65
Misc	Fryer	1	2	0.0387	0.6913	0.35
Misc	Fryer	2	1	0.8823	0.5028	0.65
Misc	Fryer	2	2	0.7941	0.5531	0.35
Misc	Griddle	1	1	0.043	0.6285	0.65
Misc	Griddle	1	2	0.0387	0.6913	0.35
Misc	Griddle	2	1	0.8823	0.5028	0.65
Misc	Griddle	2	2	0.7941	0.5531	0.35
Misc	Other_Cooking	1	1	0.043	0.6282	0.65
Misc	Other_Cooking	1	2	0.0387	0.691	0.35
Misc	Other_Cooking	2	1	0.8819	0.5025	0.65
Misc	Other_Cooking	2	2	0.7937	0.5528	0.35
Misc	AC_Compressor	1	1	0.1322	1.9306	0.65
Misc	AC_Compressor	1	2	0.1189	2.1237	0.35
Misc	AC_Compressor	2	1	2.7104	1.5445	0.65
Misc	AC_Compressor	2	2	2.4394	1.6989	0.35
Misc	Other	1	1	0	0	1
Misc	Other	2	1	0	0	0
Government	Space_Heat	1	1	0.3046	3.815	0.65
Government	Space_Heat	1	2	0.2742	4.1965	0.3
Government	Space_Heat	1	3	0.2495	4.578	0.04
Government	Space_Heat	1	4	0.2248	4.9595	0.01
Government	Space_Heat	2	1	6.2481	3.052	1
Government	Space_Heat	2	2	5.6233	3.3572	0
Government	Space_Heat	2	3	5.1172	3.6624	0
Government	Space_Heat	2	4	4.6111	3.9676	0
Government	Water_Heat	1	1	0.0474	0.5935	0.4
Government	Water_Heat	1	2	0.0427	0.6528	0.5
Government	Water_Heat	1	3	0.0373	0.7122	0.08
Government	Water_Heat	1	4	0.032	0.7715	0.02
Government	Water_Heat	2	1	0.972	0.4748	0.4
Government	Water_Heat	2	2	0.8748	0.5222	0.5
Government	Water_Heat	2	3	0.7654	0.5697	0.08
Government	Water_Heat	2	4	0.6561	0.6172	0.02
Government	Cook_top	1	1	0.0346	0.4333	0.65

<u>Business Types</u>	<u>End Use</u>	<u>Fuel</u>	<u>Efficiency</u>	<u>uec</u> (therm/SqFt)	<u>Equipment Cost</u>	<u>efficiency shares</u>
Government	Cook_top	1	2	0.0311	0.4766	0.35
Government	Cook_top	2	1	0.7096	0.3466	0.65
Government	Cook_top	2	2	0.6387	0.3813	0.35
Government	Fryer	1	1	0.0346	0.4332	0.65
Government	Fryer	1	2	0.0311	0.4765	0.35
Government	Fryer	2	1	0.7094	0.3465	0.65
Government	Fryer	2	2	0.6385	0.3812	0.35
Government	Griddle	1	1	0.0346	0.4332	0.65
Government	Griddle	1	2	0.0311	0.4765	0.35
Government	Griddle	2	1	0.7094	0.3465	0.65
Government	Griddle	2	2	0.6385	0.3812	0.35
Government	Other_Cooking	1	1	0.0346	0.4333	0.65
Government	Other_Cooking	1	2	0.0311	0.4766	0.35
Government	Other_Cooking	2	1	0.7096	0.3466	0.65
Government	Other_Cooking	2	2	0.6387	0.3813	0.35
Government	AC_Compressor	1	1	0.1043	1.3062	0.65
Government	AC_Compressor	1	2	0.0939	1.4368	0.35
Government	AC_Compressor	2	1	2.1392	1.0449	0.65
Government	AC_Compressor	2	2	1.9253	1.1494	0.35
Government	Other	1	1	0	0	1
Government	Other	2	1	0	0	0
TCU	Space_Heat	1	1	0.1469	1.8457	0.65
TCU	Space_Heat	1	2	0.1322	2.0303	0.3
TCU	Space_Heat	1	3	0.1203	2.2149	0.04
TCU	Space_Heat	1	4	0.1084	2.3995	0.01
TCU	Space_Heat	2	1	3.0121	1.4766	1
TCU	Space_Heat	2	2	2.7109	1.6242	0
TCU	Space_Heat	2	3	2.4669	1.7719	0
TCU	Space_Heat	2	4	2.2229	1.9196	0
TCU	Water_Heat	1	1	0.2013	2.5303	0.4
TCU	Water_Heat	1	2	0.1812	2.7833	0.5
TCU	Water_Heat	1	3	0.1585	3.0364	0.08
TCU	Water_Heat	1	4	0.1359	3.2894	0.02
TCU	Water_Heat	2	1	4.1292	2.0243	0.4
TCU	Water_Heat	2	2	3.7163	2.2267	0.5
TCU	Water_Heat	2	3	3.2518	2.4291	0.08
TCU	Water_Heat	2	4	2.7872	2.6315	0.02
TCU	Engine	1	1	2.4409	30.6768	0.65
TCU	Engine	1	2	2.1968	33.7445	0.35
TCU	Engine	2	1	50.0617	24.5415	0.65
TCU	Engine	2	2	45.0556	26.9956	0.35
TCU	Other	1	1	0	0	1
TCU	Other	2	1	0	0	0
Construction	Space_Heat	1	1	0.1469	2.2951	0.65
Construction	Space_Heat	1	2	0.1322	2.5246	0.3
Construction	Space_Heat	1	3	0.1203	2.7542	0.04
Construction	Space_Heat	1	4	0.1084	2.9837	0.01
Construction	Space_Heat	2	1	3.0121	1.8361	1
Construction	Space_Heat	2	2	2.7109	2.0197	0
Construction	Space_Heat	2	3	2.4669	2.2033	0
Construction	Space_Heat	2	4	2.2229	2.3869	0
Construction	Water_Heat	1	1	0.2013	3.1464	0.4
Construction	Water_Heat	1	2	0.1812	3.461	0.5
Construction	Water_Heat	1	3	0.1585	3.7757	0.08
Construction	Water_Heat	1	4	0.1359	4.0903	0.02
Construction	Water_Heat	2	1	4.1292	2.5171	0.4
Construction	Water_Heat	2	2	3.7163	2.7688	0.5
Construction	Water_Heat	2	3	3.2518	3.0205	0.08
Construction	Water_Heat	2	4	2.7872	3.2722	0.02
Construction	Other	1	1	0	0	1
Construction	Other	2	1	0	0	0
Agriculture	Space_Heat	1	1	0.1469	1.6583	0.65
Agriculture	Space_Heat	1	2	0.1322	1.8242	0.3
Agriculture	Space_Heat	1	3	0.1203	1.99	0.04
Agriculture	Space_Heat	1	4	0.1084	2.1558	0.01
Agriculture	Space_Heat	2	1	3.0121	1.3267	1
Agriculture	Space_Heat	2	2	2.7109	1.4593	0
Agriculture	Space_Heat	2	3	2.4669	1.592	0
Agriculture	Space_Heat	2	4	2.2229	1.7247	0
Agriculture	Water_Heat	1	1	0.2013	2.2734	0.4
Agriculture	Water_Heat	1	2	0.1812	2.5008	0.5

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

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<u>Business Types</u>	<u>End Use</u>	<u>Fuel</u>	<u>Share</u>
Office	Space_Heat	1	0.8555
Office	Space_Heat	2	0.1445
Office	Water_Heat	1	0.16581
Office	Water_Heat	2	0.83419
Office	Cooking	1	0.02069
Office	Cooking	2	0.97931
Office	AC_Compressor	1	0.06
Office	AC_Compressor	2	0.94
Office	Other	1	1
Restaurant	Space_Heat	1	0.59046
Restaurant	Space_Heat	2	0.40954
Restaurant	Water_Heat	1	0.90204
Restaurant	Water_Heat	2	0.09796
Restaurant	Cook_top	1	0.97733
Restaurant	Cook_top	2	0.02267
Restaurant	Fryer	1	0.90535
Restaurant	Fryer	2	0.09465
Restaurant	Griddle	1	0.97038
Restaurant	Griddle	2	0.02962
Restaurant	Other_Cooking	1	0.66
Restaurant	Other_Cooking	2	0.34
Restaurant	AC_Compressor	1	0.06
Restaurant	AC_Compressor	2	0.94
Restaurant	Other	1	1
Retail	Space_Heat	1	0.51751
Retail	Space_Heat	2	0.48249
Retail	Water_Heat	1	0.31008
Retail	Water_Heat	2	0.68992
Retail	Cooking	1	0.09367
Retail	Cooking	2	0.90633
Retail	Other	1	1
Laundry	Space_Heat	1	0.57692
Laundry	Space_Heat	2	0.42308
Laundry	Water_Heat	1	0.67647
Laundry	Water_Heat	2	0.32353
Laundry	Drying	1	0.6
Laundry	Drying	2	0.4
Laundry	Other	1	1
Warehouse	Space_Heat	1	0.43723
Warehouse	Space_Heat	2	0.56277
Warehouse	Water_Heat	1	0.07159
Warehouse	Water_Heat	2	0.92841
Warehouse	Engine	1	0.06
Warehouse	Engine	2	0.94
Warehouse	Other	1	1
School	Space_Heat	1	0.75284
School	Space_Heat	2	0.24716
School	Water_Heat	1	0.75843
School	Water_Heat	2	0.24157
School	Cook_top	1	0.42857
School	Cook_top	2	0.57143
School	Fryer	1	0.42857
School	Fryer	2	0.57143
School	Griddle	1	0.42857
School	Griddle	2	0.57143
School	Other_Cooking	1	0.42857
School	Other_Cooking	2	0.57143
School	AC_Compressor	1	0.06
School	AC_Compressor	2	0.94
School	Other	1	1
College	Space_Heat	1	0.33028
College	Space_Heat	2	0.66972
College	Water_Heat	1	0.81675

<u>Business Types</u>	<u>End Use</u>	<u>Fuel</u>	<u>Share</u>
College	Water_Heat	2	0.18325
College	Cook_top	1	0.04801
College	Cook_top	2	0.95199
College	Fryer	1	0.04801
College	Fryer	2	0.95199
College	Griddle	1	0.04801
College	Griddle	2	0.95199
College	Other_Cooking	1	0.04801
College	Other_Cooking	2	0.95199
College	AC_Compressor	1	0.06
College	AC_Compressor	2	0.94
College	Other	1	1
Health	Space_Heat	1	0.66026
Health	Space_Heat	2	0.33974
Health	Water_Heat	1	0.8242
Health	Water_Heat	2	0.1758
Health	Cook_top	1	0.09487
Health	Cook_top	2	0.90513
Health	Fryer	1	0.09487
Health	Fryer	2	0.90513
Health	Griddle	1	0.09487
Health	Griddle	2	0.90513
Health	Other_Cooking	1	0.66
Health	Other_Cooking	2	0.34
Health	Drying	1	0.6
Health	Drying	2	0.4
Health	AC_Compressor	1	0.06
Health	AC_Compressor	2	0.94
Health	Other	1	1
Lodging	Space_Heat	1	0.27151
Lodging	Space_Heat	2	0.72849
Lodging	Water_Heat	1	0.98948
Lodging	Water_Heat	2	0.01052
Lodging	Cook_top	1	0.44958
Lodging	Cook_top	2	0.55042
Lodging	Fryer	1	0.44958
Lodging	Fryer	2	0.55042
Lodging	Griddle	1	0.44958
Lodging	Griddle	2	0.55042
Lodging	Other_Cooking	1	0.44958
Lodging	Other_Cooking	2	0.55042
Lodging	Drying	1	0.6
Lodging	Drying	2	0.4
Lodging	AC_Compressor	1	0.06
Lodging	AC_Compressor	2	0.94
Lodging	Other	1	1
Misc	Space_Heat	1	0.54964
Misc	Space_Heat	2	0.45036
Misc	Water_Heat	1	0.55691
Misc	Water_Heat	2	0.44309
Misc	Cook_top	1	0.97733
Misc	Cook_top	2	0.02267
Misc	Fryer	1	0.90535
Misc	Fryer	2	0.09465
Misc	Griddle	1	0.97038
Misc	Griddle	2	0.02962
Misc	Other_Cooking	1	0.66
Misc	Other_Cooking	2	0.34
Misc	AC_Compressor	1	0.06
Misc	AC_Compressor	2	0.94
Misc	Other	1	1
Government	Space_Heat	1	0.8555
Government	Space_Heat	2	0.1445
Government	Water_Heat	1	0.16581
Government	Water_Heat	2	0.83419
Government	Cook_top	1	0.97733
Government	Cook_top	2	0.02267
Government	Fryer	1	0.90535
Government	Fryer	2	0.09465
Government	Griddle	1	0.97038

<u>Business Types</u>	<u>End Use</u>	<u>Fuel</u>	<u>Share</u>
Government	Griddle	2	0.02962
Government	Other_Cooking	1	0.66
Government	Other_Cooking	2	0.34
Government	AC_Compressor	1	0.06
Government	AC_Compressor	2	0.94
Government	Other	1	1
TCU	Space_Heat	1	0.57692
TCU	Space_Heat	2	0.42308
TCU	Water_Heat	1	0.67647
TCU	Water_Heat	2	0.32353
TCU	Engine	1	0.06
TCU	Engine	2	0.94
TCU	Other	1	1
Construction	Space_Heat	1	0.57692
Construction	Space_Heat	2	0.42308
Construction	Water_Heat	1	0.67647
Construction	Water_Heat	2	0.32353
Construction	Other	1	1
Agriculture	Space_Heat	1	0.57692
Agriculture	Space_Heat	2	0.42308
Agriculture	Water_Heat	1	0.67647
Agriculture	Water_Heat	2	0.32353
Agriculture	Drying	1	1
Agriculture	Drying	2	0
Agriculture	Engine	1	0.06
Agriculture	Engine	2	0.94
Agriculture	Other	1	1
Grocery	Space_Heat	1	0.74652
Grocery	Space_Heat	2	0.25348
Grocery	Water_Heat	1	0.70846
Grocery	Water_Heat	2	0.29154
Grocery	Cook_top	1	0.35627
Grocery	Cook_top	2	0.64373
Grocery	Fryer	1	0.35627
Grocery	Fryer	2	0.64373
Grocery	Griddle	1	0.35627
Grocery	Griddle	2	0.64373
Grocery	Other_Cooking	1	0.35627
Grocery	Other_Cooking	2	0.64373
Grocery	AC_Compressor	1	0.06
Grocery	AC_Compressor	2	0.94
Grocery	Other	1	1

San Diego Gas and Electric Company
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Efficiency Shares

bname	nname	fname	Stock	Standard	High	Premium
Agriculture	Drying	Electric	0.65	0.35	N/A	N/A
Agriculture	Drying	Natural_Gas	0.65	0.35	N/A	N/A
Agriculture	Engine	Electric	0.65	0.35	N/A	N/A
Agriculture	Engine	Natural_Gas	0.65	0.35	N/A	N/A
Agriculture	Other	Natural_Gas	1	N/A	N/A	N/A
Agriculture	Space_Heat	Electric	1	N/A	N/A	N/A
Agriculture	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Agriculture	Water_Heat	Electric	0.4	0.5	0.08	0.02
Agriculture	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
College	AC_Compressor	Electric	0.65	0.35	N/A	N/A
College	AC_Compressor	Natural_Gas	0.65	0.35	N/A	N/A
College	Cook_top	Electric	0.65	0.35	N/A	N/A
College	Cook_top	Natural_Gas	0.65	0.35	N/A	N/A
College	Fryer	Electric	0.65	0.35	N/A	N/A
College	Fryer	Natural_Gas	0.65	0.35	N/A	N/A
College	Griddle	Electric	0.65	0.35	N/A	N/A
College	Griddle	Natural_Gas	0.65	0.35	N/A	N/A
College	Other	Natural_Gas	1	N/A	N/A	N/A
College	Other_Cooking	Electric	0.65	0.35	N/A	N/A
College	Other_Cooking	Natural_Gas	0.65	0.35	N/A	N/A
College	Space_Heat	Electric	1	N/A	N/A	N/A
College	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
College	Water_Heat	Electric	0.4	0.5	0.08	0.02
College	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Construction	Other	Natural_Gas	1	N/A	N/A	N/A
Construction	Space_Heat	Electric	1	N/A	N/A	N/A
Construction	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Construction	Water_Heat	Electric	0.4	0.5	0.08	0.02
Construction	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Government	AC_Compressor	Electric	0.65	0.35	N/A	N/A
Government	AC_Compressor	Natural_Gas	0.65	0.35	N/A	N/A
Government	Cook_top	Electric	0.65	0.35	N/A	N/A

bname	nname	fname	Stock	Standard	High	Premium
Government	Cook_top	Natural_Gas	0.65	0.35	N/A	N/A
Government	Fryer	Electric	0.65	0.35	N/A	N/A
Government	Fryer	Natural_Gas	0.65	0.35	N/A	N/A
Government	Griddle	Electric	0.65	0.35	N/A	N/A
Government	Griddle	Natural_Gas	0.65	0.35	N/A	N/A
Government	Other	Natural_Gas	1	N/A	N/A	N/A
Government	Other_Cooking	Electric	0.65	0.35	N/A	N/A
Government	Other_Cooking	Natural_Gas	0.65	0.35	N/A	N/A
Government	Space_Heat	Electric	1	N/A	N/A	N/A
Government	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Government	Water_Heat	Electric	0.4	0.5	0.08	0.02
Government	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Grocery	AC_Compressor	Electric	0.65	0.35	N/A	N/A
Grocery	AC_Compressor	Natural_Gas	0.65	0.35	N/A	N/A
Grocery	Cook_top	Electric	0.65	0.35	N/A	N/A
Grocery	Cook_top	Natural_Gas	0.65	0.35	N/A	N/A
Grocery	Fryer	Electric	0.65	0.35	N/A	N/A
Grocery	Fryer	Natural_Gas	0.65	0.35	N/A	N/A
Grocery	Griddle	Electric	0.65	0.35	N/A	N/A
Grocery	Griddle	Natural_Gas	0.65	0.35	N/A	N/A
Grocery	Other	Natural_Gas	1	N/A	N/A	N/A
Grocery	Other_Cooking	Electric	0.65	0.35	N/A	N/A
Grocery	Other_Cooking	Natural_Gas	0.65	0.35	N/A	N/A
Grocery	Space_Heat	Electric	1	N/A	N/A	N/A
Grocery	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Grocery	Water_Heat	Electric	0.4	0.5	0.08	0.02
Grocery	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Health	AC_Compressor	Electric	0.65	0.35	N/A	N/A
Health	AC_Compressor	Natural_Gas	0.65	0.35	N/A	N/A
Health	Cook_top	Electric	0.65	0.35	N/A	N/A
Health	Cook_top	Natural_Gas	0.65	0.35	N/A	N/A
Health	Drying	Electric	0.65	0.35	N/A	N/A
Health	Drying	Natural_Gas	0.65	0.35	N/A	N/A
Health	Fryer	Electric	0.65	0.35	N/A	N/A
Health	Fryer	Natural_Gas	0.65	0.35	N/A	N/A
Health	Griddle	Electric	0.65	0.35	N/A	N/A

bname	nname	fname	Stock	Standard	High	Premium
Health	Griddle	Natural_Gas	0.65	0.35	N/A	N/A
Health	Other	Natural_Gas	1	N/A	N/A	N/A
Health	Other_Cooking	Electric	0.65	0.35	N/A	N/A
Health	Other_Cooking	Natural_Gas	0.65	0.35	N/A	N/A
Health	Space_Heat	Electric	1	N/A	N/A	N/A
Health	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Health	Water_Heat	Electric	0.4	0.5	0.08	0.02
Health	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Laundry	Drying	Electric	0.65	0.35	N/A	N/A
Laundry	Drying	Natural_Gas	0.65	0.35	N/A	N/A
Laundry	Other	Natural_Gas	1	N/A	N/A	N/A
Laundry	Space_Heat	Electric	1	N/A	N/A	N/A
Laundry	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Laundry	Water_Heat	Electric	0.4	0.5	0.08	0.02
Laundry	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Lodging	AC_Compressor	Electric	0.65	0.35	N/A	N/A
Lodging	AC_Compressor	Natural_Gas	0.65	0.35	N/A	N/A
Lodging	Cook_top	Electric	0.65	0.35	N/A	N/A
Lodging	Cook_top	Natural_Gas	0.65	0.35	N/A	N/A
Lodging	Drying	Electric	0.65	0.35	N/A	N/A
Lodging	Drying	Natural_Gas	0.65	0.35	N/A	N/A
Lodging	Fryer	Electric	0.65	0.35	N/A	N/A
Lodging	Fryer	Natural_Gas	0.65	0.35	N/A	N/A
Lodging	Griddle	Electric	0.65	0.35	N/A	N/A
Lodging	Griddle	Natural_Gas	0.65	0.35	N/A	N/A
Lodging	Other	Natural_Gas	1	N/A	N/A	N/A
Lodging	Other_Cooking	Electric	0.65	0.35	N/A	N/A
Lodging	Other_Cooking	Natural_Gas	0.65	0.35	N/A	N/A
Lodging	Space_Heat	Electric	1	N/A	N/A	N/A
Lodging	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Lodging	Water_Heat	Electric	0.4	0.5	0.08	0.02
Lodging	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Misc	AC_Compressor	Electric	0.65	0.35	N/A	N/A
Misc	AC_Compressor	Natural_Gas	0.65	0.35	N/A	N/A
Misc	Cook_top	Electric	0.65	0.35	N/A	N/A
Misc	Cook_top	Natural_Gas	0.65	0.35	N/A	N/A

bname	nname	fname	Stock	Standard	High	Premium
Misc	Fryer	Electric	0.65	0.35	N/A	N/A
Misc	Fryer	Natural_Gas	0.65	0.35	N/A	N/A
Misc	Griddle	Electric	0.65	0.35	N/A	N/A
Misc	Griddle	Natural_Gas	0.65	0.35	N/A	N/A
Misc	Other	Natural_Gas	1	N/A	N/A	N/A
Misc	Other_Cooking	Electric	0.65	0.35	N/A	N/A
Misc	Other_Cooking	Natural_Gas	0.65	0.35	N/A	N/A
Misc	Space_Heat	Electric	1	N/A	N/A	N/A
Misc	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Misc	Water_Heat	Electric	0.4	0.5	0.08	0.02
Misc	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Office	AC_Compressor	Electric	0.65	0.35	N/A	N/A
Office	AC_Compressor	Natural_Gas	0.65	0.35	N/A	N/A
Office	Cooking	Electric	0.65	0.35	N/A	N/A
Office	Cooking	Natural_Gas	0.65	0.35	N/A	N/A
Office	Other	Natural_Gas	1	N/A	N/A	N/A
Office	Space_Heat	Electric	1	N/A	N/A	N/A
Office	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Office	Water_Heat	Electric	0.4	0.5	0.08	0.02
Office	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Restaurant	AC_Compressor	Electric	0.65	0.35	N/A	N/A
Restaurant	AC_Compressor	Natural_Gas	0.65	0.35	N/A	N/A
Restaurant	Cook_top	Electric	0.65	0.35	N/A	N/A
Restaurant	Cook_top	Natural_Gas	0.65	0.35	N/A	N/A
Restaurant	Fryer	Electric	0.65	0.35	N/A	N/A
Restaurant	Fryer	Natural_Gas	0.65	0.35	N/A	N/A
Restaurant	Griddle	Electric	0.65	0.35	N/A	N/A
Restaurant	Griddle	Natural_Gas	0.65	0.35	N/A	N/A
Restaurant	Other	Natural_Gas	1	N/A	N/A	N/A
Restaurant	Other_Cooking	Electric	0.65	0.35	N/A	N/A
Restaurant	Other_Cooking	Natural_Gas	0.65	0.35	N/A	N/A
Restaurant	Space_Heat	Electric	1	N/A	N/A	N/A
Restaurant	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Restaurant	Water_Heat	Electric	0.4	0.5	0.08	0.02
Restaurant	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Retail	Cooking	Electric	0.65	0.35	N/A	N/A

bname	nname	fname	Stock	Standard	High	Premium
Retail	Cooking	Natural_Gas	0.65	0.35	N/A	N/A
Retail	Other	Natural_Gas	1	N/A	N/A	N/A
Retail	Space_Heat	Electric	1	N/A	N/A	N/A
Retail	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Retail	Water_Heat	Electric	0.4	0.5	0.08	0.02
Retail	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
School	AC_Compressor	Electric	0.65	0.35	N/A	N/A
School	AC_Compressor	Natural_Gas	0.65	0.35	N/A	N/A
School	Cook_top	Electric	0.65	0.35	N/A	N/A
School	Cook_top	Natural_Gas	0.65	0.35	N/A	N/A
School	Fryer	Electric	0.65	0.35	N/A	N/A
School	Fryer	Natural_Gas	0.65	0.35	N/A	N/A
School	Griddle	Electric	0.65	0.35	N/A	N/A
School	Griddle	Natural_Gas	0.65	0.35	N/A	N/A
School	Other	Natural_Gas	1	N/A	N/A	N/A
School	Other_Cooking	Electric	0.65	0.35	N/A	N/A
School	Other_Cooking	Natural_Gas	0.65	0.35	N/A	N/A
School	Space_Heat	Electric	1	N/A	N/A	N/A
School	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
School	Water_Heat	Electric	0.4	0.5	0.08	0.02
School	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
TCU	Engine	Electric	0.65	0.35	N/A	N/A
TCU	Engine	Natural_Gas	0.65	0.35	N/A	N/A
TCU	Other	Natural_Gas	1	N/A	N/A	N/A
TCU	Space_Heat	Electric	1	N/A	N/A	N/A
TCU	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
TCU	Water_Heat	Electric	0.4	0.5	0.08	0.02
TCU	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02
Warehouse	Engine	Electric	0.65	0.35	N/A	N/A
Warehouse	Engine	Natural_Gas	0.65	0.35	N/A	N/A
Warehouse	Other	Natural_Gas	1	N/A	N/A	N/A
Warehouse	Space_Heat	Electric	1	N/A	N/A	N/A
Warehouse	Space_Heat	Natural_Gas	0.65	0.3	0.04	0.01
Warehouse	Water_Heat	Electric	0.4	0.5	0.08	0.02
Warehouse	Water_Heat	Natural_Gas	0.4	0.5	0.08	0.02

2008 California Gas Report - Commercial GN3 Saturation Rate

<u>Business Type</u>	<u>End Use</u>	<u>saturation</u>
Office	Space_Heat	0.872
Office	Water_Heat	0.7
Office	Cooking	0.082
Office	AC_Compressor	0.931
Office	Other	1
Restaurant	Space_Heat	0.818
Restaurant	Water_Heat	0.96
Restaurant	Cook_top	0.75
Restaurant	Fryer	0.729
Restaurant	Griddle	0.574
Restaurant	Other_Cooking	0.9
Restaurant	AC_Compressor	0.871
Restaurant	Other	1
Retail	Space_Heat	0.771
Retail	Water_Heat	0.62
Retail	Cooking	0.245
Retail	Other	1
Laundry	Space_Heat	0.72
Laundry	Water_Heat	1
Laundry	Drying	1
Laundry	Other	1
Warehouse	Space_Heat	0.231
Warehouse	Water_Heat	0.88
Warehouse	Engine	0.25
Warehouse	Other	1
School	Space_Heat	0.967
School	Water_Heat	0.9
School	Cook_top	0.147
School	Fryer	0.147
School	Griddle	0.147
School	Other_Cooking	0.147
School	AC_Compressor	0.885
School	Other	1
College	Space_Heat	0.763
College	Water_Heat	0.955
College	Cook_top	0.147
College	Fryer	0.147
College	Griddle	0.147
College	Other_Cooking	0.147
College	AC_Compressor	0.885
College	Other	1
Health	Space_Heat	0.936
Health	Water_Heat	1
Health	Cook_top	0.102
Health	Fryer	0.102
Health	Griddle	0.102
Health	Other_Cooking	0.102
Health	Drying	0.82
Health	AC_Compressor	0.792
Health	Other	1
Lodging	Space_Heat	0.895
Lodging	Water_Heat	1
Lodging	Cook_top	0.084
Lodging	Fryer	0.084
Lodging	Griddle	0.084
Lodging	Other_Cooking	0.084
Lodging	Drying	0.82
Lodging	AC_Compressor	0.795
Lodging	Other	1
Misc	Space_Heat	0.695
Misc	Water_Heat	0.69
Misc	Cook_top	0.021
Misc	Fryer	0.021
Misc	Griddle	0.021
Misc	Other_Cooking	0.021
Misc	AC_Compressor	0.731
Misc	Other	1
Government	Space_Heat	0.872

<u>Business Type</u>	<u>End Use</u>	<u>saturation</u>
Government	Water_Heat	0.7
Government	Cook_top	0.196
Government	Fryer	0.196
Government	Griddle	0.196
Government	Other_Cooking	0.196
Government	AC_Compressor	0.888
Government	Other	1
TCU	Space_Heat	0.72
TCU	Water_Heat	0.69
TCU	Engine	0.5
TCU	Other	1
Construction	Space_Heat	0.72
Construction	Water_Heat	0.69
Construction	Other	1
Agriculture	Space_Heat	0.72
Agriculture	Water_Heat	0.69
Agriculture	Drying	1
Agriculture	Engine	0.5
Agriculture	Other	1
Grocery	Space_Heat	0.647
Grocery	Water_Heat	0.93
Grocery	Cook_top	0.245
Grocery	Fryer	0.245
Grocery	Griddle	0.245
Grocery	Other_Cooking	0.245
Grocery	AC_Compressor	0.856
Grocery	Other	1

**2008 California Gas Report - Commercial GN3
Equipment Cost Data**

b	n	f	e	bname	nname	EQcost
	1	1	1	1 Office	Space_Heat	4.3149
	1	1	1	2 Office	Space_Heat	4.7464
	1	1	1	3 Office	Space_Heat	5.1779
	1	1	1	4 Office	Space_Heat	5.6094
	1	1	2	1 Office	Space_Heat	3.4519
	1	1	2	2 Office	Space_Heat	3.7971
	1	1	2	3 Office	Space_Heat	4.1423
	1	1	2	4 Office	Space_Heat	4.4875
	1	2	1	1 Office	Water_Heat	0.6712
	1	2	1	2 Office	Water_Heat	0.7384
	1	2	1	3 Office	Water_Heat	0.8055
	1	2	1	4 Office	Water_Heat	0.8726
	1	2	2	1 Office	Water_Heat	0.537
	1	2	2	2 Office	Water_Heat	0.5907
	1	2	2	3 Office	Water_Heat	0.6444
	1	2	2	4 Office	Water_Heat	0.6981
	1	3	1	1 Office	Cooking	0.4899
	1	3	1	2 Office	Cooking	0.5389
	1	3	2	1 Office	Cooking	0.3919
	1	3	2	2 Office	Cooking	0.4311
	1	10	1	1 Office	AC_Compressor	1.4773
	1	10	1	2 Office	AC_Compressor	1.6251
	1	10	2	1 Office	AC_Compressor	1.1819
	1	10	2	2 Office	AC_Compressor	1.3
	1	11	1	1 Office	Other	0
	1	11	2	1 Office	Other	0
	2	1	1	1 Restaurant	Space_Heat	1.5841
	2	1	1	2 Restaurant	Space_Heat	1.7425
	2	1	1	3 Restaurant	Space_Heat	1.9009
	2	1	1	4 Restaurant	Space_Heat	2.0593
	2	1	2	1 Restaurant	Space_Heat	1.2673
	2	1	2	2 Restaurant	Space_Heat	1.394
	2	1	2	3 Restaurant	Space_Heat	1.5207
	2	1	2	4 Restaurant	Space_Heat	1.6474
	2	2	1	1 Restaurant	Water_Heat	11.666
	2	2	1	2 Restaurant	Water_Heat	12.8326
	2	2	1	3 Restaurant	Water_Heat	13.9992
	2	2	1	4 Restaurant	Water_Heat	15.1658
	2	2	2	1 Restaurant	Water_Heat	9.3328
	2	2	2	2 Restaurant	Water_Heat	10.2661
	2	2	2	3 Restaurant	Water_Heat	11.1994
	2	2	2	4 Restaurant	Water_Heat	12.1327
	2	4	1	1 Restaurant	Cook_top	16.1343
	2	4	1	2 Restaurant	Cook_top	17.7477
	2	4	2	1 Restaurant	Cook_top	12.9074
	2	4	2	2 Restaurant	Cook_top	14.1981
	2	5	1	1 Restaurant	Fryer	14.5274
	2	5	1	2 Restaurant	Fryer	15.9802
	2	5	2	1 Restaurant	Fryer	11.622
	2	5	2	2 Restaurant	Fryer	12.7841
	2	6	1	1 Restaurant	Griddle	12.2603
	2	6	1	2 Restaurant	Griddle	13.4863
	2	6	2	1 Restaurant	Griddle	9.8082
	2	6	2	2 Restaurant	Griddle	10.789
	2	7	1	1 Restaurant	Other_Cooking	13.0747
	2	7	1	2 Restaurant	Other_Cooking	14.3822
	2	7	2	1 Restaurant	Other_Cooking	10.4598
	2	7	2	2 Restaurant	Other_Cooking	11.5057
	2	10	1	1 Restaurant	AC_Compressor	2.7306
	2	10	1	2 Restaurant	AC_Compressor	3.0036
	2	10	2	1 Restaurant	AC_Compressor	2.1844
	2	10	2	2 Restaurant	AC_Compressor	2.4029
	2	11	1	1 Restaurant	Other	0
	2	11	2	1 Restaurant	Other	0
	3	1	1	1 Retail	Space_Heat	3.5122
	3	1	1	2 Retail	Space_Heat	3.8634
	3	1	1	3 Retail	Space_Heat	4.2146
	3	1	1	4 Retail	Space_Heat	4.5658
	3	1	2	1 Retail	Space_Heat	2.8097
	3	1	2	2 Retail	Space_Heat	3.0907

b	SDG&E: n	2008 California f	Gas Report e	Workpapers-REDACTED bname	nname	EQcost
	3	1	2	3 Retail	Space_Heat	3.3717
	3	1	2	4 Retail	Space_Heat	3.6527
	3	2	1	1 Retail	Water_Heat	1.563
	3	2	1	2 Retail	Water_Heat	1.7193
	3	2	1	3 Retail	Water_Heat	1.8756
	3	2	1	4 Retail	Water_Heat	2.0319
	3	2	2	1 Retail	Water_Heat	1.2504
	3	2	2	2 Retail	Water_Heat	1.3754
	3	2	2	3 Retail	Water_Heat	1.5004
	3	2	2	4 Retail	Water_Heat	1.6255
	3	3	1	1 Retail	Cooking	4.4039
	3	3	1	2 Retail	Cooking	4.8443
	3	3	2	1 Retail	Cooking	3.5231
	3	3	2	2 Retail	Cooking	3.875
	3	11	1	1 Retail	Other	0
	3	11	2	1 Retail	Other	0
	4	1	1	1 Laundry	Space_Heat	1.836
	4	1	1	2 Laundry	Space_Heat	2.02
	4	1	1	3 Laundry	Space_Heat	2.203
	4	1	1	4 Laundry	Space_Heat	2.387
	4	1	2	1 Laundry	Space_Heat	1.469
	4	1	2	2 Laundry	Space_Heat	1.616
	4	1	2	3 Laundry	Space_Heat	1.763
	4	1	2	4 Laundry	Space_Heat	1.909
	4	2	1	1 Laundry	Water_Heat	34.512
	4	2	1	2 Laundry	Water_Heat	37.963
	4	2	1	3 Laundry	Water_Heat	41.414
	4	2	1	4 Laundry	Water_Heat	44.865
	4	2	2	1 Laundry	Water_Heat	27.609
	4	2	2	2 Laundry	Water_Heat	30.37
	4	2	2	3 Laundry	Water_Heat	33.131
	4	2	2	4 Laundry	Water_Heat	35.892
	4	8	1	1 Laundry	Drying	186.738
	4	8	1	2 Laundry	Drying	205.412
	4	8	2	1 Laundry	Drying	149.39
	4	8	2	2 Laundry	Drying	164.329
	4	11	1	1 Laundry	Other	0
	4	11	2	1 Laundry	Other	0
	5	1	1	1 Warehouse	Space_Heat	7.909
	5	1	1	2 Warehouse	Space_Heat	8.7
	5	1	1	3 Warehouse	Space_Heat	9.491
	5	1	1	4 Warehouse	Space_Heat	10.282
	5	1	2	1 Warehouse	Space_Heat	6.327
	5	1	2	2 Warehouse	Space_Heat	6.96
	5	1	2	3 Warehouse	Space_Heat	7.593
	5	1	2	4 Warehouse	Space_Heat	8.225
	5	2	1	1 Warehouse	Water_Heat	2.608
	5	2	1	2 Warehouse	Water_Heat	2.869
	5	2	1	3 Warehouse	Water_Heat	3.13
	5	2	1	4 Warehouse	Water_Heat	3.39
	5	2	2	1 Warehouse	Water_Heat	2.086
	5	2	2	2 Warehouse	Water_Heat	2.295
	5	2	2	3 Warehouse	Water_Heat	2.504
	5	2	2	4 Warehouse	Water_Heat	2.712
	5	9	1	1 Warehouse	Engine	113.127
	5	9	1	2 Warehouse	Engine	124.44
	5	9	2	1 Warehouse	Engine	90.502
	5	9	2	2 Warehouse	Engine	99.552
	5	11	1	1 Warehouse	Other	0
	5	11	2	1 Warehouse	Other	0
	6	1	1	1 School	Space_Heat	1.225
	6	1	1	2 School	Space_Heat	1.348
	6	1	1	3 School	Space_Heat	1.471
	6	1	1	4 School	Space_Heat	1.593
	6	1	2	1 School	Space_Heat	0.98
	6	1	2	2 School	Space_Heat	1.078
	6	1	2	3 School	Space_Heat	1.176
	6	1	2	4 School	Space_Heat	1.274
	6	2	1	1 School	Water_Heat	1.635
	6	2	1	2 School	Water_Heat	1.799
	6	2	1	3 School	Water_Heat	1.962
	6	2	1	4 School	Water_Heat	2.126
	6	2	2	1 School	Water_Heat	1.308
	6	2	2	2 School	Water_Heat	1.439
	6	2	2	3 School	Water_Heat	1.57
	6	2	2	4 School	Water_Heat	1.701
	6	4	1	1 School	Cook_top	0.61
	6	4	1	2 School	Cook_top	0.671

b	SDG&E: n	2008 California f	Gas Report e	Workpapers-REDACTED bname	nname	EQcost
	6	4	2	1 School	Cook_top	0.488
	6	4	2	2 School	Cook_top	0.537
	6	5	1	1 School	Fryer	0.612
	6	5	1	2 School	Fryer	0.673
	6	5	2	1 School	Fryer	0.489
	6	5	2	2 School	Fryer	0.538
	6	6	1	1 School	Griddle	0.612
	6	6	1	2 School	Griddle	0.673
	6	6	2	1 School	Griddle	0.489
	6	6	2	2 School	Griddle	0.538
	6	7	1	1 School	Other_Cooking	0.61
	6	7	1	2 School	Other_Cooking	0.671
	6	7	2	1 School	Other_Cooking	0.488
	6	7	2	2 School	Other_Cooking	0.537
	6	10	1	1 School	AC_Compressor	0.866
	6	10	1	2 School	AC_Compressor	0.953
	6	10	2	1 School	AC_Compressor	0.693
	6	10	2	2 School	AC_Compressor	0.762
	6	11	1	1 School	Other	0
	6	11	2	1 School	Other	0
	7	1	1	1 College	Space_Heat	3.14441
	7	1	1	2 College	Space_Heat	3.45885
	7	1	1	3 College	Space_Heat	3.77329
	7	1	1	4 College	Space_Heat	4.08773
	7	1	2	1 College	Space_Heat	2.51553
	7	1	2	2 College	Space_Heat	2.76708
	7	1	2	3 College	Space_Heat	3.01863
	7	1	2	4 College	Space_Heat	3.27018
	7	2	1	1 College	Water_Heat	3.38894
	7	2	1	2 College	Water_Heat	3.72784
	7	2	1	3 College	Water_Heat	4.06673
	7	2	1	4 College	Water_Heat	4.40563
	7	2	2	1 College	Water_Heat	2.71116
	7	2	2	2 College	Water_Heat	2.98227
	7	2	2	3 College	Water_Heat	3.25339
	7	2	2	4 College	Water_Heat	3.5245
	7	4	1	1 College	Cook_top	0.57358
	7	4	1	2 College	Cook_top	0.63093
	7	4	2	1 College	Cook_top	0.45886
	7	4	2	2 College	Cook_top	0.50475
	7	5	1	1 College	Fryer	0.57322
	7	5	1	2 College	Fryer	0.63055
	7	5	2	1 College	Fryer	0.45858
	7	5	2	2 College	Fryer	0.50444
	7	6	1	1 College	Griddle	0.57322
	7	6	1	2 College	Griddle	0.63055
	7	6	2	1 College	Griddle	0.45858
	7	6	2	2 College	Griddle	0.50444
	7	7	1	1 College	Other_Cooking	0.57358
	7	7	1	2 College	Other_Cooking	0.63093
	7	7	2	1 College	Other_Cooking	0.45886
	7	7	2	2 College	Other_Cooking	0.50475
	7	10	1	1 College	AC_Compressor	1.3949
	7	10	1	2 College	AC_Compressor	1.53439
	7	10	2	1 College	AC_Compressor	1.11592
	7	10	2	2 College	AC_Compressor	1.22752
	7	11	1	1 College	Other	0
	7	11	2	1 College	Other	0
	8	1	1	1 Health	Space_Heat	0.8825
	8	1	1	2 Health	Space_Heat	0.97075
	8	1	1	3 Health	Space_Heat	1.059
	8	1	1	4 Health	Space_Heat	1.14725
	8	1	2	1 Health	Space_Heat	0.706
	8	1	2	2 Health	Space_Heat	0.7766
	8	1	2	3 Health	Space_Heat	0.8472
	8	1	2	4 Health	Space_Heat	0.9178
	8	2	1	1 Health	Water_Heat	5.33917
	8	2	1	2 Health	Water_Heat	5.87309
	8	2	1	3 Health	Water_Heat	6.407
	8	2	1	4 Health	Water_Heat	6.94092
	8	2	2	1 Health	Water_Heat	4.27134
	8	2	2	2 Health	Water_Heat	4.69847
	8	2	2	3 Health	Water_Heat	5.1256
	8	2	2	4 Health	Water_Heat	5.55274
	8	4	1	1 Health	Cook_top	3.37409
	8	4	1	2 Health	Cook_top	3.7115
	8	4	2	1 Health	Cook_top	2.69927
	8	4	2	2 Health	Cook_top	2.9692

b	SDG&E: n	2008 California f	Gas Report e	Workpapers-REDACTED bname	nname	EQcost
	8	5	1	1 Health	Fryer	3.37409
	8	5	1	2 Health	Fryer	3.7115
	8	5	2	1 Health	Fryer	2.69927
	8	5	2	2 Health	Fryer	2.9692
	8	6	1	1 Health	Griddle	3.37409
	8	6	1	2 Health	Griddle	3.7115
	8	6	2	1 Health	Griddle	2.69927
	8	6	2	2 Health	Griddle	2.9692
	8	7	1	1 Health	Other_Cooking	0.33743
	8	7	1	2 Health	Other_Cooking	0.37118
	8	7	2	1 Health	Other_Cooking	0.26995
	8	7	2	2 Health	Other_Cooking	0.29694
	8	8	1	1 Health	Drying	1.86871
	8	8	1	2 Health	Drying	2.05558
	8	8	2	1 Health	Drying	1.49497
	8	8	2	2 Health	Drying	1.64446
	8	10	1	1 Health	AC_Compressor	1.45749
	8	10	1	2 Health	AC_Compressor	1.60324
	8	10	2	1 Health	AC_Compressor	1.16599
	8	10	2	2 Health	AC_Compressor	1.28259
	8	11	1	1 Health	Other	0
	8	11	2	1 Health	Other	0
	9	1	1	1 Lodging	Space_Heat	4.85892
	9	1	1	2 Lodging	Space_Heat	5.3448
	9	1	1	3 Lodging	Space_Heat	5.8307
	9	1	1	4 Lodging	Space_Heat	6.3166
	9	1	2	1 Lodging	Space_Heat	3.8871
	9	1	2	2 Lodging	Space_Heat	4.2759
	9	1	2	3 Lodging	Space_Heat	4.6646
	9	1	2	4 Lodging	Space_Heat	5.0533
	9	2	1	1 Lodging	Water_Heat	8.6651
	9	2	1	2 Lodging	Water_Heat	9.5317
	9	2	1	3 Lodging	Water_Heat	10.3982
	9	2	1	4 Lodging	Water_Heat	11.2647
	9	2	2	1 Lodging	Water_Heat	6.9321
	9	2	2	2 Lodging	Water_Heat	7.6253
	9	2	2	3 Lodging	Water_Heat	8.3185
	9	2	2	4 Lodging	Water_Heat	9.0118
	9	4	1	1 Lodging	Cook_top	4.0305
	9	4	1	2 Lodging	Cook_top	4.4335
	9	4	2	1 Lodging	Cook_top	3.2244
	9	4	2	2 Lodging	Cook_top	3.5468
	9	5	1	1 Lodging	Fryer	5.2524
	9	5	1	2 Lodging	Fryer	5.7777
	9	5	2	1 Lodging	Fryer	4.2019
	9	5	2	2 Lodging	Fryer	4.6221
	9	6	1	1 Lodging	Griddle	5.2524
	9	6	1	2 Lodging	Griddle	5.7777
	9	6	2	1 Lodging	Griddle	4.2019
	9	6	2	2 Lodging	Griddle	4.6221
	9	7	1	1 Lodging	Other_Cooking	0.5148
	9	7	1	2 Lodging	Other_Cooking	0.5663
	9	7	2	1 Lodging	Other_Cooking	0.4118
	9	7	2	2 Lodging	Other_Cooking	0.453
	9	8	1	1 Lodging	Drying	2.1663
	9	8	1	2 Lodging	Drying	2.3829
	9	8	2	1 Lodging	Drying	1.733
	9	8	2	2 Lodging	Drying	1.9063
	9	10	1	1 Lodging	AC_Compressor	0.7157
	9	10	1	2 Lodging	AC_Compressor	0.7872
	9	10	2	1 Lodging	AC_Compressor	0.5725
	9	10	2	2 Lodging	AC_Compressor	0.6298
	9	11	1	1 Lodging	Other	0
	9	11	2	1 Lodging	Other	0
10	1	1	1	1 Misc	Space_Heat	2.1455
10	1	1	1	2 Misc	Space_Heat	2.36
10	1	1	1	3 Misc	Space_Heat	2.5746
10	1	1	1	4 Misc	Space_Heat	2.7891
10	1	1	2	1 Misc	Space_Heat	1.7164
10	1	1	2	2 Misc	Space_Heat	1.888
10	1	1	2	3 Misc	Space_Heat	2.0597
10	1	1	2	4 Misc	Space_Heat	2.2313
10	2	1	1	1 Misc	Water_Heat	2.9412
10	2	1	2	2 Misc	Water_Heat	3.2354
10	2	1	3	3 Misc	Water_Heat	3.5295
10	2	1	4	4 Misc	Water_Heat	3.8236
10	2	2	1	1 Misc	Water_Heat	2.353
10	2	2	2	2 Misc	Water_Heat	2.5883

b	SDG&E: n	2008 California f	Gas Report e	Workpapers-REDACTED bname	Workpapers-REDACTED nname	EQcost
10	2	2	3	Misc	Water_Heat	2.8236
10	2	2	4	Misc	Water_Heat	3.0589
10	4	1	1	Misc	Cook_top	0.6282
10	4	1	2	Misc	Cook_top	0.691
10	4	2	1	Misc	Cook_top	0.5025
10	4	2	2	Misc	Cook_top	0.5528
10	5	1	1	Misc	Fryer	0.6285
10	5	1	2	Misc	Fryer	0.6913
10	5	2	1	Misc	Fryer	0.5028
10	5	2	2	Misc	Fryer	0.5531
10	6	1	1	Misc	Griddle	0.6285
10	6	1	2	Misc	Griddle	0.6913
10	6	2	1	Misc	Griddle	0.5028
10	6	2	2	Misc	Griddle	0.5531
10	7	1	1	Misc	Other_Cooking	0.6282
10	7	1	2	Misc	Other_Cooking	0.691
10	7	2	1	Misc	Other_Cooking	0.5025
10	7	2	2	Misc	Other_Cooking	0.5528
10	10	1	1	Misc	AC_Compressor	1.9306
10	10	1	2	Misc	AC_Compressor	2.1237
10	10	2	1	Misc	AC_Compressor	1.5445
10	10	2	2	Misc	AC_Compressor	1.6989
10	11	1	1	Misc	Other	0
10	11	2	1	Misc	Other	0
11	1	1	1	Government	Space_Heat	3.815
11	1	1	2	Government	Space_Heat	4.1965
11	1	1	3	Government	Space_Heat	4.578
11	1	1	4	Government	Space_Heat	4.9595
11	1	2	1	Government	Space_Heat	3.052
11	1	2	2	Government	Space_Heat	3.3572
11	1	2	3	Government	Space_Heat	3.6624
11	1	2	4	Government	Space_Heat	3.9676
11	2	1	1	Government	Water_Heat	0.5935
11	2	1	2	Government	Water_Heat	0.6528
11	2	1	3	Government	Water_Heat	0.7122
11	2	1	4	Government	Water_Heat	0.7715
11	2	2	1	Government	Water_Heat	0.4748
11	2	2	2	Government	Water_Heat	0.5222
11	2	2	3	Government	Water_Heat	0.5697
11	2	2	4	Government	Water_Heat	0.6172
11	4	1	1	Government	Cook_top	0.4333
11	4	1	2	Government	Cook_top	0.4766
11	4	2	1	Government	Cook_top	0.3466
11	4	2	2	Government	Cook_top	0.3813
11	5	1	1	Government	Fryer	0.4332
11	5	1	2	Government	Fryer	0.4765
11	5	2	1	Government	Fryer	0.3465
11	5	2	2	Government	Fryer	0.3812
11	6	1	1	Government	Griddle	0.4332
11	6	1	2	Government	Griddle	0.4765
11	6	2	1	Government	Griddle	0.3465
11	6	2	2	Government	Griddle	0.3812
11	7	1	1	Government	Other_Cooking	0.4333
11	7	1	2	Government	Other_Cooking	0.4766
11	7	2	1	Government	Other_Cooking	0.3466
11	7	2	2	Government	Other_Cooking	0.3813
11	10	1	1	Government	AC_Compressor	1.3062
11	10	1	2	Government	AC_Compressor	1.4368
11	10	2	1	Government	AC_Compressor	1.0449
11	10	2	2	Government	AC_Compressor	1.1494
11	11	1	1	Government	Other	0
11	11	2	1	Government	Other	0
12	1	1	1	TCU	Space_Heat	1.8457
12	1	1	2	TCU	Space_Heat	2.0303
12	1	1	3	TCU	Space_Heat	2.2149
12	1	1	4	TCU	Space_Heat	2.3995
12	1	2	1	TCU	Space_Heat	1.4766
12	1	2	2	TCU	Space_Heat	1.6242
12	1	2	3	TCU	Space_Heat	1.7719
12	1	2	4	TCU	Space_Heat	1.9196
12	2	1	1	TCU	Water_Heat	2.5303
12	2	1	2	TCU	Water_Heat	2.7833
12	2	1	3	TCU	Water_Heat	3.0364
12	2	1	4	TCU	Water_Heat	3.2894
12	2	2	1	TCU	Water_Heat	2.0243
12	2	2	2	TCU	Water_Heat	2.2267
12	2	2	3	TCU	Water_Heat	2.4291
12	2	2	4	TCU	Water_Heat	2.6315

b	SDG&E: n	2008 California f	Gas Report e	Workpapers-REDACTED bname	nname	EQcost
	12	9	1	1 TCU	Engine	30.6768
	12	9	1	2 TCU	Engine	33.7445
	12	9	2	1 TCU	Engine	24.5415
	12	9	2	2 TCU	Engine	26.9956
	12	11	1	1 TCU	Other	0
	12	11	2	1 TCU	Other	0
	13	1	1	1 Construction	Space_Heat	2.2951
	13	1	1	2 Construction	Space_Heat	2.5246
	13	1	1	3 Construction	Space_Heat	2.7542
	13	1	1	4 Construction	Space_Heat	2.9837
	13	1	2	1 Construction	Space_Heat	1.8361
	13	1	2	2 Construction	Space_Heat	2.0197
	13	1	2	3 Construction	Space_Heat	2.2033
	13	1	2	4 Construction	Space_Heat	2.3869
	13	2	1	1 Construction	Water_Heat	3.1464
	13	2	1	2 Construction	Water_Heat	3.461
	13	2	1	3 Construction	Water_Heat	3.7757
	13	2	1	4 Construction	Water_Heat	4.0903
	13	2	2	1 Construction	Water_Heat	2.5171
	13	2	2	2 Construction	Water_Heat	2.7688
	13	2	2	3 Construction	Water_Heat	3.0205
	13	2	2	4 Construction	Water_Heat	3.2722
	13	11	1	1 Construction	Other	0
	13	11	2	1 Construction	Other	0
	14	1	1	1 Agriculture	Space_Heat	1.6583
	14	1	1	2 Agriculture	Space_Heat	1.8242
	14	1	1	3 Agriculture	Space_Heat	1.99
	14	1	1	4 Agriculture	Space_Heat	2.1558
	14	1	2	1 Agriculture	Space_Heat	1.3267
	14	1	2	2 Agriculture	Space_Heat	1.4593
	14	1	2	3 Agriculture	Space_Heat	1.592
	14	1	2	4 Agriculture	Space_Heat	1.7247
	14	2	1	1 Agriculture	Water_Heat	2.2734
	14	2	1	2 Agriculture	Water_Heat	2.5008
	14	2	1	3 Agriculture	Water_Heat	2.7281
	14	2	1	4 Agriculture	Water_Heat	2.9554
	14	2	2	1 Agriculture	Water_Heat	1.8187
	14	2	2	2 Agriculture	Water_Heat	2.0006
	14	2	2	3 Agriculture	Water_Heat	2.1825
	14	2	2	4 Agriculture	Water_Heat	2.3644
	14	8	1	1 Agriculture	Drying	2.2734
	14	8	1	2 Agriculture	Drying	2.5008
	14	8	2	1 Agriculture	Drying	1.8187
	14	8	2	2 Agriculture	Drying	2.0006
	14	9	1	1 Agriculture	Engine	9.7757
	14	9	1	2 Agriculture	Engine	10.7533
	14	9	2	1 Agriculture	Engine	7.8206
	14	9	2	2 Agriculture	Engine	8.6026
	14	11	1	1 Agriculture	Other	0
	14	11	2	1 Agriculture	Other	0

**San Diego Gas and Electric Company
2008 California Gas Report - Commercial GN3
Employment Forecast (in millions)**

<u>YEAR</u>	<u>Office</u>	<u>Restaurant</u>	<u>Retail</u>	<u>Laundry</u>	<u>Warehouse</u>	<u>School</u>	<u>College</u>	<u>Health</u>	<u>Lodging</u>	<u>Misc</u>	<u>Government</u>	<u>TCU</u>	<u>Construction</u>	<u>Agriculture</u>	<u>EMPLTOT</u>
2006	0.29748	0.10237	0.14761	0.01566	0.04811	0.08773	0.03253	0.10366	0.02997	0.05714	0.11854	0.06243	0.09260	0.01096	1.20678
2007	0.29687	0.10488	0.14872	0.01538	0.04868	0.09014	0.03329	0.10710	0.03150	0.05794	0.12044	0.06359	0.08717	0.01083	1.21653
2008	0.30001	0.10670	0.15006	0.01582	0.04958	0.09252	0.03417	0.10993	0.03204	0.05963	0.12130	0.06402	0.08159	0.01088	1.22825
2009	0.30598	0.10870	0.15246	0.01587	0.04983	0.09394	0.03469	0.11162	0.03265	0.05983	0.12211	0.06453	0.07612	0.01093	1.23927
2010	0.31476	0.11025	0.15553	0.01579	0.05022	0.09510	0.03512	0.11299	0.03311	0.05950	0.12420	0.06519	0.07583	0.01099	1.25858
2011	0.32431	0.11242	0.15726	0.01580	0.05062	0.09616	0.03551	0.11425	0.03376	0.05954	0.12513	0.06663	0.07621	0.01104	1.27865
2012	0.33061	0.11461	0.15902	0.01589	0.05099	0.09745	0.03599	0.11578	0.03442	0.05987	0.12690	0.06799	0.07796	0.01110	1.29859
2013	0.33407	0.11634	0.16011	0.01603	0.05117	0.09898	0.03656	0.11761	0.03494	0.06043	0.12853	0.06933	0.08019	0.01115	1.31544
2014	0.33933	0.11774	0.16095	0.01617	0.05135	0.10042	0.03709	0.11932	0.03536	0.06096	0.12997	0.07032	0.08185	0.01121	1.33205
2015	0.34520	0.11895	0.16135	0.01633	0.05141	0.10172	0.03757	0.12086	0.03573	0.06155	0.13123	0.07120	0.08307	0.01127	1.34742
2016	0.35065	0.12008	0.16124	0.01648	0.05160	0.10302	0.03804	0.12240	0.03606	0.06210	0.13240	0.07225	0.08418	0.01132	1.36181
2017	0.35587	0.12107	0.16079	0.01665	0.05189	0.10452	0.03860	0.12419	0.03636	0.06273	0.13345	0.07320	0.08519	0.01138	1.37588
2018	0.36168	0.12198	0.16045	0.01678	0.05225	0.10627	0.03925	0.12626	0.03663	0.06324	0.13448	0.07388	0.08617	0.01144	1.39075
2019	0.36750	0.12306	0.16031	0.01690	0.05270	0.10819	0.03996	0.12855	0.03696	0.06370	0.13548	0.07457	0.08714	0.01149	1.40651
2020	0.37345	0.12434	0.16038	0.01702	0.05308	0.11013	0.04067	0.13085	0.03734	0.06414	0.13722	0.07514	0.08810	0.01155	1.42342
2021	0.37970	0.12559	0.16065	0.01714	0.05345	0.11226	0.04146	0.13338	0.03772	0.06460	0.13740	0.07599	0.08883	0.01161	1.43977
2022	0.38606	0.12677	0.16098	0.01727	0.05402	0.11426	0.04220	0.13576	0.03807	0.06507	0.13828	0.07699	0.08962	0.01167	1.45702
2023	0.39340	0.12799	0.16138	0.01740	0.05459	0.11614	0.04289	0.13799	0.03844	0.06558	0.13917	0.07818	0.09053	0.01172	1.47539
2024	0.40142	0.12907	0.16172	0.01754	0.05518	0.11790	0.04354	0.14008	0.03877	0.06611	0.14004	0.07937	0.09151	0.01178	1.49403
2025	0.40913	0.13016	0.16207	0.01767	0.05570	0.11970	0.04421	0.14223	0.03909	0.06660	0.14095	0.08059	0.09277	0.01184	1.51271
2026	0.41662	0.13123	0.16241	0.01781	0.05616	0.12157	0.04490	0.14444	0.03941	0.06711	0.14186	0.08197	0.09417	0.01190	1.53156
2027	0.42370	0.13245	0.16301	0.01797	0.05662	0.12339	0.04557	0.14660	0.03978	0.06773	0.14281	0.08353	0.09605	0.01196	1.55116
2028	0.43016	0.13368	0.16378	0.01815	0.05712	0.12521	0.04624	0.14877	0.04015	0.06842	0.14375	0.08520	0.09789	0.01202	1.57055
2029	0.43667	0.13504	0.16461	0.01832	0.05762	0.12687	0.04685	0.15074	0.04056	0.06905	0.14467	0.08690	0.09964	0.01208	1.58962
2030	0.44385	0.13630	0.16528	0.01849	0.05812	0.12836	0.04740	0.15251	0.04094	0.06967	0.14613	0.08864	0.10136	0.01214	1.60919

San Diego Gas and Electric Company
2008 California Gas Report - Commercial GN3
Core Commercial Demand Forecast
Avg Temperature

<u>YEAR</u>	<u>Model Output</u>				<u>GTNC Migrate to GN3</u>	<u>(Mdt)</u>
	<u>GN3-Com</u>	<u>DSM</u>	<u>Vernon</u>	<u>SGIP Added Load</u>		<u>Total Com-GN3</u>
2007	15,116	0	0	0	0	15,116
2008	15,049	259	0	0	0	14,790
2009	15,123	517	0	0	0	14,605
2010	15,238	802	0	0	0	14,436
2011	15,347	1,111	0	0	0	14,236
2012	15,485	1,445	0	0	0	14,040
2013	15,594	1,805	0	0	0	13,789
2014	15,695	2,165	0	0	0	13,530
2015	15,745	2,525	0	0	0	13,220
2016	15,781	2,885	0	0	0	12,897
2017	15,816	3,245	0	0	0	12,571
2018	15,854	3,346	0	0	0	12,508
2019	15,902	3,447	0	0	0	12,455
2020	15,965	3,523	0	0	0	12,442
2021	16,029	3,573	0	0	0	12,455
2022	16,078	3,599	0	0	0	12,480
2023	16,133	3,599	0	0	0	12,534
2024	16,185	3,599	0	0	0	12,586
2025	16,238	3,599	0	0	0	12,640
2026	16,302	3,599	0	0	0	12,704
2027	16,364	3,599	0	0	0	12,766
2028	16,421	3,599	0	0	0	12,822
2029	16,476	3,599	0	0	0	12,878
2030	16,537	3,599	0	0	0	12,939

San Diego Gas and Electric Company
2008 California Gas Report - Commercial GN3
Core Commercial Demand Forecast
Cold Temperature

<u>YEAR</u>	<u>Model Output</u>				<u>GTNC Migrate to GN3</u>	<u>(Mdt)</u>
	<u>GN3-Com</u>	<u>DSM</u>	<u>Vernon</u>	<u>SGIP Added Load</u>		<u>Total Com-GN3</u>
2007	15,695	0	0	0	0	15,990
2008	15,905	259	0	0	0	15,646
2009	15,968	517	0	0	0	15,450
2010	16,073	802	0	0	0	15,272
2011	16,171	1,111	0	0	0	15,060
2012	16,298	1,445	0	0	0	14,852
2013	16,392	1,805	0	0	0	14,587
2014	16,478	2,165	0	0	0	14,313
2015	16,510	2,525	0	0	0	13,985
2016	16,528	2,885	0	0	0	13,643
2017	16,544	3,245	0	0	0	13,299
2018	16,578	3,346	0	0	0	13,232
2019	16,623	3,447	0	0	0	13,176
2020	16,685	3,523	0	0	0	13,163
2021	16,750	3,573	0	0	0	13,176
2022	16,800	3,599	0	0	0	13,202
2023	16,858	3,599	0	0	0	13,259
2024	16,913	3,599	0	0	0	13,315
2025	16,970	3,599	0	0	0	13,371
2026	17,038	3,599	0	0	0	13,439
2027	17,103	3,599	0	0	0	13,504
2028	17,163	3,599	0	0	0	13,565
2029	17,222	3,599	0	0	0	13,623
2030	17,286	3,599	0	0	0	13,687

San Diego Gas and Electric Company
2008 California Gas Report - Commercial GN3
Core Commercial Demand Forecast
Hot Temperature

<u>YEAR</u>	<u>Model Output</u>				<u>GTNC Migrate</u>	(Mdth) <u>Total</u>
	<u>GN3-Com</u>	<u>DSM</u>	<u>Vernon</u>	<u>SGIP Added Load</u>	<u>to GN3</u>	<u>Com-GN3</u>
2007	14,025	0	0	0	0	14,268
2008	14,220	259	0	0	0	13,961
2009	14,304	517	0	0	0	13,786
2010	14,429	802	0	0	0	13,627
2011	14,549	1,111	0	0	0	13,438
2012	14,698	1,445	0	0	0	13,253
2013	14,821	1,805	0	0	0	13,016
2014	14,937	2,165	0	0	0	12,772
2015	15,004	2,525	0	0	0	12,479
2016	15,059	2,885	0	0	0	12,174
2017	15,112	3,245	0	0	0	11,867
2018	15,153	3,346	0	0	0	11,807
2019	15,204	3,447	0	0	0	11,757
2020	15,268	3,523	0	0	0	11,745
2021	15,330	3,573	0	0	0	11,757
2022	15,379	3,599	0	0	0	11,780
2023	15,430	3,599	0	0	0	11,831
2024	15,479	3,599	0	0	0	11,881
2025	15,530	3,599	0	0	0	11,931
2026	15,590	3,599	0	0	0	11,992
2027	15,649	3,599	0	0	0	12,050
2028	15,702	3,599	0	0	0	12,104
2029	15,755	3,599	0	0	0	12,156
2030	15,812	3,599	0	0	0	12,213

San Diego Gas and Electric Company
2008 California Gas Report - Commercial GN3
Core Commercial Demand Forecast
 Base ("Zero Hdd") Temperature

<u>YEAR</u>	<u>Model Output</u>				<u>GTNC Migrate</u>	(Mdt) Total
	<u>GN3-Com</u>	<u>DSM</u>	<u>Vernon</u>	<u>SGIP Added Load</u>	<u>to GN3</u>	<u>Com-GN3</u>
2007	11,687	0	0	0	0	11,857
2008	11,860	259	0	0	0	11,602
2009	11,974	517	0	0	0	11,456
2010	12,125	802	0	0	0	11,324
2011	12,278	1,111	0	0	0	11,167
2012	12,458	1,445	0	0	0	11,013
2013	12,621	1,805	0	0	0	10,816
2014	12,778	2,165	0	0	0	10,613
2015	12,894	2,525	0	0	0	10,369
2016	13,001	2,885	0	0	0	10,116
2017	13,106	3,245	0	0	0	9,861
2018	13,157	3,346	0	0	0	9,811
2019	13,216	3,447	0	0	0	9,769
2020	13,283	3,523	0	0	0	9,760
2021	13,343	3,573	0	0	0	9,770
2022	13,387	3,599	0	0	0	9,789
2023	13,430	3,599	0	0	0	9,832
2024	13,471	3,599	0	0	0	9,873
2025	13,513	3,599	0	0	0	9,915
2026	13,563	3,599	0	0	0	9,965
2027	13,612	3,599	0	0	0	10,013
2028	13,656	3,599	0	0	0	10,058
2029	13,700	3,599	0	0	0	10,101
2030	13,748	3,599	0	0	0	10,149

GN3 Industrial DATA TABLES

San Diego Gas and Electric Company
2008 CGR - Industrial GN3
The Year the Equipment Was Installed by Business Types

<u>Business Type</u>	<u>Fire_</u> <u>Tube_</u> <u>Boiler</u>	<u>Water_</u> <u>Tube_</u> <u>Boiler</u>	<u>Space_</u> <u>Heat</u>	<u>Water_</u> <u>Heat</u>	<u>Dryer</u>	<u>Furnace_</u> <u>Oven_</u> <u>Kiln</u>	<u>AC</u>	<u>Engine</u>	<u>Other</u>
Mining	1981	1974	1978	1978	1968	1980	1973	1980	1975
Food	1980	1982	1975	1978	1976	1983	1970	1987	1977
Textile	1985	1979	1977	1978	1981	1976	1976		1979
Wood_Paper	1979	1975	1975	1976	1976	1976	1976		1980
Chemical	1980	1980	1976	1977	1967	1976	1974	1980	1979
Petroleum	1980	1981	1974	1977	1975	1979		1972	1978
Stone	1980	1973	1975	1977	1980	1978	1982		1977
Prim_Metal	1986	1979	1975	1976	1976	1977	1978		1974
Fab_Metal	1982	1981	1976	1977	1979	1979	1976	1972	1976
Transport	1980	1978	1976	1976	1980	1980	1974	1988	1976
Misc	1979	1980	1976	1976	1978	1978	1976	1979	1977

2008 CGR - Industrial GN3
Electric Price Forecasat

(Cent/KWH)

(a) Average Price Forecast

<u>Year</u>	<u>Chemical</u>	<u>Fab Metal</u>	<u>Food</u>	<u>Mining</u>	<u>Petroleum</u>	<u>Prim Metal</u>	<u>Stone</u>	<u>Textile</u>	<u>Transport</u>	<u>Wood Paper</u>	<u>Misc</u>
2007	14.8219	14.6017	15.4000	14.7144	14.2079	15.7113	14.4400	14.8348	15.0639	13.8095	14.4125
2008	18.1171	17.9261	18.7853	17.9803	17.4357	19.1669	17.6638	18.1341	18.3942	17.0281	17.6985
2009	18.0258	17.9101	18.4243	17.9727	17.6390	18.6024	17.7831	18.0311	18.1970	17.4026	17.7918
2010	17.1020	16.9874	17.4923	17.0487	16.7215	17.6689	16.8630	17.1074	17.2694	16.4884	16.8707
2011	17.2296	17.1113	17.6281	17.1740	16.8394	17.8105	16.9844	17.2352	17.4003	16.5999	16.9915
2012	16.5396	16.4185	16.9430	16.4822	16.1430	17.1297	16.2903	16.5455	16.7121	15.8991	16.2966
2013	16.4614	16.3339	16.8822	16.4003	16.0462	17.0789	16.2002	16.4678	16.6411	15.7903	16.2060
2014	16.3516	16.2173	16.7903	16.2867	15.9170	16.9977	16.0781	16.3585	16.5387	15.6486	16.0832
2015	16.3372	16.2044	16.7665	16.2724	15.9102	16.9716	16.0683	16.3442	16.5201	15.6460	16.0725
2016	16.4938	16.3626	16.9137	16.4292	16.0746	17.1164	16.2296	16.5008	16.6724	15.8147	16.2329
2017	16.5545	16.4249	16.9654	16.4902	16.1427	17.1657	16.2949	16.5616	16.7291	15.8869	16.2973
2018	16.6885	16.5592	17.0947	16.6238	16.2799	17.2946	16.4308	16.6957	16.8608	16.0257	16.4323
2019	17.0032	16.8720	17.4116	16.9371	16.5909	17.6144	16.7430	17.0106	17.1762	16.3340	16.7439
2020	17.3333	17.1998	17.7454	17.2655	16.9158	17.9520	17.0697	17.3410	17.5077	16.6552	17.0698
2021	17.6758	17.5373	18.0996	17.6050	17.2450	18.3139	17.4036	17.6838	17.8549	16.9756	17.4030
2022	18.0165	17.8769	18.4400	17.9447	17.5845	18.6562	17.7435	18.0247	18.1953	17.3139	17.7421
2023	18.3618	18.2211	18.7852	18.2889	17.9284	19.0031	18.0878	18.3702	18.5402	17.6567	18.0857
2024	18.7163	18.5744	19.1398	18.6423	18.2813	19.3596	18.4412	18.7248	18.8946	18.0081	18.4383
2025	19.0829	18.9396	19.5077	19.0077	18.6454	19.7299	18.8061	19.0917	19.2615	18.3701	18.8025
2026	19.4723	19.3252	19.9047	19.3947	19.0254	20.1328	19.1894	19.4815	19.6539	18.7439	19.1850
2027	19.8678	19.7182	20.3044	19.7884	19.4153	20.5364	19.5812	19.8772	20.0509	19.1297	19.5761
2028	20.2685	20.1173	20.7065	20.1878	19.8131	20.9411	19.9799	20.2781	20.4520	19.5253	19.9741
2029	20.6775	20.5254	21.1149	20.5959	20.2213	21.3509	20.3884	20.6873	20.8606	19.9327	20.3818
2030	21.0976	20.9443	21.5353	21.0150	20.6397	21.7732	20.8073	21.1075	21.2806	20.3496	20.8000

(b) Marginal Price Forecasat

<u>Year</u>	<u>Chemical</u>	<u>Fab Metal</u>	<u>Food</u>	<u>Mining</u>	<u>Petroleum</u>	<u>Prim Metal</u>	<u>Stone</u>	<u>Textile</u>	<u>Transport</u>	<u>Wood Paper</u>	<u>Misc</u>
2007	11.5661	11.6784	11.9943	11.7499	11.2671	12.0056	11.5652	11.6395	11.8588	11.0293	11.4278
2008	14.1112	14.3554	14.6207	14.3300	13.8611	14.6342	14.1207	14.1986	14.4596	13.6695	14.0600
2009	14.1425	14.2276	14.4024	14.2541	13.9773	14.4092	14.1436	14.1871	14.3202	13.8470	14.0760
2010	13.4146	13.4985	13.6709	13.5246	13.2515	13.6777	13.4156	13.4586	13.5898	13.1230	13.3489
2011	13.5128	13.5991	13.7762	13.6259	13.3453	13.7832	13.5139	13.5580	13.6929	13.2132	13.4453
2012	12.9668	13.0548	13.2355	13.0822	12.7959	13.2426	12.9679	13.0129	13.1505	12.6611	12.8980
2013	12.9009	12.9933	13.1832	13.0221	12.7213	13.1907	12.9020	12.9493	13.0939	12.5797	12.8286
2014	12.8098	12.9070	13.1065	12.9372	12.6212	13.1143	12.8111	12.8607	13.0126	12.4724	12.7339
2015	12.7995	12.8950	13.0912	12.9247	12.6140	13.0989	12.8007	12.8496	12.9990	12.4677	12.7248
2016	12.9241	13.0180	13.2107	13.0471	12.7419	13.2182	12.9253	12.9733	13.1200	12.5982	12.8507
2017	12.9730	13.0653	13.2547	13.0939	12.7939	13.2621	12.9742	13.0214	13.1656	12.6527	12.9009
2018	13.0789	13.1705	13.3586	13.1990	12.9010	13.3660	13.0801	13.1269	13.2702	12.7608	13.0073
2019	13.3259	13.4184	13.6084	13.4472	13.1463	13.6159	13.3271	13.3744	13.5191	13.0046	13.2536
2020	13.5848	13.6786	13.8712	13.7078	13.4027	13.8788	13.5860	13.6339	13.7806	13.2590	13.5115
2021	13.8517	13.9487	14.1478	13.9788	13.6634	14.1556	13.8529	13.9025	14.0541	13.5149	13.7759
2022	14.1197	14.2171	14.4169	14.2473	13.9308	14.4247	14.1210	14.1707	14.3229	13.7818	14.0436
2023	14.3914	14.4891	14.6896	14.5194	14.2017	14.6975	14.3926	14.4425	14.5953	14.0521	14.3150
2024	14.6702	14.7683	14.9698	14.7988	14.4797	14.9777	14.6714	14.7216	14.8750	14.3295	14.5935
2025	14.9585	15.0572	15.2601	15.0879	14.7666	15.2680	14.9597	15.0102	15.1647	14.6154	14.8812
2026	15.2632	15.3642	15.5716	15.3956	15.0670	15.5798	15.2644	15.3161	15.4740	14.9124	15.1842
2027	15.5735	15.6759	15.8861	15.7077	15.3747	15.8944	15.5748	15.6271	15.7873	15.2179	15.4934
2028	15.8885	15.9916	16.2034	16.0237	15.6883	16.2117	15.8898	15.9425	16.1038	15.5304	15.8079
2029	16.2105	16.3139	16.5261	16.3460	16.0099	16.5344	16.2118	16.2647	16.4263	15.8516	16.1297
2030	16.5411	16.6449	16.8580	16.6772	16.3396	16.8664	16.5424	16.5955	16.7578	16.1807	16.4600

2008 CGR - Industrial GN3

Gas Price Forecast

(\$/Therm)

(a) Average Price Forecast

Year	Price Deflator	Chemical	Fabricated Metal	Food	Mining	Petroleum	Primary Metal	Stone	Textile	Transport	Wood Paper	Misc
2007	100.00	0.9296	0.9158	0.9658	0.9228	0.8911	0.9854	0.9056	0.9304	0.9448	0.8661	0.9039
2008	101.67	1.1531	1.1410	1.1957	1.1444	1.1098	1.2200	1.1243	1.1542	1.1708	1.0838	1.1265
2009	103.41	1.1593	1.1519	1.1850	1.1559	1.1345	1.1964	1.1437	1.1597	1.1703	1.1192	1.1443
2010	105.44	1.1419	1.1342	1.1679	1.1383	1.1165	1.1797	1.1259	1.1422	1.1530	1.1009	1.1264
2011	107.46	1.1453	1.1375	1.1718	1.1416	1.1194	1.1840	1.1290	1.1457	1.1567	1.1035	1.1295
2012	109.61	1.1051	1.0971	1.1321	1.1013	1.0787	1.1446	1.0885	1.1055	1.1167	1.0624	1.0889
2013	111.72	1.0724	1.0641	1.0998	1.0684	1.0453	1.1126	1.0554	1.0728	1.0841	1.0287	1.0557
2014	113.98	1.0397	1.0312	1.0676	1.0356	1.0121	1.0808	1.0223	1.0402	1.0516	0.9950	1.0227
2015	116.32	1.0808	1.0720	1.1092	1.0765	1.0525	1.1227	1.0630	1.0812	1.0929	1.0350	1.0633
2016	118.68	1.1354	1.1264	1.1643	1.1310	1.1066	1.1783	1.1173	1.1359	1.1477	1.0887	1.1175
2017	121.09	1.1855	1.1762	1.2149	1.1809	1.1560	1.2293	1.1669	1.1860	1.1980	1.1377	1.1671
2018	123.50	1.2302	1.2206	1.2601	1.2254	1.2001	1.2749	1.2112	1.2307	1.2429	1.1813	1.2113
2019	125.90	1.2682	1.2584	1.2987	1.2633	1.2375	1.3138	1.2488	1.2688	1.2811	1.2183	1.2489
2020	128.42	1.3039	1.2939	1.3349	1.2988	1.2725	1.3505	1.2841	1.3045	1.3170	1.2529	1.2841
2021	131.02	1.3164	1.3061	1.3480	1.3111	1.2843	1.3639	1.2961	1.3170	1.3297	1.2642	1.2961
2022	133.63	1.3664	1.3559	1.3986	1.3610	1.3337	1.4150	1.3457	1.3671	1.3800	1.3132	1.3456
2023	136.28	1.4177	1.4068	1.4504	1.4121	1.3842	1.4672	1.3965	1.4183	1.4315	1.3633	1.3964
2024	138.99	1.4703	1.4592	1.5036	1.4645	1.4361	1.5208	1.4487	1.4710	1.4843	1.4147	1.4485
2025	141.80	1.5222	1.5107	1.5560	1.5162	1.4873	1.5738	1.5001	1.5229	1.5364	1.4653	1.4998
2026	144.69	1.5536	1.5418	1.5881	1.5474	1.5179	1.6063	1.5310	1.5543	1.5681	1.4955	1.5307
2027	147.63	1.5989	1.5869	1.6341	1.5925	1.5625	1.6527	1.5759	1.5997	1.6137	1.5395	1.5754
2028	150.61	1.6555	1.6431	1.6912	1.6489	1.6183	1.7104	1.6319	1.6562	1.6704	1.5948	1.6314
2029	153.65	1.7221	1.7094	1.7585	1.7153	1.6841	1.7782	1.6980	1.7229	1.7373	1.6601	1.6975
2030	156.78	1.7883	1.7753	1.8254	1.7813	1.7495	1.8456	1.7637	1.7891	1.8038	1.7249	1.7631

(b) Marginal Price Forecast

Year	Price Deflator	Chemical	Fabricated Metal	Food	Mining	Petroleum	Primary Metal	Stone	Textile	Transport	Wood Paper	Misc
2007	100.00	0.8676	0.8760	0.8997	0.8814	0.8452	0.9006	0.8675	0.8731	0.8896	0.8273	0.8572
2008	101.67	1.0791	1.0978	1.1181	1.0959	1.0600	1.1191	1.0799	1.0858	1.1058	1.0454	1.0752
2009	103.41	1.1177	1.1244	1.1382	1.1265	1.1046	1.1388	1.1178	1.1212	1.1317	1.0943	1.1124
2010	105.44	1.0994	1.1063	1.1204	1.1084	1.0860	1.1210	1.0995	1.1030	1.1138	1.0755	1.0940
2011	107.46	1.1020	1.1091	1.1235	1.1113	1.0884	1.1241	1.1021	1.1057	1.1167	1.0776	1.0965
2012	109.61	1.0610	1.0682	1.0829	1.0704	1.0470	1.0835	1.0610	1.0647	1.0760	1.0359	1.0553
2013	111.72	1.0273	1.0347	1.0498	1.0370	1.0130	1.0504	1.0274	1.0312	1.0427	1.0017	1.0215
2014	113.98	0.9938	1.0013	1.0168	1.0036	0.9791	1.0174	0.9938	0.9977	1.0095	0.9676	0.9879
2015	116.32	1.0338	1.0415	1.0574	1.0439	1.0188	1.0580	1.0339	1.0379	1.0499	1.0070	1.0278
2016	118.68	1.0875	1.0954	1.1116	1.0979	1.0722	1.1123	1.0876	1.0916	1.1040	1.0601	1.0813
2017	121.09	1.1366	1.1447	1.1613	1.1472	1.1209	1.1619	1.1367	1.1408	1.1534	1.1085	1.1303
2018	123.50	1.1803	1.1885	1.2055	1.1911	1.1642	1.2062	1.1804	1.1846	1.1975	1.1516	1.1738
2019	125.90	1.2173	1.2258	1.2431	1.2284	1.2009	1.2438	1.2174	1.2217	1.2349	1.1880	1.2107
2020	128.42	1.2520	1.2606	1.2784	1.2633	1.2352	1.2791	1.2521	1.2565	1.2700	1.2220	1.2452
2021	131.02	1.2634	1.2722	1.2904	1.2750	1.2462	1.2911	1.2635	1.2680	1.2819	1.2327	1.2565
2022	133.63	1.3124	1.3214	1.3400	1.3242	1.2948	1.3407	1.3125	1.3171	1.3312	1.2809	1.3053
2023	136.28	1.3625	1.3718	1.3908	1.3747	1.3446	1.3915	1.3626	1.3674	1.3818	1.3304	1.3553
2024	138.99	1.4140	1.4235	1.4429	1.4264	1.3957	1.4437	1.4141	1.4190	1.4338	1.3812	1.4066
2025	141.80	1.4647	1.4744	1.4942	1.4774	1.4459	1.4950	1.4648	1.4698	1.4849	1.4311	1.4571
2026	144.69	1.4949	1.5048	1.5252	1.5079	1.4757	1.5260	1.4951	1.5001	1.5156	1.4606	1.4872
2027	147.63	1.5391	1.5492	1.5700	1.5523	1.5194	1.5708	1.5392	1.5444	1.5602	1.5039	1.5312
2028	150.61	1.5944	1.6047	1.6260	1.6080	1.5743	1.6268	1.5945	1.5998	1.6160	1.5585	1.5863
2029	153.65	1.6598	1.6704	1.6921	1.6736	1.6392	1.6929	1.6599	1.6653	1.6819	1.6230	1.6515
2030	156.78	1.7247	1.7355	1.7577	1.7389	1.7037	1.7586	1.7248	1.7303	1.7473	1.6871	1.7162

San Diego Gas and Electric Company
2008 CGR - Industrial GN3
Historical Throughput and Customer Counts

<u>Business Type</u>	<u>therms_</u> <u>2007</u> <u>Temp. Adj.</u>	<u>meters_</u> <u>2007</u>	<u>meters_</u> <u>2007</u> <u>ExCust</u>	<u>meters_</u> <u>2007</u> <u>NewCust</u>	<u>avgUse_</u> <u>2007</u> <u>ExCust</u>	<u>avgUse_</u> <u>2007</u> <u>NewCust</u>	<u>Price</u> <u>Elasticity</u>	<u>Employment</u> <u>Elasticity</u>
Mining	82039.60	8	8	0	10,255	0	0.000000	0.321451
Food	3265515.67	307	303	4	10,657	9,079	-0.190795	1.242506
Textile	88147.99	34	32	2	2,266	7,816	0.000000	0.033325
Wood_Paper	125504.85	21	21	0	5,976	0	0.000000	0.508272
Chemical	2394269.97	81	80	1	29,920	698	-0.080517	0.650067
Petroleum	28022.49	4	4	0	7,006	0	-0.180563	0.084537
Stone	726115.23	38	38	0	19,108	0	0.000000	0.416909
Prim_Metal	303051.99	16	16	0	18,941	0	0.000000	0.956685
Fab_Metal	1248291.79	182	181	1	6,846	9,190	-0.137441	1.023881
Transport	1870176.32	66	65	1	28,771	80	0.000000	0.402505
Misc	7939355.36	724	714	10	10,509	43,571	-0.108307	0.879307
Total	18,070,491	1,481	1,462					

San Diego Gas and Electric Company
2008 CGR - Industrial GN3
Average Use Per Meter therm

<u>Business Type</u>	<u>Fire_</u> <u>Tube_</u> <u>Boiler</u>	<u>Water_</u> <u>Tube_</u> <u>Boiler</u>	<u>Space_</u> <u>Heat</u>	<u>Water_</u> <u>Heat</u>	<u>Dryer</u>	<u>Furnace_</u> <u>Oven_</u> <u>Kiln</u>	<u>AC</u>	<u>Engine</u>	<u>Other</u>	<u>Total</u>
Mining	4366.6	42.6	491.8	121.7	1553.1	1535.6	11.0	1218.1	4169.3	13509.8
Food	16172.7	3829.2	1397.9	549.5	1970.7	4751.6	95.4	397.2	3383.0	32547.2
Textile	13453.1	3495.6	435.2	874.1	8247.0	1773.6	282.9	0.0	904.9	29466.4
Wood_Paper	4003.5	1313.9	895.2	91.2	727.6	1271.4	12.3	0.0	1333.4	9648.5
Chemical	5933.3	3338.2	757.4	575.4	49.0	1093.9	6.3	0.3	3051.2	14805.0
Petroleum	7748.0	1953.7	342.9	449.8	25523.9	112.3	0.0	34.5	10240.9	46406.0
Stone	1797.2	357.2	697.5	675.5	3176.5	6897.1	127.4	0.0	1204.3	14932.7
Prim_Metal	442.0	1396.6	1205.0	287.3	59.1	25647.9	237.4	0.0	2342.9	31618.2
Fab_Metal	1535.4	1498.7	1207.0	266.6	133.7	3842.0	20.7	0.0	2434.7	10938.7
Transport	387.3	225.6	666.8	192.0	424.5	723.0	5.7	2.5	373.0	3000.4
Misc	750.9	528.1	496.4	138.2	336.2	1853.1	33.0	6.0	952.2	5094.1

San Diego Gas and Electric Company
2008 CGR - Industrial GN3
 Use Per Meter for New Customers therm

<u>Business Type</u>	<u>Fire_</u> <u>Tube_</u> <u>Boiler</u>	<u>Water_</u> <u>Tube_</u> <u>Boiler</u>	<u>Space_</u> <u>Heat</u>	<u>Water_</u> <u>Heat</u>	<u>Dryer</u>	<u>Furnace_</u> <u>Oven_</u> <u>Kiln</u>	<u>AC</u>	<u>Engine</u>	<u>Other</u>	<u>Total</u>
Mining	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35872.2	0.0	35872.2
Food	13791.7	2.8	205.1	225.3	0.0	0.0	0.0	0.0	0.0	14224.8
Textile	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wood_Paper										0.0
Chemical	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17866.6	17866.6
Petroleum	0.0	0.0	0.0	0.0	140409.4	0.0	0.0	0.0	0.0	140409.4
Stone	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prim_Metal	0.0	0.0	0.0	891.7	0.0	14986.1	0.0	0.0	4995.4	20873.2
Fab_Metal	0.0	0.0	558.2	0.0	0.0	3041.6	0.0	0.0	8110.9	11710.8
Transport	0.0	0.0	0.0	0.0	0.0	2306.4	0.0	0.0	331.4	2637.8
Misc	612.3	0.0	0.0	5.0	2182.2	1428.8	0.0	0.0	983.8	5212.0

San Diego Gas and Electric Company
2008 CGR - Industrial GN3
Electric UEC (Kwh/SqFt)

<u>Business Type</u>	<u>Fire_</u> <u>Tube_</u> <u>Boiler</u>	<u>Water_</u> <u>Tube_</u> <u>Boiler</u>	<u>Space_</u> <u>Heat</u>	<u>Water_</u> <u>Heat</u>	<u>Dryer</u>	<u>Furnace_</u> <u>Oven_</u> <u>Kiln</u>	<u>AC</u>	<u>Engine</u>	<u>Other</u>
Mining	12053557	117480	22540	4117	3349437	1388699	3261	2871579 .	
Food	992080	234899	77958	15939	1062552	781260	24817	1163891 .	
Textile	1428304	371125	20797	30369	3811277	1069238	74615	0 .	
Wood_Paper	11051345	3626956	48301	2915	523062	985476	3282	0 .	
Chemical	1169880	658201	34723	19440	26417	593554	1620	738 .	
Petroleum	1527674	385215	15711	15192	13761553	60935	0	101154 .	
Stone	4960873	985989	31975	22824	6850607	6237158	37820	0 .	
Primary_Metal	174313	550730	55233	9317	25494	13916258	66288	0 .	
Fabricated_Metal	605450	591011	55315	8658	57653	2084618	5763	0 .	
Transportation	76358	44486	30560	6490	228869	392291	1456	7240 .	
Miscellaneous	148060	104128	22745	4673	181266	1005453	8471	17618 .	

San Diego Gas and Electric Company

2008 CGR - Industrial GN3

Gas UEC

(Therm per SqFt.)

<u>Business Type</u>	<u>Fire_</u> <u>Tube_</u> <u>Boiler</u>	<u>Water_</u> <u>Tube_</u> <u>Boiler</u>	<u>Space_</u> <u>Heat</u>	<u>Water_</u> <u>Heat</u>	<u>Dryer</u>	<u>Furnace_</u> <u>Oven_</u> <u>Kiln</u>	<u>AC</u>	<u>Engine</u>	<u>Other</u>
Mining	587697	5728	1099	281	163309	67709	159	140010	4169
Food	48371	11453	3801	1088	51807	38092	1210	56748	3383
Textile	69640	18095	1014	2073	185827	52133	3638	0	905
Wood_Paper	538832	176840	2355	199	25503	48049	160	0	1333
Chemical	57040	32092	1693	1327	1288	28940	79	36	3051
Petroleum	74485	18782	766	1037	670974	2971	0	4932	10241
Stone	241878	48074	1559	1558	334016	304106	1844	0	1204
Primary_Metal	8499	26852	2693	636	1243	678517	3232	0	2343
Fabricated_Metal	29520	28816	2697	591	2811	101640	281	0	2435
Transportation	3723	2169	1490	443	11159	19127	71	353	373
Miscellaneous	7219	5077	1109	319	8838	49023	413	859	

San Diego Gas and Electric Company
2008 CGR - Industrial GN3
Gas Market Shares

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

**San Diego Gas and Electric Company
2008 CGR - Industrial GN3
Saturation Rate**

<u>Business Type</u>	<u>Fire_</u> <u>Tube_</u> <u>Boiler</u>	<u>Water_</u> <u>Tube_</u> <u>Boiler</u>	<u>Space_</u> <u>Heat</u>	<u>Water_</u> <u>Heat</u>	<u>Dryer</u>	<u>Furnace_</u> <u>Oven_</u> <u>Kiln</u>	<u>AC</u>	<u>Engine</u>	<u>Other</u>
Mining	0.01	0.01	0.73	0.73	0.03	0.06	0.64	0.87	1.00
Food	0.45	0.45	0.60	0.85	0.12	0.33	0.73	0.70	1.00
Textile	0.26	0.26	0.70	0.71	0.14	0.09	0.72	0.46	1.00
Wood_Paper	0.01	0.01	0.62	0.77	0.09	0.07	0.71	0.50	1.00
Chemical	0.14	0.14	0.73	0.73	0.12	0.10	0.74	0.70	1.00
Petroleum	0.14	0.14	0.73	0.73	0.12	0.10	0.74	0.70	1.00
Stone	0.01	0.01	0.73	0.73	0.03	0.06	0.64	0.87	1.00
Prim_Metal	0.07	0.07	0.73	0.76	0.15	0.10	0.68	0.86	1.00
Fab_Metal	0.07	0.07	0.73	0.76	0.15	0.10	0.68	0.86	1.00
Transport	0.14	0.14	0.73	0.73	0.12	0.10	0.74	0.70	1.00
Misc	0.14	0.14	0.73	0.73	0.12	0.10	0.74	0.70	1.00

**San Diego Gas and Electric Company
2008 CGR - Industrial GN3
UEC, Equipment Cost and Efficiency Shares**

**Where Fuel = 1 (gas) and = 2 (electric), and
Efficiency =1 (stock), =2 (standard), =3 (high) and =4 (premium)**

<u>Business Type</u>	<u>End Use</u>	<u>Fuel</u>	<u>Efficiency</u>	<u>EQcost</u>
Mining	Fire_Tube_Boiler	1	1	3,907,010
Mining	Fire_Tube_Boiler	1	2	4,297,711
Mining	Fire_Tube_Boiler	1	3	4,688,412
Mining	Fire_Tube_Boiler	2	1	3,125,608
Mining	Fire_Tube_Boiler	2	2	3,438,169
Mining	Fire_Tube_Boiler	2	3	3,750,729
Mining	Water_Tube_Boiler	1	1	38,080
Mining	Water_Tube_Boiler	1	2	41,888
Mining	Water_Tube_Boiler	1	3	45,696
Mining	Water_Tube_Boiler	2	1	30,464
Mining	Water_Tube_Boiler	2	2	33,510
Mining	Water_Tube_Boiler	2	3	36,557
Mining	Space_Heat	1	1	7,306
Mining	Space_Heat	1	2	8,037
Mining	Space_Heat	1	3	8,767
Mining	Space_Heat	2	1	5,845
Mining	Space_Heat	2	2	6,429
Mining	Space_Heat	2	3	7,014
Mining	Water_Heat	1	1	1,868
Mining	Water_Heat	1	2	2,055
Mining	Water_Heat	1	3	2,242
Mining	Water_Heat	2	1	1,494
Mining	Water_Heat	2	2	1,644
Mining	Water_Heat	2	3	1,793
Mining	Dryer	1	1	1,085,678
Mining	Dryer	1	2	1,194,246
Mining	Dryer	1	3	1,302,814
Mining	Dryer	2	1	868,543
Mining	Dryer	2	2	955,397
Mining	Dryer	2	3	1,042,251
Mining	Furnace_Oven_Kiln	1	1	450,129
Mining	Furnace_Oven_Kiln	1	2	495,142
Mining	Furnace_Oven_Kiln	1	3	540,155
Mining	Furnace_Oven_Kiln	2	1	360,104
Mining	Furnace_Oven_Kiln	2	2	396,114
Mining	Furnace_Oven_Kiln	2	3	432,124
Mining	AC	1	1	1,057
Mining	AC	1	2	1,163
Mining	AC	1	3	1,268
Mining	AC	2	1	846
Mining	AC	2	2	930
Mining	AC	2	3	1,015
Mining	Engine	1	1	930,786
Mining	Engine	1	2	1,023,865
Mining	Engine	1	3	1,116,944
Mining	Engine	2	1	744,629
Mining	Engine	2	2	819,092
Mining	Engine	2	3	893,555
Mining	Other	1	1	-
Mining	Other	1	2	-
Mining	Other	1	3	-
Mining	Other	2	1	-
Mining	Other	2	2	-
Mining	Other	2	3	-
Food	Fire_Tube_Boiler	1	1	303,093
Food	Fire_Tube_Boiler	1	2	333,402
Food	Fire_Tube_Boiler	1	3	363,711
Food	Fire_Tube_Boiler	2	1	242,474
Food	Fire_Tube_Boiler	2	2	266,722

Food	Fire_Tube_Boiler	2	3	290,969
Food	Water_Tube_Boiler	1	1	71,765
Food	Water_Tube_Boiler	1	2	78,941
Food	Water_Tube_Boiler	1	3	86,117
Food	Water_Tube_Boiler	2	1	57,412
Food	Water_Tube_Boiler	2	2	63,153
Food	Water_Tube_Boiler	2	3	68,894
Food	Space_Heat	1	1	23,817
Food	Space_Heat	1	2	26,199
Food	Space_Heat	1	3	28,580
Food	Space_Heat	2	1	19,054
Food	Space_Heat	2	2	20,959
Food	Space_Heat	2	3	22,864
Food	Water_Heat	1	1	6,817
Food	Water_Heat	1	2	7,499
Food	Water_Heat	1	3	8,181
Food	Water_Heat	2	1	5,454
Food	Water_Heat	2	2	5,999
Food	Water_Heat	2	3	6,545
Food	Dryer	1	1	324,623
Food	Dryer	1	2	357,085
Food	Dryer	1	3	389,547
Food	Dryer	2	1	259,698
Food	Dryer	2	2	285,668
Food	Dryer	2	3	311,638
Food	Furnace_Oven_Kiln	1	1	238,684
Food	Furnace_Oven_Kiln	1	2	262,553
Food	Furnace_Oven_Kiln	1	3	286,421
Food	Furnace_Oven_Kiln	2	1	190,948
Food	Furnace_Oven_Kiln	2	2	210,042
Food	Furnace_Oven_Kiln	2	3	229,137
Food	AC	1	1	7,582
Food	AC	1	2	8,340
Food	AC	1	3	9,098
Food	AC	2	1	6,065
Food	AC	2	2	6,672
Food	AC	2	3	7,279
Food	Engine	1	1	355,583
Food	Engine	1	2	391,141
Food	Engine	1	3	426,700
Food	Engine	2	1	284,466
Food	Engine	2	2	312,913
Food	Engine	2	3	341,360
Food	Other	1	1	-
Food	Other	1	2	-
Food	Other	1	3	-
Food	Other	2	1	-
Food	Other	2	2	-
Food	Other	2	3	-
Textile	Fire_Tube_Boiler	1	1	440,682
Textile	Fire_Tube_Boiler	1	2	484,750
Textile	Fire_Tube_Boiler	1	3	528,818
Textile	Fire_Tube_Boiler	2	1	352,546
Textile	Fire_Tube_Boiler	2	2	387,800
Textile	Fire_Tube_Boiler	2	3	423,055
Textile	Water_Tube_Boiler	1	1	114,505
Textile	Water_Tube_Boiler	1	2	125,956
Textile	Water_Tube_Boiler	1	3	137,406
Textile	Water_Tube_Boiler	2	1	91,604
Textile	Water_Tube_Boiler	2	2	100,765
Textile	Water_Tube_Boiler	2	3	109,925
Textile	Space_Heat	1	1	6,417
Textile	Space_Heat	1	2	7,058
Textile	Space_Heat	1	3	7,700
Textile	Space_Heat	2	1	5,133
Textile	Space_Heat	2	2	5,647
Textile	Space_Heat	2	3	6,160
Textile	Water_Heat	1	1	13,118
Textile	Water_Heat	1	2	14,430
Textile	Water_Heat	1	3	15,742
Textile	Water_Heat	2	1	10,494

Textile	Water_Heat	2	2	11,544
Textile	Water_Heat	2	3	12,593
Textile	Dryer	1	1	1,175,913
Textile	Dryer	1	2	1,293,505
Textile	Dryer	1	3	1,411,096
Textile	Dryer	2	1	940,731
Textile	Dryer	2	2	1,034,804
Textile	Dryer	2	3	1,128,877
Textile	Furnace_Oven_Kiln	1	1	329,898
Textile	Furnace_Oven_Kiln	1	2	362,887
Textile	Furnace_Oven_Kiln	1	3	395,877
Textile	Furnace_Oven_Kiln	2	1	263,918
Textile	Furnace_Oven_Kiln	2	2	290,310
Textile	Furnace_Oven_Kiln	2	3	316,702
Textile	AC	1	1	23,021
Textile	AC	1	2	25,323
Textile	AC	1	3	27,626
Textile	AC	2	1	18,417
Textile	AC	2	2	20,259
Textile	AC	2	3	22,100
Textile	Engine	1	1	-
Textile	Engine	1	2	-
Textile	Engine	1	3	-
Textile	Engine	2	1	-
Textile	Engine	2	2	-
Textile	Engine	2	3	-
Textile	Other	1	1	-
Textile	Other	1	2	-
Textile	Other	1	3	-
Textile	Other	2	1	-
Textile	Other	2	2	-
Textile	Other	2	3	-
Wood_Paper	Fire_Tube_Boiler	1	1	3,531,505
Wood_Paper	Fire_Tube_Boiler	1	2	3,884,655
Wood_Paper	Fire_Tube_Boiler	1	3	4,237,806
Wood_Paper	Fire_Tube_Boiler	2	1	2,825,204
Wood_Paper	Fire_Tube_Boiler	2	2	3,107,724
Wood_Paper	Fire_Tube_Boiler	2	3	3,390,245
Wood_Paper	Water_Tube_Boiler	1	1	1,159,009
Wood_Paper	Water_Tube_Boiler	1	2	1,274,910
Wood_Paper	Water_Tube_Boiler	1	3	1,390,811
Wood_Paper	Water_Tube_Boiler	2	1	927,207
Wood_Paper	Water_Tube_Boiler	2	2	1,019,928
Wood_Paper	Water_Tube_Boiler	2	3	1,112,649
Wood_Paper	Space_Heat	1	1	15,435
Wood_Paper	Space_Heat	1	2	16,978
Wood_Paper	Space_Heat	1	3	18,522
Wood_Paper	Space_Heat	2	1	12,348
Wood_Paper	Space_Heat	2	2	13,583
Wood_Paper	Space_Heat	2	3	14,817
Wood_Paper	Water_Heat	1	1	1,304
Wood_Paper	Water_Heat	1	2	1,435
Wood_Paper	Water_Heat	1	3	1,565
Wood_Paper	Water_Heat	2	1	1,043
Wood_Paper	Water_Heat	2	2	1,148
Wood_Paper	Water_Heat	2	3	1,252
Wood_Paper	Dryer	1	1	167,147
Wood_Paper	Dryer	1	2	183,861
Wood_Paper	Dryer	1	3	200,576
Wood_Paper	Dryer	2	1	133,717
Wood_Paper	Dryer	2	2	147,089
Wood_Paper	Dryer	2	3	160,461
Wood_Paper	Furnace_Oven_Kiln	1	1	314,913
Wood_Paper	Furnace_Oven_Kiln	1	2	346,404
Wood_Paper	Furnace_Oven_Kiln	1	3	377,896
Wood_Paper	Furnace_Oven_Kiln	2	1	251,931
Wood_Paper	Furnace_Oven_Kiln	2	2	277,124
Wood_Paper	Furnace_Oven_Kiln	2	3	302,317
Wood_Paper	AC	1	1	1,049
Wood_Paper	AC	1	2	1,154
Wood_Paper	AC	1	3	1,258

Wood_Paper	AC	2	1	839
Wood_Paper	AC	2	2	923
Wood_Paper	AC	2	3	1,007
Wood_Paper	Engine	1	1	-
Wood_Paper	Engine	1	2	-
Wood_Paper	Engine	1	3	-
Wood_Paper	Engine	2	1	-
Wood_Paper	Engine	2	2	-
Wood_Paper	Engine	2	3	-
Wood_Paper	Other	1	1	-
Wood_Paper	Other	1	2	-
Wood_Paper	Other	1	3	-
Wood_Paper	Other	2	1	-
Wood_Paper	Other	2	2	-
Wood_Paper	Other	2	3	-
Chemical	Fire_Tube_Boiler	1	1	374,525
Chemical	Fire_Tube_Boiler	1	2	411,977
Chemical	Fire_Tube_Boiler	1	3	449,430
Chemical	Fire_Tube_Boiler	2	1	299,620
Chemical	Fire_Tube_Boiler	2	2	329,582
Chemical	Fire_Tube_Boiler	2	3	359,544
Chemical	Water_Tube_Boiler	1	1	210,716
Chemical	Water_Tube_Boiler	1	2	231,788
Chemical	Water_Tube_Boiler	1	3	252,859
Chemical	Water_Tube_Boiler	2	1	168,573
Chemical	Water_Tube_Boiler	2	2	185,430
Chemical	Water_Tube_Boiler	2	3	202,287
Chemical	Space_Heat	1	1	11,116
Chemical	Space_Heat	1	2	12,228
Chemical	Space_Heat	1	3	13,339
Chemical	Space_Heat	2	1	8,893
Chemical	Space_Heat	2	2	9,782
Chemical	Space_Heat	2	3	10,672
Chemical	Water_Heat	1	1	8,713
Chemical	Water_Heat	1	2	9,584
Chemical	Water_Heat	1	3	10,456
Chemical	Water_Heat	2	1	6,970
Chemical	Water_Heat	2	2	7,668
Chemical	Water_Heat	2	3	8,365
Chemical	Dryer	1	1	8,457
Chemical	Dryer	1	2	9,303
Chemical	Dryer	1	3	10,148
Chemical	Dryer	2	1	6,766
Chemical	Dryer	2	2	7,442
Chemical	Dryer	2	3	8,119
Chemical	Furnace_Oven_Kiln	1	1	190,020
Chemical	Furnace_Oven_Kiln	1	2	209,022
Chemical	Furnace_Oven_Kiln	1	3	228,024
Chemical	Furnace_Oven_Kiln	2	1	152,016
Chemical	Furnace_Oven_Kiln	2	2	167,218
Chemical	Furnace_Oven_Kiln	2	3	182,419
Chemical	AC	1	1	519
Chemical	AC	1	2	571
Chemical	AC	1	3	622
Chemical	AC	2	1	415
Chemical	AC	2	2	456
Chemical	AC	2	3	498
Chemical	Engine	1	1	236
Chemical	Engine	1	2	260
Chemical	Engine	1	3	284
Chemical	Engine	2	1	189
Chemical	Engine	2	2	208
Chemical	Engine	2	3	227
Chemical	Other	1	1	-
Chemical	Other	1	2	-
Chemical	Other	1	3	-
Chemical	Other	2	1	-
Chemical	Other	2	2	-
Chemical	Other	2	3	-
Petroleum	Fire_Tube_Boiler	1	1	461,658
Petroleum	Fire_Tube_Boiler	1	2	507,824

Petroleum	Fire_Tube_Boiler	1	3	553,990
Petroleum	Fire_Tube_Boiler	2	1	369,326
Petroleum	Fire_Tube_Boiler	2	2	406,259
Petroleum	Fire_Tube_Boiler	2	3	443,192
Petroleum	Water_Tube_Boiler	1	1	116,411
Petroleum	Water_Tube_Boiler	1	2	128,052
Petroleum	Water_Tube_Boiler	1	3	139,693
Petroleum	Water_Tube_Boiler	2	1	93,129
Petroleum	Water_Tube_Boiler	2	2	102,442
Petroleum	Water_Tube_Boiler	2	3	111,754
Petroleum	Space_Heat	1	1	4,748
Petroleum	Space_Heat	1	2	5,222
Petroleum	Space_Heat	1	3	5,697
Petroleum	Space_Heat	2	1	3,798
Petroleum	Space_Heat	2	2	4,178
Petroleum	Space_Heat	2	3	4,558
Petroleum	Water_Heat	1	1	6,427
Petroleum	Water_Heat	1	2	7,070
Petroleum	Water_Heat	1	3	7,713
Petroleum	Water_Heat	2	1	5,142
Petroleum	Water_Heat	2	2	5,656
Petroleum	Water_Heat	2	3	6,170
Petroleum	Dryer	1	1	4,158,697
Petroleum	Dryer	1	2	4,574,567
Petroleum	Dryer	1	3	4,990,436
Petroleum	Dryer	2	1	3,326,957
Petroleum	Dryer	2	2	3,659,653
Petroleum	Dryer	2	3	3,992,349
Petroleum	Furnace_Oven_Kiln	1	1	18,414
Petroleum	Furnace_Oven_Kiln	1	2	20,256
Petroleum	Furnace_Oven_Kiln	1	3	22,097
Petroleum	Furnace_Oven_Kiln	2	1	14,731
Petroleum	Furnace_Oven_Kiln	2	2	16,205
Petroleum	Furnace_Oven_Kiln	2	3	17,678
Petroleum	AC	1	1	-
Petroleum	AC	1	2	-
Petroleum	AC	1	3	-
Petroleum	AC	2	1	-
Petroleum	AC	2	2	-
Petroleum	AC	2	3	-
Petroleum	Engine	1	1	30,569
Petroleum	Engine	1	2	33,625
Petroleum	Engine	1	3	36,682
Petroleum	Engine	2	1	24,455
Petroleum	Engine	2	2	26,900
Petroleum	Engine	2	3	29,346
Petroleum	Other	1	1	-
Petroleum	Other	1	2	-
Petroleum	Other	1	3	-
Petroleum	Other	2	1	-
Petroleum	Other	2	2	-
Petroleum	Other	2	3	-
Stone	Fire_Tube_Boiler	1	1	1,591,073
Stone	Fire_Tube_Boiler	1	2	1,750,181
Stone	Fire_Tube_Boiler	1	3	1,909,288
Stone	Fire_Tube_Boiler	2	1	1,272,859
Stone	Fire_Tube_Boiler	2	2	1,400,145
Stone	Fire_Tube_Boiler	2	3	1,527,431
Stone	Water_Tube_Boiler	1	1	316,231
Stone	Water_Tube_Boiler	1	2	347,854
Stone	Water_Tube_Boiler	1	3	379,477
Stone	Water_Tube_Boiler	2	1	252,985
Stone	Water_Tube_Boiler	2	2	278,283
Stone	Water_Tube_Boiler	2	3	303,582
Stone	Space_Heat	1	1	10,255
Stone	Space_Heat	1	2	11,281
Stone	Space_Heat	1	3	12,306
Stone	Space_Heat	2	1	8,204
Stone	Space_Heat	2	2	9,024
Stone	Space_Heat	2	3	9,845
Stone	Water_Heat	1	1	10,249

Stone	Water_Heat	1	2	11,273
Stone	Water_Heat	1	3	12,298
Stone	Water_Heat	2	1	8,199
Stone	Water_Heat	2	2	9,019
Stone	Water_Heat	2	3	9,839
Stone	Dryer	1	1	2,197,157
Stone	Dryer	1	2	2,416,873
Stone	Dryer	1	3	2,636,589
Stone	Dryer	2	1	1,757,726
Stone	Dryer	2	2	1,933,498
Stone	Dryer	2	3	2,109,271
Stone	Furnace_Oven_Kiln	1	1	2,000,409
Stone	Furnace_Oven_Kiln	1	2	2,200,450
Stone	Furnace_Oven_Kiln	1	3	2,400,491
Stone	Furnace_Oven_Kiln	2	1	1,600,327
Stone	Furnace_Oven_Kiln	2	2	1,760,360
Stone	Furnace_Oven_Kiln	2	3	1,920,393
Stone	AC	1	1	12,130
Stone	AC	1	2	13,343
Stone	AC	1	3	14,556
Stone	AC	2	1	9,704
Stone	AC	2	2	10,674
Stone	AC	2	3	11,645
Stone	Engine	1	1	-
Stone	Engine	1	2	-
Stone	Engine	1	3	-
Stone	Engine	2	1	-
Stone	Engine	2	2	-
Stone	Engine	2	3	-
Stone	Other	1	1	-
Stone	Other	1	2	-
Stone	Other	1	3	-
Stone	Other	2	1	-
Stone	Other	2	2	-
Stone	Other	2	3	-
Prim_Metal	Fire_Tube_Boiler	1	1	54,853
Prim_Metal	Fire_Tube_Boiler	1	2	60,338
Prim_Metal	Fire_Tube_Boiler	1	3	65,823
Prim_Metal	Fire_Tube_Boiler	2	1	43,882
Prim_Metal	Fire_Tube_Boiler	2	2	48,270
Prim_Metal	Fire_Tube_Boiler	2	3	52,658
Prim_Metal	Water_Tube_Boiler	1	1	173,303
Prim_Metal	Water_Tube_Boiler	1	2	190,633
Prim_Metal	Water_Tube_Boiler	1	3	207,963
Prim_Metal	Water_Tube_Boiler	2	1	138,642
Prim_Metal	Water_Tube_Boiler	2	2	152,506
Prim_Metal	Water_Tube_Boiler	2	3	166,371
Prim_Metal	Space_Heat	1	1	17,381
Prim_Metal	Space_Heat	1	2	19,119
Prim_Metal	Space_Heat	1	3	20,857
Prim_Metal	Space_Heat	2	1	13,905
Prim_Metal	Space_Heat	2	2	15,295
Prim_Metal	Space_Heat	2	3	16,685
Prim_Metal	Water_Heat	1	1	4,105
Prim_Metal	Water_Heat	1	2	4,515
Prim_Metal	Water_Heat	1	3	4,926
Prim_Metal	Water_Heat	2	1	3,284
Prim_Metal	Water_Heat	2	2	3,612
Prim_Metal	Water_Heat	2	3	3,941
Prim_Metal	Dryer	1	1	8,022
Prim_Metal	Dryer	1	2	8,825
Prim_Metal	Dryer	1	3	9,627
Prim_Metal	Dryer	2	1	6,418
Prim_Metal	Dryer	2	2	7,060
Prim_Metal	Dryer	2	3	7,701
Prim_Metal	Furnace_Oven_Kiln	1	1	4,379,149
Prim_Metal	Furnace_Oven_Kiln	1	2	4,817,064
Prim_Metal	Furnace_Oven_Kiln	1	3	5,254,978
Prim_Metal	Furnace_Oven_Kiln	2	1	3,503,319
Prim_Metal	Furnace_Oven_Kiln	2	2	3,853,651
Prim_Metal	Furnace_Oven_Kiln	2	3	4,203,983

Prim_Metal	AC	1	1	20,859
Prim_Metal	AC	1	2	22,945
Prim_Metal	AC	1	3	25,031
Prim_Metal	AC	2	1	16,687
Prim_Metal	AC	2	2	18,356
Prim_Metal	AC	2	3	20,025
Prim_Metal	Engine	1	1	-
Prim_Metal	Engine	1	2	-
Prim_Metal	Engine	1	3	-
Prim_Metal	Engine	2	1	-
Prim_Metal	Engine	2	2	-
Prim_Metal	Engine	2	3	-
Prim_Metal	Other	1	1	-
Prim_Metal	Other	1	2	-
Prim_Metal	Other	1	3	-
Prim_Metal	Other	2	1	-
Prim_Metal	Other	2	2	-
Prim_Metal	Other	2	3	-
Fab_Metal	Fire_Tube_Boiler	1	1	199,496
Fab_Metal	Fire_Tube_Boiler	1	2	219,446
Fab_Metal	Fire_Tube_Boiler	1	3	239,395
Fab_Metal	Fire_Tube_Boiler	2	1	159,597
Fab_Metal	Fire_Tube_Boiler	2	2	175,557
Fab_Metal	Fire_Tube_Boiler	2	3	191,516
Fab_Metal	Water_Tube_Boiler	1	1	194,739
Fab_Metal	Water_Tube_Boiler	1	2	214,212
Fab_Metal	Water_Tube_Boiler	1	3	233,686
Fab_Metal	Water_Tube_Boiler	2	1	155,791
Fab_Metal	Water_Tube_Boiler	2	2	171,370
Fab_Metal	Water_Tube_Boiler	2	3	186,949
Fab_Metal	Space_Heat	1	1	18,226
Fab_Metal	Space_Heat	1	2	20,049
Fab_Metal	Space_Heat	1	3	21,872
Fab_Metal	Space_Heat	2	1	14,581
Fab_Metal	Space_Heat	2	2	16,039
Fab_Metal	Space_Heat	2	3	17,497
Fab_Metal	Water_Heat	1	1	3,994
Fab_Metal	Water_Heat	1	2	4,393
Fab_Metal	Water_Heat	1	3	4,793
Fab_Metal	Water_Heat	2	1	3,195
Fab_Metal	Water_Heat	2	2	3,515
Fab_Metal	Water_Heat	2	3	3,834
Fab_Metal	Dryer	1	1	18,997
Fab_Metal	Dryer	1	2	20,896
Fab_Metal	Dryer	1	3	22,796
Fab_Metal	Dryer	2	1	15,197
Fab_Metal	Dryer	2	2	16,717
Fab_Metal	Dryer	2	3	18,237
Fab_Metal	Furnace_Oven_Kiln	1	1	686,883
Fab_Metal	Furnace_Oven_Kiln	1	2	755,571
Fab_Metal	Furnace_Oven_Kiln	1	3	824,260
Fab_Metal	Furnace_Oven_Kiln	2	1	549,507
Fab_Metal	Furnace_Oven_Kiln	2	2	604,457
Fab_Metal	Furnace_Oven_Kiln	2	3	659,408
Fab_Metal	AC	1	1	1,899
Fab_Metal	AC	1	2	2,089
Fab_Metal	AC	1	3	2,279
Fab_Metal	AC	2	1	1,519
Fab_Metal	AC	2	2	1,671
Fab_Metal	AC	2	3	1,823
Fab_Metal	Engine	1	1	-
Fab_Metal	Engine	1	2	-
Fab_Metal	Engine	1	3	-
Fab_Metal	Engine	2	1	-
Fab_Metal	Engine	2	2	-
Fab_Metal	Engine	2	3	-
Fab_Metal	Other	1	1	-
Fab_Metal	Other	1	2	-
Fab_Metal	Other	1	3	-
Fab_Metal	Other	2	1	-
Fab_Metal	Other	2	2	-

Fab_Metal	Other	2	3	-
Transport	Fire_Tube_Boiler	1	1	27,156
Transport	Fire_Tube_Boiler	1	2	29,871
Transport	Fire_Tube_Boiler	1	3	32,587
Transport	Fire_Tube_Boiler	2	1	21,724
Transport	Fire_Tube_Boiler	2	2	23,897
Transport	Fire_Tube_Boiler	2	3	26,069
Transport	Water_Tube_Boiler	1	1	15,821
Transport	Water_Tube_Boiler	1	2	17,403
Transport	Water_Tube_Boiler	1	3	18,985
Transport	Water_Tube_Boiler	2	1	12,657
Transport	Water_Tube_Boiler	2	2	13,922
Transport	Water_Tube_Boiler	2	3	15,188
Transport	Space_Heat	1	1	10,868
Transport	Space_Heat	1	2	11,955
Transport	Space_Heat	1	3	13,042
Transport	Space_Heat	2	1	8,694
Transport	Space_Heat	2	2	9,564
Transport	Space_Heat	2	3	10,433
Transport	Water_Heat	1	1	3,231
Transport	Water_Heat	1	2	3,554
Transport	Water_Heat	1	3	3,877
Transport	Water_Heat	2	1	2,585
Transport	Water_Heat	2	2	2,843
Transport	Water_Heat	2	3	3,102
Transport	Dryer	1	1	81,394
Transport	Dryer	1	2	89,533
Transport	Dryer	1	3	97,673
Transport	Dryer	2	1	65,115
Transport	Dryer	2	2	71,627
Transport	Dryer	2	3	78,138
Transport	Furnace_Oven_Kiln	1	1	139,512
Transport	Furnace_Oven_Kiln	1	2	153,464
Transport	Furnace_Oven_Kiln	1	3	167,415
Transport	Furnace_Oven_Kiln	2	1	111,610
Transport	Furnace_Oven_Kiln	2	2	122,771
Transport	Furnace_Oven_Kiln	2	3	133,932
Transport	AC	1	1	518
Transport	AC	1	2	570
Transport	AC	1	3	621
Transport	AC	2	1	414
Transport	AC	2	2	456
Transport	AC	2	3	497
Transport	Engine	1	1	2,575
Transport	Engine	1	2	2,832
Transport	Engine	1	3	3,090
Transport	Engine	2	1	2,060
Transport	Engine	2	2	2,266
Transport	Engine	2	3	2,472
Transport	Other	1	1	-
Transport	Other	1	2	-
Transport	Other	1	3	-
Transport	Other	2	1	-
Transport	Other	2	2	-
Transport	Other	2	3	-
Misc	Fire_Tube_Boiler	1	1	50,324
Misc	Fire_Tube_Boiler	1	2	55,356
Misc	Fire_Tube_Boiler	1	3	60,388
Misc	Fire_Tube_Boiler	2	1	40,259
Misc	Fire_Tube_Boiler	2	2	44,285
Misc	Fire_Tube_Boiler	2	3	48,311
Misc	Water_Tube_Boiler	1	1	35,392
Misc	Water_Tube_Boiler	1	2	38,931
Misc	Water_Tube_Boiler	1	3	42,470
Misc	Water_Tube_Boiler	2	1	28,313
Misc	Water_Tube_Boiler	2	2	31,145
Misc	Water_Tube_Boiler	2	3	33,976
Misc	Space_Heat	1	1	7,731
Misc	Space_Heat	1	2	8,504
Misc	Space_Heat	1	3	9,277
Misc	Space_Heat	2	1	6,185

Misc	Space_Heat	2	2	6,803
Misc	Space_Heat	2	3	7,422
Misc	Water_Heat	1	1	2,224
Misc	Water_Heat	1	2	2,446
Misc	Water_Heat	1	3	2,669
Misc	Water_Heat	2	1	1,779
Misc	Water_Heat	2	2	1,957
Misc	Water_Heat	2	3	2,135
Misc	Dryer	1	1	61,610
Misc	Dryer	1	2	67,771
Misc	Dryer	1	3	73,932
Misc	Dryer	2	1	49,288
Misc	Dryer	2	2	54,217
Misc	Dryer	2	3	59,145
Misc	Furnace_Oven_Kiln	1	1	341,739
Misc	Furnace_Oven_Kiln	1	2	375,913
Misc	Furnace_Oven_Kiln	1	3	410,087
Misc	Furnace_Oven_Kiln	2	1	273,391
Misc	Furnace_Oven_Kiln	2	2	300,731
Misc	Furnace_Oven_Kiln	2	3	328,070
Misc	AC	1	1	2,879
Misc	AC	1	2	3,167
Misc	AC	1	3	3,455
Misc	AC	2	1	2,303
Misc	AC	2	2	2,534
Misc	AC	2	3	2,764
Misc	Engine	1	1	5,988
Misc	Engine	1	2	6,587
Misc	Engine	1	3	7,186
Misc	Engine	2	1	4,790
Misc	Engine	2	2	5,270
Misc	Engine	2	3	5,749
Misc	Other	1	1	-
Misc	Other	1	2	-
Misc	Other	1	3	-
Misc	Other	2	1	-
Misc	Other	2	2	-
Misc	Other	2	3	-

**San Diego Gas and Electric Company
2008 CGR - Industrial GN3
Employment Forecast (in thousands)**

YEAR	Mining	Food	Textile	Wood_Paper	Chemical	Petroleum	Stone	Primary_Metal	Fabricated_Metal	Transportation	Miscellaneous	Total
2007	2,212	13,904	4,514	3,078	4,520	713	3,084	1,161	10,821	9,276	49,218	102,500
2008	2,296	13,937	4,423	2,908	4,600	727	2,996	1,160	11,051	9,333	49,649	103,081
2009	2,309	14,012	4,341	2,841	4,636	715	2,933	1,116	10,821	9,379	48,656	101,760
2010	2,251	13,967	4,282	2,903	4,667	699	2,930	1,090	10,740	9,363	48,261	101,154
2011	2,217	14,162	4,290	3,034	4,795	697	2,990	1,094	10,959	9,515	48,656	102,409
2012	2,157	14,242	4,228	3,086	4,897	688	3,009	1,097	11,275	9,553	48,747	102,978
2013	2,076	14,283	4,150	3,091	4,980	677	3,003	1,093	11,497	9,493	48,664	103,006
2014	1,997	14,353	4,088	3,100	5,060	669	2,995	1,087	11,640	9,419	48,678	103,087
2015	1,928	14,460	4,047	3,116	5,149	662	2,993	1,082	11,817	9,365	48,735	103,354
2016	1,870	14,579	4,019	3,135	5,233	654	2,992	1,078	12,044	9,319	48,920	103,844
2017	1,816	14,705	4,019	3,138	5,331	649	3,003	1,081	12,282	9,275	49,349	104,648
2018	1,771	14,843	4,035	3,151	5,430	646	3,025	1,089	12,472	9,266	49,651	105,380
2019	1,743	14,941	4,037	3,147	5,502	642	3,029	1,089	12,524	9,231	49,538	105,422
2020	1,737	15,045	4,042	3,138	5,572	637	3,044	1,088	12,496	9,205	49,290	105,293
2021	1,738	15,133	4,049	3,124	5,639	634	3,055	1,090	12,439	9,157	48,830	104,889
2022	1,739	15,176	4,060	3,106	5,697	631	3,057	1,087	12,290	9,112	48,380	104,335
2023	1,740	15,210	4,055	3,091	5,753	627	3,058	1,087	12,197	9,080	48,076	103,975
2024	1,741	15,248	4,042	3,081	5,795	623	3,058	1,088	12,142	9,054	47,893	103,765
2025	1,743	15,315	4,045	3,079	5,845	619	3,063	1,088	12,082	9,041	47,914	103,835
2026	1,744	15,391	4,058	3,080	5,899	617	3,070	1,087	12,047	9,028	48,053	104,075
2027	1,745	15,460	4,069	3,074	5,957	614	3,078	1,080	12,043	9,000	48,259	104,378
2028	1,745	15,487	4,059	3,051	6,005	609	3,079	1,069	11,992	8,950	48,439	104,485
2029	1,747	15,528	4,045	3,034	6,051	606	3,078	1,057	11,912	8,909	48,651	104,616
2030	1,745	15,560	4,037	3,020	6,081	602	3,071	1,041	11,814	8,882	48,783	104,636

San Diego Gas and Electric Company
2008 CGR - Industrial GN3
Core Industrial Demand Forecast (Mdt)
Average Temperature

YEAR	<u>Model Output</u>		
	<u>GN-3 - Ind</u>	<u>DSM</u>	<u>GN-3 - Ind</u>
2007	1,807.0	0.0	1,807.0
2008	1,756.9	5.3	1,751.6
2009	1,729.9	10.6	1,719.3
2010	1,717.6	16.4	1,701.2
2011	1,719.9	22.8	1,697.1
2012	1,725.1	29.6	1,695.5
2013	1,724.4	37.0	1,687.4
2014	1,724.2	44.4	1,679.8
2015	1,713.0	51.7	1,661.3
2016	1,701.9	59.1	1,642.8
2017	1,694.6	66.5	1,628.2
2018	1,688.0	68.5	1,619.4
2019	1,676.3	70.6	1,605.7
2020	1,664.1	72.2	1,591.9
2021	1,653.6	73.2	1,580.4
2022	1,635.5	73.7	1,561.8
2023	1,619.5	73.7	1,545.8
2024	1,605.2	73.7	1,531.4
2025	1,594.0	73.7	1,520.3
2026	1,587.7	73.7	1,513.9
2027	1,580.5	73.7	1,506.8
2028	1,570.2	73.7	1,496.5
2029	1,559.5	73.7	1,485.8
2030	1,560.7	73.7	1,487.0

San Diego Gas and Electric Company
2008 CGR - Industrial GN3
Core Industrial Demand Forecast (Mdth)
Cold Temperature

<u>YEAR</u>	<u>Model Output</u>		<u>GN-3 - Ind</u>
	<u>GN-3 - Ind</u>	<u>DSM</u>	
2007	1,901.0	0.0	1,901.0
2008	1,848.2	5.6	1,842.6
2009	1,819.8	11.2	1,808.7
2010	1,806.9	17.3	1,789.6
2011	1,809.3	23.9	1,785.4
2012	1,814.9	31.2	1,783.7
2013	1,814.1	38.9	1,775.2
2014	1,813.8	46.7	1,767.2
2015	1,802.1	54.4	1,747.7
2016	1,790.3	62.2	1,728.2
2017	1,782.7	69.9	1,712.8
2018	1,775.7	72.1	1,703.6
2019	1,763.5	74.3	1,689.2
2020	1,750.6	75.9	1,674.7
2021	1,739.6	77.0	1,662.6
2022	1,720.5	77.5	1,643.0
2023	1,703.7	77.5	1,626.1
2024	1,688.6	77.5	1,611.1
2025	1,676.9	77.5	1,599.3
2026	1,670.2	77.5	1,592.7
2027	1,662.7	77.5	1,585.1
2028	1,651.9	77.5	1,574.4
2029	1,640.6	77.5	1,563.0
2030	1,641.8	77.5	1,564.3

San Diego Gas and Electric Company
2008 CGR - Industrial GN3
Core Industrial Demand Forecast (Mdth)
Hot Temperature

<u>YEAR</u>	Model Output		<u>GN-3 - Ind</u>
	<u>GN-3 - Ind</u>	<u>DSM</u>	
2007	1,713.1	0.0	1,713.1
2008	1,665.5	5.0	1,660.5
2009	1,639.9	10.1	1,629.9
2010	1,628.3	15.6	1,612.7
2011	1,630.4	21.6	1,608.9
2012	1,635.4	28.1	1,607.4
2013	1,634.8	35.1	1,599.7
2014	1,634.5	42.0	1,592.5
2015	1,623.9	49.0	1,574.9
2016	1,613.4	56.0	1,557.3
2017	1,606.5	63.0	1,543.5
2018	1,600.2	65.0	1,535.2
2019	1,589.2	66.9	1,522.2
2020	1,577.6	68.4	1,509.1
2021	1,567.6	69.4	1,498.2
2022	1,550.4	69.9	1,480.6
2023	1,535.3	69.9	1,465.4
2024	1,521.7	69.9	1,451.8
2025	1,511.1	69.9	1,441.2
2026	1,505.1	69.9	1,435.2
2027	1498.3	69.9	1428.4
2028	1488.6	69.9	1418.7
2029	1478.4	69.9	1408.5
2030	1479.5	69.9	1409.7

San Diego Gas and Electric Company
2008 CGR - Industrial GN3
Core Industrial Demand Forecast (Mdth)
Base Temperature

<u>YEAR</u>	<u>Model Output</u>		
	<u>GN-3 - Ind</u>	<u>DSM</u>	<u>GN-3 - Ind</u>
2007	1,454.4	0.0	1,454.4
2008	1,414.0	4.4	1,409.6
2009	1,392.3	8.7	1,383.6
2010	1,382.4	13.3	1,369.1
2011	1,384.2	18.3	1,366.0
2012	1,388.5	23.8	1,364.7
2013	1,387.9	29.8	1,358.1
2014	1,387.7	35.7	1,352.0
2015	1,378.7	41.9	1,336.8
2016	1,369.7	47.9	1,321.9
2017	1,363.9	53.7	1,310.2
2018	1,358.6	55.4	1,303.2
2019	1,349.2	57.2	1,292.0
2020	1,339.3	58.5	1,280.8
2021	1,330.9	59.3	1,271.6
2022	1,316.3	60.0	1,256.3
2023	1,303.4	59.9	1,243.5
2024	1,291.9	59.9	1,232.1
2025	1,282.9	59.7	1,223.2
2026	1,277.8	59.6	1,218.3
2027	1,272.1	59.6	1,212.5
2028	1,263.8	59.7	1,204.1
2029	1,255.2	59.7	1,195.4
2030	1,256.1	59.3	1,196.9

2008 CALIFORNIA GAS REPORT

NONCORE COMMERCIAL AND INDUSTRIAL DEMAND FORECAST
JULY 2008



Forecast Units are in MDth

Date	Year	Day	Commercial			Industrial		
			69.00%	30.00%	1.00%	29.00%	44.00%	27.00%
			MP	HP	T	MP	HP	T
Jan-06	2006	31	191	259	4	28	78	13
Feb-06	2006	28	189	257	4	29	72	28
Mar-06	2006	31	174	232	4	26	56	26
Apr-06	2006	30	196	275	4	30	66	34
May-06	2006	31	187	163	2	27	83	24
Jun-06	2006	30	175	68	2	28	79	20
Jul-06	2006	31	155	75	2	29	83	22
Aug-06	2006	31	130	74	2	29	53	17
Sep-06	2006	30	148	72	2	31	57	30
Oct-06	2006	31	141	71	2	27	43	29
Nov-06	2006	30	155	100	2	25	41	30
Dec-06	2006	31	154	84	2	23	30	27
Jan-07	2007	31	180	53	2	30	48	23
Feb-07	2007	28	203	70	2	34	66	29
Mar-07	2007	31	166	69	2	24	49	25
Apr-07	2007	30	172	87	4	35	60	29
May-07	2007	31	167	60	2	37	56	30
Jun-07	2007	30	156	49	2	37	60	27
Jul-07	2007	31	111	57	2	39	53	26
Aug-07	2007	31	117	49	2	41	54	32
Sep-07	2007	30	118	51	2	45	57	40
Oct-07	2007	31	115	46	2	36	49	34
Nov-07	2007	30	120	79	2	36	54	50
Dec-07	2007	31	135	104	2	32	51	59
Jan-08	2008	31	148	65	2	35	54	33
Feb-08	2008	28	134	59	2	32	49	30
Mar-08	2008	31	148	65	2	35	54	33
Apr-08	2008	30	143	63	2	34	53	32
May-08	2008	31	148	65	2	35	54	33
Jun-08	2008	30	143	63	2	34	53	32
Jul-08	2008	31	148	65	2	35	54	33
Aug-08	2008	31	148	65	2	35	54	33
Sep-08	2008	30	143	63	2	34	53	32
Oct-08	2008	31	148	65	2	35	54	33
Nov-08	2008	30	143	63	2	34	53	32
Dec-08	2008	31	148	65	2	35	54	33
Jan-09	2009	31	149	65	2	34	53	33
Feb-09	2009	28	134	59	2	31	48	29
Mar-09	2009	31	149	65	2	34	53	33
Apr-09	2009	30	144	63	2	33	51	32
May-09	2009	31	149	65	2	34	53	33
Jun-09	2009	30	144	63	2	33	51	32
Jul-09	2009	31	149	65	2	34	53	33
Aug-09	2009	31	149	65	2	34	53	33
Sep-09	2009	30	144	63	2	33	51	32
Oct-09	2009	31	149	65	2	34	53	33
Nov-09	2009	30	144	63	2	33	51	32
Dec-09	2009	31	149	65	2	34	53	33
Jan-10	2010	31	150	66	2	34	52	32
Feb-10	2010	28	135	59	2	30	47	29
Mar-10	2010	31	150	66	2	34	52	32
Apr-10	2010	30	145	64	2	33	50	31
May-10	2010	31	150	66	2	34	52	32
Jun-10	2010	30	145	64	2	33	50	31

Forecast Units are in MDth

Date	Year	Day	Commercial			Industrial		
			69.00%	30.00%	1.00%	29.00%	44.00%	27.00%
			MP	HP	T	MP	HP	T
Jul-10	2010	31	150	66	2	34	52	32
Aug-10	2010	31	150	66	2	34	52	32
Sep-10	2010	30	145	64	2	33	50	31
Oct-10	2010	31	150	66	2	34	52	32
Nov-10	2010	30	145	64	2	33	50	31
Dec-10	2010	31	150	66	2	34	52	32
Jan-11	2011	31	151	66	2	33	51	31
Feb-11	2011	28	136	60	2	30	46	28
Mar-11	2011	31	151	66	2	33	51	31
Apr-11	2011	30	146	64	2	32	50	30
May-11	2011	31	151	66	2	33	51	31
Jun-11	2011	30	146	64	2	32	50	30
Jul-11	2011	31	151	66	2	33	51	31
Aug-11	2011	31	151	66	2	33	51	31
Sep-11	2011	30	146	64	2	32	50	30
Oct-11	2011	31	151	66	2	33	51	31
Nov-11	2011	30	146	64	2	32	50	30
Dec-11	2011	31	151	66	2	33	51	31
Jan-12	2012	31	152	67	2	33	50	31
Feb-12	2012	28	138	61	2	29	46	28
Mar-12	2012	31	152	67	2	33	50	31
Apr-12	2012	30	148	65	2	32	49	30
May-12	2012	31	152	67	2	33	50	31
Jun-12	2012	30	148	65	2	32	49	30
Jul-12	2012	31	152	67	2	33	50	31
Aug-12	2012	31	152	67	2	33	50	31
Sep-12	2012	30	148	65	2	32	49	30
Oct-12	2012	31	152	67	2	33	50	31
Nov-12	2012	30	148	65	2	32	49	30
Dec-12	2012	31	152	67	2	33	50	31
Jan-13	2013	31	154	68	2	32	49	30
Feb-13	2013	28	139	61	2	29	45	27
Mar-13	2013	31	154	68	2	32	49	30
Apr-13	2013	30	149	66	2	31	48	29
May-13	2013	31	154	68	2	32	49	30
Jun-13	2013	30	149	66	2	31	48	29
Jul-13	2013	31	154	68	2	32	49	30
Aug-13	2013	31	154	68	2	32	49	30
Sep-13	2013	30	149	66	2	31	48	29
Oct-13	2013	31	154	68	2	32	49	30
Nov-13	2013	30	149	66	2	31	48	29
Dec-13	2013	31	154	68	2	32	49	30
Jan-14	2014	31	155	68	2	31	48	30
Feb-14	2014	28	140	62	2	28	44	27
Mar-14	2014	31	155	68	2	31	48	30
Apr-14	2014	30	150	66	2	30	47	29
May-14	2014	31	155	68	2	31	48	30
Jun-14	2014	30	150	66	2	30	47	29
Jul-14	2014	31	155	68	2	31	48	30
Aug-14	2014	31	155	68	2	31	48	30
Sep-14	2014	30	150	66	2	30	47	29
Oct-14	2014	31	155	68	2	31	48	30
Nov-14	2014	30	150	66	2	30	47	29
Dec-14	2014	31	155	68	2	31	48	30

Forecast Units are in MDth

Date	Year	Day	Commercial			Industrial		
			69.00%	30.00%	1.00%	29.00%	44.00%	27.00%
			MP	HP	T	MP	HP	T
Jan-15	2015	31	156	69	2	30	47	29
Feb-15	2015	28	141	62	2	27	42	26
Mar-15	2015	31	156	69	2	30	47	29
Apr-15	2015	30	151	66	2	29	45	28
May-15	2015	31	156	69	2	30	47	29
Jun-15	2015	30	151	66	2	29	45	28
Jul-15	2015	31	156	69	2	30	47	29
Aug-15	2015	31	156	69	2	30	47	29
Sep-15	2015	30	151	66	2	29	45	28
Oct-15	2015	31	156	69	2	30	47	29
Nov-15	2015	30	151	66	2	29	45	28
Dec-15	2015	31	156	69	2	30	47	29
Jan-16	2016	31	156	69	2	29	45	28
Feb-16	2016	28	141	62	2	26	41	25
Mar-16	2016	31	156	69	2	29	45	28
Apr-16	2016	30	151	66	2	28	44	27
May-16	2016	31	156	69	2	29	45	28
Jun-16	2016	30	151	66	2	28	44	27
Jul-16	2016	31	156	69	2	29	45	28
Aug-16	2016	31	156	69	2	29	45	28
Sep-16	2016	30	151	66	2	28	44	27
Oct-16	2016	31	156	69	2	29	45	28
Nov-16	2016	30	151	66	2	28	44	27
Dec-16	2016	31	156	69	2	29	45	28
Jan-17	2017	31	156	69	2	28	44	27
Feb-17	2017	28	141	62	2	26	40	24
Mar-17	2017	31	156	69	2	28	44	27
Apr-17	2017	30	151	67	2	28	43	26
May-17	2017	31	156	69	2	28	44	27
Jun-17	2017	30	151	67	2	28	43	26
Jul-17	2017	31	156	69	2	28	44	27
Aug-17	2017	31	156	69	2	28	44	27
Sep-17	2017	30	151	67	2	28	43	26
Oct-17	2017	31	156	69	2	28	44	27
Nov-17	2017	30	151	67	2	28	43	26
Dec-17	2017	31	156	69	2	28	44	27
Jan-18	2018	31	157	69	2	28	43	27
Feb-18	2018	28	142	62	2	25	39	24
Mar-18	2018	31	157	69	2	28	43	27
Apr-18	2018	30	152	67	2	27	42	26
May-18	2018	31	157	69	2	28	43	27
Jun-18	2018	30	152	67	2	27	42	26
Jul-18	2018	31	157	69	2	28	43	27
Aug-18	2018	31	157	69	2	28	43	27
Sep-18	2018	30	152	67	2	27	42	26
Oct-18	2018	31	157	69	2	28	43	27
Nov-18	2018	30	152	67	2	27	42	26
Dec-18	2018	31	157	69	2	28	43	27
Jan-19	2019	31	158	69	2	28	43	26
Feb-19	2019	28	142	63	2	25	39	24
Mar-19	2019	31	158	69	2	28	43	26
Apr-19	2019	30	153	67	2	27	41	25
May-19	2019	31	158	69	2	28	43	26
Jun-19	2019	30	153	67	2	27	41	25

Forecast Units are in MDth

Date	Year	Day	Commercial			Industrial		
			69.00%	30.00%	1.00%	29.00%	44.00%	27.00%
			MP	HP	T	MP	HP	T
Jul-19	2019	31	158	69	2	28	43	26
Aug-19	2019	31	158	69	2	28	43	26
Sep-19	2019	30	153	67	2	27	41	25
Oct-19	2019	31	158	69	2	28	43	26
Nov-19	2019	30	153	67	2	27	41	25
Dec-19	2019	31	158	69	2	28	43	26
Jan-20	2020	31	159	70	2	27	42	26
Feb-20	2020	28	143	63	2	25	38	24
Mar-20	2020	31	159	70	2	27	42	26
Apr-20	2020	30	153	68	2	26	41	25
May-20	2020	31	159	70	2	27	42	26
Jun-20	2020	30	153	68	2	26	41	25
Jul-20	2020	31	159	70	2	27	42	26
Aug-20	2020	31	159	70	2	27	42	26
Sep-20	2020	30	153	68	2	26	41	25
Oct-20	2020	31	159	70	2	27	42	26
Nov-20	2020	30	153	68	2	26	41	25
Dec-20	2020	31	159	70	2	27	42	26
Jan-21	2021	31	160	70	2	27	42	26
Feb-21	2021	28	144	64	2	25	38	23
Mar-21	2021	31	160	70	2	27	42	26
Apr-21	2021	30	155	68	2	26	41	25
May-21	2021	31	160	70	2	27	42	26
Jun-21	2021	30	155	68	2	26	41	25
Jul-21	2021	31	160	70	2	27	42	26
Aug-21	2021	31	160	70	2	27	42	26
Sep-21	2021	30	155	68	2	26	41	25
Oct-21	2021	31	160	70	2	27	42	26
Nov-21	2021	30	155	68	2	26	41	25
Dec-21	2021	31	160	70	2	27	42	26
Jan-22	2022	31	161	71	2	27	42	26
Feb-22	2022	28	145	64	2	24	38	23
Mar-22	2022	31	161	71	2	27	42	26
Apr-22	2022	30	155	68	2	26	41	25
May-22	2022	31	161	71	2	27	42	26
Jun-22	2022	30	155	68	2	26	41	25
Jul-22	2022	31	161	71	2	27	42	26
Aug-22	2022	31	161	71	2	27	42	26
Sep-22	2022	30	155	68	2	26	41	25
Oct-22	2022	31	161	71	2	27	42	26
Nov-22	2022	30	155	68	2	26	41	25
Dec-22	2022	31	161	71	2	27	42	26
Jan-23	2023	31	161	71	2	27	42	26
Feb-23	2023	28	146	64	2	24	38	23
Mar-23	2023	31	161	71	2	27	42	26
Apr-23	2023	30	156	69	2	26	40	25
May-23	2023	31	161	71	2	27	42	26
Jun-23	2023	30	156	69	2	26	40	25
Jul-23	2023	31	161	71	2	27	42	26
Aug-23	2023	31	161	71	2	27	42	26
Sep-23	2023	30	156	69	2	26	40	25
Oct-23	2023	31	161	71	2	27	42	26
Nov-23	2023	30	156	69	2	26	40	25
Dec-23	2023	31	161	71	2	27	42	26

Forecast Units are in MDth

Date	Year	Day	Commercial			Industrial		
			69.00%	30.00%	1.00%	29.00%	44.00%	27.00%
			MP	HP	T	MP	HP	T
Jan-24	2024	31	162	71	2	27	42	26
Feb-24	2024	28	146	65	2	24	38	23
Mar-24	2024	31	162	71	2	27	42	26
Apr-24	2024	30	157	69	2	26	40	25
May-24	2024	31	162	71	2	27	42	26
Jun-24	2024	30	157	69	2	26	40	25
Jul-24	2024	31	162	71	2	27	42	26
Aug-24	2024	31	162	71	2	27	42	26
Sep-24	2024	30	157	69	2	26	40	25
Oct-24	2024	31	162	71	2	27	42	26
Nov-24	2024	30	157	69	2	26	40	25
Dec-24	2024	31	162	71	2	27	42	26
Jan-25	2025	31	163	72	2	27	42	25
Feb-25	2025	28	147	65	2	24	38	23
Mar-25	2025	31	163	72	2	27	42	25
Apr-25	2025	30	158	69	2	26	40	25
May-25	2025	31	163	72	2	27	42	25
Jun-25	2025	30	158	69	2	26	40	25
Jul-25	2025	31	163	72	2	27	42	25
Aug-25	2025	31	163	72	2	27	42	25
Sep-25	2025	30	158	69	2	26	40	25
Oct-25	2025	31	163	72	2	27	42	25
Nov-25	2025	30	158	69	2	26	40	25
Dec-25	2025	31	163	72	2	27	42	25
Jan-26	2026	31	164	72	2	27	42	25
Feb-26	2026	28	148	65	2	24	38	23
Mar-26	2026	31	164	72	2	27	42	25
Apr-26	2026	30	158	70	2	26	40	25
May-26	2026	31	164	72	2	27	42	25
Jun-26	2026	30	158	70	2	26	40	25
Jul-26	2026	31	164	72	2	27	42	25
Aug-26	2026	31	164	72	2	27	42	25
Sep-26	2026	30	158	70	2	26	40	25
Oct-26	2026	31	164	72	2	27	42	25
Nov-26	2026	30	158	70	2	26	40	25
Dec-26	2026	31	164	72	2	27	42	25
Jan-27	2027	31	164	73	3	27	42	26
Feb-27	2027	28	149	66	2	24	38	23
Mar-27	2027	31	164	73	3	27	42	26
Apr-27	2027	30	159	70	2	26	40	25
May-27	2027	31	164	73	3	27	42	26
Jun-27	2027	30	159	70	2	26	40	25
Jul-27	2027	31	164	73	3	27	42	26
Aug-27	2027	31	164	73	3	27	42	26
Sep-27	2027	30	159	70	2	26	40	25
Oct-27	2027	31	164	73	3	27	42	26
Nov-27	2027	30	159	70	2	26	40	25
Dec-27	2027	31	164	73	3	27	42	26
Jan-28	2028	31	165	73	3	27	41	25
Feb-28	2028	28	149	66	2	24	37	23
Mar-28	2028	31	165	73	3	27	41	25
Apr-28	2028	30	159	70	2	26	40	25
May-28	2028	31	165	73	3	27	41	25
Jun-28	2028	30	159	70	2	26	40	25

Forecast Units are in MDth

Date	Year	Day	Commercial			Industrial		
			69.00%	30.00%	1.00%	29.00%	44.00%	27.00%
			MP	HP	T	MP	HP	T
Jul-28	2028	31	165	73	3	27	41	25
Aug-28	2028	31	165	73	3	27	41	25
Sep-28	2028	30	159	70	2	26	40	25
Oct-28	2028	31	165	73	3	27	41	25
Nov-28	2028	30	159	70	2	26	40	25
Dec-28	2028	31	165	73	3	27	41	25
Jan-29	2029	31	166	73	3	27	41	25
Feb-29	2029	28	150	66	2	24	37	23
Mar-29	2029	31	166	73	3	27	41	25
Apr-29	2029	30	161	71	2	26	40	25
May-29	2029	31	166	73	3	27	41	25
Jun-29	2029	30	161	71	2	26	40	25
Jul-29	2029	31	166	73	3	27	41	25
Aug-29	2029	31	166	73	3	27	41	25
Sep-29	2029	30	161	71	2	26	40	25
Oct-29	2029	31	166	73	3	27	41	25
Nov-29	2029	30	161	71	2	26	40	25
Dec-29	2029	31	166	73	3	27	41	25
Jan-30	2030	31	166	74	3	27	41	25
Feb-30	2030	28	150	67	2	24	37	23
Mar-30	2030	31	166	74	3	27	41	25
Apr-30	2030	30	161	71	2	26	40	25
May-30	2030	31	166	74	3	27	41	25
Jun-30	2030	30	161	71	2	26	40	25
Jul-30	2030	31	166	74	3	27	41	25
Aug-30	2030	31	166	74	3	27	41	25
Sep-30	2030	30	161	71	2	26	40	25
Oct-30	2030	31	166	74	3	27	41	25
Nov-30	2030	30	161	71	2	26	40	25
Dec-30	2030	31	166	74	3	27	41	25

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jan-06	2006	31	92	82	0	0	427	126
Feb-06	2006	28	97	81	0	0	467	129
Mar-06	2006	31	102	73	0	0	423	94
Apr-06	2006	30	113	79	0	0	424	134
May-06	2006	31	107	67	0	0	816	220
Jun-06	2006	30	109	86	0	0	1,280	241
Jul-06	2006	31	113	83	0	0	1,266	233
Aug-06	2006	31	115	103	0	0	1,329	242
Sep-06	2006	30	115	110	0	0	1,315	239
Oct-06	2006	31	195	96	0	0	1,288	224
Nov-06	2006	30	112	125	0	0	1,287	209
Dec-06	2006	31	114	92	0	0	1,188	237
Jan-07	2007	31	106	64	0	0	1,399	238
Feb-07	2007	28	112	67	0	0	1,330	238
Mar-07	2007	31	103	57	0	0	1,159	223
Apr-07	2007	30	106	52	0	0	1,237	128
May-07	2007	31	96	55	0	0	1,253	236
Jun-07	2007	30	96	65	0	0	1,365	231
Jul-07	2007	31	100	65	0	0	1,236	234
Aug-07	2007	31	123	63	0	0	1,306	247
Sep-07	2007	30	123	69	0	0	1,340	237
Oct-07	2007	31	115	65	0	0	1,331	229
Nov-07	2007	30	114	69	0	0	1,249	167
Dec-07	2007	31	86	66	0	0	1,048	222
Jan-08	2008	31	107	64	0	0	1,277	220
Feb-08	2008	28	97	58	0	0	1,153	198
Mar-08	2008	31	107	64	0	0	1,277	220
Apr-08	2008	30	104	62	0	0	1,236	213
May-08	2008	31	107	64	0	0	1,277	220
Jun-08	2008	30	104	62	0	0	1,236	213
Jul-08	2008	31	107	64	0	0	1,277	220
Aug-08	2008	31	107	64	0	0	1,277	220
Sep-08	2008	30	104	62	0	0	1,236	213
Oct-08	2008	31	107	64	0	0	1,277	220
Nov-08	2008	30	104	62	0	0	1,236	213
Dec-08	2008	31	107	64	0	0	1,277	220
Jan-09	2009	31	108	64	0	0	1,282	221
Feb-09	2009	28	97	58	0	0	1,158	199
Mar-09	2009	31	108	64	0	0	1,282	221
Apr-09	2009	30	104	62	0	0	1,241	214
May-09	2009	31	108	64	0	0	1,282	221
Jun-09	2009	30	104	62	0	0	1,241	214
Jul-09	2009	31	108	64	0	0	1,282	221
Aug-09	2009	31	108	64	0	0	1,282	221
Sep-09	2009	30	104	62	0	0	1,241	214
Oct-09	2009	31	108	64	0	0	1,282	221
Nov-09	2009	30	104	62	0	0	1,241	214
Dec-09	2009	31	108	64	0	0	1,282	221
Jan-10	2010	31	108	64	0	0	1,291	223
Feb-10	2010	28	98	58	0	0	1,166	201
Mar-10	2010	31	108	64	0	0	1,291	223
Apr-10	2010	30	105	62	0	0	1,249	215
May-10	2010	31	108	64	0	0	1,291	223
Jun-10	2010	30	105	62	0	0	1,249	215

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jul-10	2010	31	108	64	0	0	1,291	223
Aug-10	2010	31	108	64	0	0	1,291	223
Sep-10	2010	30	105	62	0	0	1,249	215
Oct-10	2010	31	108	64	0	0	1,291	223
Nov-10	2010	30	105	62	0	0	1,249	215
Dec-10	2010	31	108	64	0	0	1,291	223
Jan-11	2011	31	109	65	0	0	1,304	225
Feb-11	2011	28	99	58	0	0	1,178	203
Mar-11	2011	31	109	65	0	0	1,304	225
Apr-11	2011	30	106	63	0	0	1,262	218
May-11	2011	31	109	65	0	0	1,304	225
Jun-11	2011	30	106	63	0	0	1,262	218
Jul-11	2011	31	109	65	0	0	1,304	225
Aug-11	2011	31	109	65	0	0	1,304	225
Sep-11	2011	30	106	63	0	0	1,262	218
Oct-11	2011	31	109	65	0	0	1,304	225
Nov-11	2011	30	106	63	0	0	1,262	218
Dec-11	2011	31	109	65	0	0	1,304	225
Jan-12	2012	31	111	65	0	0	1,321	229
Feb-12	2012	28	100	59	0	0	1,193	207
Mar-12	2012	31	111	65	0	0	1,321	229
Apr-12	2012	30	107	63	0	0	1,279	221
May-12	2012	31	111	65	0	0	1,321	229
Jun-12	2012	30	107	63	0	0	1,279	221
Jul-12	2012	31	111	65	0	0	1,321	229
Aug-12	2012	31	111	65	0	0	1,321	229
Sep-12	2012	30	107	63	0	0	1,279	221
Oct-12	2012	31	111	65	0	0	1,321	229
Nov-12	2012	30	107	63	0	0	1,279	221
Dec-12	2012	31	111	65	0	0	1,321	229
Jan-13	2013	31	112	66	0	0	1,337	232
Feb-13	2013	28	101	60	0	0	1,208	209
Mar-13	2013	31	112	66	0	0	1,337	232
Apr-13	2013	30	108	64	0	0	1,294	224
May-13	2013	31	112	66	0	0	1,337	232
Jun-13	2013	30	108	64	0	0	1,294	224
Jul-13	2013	31	112	66	0	0	1,337	232
Aug-13	2013	31	112	66	0	0	1,337	232
Sep-13	2013	30	108	64	0	0	1,294	224
Oct-13	2013	31	112	66	0	0	1,337	232
Nov-13	2013	30	108	64	0	0	1,294	224
Dec-13	2013	31	112	66	0	0	1,337	232
Jan-14	2014	31	113	67	0	0	1,352	235
Feb-14	2014	28	102	60	0	0	1,221	212
Mar-14	2014	31	113	67	0	0	1,352	235
Apr-14	2014	30	109	65	0	0	1,308	227
May-14	2014	31	113	67	0	0	1,352	235
Jun-14	2014	30	109	65	0	0	1,308	227
Jul-14	2014	31	113	67	0	0	1,352	235
Aug-14	2014	31	113	67	0	0	1,352	235
Sep-14	2014	30	109	65	0	0	1,308	227
Oct-14	2014	31	113	67	0	0	1,352	235
Nov-14	2014	30	109	65	0	0	1,308	227
Dec-14	2014	31	113	67	0	0	1,352	235

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jan-15	2015	31	113	67	0	0	1,356	236
Feb-15	2015	28	102	60	0	0	1,225	213
Mar-15	2015	31	113	67	0	0	1,356	236
Apr-15	2015	30	110	65	0	0	1,313	228
May-15	2015	31	113	67	0	0	1,356	236
Jun-15	2015	30	110	65	0	0	1,313	228
Jul-15	2015	31	113	67	0	0	1,356	236
Aug-15	2015	31	113	67	0	0	1,356	236
Sep-15	2015	30	110	65	0	0	1,313	228
Oct-15	2015	31	113	67	0	0	1,356	236
Nov-15	2015	30	110	65	0	0	1,313	228
Dec-15	2015	31	113	67	0	0	1,356	236
Jan-16	2016	31	114	67	0	0	1,361	237
Feb-16	2016	28	103	60	0	0	1,229	214
Mar-16	2016	31	114	67	0	0	1,361	237
Apr-16	2016	30	110	65	0	0	1,317	229
May-16	2016	31	114	67	0	0	1,361	237
Jun-16	2016	30	110	65	0	0	1,317	229
Jul-16	2016	31	114	67	0	0	1,361	237
Aug-16	2016	31	114	67	0	0	1,361	237
Sep-16	2016	30	110	65	0	0	1,317	229
Oct-16	2016	31	114	67	0	0	1,361	237
Nov-16	2016	30	110	65	0	0	1,317	229
Dec-16	2016	31	114	67	0	0	1,361	237
Jan-17	2017	31	114	67	0	0	1,365	238
Feb-17	2017	28	103	61	0	0	1,233	215
Mar-17	2017	31	114	67	0	0	1,365	238
Apr-17	2017	30	110	65	0	0	1,321	230
May-17	2017	31	114	67	0	0	1,365	238
Jun-17	2017	30	110	65	0	0	1,321	230
Jul-17	2017	31	114	67	0	0	1,365	238
Aug-17	2017	31	114	67	0	0	1,365	238
Sep-17	2017	30	110	65	0	0	1,321	230
Oct-17	2017	31	114	67	0	0	1,365	238
Nov-17	2017	30	110	65	0	0	1,321	230
Dec-17	2017	31	114	67	0	0	1,365	238
Jan-18	2018	31	114	68	0	0	1,370	238
Feb-18	2018	28	103	61	0	0	1,237	215
Mar-18	2018	31	114	68	0	0	1,370	238
Apr-18	2018	30	111	65	0	0	1,326	231
May-18	2018	31	114	68	0	0	1,370	238
Jun-18	2018	30	111	65	0	0	1,326	231
Jul-18	2018	31	114	68	0	0	1,370	238
Aug-18	2018	31	114	68	0	0	1,370	238
Sep-18	2018	30	111	65	0	0	1,326	231
Oct-18	2018	31	114	68	0	0	1,370	238
Nov-18	2018	30	111	65	0	0	1,326	231
Dec-18	2018	31	114	68	0	0	1,370	238
Jan-19	2019	31	115	68	0	0	1,375	239
Feb-19	2019	28	104	61	0	0	1,242	216
Mar-19	2019	31	115	68	0	0	1,375	239
Apr-19	2019	30	111	66	0	0	1,330	231
May-19	2019	31	115	68	0	0	1,375	239
Jun-19	2019	30	111	66	0	0	1,330	231

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jul-19	2019	31	115	68	0	0	1,375	239
Aug-19	2019	31	115	68	0	0	1,375	239
Sep-19	2019	30	111	66	0	0	1,330	231
Oct-19	2019	31	115	68	0	0	1,375	239
Nov-19	2019	30	111	66	0	0	1,330	231
Dec-19	2019	31	115	68	0	0	1,375	239
Jan-20	2020	31	115	68	0	0	1,379	240
Feb-20	2020	28	104	62	0	0	1,246	217
Mar-20	2020	31	115	68	0	0	1,379	240
Apr-20	2020	30	111	66	0	0	1,335	232
May-20	2020	31	115	68	0	0	1,379	240
Jun-20	2020	30	111	66	0	0	1,335	232
Jul-20	2020	31	115	68	0	0	1,379	240
Aug-20	2020	31	115	68	0	0	1,379	240
Sep-20	2020	30	111	66	0	0	1,335	232
Oct-20	2020	31	115	68	0	0	1,379	240
Nov-20	2020	30	111	66	0	0	1,335	232
Dec-20	2020	31	115	68	0	0	1,379	240
Jan-21	2021	31	116	69	0	0	1,388	241
Feb-21	2021	28	105	62	0	0	1,254	218
Mar-21	2021	31	116	69	0	0	1,388	241
Apr-21	2021	30	112	66	0	0	1,343	233
May-21	2021	31	116	69	0	0	1,388	241
Jun-21	2021	30	112	66	0	0	1,343	233
Jul-21	2021	31	116	69	0	0	1,388	241
Aug-21	2021	31	116	69	0	0	1,388	241
Sep-21	2021	30	112	66	0	0	1,343	233
Oct-21	2021	31	116	69	0	0	1,388	241
Nov-21	2021	30	112	66	0	0	1,343	233
Dec-21	2021	31	116	69	0	0	1,388	241
Jan-22	2022	31	116	69	0	0	1,393	242
Feb-22	2022	28	105	62	0	0	1,258	219
Mar-22	2022	31	116	69	0	0	1,393	242
Apr-22	2022	30	112	67	0	0	1,348	235
May-22	2022	31	116	69	0	0	1,393	242
Jun-22	2022	30	112	67	0	0	1,348	235
Jul-22	2022	31	116	69	0	0	1,393	242
Aug-22	2022	31	116	69	0	0	1,393	242
Sep-22	2022	30	112	67	0	0	1,348	235
Oct-22	2022	31	116	69	0	0	1,393	242
Nov-22	2022	30	112	67	0	0	1,348	235
Dec-22	2022	31	116	69	0	0	1,393	242
Jan-23	2023	31	117	69	0	0	1,399	244
Feb-23	2023	28	105	62	0	0	1,264	220
Mar-23	2023	31	117	69	0	0	1,399	244
Apr-23	2023	30	113	67	0	0	1,354	236
May-23	2023	31	117	69	0	0	1,399	244
Jun-23	2023	30	113	67	0	0	1,354	236
Jul-23	2023	31	117	69	0	0	1,399	244
Aug-23	2023	31	117	69	0	0	1,399	244
Sep-23	2023	30	113	67	0	0	1,354	236
Oct-23	2023	31	117	69	0	0	1,399	244
Nov-23	2023	30	113	67	0	0	1,354	236
Dec-23	2023	31	117	69	0	0	1,399	244

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jan-24	2024	31	117	69	0	0	1,405	245
Feb-24	2024	28	106	62	0	0	1,269	221
Mar-24	2024	31	117	69	0	0	1,405	245
Apr-24	2024	30	113	67	0	0	1,360	237
May-24	2024	31	117	69	0	0	1,405	245
Jun-24	2024	30	113	67	0	0	1,360	237
Jul-24	2024	31	117	69	0	0	1,405	245
Aug-24	2024	31	117	69	0	0	1,405	245
Sep-24	2024	30	113	67	0	0	1,360	237
Oct-24	2024	31	117	69	0	0	1,405	245
Nov-24	2024	30	113	67	0	0	1,360	237
Dec-24	2024	31	117	69	0	0	1,405	245
Jan-25	2025	31	117	69	0	0	1,412	247
Feb-25	2025	28	106	63	0	0	1,275	223
Mar-25	2025	31	117	69	0	0	1,412	247
Apr-25	2025	30	114	67	0	0	1,366	239
May-25	2025	31	117	69	0	0	1,412	247
Jun-25	2025	30	114	67	0	0	1,366	239
Jul-25	2025	31	117	69	0	0	1,412	247
Aug-25	2025	31	117	69	0	0	1,412	247
Sep-25	2025	30	114	67	0	0	1,366	239
Oct-25	2025	31	117	69	0	0	1,412	247
Nov-25	2025	30	114	67	0	0	1,366	239
Dec-25	2025	31	117	69	0	0	1,412	247
Jan-26	2026	31	118	70	0	0	1,420	248
Feb-26	2026	28	107	63	0	0	1,283	224
Mar-26	2026	31	118	70	0	0	1,420	248
Apr-26	2026	30	114	67	0	0	1,374	240
May-26	2026	31	118	70	0	0	1,420	248
Jun-26	2026	30	114	67	0	0	1,374	240
Jul-26	2026	31	118	70	0	0	1,420	248
Aug-26	2026	31	118	70	0	0	1,420	248
Sep-26	2026	30	114	67	0	0	1,374	240
Oct-26	2026	31	118	70	0	0	1,420	248
Nov-26	2026	30	114	67	0	0	1,374	240
Dec-26	2026	31	118	70	0	0	1,420	248
Jan-27	2027	31	119	70	0	0	1,430	250
Feb-27	2027	28	107	63	0	0	1,291	226
Mar-27	2027	31	119	70	0	0	1,430	250
Apr-27	2027	30	115	68	0	0	1,383	242
May-27	2027	31	119	70	0	0	1,430	250
Jun-27	2027	30	115	68	0	0	1,383	242
Jul-27	2027	31	119	70	0	0	1,430	250
Aug-27	2027	31	119	70	0	0	1,430	250
Sep-27	2027	30	115	68	0	0	1,383	242
Oct-27	2027	31	119	70	0	0	1,430	250
Nov-27	2027	30	115	68	0	0	1,383	242
Dec-27	2027	31	119	70	0	0	1,430	250
Jan-28	2028	31	119	70	0	0	1,434	252
Feb-28	2028	28	107	63	0	0	1,295	227
Mar-28	2028	31	119	70	0	0	1,434	252
Apr-28	2028	30	115	68	0	0	1,387	243
May-28	2028	31	119	70	0	0	1,434	252
Jun-28	2028	30	115	68	0	0	1,387	243

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jul-28	2028	31	119	70	0	0	1,434	252
Aug-28	2028	31	119	70	0	0	1,434	252
Sep-28	2028	30	115	68	0	0	1,387	243
Oct-28	2028	31	119	70	0	0	1,434	252
Nov-28	2028	30	115	68	0	0	1,387	243
Dec-28	2028	31	119	70	0	0	1,434	252
Jan-29	2029	31	119	70	0	0	1,446	254
Feb-29	2029	28	108	64	0	0	1,306	230
Mar-29	2029	31	119	70	0	0	1,446	254
Apr-29	2029	30	116	68	0	0	1,399	246
May-29	2029	31	119	70	0	0	1,446	254
Jun-29	2029	30	116	68	0	0	1,399	246
Jul-29	2029	31	119	70	0	0	1,446	254
Aug-29	2029	31	119	70	0	0	1,446	254
Sep-29	2029	30	116	68	0	0	1,399	246
Oct-29	2029	31	119	70	0	0	1,446	254
Nov-29	2029	30	116	68	0	0	1,399	246
Dec-29	2029	31	119	70	0	0	1,446	254
Jan-30	2030	31	120	71	0	0	1,454	256
Feb-30	2030	28	108	64	0	0	1,313	231
Mar-30	2030	31	120	71	0	0	1,454	256
Apr-30	2030	30	116	68	0	0	1,407	248
May-30	2030	31	120	71	0	0	1,454	256
Jun-30	2030	30	116	68	0	0	1,407	248
Jul-30	2030	31	120	71	0	0	1,454	256
Aug-30	2030	31	120	71	0	0	1,454	256
Sep-30	2030	30	116	68	0	0	1,407	248
Oct-30	2030	31	120	71	0	0	1,454	256
Nov-30	2030	30	116	68	0	0	1,407	248
Dec-30	2030	31	120	71	0	0	1,454	256

Therms	NC Commercial			NC Industrial			COGEN <= 3 MW	
	M	H	T	M	H	T	M	H
2007	17,594,234	7,737,025	266,962	4,245,973	6,562,176	4,026,122	12,798,680	7,576,817
2008	17,416,410	7,648,372	262,627	4,174,869	6,452,284	3,958,700	12,622,846	7,495,578
2009	17,545,563	7,699,565	263,932	4,154,243	6,420,407	3,939,142	12,668,483	7,522,513
2010	17,708,068	7,770,369	266,055	4,155,757	6,422,747	3,940,578	12,760,749	7,566,905
2011	17,838,300	7,832,110	269,241	4,186,973	6,470,992	3,970,177	12,883,208	7,621,049
2012	18,051,963	7,932,292	273,321	4,220,994	6,523,571	4,002,436	13,036,842	7,701,150
2013	18,260,147	8,032,290	277,204	4,242,453	6,556,736	4,022,784	13,169,139	7,776,584
2014	18,466,253	8,126,045	280,500	4,265,815	6,592,842	4,044,937	13,300,943	7,852,088
2015	18,535,958	8,157,983	281,650	4,263,403	6,589,115	4,042,650	13,340,851	7,872,288
2016	18,582,441	8,182,722	282,795	4,260,786	6,585,069	4,040,168	13,372,171	7,886,559
2017	18,646,246	8,213,765	283,898	4,266,657	6,594,144	4,045,735	13,416,745	7,913,929
2018	18,729,288	8,250,094	284,681	4,273,634	6,604,926	4,052,350	13,467,335	7,950,199
2019	18,831,656	8,294,607	285,642	4,270,085	6,599,441	4,048,985	13,516,363	7,986,553
2020	18,947,616	8,344,157	286,475	4,264,651	6,591,043	4,043,833	13,565,503	8,023,319
2021	19,091,535	8,406,755	288,310	4,261,538	6,586,232	4,040,881	13,640,220	8,074,655
2022	19,184,630	8,450,036	289,642	4,243,994	6,559,117	4,024,245	13,677,382	8,099,192
2023	19,274,423	8,493,076	291,282	4,230,300	6,537,954	4,011,261	13,721,773	8,122,944
2024	19,359,764	8,533,712	292,906	4,219,776	6,521,688	4,001,281	13,768,725	8,146,216
2025	19,449,222	8,577,084	294,638	4,215,540	6,515,141	3,997,264	13,823,531	8,175,186
2026	19,548,919	8,626,918	296,749	4,216,412	6,516,490	3,998,092	13,890,111	8,210,707
2027	19,651,143	8,679,379	299,187	4,219,148	6,520,718	4,000,686	13,961,254	8,247,087
2028	19,677,975	8,699,646	300,629	4,202,177	6,494,489	3,984,594	13,975,524	8,249,372
2029	19,812,062	8,767,347	303,831	4,210,167	6,506,837	3,992,170	14,069,189	8,296,304
2030	19,887,164	8,810,056	306,216	4,204,000	6,497,307	3,986,323	14,120,775	8,314,384

Therms	A	T	COGEN <= 3 MM			CANDI	COGEN	Total w/o Adjust
			M	H	T			
2007		0	0	152,528,338	26,300,235	40,432,492	199,204,070	239,636,562
2008		0	0	150,321,787	25,873,145	39,913,262	196,313,357	236,226,619
2009		0	0	150,947,981	26,001,700	40,022,852	197,140,677	237,163,529
2010		0	0	152,009,200	26,210,847	40,263,573	198,547,701	238,811,274
2011		0	0	153,531,795	26,524,796	40,567,794	200,560,847	241,128,640
2012		0	0	155,557,934	26,926,722	41,004,577	203,222,648	244,227,225
2013		0	0	157,468,521	27,309,247	41,391,615	205,723,491	247,115,105
2014		0	0	159,178,433	27,634,000	41,776,392	207,965,465	249,741,857
2015		0	0	159,713,101	27,747,284	41,870,760	208,673,524	250,544,284
2016		0	0	160,201,595	27,860,026	41,933,981	209,320,352	251,254,332
2017		0	0	160,774,328	27,968,675	42,050,445	210,073,677	252,124,122
2018		0	0	161,298,902	28,045,805	42,194,972	210,762,242	252,957,214
2019		0	0	161,877,378	28,140,557	42,330,417	211,520,851	253,851,268
2020		0	0	162,413,309	28,222,621	42,477,775	212,224,752	254,702,527
2021		0	0	163,405,829	28,403,387	42,675,251	213,524,091	256,199,342
2022		0	0	164,016,576	28,534,555	42,751,663	214,327,705	257,079,368
2023		0	0	164,734,337	28,696,173	42,838,296	215,275,227	258,113,523
2024		0	0	165,446,896	28,856,187	42,929,127	216,218,024	259,147,151
2025		0	0	166,242,812	29,026,832	43,048,889	217,268,361	260,317,251
2026		0	0	167,221,716	29,234,718	43,203,580	218,557,251	261,760,832
2027		0	0	168,323,606	29,474,973	43,370,262	220,006,920	263,377,182
2028		0	0	168,812,294	29,616,988	43,359,509	220,654,178	264,013,688
2029		0	0	170,265,582	29,932,442	43,592,415	222,563,516	266,155,931
2030		0	0	171,213,678	30,167,370	43,691,066	223,816,207	267,507,273

For 2008 Cal Gas Report and long-term resource planning, from Scott Wilder (213-244-2412), March 2008.

San Diego County employment data (in thousands), based on NAICS and recorded through December 2007.

For series name definitions, see file ECONAMESSD.XLS. Forecast through 2013 based on Global Insight Winter 2008 Regional forecast (Feb.2008); forecast starting 2014 based on growth rates from Global Insight Fall 2007 long-term Regional forecast (Nov.2007).

	Office	Restaurant	Retail	Laundry	Warehouse	School	College	Health	Lodging	Misc	Government	TCU	Constructor	Agriculture	Industrial
2006	297,325	102,267	148,258	15,208	48,108	87,867	32,592	103,817	30,542	56,800	118,758	62,942	92,658	10,917	104,417
2007	296,867	104,883	148,717	15,375	48,683	90,142	33,292	107,100	31,500	57,942	120,442	63,592	87,167	10,825	102,500
2008	300,007	106,697	150,064	15,823	49,583	92,518	34,168	109,927	32,045	59,633	121,297	64,022	81,587	10,879	103,081
2009	305,979	108,699	152,456	15,874	49,829	93,942	34,694	111,619	32,647	59,829	122,113	64,535	76,123	10,934	101,760
2010	314,755	110,254	155,535	15,788	50,224	95,097	35,120	112,986	33,114	59,501	124,198	65,195	75,828	10,988	101,153
2011	324,306	112,422	157,257	15,799	50,621	96,163	35,514	114,254	33,765	59,545	125,127	66,628	76,206	11,043	102,409
2012	330,610	114,611	159,019	15,885	50,992	97,449	35,989	115,784	34,422	59,869	126,904	67,993	77,962	11,098	102,978
2013	334,074	116,336	160,108	16,034	51,175	98,983	36,556	117,607	34,940	60,429	128,529	69,327	80,194	11,154	103,006
2014	339,330	117,743	160,952	16,175	51,353	100,423	37,087	119,316	35,363	60,960	129,973	70,317	81,845	11,210	103,086
2015	345,198	118,951	161,350	16,330	51,410	101,720	37,566	120,858	35,726	61,545	131,227	71,198	83,073	11,266	103,354
2016	350,650	120,076	161,236	16,476	51,603	103,016	38,045	122,396	36,064	62,096	132,402	72,247	84,178	11,322	103,845
2017	355,866	121,068	160,790	16,645	51,886	104,521	38,601	124,187	36,361	62,734	133,455	73,196	85,192	11,379	104,648
2018	361,677	121,978	160,451	16,781	52,250	106,266	39,245	126,260	36,635	63,243	134,475	73,882	86,171	11,435	105,379
2019	367,504	123,062	160,313	16,902	52,695	108,188	39,955	128,546	36,960	63,702	135,481	74,571	87,139	11,493	105,421
2020	373,445	124,338	160,379	17,018	53,079	110,132	40,673	130,855	37,343	64,139	137,223	75,143	88,097	11,550	105,294
2021	379,695	125,593	160,645	17,139	53,455	112,256	41,458	133,378	37,721	64,595	137,401	75,988	88,835	11,608	104,889
2022	386,059	126,768	160,984	17,266	54,020	114,262	42,198	135,761	38,073	65,072	138,275	76,995	89,623	11,666	104,335
2023	393,396	127,986	161,377	17,401	54,588	116,136	42,890	137,987	38,439	65,581	139,173	78,184	90,531	11,724	103,975
2024	401,418	129,071	161,719	17,541	55,182	117,899	43,541	140,081	38,765	66,111	140,042	79,367	91,513	11,783	103,765
2025	409,128	130,165	162,070	17,671	55,700	119,704	44,208	142,226	39,094	66,597	140,948	80,591	92,771	11,842	103,836
2026	416,620	131,235	162,414	17,806	56,161	121,565	44,895	144,438	39,415	67,110	141,864	81,971	94,169	11,901	104,075
2027	423,700	132,446	163,012	17,970	56,617	123,387	45,568	146,603	39,779	67,727	142,805	83,534	96,051	11,960	104,378
2028	430,159	133,685	163,776	18,153	57,124	125,209	46,241	148,768	40,151	68,415	143,751	85,201	97,895	12,020	104,486
2029	436,665	135,039	164,613	18,322	57,624	126,868	46,853	150,738	40,557	69,054	144,673	86,895	99,641	12,080	104,616
2030	443,852	136,304	165,283	18,486	58,116	128,358	47,403	152,506	40,937	69,671	146,132	88,639	101,358	12,141	104,636

Trend Based on Price and Employment Forecasts

Price

Price Elasticity	-0.071	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
WACOG Commodity	\$6.42	\$6.30	\$8.28	\$8.14	\$7.78	\$7.60	\$7.04	\$6.56	\$6.10	\$6.26	\$6.52	\$6.73	\$6.89
Price Change %		0.13%	-1.94%	0.12%	0.32%	0.17%	0.55%	0.50%	0.51%	-0.18%	-0.29%	-0.23%	-0.17%

Employment Elasticity **0.474**

Commercial Employment Change %

Name	BusiType	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mining	1	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Food	2	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Textile	3	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Wood_Paper	4	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Chemical	5	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Petroleum	6	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Stone	7	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Prim_Metal	8	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Fab_Metal	9	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Transport	10	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Misc	11	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Office	101	-0.07%	0.50%	0.93%	1.34%	1.42%	0.91%	0.49%	0.74%	0.81%	0.74%	0.70%	0.77%
Restaurant	102	1.20%	0.81%	0.88%	0.67%	0.92%	0.91%	0.71%	0.57%	0.48%	0.45%	0.39%	0.36%
Retail	103	0.15%	0.43%	0.75%	0.95%	0.52%	0.53%	0.32%	0.25%	0.12%	-0.03%	-0.13%	-0.10%
Laundry	104	0.52%	1.36%	0.15%	-0.26%	0.03%	0.26%	0.44%	0.41%	0.45%	0.42%	0.48%	0.38%
Warehouse	105	0.56%	0.87%	0.23%	0.37%	0.37%	0.35%	0.17%	0.16%	0.05%	0.18%	0.26%	0.33%
School	106	1.21%	1.23%	0.72%	0.58%	0.53%	0.63%	0.74%	0.68%	0.61%	0.60%	0.69%	0.78%
College	107	1.01%	1.23%	0.72%	0.58%	0.53%	0.63%	0.74%	0.68%	0.61%	0.60%	0.69%	0.79%
Health	108	1.48%	1.24%	0.72%	0.58%	0.53%	0.63%	0.74%	0.68%	0.61%	0.60%	0.69%	0.78%
Lodging	109	1.46%	0.81%	0.88%	0.67%	0.92%	0.91%	0.71%	0.57%	0.48%	0.45%	0.39%	0.36%
Misc	110	0.94%	1.36%	0.16%	-0.26%	0.03%	0.26%	0.44%	0.41%	0.45%	0.42%	0.48%	0.38%
Government	111	0.67%	0.34%	0.32%	0.80%	0.35%	0.67%	0.60%	0.53%	0.46%	0.42%	0.38%	0.36%
TCU	112	0.49%	0.32%	0.38%	0.48%	1.03%	0.96%	0.92%	0.67%	0.59%	0.69%	0.62%	0.44%
Construction	113	-2.90%	-3.14%	-3.29%	-0.18%	0.24%	1.08%	1.34%	0.97%	0.71%	0.63%	0.57%	0.54%
Agriculture	114	-0.40%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%

Trend Based on Price :

Price	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Price Elasticity												
WACOG Commodity	\$6.99	\$7.06	\$6.95	\$7.11	\$7.27	\$7.43	\$7.57	\$7.66	\$7.74	\$8.25	\$8.10	\$8.28
Price Change %	-0.10%	-0.07%	0.11%	-0.16%	-0.16%	-0.15%	-0.13%	-0.09%	-0.07%	-0.45%	0.13%	-0.16%

Employment Elasticity

Commercial Employer	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Mining	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Food	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Textile	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Wood_Paper	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Chemical	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Petroleum	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Stone	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Prim_Metal	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Fab_Metal	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Transport	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Misc	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Office	0.76%	0.76%	0.79%	0.79%	0.89%	0.96%	0.90%	0.86%	0.80%	0.72%	0.71%	0.77%
Restaurant	0.42%	0.49%	0.48%	0.44%	0.45%	0.40%	0.40%	0.39%	0.44%	0.44%	0.48%	0.44%
Retail	-0.04%	0.02%	0.08%	0.10%	0.12%	0.10%	0.10%	0.10%	0.17%	0.22%	0.24%	0.19%
Laundry	0.34%	0.32%	0.34%	0.35%	0.37%	0.38%	0.35%	0.36%	0.43%	0.48%	0.44%	0.42%
Warehouse	0.40%	0.34%	0.33%	0.50%	0.50%	0.51%	0.44%	0.39%	0.38%	0.42%	0.41%	0.40%
School	0.85%	0.84%	0.91%	0.84%	0.77%	0.71%	0.72%	0.73%	0.70%	0.70%	0.62%	0.55%
College	0.85%	0.84%	0.91%	0.84%	0.77%	0.71%	0.72%	0.73%	0.71%	0.69%	0.62%	0.55%
Health	0.85%	0.84%	0.91%	0.84%	0.77%	0.71%	0.72%	0.73%	0.71%	0.69%	0.62%	0.55%
Lodging	0.42%	0.49%	0.48%	0.44%	0.45%	0.40%	0.40%	0.39%	0.44%	0.44%	0.48%	0.44%
Misc	0.34%	0.32%	0.34%	0.35%	0.37%	0.38%	0.35%	0.36%	0.43%	0.48%	0.44%	0.42%
Government	0.35%	0.61%	0.06%	0.30%	0.31%	0.29%	0.31%	0.31%	0.31%	0.31%	0.30%	0.48%
TCU	0.44%	0.36%	0.53%	0.62%	0.73%	0.71%	0.73%	0.81%	0.90%	0.94%	0.93%	0.94%
Construction	0.53%	0.52%	0.40%	0.42%	0.48%	0.51%	0.65%	0.71%	0.94%	0.90%	0.84%	0.81%
Agriculture	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%

2008 CALIFORNIA GAS REPORT

NATURAL GAS VEHICLES
JULY 2008



YEAR	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12	TOTAL	RATE	DELCODE	NGVTYPE
2007	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	1.13	13.5	GNV	N	C
2008	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	15.3	GNV	N	C
2009	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	17.2	GNV	N	C
2010	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	1.63	19.5	GNV	N	C
2011	1.83	2.83	3.83	4.83	5.83	6.83	7.83	8.83	9.83	10.83	11.83	12.83	22.0	GNV	N	C
2012	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	1.95	23.4	GNV	N	C
2013	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	2.08	24.9	GNV	N	C
2014	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	2.21	26.5	GNV	N	C
2015	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	2.35	28.2	GNV	N	C
2016	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	30.0	GNV	N	C
2017	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	2.67	32.0	GNV	N	C
2018	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	2.84	34.1	GNV	N	C
2019	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	3.03	36.3	GNV	N	C
2020	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	38.6	GNV	N	C
2021	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	3.43	41.2	GNV	N	C
2022	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	3.65	43.8	GNV	N	C
2023	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	3.88	46.5	GNV	N	C
2024	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	51.4	GNV	N	C
2025	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	4.53	54.3	GNV	N	C
2026	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	57.1	GNV	N	C
2027	4.99	4.99	4.99	4.99	4.99	4.99	4.99	4.99	4.99	4.99	4.99	4.99	59.9	GNV	N	C
2028	5.23	5.23	5.23	5.23	5.23	5.23	5.23	5.23	5.23	5.23	5.23	5.23	62.7	GNV	N	C
2029	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	5.44	65.3	GNV	N	C
2030	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	67.9	GNV	N	C

2007	82.78	82.78	82.78	82.78	82.78	82.78	82.78	82.78	82.78	82.78	82.78	82.78	993.3	GNV	N	U
2008	93.46	93.46	93.46	93.46	93.46	93.46	93.46	93.46	93.46	93.46	93.46	93.46	1121.6	GNV	N	U
2009	105.53	105.53	105.53	105.53	105.53	105.53	105.53	105.53	105.53	105.53	105.53	105.53	1266.4	GNV	N	U
2010	119.15	119.15	119.15	119.15	119.15	119.15	119.15	119.15	119.15	119.15	119.15	119.15	1429.9	GNV	N	U
2011	134.54	134.54	134.54	134.54	134.54	134.54	134.54	134.54	134.54	134.54	134.54	134.54	1614.5	GNV	N	U
2012	143.23	143.23	143.23	143.23	143.23	143.23	143.23	143.23	143.23	143.23	143.23	143.23	1718.7	GNV	N	U
2013	152.48	152.48	152.48	152.48	152.48	152.48	152.48	152.48	152.48	152.48	152.48	152.48	1829.8	GNV	N	U
2014	162.33	162.33	162.33	162.33	162.33	162.33	162.33	162.33	162.33	162.33	162.33	162.33	1948.0	GNV	N	U
2015	172.82	172.82	172.82	172.82	172.82	172.82	172.82	172.82	172.82	172.82	172.82	172.82	2073.8	GNV	N	U
2016	183.98	183.98	183.98	183.98	183.98	183.98	183.98	183.98	183.98	183.98	183.98	183.98	2207.8	GNV	N	U
2017	195.94	195.94	195.94	195.94	195.94	195.94	195.94	195.94	195.94	195.94	195.94	195.94	2351.3	GNV	N	U
2018	208.68	208.68	208.68	208.68	208.68	208.68	208.68	208.68	208.68	208.68	208.68	208.68	2504.1	GNV	N	U
2019	222.24	222.24	222.24	222.24	222.24	222.24	222.24	222.24	222.24	222.24	222.24	222.24	2666.9	GNV	N	U
2020	236.69	236.69	236.69	236.69	236.69	236.69	236.69	236.69	236.69	236.69	236.69	236.69	2840.2	GNV	N	U
2021	252.07	252.07	252.07	252.07	252.07	252.07	252.07	252.07	252.07	252.07	252.07	252.07	3024.9	GNV	N	U
2022	268.46	268.46	268.46	268.46	268.46	268.46	268.46	268.46	268.46	268.46	268.46	268.46	3221.5	GNV	N	U
2023	284.94	284.94	284.94	284.94	284.94	284.94	284.94	284.94	284.94	284.94	284.94	284.94	3419.3	GNV	N	U
2024	301.55	301.55	301.55	301.55	301.55	301.55	301.55	301.55	301.55	301.55	301.55	301.55	3618.6	GNV	N	U
2025	318.20	318.20	318.20	318.20	318.20	318.20	318.20	318.20	318.20	318.20	318.20	318.20	3818.4	GNV	N	U
2026	334.78	334.78	334.78	334.78	334.78	334.78	334.78	334.78	334.78	334.78	334.78	334.78	4017.3	GNV	T	U
2027	351.18	351.18	351.18	351.18	351.18	351.18	351.18	351.18	351.18	351.18	351.18	351.18	4214.1	GNV	T	U
2028	367.26	367.26	367.26	367.26	367.26	367.26	367.26	367.26	367.26	367.26	367.26	367.26	4407.2	GNV	T	U
2029	382.95	382.95	382.95	382.95	382.95	382.95	382.95	382.95	382.95	382.95	382.95	382.95	4595.3	GNV	T	U
2030	398.11	398.11	398.11	398.11	398.11	398.11	398.11	398.11	398.11	398.11	398.11	398.11	4777.3	GNV	T	U

YEAR	MDTH1	MDTH2	MDTH3	MDTH4	MDTH5	MDTH6	MDTH7	MDTH8	MDTH9	MDTH10	MDTH11	MDTH12	TOTAL	RATE	DELCODE	NGVTYPE
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2023	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2024	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2026	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2027	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2028	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2029	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U
2030	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0 GNV	T	U

2008 SDG&E CGR

Compressed:

2007 throughput is actual from SDG&E throughput report.

Compressed throughput growth is projected at 7.06% through 2030.

Uncompressed:

2007 throughput is actual from throughput report.

Uncompressed throughput forecast is expected to grow at the annual compounded rate of 7.06% for the next 23 years. Growth over the next four years will be mainly due to ports and goods movements loads. The growth rate will then decrease gradually through 2030 as the main fleet markets become more saturated.

Throughput increase over the next 23 years is expected to reach a total load of 4777.3 Mdtherms. This throughput increase is expected to come mainly from Port trucks which serve the San Diego Port. Additional load through 2030 is expected from transits and shared rides such as taxis and airport shuttles.

NGV stations are expected to grow from a 2007 level of 33 to approximately 122 by 2030, an annual compounded growth rate of 5.84% per year to accommodate the throughput growth.

2008 CALIFORNIA GAS REPORT

COGENERATION DEMAND FORECAST
JULY 2008



Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jan-06	2006	31	92	82	0	0	427	126
Feb-06	2006	28	97	81	0	0	467	129
Mar-06	2006	31	102	73	0	0	423	94
Apr-06	2006	30	113	79	0	0	424	134
May-06	2006	31	107	67	0	0	816	220
Jun-06	2006	30	109	86	0	0	1,280	241
Jul-06	2006	31	113	83	0	0	1,266	233
Aug-06	2006	31	115	103	0	0	1,329	242
Sep-06	2006	30	115	110	0	0	1,315	239
Oct-06	2006	31	195	96	0	0	1,288	224
Nov-06	2006	30	112	125	0	0	1,287	209
Dec-06	2006	31	114	92	0	0	1,188	237
Jan-07	2007	31	106	64	0	0	1,399	238
Feb-07	2007	28	112	67	0	0	1,330	238
Mar-07	2007	31	103	57	0	0	1,159	223
Apr-07	2007	30	106	52	0	0	1,237	128
May-07	2007	31	96	55	0	0	1,253	236
Jun-07	2007	30	96	65	0	0	1,365	231
Jul-07	2007	31	100	65	0	0	1,236	234
Aug-07	2007	31	123	63	0	0	1,306	247
Sep-07	2007	30	123	69	0	0	1,340	237
Oct-07	2007	31	115	65	0	0	1,331	229
Nov-07	2007	30	114	69	0	0	1,249	167
Dec-07	2007	31	86	66	0	0	1,048	222
Jan-08	2008	31	107	64	0	0	1,277	220
Feb-08	2008	28	97	58	0	0	1,153	198
Mar-08	2008	31	107	64	0	0	1,277	220
Apr-08	2008	30	104	62	0	0	1,236	213
May-08	2008	31	107	64	0	0	1,277	220
Jun-08	2008	30	104	62	0	0	1,236	213
Jul-08	2008	31	107	64	0	0	1,277	220
Aug-08	2008	31	107	64	0	0	1,277	220
Sep-08	2008	30	104	62	0	0	1,236	213
Oct-08	2008	31	107	64	0	0	1,277	220
Nov-08	2008	30	104	62	0	0	1,236	213
Dec-08	2008	31	107	64	0	0	1,277	220
Jan-09	2009	31	108	64	0	0	1,282	221
Feb-09	2009	28	97	58	0	0	1,158	199
Mar-09	2009	31	108	64	0	0	1,282	221
Apr-09	2009	30	104	62	0	0	1,241	214
May-09	2009	31	108	64	0	0	1,282	221
Jun-09	2009	30	104	62	0	0	1,241	214
Jul-09	2009	31	108	64	0	0	1,282	221
Aug-09	2009	31	108	64	0	0	1,282	221
Sep-09	2009	30	104	62	0	0	1,241	214
Oct-09	2009	31	108	64	0	0	1,282	221
Nov-09	2009	30	104	62	0	0	1,241	214
Dec-09	2009	31	108	64	0	0	1,282	221
Jan-10	2010	31	108	64	0	0	1,291	223
Feb-10	2010	28	98	58	0	0	1,166	201
Mar-10	2010	31	108	64	0	0	1,291	223
Apr-10	2010	30	105	62	0	0	1,249	215
May-10	2010	31	108	64	0	0	1,291	223
Jun-10	2010	30	105	62	0	0	1,249	215

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jul-10	2010	31	108	64	0	0	1,291	223
Aug-10	2010	31	108	64	0	0	1,291	223
Sep-10	2010	30	105	62	0	0	1,249	215
Oct-10	2010	31	108	64	0	0	1,291	223
Nov-10	2010	30	105	62	0	0	1,249	215
Dec-10	2010	31	108	64	0	0	1,291	223
Jan-11	2011	31	109	65	0	0	1,304	225
Feb-11	2011	28	99	58	0	0	1,178	203
Mar-11	2011	31	109	65	0	0	1,304	225
Apr-11	2011	30	106	63	0	0	1,262	218
May-11	2011	31	109	65	0	0	1,304	225
Jun-11	2011	30	106	63	0	0	1,262	218
Jul-11	2011	31	109	65	0	0	1,304	225
Aug-11	2011	31	109	65	0	0	1,304	225
Sep-11	2011	30	106	63	0	0	1,262	218
Oct-11	2011	31	109	65	0	0	1,304	225
Nov-11	2011	30	106	63	0	0	1,262	218
Dec-11	2011	31	109	65	0	0	1,304	225
Jan-12	2012	31	111	65	0	0	1,321	229
Feb-12	2012	28	100	59	0	0	1,193	207
Mar-12	2012	31	111	65	0	0	1,321	229
Apr-12	2012	30	107	63	0	0	1,279	221
May-12	2012	31	111	65	0	0	1,321	229
Jun-12	2012	30	107	63	0	0	1,279	221
Jul-12	2012	31	111	65	0	0	1,321	229
Aug-12	2012	31	111	65	0	0	1,321	229
Sep-12	2012	30	107	63	0	0	1,279	221
Oct-12	2012	31	111	65	0	0	1,321	229
Nov-12	2012	30	107	63	0	0	1,279	221
Dec-12	2012	31	111	65	0	0	1,321	229
Jan-13	2013	31	112	66	0	0	1,337	232
Feb-13	2013	28	101	60	0	0	1,208	209
Mar-13	2013	31	112	66	0	0	1,337	232
Apr-13	2013	30	108	64	0	0	1,294	224
May-13	2013	31	112	66	0	0	1,337	232
Jun-13	2013	30	108	64	0	0	1,294	224
Jul-13	2013	31	112	66	0	0	1,337	232
Aug-13	2013	31	112	66	0	0	1,337	232
Sep-13	2013	30	108	64	0	0	1,294	224
Oct-13	2013	31	112	66	0	0	1,337	232
Nov-13	2013	30	108	64	0	0	1,294	224
Dec-13	2013	31	112	66	0	0	1,337	232
Jan-14	2014	31	113	67	0	0	1,352	235
Feb-14	2014	28	102	60	0	0	1,221	212
Mar-14	2014	31	113	67	0	0	1,352	235
Apr-14	2014	30	109	65	0	0	1,308	227
May-14	2014	31	113	67	0	0	1,352	235
Jun-14	2014	30	109	65	0	0	1,308	227
Jul-14	2014	31	113	67	0	0	1,352	235
Aug-14	2014	31	113	67	0	0	1,352	235
Sep-14	2014	30	109	65	0	0	1,308	227
Oct-14	2014	31	113	67	0	0	1,352	235
Nov-14	2014	30	109	65	0	0	1,308	227
Dec-14	2014	31	113	67	0	0	1,352	235

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jan-15	2015	31	113	67	0	0	1,356	236
Feb-15	2015	28	102	60	0	0	1,225	213
Mar-15	2015	31	113	67	0	0	1,356	236
Apr-15	2015	30	110	65	0	0	1,313	228
May-15	2015	31	113	67	0	0	1,356	236
Jun-15	2015	30	110	65	0	0	1,313	228
Jul-15	2015	31	113	67	0	0	1,356	236
Aug-15	2015	31	113	67	0	0	1,356	236
Sep-15	2015	30	110	65	0	0	1,313	228
Oct-15	2015	31	113	67	0	0	1,356	236
Nov-15	2015	30	110	65	0	0	1,313	228
Dec-15	2015	31	113	67	0	0	1,356	236
Jan-16	2016	31	114	67	0	0	1,361	237
Feb-16	2016	28	103	60	0	0	1,229	214
Mar-16	2016	31	114	67	0	0	1,361	237
Apr-16	2016	30	110	65	0	0	1,317	229
May-16	2016	31	114	67	0	0	1,361	237
Jun-16	2016	30	110	65	0	0	1,317	229
Jul-16	2016	31	114	67	0	0	1,361	237
Aug-16	2016	31	114	67	0	0	1,361	237
Sep-16	2016	30	110	65	0	0	1,317	229
Oct-16	2016	31	114	67	0	0	1,361	237
Nov-16	2016	30	110	65	0	0	1,317	229
Dec-16	2016	31	114	67	0	0	1,361	237
Jan-17	2017	31	114	67	0	0	1,365	238
Feb-17	2017	28	103	61	0	0	1,233	215
Mar-17	2017	31	114	67	0	0	1,365	238
Apr-17	2017	30	110	65	0	0	1,321	230
May-17	2017	31	114	67	0	0	1,365	238
Jun-17	2017	30	110	65	0	0	1,321	230
Jul-17	2017	31	114	67	0	0	1,365	238
Aug-17	2017	31	114	67	0	0	1,365	238
Sep-17	2017	30	110	65	0	0	1,321	230
Oct-17	2017	31	114	67	0	0	1,365	238
Nov-17	2017	30	110	65	0	0	1,321	230
Dec-17	2017	31	114	67	0	0	1,365	238
Jan-18	2018	31	114	68	0	0	1,370	238
Feb-18	2018	28	103	61	0	0	1,237	215
Mar-18	2018	31	114	68	0	0	1,370	238
Apr-18	2018	30	111	65	0	0	1,326	231
May-18	2018	31	114	68	0	0	1,370	238
Jun-18	2018	30	111	65	0	0	1,326	231
Jul-18	2018	31	114	68	0	0	1,370	238
Aug-18	2018	31	114	68	0	0	1,370	238
Sep-18	2018	30	111	65	0	0	1,326	231
Oct-18	2018	31	114	68	0	0	1,370	238
Nov-18	2018	30	111	65	0	0	1,326	231
Dec-18	2018	31	114	68	0	0	1,370	238
Jan-19	2019	31	115	68	0	0	1,375	239
Feb-19	2019	28	104	61	0	0	1,242	216
Mar-19	2019	31	115	68	0	0	1,375	239
Apr-19	2019	30	111	66	0	0	1,330	231
May-19	2019	31	115	68	0	0	1,375	239
Jun-19	2019	30	111	66	0	0	1,330	231

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jul-19	2019	31	115	68	0	0	1,375	239
Aug-19	2019	31	115	68	0	0	1,375	239
Sep-19	2019	30	111	66	0	0	1,330	231
Oct-19	2019	31	115	68	0	0	1,375	239
Nov-19	2019	30	111	66	0	0	1,330	231
Dec-19	2019	31	115	68	0	0	1,375	239
Jan-20	2020	31	115	68	0	0	1,379	240
Feb-20	2020	28	104	62	0	0	1,246	217
Mar-20	2020	31	115	68	0	0	1,379	240
Apr-20	2020	30	111	66	0	0	1,335	232
May-20	2020	31	115	68	0	0	1,379	240
Jun-20	2020	30	111	66	0	0	1,335	232
Jul-20	2020	31	115	68	0	0	1,379	240
Aug-20	2020	31	115	68	0	0	1,379	240
Sep-20	2020	30	111	66	0	0	1,335	232
Oct-20	2020	31	115	68	0	0	1,379	240
Nov-20	2020	30	111	66	0	0	1,335	232
Dec-20	2020	31	115	68	0	0	1,379	240
Jan-21	2021	31	116	69	0	0	1,388	241
Feb-21	2021	28	105	62	0	0	1,254	218
Mar-21	2021	31	116	69	0	0	1,388	241
Apr-21	2021	30	112	66	0	0	1,343	233
May-21	2021	31	116	69	0	0	1,388	241
Jun-21	2021	30	112	66	0	0	1,343	233
Jul-21	2021	31	116	69	0	0	1,388	241
Aug-21	2021	31	116	69	0	0	1,388	241
Sep-21	2021	30	112	66	0	0	1,343	233
Oct-21	2021	31	116	69	0	0	1,388	241
Nov-21	2021	30	112	66	0	0	1,343	233
Dec-21	2021	31	116	69	0	0	1,388	241
Jan-22	2022	31	116	69	0	0	1,393	242
Feb-22	2022	28	105	62	0	0	1,258	219
Mar-22	2022	31	116	69	0	0	1,393	242
Apr-22	2022	30	112	67	0	0	1,348	235
May-22	2022	31	116	69	0	0	1,393	242
Jun-22	2022	30	112	67	0	0	1,348	235
Jul-22	2022	31	116	69	0	0	1,393	242
Aug-22	2022	31	116	69	0	0	1,393	242
Sep-22	2022	30	112	67	0	0	1,348	235
Oct-22	2022	31	116	69	0	0	1,393	242
Nov-22	2022	30	112	67	0	0	1,348	235
Dec-22	2022	31	116	69	0	0	1,393	242
Jan-23	2023	31	117	69	0	0	1,399	244
Feb-23	2023	28	105	62	0	0	1,264	220
Mar-23	2023	31	117	69	0	0	1,399	244
Apr-23	2023	30	113	67	0	0	1,354	236
May-23	2023	31	117	69	0	0	1,399	244
Jun-23	2023	30	113	67	0	0	1,354	236
Jul-23	2023	31	117	69	0	0	1,399	244
Aug-23	2023	31	117	69	0	0	1,399	244
Sep-23	2023	30	113	67	0	0	1,354	236
Oct-23	2023	31	117	69	0	0	1,399	244
Nov-23	2023	30	113	67	0	0	1,354	236
Dec-23	2023	31	117	69	0	0	1,399	244

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jan-24	2024	31	117	69	0	0	1,405	245
Feb-24	2024	28	106	62	0	0	1,269	221
Mar-24	2024	31	117	69	0	0	1,405	245
Apr-24	2024	30	113	67	0	0	1,360	237
May-24	2024	31	117	69	0	0	1,405	245
Jun-24	2024	30	113	67	0	0	1,360	237
Jul-24	2024	31	117	69	0	0	1,405	245
Aug-24	2024	31	117	69	0	0	1,405	245
Sep-24	2024	30	113	67	0	0	1,360	237
Oct-24	2024	31	117	69	0	0	1,405	245
Nov-24	2024	30	113	67	0	0	1,360	237
Dec-24	2024	31	117	69	0	0	1,405	245
Jan-25	2025	31	117	69	0	0	1,412	247
Feb-25	2025	28	106	63	0	0	1,275	223
Mar-25	2025	31	117	69	0	0	1,412	247
Apr-25	2025	30	114	67	0	0	1,366	239
May-25	2025	31	117	69	0	0	1,412	247
Jun-25	2025	30	114	67	0	0	1,366	239
Jul-25	2025	31	117	69	0	0	1,412	247
Aug-25	2025	31	117	69	0	0	1,412	247
Sep-25	2025	30	114	67	0	0	1,366	239
Oct-25	2025	31	117	69	0	0	1,412	247
Nov-25	2025	30	114	67	0	0	1,366	239
Dec-25	2025	31	117	69	0	0	1,412	247
Jan-26	2026	31	118	70	0	0	1,420	248
Feb-26	2026	28	107	63	0	0	1,283	224
Mar-26	2026	31	118	70	0	0	1,420	248
Apr-26	2026	30	114	67	0	0	1,374	240
May-26	2026	31	118	70	0	0	1,420	248
Jun-26	2026	30	114	67	0	0	1,374	240
Jul-26	2026	31	118	70	0	0	1,420	248
Aug-26	2026	31	118	70	0	0	1,420	248
Sep-26	2026	30	114	67	0	0	1,374	240
Oct-26	2026	31	118	70	0	0	1,420	248
Nov-26	2026	30	114	67	0	0	1,374	240
Dec-26	2026	31	118	70	0	0	1,420	248
Jan-27	2027	31	119	70	0	0	1,430	250
Feb-27	2027	28	107	63	0	0	1,291	226
Mar-27	2027	31	119	70	0	0	1,430	250
Apr-27	2027	30	115	68	0	0	1,383	242
May-27	2027	31	119	70	0	0	1,430	250
Jun-27	2027	30	115	68	0	0	1,383	242
Jul-27	2027	31	119	70	0	0	1,430	250
Aug-27	2027	31	119	70	0	0	1,430	250
Sep-27	2027	30	115	68	0	0	1,383	242
Oct-27	2027	31	119	70	0	0	1,430	250
Nov-27	2027	30	115	68	0	0	1,383	242
Dec-27	2027	31	119	70	0	0	1,430	250
Jan-28	2028	31	119	70	0	0	1,434	252
Feb-28	2028	28	107	63	0	0	1,295	227
Mar-28	2028	31	119	70	0	0	1,434	252
Apr-28	2028	30	115	68	0	0	1,387	243
May-28	2028	31	119	70	0	0	1,434	252
Jun-28	2028	30	115	68	0	0	1,387	243

Forecast Units are in MDth

Date	Year	Day	Cogen <= 3MM			Cogen > 3MM		
			MP	HP	T	MP	HP	T
Jul-28	2028	31	119	70	0	0	1,434	252
Aug-28	2028	31	119	70	0	0	1,434	252
Sep-28	2028	30	115	68	0	0	1,387	243
Oct-28	2028	31	119	70	0	0	1,434	252
Nov-28	2028	30	115	68	0	0	1,387	243
Dec-28	2028	31	119	70	0	0	1,434	252
Jan-29	2029	31	119	70	0	0	1,446	254
Feb-29	2029	28	108	64	0	0	1,306	230
Mar-29	2029	31	119	70	0	0	1,446	254
Apr-29	2029	30	116	68	0	0	1,399	246
May-29	2029	31	119	70	0	0	1,446	254
Jun-29	2029	30	116	68	0	0	1,399	246
Jul-29	2029	31	119	70	0	0	1,446	254
Aug-29	2029	31	119	70	0	0	1,446	254
Sep-29	2029	30	116	68	0	0	1,399	246
Oct-29	2029	31	119	70	0	0	1,446	254
Nov-29	2029	30	116	68	0	0	1,399	246
Dec-29	2029	31	119	70	0	0	1,446	254
Jan-30	2030	31	120	71	0	0	1,454	256
Feb-30	2030	28	108	64	0	0	1,313	231
Mar-30	2030	31	120	71	0	0	1,454	256
Apr-30	2030	30	116	68	0	0	1,407	248
May-30	2030	31	120	71	0	0	1,454	256
Jun-30	2030	30	116	68	0	0	1,407	248
Jul-30	2030	31	120	71	0	0	1,454	256
Aug-30	2030	31	120	71	0	0	1,454	256
Sep-30	2030	30	116	68	0	0	1,407	248
Oct-30	2030	31	120	71	0	0	1,454	256
Nov-30	2030	30	116	68	0	0	1,407	248
Dec-30	2030	31	120	71	0	0	1,454	256

Therms	NC Commercial			NC Industrial			COGEN <= 3 MW	
	M	H	T	M	H	T	M	H
2007	17,594,234	7,737,025	266,962	4,245,973	6,562,176	4,026,122	12,798,680	7,576,817
2008	17,416,410	7,648,372	262,627	4,174,869	6,452,284	3,958,700	12,622,846	7,495,578
2009	17,545,563	7,699,565	263,932	4,154,243	6,420,407	3,939,142	12,668,483	7,522,513
2010	17,708,068	7,770,369	266,055	4,155,757	6,422,747	3,940,578	12,760,749	7,566,905
2011	17,838,300	7,832,110	269,241	4,186,973	6,470,992	3,970,177	12,883,208	7,621,049
2012	18,051,963	7,932,292	273,321	4,220,994	6,523,571	4,002,436	13,036,842	7,701,150
2013	18,260,147	8,032,290	277,204	4,242,453	6,556,736	4,022,784	13,169,139	7,776,584
2014	18,466,253	8,126,045	280,500	4,265,815	6,592,842	4,044,937	13,300,943	7,852,088
2015	18,535,958	8,157,983	281,650	4,263,403	6,589,115	4,042,650	13,340,851	7,872,288
2016	18,582,441	8,182,722	282,795	4,260,786	6,585,069	4,040,168	13,372,171	7,886,559
2017	18,646,246	8,213,765	283,898	4,266,657	6,594,144	4,045,735	13,416,745	7,913,929
2018	18,729,288	8,250,094	284,681	4,273,634	6,604,926	4,052,350	13,467,335	7,950,199
2019	18,831,656	8,294,607	285,642	4,270,085	6,599,441	4,048,985	13,516,363	7,986,553
2020	18,947,616	8,344,157	286,475	4,264,651	6,591,043	4,043,833	13,565,503	8,023,319
2021	19,091,535	8,406,755	288,310	4,261,538	6,586,232	4,040,881	13,640,220	8,074,655
2022	19,184,630	8,450,036	289,642	4,243,994	6,559,117	4,024,245	13,677,382	8,099,192
2023	19,274,423	8,493,076	291,282	4,230,300	6,537,954	4,011,261	13,721,773	8,122,944
2024	19,359,764	8,533,712	292,906	4,219,776	6,521,688	4,001,281	13,768,725	8,146,216
2025	19,449,222	8,577,084	294,638	4,215,540	6,515,141	3,997,264	13,823,531	8,175,186
2026	19,548,919	8,626,918	296,749	4,216,412	6,516,490	3,998,092	13,890,111	8,210,707
2027	19,651,143	8,679,379	299,187	4,219,148	6,520,718	4,000,686	13,961,254	8,247,087
2028	19,677,975	8,699,646	300,629	4,202,177	6,494,489	3,984,594	13,975,524	8,249,372
2029	19,812,062	8,767,347	303,831	4,210,167	6,506,837	3,992,170	14,069,189	8,296,304
2030	19,887,164	8,810,056	306,216	4,204,000	6,497,307	3,986,323	14,120,775	8,314,384

Therms	A	T	COGEN <= 3 MM			CANDI	COGEN	Total w/o Adjust
			M	H	T			
2007		0	0	152,528,338	26,300,235	40,432,492	199,204,070	239,636,562
2008		0	0	150,321,787	25,873,145	39,913,262	196,313,357	236,226,619
2009		0	0	150,947,981	26,001,700	40,022,852	197,140,677	237,163,529
2010		0	0	152,009,200	26,210,847	40,263,573	198,547,701	238,811,274
2011		0	0	153,531,795	26,524,796	40,567,794	200,560,847	241,128,640
2012		0	0	155,557,934	26,926,722	41,004,577	203,222,648	244,227,225
2013		0	0	157,468,521	27,309,247	41,391,615	205,723,491	247,115,105
2014		0	0	159,178,433	27,634,000	41,776,392	207,965,465	249,741,857
2015		0	0	159,713,101	27,747,284	41,870,760	208,673,524	250,544,284
2016		0	0	160,201,595	27,860,026	41,933,981	209,320,352	251,254,332
2017		0	0	160,774,328	27,968,675	42,050,445	210,073,677	252,124,122
2018		0	0	161,298,902	28,045,805	42,194,972	210,762,242	252,957,214
2019		0	0	161,877,378	28,140,557	42,330,417	211,520,851	253,851,268
2020		0	0	162,413,309	28,222,621	42,477,775	212,224,752	254,702,527
2021		0	0	163,405,829	28,403,387	42,675,251	213,524,091	256,199,342
2022		0	0	164,016,576	28,534,555	42,751,663	214,327,705	257,079,368
2023		0	0	164,734,337	28,696,173	42,838,296	215,275,227	258,113,523
2024		0	0	165,446,896	28,856,187	42,929,127	216,218,024	259,147,151
2025		0	0	166,242,812	29,026,832	43,048,889	217,268,361	260,317,251
2026		0	0	167,221,716	29,234,718	43,203,580	218,557,251	261,760,832
2027		0	0	168,323,606	29,474,973	43,370,262	220,006,920	263,377,182
2028		0	0	168,812,294	29,616,988	43,359,509	220,654,178	264,013,688
2029		0	0	170,265,582	29,932,442	43,592,415	222,563,516	266,155,931
2030		0	0	171,213,678	30,167,370	43,691,066	223,816,207	267,507,273

For 2008 Cal Gas Report and long-term resource planning, from Scott Wilder (213-244-2412), March 2008.

San Diego County employment data (in thousands), based on NAICS and recorded through December 2007.

For series name definitions, see file ECONAMESSD.XLS. Forecast through 2013 based on Global Insight Winter 2008 Regional forecast (Feb.2008);

forecast starting 2014 based on growth rates from Global Insight Fall 2007 long-term Regional forecast (Nov.2007).

	Office	Restaurant	Retail	Laundry	Warehouse	School	College	Health	Lodging	Misc	Government	TCU	Constructor	Agriculture	Industrial
2006	297,325	102,267	148,258	15,208	48,108	87,867	32,592	103,817	30,542	56,800	118,758	62,942	92,658	10,917	104,417
2007	296,867	104,883	148,717	15,375	48,683	90,142	33,292	107,100	31,500	57,942	120,442	63,592	87,167	10,825	102,500
2008	300,007	106,697	150,064	15,823	49,583	92,518	34,168	109,927	32,045	59,633	121,297	64,022	81,587	10,879	103,081
2009	305,979	108,699	152,456	15,874	49,829	93,942	34,694	111,619	32,647	59,829	122,113	64,535	76,123	10,934	101,760
2010	314,755	110,254	155,535	15,788	50,224	95,097	35,120	112,986	33,114	59,501	124,198	65,195	75,828	10,988	101,153
2011	324,306	112,422	157,257	15,799	50,621	96,163	35,514	114,254	33,765	59,545	125,127	66,628	76,206	11,043	102,409
2012	330,610	114,611	159,019	15,885	50,992	97,449	35,989	115,784	34,422	59,869	126,904	67,993	77,962	11,098	102,978
2013	334,074	116,336	160,108	16,034	51,175	98,983	36,556	117,607	34,940	60,429	128,529	69,327	80,194	11,154	103,006
2014	339,330	117,743	160,952	16,175	51,353	100,423	37,087	119,316	35,363	60,960	129,973	70,317	81,845	11,210	103,086
2015	345,198	118,951	161,350	16,330	51,410	101,720	37,566	120,858	35,726	61,545	131,227	71,198	83,073	11,266	103,354
2016	350,650	120,076	161,236	16,476	51,603	103,016	38,045	122,396	36,064	62,096	132,402	72,247	84,178	11,322	103,845
2017	355,866	121,068	160,790	16,645	51,886	104,521	38,601	124,187	36,361	62,734	133,455	73,196	85,192	11,379	104,648
2018	361,677	121,978	160,451	16,781	52,250	106,266	39,245	126,260	36,635	63,243	134,475	73,882	86,171	11,435	105,379
2019	367,504	123,062	160,313	16,902	52,695	108,188	39,955	128,546	36,960	63,702	135,481	74,571	87,139	11,493	105,421
2020	373,445	124,338	160,379	17,018	53,079	110,132	40,673	130,855	37,343	64,139	137,223	75,143	88,097	11,550	105,294
2021	379,695	125,593	160,645	17,139	53,455	112,256	41,458	133,378	37,721	64,595	137,401	75,988	88,835	11,608	104,889
2022	386,059	126,768	160,984	17,266	54,020	114,262	42,198	135,761	38,073	65,072	138,275	76,995	89,623	11,666	104,335
2023	393,396	127,986	161,377	17,401	54,588	116,136	42,890	137,987	38,439	65,581	139,173	78,184	90,531	11,724	103,975
2024	401,418	129,071	161,719	17,541	55,182	117,899	43,541	140,081	38,765	66,111	140,042	79,367	91,513	11,783	103,765
2025	409,128	130,165	162,070	17,671	55,700	119,704	44,208	142,226	39,094	66,597	140,948	80,591	92,771	11,842	103,836
2026	416,620	131,235	162,414	17,806	56,161	121,565	44,895	144,438	39,415	67,110	141,864	81,971	94,169	11,901	104,075
2027	423,700	132,446	163,012	17,970	56,617	123,387	45,568	146,603	39,779	67,727	142,805	83,534	96,051	11,960	104,378
2028	430,159	133,685	163,776	18,153	57,124	125,209	46,241	148,768	40,151	68,415	143,751	85,201	97,895	12,020	104,486
2029	436,665	135,039	164,613	18,322	57,624	126,868	46,853	150,738	40,557	69,054	144,673	86,895	99,641	12,080	104,616
2030	443,852	136,304	165,283	18,486	58,116	128,358	47,403	152,506	40,937	69,671	146,132	88,639	101,358	12,141	104,636

Trend Based on Price and Employment Forecasts

Price

Price Elasticity	-0.071	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
WACOG Commodity	\$6.42	\$6.30	\$8.28	\$8.14	\$7.78	\$7.60	\$7.04	\$6.56	\$6.10	\$6.26	\$6.52	\$6.73	\$6.89
Price Change %		0.13%	-1.94%	0.12%	0.32%	0.17%	0.55%	0.50%	0.51%	-0.18%	-0.29%	-0.23%	-0.17%

Employment Elasticity **0.474**

Commercial Employment Change %

Name	BusiType	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Mining	1	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Food	2	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Textile	3	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Wood_Paper	4	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Chemical	5	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Petroleum	6	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Stone	7	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Prim_Metal	8	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Fab_Metal	9	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Transport	10	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Misc	11	-0.88%	0.27%	-0.61%	-0.28%	0.58%	0.26%	0.01%	0.04%	0.12%	0.22%	0.37%	0.33%
Office	101	-0.07%	0.50%	0.93%	1.34%	1.42%	0.91%	0.49%	0.74%	0.81%	0.74%	0.70%	0.77%
Restaurant	102	1.20%	0.81%	0.88%	0.67%	0.92%	0.91%	0.71%	0.57%	0.48%	0.45%	0.39%	0.36%
Retail	103	0.15%	0.43%	0.75%	0.95%	0.52%	0.53%	0.32%	0.25%	0.12%	-0.03%	-0.13%	-0.10%
Laundry	104	0.52%	1.36%	0.15%	-0.26%	0.03%	0.26%	0.44%	0.41%	0.45%	0.42%	0.48%	0.38%
Warehouse	105	0.56%	0.87%	0.23%	0.37%	0.37%	0.35%	0.17%	0.16%	0.05%	0.18%	0.26%	0.33%
School	106	1.21%	1.23%	0.72%	0.58%	0.53%	0.63%	0.74%	0.68%	0.61%	0.60%	0.69%	0.78%
College	107	1.01%	1.23%	0.72%	0.58%	0.53%	0.63%	0.74%	0.68%	0.61%	0.60%	0.69%	0.79%
Health	108	1.48%	1.24%	0.72%	0.58%	0.53%	0.63%	0.74%	0.68%	0.61%	0.60%	0.69%	0.78%
Lodging	109	1.46%	0.81%	0.88%	0.67%	0.92%	0.91%	0.71%	0.57%	0.48%	0.45%	0.39%	0.36%
Misc	110	0.94%	1.36%	0.16%	-0.26%	0.03%	0.26%	0.44%	0.41%	0.45%	0.42%	0.48%	0.38%
Government	111	0.67%	0.34%	0.32%	0.80%	0.35%	0.67%	0.60%	0.53%	0.46%	0.42%	0.38%	0.36%
TCU	112	0.49%	0.32%	0.38%	0.48%	1.03%	0.96%	0.92%	0.67%	0.59%	0.69%	0.62%	0.44%
Construction	113	-2.90%	-3.14%	-3.29%	-0.18%	0.24%	1.08%	1.34%	0.97%	0.71%	0.63%	0.57%	0.54%
Agriculture	114	-0.40%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%

Trend Based on Price :

Price	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Price Elasticity												
WACOG Commodity	\$6.99	\$7.06	\$6.95	\$7.11	\$7.27	\$7.43	\$7.57	\$7.66	\$7.74	\$8.25	\$8.10	\$8.28
Price Change %	-0.10%	-0.07%	0.11%	-0.16%	-0.16%	-0.15%	-0.13%	-0.09%	-0.07%	-0.45%	0.13%	-0.16%

Employment Elasticity

Commercial Employer	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Mining	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Food	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Textile	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Wood_Paper	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Chemical	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Petroleum	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Stone	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Prim_Metal	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Fab_Metal	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Transport	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Misc	0.02%	-0.06%	-0.18%	-0.25%	-0.16%	-0.10%	0.03%	0.11%	0.14%	0.05%	0.06%	0.01%
Office	0.76%	0.76%	0.79%	0.79%	0.89%	0.96%	0.90%	0.86%	0.80%	0.72%	0.71%	0.77%
Restaurant	0.42%	0.49%	0.48%	0.44%	0.45%	0.40%	0.40%	0.39%	0.44%	0.44%	0.48%	0.44%
Retail	-0.04%	0.02%	0.08%	0.10%	0.12%	0.10%	0.10%	0.10%	0.17%	0.22%	0.24%	0.19%
Laundry	0.34%	0.32%	0.34%	0.35%	0.37%	0.38%	0.35%	0.36%	0.43%	0.48%	0.44%	0.42%
Warehouse	0.40%	0.34%	0.33%	0.50%	0.50%	0.51%	0.44%	0.39%	0.38%	0.42%	0.41%	0.40%
School	0.85%	0.84%	0.91%	0.84%	0.77%	0.71%	0.72%	0.73%	0.70%	0.70%	0.62%	0.55%
College	0.85%	0.84%	0.91%	0.84%	0.77%	0.71%	0.72%	0.73%	0.71%	0.69%	0.62%	0.55%
Health	0.85%	0.84%	0.91%	0.84%	0.77%	0.71%	0.72%	0.73%	0.71%	0.69%	0.62%	0.55%
Lodging	0.42%	0.49%	0.48%	0.44%	0.45%	0.40%	0.40%	0.39%	0.44%	0.44%	0.48%	0.44%
Misc	0.34%	0.32%	0.34%	0.35%	0.37%	0.38%	0.35%	0.36%	0.43%	0.48%	0.44%	0.42%
Government	0.35%	0.61%	0.06%	0.30%	0.31%	0.29%	0.31%	0.31%	0.31%	0.31%	0.30%	0.48%
TCU	0.44%	0.36%	0.53%	0.62%	0.73%	0.71%	0.73%	0.81%	0.90%	0.94%	0.93%	0.94%
Construction	0.53%	0.52%	0.40%	0.42%	0.48%	0.51%	0.65%	0.71%	0.94%	0.90%	0.84%	0.81%
Agriculture	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%	0.24%

2008 CALIFORNIA GAS REPORT

ENERGY EFFICIENCY
JULY 2008



SDG&E Energy Efficiency

ANNUAL NET SAVINGS	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
	mdth	mdth	mdth	mdth	mdth	mdth	mdth	mdth	mdth	mdth	mdth	mdth
Residential	162	162	162	162	162	162	162	162	162	162	162	162
Core Commercial	360	360	360	360	360	360	360	360	360	360	360	360
Core Industrial	7	7	7	7	7	7	7	7	7	7	7	7
Noncore Commercial	4	4	4	4	4	4	4	4	4	4	4	4
Noncore Industrial	37	37	37	37	37	37	37	37	37	37	37	37
Total	570	570	570	570	570	570	570	570	570	570	570	570

Cumulative Savings mdth	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
SDGE	mdth	mdth	mdth	mdth	mdth	mdth	mdth	mdth	mdth	mdth	mdth	mdth
Residential	1,606	1,617	1,617	1,617	1,617	1,617	1,617	1,617	1,617	1,617	1,617	1,617
Core Commercial	3,573	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599	3,599
Core Industrial	73	74	74	74	74	74	74	74	74	74	74	74
Noncore Commercial	41	41	41	41	41	41	41	41	41	41	41	41
Noncore Industrial	367	370	370	370	370	370	370	370	370	370	370	370
Total Load Impacts	5,660	5,700	5,700	5,700	5,700	5,700	5,700	5,700	5,700	5,700	5,700	5,700

Cumulative Savings MMCF	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
SDGE												
Residential	1,572	1,583	1,583	1,583	1,583	1,583	1,583	1,583	1,583	1,583	1,583	1,583
Core Commercial	3,497	3,522	3,522	3,522	3,522	3,522	3,522	3,522	3,522	3,522	3,522	3,522
Core Industrial	72	72	72	72	72	72	72	72	72	72	72	72
Noncore Commercial	40	40	40	40	40	40	40	40	40	40	40	40
Noncore Industrial	359	362	362	362	362	362	362	362	362	362	362	362
Total Cumulative Load	5,540	5,579	5,579	5,579	5,579	5,579	5,579	5,579	5,579	5,579	5,579	5,579

2008 CALIFORNIA GAS REPORT

SUPPORTING DATA
JULY 2008



2008 CALIFORNIA GAS REPORT

**PEAKDAY FORECAST
JULY 2008**



SDG&E Heating Degree Day (HDD) Weather Designs

	(Calendar Based)		Average	Hot	
	Cold			1-in-10 exceedance	1-in-35 exceedance
	1-in-35 exceedance	1-in-10 exceedance			
January	341.3	316.6	269.5	222.5	197.7
February	278.1	258.0	219.6	181.3	161.1
March	242.4	224.8	191.4	158.0	140.4
April	146.0	135.4	115.3	95.1	84.5
May	66.9	62.1	52.9	43.6	38.8
June	16.1	14.9	12.7	10.5	9.3
July	0.4	0.4	0.3	0.3	0.3
August	0.0	0.0	0.0	0.0	0.0
September	1.8	1.7	1.4	1.2	1.0
October	30.9	28.6	24.4	20.1	17.9
November	172.0	159.5	135.8	112.1	99.6
December	<u>358.0</u>	<u>332.0</u>	<u>282.6</u>	<u>233.3</u>	<u>207.3</u>
	1654.0	1534.0	1306.0	1078.0	958.0

**2008-CGR Sales + Transport + Exchange for Month of DECEMBER (units=Mdth/Day)
"1-in-2" Likelihood Cold Day Temperature**

No. "CGR_B"	CLASS	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1	RESIDEN	258.7	261.4	263.6	266.7	269.8	272.2	275.1	277.8	280.5	283.3	285.5	287.3	289.5	291.5	293.5	295.9	297.8	299.8	302.0
2	Com GN3	72.6	73.8	75.2	76.6	77.7	78.5	79.6	80.7	81.7	82.7	83.4	84.0	84.6	85.4	85.9	86.6	87.3	88.1	88.9
2	GAC 2/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	GEN 2/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Ind GN3	7.1	7.2	7.2	7.3	7.3	7.3	7.4	7.4	7.4	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
4	NGV 2/	2.9	3.0	3.0	3.1	3.2	3.2	3.3	3.4	3.4	3.5	3.6	3.6	3.7	3.8	3.8	3.9	4.0	4.0	4.1
Total: MDth/day		341.3	345.4	349.1	353.7	357.9	361.3	365.4	369.3	373.1	376.9	379.9	382.4	385.3	388.2	390.8	393.9	396.7	399.4	402.5
MMcf/day 4/		334.1	338.0	341.7	346.2	350.3	353.7	357.6	361.4	365.2	368.9	371.9	374.3	377.1	379.9	382.5	385.6	388.2	390.9	394.0
Days per Mo		31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Pk-Day Temp. (deg-F) =		47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
Hdd: December--ColdYr =		358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0
"Wkday/Wkend" Factor-Res:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
"Wkday/Wkend" Factor-NonRes:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Zero-HDD Load/Day Seasonal "Scale-Up":		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Use this Method&I Calculations

Notes:

1/
$$= \frac{("Cold-Dec" / 31 \text{ days}) + (("Cold-Dec" - "Base-Dec") / "Cold-Dec_Hdd")}{(65 \text{ degF} - 47.5 \text{ degF})}$$

2/ "Non-temperature" sensitive market segment.

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

4/
$$Dth/Mcf = 1.0217$$

**2008-CGR Sales + Transport + Exchange for Month of DECEMBER (units=Mdth/Day)
"1-in-10" Likelihood Cold Day Temperature**

No. "CGR_B"	CLASS	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1	RESIDEN	303.8	307.0	309.6	313.3	316.9	319.7	323.1	326.3	329.4	332.7	335.3	337.4	340.1	342.4	344.8	347.5	349.8	352.1	354.7
2	Com GN3	81.3	82.7	84.2	85.7	86.9	87.9	89.1	90.3	91.5	92.5	93.4	94.0	94.7	95.5	96.2	97.0	97.8	98.6	99.5
2	GAC <u>2/</u>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	GEN <u>2/</u>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Ind GN3	7.8	7.8	7.9	8.0	8.0	8.0	8.1	8.1	8.1	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
4	NGV <u>2/</u>	2.9	3.0	3.0	3.1	3.2	3.2	3.3	3.4	3.4	3.5	3.6	3.6	3.7	3.8	3.8	3.9	4.0	4.0	4.1
Total: MDth/day		395.8	400.5	404.8	410.1	415.0	418.9	423.6	428.1	432.5	436.9	440.4	443.3	446.6	449.9	453.0	456.6	459.8	462.9	466.6
MMcf/day <u>4/</u>		387.4	392.0	396.2	401.4	406.2	410.0	414.6	419.0	423.3	427.6	431.0	433.8	437.2	440.4	443.4	446.9	450.0	453.1	456.7
Days per Mo		31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Pk-Day Temp. (deg-F) =		43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7	43.7
Hdd: December--ColdYr =		358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0
"Wkday/Wkend" Factor-Res:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
"Wkday/Wkend" Factor-NonRes:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Zero-HDD Load/Day Seasonal "Scale-Up":		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Use this Method&I Calculations

Notes:

1/ = ("Cold-Dec" / 31 days)+((("Cold-Dec" - "Base-Dec") / "Cold-Dec_Hdd"]*(65 degF - 43.7 degF)

2/ "Non-temperature" sensitive market segment.

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

4/ Dth/Mcf= 1.0217

**2008-CGR Sales + Transport + Exchange for Month of DECEMBER (units=Mdth/Day)
"1-in-35" Likelihood Cold Day Temperature**

No. "CGR_B"	CLASS	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1	RESIDEN	326.4	329.8	332.6	336.6	340.4	343.5	347.1	350.6	353.9	357.5	360.2	362.5	365.3	367.8	370.4	373.3	375.8	378.3	381.1
2	Com GN3	85.6	87.1	88.7	90.3	91.5	92.6	93.8	95.1	96.4	97.4	98.3	99.0	99.7	100.6	101.3	102.1	103.0	103.8	104.8
2	GAC 2/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	GEN 2/	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Ind GN3	8.1	8.2	8.2	8.3	8.3	8.4	8.4	8.4	8.5	8.5	8.5	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
4	NGV 2/	2.9	3.0	3.0	3.1	3.2	3.2	3.3	3.4	3.4	3.5	3.6	3.6	3.7	3.8	3.8	3.9	4.0	4.0	4.1
Total: MDth/day		423.0	428.0	432.6	438.3	443.5	447.7	452.7	457.5	462.2	466.9	470.6	473.7	477.3	480.8	484.1	488.0	491.3	494.7	498.6
MMcf/day 4/		414.0	418.9	423.4	429.0	434.1	438.2	443.1	447.8	452.4	457.0	460.6	463.6	467.2	470.6	473.8	477.6	480.9	484.2	488.0
Days per Mo		31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
Pk-Day Temp. (deg-F) =		41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8	41.8
Hdd: December--ColdYr =		358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0	358.0
"Wkday/Wkend" Factor-Res:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
"Wkday/Wkend" Factor-NonRes:		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Zero-HDD Load/Day Seasonal "Scale-Up":		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Use this Method&I Calculations

Notes:

1/
$$= \frac{("Cold-Dec" / 31 \text{ days}) + (("Cold-Dec" - "Base-Dec") / ("Cold-Dec_Hdd"] * (65 \text{ degF} - 41.8 \text{ degF}))}{}$$

2/ "Non-temperature" sensitive market segment.

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

4/ Dth/Mcf= 1.0217

**Friday, May 16, 2008 2008-CGR Sales + Transport + Exchange for Month of DECEMBER (units=mdth)
Temp=December, Cold Yea**

No. "CGR_CLASS	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1 Residen	5826.5	5887.6	5937.3	6008.2	6077.3	6131.8	6196.7	6258.3	6317.9	6380.8	6429.8	6470.9	6521.3	6566.3	6611.5	6664.3	6708.2	6752.2	6802.3
2 Com GN3	1830.4	1861.7	1896.9	1931.2	1957.6	1980.1	2006.7	2033.9	2060.5	2083.7	2102.6	2117.0	2132.4	2151.8	2166.5	2184.2	2201.9	2219.8	2240.9
2 GAC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 GEN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 Ind GN3	188.3	189.5	191.0	192.2	193.0	193.7	194.6	195.5	196.6	197.4	198.0	198.2	198.4	198.5	198.6	198.7	198.8	199.0	199.3
4 NGV	89.6	91.7	93.8	95.9	98.0	100.1	102.2	104.3	106.4	108.5	110.6	112.7	114.8	116.9	119.0	121.1	123.2	125.3	127.4
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	7935	8030	8119	8227	8326	8406	8500	8592	8681	8770	8841	8899	8967	9033	9096	9168	9232	9296	9370

**Friday, May 16, 2008 2008-CGR Sales + Transport + Exchange for Month of DECEMBER (units=mdth)
Temp=December, "Base/Zero-Hdd" Yea**

No. "CGR_CLASS	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
1 Residen	1573.8	1590.3	1603.7	1622.8	1641.5	1656.2	1673.8	1690.4	1706.5	1723.5	1736.7	1747.8	1761.4	1773.6	1785.8	1800.0	1811.9	1823.8	1837.3
2 Com GN3	1014.8	1032.1	1051.7	1070.7	1085.4	1097.8	1112.6	1127.6	1142.4	1155.2	1165.7	1173.7	1182.2	1193.0	1201.2	1211.0	1220.8	1230.7	1242.4
2 GAC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 GEN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 Ind GN3	125.1	125.9	127.0	127.7	128.2	128.7	129.3	129.9	130.6	131.2	131.6	131.7	131.9	131.9	132.0	132.0	132.1	132.2	132.4
4 NGV	89.6	91.7	93.8	95.9	98.0	100.1	102.2	104.3	106.4	108.5	110.6	112.7	114.8	116.9	119.0	121.1	123.2	125.3	127.4
	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
	2803	2840	2876	2917	2953	2983	3018	3052	3086	3118	3145	3166	3190	3215	3238	3264	3288	3312	3340

2008 CALIFORNIA GAS REPORT

**WEATHER: HEATING DEGREE DAYS – AVERAGE AND “COLD” YEAR DESIGNS;
AND WINTER PEAK DAY DESIGN TEMPERATURES
JULY 2008**



I. Overview

San Diego Gas and Electric Company's service area for natural gas extends from southern Orange County throughout San Diego County to the Mexican border. To quantify the overall temperature experienced within this region, SDGandE aggregates daily temperature recordings from three U.S. Weather Bureau weather stations into one system average heating degree-day ("HDD") figure. The table below lists weather station locations along with a designated temperature zone as a mnemonic.

Table 1

Temperature Zones with Representative Weather Stations

Temperature Zone	Weight	Station Location
1. Inland (East)	1/3	El Cajon
2. Coastal	1/3	San Diego's Lindberg Field
3. Inland (North)	1/3	Miramar Naval Air Station

SDGandE uses 65° Fahrenheit to calculate the number of HDDs. One heating degree-day is accumulated for each degree that the daily average is *below* 65° Fahrenheit. To arrive at the system average HDDs figure for its entire service area, SDGandE weights the HDD figure for each zone using the weights shown in Table 1. These weights are used in calculating the data shown from January 1987 to December 2006.

Daily maximum and minimum temperatures, for each individual weather station in the table above, are compiled from National Weather Service data. The web-site:

<http://newweb.wrh.noaa.gov/sgx/obs/rtp/rtpmap.php?wfo=sgx>

provides easy access to temperature data for San Diego and parts of surrounding counties. For each station, the average temperature is computed as the (maximum + minimum)/2 and this value is used to compute the heating degrees (i.e., the *daily* HDD) for each station as well. System average values of HDD are then computed using the weights for each respective station. Annual and monthly HDDs for the entire SDGandE service area from 1987 to 2006 are listed in Table 2, below.

Table 2**Calendar Month Heating Degree-Days (Jan. 1987 through Dec. 2006)**

<u>Year</u>	<u>Month</u>												<u>Total</u> <u>"Cal-Year"</u>
	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>	<u>Jul</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>	
1987	329	226	202	75	40	4	2	1	0	4	132	392	1407
1988	287	163	136	101	61	30	0	0	7	9	173	308	1275
1989	360	280	169	60	46	17	0	0	3	24	83	223	1264
1990	274	301	205	66	54	5	0	0	0	1	106	310	1322
1991	258	148	282	121	96	26	0	0	1	32	108	247	1319
1992	243	118	160	14	1	0	0	0	0	3	114	350	1002
1993	268	226	132	65	16	9	0	0	2	7	123	264	1111
1994	229	233	160	125	92	2	0	0	0	30	289	308	1468
1995	266	117	164	128	107	23	0	0	0	7	44	222	1078
1996	236	189	175	72	18	3	0	0	1	74	142	244	1155
1997	256	250	145	102	2	2	0	0	0	16	95	290	1159
1998	254	258	206	195	94	22	1	0	5	31	172	340	1576
1999	277	267	281	223	113	50	3	0	4	4	146	244	1612
2000	247	217	223	93	28	3	0	0	0	50	238	227	1327
2001	353	299	199	197	29	5	0	0	0	9	127	326	1544
2002	316	225	247	156	89	12	0	0	2	53	81	296	1478
2003	142	202	179	185	94	31	0	0	0	7	158	276	1273
2004	273	270	97	66	14	4	1	0	0	52	202	267	1246
2005	246	199	160	118	33	5	0	0	4	38	95	231	1128
2006	275	204	307	145	32	0	0	0	1	36	89	288	1377
20-Yr-Avg (Jan1987- Dec2006)													
Avg.	269.5	219.6	191.4	115.3	52.9	12.7	0.4	0.0	1.4	24.4	135.8	282.7	1306.1
St.Dev.	47.4	53.8	54.7	55.1	37.2	13.6	0.8	0.1	1.9	21.2	58.0	46.9	171.780
Min.	142.0	117.0	96.7	13.7	1.3	0.0	0.0	0.0	0.0	1.3	43.7	222.3	1002.3
Max.	359.7	300.7	307.0	223.3	113.0	49.7	3.3	0.7	6.7	74.0	289.0	392.3	1612.0

II. Calculations to Define Our Average-Temperature Year

The simple average of the 20-year period (January 1987 through December 2006) was used to represent the Average Year total and the individual monthly values for HDD. The standard deviation of these 20 years of annual HDDs was used to design the two Cold Years based on a “1-in-10” and “1-in-35” chance, c , that the respective annual “Cold Year” hdd_c value would be exceeded.

Our model for the annual HDD data is essentially a regression model where the only “explanatory” variable is the constant term. For example, the annual HDDs are modeled by the equation below:

$$HDD_y = \beta_0 + e_y; \text{ where } \beta_0 \text{ represents the mean and the } e_y \text{ is an error term.}$$

It turns out (e.g., see *Econometrics*, Wonnacott and Wonnacott, 1970, Wiley & Sons, Inc., 1970, p. 254) that the average of the annual HDD_y estimates β_0 and that the standard deviation of these HDDs about the mean, β_0 , estimates the standard deviation, s_e , of the error term, e_y . Further, a probability model for the annual HDD is based on a T-Distribution with N-1 degrees of freedom, where, N is the number of years of HDD data we use:

$$U = (HDD_y - \beta_0) / s_e, \text{ has a T-Distribution with N-1 degrees of freedom.}$$

III. Calculating the Cold-Temperature Year Weather Designs

Cold Year HDD Weather Designs

For SDGandE, cold-temperature-year HDD weather designs are developed with a 1-in-35 year chance of occurrence. In terms of probabilities this can be expressed as the following for a “1-in-35” cold-year HDD value in equation 1 and a “1-in-10” cold-year HDD value in equation 2, with Annual HDD as the random variable:

$$(1) \quad \text{Prob} \{ \text{Annual HDD} > \text{“1-in-35” Cold-Yr HDD} \} = 1/35 = 0.0286$$

$$(2) \quad \text{Prob} \{ \text{Annual HDD} > \text{“1-in-10” Cold-Yr HDD} \} = 1/10 = 0.1000$$

An area of 0.0286 under one tail of the T-Distribution translates to 2.025 standard deviations *above* an average-year based on a t-statistic with 19

degrees of freedom. Using the standard deviation of 171.78 HDD from the last 20 years of data, these equations yield values of about 1,654 HDD for a “1-in-35” cold year and 1,534 as the number of HDDs for a “1-in-10” cold year (an area of 0.1000 under one tail of the T-Distribution translates to 1.328 standard deviations *above* an average-year based on a t-statistic with 19 degrees of freedom). For example, the “1-in-35” cold-year HDD is calculated as follows:

$$(3) \quad \text{Cold-year HDD} = 1,654 \text{ which equals approximately} \\ 1,306 \text{ average-year HDDs} + 2.025 * 171.78$$

Table 3 shows monthly HDD figures for “1-in-35” cold year, “1-in-10” cold year and, average year temperature designs. The monthly average-temperature-year HDDs are calculated from weighted monthly HDDs from 1987 to 2006, as shown as the bottom of Table 2, above. For example, the average-year December value of 282.6 HDD equals the simple average of the 20 December HDD figures from 1987 to 2006, and represents 21.6 percent of the HDDs in an average-year. SDGandE calculates the cold-temperature-year monthly HDD values using the same shape of the average-year HDDs. For example, since 21.6 percent of average-temperature-year HDDs occurred in December, the estimated number of HDDs during December for a cold-year is equal to 1,654 HDDs multiplied by 21.6 percent, or 358.0 HDDs.

Table 3

Calendar Month Heating Degree-Day Designs

	SDG&E Heating Degree Day (HDD) Weather Designs				
	(Calendar Based)		Average	Hot	
	Cold				
	1-in-35 Design	1-in-10 Design		1-in-10 Design	1-in-35 Design
January	341.3	316.6	269.5	222.5	197.7
February	278.1	258.0	219.6	181.3	161.1
March	242.4	224.8	191.4	158.0	140.4
April	146.0	135.4	115.3	95.1	84.5
May	66.9	62.1	52.9	43.6	38.8
June	16.1	14.9	12.7	10.5	9.3
July	0.4	0.4	0.3	0.3	0.3
August	0.0	0.0	0.0	0.0	0.0
September	1.8	1.7	1.4	1.2	1.0
October	30.9	28.6	24.4	20.1	17.9
November	172.0	159.5	135.8	112.1	99.6
December	358.0	332.0	282.6	233.3	207.3
	1654	1534	1306	1078	958

IV. Calculating the Peak-Day Design Temperature

SDGandE's Peak-Day design temperature of 41.8 degrees Fahrenheit, denoted "Deg-F," is determined from a statistical analysis of observed annual minimum daily system average temperatures constructed from daily temperature recordings from the three U.S. Weather Bureau weather stations discussed above. Since we have a time series of daily data by year, the following notation will be used for the remainder of this discussion:

- (1) $AVG_{y,d}$ = system average value of Temperature
for calendar year "y" and day "d".

The calendar year, y, can range from 1972 through 2006, while the day, d, can range from 1 to 365, for non leap years, or from 1 to 366 for leap years. The "upper" value for the day, d, thus depends on the calendar year, y, and will be denoted by $n(y)=365$, or 366, respectively, when y is a non-leap year or a leap year.

For each calendar year, we calculate the following statistic from our series of daily system average temperatures defined in equation (1) above:

$$(2) \quad \text{MinAVG}_y = \min_{d=1}^{n(y)} \{ AVG_{y,d} \}, \text{ for } y=1972, 1973, \dots, 2006.$$

(The notation used in equation 2 means "For a particular year, y, list all the daily values of system average temperature for that year, then pick the smallest one.")

The resulting minimum annual temperatures are shown in Table 4, below. Note that most of the minimum temperatures occur in the months of December or January; however, for some calendar years the minimums occurred in other months (the minimum for 1991 was observed in March).

The statistical methods we use to analyze this data employ software developed to fit three generic probability models: the Generalized Extreme Value (GEV) model, the Double-Exponential or GUMBEL (EV1) model and a 2-Parameter Students' T-Distribution (T-Dist) model. [The GEV and EV1 models have the same mathematical specification as those implemented in a DOS-based executable-only computer code that was developed by Richard L. Lehman and described in a paper published in the Proceedings of the Eighth Conference on Applied Climatology, January 17-22, 1993, Anaheim, California, pp. 270-273, by the American Meteorological Society, Boston, MA., with the title "Two Software Products for Extreme Value Analysis: System Overviews of ANYEX and DDEX." At the time he wrote the paper, Dr. Lehman was with the Climate

Analysis Center, National Weather Service/NOAA in Washington, D.C., zip code 20233.] The Statistical Analysis Software (SAS) procedure for nonlinear statistical model estimation (PROC MODEL, from SAS V6.12) was used to do the calculations. Further, the calculation procedures were implemented to fit the probability models to observed *maximums* of data, like heating degrees. By recognizing that:

$$-\text{MinAVG}_y = -\min_{d=1}^{n(y)}\{\text{AVG}_{y,d}\} = \max_{d=1}^{n(y)}\{-\text{AVG}_{y,d}\}, \text{ for } y=1972, \dots, 2006;$$

this same software, when applied to the *negative* of the minimum temperature data, yields appropriate probability model estimation results.

The calculations done to fit any one of the three probability models chooses the parameter values that provide the “best fit” of the parametric probability model’s calculated cumulative distribution function (CDF) to the empirical cumulative distribution function (ECDF). Note that the ECDF is constructed based on the variable “-MinAVG_y” (which is a *maximum* over a set of *negative* temperatures) with values of the variable MinAVG_y that are the same as shown in Table 4.

In Table 5, the data for -MinAVG_y are shown after they have been sorted from “lowest” to “highest” value. The ascending *ordinal* value is shown in the column labeled “RANK” and the empirical cumulative distribution function is calculated and shown in the next column. The formula used to calculate this function is:

$$\text{ECDF} = (\text{RANK} - \alpha)/[\text{MaxRANK} + (1 - 2\alpha)],$$

where the parameter “ α ” (shown as *alpha* in Table 5) is a “small” positive value (usually less than 1/2) that is used to bound the ECDF away from 0 and 1.

Of the three probability models considered (GEV, EV1, and T_Dist) the results obtained for the GEV model were selected since the fit to the ECDF was better than that of either the EV1 model or the T_Dist model. (Convergence to stable parameter estimates was occasionally a problem with fitting a GEV model to the ECDF; however, convergence was obtained in this case.)

The following mathematical expression specifies the GEV model we fit to the data for “-MinAVG_y” shown in Table 5.

$$(3) \quad \text{ECDF}(-\text{MinAVG}_y) = \text{Prob} \{ -T < -\text{MinAVG}_y \} = \exp[-((1 - k \cdot z) / k)],$$

where “exp[.]” is the exponential function, and

$$(4) \quad z = (-\text{MinAVG}_y - \gamma) / \theta, \text{ for each year, } y, \text{ and}$$

the parameters “ k ”, “ γ ” and “ θ ” are estimated for the GEV model. The estimated values for k , γ and θ are shown in Table 5 along with the fitted values of the model CDF (the column: “Fitted” Model CDF).

Now, to calculate a *peak-day design temperature*, $TPDD_{\delta}$, with a specified likelihood, δ , that a value less than $TPDD_{\delta}$ would be observed, we use the equation below:

$$(5) \quad \delta = \text{Prob} \{ T \leq TPDD_{\delta} \}, \text{ which is equivalent to}$$

$$(6) \quad \delta = \text{Prob} \{ [(-T - \gamma) / \theta] \geq [(-TPDD_{\delta} - \gamma) / \theta] \}, = \text{Prob} \{ [(-T - \gamma) / \theta] \geq [z_{\delta}] \},$$

where $z_{\delta} = [(-TPDD_{\delta} - \gamma) / \theta]$. In terms of our probability model,

$$(7) \quad \delta = 1 - \exp[-((1 - k \cdot z_{\delta}) (1/k))], \text{ or } (1 - \delta) = \exp[-((1 - k \cdot z_{\delta}) (1/k))],$$

which yields the following equation for z_{δ} ,

$$(7') \quad z_{\delta} = \{1 - [(-\ln(1 - \delta))^{(k)}] (1/k)\}, \text{ where "ln[.]" is the natural}$$

logarithm function. The implied equation for $TPDD_{\delta}$ is:

$$(8) \quad TPDD_{\delta} = - [\gamma + (z_{\delta} \cdot \theta)].$$

To calculate the minimum daily (system average) temperature to define our extreme weather event, we specify that this COLDEST-Day be one where the temperature would be lower with a "1-in-35" likelihood. This criterion translates into two equations to be solved based on equations (7) and (8) above:

$$(9) \quad \text{solve for "z}_{\delta}\text{" from equation (7') above with } (1 - \delta) = (1 - 1/35) = 1 - 0.0286,$$

$$(10) \quad \text{solve for "TPDD}_{\delta}\text{" from } TPDD_{\delta} = - [\gamma + (z_{\delta} \cdot \theta)].$$

The value of $z_{\delta} = 2.676$ and $TPDD_{\delta} = - [\gamma + (z_{\delta} \cdot \theta)] = 41.8$ degrees Fahrenheit, with values for "k", "γ" and "θ" in Table 5, below.

SDG&E's Peak-Day design temperature of 43.7 degrees Fahrenheit, is calculated in a methodologically similar way as for the 41.8 degree peak day temperature. The criteria specified in equation (9) above for a "1-in-35" likelihood would be replaced by a "1-in-10" likelihood.

$$(9') \quad \text{solve for "z}_{\delta}\text{" from equation (7') above with } (1 - \delta) = (1 - 1/10) = 1 - 0.1000,$$

which yields a "z_δ" value of $z_{\delta} = 1.877$ and, $TPDD_{\delta} = - [\gamma + (z_{\delta} \cdot \theta)] = 43.7$, with values for "k", "γ" and "θ" in Table 5, below.

A plot of the cumulative distribution function for $MinAVG_y$ based on the fitted model parameters "k", "γ" and "θ" in Table 5, below, is shown in Figure 1.

Table 4

YEAR	MINAVG	Month(MinAvg)
1972	46.5833	Dec
1973	46.0833	Jan
1974	44.0000	Dec
1975	44.0833	Jan
1976	44.9167	Jan
1977	50.5833	Mar
1978	42.5833	Dec
1979	45.0000	Jan
1980	53.6667	Jan
1981	49.6667	Jan
1982	48.6667	Dec
1983	51.3333	Jan
1984	48.3333	Dec
1985	46.0000	Dec
1986	50.0000	Feb
1987	41.3333	Dec
1988	45.3333	Dec
1989	45.0000	Jan
1990	43.6667	Feb
1991	48.6667	Mar
1992	47.0000	Dec
1993	46.6667	Jan
1994	48.0000	Nov
1995	51.0000	Dec
1996	48.6667	Feb
1997	49.0000	Dec
1998	46.6667	Dec
1999	48.6667	Jan
2000	50.3333	Jan
2001	47.6667	Jan
2002	45.6667	Jan
2003	49.0000	Dec
2004	47.6667	Nov
2005	47.6667	Jan
2006	48.3333	Dec

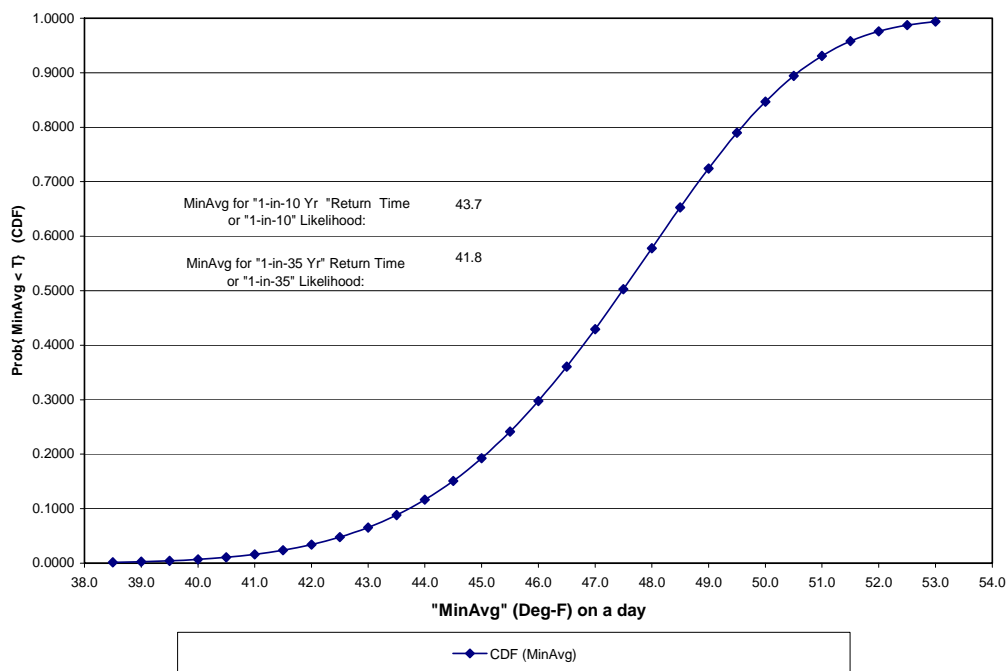
Table 5

alpha= 0.375

YEAR	Month (-MinAvg)	Days/Yr	-MinAvg	"Rank"	Empirical CDF	"Fitted" Model CDF
1980	Jan	366	-53.6667	1	0.01773	0.00188
1983	Jan	365	-51.3333	2	0.04610	0.05003
1995	Dec	365	-51.0000	3	0.07447	0.06900
1977	Mar	365	-50.5833	4	0.10284	0.09897
2000	Jan	366	-50.3333	5	0.13121	0.12043
1986	Feb	365	-50.0000	6	0.15957	0.15309
1981	Jan	365	-49.6667	7	0.18794	0.19016
1997	Dec	365	-49.0000	8	0.21631	0.27570
2003	Dec	365	-49.0000	9	0.24468	0.27570
1982	Dec	365	-48.6667	10	0.27305	0.32287
1991	Mar	365	-48.6667	11	0.30142	0.32287
1996	Feb	366	-48.6667	12	0.32979	0.32287
1999	Jan	365	-48.6667	13	0.35816	0.32287
1984	Dec	366	-48.3333	14	0.38652	0.37193
2006	Dec	365	-48.3333	15	0.41489	0.37193
1994	Nov	365	-48.0000	16	0.44326	0.42204
2001	Jan	365	-47.6667	17	0.47163	0.47236
2004	Nov	366	-47.6667	18	0.50000	0.47236
2005	Jan	365	-47.6667	19	0.52837	0.47236
1992	Dec	366	-47.0000	20	0.55674	0.57051
1993	Jan	365	-46.6667	21	0.58511	0.61702
1998	Dec	365	-46.6667	22	0.61348	0.61702
1972	Dec	366	-46.5833	23	0.64184	0.62829
1973	Jan	365	-46.0833	24	0.67021	0.69237
1985	Dec	365	-46.0000	25	0.69858	0.70242
2002	Jan	365	-45.6667	26	0.72695	0.74066
1988	Dec	366	-45.3333	27	0.75532	0.77569
1979	Jan	365	-45.0000	28	0.78369	0.80744
1989	Jan	365	-45.0000	29	0.81206	0.80744
1976	Jan	366	-44.9167	30	0.84043	0.81487
1975	Jan	365	-44.0833	31	0.86879	0.87831
1974	Dec	365	-44.0000	32	0.89716	0.88362
1990	Feb	365	-43.6667	33	0.92553	0.90312
1978	Dec	365	-42.5833	34	0.95390	0.94959
1987	Dec	365	-41.3333	35	0.98227	0.97900
Mean{-MinAvg}=			-47.3571			
St.Dev{-MinAvg}=			2.6523			
"Gamma": "Data Analysis Fitted Est."=			-48.36			
"Theta": "Data Analysis Fitted Est."=			2.47			
"Kappa": "Data Analysis Fitted Est."=			0.17			

Figure 1

Cummulative Distribution Function for the Random Variable: "MinAvg",
 [Minimum System Avg. Temp (Deg-F) on a Day over a Year]



V. Estimating the Uncertainty in the Peak-Day Design Temperature

The calculated peak-day design temperatures in section IV above also have a statistical uncertainty associated with them. The estimated measures of uncertainty recommended for our use are calculated from the fitted model for the probability distribution and are believed to be reasonable, although rough, approximations.

The basic approach used the estimated parameters for the probability distribution (see the results provided in Table 5, above) to calculate the fitted temperatures as a function of the empirical CDF listed in Table 5. These fitted temperatures are then “compared” with the observed temperatures by calculating the difference = “observed” – “fitted” values. The full set of differences are then separated into the lower third (L), the middle third (M) and the upper third (U) of the distribution. Finally, calculate values of the root-mean-square error (RMSE) of the differences in each third of the distribution, along with the entire set of differences overall. The data in Table 6, below, show the temperature data and the resulting RMSE values.

The formula below is used to calculate the RMSE for a specified set of “N” data differences:

$$\text{RMSE} = \text{SQRT} \left\{ \left(\sum_{i=1, \dots, N} e[i]^2 \right) / (N-3) \right\},$$

where $e[i]$ = *observed* less *fitted* value of temperature, $T[i]$. The number of estimated parameters (3 for the GEV model) is subtracted from the respective number of data differences, N , in the denominator of the RMSE expression.

Since both the “1-in-35” and “1-in-10” peak-day temperature values are in the lower third quantile of the fitted distribution, the calculated standard error for these estimates is 0.3 Deg-F.

Table 6

Quantile: (Lower, Middle, Upper 3rd's)	Observed "T[i]" Temp. Ranked	"Fitted Value" of "T[i]"	Residual "e[i]": Obs'd. less Fitted Value of "T[i]"	Square of "e[i]":
U	53.6667	52.2373	1.4294	2.0431
U	51.3333	51.4135	-0.0802	0.0064
U	51.0000	50.9160	0.0840	0.0071
U	50.5833	50.5360	0.0474	0.0022
U	50.3333	50.2181	0.1152	0.0133
U	50.0000	49.9388	0.0612	0.0037
U	49.6667	49.6856	-0.0189	0.0004
U	49.0000	49.4509	-0.4509	0.2033
U	49.0000	49.2299	-0.2299	0.0529
U	48.6667	49.0192	-0.3526	0.1243
U	48.6667	48.8162	-0.1496	0.0224
U	48.6667	48.6190	0.0477	0.0023
M	48.6667	48.4260	0.2407	0.0579
M	48.3333	48.2358	0.0975	0.0095
M	48.3333	48.0473	0.2860	0.0818
M	48.0000	47.8596	0.1404	0.0197
M	47.6667	47.6715	-0.0048	0.0000
M	47.6667	47.4822	0.1845	0.0340
M	47.6667	47.2907	0.3760	0.1414
M	47.0000	47.0960	-0.0960	0.0092
M	46.6667	46.8970	-0.2304	0.0531
M	46.6667	46.6927	-0.0260	0.0007
M	46.5833	46.4815	0.1019	0.0104
L	46.0833	46.2619	-0.1786	0.0319
L	46.0000	46.0320	-0.0320	0.0010
L	45.6667	45.7894	-0.1227	0.0151
L	45.3333	45.5309	-0.1976	0.0390
L	45.0000	45.2525	-0.2525	0.0638
L	45.0000	44.9485	0.0515	0.0027
L	44.9167	44.6106	0.3061	0.0937
L	44.0833	44.2261	-0.1428	0.0204
L	44.0000	43.7736	0.2264	0.0513
L	43.6667	43.2123	0.4544	0.2065
L	42.5833	42.4461	0.1373	0.0188
L	41.3333	41.1143	0.2190	0.0480
		Overall RMSE (e _{Ti}):		0.3 °F
		Lower 3rd RMSE (e _{Ti}):		0.3 °F
		Middle 3rd RMSE (e _{Ti}):		0.2 °F
		Upper 3rd RMSE (e _{Ti}):		0.5 °F

VI. The Relationship between Annual Likelihoods for Peak-Day Temperatures and “Expected Return Time”

The event whose probability distribution we’ve modeled is the likelihood that the minimum daily temperature over a calendar year is less than a specified value. And, in particular, we’ve used this probability model to infer the value of a temperature, our *peak-day design temperature* (TPDD_δ), that corresponds to a pre-defined likelihood, δ, that the observed minimum temperature is less than or equal to this design temperature.

$$(1) \quad \delta = \text{Prob}\{\text{Minimum Daily Temperature over the Year} < \text{TPDD}_\delta\}.$$

For some applications, it is useful to think of how this specified likelihood (or “risk level” δ) relates to the expected number of years until this Peak-Day event would first occur. This expected number of years is what is meant by the *return period*. The results stated below are found in the book: ***Statistics of Extremes***, E.J. Gumbel, Columbia University Press, 1958, on pages 21-25.

$$(2) \quad E[\text{\#Yrs for Peak-Day Event to Occur}] = 1 / \delta,$$

$$1 / \text{Prob}\{\text{Minimum Daily Temperature over the Year} < \text{TPDD}_\delta\}.$$

For our peak-day design temperature (41.8°F) associated with a 1-in-35 annual likelihood, the return period is 35 years (δ=1/35). For the 43.7°F peak-day design temperature, the return period is 10 years (δ=1/10). Occasionally, a less precise terminology is used. For example, the 41.8°F peak-day design temperature may be referred to as a “1-in-35 year cold day”; and the 43.7°F peak-day design temperature may be referred to as a “1-in-10 year cold day.”

The probability model for the *return period*, as a random variable, is a geometric (discrete) distribution with positive integer values for the *return period*. The parameter δ = Prob{ Minimum Daily Temperature over the Year < TPDD_δ }.

$$(3) \quad \text{Prob}\{\text{return period} = r\} = (1 - \delta)^{(r-1)} \delta, \text{ for } r = 1, 2, 3, \dots$$

The expected value of the *return period* is already given in (2) above; the variance of the *return period* is:

$$(4) \quad \text{Var}[\text{return period}] = (E[\text{return period}])^2 \times (1 - (1 / E[\text{return period}])),$$

$$(4') \quad \text{Var}[\text{return period}] = (E[\text{return period}]) \times (E[\text{return period}] - 1).$$

Equations (4) and (4') indicate that the standard deviation (square root of the variance) of the *return period* is nearly equal to its expected value. Thus, there is substantial variability about the expected value—a *return period* is not very precise.

VII. Calculation of Likelihoods for Peak-Day Temperature Events Over a Specified Number of Years

With a specified annual likelihood (i.e., a level of risk) for a peak-day temperature event, several forward-looking questions can be posed:

- 1). What is the probability that we observe *no* peak-day event over the next N years?
- 2). What is the probability that we observe *at least one* specified peak-day event over the next N years?"
- 3). What is the probability that we observe exactly one peak-day event over the next N years?
- 4). What is the underlying peak-day temperature associated with the annual likelihood computed from setting the probability in question 3 above to a specified value?

To calculate the probabilities to answer questions 1-3, we use a binomial probability model:

$$(1) \text{ BiNomial}(s, N, \delta) = \{ N! / [(s!) (N-s)!] \} [\delta]^s [1 - \delta]^{(N-s)}, \text{ where}$$

N = # of years, s = # of peak-day events and δ = Annual Likelihood of a peak-day event.; the notation "N!" means the product "N(N-1)(N-2) ... (2)(1)" in the formula.

The binomial probability model is the one that applies here since for a specified number of years in the future, N, and a specified annual likelihood, δ , for the peak-day event, there are typically a number of ways that a specified number of annual peak-day events can occur out of the total, N, regardless of the order in which the outcomes might occur.

For $\delta=0.1$, N=10 years the answer to question 1) is calculated from:

$$(2) \quad \text{Prob}\{ \text{No peak-day event over 10 years} \} = \text{BiNomial}(0, 10, 0.1) = 0.3487$$

The answer to question 2) is simply:

$$(3) \quad \text{Prob}\{ \text{At Least One peak-day event over 10 years} \} = \\ 1 - \text{Prob}\{ \text{No peak-day event over 10 years} \} = 1 - 0.3487 = 0.6513$$

The answer to question 3) is calculated from:

$$(4) \quad \text{Prob}\{ \text{Exactly One peak-day event over 10 years} \} = \text{BiNomial}(1, 10, 0.1)$$

$$(4') \quad \text{Prob}\{ \textit{Exactly One peak-day event over 10 years} \} = 0.3874$$

Finally, to find an answer to question 4) where there's a 1/10 chance that only one peak-day event occurs over a ten-year period, we solve for δ in the equation:

$$(5) \quad 0.1000 = \text{BiNomial}(1, 10, \delta).$$

A numerical solution to this equation yields $\delta = 0.0011$, approximately, for the annual likelihood of a peak-day event. Our estimation results of Section IV, above, allow us to calculate the peak-day design temperature for this value of δ . The resulting calculations yield $\text{TPDD}_{\delta} = 40.5^{\circ}\text{F}$. A similar set of calculations for the case where we want to find the annual likelihood of a peak-day where only one peak-day event occurs over a thirty-five year period with a chance of $1/35=0.0286$. The resulting value of $\delta = 0.000841$ with $\text{TPDD}_{\delta} = 38.1^{\circ}\text{F}$ for this value of δ .

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
 Calc. Means and Standard Deviantions to use as Starting Values in Non-Linear Estimations.

Variable	N	Mean	Std Dev	Minimum	Maximum
MXT_1	35	-49.3404762	3.1554478	-56.3333333	-42.3333333
MXT_2	35	-51.3976190	2.9257621	-56.3333333	-43.6666667
MXT_3	35	-52.6119048	2.4690852	-58.6666667	-48.0833333
MXT_4	35	-55.8047619	2.7934727	-63.0000000	-49.0000000
MXT_5	35	-59.6000000	2.0697400	-64.6666667	-56.0000000
MXT_6	35	-63.2976190	2.0007439	-66.6666667	-58.3333333
MXT_7	35	-68.1514286	1.9398739	-73.6666667	-64.3333333
MXT_8	35	-69.3209524	1.7600707	-73.6666667	-64.3333333
MXT_9	35	-66.4976190	2.4349784	-72.0000000	-60.0000000
MXT_10	35	-61.1752381	2.6433335	-66.6666667	-55.0000000
MXT_11	35	-53.7119048	2.8460889	-60.0000000	-47.6666667
MXT_12	35	-49.5738095	3.4359672	-56.0000000	-41.3333333
MXTYR	35	-47.3571429	2.6523491	-53.6666667	-41.3333333

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```

1  Title1 "Data Analysis for Maximum/Minimum Daily SysAvg Temperatures (Un-Rounded)." ;
2  Title2 "Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods." ;
3
4  /*****
5  /*
6  /*
7  /*
8  /* FILE SAVED: "S:\Weather\2009Bcap\SDGandE\GEV4DlyTemp(NLReg2)_Sdge4WP.sas"
9  /*
10 /*           Sep. 19th,2007 for Annual Max of Negative of Min. Temp.
11 /*           Also, separately for and each of twelve(12) calendar months Jan-Dec.
12 /*           Fit GEV models (3-parameter and 2-parameter), plus a simple T-Dist. model.
13 /*
14 /*****
15
16
17
18
19
20
21  options mprint ;
22  /* %cour8p */
23  %cour8l
MPRINT(COUR8L):  DM 'dlgprtsetup orient=landscape nodisplay';
MPRINT(COUR8L):  OPTIONS LS=158 PS=72;
24
25
26  options ls=211 ps=69 ; **<<LANDSCAPE: SAS-Monospace w/Roman 6pt. Font >>**;
27  *options ls=160 ps=90 ; **<<PORTRAIT: SAS-Monospace w/Roman 6pt. Font >>**;
28
29  options date number notes ;
30
31
32
33  libname out2 'S:\Weather\2009Bcap\SDGandE\';
NOTE: Libref OUT2 was successfully assigned as follows:
      Engine:          V612
      Physical Name: S:\Weather\2009Bcap\SDGandE
34
35
36  proc contents data=out2.SAvgSDGE ;
37  run ;

```

NOTE: The PROCEDURE CONTENTS used 0.12 seconds.

```

38
39  data seriesD ;
40  set out2.SAvgSDGE ;
41  year = year(date) ;
42  month = month(date) ;
43  posAvg = avg ;
44  negAvg = -avg ;
45  run ;

```

NOTE: The data set WORK.SERIESD has 12996 observations and 10 variables.
 NOTE: The DATA statement used 0.42 seconds.

```

46
47
48  proc means data=seriesD noprint nway ;
49  class year month ;
50  var posAvg negAvg ;
51  output out=mostat
52  mean=posAvg negAvg
53  max=MxPosAvg MxNegAvg
54  min=MnPosAvg MnNegAvg ;
55  run;

```

NOTE: The data set WORK.MOSTAT has 427 observations and 10 variables.

NOTE: The PROCEDURE MEANS used 0.11 seconds.

```
56
57
58 proc sort data=mostat ;
59     by year month ;
60 run ;
```

NOTE: The data set WORK.MOSTAT has 427 observations and 10 variables.
NOTE: The PROCEDURE SORT used 0.14 seconds.

```
61
62
63 data mostat ;
64     set mostat ;
65     MxPRatio = MxPosAvg/ PosAvg ;
66     MnPRatio = MnPosAvg/ PosAvg ;
67     MxNRatio = MxNegAvg/ NegAvg ;
68     MnNRatio = MnNegAvg/ NegAvg ;
69 run ;
```

NOTE: The data set WORK.MOSTAT has 427 observations and 14 variables.
NOTE: The DATA statement used 0.15 seconds.

```
70
71
72
73
74
75
76
77 /*****
78 ***<< Print Summary Tables of Means/Minimums/Maximums of daily NEGATIVE-Temperatures (degrees-F). >>*** ;
79
80 proc transpose data=mostat out=AvTData prefix=AvT_ ;
81     where (year < 2007) ;
82     by year ;
83     id month ;
84     var NegAvg ;
85 run ;
86
87 data AvTData ;
88     set AvTData ;
89
90 if (mod(year,4)=0) then do ;
91     AvTyr = (AvT_1 + AvT_3 + AvT_5 + AvT_7 + AvT_8 + AvT_10 + AvT_12)*31
92             + (AvT_4 + AvT_6 + AvT_9 + AvT_11)*30
93             + (AvT_2)*29 ;
94     AvTyr = AvTyr / 366 ;
95 end ;
96 else do ;
97     AvTyr = (AvT_1 + AvT_3 + AvT_5 + AvT_7 + AvT_8 + AvT_10 + AvT_12)*31
98             + (AvT_4 + AvT_6 + AvT_9 + AvT_11)*30
99             + (AvT_2)*28 ;
100    AvTyr = AvTyr / 365 ;
101 end ;
102
103 run ;
104
105 proc print data=AvTData ;
106     id year ;
107     var AvTyr AvT_1-AvT_12 ;
108 title3 'Monthly Mean NEGATIVE Temperature (Deg-F) from 1972 thru 2006.' ;
109 run ;
110
111
112
113
114
115 proc transpose data=mostat out=MnTData prefix=MnT_ ;
116     where (year < 2007) ;
117     by year ;
118     id month ;
119     var MnNegAvg ;
```

```

120 run ;
121
122 data MnTData ;
123   set MnTData ;
124   MnTyr = min(of MnT_1-MnT_12) ;
125 run ;
126
127 proc print data=MnTData ;
128   id year ;
129   var MnTyr MnT_1-MnT_12 ;
130 title3 'Monthly MINIMUM NEGATIVE-Temperature (Deg-F) from 1972 thru 2006.';
131 run ;
132 *****/
133
134
135
136
137
138 proc transpose data=mostat out=MxTData prefix=MxT_ ;
139   where (year < 2007) ;
140   by year;
141   id month ;
142   var MxNegAvg ;
143 run ;

```

NOTE: The data set WORK.MXTDATA has 35 observations and 14 variables.
NOTE: The PROCEDURE TRANSPOSE used 0.1 seconds.

```

144
145 data MxTData ;
146   set MxTData ;
147   MxTyr = max(of MxT_1-MxT_12) ;
148 run ;

```

NOTE: The data set WORK.MXTDATA has 35 observations and 15 variables.
NOTE: The DATA statement used 0.12 seconds.

```

149
150 proc print data=MxTData ;
151   id year ;
152   var MxTyr MxT_1-MxT_12 ;
153 title3 'Monthly MAXIMUM NEGATIVE-Temperature (Deg-F) from 1972 thru 2006.';
154 run ;

```

NOTE: The PROCEDURE PRINT used 0.01 seconds.

```

155
156
157
158
159
160
161
162
163
164
165 /*****
166 ***<< Descriptive Statistics: Maxiums of daily NEGATIVE-Temperatures (Deg-F) for Year and each calendar month.
>>*** ;
167
168
169 proc corr data=MxTData ;
170   var MxTyr MxT_1 - MxT_12 ;
171 title3 'Correlation Matrix of Monthly Maximum NEGATIVE-Temperatures (Deg-F) within same year.';
172 run ;
173
174 proc arima data=MxTData ;
175   identify var=MxTyr ;
176   identify var=MxT_1 ;
177   identify var=MxT_2 ;
178   identify var=MxT_3 ;
179   identify var=MxT_4 ;
180   identify var=MxT_5 ;
181   identify var=MxT_6 ;

```

```

182 identify var=MxT_7 ;
183 identify var=MxT_8 ;
184 identify var=MxT_9 ;
185 identify var=MxT_10 ;
186 identify var=MxT_11 ;
187 identify var=MxT_12 ;
188 title3 "Auto-correlation analysis of each calendar month's Maximum NEGATIVE-Temperatures (Deg-F) within same
year.";
189 run ;
190
191 proc univariate normal data=MxTData plot ;
192 id year ;
193 var MxTYr MxT_1 - MxT_12 ;
194 title3 "Probability plots and tests for NORMALity by each calendar month's Maximun NEGATIVE-Temperatures (Deg-F)
time series.";
195 run ;
196
197
198 proc means data=MxTData ;
199 var MxT_1 - MxT_12 MxTYr ;
200 run ;
201 *****/
202
203
204
205
206
207
208
209
210 ***<< Statistical Estimation of GEV Models: Maximums of daily heating degrees for Year and each calendar month.
>>*** ;
211
212 %macro RankIt(file=MxTData,var=MxTYr,rank=RankYr,prob=PrMxTYr,Nobser=35,PltValue=0.375) ;
213 proc sort data=&file ;
214 by &var ;
215 run ;
216
217 data &file ;
218 set &file ;
219 retain &rank 0 alpha &pltvalue ;
220
221 &rank = &rank + 1 ;
222 &prob = (&rank - alpha) / (&Nobser + (1 - 2*alpha)) ;
223 run ;
224
225 proc print data=&file ;
226 var &var &rank &prob alpha year ;
227 run ;
228 %mend RankIt ;
229
230
231
232
233 %macro GEVfit(file=MxTData,ofile=MxTNL1,outfit=fit1,outtest=est1,depvar=PrMxTYr,var=MxTYr,typeGEV=1,
234 KappaI=0.25,GammaI=-47.05,ThetaI=2.77,YrLo=1972,YrHi=2006) ;
235 proc sort data=&file ;
236 by year ;
237 run ;
238
239
240
241 proc model data=&file converge=0.001
242 maxit=500 dw ; outmodel=&ofile ;
243 range year = &YrLo to &YrHi ; ***<< Dropped Jan-Jul 2007 data. >>*** ;
244
245
246 y = (&var - Gamma) / Theta ;
247
248 %if &typeGEV=1 %then %do ; ***<< 3-parameter GEV Model. >>*** ;
249 &depvar = exp( -(1 - Kappa * (y))**(1/Kappa) ) ;
250 %let typmod = 3-parameter GEV Model. ;
251 %end ;
252
253 %if &typeGEV=2 %then %do ; ***<< 2-parameter "Double Exponential" or "Gumbel" Model. >>*** ;
254 &depvar = exp( -exp(-(y)) ) ;
255 %let typmod = 2-parameter Double Exponential or Gumbel Model. ;

```

```

256         %end ;
257
258         %if (&typeGEV NE 1) AND (&typeGEV NE 2) %then %do ; **<< 2-parameter "T-Dist" Model. >>** ;
259         dft=(&YrHi - &YrLo) +1 -2 ;
260         &depvar = probt(y,dft) ;
261         %let typmod = 2-parameter T-Dist Model. ;
262         %end ;
263
264
265 %if &typeGEV = 1 %then %do ;
266 parms
267     Kappa &KappaI
268     Gamma &GammaI
269     Theta &ThetaI ;
270 %end ;
271
272 %if (&typeGEV NE 1) %then %do ;
273 parms
274     Gamma &GammaI
275     Theta &ThetaI ;
276 %end ;
277
278
279 fit &depvar /out=&outfit outall
280         outest=&outest corrb corrs outcov ;
281
282 title3 "Non-linear Estimation of &&typmod: for Maximum NEGATIVE Temperature (Deg-F).";
283 run ;
284 %mend GEVfit ;
285
286
287
288
289
290
291
292 /*****
293 *****/
294
295 proc means data=MxTData ;
296     var MxT_1 - MxT_12 MxTYr ;
297     output out=VarStat
298         mean=mean1-mean12 meanYr
299         std=stdev1-stdev12 stdevYr;
300 title3 "Calc. Means and Standard Deviantions to use as Starting Values in Non-Linear Estimations." ;
301 run ;

```

NOTE: The data set WORK.VARSTAT has 1 observations and 28 variables.
NOTE: The PROCEDURE MEANS used 0.07 seconds.

```

302
303
304 proc print data=VarStat ;
305 run ;

```

NOTE: The PROCEDURE PRINT used 0.14 seconds.

```

306
307
308 data _null_ ;
309     set VarStat ;
310
311     call symput('gamma_Yr',meanYr) ;
312     call symput('theta_Yr',stdevYr) ;
313
314     call symput('gamma_12',mean12) ;
315     call symput('theta_12',stdev12) ;
316
317     call symput('gamma_11',mean11) ;
318     call symput('theta_11',stdev11) ;
319
320     call symput('gamma_10',mean10) ;
321     call symput('theta_10',stdev10) ;
322
323     call symput('gamma_9',mean9) ;

```



```

324 call symput('theta_9',stdev9) ;
325
326 call symput('gamma_8',mean8) ;
327 call symput('theta_8',stdev8) ;
328
329 call symput('gamma_7',mean7) ;
330 call symput('theta_7',stdev7) ;
331
332 call symput('gamma_6',mean6) ;
333 call symput('theta_6',stdev6) ;
334
335 call symput('gamma_5',mean5) ;
336 call symput('theta_5',stdev5) ;
337
338 call symput('gamma_4',mean4) ;
339 call symput('theta_4',stdev4) ;
340
341 call symput('gamma_3',mean3) ;
342 call symput('theta_3',stdev3) ;
343
344 call symput('gamma_2',mean2) ;
345 call symput('theta_2',stdev2) ;
346
347 call symput('gamma_1',mean1) ;
348 call symput('theta_1',stdev1) ;
349
350 run ;

```

NOTE: Numeric values have been converted to character values at the places given by: (Line):(Column).

```

311:26 312:26 314:26 315:26 317:26 318:26 320:26 321:26 323:25 324:25 326:25 327:25
329:25 330:25 332:25 333:25 335:25 336:25 338:25 339:25 341:25 342:25
344:25 345:25 347:25 348:25

```

NOTE: The DATA statement used 0.06 seconds.

```

351
352
353
354
355
356
357 *****<<< Analysis for "Annual" Data (i.e., SUFIX "mm" = "_Yr" >>>*****;
358
359
360
361
362
363 %RankIt(file=MxTData,var=MxTYr,rank=RankYr,prob=PrMxTYr,Nobser=35,PltValue=0.375) ;
MPRINT(RANKIT): PROC SORT DATA=MXTDATA ;
MPRINT(RANKIT): BY MXTYR ;
MPRINT(RANKIT): RUN ;

```

NOTE: The data set WORK.MXTDATA has 35 observations and 15 variables.

NOTE: The PROCEDURE SORT used 0.17 seconds.

```

MPRINT(RANKIT): DATA MXTDATA ;
MPRINT(RANKIT): SET MXTDATA ;
MPRINT(RANKIT): RETAIN RANKYR 0 ALPHA 0.375 ;
MPRINT(RANKIT): RANKYR = RANKYR + 1 ;
MPRINT(RANKIT): PRMXTYR = (RANKYR - ALPHA) / (35 +(1 - 2*ALPHA)) ;
MPRINT(RANKIT): RUN ;

```

NOTE: The data set WORK.MXTDATA has 35 observations and 18 variables.

NOTE: The DATA statement used 0.18 seconds.

```

MPRINT(RANKIT): PROC PRINT DATA=MXTDATA ;
MPRINT(RANKIT): VAR MXTYR RANKYR PRMXTYR ALPHA YEAR ;
MPRINT(RANKIT): RUN ;

```

NOTE: The PROCEDURE PRINT used 0.0 seconds.

```

364
365
366

```

```

367
368
369
370
371
372
373 %GEVfit(file=MxTData,ofile=MxTnl1,outfit=fit1,outest=est1,depvar=PrMxTYr,var=MxTYr,typeGEV=1,
374           KappaI=0.25,GammaI=&gamma_Yr,ThetaI=&theta_Yr,YrLo=1972,YrHi=2006) ;
MPRINT(GEVFIT):  PROC SORT DATA=MXTDATA ;
MPRINT(GEVFIT):  BY YEAR ;
MPRINT(GEVFIT):  RUN ;

```

NOTE: The data set WORK.MXTDATA has 35 observations and 18 variables.
NOTE: The PROCEDURE SORT used 0.14 seconds.

```

MPRINT(GEVFIT):  PROC MODEL DATA=MXTDATA CONVERGE=0.001 MAXIT=500 DW ;
MPRINT(GEVFIT):  OUTMODEL%MXTNL1 ;
MPRINT(GEVFIT):  RANGE YEAR = 1972 TO 2006 ;
MPRINT(GEVFIT):  ***<< DROPPED JAN-JUL 2007 DATA. >>*** ;
MPRINT(GEVFIT):  Y % (MXTYR - GAMMA) / THETA ;
MPRINT(GEVFIT):  ***<< 3-PARAMETER GEV MODEL. >>>*** ;
MPRINT(GEVFIT):  PRMXTYR % EXP( -(1 - KAPPA * (Y))**(1/KAPPA) ) ;
MPRINT(GEVFIT):  PARS KAPPA 0.25 GAMMA -47.35714286 THETA 2.6523490813 ;

MPRINT(GEVFIT):  FIT PRMXTYR /OUT=FIT1 OUTALL OUTEST=EST1 CORR CORR OUTCOV ;
MPRINT(GEVFIT):  TITLE3 "Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).";
MPRINT(GEVFIT):  RUN ;

```

NOTE: At OLS Iteration 3 CONVERGE=0.001 Criteria Met.
NOTE: The data set WORK.FIT1 has 105 observations and 6 variables.
NOTE: The data set WORK.EST1 has 4 observations and 6 variables.
375
376

NOTE: The PROCEDURE MODEL used 0.15 seconds.

```

377 proc print data=fit1 ;
378 run ;

```

NOTE: The PROCEDURE PRINT used 0.0 seconds.

```

379
380
381
382 proc transpose data=fit1 out=pred1 prefix=probP ;
383   where (_type_ = "PREDICT" ) ;
384   by year ;
385   var prmxtyr ;
386 run ;

```

NOTE: The data set WORK.PRED1 has 35 observations and 3 variables.
NOTE: The PROCEDURE TRANSPOSE used 0.06 seconds.

```

387
388 data comb1 ;
389   merge MxTData pred1 ;
390   by year ;
391   ProbP = ProbP1 ;
392   keep year MxTYr PrMxTYr ProbP ;
393 run ;

```

NOTE: The data set WORK.COMB1 has 35 observations and 4 variables.
NOTE: The DATA statement used 0.12 seconds.

```

394
395
396 proc print data=comb1 ;
397 run ;

```

NOTE: The PROCEDURE PRINT used 0.0 seconds.

```

398
399
400 proc plot data=comb1 ;
401   plot prmxtyr*MxTYr='*'
402     ProbP*MxTYr='-.' / overlay ;
403 run ;

404
405
406

```

NOTE: The PROCEDURE PLOT used 0.01 seconds.

```

407 proc print data=est1 ;
408 run ;

```

NOTE: The PROCEDURE PRINT used 0.0 seconds.

```

409
410
411 /*****
412 data out2.est1_Yr ;   ***<<< Save a copy of the "G.E.V. Model" estimation results! >>*** ;
413   set est1 ;
414 run ;
415 *****/
416
417
418
419
420
421
422
423
424
425
426
427
428 data comb ;
429   merge MxTData pred1 ;
430   by year ;
431
432 ***<< "Log(PrMxTYr) - Log(ProgP)" to calc. RMSE of Proportional Errors Models! >>*** ;
433   LgPrRat1 = Log(PrMxTYr/ProbP1) ;
434
435 label   LgPrRat1 = "Log(PrMxTYr/ProbP1)- GEV" ;
436
437   if (PrMxTYr <= (1/3)) then Quantile=1 ; ***<< "Lower Third" >>*** ;
438   if (PrMxTYr > (1/3)) AND (PrMxTYr <= (2/3)) then Quantile=2 ; ***<< "Middle Third" >>*** ;
439   if (PrMxTYr > (2/3)) then Quantile=3 ; ***<< "Upper Third" >>*** ;
440
441   keep year MxTYr Quantile PrMxTYr ProbP1 LgPrRat1 ;
442 run ;

```

NOTE: The data set WORK.COMB has 35 observations and 6 variables.

NOTE: The DATA statement used 0.17 seconds.

```

443
444
445 proc print data=comb ;
446   var year MxTYr Quantile PrMxTYr ProbP1 LgPrRat1 ;
447   title3 "Est'd CDFs and Logarithms of 'Empirical CDF rel. to Fitted CDF' values by Models." ;
448 run ;

```

NOTE: The PROCEDURE PRINT used 0.0 seconds.

```

449
450
451
452 proc means data=comb n mean std min max var uss ;
453   var LgPrRat1 ;
454   title3 "Stats for Logarithms of 'Empirical CDF rel. to Fitted CDF' values by Models to calc. RMSE of Prop. Model
Spec" ;
455 run ;

```

NOTE: The PROCEDURE MEANS used 0.0 seconds.

```
456
457
458 proc sort data=comb ;
459   by Quantile ;
460 run ;
```

NOTE: The data set WORK.COMB has 35 observations and 6 variables.
NOTE: The PROCEDURE SORT used 0.1 seconds.

```
461
462
463 proc means data=comb  n mean std min max var uss ;
464   by Quantile ;
465   var LgPrRat1 ;
466   title3 "Stats By Quantile for Logarithms of 'Empirical CDF rel. to Fitted CDF' values by Models to calc. RMSE of
Prop. Model Spec" ;
467 run ;
```

NOTE: The PROCEDURE MEANS used 0.0 seconds.

```
468
469
470
471
472
473 quit ;
```

IX. Attachment 2: SAS Program Output

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.

CONTENTS PROCEDURE

Data Set Name:	OUT2.SAVGSDGE	Observations:	12996
Member Type:	DATA	Variables:	6
Engine:	V612	Indexes:	0
Created:	11:54 Thursday, August 16, 2007	Observation Length:	48
Last Modified:	11:54 Thursday, August 16, 2007	Deleted Observations:	0
Protection:		Compressed:	NO
Data Set Type:		Sorted:	NO
Label:			

-----Engine/Host Dependent Information-----

Data Set Page Size:	8192
Number of Data Set Pages:	78
File Format:	607
First Data Page:	1
Max Obs per Page:	169
Obs in First Data Page:	147

-----Alphabetic List of Variables and Attributes-----

#	Variable	Type	Len	Pos	Format	Informat	Label
2	AVG	Num	8	8			Syst-Avg. Avg
6	CDD	Num	8	40			Syst-Avg. Cdd
1	DATE	Num	8	0	DATE9.	DATE12.	
5	HDD	Num	8	32			Syst-Avg. Hdd
3	MAX	Num	8	16			Syst-Avg. Max
4	MIN	Num	8	24			Syst-Avg. Min

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.

Monthly MAXIMUM NEGATIVE-Temperature (Deg-F) from 1972 thru 2006.

YEAR	MXTYR	MXT_1	MXT_2	MXT_3	MXT_4	MXT_5	MXT_6	MXT_7	MXT_8	MXT_9	MXT_10	MXT_11	MXT_12
1972	-46.5833	-46.9167	-50.0000	-54.5833	-56.5833	-59.0833	-63.5833	-69.4167	-67.6667	-66.0000	-55.4167	-54.0833	-46.5833
1973	-46.0833	-46.0833	-54.0000	-52.9167	-56.0000	-57.6667	-63.5833	-67.6667	-69.0000	-66.0000	-61.6667	-52.0000	-51.9167
1974	-44.0000	-48.0000	-51.0000	-52.3333	-57.4167	-60.0000	-64.4167	-67.0833	-69.3333	-67.0000	-57.4167	-54.5833	-44.0000
1975	-44.0833	-44.0833	-48.9167	-48.0833	-51.0833	-57.0000	-60.3333	-66.4167	-68.0833	-66.0000	-60.0000	-49.9167	-50.0000
1976	-44.9167	-44.9167	-54.0000	-49.6667	-55.0000	-60.0000	-63.0000	-69.5833	-68.5833	-68.0833	-61.5833	-49.6667	-52.4167
1977	-50.5833	-51.5833	-52.0833	-50.5833	-53.9167	-58.5833	-65.5833	-68.9167	-71.6667	-67.9167	-63.0000	-56.0000	-56.0000
1978	-42.5833	-52.0000	-53.0000	-55.4167	-54.9167	-60.0000	-66.3333	-68.0000	-68.3333	-66.4167	-65.0000	-54.4167	-42.5833
1979	-45.0000	-45.0000	-50.0000	-50.9167	-58.0000	-60.4167	-63.6667	-67.6667	-70.8167	-71.4167	-60.9667	-51.9167	-52.3333
1980	-53.6667	-53.6667	-55.9167	-53.9167	-55.6667	-58.5833	-63.9167	-69.4167	-70.0833	-67.5833	-60.0833	-55.6667	-54.5833
1981	-49.6667	-49.6667	-53.0000	-53.3333	-56.0000	-61.6667	-66.6667	-71.6667	-72.3333	-68.3333	-58.3333	-54.3333	-53.3333
1982	-48.6667	-49.3333	-54.3333	-53.6667	-53.0000	-60.3333	-62.0000	-67.0000	-71.0000	-64.0000	-61.3333	-55.3333	-48.6667
1983	-51.3333	-51.3333	-53.0000	-55.6667	-54.0000	-60.0000	-62.0000	-68.0000	-70.0000	-67.6667	-66.6667	-51.6667	-52.3333
1984	-48.3333	-51.3333	-51.6667	-58.6667	-57.5833	-59.3333	-65.3333	-72.6667	-73.6667	-72.0000	-61.0000	-53.0000	-48.3333
1985	-46.0000	-48.6667	-46.6667	-49.3333	-58.3333	-60.3333	-62.6667	-71.6667	-68.6667	-65.3333	-63.0000	-50.6667	-46.0000
1986	-50.0000	-56.3333	-50.0000	-53.3333	-57.3333	-58.6667	-66.0000	-67.6667	-70.3333	-60.0000	-60.6667	-58.0000	-53.0000
1987	-41.3333	-42.3333	-49.0000	-53.0000	-56.0000	-60.3333	-64.0000	-64.6667	-64.3333	-67.0000	-63.3333	-54.3333	-41.3333
1988	-45.3333	-49.0000	-52.3333	-55.0000	-55.6667	-57.0000	-59.6667	-68.6667	-68.6667	-63.3333	-62.3333	-53.3333	-45.3333
1989	-45.0000	-45.0000	-45.6667	-51.6667	-56.6667	-58.3333	-62.0000	-68.0000	-69.0000	-62.6667	-61.0000	-56.6667	-51.3333
1990	-43.6667	-48.0000	-43.6667	-50.0000	-58.6667	-58.0000	-63.0000	-69.0000	-69.0000	-68.0000	-65.0000	-55.0000	-43.6667
1991	-48.6667	-51.6667	-54.6667	-48.6667	-58.0000	-58.0000	-61.3333	-66.6667	-68.0000	-65.0000	-58.0000	-51.0000	-50.3333
1992	-47.0000	-52.0000	-56.3333	-56.0000	-63.0000	-64.3333	-65.3333	-68.3333	-68.3333	-70.0000	-64.3333	-55.0000	-47.0000
1993	-46.6667	-46.6667	-52.3333	-54.3333	-58.6667	-59.6667	-61.3333	-68.0000	-67.6667	-64.3333	-62.3333	-55.6667	-52.0000
1994	-48.0000	-51.6667	-52.0000	-53.6667	-55.3333	-59.3333	-64.6667	-68.0000	-70.3333	-66.6667	-61.3333	-48.0000	-50.3333
1995	-51.0000	-52.3333	-56.0000	-52.3333	-53.3333	-56.0000	-61.0000	-66.6667	-70.0000	-66.6667	-62.6667	-60.0000	-51.0000
1996	-48.6667	-50.3333	-48.6667	-55.0000	-58.3333	-61.6667	-64.6667	-68.3333	-69.3333	-67.0000	-55.0000	-53.3333	-52.0000
1997	-49.0000	-51.0000	-50.6667	-52.3333	-53.0000	-64.6667	-64.0000	-67.6667	-70.6667	-69.6667	-62.0000	-57.6667	-49.0000
1998	-46.6667	-51.3333	-52.6667	-50.0000	-51.0000	-57.3333	-62.0000	-66.6667	-71.3333	-64.0000	-61.3333	-56.3333	-46.6667
1999	-48.6667	-48.6667	-49.6667	-50.0000	-49.0000	-57.0000	-58.3333	-64.3333	-67.3333	-63.6667	-64.3333	-54.3333	-51.0000
2000	-50.3333	-50.3333	-52.6667	-50.3333	-57.6667	-62.3333	-64.3333	-67.0000	-67.6667	-67.3333	-59.0000	-50.6667	-52.3333
2001	-47.6667	-47.6667	-49.0000	-52.3333	-51.3333	-60.3333	-62.3333	-67.0000	-67.0000	-68.0000	-64.3333	-50.6667	-50.3333
2002	-45.6667	-45.6667	-47.6667	-52.6667	-57.3333	-57.6667	-61.6667	-66.6667	-67.3333	-64.3333	-59.6667	-57.3333	-50.0000
2003	-49.0000	-54.6667	-52.6667	-52.6667	-53.3333	-57.3333	-61.3333	-68.0000	-71.0000	-68.3333	-61.3333	-54.6667	-49.0000
2004	-47.6667	-51.0000	-53.0000	-54.6667	-58.3333	-63.3333	-65.0000	-67.3333	-69.6667	-66.0000	-57.3333	-47.6667	-49.3333
2005	-47.6667	-47.6667	-53.6667	-55.6667	-58.0000	-60.6667	-64.0000	-67.8000	-69.6667	-64.6667	-60.6667	-55.0000	-52.6667
2006	-48.3333	-51.0000	-49.0000	-48.6667	-55.6667	-61.0000	-66.3333	-73.6667	-70.3333	-67.0000	-59.6667	-52.0000	-48.3333

Data Analysis for Maximum/Minimum Daily SysAvg Temperatures (Un-Rounded).
 Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
 Calc. Means and Standard Deviantions to use as Starting Values in Non-Linear Estimations.

Variable	N	Mean	Std-Dev	Minimum	Maximum
MXT_1	35	-49.3404762	3.1554478	-56.3333333	-42.3333333
MXT_2	35	-51.3976190	2.9257621	-56.3333333	-43.6666667
MXT_3	35	-52.6119048	2.4690852	-58.6666667	-48.0833333
MXT_4	35	-55.8047619	2.7934727	-63.0000000	-49.0000000
MXT_5	35	-59.6000000	2.0697400	-64.6666667	-56.0000000
MXT_6	35	-63.2976190	2.0007439	-66.6666667	-58.3333333
MXT_7	35	-68.1514286	1.9398739	-73.6666667	-64.3333333
MXT_8	35	-69.3209524	1.7600707	-73.6666667	-64.3333333
MXT_9	35	-66.4976190	2.4349784	-72.0000000	-60.0000000
MXT_10	35	-61.1752381	2.6433335	-66.6666667	-55.0000000
MXT_11	35	-53.7119048	2.8460889	-60.0000000	-47.6666667
MXT_12	35	-49.5738095	3.4359672	-56.0000000	-41.3333333
MXTYR	35	-47.3571429	2.6523491	-53.6666667	-41.3333333

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
Calc. Means and Standard Deviations to use as Starting Values in Non-Linear Estimations.

OBS	_TYPE_	_FREQ_	MEAN1	MEAN2	MEAN3	MEAN4	MEAN5	MEAN6	MEAN7	MEAN8	MEAN9	MEAN10	MEAN11	MEAN12
1	0	35	-49.3405	-51.3976	-52.6119	-55.8048	-59.6	-63.2976	-68.1514	-69.3210	-66.4976	-61.1752	-53.7119	-49.5738
OBS	MEANYR	STDEV1	STDEV2	STDEV3	STDEV4	STDEV5	STDEV6	STDEV7	STDEV8	STDEV9	STDEV10	STDEV11	STDEV12	STDEVYR
1	-47.3571	3.15545	2.92576	2.46909	2.79347	2.06974	2.00074	1.93987	1.76007	2.43498	2.64333	2.84609	3.43597	2.65235

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
Calc. Means and Standard Deviations to use as Starting Values in Non-Linear Estimations.

OBS	MXTYR	RANKYR	PRMXTYR	ALPHA	YEAR
1	-53.6667	1	0.01773	0.375	1980
2	-51.3333	2	0.04610	0.375	1983
3	-51.0000	3	0.07447	0.375	1995
4	-50.5833	4	0.10284	0.375	1977
5	-50.3333	5	0.13121	0.375	2000
6	-50.0000	6	0.15957	0.375	1986
7	-49.6667	7	0.18794	0.375	1981
8	-49.0000	8	0.21631	0.375	1997
9	-49.0000	9	0.24468	0.375	2003
10	-48.6667	10	0.27305	0.375	1982
11	-48.6667	11	0.30142	0.375	1991
12	-48.6667	12	0.32979	0.375	1996
13	-48.6667	13	0.35816	0.375	1999
14	-48.3333	14	0.38652	0.375	1984
15	-48.3333	15	0.41489	0.375	2006
16	-48.0000	16	0.44326	0.375	1994
17	-47.6667	17	0.47163	0.375	2001
18	-47.6667	18	0.50000	0.375	2004
19	-47.6667	19	0.52837	0.375	2005
20	-47.0000	20	0.55674	0.375	1992
21	-46.6667	21	0.58511	0.375	1993
22	-46.6667	22	0.61348	0.375	1998
23	-46.5833	23	0.64184	0.375	1972
24	-46.0833	24	0.67021	0.375	1973
25	-46.0000	25	0.69858	0.375	1985
26	-45.6667	26	0.72695	0.375	2002
27	-45.3333	27	0.75532	0.375	1988
28	-45.0000	28	0.78369	0.375	1979
29	-45.0000	29	0.81206	0.375	1989
30	-44.9167	30	0.84043	0.375	1976
31	-44.0833	31	0.86879	0.375	1975
32	-44.0000	32	0.89716	0.375	1974
33	-43.6667	33	0.92553	0.375	1990
34	-42.5833	34	0.95390	0.375	1978
35	-41.3333	35	0.98227	0.375	1987

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).

MODEL Procedure

Model Summary

Model Variables	1
Parameters	4
RANGE Variable	YEAR
Equations	1
Number of Statements	3

Model Variables: PRMXYR

Parameters: GAMMA: -47.36 THETA: 2.652 KAPPA: 0.25 MXTNL1

Equations: PRMXYR

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).

MODEL Procedure

The Equation to Estimate is:

$$\text{PRMXYR} = F(\text{GAMMA}, \text{THETA}, \text{KAPPA})$$

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).

MODEL Procedure
OLS Estimation

OLS Estimation Summary

Dataset Option	Dataset
DATA=	MXTDATA
OUT=	FIT1
OUTEST=	EST1

Parameters Estimated 3

RANGE Processed	YEAR
First	1972
Last	2006

Minimization Summary

Method	GAUSS
Iterations	3

Final Convergence Criteria

R	0.00070353
PPC(KAPPA)	0.00026
RPC(KAPPA)	0.033597
Object	0.00171551
Trace(S)	0.00063019
Objective Value	0.00057617

Observations Processed

Read	35
Solved	35

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
 Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).

MODEL Procedure
 OLS Estimation

Nonlinear OLS Summary of Residual Errors

Equation	DF Model	DF Error	SSE	MSE	Root MSE	R-Square	Adj R-Sq	Durbin Watson
PRMXYR	3	32	0.02017	0.0006302	0.02510	0.9930	0.9925	1.694

Nonlinear OLS Parameter Estimates

Parameter	Estimate	Approx. Std Err	'T' Ratio	Approx. Prob> T
GAMMA	-48.360528	0.04287	-1127.99	0.0001
THETA	2.470319	0.08227	30.03	0.0001
KAPPA	0.166335	0.05089	3.27	0.0026

Number of Observations		Statistics for System	
Used	35	Objective	0.000576
Missing	0	Objective*N	0.0202

RANGE of Fit: YEAR = 1972 TO 2006

Correlations of Estimates

CorrB	GAMMA	THETA	KAPPA
GAMMA	1.0000	-0.0259	0.3522
THETA	-0.0259	1.0000	0.6938
KAPPA	0.3522	0.6938	1.0000

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).

MODEL Procedure

Model Summary

Model Variables	1
Parameters	4
RANGE Variable	YEAR
Equations	1
Number of Statements	4

Model Variables: PRMXYR

Parameters: MXTNL1 GAMMA: -48.36(-1128) THETA: 2.47(30) KAPPA: 0.1663(3.3)

Equations: PRMXYR

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
 Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).

OBS	YEAR	_ESTYPE_	_TYPE_	_WEIGHT_	PRMXYR	MXYR
1	1972	OLS	ACTUAL	1	0.64184	-46.5833
2	1972	OLS	PREDICT	1	0.62829	-46.5833
3	1972	OLS	RESIDUAL	1	0.01356	-46.5833
4	1973	OLS	ACTUAL	1	0.67021	-46.0833
5	1973	OLS	PREDICT	1	0.69237	-46.0833
6	1973	OLS	RESIDUAL	1	-0.02216	-46.0833
7	1974	OLS	ACTUAL	1	0.89716	-44.0000
8	1974	OLS	PREDICT	1	0.88362	-44.0000
9	1974	OLS	RESIDUAL	1	0.01354	-44.0000
10	1975	OLS	ACTUAL	1	0.86879	-44.0833
11	1975	OLS	PREDICT	1	0.87831	-44.0833
12	1975	OLS	RESIDUAL	1	-0.00952	-44.0833
13	1976	OLS	ACTUAL	1	0.84043	-44.9167
14	1976	OLS	PREDICT	1	0.81487	-44.9167
15	1976	OLS	RESIDUAL	1	0.02556	-44.9167
16	1977	OLS	ACTUAL	1	0.10284	-50.5833
17	1977	OLS	PREDICT	1	0.09897	-50.5833
18	1977	OLS	RESIDUAL	1	0.00387	-50.5833
19	1978	OLS	ACTUAL	1	0.95390	-42.5833
20	1978	OLS	PREDICT	1	0.94959	-42.5833
21	1978	OLS	RESIDUAL	1	0.00431	-42.5833
22	1979	OLS	ACTUAL	1	0.78369	-45.0000
23	1979	OLS	PREDICT	1	0.80744	-45.0000
24	1979	OLS	RESIDUAL	1	-0.02375	-45.0000
25	1980	OLS	ACTUAL	1	0.01773	-53.6667
26	1980	OLS	PREDICT	1	0.00188	-53.6667
27	1980	OLS	RESIDUAL	1	0.01585	-53.6667
28	1981	OLS	ACTUAL	1	0.18794	-49.6667
29	1981	OLS	PREDICT	1	0.19016	-49.6667
30	1981	OLS	RESIDUAL	1	-0.00221	-49.6667
31	1982	OLS	ACTUAL	1	0.27305	-48.6667
32	1982	OLS	PREDICT	1	0.32287	-48.6667
33	1982	OLS	RESIDUAL	1	-0.04982	-48.6667
34	1983	OLS	ACTUAL	1	0.04610	-51.3333
35	1983	OLS	PREDICT	1	0.05003	-51.3333
36	1983	OLS	RESIDUAL	1	-0.00394	-51.3333
37	1984	OLS	ACTUAL	1	0.38652	-48.3333
38	1984	OLS	PREDICT	1	0.37193	-48.3333
39	1984	OLS	RESIDUAL	1	0.01459	-48.3333
40	1985	OLS	ACTUAL	1	0.69858	-46.0000
41	1985	OLS	PREDICT	1	0.70242	-46.0000
42	1985	OLS	RESIDUAL	1	-0.00384	-46.0000
43	1986	OLS	ACTUAL	1	0.15957	-50.0000
44	1986	OLS	PREDICT	1	0.15309	-50.0000
45	1986	OLS	RESIDUAL	1	0.00648	-50.0000
46	1987	OLS	ACTUAL	1	0.98227	-41.3333
47	1987	OLS	PREDICT	1	0.97900	-41.3333
48	1987	OLS	RESIDUAL	1	0.00326	-41.3333
49	1988	OLS	ACTUAL	1	0.75532	-45.3333
50	1988	OLS	PREDICT	1	0.77569	-45.3333
51	1988	OLS	RESIDUAL	1	-0.02037	-45.3333
52	1989	OLS	ACTUAL	1	0.81206	-45.0000
53	1989	OLS	PREDICT	1	0.80744	-45.0000
54	1989	OLS	RESIDUAL	1	0.00462	-45.0000
55	1990	OLS	ACTUAL	1	0.92553	-43.6667
56	1990	OLS	PREDICT	1	0.90312	-43.6667
57	1990	OLS	RESIDUAL	1	0.02241	-43.6667
58	1991	OLS	ACTUAL	1	0.30142	-48.6667
59	1991	OLS	PREDICT	1	0.32287	-48.6667
60	1991	OLS	RESIDUAL	1	-0.02145	-48.6667
61	1992	OLS	ACTUAL	1	0.55674	-47.0000
62	1992	OLS	PREDICT	1	0.57051	-47.0000
63	1992	OLS	RESIDUAL	1	-0.01377	-47.0000

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
 Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).

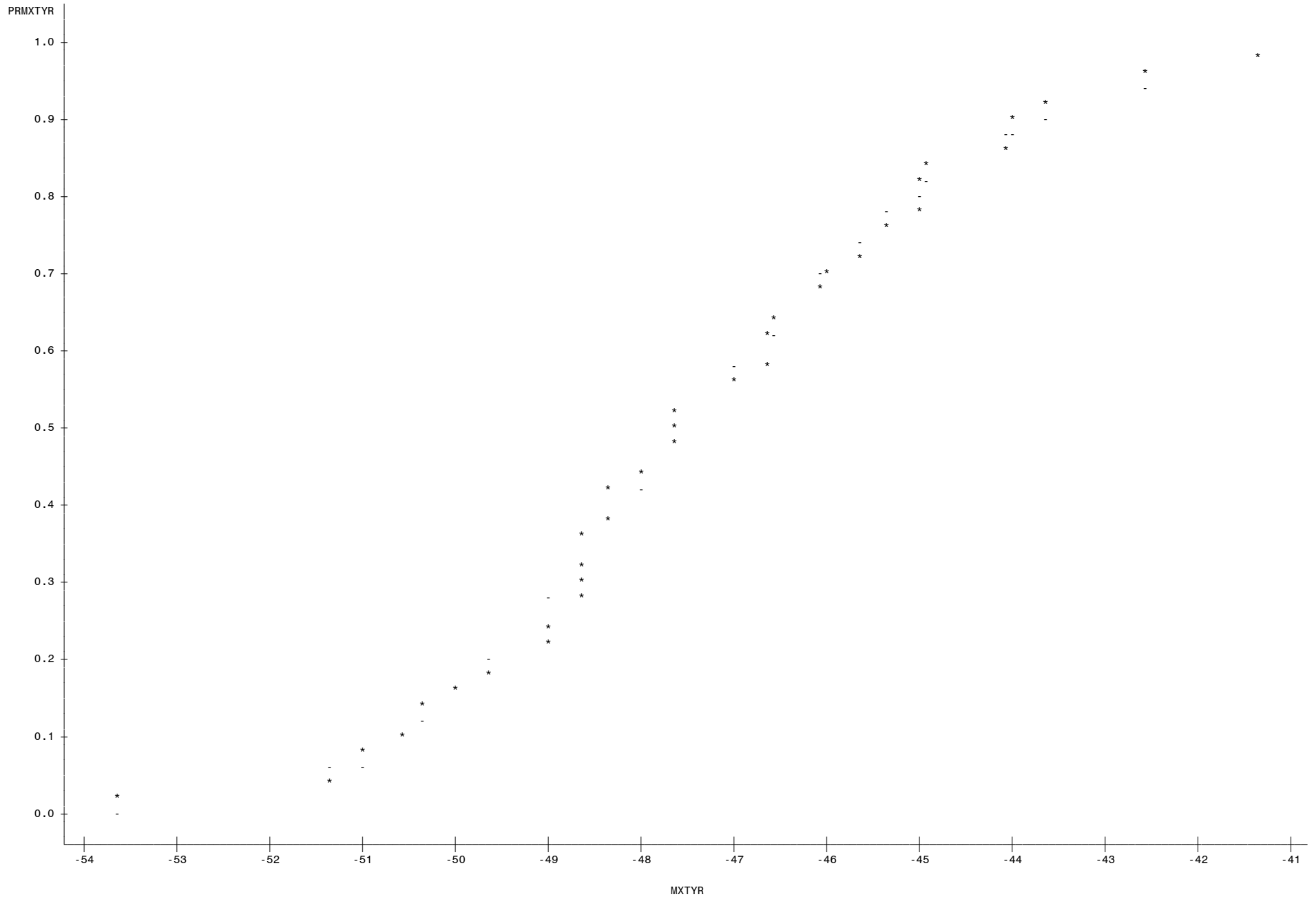
OBS	YEAR	_ESTYPE_	_TYPE_	_WEIGHT_	PRMXYR	MXYR
64	1993	OLS	ACTUAL	1	0.58511	-46.6667
65	1993	OLS	PREDICT	1	0.61702	-46.6667
66	1993	OLS	RESIDUAL	1	-0.03191	-46.6667
67	1994	OLS	ACTUAL	1	0.44326	-48.0000
68	1994	OLS	PREDICT	1	0.42204	-48.0000
69	1994	OLS	RESIDUAL	1	0.02122	-48.0000
70	1995	OLS	ACTUAL	1	0.07447	-51.0000
71	1995	OLS	PREDICT	1	0.06900	-51.0000
72	1995	OLS	RESIDUAL	1	0.00547	-51.0000
73	1996	OLS	ACTUAL	1	0.32979	-48.6667
74	1996	OLS	PREDICT	1	0.32287	-48.6667
75	1996	OLS	RESIDUAL	1	0.00692	-48.6667
76	1997	OLS	ACTUAL	1	0.21631	-49.0000
77	1997	OLS	PREDICT	1	0.27570	-49.0000
78	1997	OLS	RESIDUAL	1	-0.05938	-49.0000
79	1998	OLS	ACTUAL	1	0.61348	-46.6667
80	1998	OLS	PREDICT	1	0.61702	-46.6667
81	1998	OLS	RESIDUAL	1	-0.00354	-46.6667
82	1999	OLS	ACTUAL	1	0.35816	-48.6667
83	1999	OLS	PREDICT	1	0.32287	-48.6667
84	1999	OLS	RESIDUAL	1	0.03529	-48.6667
85	2000	OLS	ACTUAL	1	0.13121	-50.3333
86	2000	OLS	PREDICT	1	0.12043	-50.3333
87	2000	OLS	RESIDUAL	1	0.01077	-50.3333
88	2001	OLS	ACTUAL	1	0.47163	-47.6667
89	2001	OLS	PREDICT	1	0.47236	-47.6667
90	2001	OLS	RESIDUAL	1	-0.00072	-47.6667
91	2002	OLS	ACTUAL	1	0.72695	-45.6667
92	2002	OLS	PREDICT	1	0.74066	-45.6667
93	2002	OLS	RESIDUAL	1	-0.01371	-45.6667
94	2003	OLS	ACTUAL	1	0.24468	-49.0000
95	2003	OLS	PREDICT	1	0.27570	-49.0000
96	2003	OLS	RESIDUAL	1	-0.03102	-49.0000
97	2004	OLS	ACTUAL	1	0.50000	-47.6667
98	2004	OLS	PREDICT	1	0.47236	-47.6667
99	2004	OLS	RESIDUAL	1	0.02764	-47.6667
100	2005	OLS	ACTUAL	1	0.52837	-47.6667
101	2005	OLS	PREDICT	1	0.47236	-47.6667
102	2005	OLS	RESIDUAL	1	0.05601	-47.6667
103	2006	OLS	ACTUAL	1	0.41489	-48.3333
104	2006	OLS	PREDICT	1	0.37193	-48.3333
105	2006	OLS	RESIDUAL	1	0.04296	-48.3333

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).

OBS	YEAR	MXTYR	PRMXTYR	PROBP
1	1972	-46.5833	0.64184	0.62829
2	1973	-46.0833	0.67021	0.69237
3	1974	-44.0000	0.89716	0.88362
4	1975	-44.0833	0.86879	0.87831
5	1976	-44.9167	0.84043	0.81487
6	1977	-50.5833	0.10284	0.09897
7	1978	-42.5833	0.95390	0.94959
8	1979	-45.0000	0.78369	0.80744
9	1980	-53.6667	0.01773	0.00188
10	1981	-49.6667	0.18794	0.19016
11	1982	-48.6667	0.27305	0.32287
12	1983	-51.3333	0.04610	0.05003
13	1984	-48.3333	0.38652	0.37193
14	1985	-46.0000	0.69858	0.70242
15	1986	-50.0000	0.15957	0.15309
16	1987	-41.3333	0.98227	0.97900
17	1988	-45.3333	0.75532	0.77569
18	1989	-45.0000	0.81206	0.80744
19	1990	-43.6667	0.92553	0.90312
20	1991	-48.6667	0.30142	0.32287
21	1992	-47.0000	0.55674	0.57051
22	1993	-46.6667	0.58511	0.61702
23	1994	-48.0000	0.44326	0.42204
24	1995	-51.0000	0.07447	0.06900
25	1996	-48.6667	0.32979	0.32287
26	1997	-49.0000	0.21631	0.27570
27	1998	-46.6667	0.61348	0.61702
28	1999	-48.6667	0.35816	0.32287
29	2000	-50.3333	0.13121	0.12043
30	2001	-47.6667	0.47163	0.47236
31	2002	-45.6667	0.72695	0.74066
32	2003	-49.0000	0.24468	0.27570
33	2004	-47.6667	0.50000	0.47236
34	2005	-47.6667	0.52837	0.47236
35	2006	-48.3333	0.41489	0.37193

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).

Plot of PRMXYR*MXYR. Symbol used is '*'.
Plot of PROBP*MXYR. Symbol used is '-'.



Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
Non-linear Estimation of 3-parameter GEV Model.: for Maximum NEGATIVE Temperature (Deg-F).

OBS	_NAME_	_TYPE_	_NUSED_	GAMMA	THETA	KAPPA
1		OLS	35	-48.3605	2.47032	0.16633
2	GAMMA	OLS	35	0.0018	-0.00009	0.00077
3	THETA	OLS	35	-0.0001	0.00677	0.00290
4	KAPPA	OLS	35	0.0008	0.00290	0.00259

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
 Est'd CDFs and Logarithms of 'Empirical CDF rel. to Fitted CDF' values by Models.

OBS	YEAR	MXTYR	QUANTILE	PRMXTYR	PROBP1	LGPRRAT1
1	1972	-46.5833	2	0.64184	0.62829	0.02135
2	1973	-46.0833	3	0.67021	0.69237	-0.03253
3	1974	-44.0000	3	0.89716	0.88362	0.01521
4	1975	-44.0833	3	0.86879	0.87831	-0.01089
5	1976	-44.9167	3	0.84043	0.81487	0.03088
6	1977	-50.5833	1	0.10284	0.09897	0.03832
7	1978	-42.5833	3	0.95390	0.94959	0.00453
8	1979	-45.0000	3	0.78369	0.80744	-0.02986
9	1980	-53.6667	1	0.01773	0.00188	2.24241
10	1981	-49.6667	1	0.18794	0.19016	-0.01171
11	1982	-48.6667	1	0.27305	0.32287	-0.16759
12	1983	-51.3333	1	0.04610	0.05003	-0.08192
13	1984	-48.3333	2	0.38652	0.37193	0.03848
14	1985	-46.0000	3	0.69858	0.70242	-0.00548
15	1986	-50.0000	1	0.15957	0.15309	0.04148
16	1987	-41.3333	3	0.98227	0.97900	0.00333
17	1988	-45.3333	3	0.75532	0.77569	-0.02661
18	1989	-45.0000	3	0.81206	0.80744	0.00570
19	1990	-43.6667	3	0.92553	0.90312	0.02451
20	1991	-48.6667	1	0.30142	0.32287	-0.06875
21	1992	-47.0000	2	0.55674	0.57051	-0.02444
22	1993	-46.6667	2	0.58511	0.61702	-0.05311
23	1994	-48.0000	2	0.44326	0.42204	0.04906
24	1995	-51.0000	1	0.07447	0.06900	0.07632
25	1996	-48.6667	1	0.32979	0.32287	0.02120
26	1997	-49.0000	1	0.21631	0.27570	-0.24258
27	1998	-46.6667	2	0.61348	0.61702	-0.00576
28	1999	-48.6667	2	0.35816	0.32287	0.10372
29	2000	-50.3333	1	0.13121	0.12043	0.08566
30	2001	-47.6667	2	0.47163	0.47236	-0.00154
31	2002	-45.6667	3	0.72695	0.74066	-0.01868
32	2003	-49.0000	1	0.24468	0.27570	-0.11935
33	2004	-47.6667	2	0.50000	0.47236	0.05688
34	2005	-47.6667	2	0.52837	0.47236	0.11206
35	2006	-48.3333	2	0.41489	0.37193	0.10931

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
 Stats for Logarithms of 'Empirical CDF rel. to Fitted CDF' values by Models to calc. RMSE of Prop. Model Spec

Analysis Variable : LGPRRAT1 Log(PrMxTYr/ProbP1)- GEV

N	Mean	Std Dev	Minimum	Maximum	Variance	USS
35	0.0622752	0.3862909	-0.2425777	2.2424075	0.1492207	5.2092406

Fit GEV Probability Model to Empirical CDF using NL-OLS Regression Methods.
 Stats By Quantile for Logarithms of 'Empirical CDF rel. to Fitted CDF' values by Models to calc. RMSE of Prop. Model Spec

Analysis Variable : LGPRRAT1 Log(PrMxTYr/ProbP1)- GEV

----- QUANTILE=1 -----

N	Mean	Std Dev	Minimum	Maximum	Variance	USS
12	0.1511246	0.6663248	-0.2425777	2.2424075	0.4439888	5.1579402

----- QUANTILE=2 -----

N	Mean	Std Dev	Minimum	Maximum	Variance	USS
11	0.0369105	0.0559546	-0.0531075	0.1120616	0.0031309	0.0462955

----- QUANTILE=3 -----

N	Mean	Std Dev	Minimum	Maximum	Variance	USS
12	-0.0033234	0.0210462	-0.0325255	0.0308826	0.000442943	0.0050049