
Division Data Request DIV 6-1

Request:

Re: page 5, lines 6-12, of witness Czekanski's direct testimony, please explain why 10-year average data for reported heating degree days for the period ending October 2007 was used when the test year ended September 2007.

Response:

October 2007 was used as the ending month in the development of the 10-year average heating degree days because that was the latest month of degree day data available at the time.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-2

Request:

Re: page 6, lines 4-6, of witness Czekanski's direct testimony, please explain how such non-weather-related factors such as vacation schedules and production cycles are considered in the estimation of base-load usage for each rate class.

Response:

Consistent with past practice, there is no specific adjustment or consideration given to non-weather-related factors such as vacation schedules and production cycles when calculating base-load usage for the entire rate class.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-3

Request:

Re: page 6, line 19, through page 7, line 2 of witness Czekanski's direct testimony, please:

a. Document the computation of the weather normalized delivery quantities for the test year including all analyses used to determine use per heating degree day for each rate class;

b. Provide all electronic spreadsheet files used in computing weather normalized delivery quantities for the test year;

c. Indicate whether the use per heating degree day measures used in the weather normalization of test year delivery quantities were differentiated by month for each rate class and if not, please explain why not;

d. Reconcile the use per degree day measures employed in the Company's estimation of weather normalized delivery quantities for the test year with the usage per degree day measures used in the Company's Long-Range Gas Supply Plan, and the usage per degree day measures used in the Company's most recently filed GCR proceeding (Docket No. 3961).

Response:

a. Documentation for the computation of the weather normalized test year delivery quantities including determination of use per heating degree day for each rate class can be found in Workpapers PCC-1 provided in Volume 5 of the Company's filing at pages 178 through 185.

b. The electronic spreadsheet files were provided in response to Data Request DIV 2-9.

c. The use per heating degree day measures used in the weather normalization of test year delivery quantities were differentiated by month for each rate class.

Prepared by or under the supervision of: Peter Czekanski

Response: DIV 6-3 (continued)

d. The differences in the use per degree day measures employed in the Company's estimation of weather normalized delivery quantities for the test year with the usage per degree day measures used in the Company's Long-Range Gas Supply Plan are described in the testimony of Peter Czekanski starting on page 8 line 13. The usage per degree day measures for November 2008 through October 2009 used in the Company's most recently filed GCR proceeding (Docket No. 3961) are the same as used for the rate year in the rate case Docket No. 3943.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-4

Request:

Re: page 7, line 5, through page 8, line 3 of witness Czekanski's direct testimony, please:

a. Explain why the "past three years" were chosen as the basis for forecasting customer growth as opposed to customer growth patterns over a longer period of time;

b. Explain how the impacts of the growth in end-use cost differentials between natural gas and fuel oil was reflected in the Company's customer growth projections for each rate class;

c. Explain why forecasted consumption was premised on average used per customer over the most recent two years;

d. Explain why it is appropriate to forecast customer growth based on three years of data while average use per customer is estimated using two years of historical data;

e. Document the Company's assessment of the effects of increased price differentials between fuel oil and natural gas on gas use by customers in each rate class that have dual fuel capability.

f. Provide the analyses relied upon to support the assumed "one-percent" decline per year" for residential and small C&I average use per customer.

Response:

a. The use of three years was chosen as the basis for forecasting customer growth to be consistent with the approach discussed and agreed to with the Division for use in developing the forecast used in the Company's Long Range Supply Plan.

b. They were reflected in the Company's growth projections to the same extent they are reflected in the historic pattern of actual customer and usage growth.

Prepared by or under the supervision of: Peter Czekanski

Response: DIV 6-4 (continued)

c. The Company based forecasted consumption on the average use per customer over the most recent two years to be consistent with the approach discussed and agreed to with the Division for use in developing the forecast used in the Company's Long Range Supply Plan.

d. See response to a. and c. above.

e. The increased price differential between fuel oil and natural gas has been a significant factor in the number of non-firm customers that have elected to switch to firm service; in addition, some customers still on non-firm service have increased their use of natural gas. However, the Company has not made any formal assessment of the effects of the increased price differentials on gas usage by dual fuel customers.

f. See response to a. and c. above.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-5

Request:

Re: page 8, lines 8-12 of witness Czekanski's direct testimony, please document all transfers of customers between non-firm and firm service indicating the rate classification to which they transferred for customers that made such switches:

a. Between October 2007 and January 2008
b. From January 2008 to date

Response:

Please see the response to Data Request DIV 6-6.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-6

Request:

Re: page 8, lines 8-12, of witness Czekanski's direct testimony, please provide the most recent 36 months of gas use for all customers that have transferred between non-firm and firm service since October 2007.

Response:

Please see the attached report labeled Attachment DIV-6-6.

Prepared by or under the supervision of: Peter Czekanski

National Grid
Rhode Island - Gas

Attachment to DIV 6-6
Docket No. 3943

36-Months of Usage For Non-Firm to Firm Service Conversions Since October 2007
(Dth)

	CONVERSION DATE	FIRM RATE CLASS	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	TOTAL
Customer 1	10/15/2007	LL - Sales	0	0	0	0	0	0	420	783	767	858	243	141	**3,211**
Customer 2	01/01/2008	Med		0	0	0	0	0	0	0	169	428	373	201	**1,171**
Customer 3	12/01/2007	XLH - FT-1		191	818	3,513	3,438	3,387	4,858	0	2,778	2,599	2,962	3,023	**27,567**
Customer 4	12/01/2007	LL - Sales	0	0	0	1	0	7	0	0	836	871	1,748	701	**4,165**
Customer 5	12/01/2007	LL - Sales	0	0	0	0	0	1	481	845	1,417	781	723	515	**4,763**
Customer 6	12/01/2007	Med	0	0	0	0	0	3	52	142	44	111	90	50	**491**
Customer 7	01/01/2008	XLL - FT-1	5,706	6,318	11,380	12,100	11,445	12,053	23,764	29,350	37,298	36,101	32,697	25,279	**243,491**
Customer 8	11/01/2007	XLL - FT-1	732	811	452	209	78	376	629	2,185	1,975	1,989	1,384	19	**10,837**
Customer 9	09/24/2007	LL - FT-2	0	0	0	0	0	0	0	0	521	616	426		**1,563**
Customer 10	11/01/2007	XLH - FT-1	0	0	5,552	10,391	10,686	10,769	10,563	716	730	9,065	9,656	9,104	**77,233**
Customer 11	04/01/2008	XLH - FT-1	271	15	0	0	0	0	440	440	5,264	8,296	8,173	6,412	**29,311**
Customer 12	10/16/2007	Med	5,805	4,848	3,978	5,156	4,640	5,199	6,524	3,993	78	81	48		**40,351**
Customer 13	12/01/2007	XLH - FT-1	7,408	7,787	5,928	6,688	6,354	6,163	4,471	2,160	1,391	844	3,187	3,981	**56,361**
Customer 14	02/01/2008	XLH - FT-1	1,138	3,991	3,957	3,320	3,291	4,527	6,439	7,791	5,423	7,737	7,681		**55,295**
Customer 15	02/01/2008	LL - FT-1	73	0	0	0	0	81	1,123	2,359	1,400	2,943	2,501	849	**11,330**
Customer 16	12/01/2007	XLL - FT-1	331	1,190	730	1,212	1,110	1,151	1,315	1,500	1,506	2,476	1,732	1,260	**15,512**
Customer 17	01/01/2008	LL	0	0	0	0	0	0	0	0	194	618	539	247	**1,598**
Customer 18	11/01/2007	XLH - FT-1	3,803	5,263	8,013	6,600	4,504	1,908	2,663	2,681	1,787	1,735	3,150	1,447	**43,553**
Customer 19	12/01/2007	XLH - FT-1	2,387	2,401	1,959	2,153	1,761	19,622	1,958	2,036	1,831	1,874	2,072	1,872	**41,924**
Customer 20	10/01/2007	XLL - FT-1	673	53	0	0	0	0	1,569	2,069	2,084	1,836	1,807	1,098	**11,188**
Customer 21	01/01/2008	XLL - FT-1	4,907	3,576	1,069	1,320	1,631	2,996	10,985	13,235	14,495	13,423	12,296	7,942	**87,874**
Customer 22	01/01/2008	LH	0	0	0	0	0	0	0	0	0	348	632	611	**1,591**
Customer 23	11/01/2007	XLH - FT-1	37,806	46,720	57,433	57,547	47,065	31,404	50,795	46,254	36,687	71,560	73,698	48,830	**605,800**
Customer 24	12/01/2007	XLH - FT-1	0	0	1,295	3,571	2,906	2,788	5,573	7,506	8,122	13,911	7,345	5,013	**58,030**
Customer 25	09/27/2007	XLH	332	959	351	450	422	0	0	0	7,119	2,125	1,884	1,031	**14,673**
Customer 26	04/01/2008	LL - FT-1	0	0	0	0	0	54	882	1,025	1,029	776	1,001	461	**5,228**
Customer 27	03/01/2008	LL - FT-1	0	0	0	0	0	0	93	583	733	1,229	663	165	**3,466**
TOTAL			**71,371**	**84,123**	**102,913**	**114,232**	**99,330**	**102,489**	**135,597**	**127,653**	**135,679**	**185,231**	**178,710**	**120,251**	**1,457,580**

National Grid
Rhode Island - Gas

Attachment to DIV 6-6
Docket No. 3943

36-Months of Usage For Non-Firm to Firm Service Conversions Since October 2007
(Dth)

	CONVERSION DATE	FIRM RATE CLASS	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	Apr-07	TOTAL
Customer 1	10/15/2007	LL - Sales	0	0	0	0	0	206	468	678	635	0	203	396	**2,586**
Customer 2	01/01/2008	Med	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Customer 3	12/01/2007	XLH - FT-1	2,544	2,095	2,509	3,163	2,841	7	2	10	1	1	0	46	**13,220**
Customer 4	12/01/2007	LL - Sales	100	50	0	0	0	0	409	1,188	509	225	195	0	**2,676**
Customer 5	12/01/2007	LL - Sales	50	0	0	0	0	40	305	712	511	0	1	1	**1,619**
Customer 6	12/01/2007	Med	0	0	0	0	0	25	27	73	28	0	2	0	**156**
Customer 7	01/01/2008	XLL - FT-1	21,618	14,206	11,547	13,267	13,465	18,043	23,254	4,999	0	0	0	1,792	**122,190**
Customer 8	11/01/2007	XLL - FT-1	620	754	485	624	559	924	1,348	2,472	1,741	988	1,978	1,583	**14,076**
Customer 9	09/24/2007	LL - FT-2	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Customer 10	11/01/2007	XLH - FT-1	11,520	10,668	8,178	10,230	9,395	10,122	0	0	0	0	0	0	**60,113**
Customer 11	04/01/2008	XLH - FT-1	522	153	1	203	284	405	730	69	0	0	0	228	**2,595**
Customer 12	10/16/2007	Med	6,014	5,640	3,626	4,969	4,226	5,995	157	0	9	6	22	6,710	**37,375**
Customer 13	12/01/2007	XLH - FT-1	7,920	8,295	7,846	6,341	6,500	7,192	6,379	0	0	0	0	0	**50,474**
Customer 14	02/01/2008	XLH - FT-1	5,373	3,822	3,094	3,017	3,706	90	0	0	12	0	0	0	**19,116**
Customer 15	02/01/2008	LL - FT-1	121	0	0	0	0	521	1,287	2,730	10,257	37	874	1,481	**17,309**
Customer 16	12/01/2007	XLL - FT-1	0	0	0	0	0	0	0	24	79	260	842	1,058	**2,263**
Customer 17	01/01/2008	LL	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Customer 18	11/01/2007	XLH - FT-1	2,571	4,263	6,920	5,703	2,841	2,053	1,667	402	3	0	14	2,417	**28,854**
Customer 19	12/01/2007	XLH - FT-1	2,506	1,982	2,724	2,718	1,705	1,963	2,041	2,329	1,250	90	1,593	2,005	**22,907**
Customer 20	10/01/2007	XLL - FT-1	245	0	0	0	0	189	10,354	1,398	1,285	412	1,231	1,029	**16,143**
Customer 21	01/01/2008	XLL - FT-1	5,209	400	0	0	0	0	0	0	0	96	0	430	**6,135**
Customer 22	01/01/2008	LH	0	1	0	1	1	1	0	0	0	0	0	0	**4**
Customer 23	11/01/2007	XLH - FT-1	70,347	88,476	100,848	80,515	32,745	42,067	47,019	55,430	37,977	16,880	49,514	57,488	**679,307**
Customer 24	12/01/2007	XLH - FT-1	0	0	0	5,144	4,526	5,237	0	0	0	0	0	0	**14,907**
Customer 25	09/27/2007	XLH	1,023	783	559	580	742	1,429	1,327	1,659	711	552	932	2,531	**12,828**
Customer 26	04/01/2008	LL - FT-1	251	0	0	0	3	385	620	974	665	302	841	591	**4,632**
Customer 27	03/01/2008	LL - FT-1	0	0	0	0	0	0	1	0	1	1	0	0	**2**
TOTAL			**138,554**	**141,588**	**148,338**	**136,475**	**83,540**	**96,893**	**97,397**	**75,147**	**55,674**	**19,850**	**58,244**	**79,787**	**1,131,487**

National Grid
Rhode Island - Gas

Attachment to DIV 6-6
Docket No. 3943

36-Months of Usage For Non-Firm to Firm Service Conversions Since October 2007
(Dth)

	CONVERSION DATE	FIRM RATE CLASS	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	TOTAL
Customer 1	10/15/2007	LL - Sales	19	0	0	0	0	117	595	573	102	410	692	61	**2,568**
Customer 2	01/01/2008	Med	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Customer 3	12/01/2007	XLH - FT-1	1,399	2,659	2,468	3,188	3	32	8	17	0	0	857	1,720	**12,351**
Customer 4	12/01/2007	LL - Sales	0	0	0	0	0	248	770	662	0	88	109	12	**1,890**
Customer 5	12/01/2007	LL - Sales	0	3	12	2	0	0	0	0	0	12	0	0	**28**
Customer 6	12/01/2007	Med	0	1	0	0	0	20	44	53	10	0	0	1	**129**
Customer 7	01/01/2008	XLL - FT-1	98	14,194	12,434	12,282	14,001	19,698	5,368	153	45	11,170	15,469	24,386	**129,298**
Customer 8	11/01/2007	XLL - FT-1	1,069	808	488	576	600	41	0	0	0	2,987	2,235	1,526	**10,330**
Customer 9	09/24/2007	LL - FT-2	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Customer 10	11/01/2007	XLH - FT-1	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Customer 11	04/01/2008	XLH - FT-1	7,439	7,347	5,269	6,052	7,797	6,447	527	0	0	0	0	538	**41,416**
Customer 12	10/16/2007	Med	598	93	85	186	272	598	475	2	0	0	0	6,050	**8,360**
Customer 13	12/01/2007	XLH - FT-1	9,582		7,137	7,296	6,908	5,804	0	0	0	0	0	120	**36,847**
Customer 14	02/01/2008	XLH - FT-1	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Customer 15	02/01/2008	LL - FT-1	0	0	0	0	0	402	1,399	1,796	353	106	238	987	**5,280**
Customer 16	12/01/2007	XLL - FT-1	0	0	5	0	0	0	0	0	0	0	0	0	**5**
Customer 17	01/01/2008	LL	0	0	0	0	0	0	0	0	2	0	0	0	**2**
Customer 18	11/01/2007	XLH - FT-1	1,682	5,500	6,966	8,211	4,358	2,029	2,257		3	48	14	1,545	**32,613**
Customer 19	12/01/2007	XLH - FT-1	2,587	2,402	2,361	2,613	2,309	2,208	2,290	2,153	2,541	1,940	2,363	1,841	**27,606**
Customer 20	10/01/2007	XLL - FT-1	503	0	0	0	0	552	6	1,597	0	2,059	1,813	502	**7,031**
Customer 21	01/01/2008	XLL - FT-1	6,193	1,617	1,491	1,375	1,599	4,976	360	0	8	0	16	667	**18,303**
Customer 22	01/01/2008	LH	0	0	0	1	0	0	0	0	0	0	0	0	**2**
Customer 23	11/01/2007	XLH - FT-1	65,931	77,544	86,565	80,937	75,191	55,328	32,692	29,997	1,807	92,129	92,959	74,654	**765,734**
Customer 24	12/01/2007	XLH - FT-1	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Customer 25	09/27/2007	XLH	1,375	803	616	575	701	1,048	1,639	1,673	0	0	0	425	**8,855**
Customer 26	04/01/2008	LL - FT-1	348	0	0	0	0	358	742	1,036	1,168	1,145	929	312	**6,039**
Customer 27	03/01/2008	LL - FT-1	0	0	0	0	0	0	1	1	1	1	1	0	**4**
TOTAL			**98,822**	**112,971**	**125,898**	**123,294**	**113,739**	**99,905**	**49,173**	**39,714**	**6,041**	**112,095**	**117,694**	**115,347**	**1,114,692**

Division Data Request DIV 6-7

Request:

Re: page 9, lines 2-5 of witness Czekanski's direct testimony, please document all adjustments made to the Company's projections of monthly gas use for large and extra large C&I customers to reflect customers that switched from non-firm to firm service from the end of the test year to January 2008.

Response:

Please see Workpapers PCC-4 found in Volume 5 at page 196.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-8

Request:

Re: page 9, lines 2-5, of witness Czekanski's direct testimony, please indicate if there are any customers that have switched from firm service to non-firm service since the end of the test year, and if so provide the numbers of customers and monthly gas use volumes for each month of the most recent 36 month period for customers that transferred to non-firm service from each firm rate classification.

Response:

There was one customer that switched from firm service to non-firm service since the end of the test year. The monthly gas use in Dt for the most recent 36 month period is as follows:

	2005-2006	2006-2007	2007-2008
May	4,157	4,173	4,148
Jun	4,757	3,964	3,236
Jul	4,263	4,032	2,792
Aug	4,264	3,027	2,889
Sep	4,166	3,525	2,624
Oct	4,054	3,945	3,217
Nov	5,003	3,667	1,089
Dec	1,356	2,514	801
Jan	0	688	953
Feb	0	0	867
Mar	3,082	2,028	992
Apr	4,316	2,515	726

During the 36-month period, the customer was on firm service from April 2007 through March 2008. All other months represent gas usage under the non-firm service offering.

Division Data Request DIV 6-10

Request:

Re: page 9, line 14 through page 10, line 2 of witness Czekanski's direct testimony, please provide the workpapers (including electronic spreadsheets), data, analyses, and assumptions used in the development of the referenced normalization revenue adjustments, As part of this response please specify the revenue per therm that was used in the computation of normalized revenue for each rate class, and if such revenue per therm figures reflect amounts other than state tariff rates, please fully document the development of the revenue per therm figures used.

Response:

The normalization revenue adjustments described on page 9, line 14 through page 10, line 2 are the difference in base revenue associated with customer's actual usage during the test year and base revenue associated with that usage normalized for the impacts of weather. Attachment NG-PCC-3 shows that the revenue adjustments are associated with just the variable distribution component and that there is no change in customer charge revenues or demand charge revenues. The analyses and assumptions underlying the weather normalization of customer usage are described in the testimony on page 6 through page 7 line 2 and the workpapers are in Volume 5 pages 178 through 185. The calculation of base revenues is documented in the Volume 5 Workpapers PCC-7 found at pages 212 through 226. As shown, the calculation uses customer counts and usage amounts by month by rate class multiplied by the current tariff rates to calculate total base revenue. An identical calculation using the weather normalized usage can be found on Workpapers PCC-8 located in Volume 5 at pages 227 through 238. The associated electronic spreadsheets were provided in response to Division data request DIV 2-9.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-11

Request:

Re: page 10, line 14 through page 11, line 8 of witness Czekanski's direct testimony, please:

a. Provide the data and analyses upon which the Company relies to assess the appropriateness of the level of the rate discount proposed for low income customers;

b. Explain why the Company believes it is necessary and appropriate to discount monthly customer charges for low income residential customers;

c. Reconcile the Company's proposal for discounted rates for low income residential customers with its general goals of (a) moving charges closer to its actual costs of service and (b) providing customers with proper price signals;

d. Provide the Company's best estimate of its annual costs for administering the proposed residential low income discount, including all workpapers, data, and assumptions supporting the development of that estimate and showing the account(s) to which the costs of administration of that rate discount would be charged.

Response:

a, b Please see the Company's response to Data Request DIV 5-19.

c. The Company's proposed low-income rates are calculated as a discount to the full cost rates for the class. As the class rates are moved closer to the actual cost of service the low-income rates will do the same, albeit at a slower rate. The customers continue to see a price signal as the majority of the commodity costs are the gas commodity costs, which are not discounted. Although the low-income rate may be an exception to the Company's general rate -design goals, the Company believed it appropriate to offer such a rate.

d. The Company does not track, record or otherwise separate the costs of administration and billing of individual services and therefore has not developed any estimate of the costs of administration of the rate discount.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-12

Request:

Re: page 10, lines 11-16 of witness Czekanski's direct testimony, please provide the data, analyses, studies and other information upon which the Company relies to assess the conceptual conformance of its proposed low income discount with the provisions of the Affordability Act of 2006.

Response:

Among other provisions, the Affordability Act of 2006 includes the following:

42-141-5(d). Purposes of the fund.

(ii) Compensate electric and gas distribution companies for revenues lost due to the reductions in distribution and customer charges, in accordance with a plan approved by the commission, to very low income households, and if feasible to low income households, which shall, as a first priority, be used to provide up to a fifty percent (50%0 reduction in the distribution and customer charges …

In conformance with those provisions, the Company in Docket No. 3804 proposed the introduction of discounted distribution rates for any gas delivery customer who receives LIHEAP assistance. The Company's filing showed the cost associated with different levels of discount ranging from 5% up to 50% with the specific rate to be based on funding provided through the Office of Energy Resources. The proposed low-income discount rate was not implemented because the funding for the program was eliminated from the state budget this past year and hence, discounted distribution rates were never implemented. The proposal in Docket No. 3943 introduces discounted distribution rates for low-income gas customers.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-13

Request:

Re: page 12, lines 6-11, of witness Czekanski's direct testimony, please:

a. Provide the number of residential customers receiving LIHEAP grants in each month of the last two years;

b. Provide a comparison of the annual cost of the Company's proposed low income discount rate with the annual cost of the assistance that the Company has provided low income residential customers in each of the last three years through its Low Income Assistance Programs (LIAP);

c. Demonstrate how the number of customers receiving assistance through the proposed low income rate discount would differ from the number of customers that have received assistance through the LIAP in each of the last three years;

d. Provide any and all data and analyses relied upon to support the Company's assumption that the percentage of residential non-heating customers qualifying as low-income customers will be the same as that for the "general residential heating rate class";

e. Indicate the amount of contribution the Company's shareholders will make to the costs of the program it proposes to offer rate discounts to low income residential customers.

Response:

a. The last two years of data currently available is as follows:

	2005-2006	2006-2007
Oct	0	0
Nov	0	4,088
Dec	0	3,713
Jan	10,797	3,568
Feb	1,228	811
Mar	1,174	2,306
Apr	2,316	856
May	1,118	571
Jun	413	0
Jul	0	0
Aug	0	0
Sep	0	0
	17,046	15,913

Prepared by or under the supervision of: Peter Czekansi

Response: DIV 6-13 (continued)

b. The Company’s proposal is for the existing Low Income Assistance Programs (LIAP) to continue at the current annual funding level of $1,585,000 for supplemental LIHEAP and $200,000 for low income weatherization. Hence the $829,338 impact of the proposed 10% low income discount rate is incremental to the existing low income programs.

c. The difference in the number of customers receiving assistance through the proposed low income rate discount from the number of customers that have received assistance through the LIAP over the past three years is the projected 2,475 low income non-heating customers.

d. The basis for the assumption that the percentage of residential non-heating customers qualifying as low income customers will be the same as for the “general residential heating rate class” is telephone discussions with the group that is responsible for administering LIHEAP grants within the Company and with the State Office of Energy Resources.

e. The costs of the program to offer rate discounts to low income residential customers is to be paid by other customers as shown on Attachment NG-DAH-4 page 1 of 3.

Division Data Request DIV 6-15

Request:

Re: page 13, lines 10-13 of witness Czekanski's direct testimony, please provide the Company's understanding of why the level of uncollectible expense incorporated in current rates is based on a five-year average.

Response:

A review of the Company's last rate case, Docket No. 3401, shows that the 2.1% level of uncollectible expense incorporated in current rates is actually the result of a negotiated settlement agreement. The Division's consultant Mr. Effron has recommended the use of a five-year average.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-16

Request:

Re: pages 13-14 of witness Czekanski's direct testimony, please:

a. Describe in detail the manner in which the Company proposes to transition from the current DAC structure to the new DAC structure that National Grid seeks in this proceeding.

b. Identify, document, and fully explain the impacts, if any, that a decision to deny the implementation of the Company's proposed DAC changes would have on the Company's revenue requirement in this proceeding.

Response:

a. There are three changes to the DAC that will require a transition from the current structure: the Revenue Decoupling Mechanism (RDM) Factor, the P&PBOP Adjustment Factor and the Capital Expenditure ("CapX") Tracker Factor. First, the RDM factor included in the August 1, 2009 DAC filing will be based on the June 30th RDM rate class ending balance reflecting just eight (8) months of monthly calculations of the variances between target revenue per customer and the actual revenue per customer. Similarly the P&PBOP adjustment factor will be based on just the difference in the Company's actual Pension and PBOP expense for the eight-month period from November 1, 2008 through June 30, 2009 and the prorated PBOP expense base rate allowance approved in the rate case. Because the Company plans and tracks its construction budget on a fiscal year ending March 31st, the CapX Tracker Factor, the mechanism for reconciling either of the proposed Accelerated Replacement program or the multi-year Capital Tracker mechanism, that would filed August 1, 2009, would reconcile the appropriate capital expenditures for the 5 months ended March 31, 2009.

b. The proposed changes to the DAC have no impact on the Company's revenue requirement in this proceeding. The proposed DAC changes involve retrospective revenue and cost reconciliations. However, the Company believes that its proposals for reconciling pensions and PBOP, a CapX Tracker Factor along with decoupling, which addresses the issue of declining use per customer and at the same time provides the correct signal for the Company to aggressively support energy efficiency programs, produces a more stable rate path than one of more frequent base rate proceedings.

Prepared by or under the supervision of: Peter Czekanski and Mike Laflamme

Division Data Request DIV 6-17

Request:

Re: page 14, lines 3-9 of witness Czekanski's direct testimony, given the Company's recent filing in Docket No. 3961 which seeks to establish GCR charges for a 16-month period, please explain when the Company would propose to implement the GCR tariff changes discussed in witness Czekanski's direct testimony in this proceeding.

Response:

The Company would not propose to change the GCR charges implemented in Docket No. 3961 until the Company makes a GCR filing, either on an interim basis or the normal annual filing, subsequent to the Commission's approval of the proposed GCR tariff.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-18

Request:

Re: page 14, lines 3-9 of witness Czekanski's direct testimony, please:

a. Identify, document, and fully explain the impacts, if any, that a decision to defer implementation of the Company's proposed GCR tariff changes until at least the fall of 2009 would have on the Company's revenue requirement in this proceeding;

b. Identify, document, and fully explain the impacts, if any, that a decision to deny the implementation of the Company's proposed GCR tariff changes would have on the Company's revenue requirement in this proceeding.

Response:

a. Deferring the implementation of the Company's proposed GCR tariff changes until at least the fall of 2009 would not have any impact on the Company's revenue requirement in this proceeding. The revenue requirement does not include gas costs.

b. Denying the implementation of the Company's proposed GCR tariff changes would not have any impact on the Company's revenue requirements in this proceeding.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-20

Request:

Re: page 15, line 19 through page 16, line 6 of witness Czekanski's direct testimony, please:

a. Explain why it is necessary and appropriate to include monthly customer charge revenue in the calculation of RPC targets since, due to the nature of monthly customer charges, customer charge revenue will change with changes in the number of customers served;

b. Explain why it is necessary and appropriate to include monthly demand charge revenue for Medium, Large, and Extra Large C&I rate classes in the calculation of RPC targets for those classes since, due to the structure of the Company's monthly demand charges, demand charge revenue will not fluctuate directly with changes in a customer's usage volumes;

c. Explain and provide a numerical example of the manner in which revenue collected through Balancing charges will be considered in the computation of RPC targets;

d. Explain and provide a numerical example of the manner in which revenue collected through Balancing charges will be considered in the reconciliation of RPC targets with actual billed revenue for Medium, Large, and Extra Large C&I rate classifications.

Response:

a. The Company has included the monthly customer charge revenue in the calculation of RPC targets so that the RPC incorporates all the charges appearing in the "Delivery Charges" portion of customers' bills. Since the target is set based on a revenue per customer basis, not a total revenue basis, excluding monthly customer charge revenue in the calculation of RPC targets would add a step to the calculation that is unnecessary, because the calculated monthly difference between actual and target revenues per customer will be unaffected, whether customer charge revenues are included or excluded.

Response: DIV 6-20 (continued)

b. As described in item (a) above, the monthly demand charge also appears in the "Delivery Charges" portion of customers' bills. In addition, the demand charge billing quantity does change annually based on a customer's actual usage volumes over the past winter period; the demand charge billing quantities will be impacted over time by customer conservation in the same way that delivery quantities are.

c, d. Balancing charges are applicable to marketer aggregation pools and the marketer billing is not subject to the proposed revenue decoupling mechanism.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-21

Request:

Re: proposed Rate Schedules 22, 23, 24, 33 and 34, please explain how the Company intends to set Maximum Average Daily Quantities (MADQs) for new customers if the proposed RPC decoupling mechanism is approved for those classes (i.e., if the anticipated April – November gas usage of the customer would result in an MADQ that is greater than or less than the rate class average MADQ, would the Company propose to set such a new customer's MADQ at the class average, and if not, why not.) As part of the response to this request, please explain the Company's rationale for its position regarding such demand level determinations.

Response:

The Company intends to set Maximum Average Daily Quantities (MADQs) for new customers in the same manner as it had historically done, that is based on the customers expected load and load profile. This serves to better align the individual customer's bill with his specific usage pattern and is no different than the basis used for calculation of the MADQ for other customers in the rate class. The proposed revenue decoupling mechanism uses the average revenue of all customers in the rate class to identify and adjust for changes in the overall rate class usage pattern and not as a basis for billing each individual customer within the rate class.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-23

Request:

Re: page 17, lines 1-7 of witness Czekanski's direct testimony, please:

a. Indicate whether the Company's proposed CapX tracker factor proposal places any limit on the amount of capital spending in excess of target levels that the Company could recover on an annual basis, and if not:

   i. Explain the Company's position regarding the appropriateness of such a limit;

   ii. Explain how the implementation of an unlimited CapX tracker factor is consistent with the goal of rate stability

b. Provide any guidance that the Company would offer to the Commission regarding the circumstances under which the Company would expect the Commission to limit recoveries of variations in capital spending under the CapX tracker factor using the language included in the tariff description of that factor which states "*to the extent allowed by the Commission.*"

Response:

The Company's proposed CapX tracker factor proposal is intended to recover the revenue requirement of either the Accelerated Replacement Program ("ARP") investments or the multi-year full capital tracker included in the Company's alternative three-year rate plan. Both the ARP and multi-year full capital tracker include limits on the amount of spending.

As indicated in the testimony of Mr. Laflamme, the ARP is intended to recover the revenue requirement of accelerated replacement capital expenditures above those included in the Company's revenue requirement for the rate year in this proceeding. If the Company does not achieve the level of spending included in the revenue requirement in this proceeding, a credit would be included in the next DAC for the revenue requirement of the amount of spending less than forecasted. Because the Company plans and tracks its capital budget on a fiscal year ended March 31st, the ARP is based on fiscal year data. For the fiscal years ended March 31, 2009 and 2010, the ARP capital spend included in the revenue requirement in this proceeding amount to $21.5 million and $12.550 million. Assuming the three year rate plan and associated full capital tracker is not accepted, all ARP spending beyond the

Rate Year in the one-year cost of service would be deemed incremental. Please refer to Attachment NG-MDL-5 for an illustration of the DAC adjustment based on the Company's ARP proposal.

For the multi-year full capital tracker, the mechanism is intended to provide protection to customers for paying rates which incorporate capital expenditure forecasts that do not materialize. The mechanism as designed is intended to provide a customer credit for the revenue requirement of the actual fiscal year capital spending amount less than the amounts embedded in the multi-year revenue requirement. If the Company incurs capital investments that are greater than the amounts embedded in the multi-year revenue requirement, it must petition the Commission for any incremental relief associated with such incremental investment. Please refer to Attachment MDL-1 and MDL-6 for the capital addition amounts included in the Company's annual revenue requirement.

Prepared by or under the supervision of: Mike Laflamme

Division Data Request DIV 6-26

Request:

Re: page 19, lines 14-16 of witness Czekanski's direct testimony, please:

a. Verify that the referenced "Target RPC" is based on the RPC established for a firm service rate classification and identify the firm rate class(es) that would service as the basis for computing the proposed rate caps;

b. Provide the workpapers, data, studies and analyses relied upon by the Company to support its proposal to set the rate cap for non-firm service customers at 50% above the target RPC;

c. Explain why Section 6, Schedule A, Sheets 5-6, of the Company's proposed tariff provide for an October 1, 2008 effective date for the proposed non-firm service Maximum Rate provisions (i.e., rate caps).

Response:

a. Whereas the Target RPC's for firm service customers are calculated as a revenue per customer, the Non-firm margin cap is a revenue per therm calculated as follows:

		Large Low Load	Extra Large Low Load
Proposed Base Revenue (Attachment NG-DAH-4)		$ 7,574,960	$ 1,368,226
Forecasted Rate Year Therms		26,556,458	12,066,568
Base revenue per Therm		$ 0.2852	$ 0.1134
Non Firm Margin Cap @ Base Revenue +	50%	$ 0.4279	$ 0.1701

b. The establishment of a rate cap for non-firm service customers that is tied to the results of the Company's cost-of-service study was a rate design decision that tries to balance the objectives of (1) limiting the migration of customers from firm to non-firm service, since this migration could increase rates in the long run for all remaining firm customers and (2) addressing issues raised in recent proceedings concerning value of service pricing. There are no specific studies or analyses. Also please see the Company's response to Division data request DIV 5-53.

c. October 1, 2008 is the start of the rate year in the Company's filing.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-27

Request:

Re: page 19, lines 16-19 of witness Czekanski's direct testimony, please:

a. Provide the workpapers, data, and analyses relied upon by the Company to support the proposed 25,000 therm per month usage threshold for differentiating rate caps for non-firm service customers;

b. Verify that the Company's proposed tariff would use a 25,000 therm per month usage cutoff in the determination of rate discounts for non-firm customers having either No. 6 Oil or No. 4 Oil as their alternate fuels, but a 100,000 therm per month cutoff for customers having No. 2 Oil, Propane or Other Alternate Fuels as their alternatives to the use of natural gas;

c. Reconcile the Company's proposed 25,000 therm rate threshold with the basis for the determination of rate discounts for non-firm customers having specified alternate fuel capabilities as set forth in the Company's current and proposed tariffs.

Response:

a. The 25,000 therm per month usage threshold for differentiating rate caps applicable to non-firm service customers was selected on the basis that it was a threshold in the existing tariff for differentiating prices applicable to the customer.

b, c. The 25,000 therm per month usage threshold in the existing tariff is used for all non-firm service customers in determining the appropriate monthly customer charge regardless of the customer's alternative fuel. Hence, the customer charge will identify which rate cap applies to an individual customer. The usage thresholds associated with specific alternative fuels are for identifying the level of discount used in pricing the distribution rate but are not used for the purpose of the applicable rate cap.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-28

Request:

Re: page 24, lines 14-17 of witness Czekanski's direct testimony, please:

a. Explain and provide examples to illustrate the manner in which the proposed re-establishment of Flexible Firm Service will provide "*a more secure level of service*" than options presently available to such customers;

b. Identify and explain each instance in the last three years in which a customer taking service under the proposed Flexible Firm Service rate option would have received gas deliveries through the Company's facilities when other non-firm transportation service customers would not have received deliveries.

Response:

a. Customers under the Flexible Firm Service will have the opportunity to negotiate a contract that fits their alternate fuel supply contracting preference and storage capability. For example, if they have very limited storage capacity, they can contract for a better level of service, so that they would only be interrupted at colder temperatures than non-firm customers in general. They could then save on the cost of reserving oil supply to restock their tank or avoid adding additional storage but still receive a more secure level of service than they receive today. Under some circumstances they may improve their security of energy supply by negotiating for a minimum notice period or maximum duration for the curtailment.

In the past, under its previous flexible firm service offering, the Company has provided a minimum hourly flow on a firm basis enabling the customer to maintain certain processes on gas while switching other processes to an alternate fuel. Because of system limitations, non-firm customers in Westerly are currently curtailed from November 1 to March 31. The Company has discussed providing an enhanced service to individual customers that would provide for a lesser level of interruption and a more secure supply for the customer. Another example would be customers needing to burn natural gas a specific number of days to meet DEM air emissions regulations.

Prepared by or under the supervision of: Peter Czekanski and Sean Mongan

Response: DIV 6-28 (continued)

b. It is the nature of the Flexible Firm Service that it is unique to each customer because it addresses the specific needs of the customer, particularly that circumstance that causes them to be unable or unwilling to take the firm tariff service offered by the company. Thus, it is impossible to identify and explain each instance where a customer would have received service while non-firm customers were curtailed.

In general, a Flexible Firm Service customer could potentially be served at colder temperatures, for some limited maximum duration of curtailment, with some minimum notice period, with some minimum level of uninterrupted flow, with some lesser amount of incremental facilities cost, for some interim period pending some upcoming expansion or system improvement, etc. Clearly, for individual customers in locations where capacity is available, who are willing to commit to and pay for a higher, more secure level of service, the Flexible Firm Service can be crafted to offer them a service that provides service under many circumstances where non-firm customers are curtailed.

Division Data Request DIV 6-29

Request:

Re: page 20, line 21 through page 21, line 3 of witness Czekanski's direct testimony, please provide the data, analyses, studies and other documents upon which the Company relies to support the assertion that the proposed Flexible Firm Service "will enable the Company to better tailor the service to the operational needs of the individual customer." Please include in this response the information that the Company relies upon to assess the operational needs of customers that might elect to use the proposed Flexible Firm Service.

Response:

The Company has performed no formal study or relied on any particular documents. The reintroduction of Flexible Firm Service is based on feedback the Company's marketing group has received from their day-to-day dealings with customers as well as from the Company's experience in other jurisdictions in entering into negotiated agreements tailored to the operational needs of the individual customers. Please also see the response to Division data request DIV 6-28.

Division Data Request DIV 6-30

Request:

Re: page 21, lines 5-19 of witness Czekanski's direct testimony, please:

a. Provide the data, analyses, studies and rationale upon which the Company relies to support the appropriateness of the proposed 150,000 therm annual usage threshold for customers to qualify for Flexible Firm Service;

b. Provide the number of customers presently served by the Company that meet or exceed the proposed 150,000 therm annual usage threshold for customers to qualify for Flexible Firm Service;

c. Provide the Company's best estimate of the number of customers it would expect to negotiate flexible firm service contracts within the first 12 months that that option is made available, as well as the basis for that estimate;

d. Provide the Company's best estimates of the costs that would be incurred:

   i. By the Company to negotiate a Flexible Firm Service contract, prepare a letter filing and supporting documentation for the Division, and answer Division data requests regarding such a contract;

   ii. By the Division to review such a contract and render a determination regarding the acceptability of the negotiate contract terms.

e. If the Division reserves the right for further review of a contract after the end of the 30 day period provided for in the initial review process, please indicate whether any changes in the levels or structure of negotiated charges would be applied retroactively to the commencement of service under the contract, and if not, whether the Company would absorb any difference between the rate(s) ultimately accepted and the rates billed prior to the Division's final determination.

Prepared by or under the supervision of: Peter Czekanski and Sean Mongan

Response:

a. The proposed annual usage threshold for customers to qualify for Flexible Firm Service is based on the Company's knowledge of the marketplace and its experience in other jurisdictions as to the target group most likely to benefit from the service offering.

b. There are approximately 35 customers that meet or exceed the proposed threshold to qualify for the Flexible Firm Service.

c. The Company's best estimate is that it would expect to negotiate Flexible Firm Service contracts with 10 of those customers within the first 12 months that the option is made available. This estimate is based on capturing 30% of those that have been identified for using the service.

d.
   i. Flexible Firm Service would be one more option available to the marketing group when they meet with and work with customers to find solutions to their energy and operational needs. The Company does not consider negotiating a Flexible Firm Service agreement as a separately identifiable function or activity and hence has no estimate of costs that would be incurred.
   ii. The Company also has no way of estimating the time that would be required by the Division to review such a contract but would not expect it to place a significant demand on the Division or any consultant it might hire for such purpose. The review process is intended for the Division to certify that the agreement is in compliance with all tariff provisions and that the specific rates provide a net margin above incremental costs. When this service was previously offered, the Division had agreed that such review could be completed within a 30 day period with the opportunity to request up to fifteen additional days.

e. It is the Company's intention that if the Division had concerns or objected to the contact, the Company would work informally with the Division to resolve the concern. If the concerns could not be resolved informally, the Commission could take whatever action it deems appropriate including holding a hearing on the proposed agreement and extending the review period.

Prepared by or under the supervision of: Peter Czekanski and Sean Mongan

Division Data Request DIV 6-31

Request:

Re: page 23, lines 3-8 of witness Czekanski's direct testimony, please:

a. Provide the data, analyses, and studies upon which the Company has relied to support the referenced "updating" of the "conversion fuel factors associated with the various alternative fuels;

b. For the updated references for alternate fuel prices:

i. Identify events which have necessitated an updating of the reference,

ii. Indicate when the events occurred which necessitate the Company's proposed updating of alternate fuel price references;

iii. Explain why the new reference provides the most appropriate data available for making the rate determinations set forth in the Company's tariff.

Response:

a. Attached are the BTU values published by the Sierra Club, Greater Dickson Gas Authority, Questar Gas, The Engineering Toolbox and Combustion and Psychometrics. These five websites were consistent in their average heating value for the various grades of fuel oil and provide supporting documentation for the requested updates.

b. The primary event triggering the requested update is customer feedback. When calculating and publishing the monthly non-firm pricing, some customers have requested an explanation of the calculated rate and have questioned the conversion factor currently in effect. The new updated conversion factors reflect the more commonly accepted published heating values and send a more accurate price to the customer.

Prepared by or under the supervision of: Peter Czekanski

Decoder: Miles to Go Before You Eat

Why it pays to buy locally grown food
by Paul Rauber

Posted May 31, 2006
Editor's note: Subsequent to the publication of this feature, *Sierra* learned that there was a calculation error in the original paper on which the article was based, "The Load Less Traveled," (Leopold Center for Sustainable Agriculture, 2002). In addition, *Sierra*'s own calculations failed to account for the differing fuel-energy values of gasoline (light truck), diesel (commercial truck), bunker oil (ship), and jet fuel (air). We also neglected to cite the weight of our example produce; e.g., the potato was large, weighing one pound. Together, these errors led us to significantly overstate the amount of fuel needed to move the items to market.

What follows are the Leopold Center's recalculations of the fuel requirements to transport various produce to market. Remember that for the purpose of this example, the "market" was designated to be Des Moines, Iowa.

Calculations for estimating energy (fuel) requirements to transport various produce:

1. Estimates for transport of goods by various modes:

Mode of transport	Energy requirement	Source
Ship	80 kcal/ton/km	Pimentel et al., 2004
Truck	820 kcal/ton/km	Pimentel et al., 2004
Air	6,995 kcal/ton/km	(See "References" below for explanation)

   kcal = kilocalories

2. Convert to kcal/ton/mile:

   Ship: 50 kcal/ton/mile
   Truck: 510 kcal/ton/mile
   Air: 4,372 kcal/ton/mile

3. Input distances traveled by produce and mode of transport, from source to Des Moines food store:

   - Apple (Iowa) – 60 miles by light truck (gas)
   - Apple (Washington) – 1,722 miles by commercial truck (diesel)
   - Grapes (California) – 1,887 miles by commercial truck (diesel)
   - Grapes (Chile) – 5,585 miles by ship (residual fuel oil); 1,683 miles by commercial truck (diesel)
   - Potato (North Dakota) – 558 miles by commercial truck (diesel)
   - Potato (Idaho) – 1,246 miles by commercial truck (diesel)
   - Pineapple (Costa Rica) - 1,211 miles by ship (residual fuel oil); 1,466 miles by commercial truck (diesel)
   - Pineapples (Hawaii) - 2,551 miles by plane (kerosene jet fuel); 1,683 miles by commercial truck (diesel). (Only specialty Hawaiian pineapples are shipped by air. Most come in the same fashion as the Costa Rican fruit, by sea and truck.)

4. Calculate the kcal needed per pound of produce transported:

- Apple (Iowa) – 15
- Apple (Washington) – 439
- Grapes (California) – 481
- Grapes (Chile) – 139 by ship; 429 by truck
- Potato (North Dakota) – 142
- Potato (Idaho) – 317
- Pineapple (Costa Rica) 30 by ship; 373 by truck
- Pineapple (Hawaii) 5,576 by plane; 429 by truck

5. Fuel-energy values of various fuels:

Oxygenate gas (truck) – 123,000 BTU/gallon
Distillate fuel oil - #2 Diesel (truck) – 139,000 BTU/gallon
Kerosene jet fuel (air) – 135,000 BTU/gallon
Residual fuel oil (ship) – 150,000 BTU/gallon

Conversion: 1 BTU = 0.252 kcal

6. Convert to cups of fuel per pound of produce transported:

- Apple (Iowa) – 0.01
- Apple (Washington) – 0.2
- Grapes (California) – 0.22
- Grapes (Chile) – 0.06 by ship; 0.2 by truck (0.26 total)
- Potato (North Dakota) – 0.065
- Potato (Idaho) – 0.14
- Pineapple (Costa Rica) 0.01 by ship; 0.17 by truck (0.18 total)
- Pineapple (Hawaii) 2.62 by plane; 0.2 by truck (2.82 total)

7. Weights of produce pictured:

- Apple (Iowa) – .6 pounds
- Apple (Washington) – .6 pounds
- Grapes (California) – 1 pound bunch
- Grapes (Chile) – 1 pound bunch
- Potato (North Dakota) – 1 pound
- Potato (Idaho) – 1 pound
- Pineapple (Costa Rica) – 3 pounds
- Pineapple (Hawaii) – 3 pounds

8. Volume of fuel needed to transport produce:

- Apple (Iowa) – 0.048 ounces (0.288 teaspoons)
- Apple (Washington) – 0.96 ounces (5.76 teaspoons)
- One-pound bunch of grapes (California) – 1.76 ounces (3.5 tablespoons)
- One-pound bunch of grapes (Chile) – 2.1 ounces (4.2 tablespoons)
- Potato (North Dakota) - 0.52 ounces (1 tablespoon)
- Potato (Idaho) - 1.12 ounces (2.25 tablespoons)
- Pineapple (Costa Rica) - 4.32 ounces (0.54 cup)
- Pineapple (Hawaii) - 67.68 ounces (0.529 gallons)

References

1. D. Pimentel, A. Pleasant, J. Barron, J. Gaudioso, N. Pollock, E. Chae, Y. Kim, A. Lassiter, C. Schiavoni, A. Jackson, M. Lee and A. Eaton. 2004. "U.S Energy Conservation and Efficiency: Benefits and Costs." *Environment Development and Sustainability* 6: 279-305.

Greater Dickson Gas Authority

Energy Cost

Do you know what you're paying for the various forms of Energy?

The cost of various forms of energy are usually calculated in different ways and this makes it difficult for the average consumer to compare the difference between one form and another. When the retail price of energy (Btu) to the consumer is compared on the same basis, the cost looked like this:

Residential Rates as of February 2008

Energy	Unit to Obtain One Million Btu	Your Present Cost	Cost Per Million Btu
Natural Gas	1 MCF	$1.3680	$13.69
No. 2 (Kerosene)	7.2 Gallons	$3.31 x 7.2 =	$23.83
LP Gas (Propane)	11 Gallons	$2.25 x 11 =	$24.75
Gasoline (Regular)	10 Gallons	$2.90 x 10 =	$29.00
Electric	293 kWh	$.07488 x 293 =	$21.94

Conversion Factors - Other Fuels to Natural Gas Equivalent
1 CF (cubic foot) = approximately 1,025 Btu
1 CCF = 100 CF = approximately 1 Therm
10 Therms =1 MCF
1 MCF =10 Therms = 1,000,000 Btu
1 Quad =1 Quadrillion Btu = 1 Billion MCF

Comparative Fuel Use Equivalencies Chart

Comparative Values	MCF Equivalent (one million BTU)
Natural Gas = 10 Therms	1,000,000 Btu
Coal = 12,5000 Btu/lb.	80 lbs. or .04 tons
Propane = 91,500 Btu/gal.	10.9 gallons
Gasoline = 125,000 Btu/gal.	8.9 gallons

Fuel Oil #2 = 139,000 Btu/gal.	7.2 gallons
Fuel Oil # 6 = 150,000 Btu/gal.	6.7 gallons
Electricity = 3,413 Btu/kWh	293 kWh

All cost figures are based on energy rates of natural gas ($1.3680 per therm) and electric rates ($ .07488 kWh) for a 1,500 square foot house with a 34,000 Btu heat loss factor.

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COMPARATIVE THERMAL VALUES

ENERGY CONVERSION FACTORS	
1 BTU	= ENERGY REQUIRED TO RAISE THE TEMPERATU POUND OF WATER 1° F
1 CU FT (CUBIC FOOT)	= APPROX. 1,000 BTU
1 MCF	= 1,000 CU FT
1 MCF	= APPROX 1 DTH (DECATHERM) = 10 THERMS
1 THERM	= 100,000 BTU
1 DECATHERM (DTH)	= 1,000,000 BTU

COMPARATIVE THERMAL VALUES	1.00 MILLION BTU	24.0 MILLION BTU	0.0916 MILLION BTU	0.125 MILLION BTU	0.139 MILLION BTU
NATURAL GAS 1,000 BTU/CU FT	1,000 cu ft	24,000 cu ft	91.6 cu ft	125 cu ft	139 cu ft
COAL 12,000 BTU/LB	83.333 lb	2,000 lb	7.633 lb	10.417 lb	11.583 lb
PROPANE 91,600 BTU/GAL	10.917 gal	262.0 gal	1 gal	1.365 gal	1.517 gal
GASOLINE 125,000 BTU/GAL	8.0 gal	192.0 gal	0.733 gal	1 gal	1.112 gal
FUEL OIL #2 139,000 BTU/GAL	7.194 gal	172.662 gal	0.659 gal	0.899 gal	1 gal
FUEL OIL #6 150,000 BTU/GAL	6.666 gal	160.0 gal	0.611 gal	0.833 gal	0.927 gal
ELECTRICITY 3,412 BTU/KWH	293.083 kWh	7,033.998 kWh	26.846 kWh	36.635 kWh	40.739 kWh

CORPORATE HOME | SITE MAP | CO

Attachment to DIV 6-31

Fuel Oil and Combustion Values

Combustion value in Btu/gal for fuel oils No.1 to No.6

Heating or combustion value of a fuel can be expressed as the quantity of heat (Btu per gallon) released during the combustion process where oxygen reacts with hydrogen and carbon.

The combustion or heating value for some common fuels oil grades can be found in the table below:

Grade	Heating Value Btu/gal	Comments
Fuel Oil No. 1	132,900 - 137,000	Small Space Heaters
Fuel Oil No. 2	137,000 - 141,800	Residential Heating
Fuel Oil No. 4	143,100 - 148,100	Industrial Burners
Fuel Oil No. 5 (Light)	146,800 - 150,000	Preheating in General Required
Fuel Oil No.5 (Heavy)	149,400 - 152,000	Heating Required
Fuel Oil No. 6	151,300 - 155,900	Bunker C

No. 1 and No. 2 fuel are both used for residential heating purposes. The No. 2 is slightly more expensive but the fuel gives more heat per gallon used.

The No. 1 fuel oil is used in vaporizing pot-type burners. The No. 2 is used in atomizing gun-type and rotary fuel oil burners.

The heavier the grade of fuel used in an oil burner, the greater the care must be taken to ensure that oil is supplied the combustion process at the proper atomizing temperature. With to low temperature the fuel oil will not atomize and evaporate as it should and the burner will not operate efficiently.

Combustion and Psychrometrics

Modified 09-17-02

Combustion

Combustion occurs when oxygen reacts with hydrogen and carbon

Each fuel has unique heating values. Heating value is the quantity of heat in Btu that is released during combustion of one unit of an element.

Fuel Oil Heating Values		
Grade	Heating Value Btu/gal	
No. 1	132,900-137,000	small space heaters
No. 2	137,000-141,800	residential heating
No. 4	143,100-148,100	industrial burners
No. 5 (Light)	146,800-150,000	preheating typically required
No.5 (Heavy)	149,400-152,000	
No. 6	151,300-155,900	bunker c

Gas Heating Values	
Fuel	Heating Value BTU/CF
Natural Gas	950-1050
Manufactured Gas	500-600
Liquid petroleum Propane-Butane Propane Butane	 2500-3200 2500 3200

Natural Gas is color and odorless.
Specific gravity is .660 to .708 which means it is lighter than air.

Liquefied petroleum (LP)

Propane
Specific gravity is 1.5, which means that it is heavier than air.

Butane
Specific gravity is 2.

Division Data Request DIV 6-32

Request:

Please identify all adjustments to miscellaneous service charges that the Company proposes in this proceeding, and if the Company proposes no such adjustments, explain why such adjustments to the Company's miscellaneous service charges are not appropriate at this time, and provide the workpapers, data, analyses, studies and rationale upon which the Company relies to support the continuation of each current miscellaneous service charge for which the Company proposes no adjustment in this proceeding.

Response:

The Company did not undertake any studies or analyses to update any miscellaneous charges and accordingly is not proposing any adjustments.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-33

Request:

Re: Section 1, Schedule A, Sheets 4-5, of the Company's proposed tariff, please:

a. Provide the rationales for the specific interest rate determination set forth in Item 4.0 Security Deposits,

b. Explain why that interest rate is the most reasonable and appropriate for application to Security Deposits;

c. Provide a three year history of the level of the 10-year constant maturity Treasury Bond rate as reported by the Federal Reserve Board;

d. Explain why the Bank of America Prime Rate less 200 basis points is not appropriate for application to Security Deposits;

e. Provide a comparison of the rolling annual average 10-year constant maturity Treasury Bond rate over the last five years and the Bank of America prime rate less 200 basis points over the same period;

f. Explain why the Company has chosen March 1st as the date upon which adjustments to the rate of interest on Security Deposits will be adjusted;

g. Verify that the reference to "the average rate over the prior calendar year for 10-year constant maturity Treasury Bonds" will be computed based on data for the 12 months ended December 31st of the calendar immediately preceding the rate adjustment date.

Response:

a, b. The specific interest rate determination set forth in Item 4.0 Security Deposits, is that which was established as part of ProvGas Docket No. 2581 which became effective on October 1, 2000. In that docket the PUC approved a settlement agreement which included a provision on page 13 at II.H which stated:

> The Company will implement an interest rate on customer deposits equal to the rate paid on ten year, United States Treasury bonds for the preceding calendar year.

Response DIV 6-33 (continued)

The tariff change proposed in this docket is merely adding what has been the Company's practice since October 2000 to the tariff. This is also consistent with provisions found in National Grid's tariffs for electric service in Rhode Island.

c. A three year history of the level of the 10-year constant maturity Treasury Bond rate as reported by the Federal Reserve Board is as follows:

	2005-2006	2006-2007	2007-2008
Jun	4.00	5.11	5.10
Jul	4.18	5.09	5.00
Aug	4.26	4.88	4.67
Sep	4.20	4.72	4.52
Oct	4.46	4.73	4.53
Nov	4.54	4.60	4.15
Dec	4.47	4.56	4.10
Jan	4.42	4.76	3.74
Feb	4.57	4.72	3.74
Mar	4.72	4.56	3.51
Apr	4.99	4.69	3.68
May	5.11	4.75	3.88

d. See a. above.

e. A comparison of the rolling annual average 10-year constant maturity Treasury Bond rate over the last four years and the Bank of America prime rate less 200 basis points over the same period is as follows:

	(a)		**(b)**	**(a)-(b)**
	10-Year Treasury Rate	**BOA Prime Rate**	**BOA Prime Rate (less 200bps)**	**Difference**
Apr-04	4.07	4.02	2.02	2.05
May-04	4.17	4.00	2.00	2.17
Jun-04	4.29	4.00	2.00	2.29
Jul-04	4.33	4.02	2.02	2.31
Aug-04	4.31	4.06	2.06	2.25
Sep-04	4.30	4.13	2.13	2.18
Oct-04	4.29	4.19	2.19	2.10
Nov-04	4.28	4.27	2.27	2.01
Dec-04	4.27	4.38	2.38	1.90
Jan-05	4.28	4.48	2.48	1.80

Prepared by or under the supervision of: Peter Czekanski

	(a)		(b)	(a)-(b)
	10-Year Treasury Rate	BOA Prime Rate	BOA Prime Rate (less 200bps)	Difference
Feb-05	4.29	4.60	2.60	1.68
Mar-05	4.34	4.75	2.75	1.59
Apr-05	4.34	4.90	2.90	1.45
May-05	4.29	5.06	3.06	1.23
Jun-05	4.23	5.25	3.25	0.98
Jul-05	4.21	5.42	3.42	0.79
Aug-05	4.21	5.58	3.58	0.62
Sep-05	4.21	5.75	3.75	0.46
Oct-05	4.24	5.92	3.92	0.32
Nov-05	4.27	6.08	4.08	0.19
Dec-05	4.29	6.25	4.25	0.04
Jan-06	4.31	6.44	4.44	(0.13)
Feb-06	4.34	6.60	4.60	(0.26)
Mar-06	4.36	6.77	4.77	(0.41)
Apr-06	4.41	6.94	4.94	(0.52)
May-06	4.49	7.10	5.10	(0.61)
Jun-06	4.59	7.27	5.27	(0.69)
Jul-06	4.66	7.44	5.44	(0.78)
Aug-06	4.71	7.58	5.58	(0.87)
Sep-06	4.76	7.71	5.71	(0.95)
Oct-06	4.78	7.83	5.83	(1.05)
Nov-06	4.78	7.94	5.94	(1.15)
Dec-06	4.79	8.02	6.02	(1.23)
Jan-07	4.82	8.08	6.08	(1.26)
Feb-07	4.83	8.15	6.15	(1.31)
Mar-07	4.82	8.19	6.19	(1.37)
Apr-07	4.79	8.23	6.23	(1.44)
May-07	4.76	8.25	6.25	(1.49)
Jun-07	4.76	8.25	6.25	(1.49)
Jul-07	4.76	8.25	6.25	(1.49)
Aug-07	4.74	8.25	6.25	(1.51)
Sep-07	4.72	8.21	6.21	(1.49)
Oct-07	4.71	8.15	6.15	(1.44)
Nov-07	4.67	8.08	6.08	(1.42)
Dec-07	4.63	8.00	6.00	(1.37)
Jan-08	4.54	7.81	5.81	(1.27)
Feb-08	4.46	7.63	5.63	(1.16)
Mar-08	4.38	7.38	5.38	(1.00)
Apr-08	4.29	7.10	5.10	(0.81)
May-08	4.22	6.83	4.83	(0.61)

Prepared by or under the supervision of: Peter Czekanski

f. See a. above.

g. The reference is correct. The Company uses the 12-month average ended December 31st of the calendar immediately preceding the rate adjustment date. For example, as of March 2008, the interest rate being applied to customer deposits is 4.63%.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-34

Request:

Re: Section 1, Schedule B, Sheet 6, of the Company's proposed tariff, would the Company agree that the phrase "*at the time of the most recent rate case*" in the proposed definition of Target Revenue Per Customer might be more appropriately replaced with the phrase "*computed based on the Commission's final order in the Company's most recent base rate case*."

Response:

The Company would not be opposed to using the suggested phrase.

Division Data Request DIV 6-35

Request:

Re: Section 2, Schedule A, Sheet 12, of the Company's proposed tariff, please provide that data, analyses and rationale that the Company relies upon to support the appropriateness of the language regarding the determination of long-term debt costs that has been added to the description of the computation of the Weighted Pre-Tax Cost of Capital (COC).

Response:

The language regarding the determination of long-term debt costs that has been added to the description of the computation of the Weighted Pre-Tax Cost of Capital (COC) is based on the Settlement Agreement approved by the Commission in the Company's last rate case Docket No. 3401 and is being added to the tariff for clarity.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-36

Request:

Please explain the meaning of the term Dt_T at the top of Section 3, Schedule A, Sheet 5 in of the Company's proposed tariff.

Response:

The Dt_T at the top of Section 3, Schedule A, Sheet 5 in of the Company's proposed tariff is the denominator to the equation started at the bottom of Sheet 4. To avoid any confusion, the Company will show the entire formula on the same page when it files a compliance tariff at the conclusion of this docket.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-37

Request:

Re: Section 3, Schedule A, Sheet 8, of the Company's proposed tariff, please explain why Item 3.9, Service Quality Performance Factor, offers no formula for the computation of the appropriate rate adjustment on a dollars per dekatherm basis.

Response:

The Service Quality Performance (SQP) Factor is the total penalty dollars filed in the annual Service Quality Report. This SQP factor is included in the formula shown in Item 2.0.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-38

Request:

Re: Section 3, Schedule A, Sheet 9, of the Company's proposed tariff, please provide the Company's assessment of the continuing appropriateness of the provisions of Item 6.0, Earnings Sharing Mechanism, after the conclusion of this case, and provide the data, analyses, studies and rationale upon which the Company relies to support its assessment of the continuing appropriateness of that mechanism as it is presently set forth in the Company's tariff.

Response:

The continuation of the earnings sharing provision is appropriate because it is intended to serve as a customer protection mechanism from excess Company earnings, while also providing proper incentives for the Company to maximize merger related and other savings opportunities for the benefit of the Company and customers. If the Company is successful in realizing savings in excess of those projected and included in its revenue requirement in this proceeding, all else being equal, customers would receive at least a 50% share.

Prepared by or under the supervision of: Mike Laflamme

Division Data Request DIV 6-39

Request:

Re: Section 4, Schedule B, Sheets 1 and 2, and Schedule D, Sheets 1 and 2, of the Company's proposed tariff, please:

a. Explain how a condominium association with gas supplied through one meter or a residential building with more than one, but less than six, units billed through a single meter would meet the LIHEAP criteria necessary to qualify for participation in the Company's low income discount rate program.

b. Detail the actions that would be taken by the Company, as well as the timing of such actions, if a customer served under either Rate 11 or Rate 13 fails to timely provide an annual certification of continued LIHEAP qualification.

Response:

a. Section 4, Schedule B, Sheets 1 and 2, and Schedule D, Sheets 1 and 2, of the Company's proposed tariff are based on the same descriptions as reflected in Schedule A and Schedule C except for the added provision about the customer being required to be eligible for the LIHEAP. Whether or not a condominium association would qualify for LIHEAP assistance will be determined by the State Office of Energy Resources (OER).

b. Subsequent to the Company's filing on April 1, 2008, the Company identified an alternative process for certifying customer eligibility utilizing an electronic transfer of data between OER and the Company. This process is what is used for identifying that a customer is eligible for LIHEAP and therefore subject to the low income protected customer termination rules. Accordingly, the Company will introduce revised Low-Income Heating and Non-Heating tariff sheets at the time of evidentiary hearings that will replace the sentence:

> "It is the responsibility of the customer to annually certify by forms provided by the utility, the continued compliance with the foregoing qualifications."

with

> "Compliance with the foregoing qualifications will be verified annually with the State Office of Energy Resources."

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-40

Request:

Re: Section 6, Schedule A, Sheets 3, of the Company's proposed tariff, please provide the workpapers, data, analyses and studies upon which the Company relies to support the updated conversion factors for No. 6 Oil and for No. 4 Oil, and explain what necessitates such updates at this time.

Response:

Please see the Company's response to Data Request DIV 6-31.

Prepared by or under the supervision of: Peter Czekanski

Division Data Request DIV 6-41

Request:

Re: Section 6, Schedule A, Sheets 3-5, of the Company's proposed tariff, please provide the data, studies, and rationales upon which the Company relies to support the appropriateness of continued application of the current levels of the Discount Factors by fuel type that are included on the referenced sheets of the Company's proposed tariff.

Response:

The Company's proposed tariff retains the existing levels of discount factors by fuel type at the current level. The Company has not undertaken any studies or reviews.

Prepared by or under the supervision of: Peter Czekanski