Kai Millyard Associates

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August 15, 2015

Ms Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, 27th floor
PO Box 2319
Toronto, ON
M4P 1E4

RE: EB-2015-0049 & 0029 GEC Follow-ups on Interrogatory replies

Dear Ms Walli,

In lieu of Mr Neme's availability for the Technical Conference and pursuant to the Board's letters of June 22nd and July 24th, please find enclosed 2 copies of the replies from Mr Neme to clarification questions received on Wednesday on Mr Neme's IR replies. These are being uploaded to the RES system and emailed to all parties.

Sincerely,

(Mr.) Kai Millyard
Case Manager
Green Energy Coalition

ec: All parties

GEC Response to Union Gas Interrogatory #1

Question:

Reference: L.GEC.1, Pages 9-10

> *Preamble: At section III.2, Mr. Neme states that "as Figure 1 shows, leading jurisdictions have already achieved savings levels (actuals for 2014) that are on the order of twice the average of what Enbridge and Union are forecasting to achieve…. "*

Question: Union would like to better understand the information provided in Figure 1.

a) For Vermont, Massachusetts, Rhode Island and Minnesota please provide the following for each sector (Residential, Commercial and Industrial):
   i. 2014 Throughput
   ii. 2014 Number of customers per sector
   iii. 2012 Sales volumes per sector
   iv. 2012-2014 annual natural gas savings in cubic meters achieved through DSM programs
   v. 2012-2014 cumulative natural gas savings in cubic meters achieved through DSM programs
   vi. 2012-2014 Natural Gas DSM program budgets (per sector and total portfolio)

b) Please confirm the extent to which the U.S jurisdictions cited in Figure 1 have a Large Volume customer mix (i.e., number of customers, customer type, throughput volumes, sales, etc.) comparable to that of Union's franchise area.

Response:

a) See the table below. Note that Mr. Neme does not have the requested 2014 data on sales and customers; 2012 values are presented instead. Considerable effort was required to assemble just the 2014 program savings and spending by sector, so that is the only year provided. Lifetime energy savings were not readily available for Minnesota.

   Note that in the course of preparing this response, Mr. Neme discovered two errors in his previous estimation of savings as a percent of sales for Minnesota.[1] The correct value is 1.04% rather than the 1.34% previously estimated. However, it should be noted that the corrected value of 1.04% masks significant variability within the state, ranging from about 0.3% for one utility to between 1.2% and 1.3% for two of the three largest utilities. It should also be noted that these values are presented as savings from DSM eligible customers as a percent of total sales from all customers. Large customers in Minnesota

[1] The prefiled evidence will be corrected shortly.

have an option to opt out of DSM programs and many have chosen to do so. Minnesota savings as a percent of sales to eligible customers is appreciably higher in some cases. For example, Excel Energy reported that its 2014 savings as a percent of eligible sales was close to 1.7%.

Some jurisdictions appear to allocate overhead and other costs not directly related to individual programs to a non-program budget category, whereas others appear to simply allocate all non-program costs to programs. That is why the budget row for "regulatory/other" is blank in some cases.

Finally, the blank in the low income budget and savings rows for Vermont Gas' does not mean that it does not address low income customers. Vermont Gas simply includes treatment of low income buildings in its Residential New Construction and Residential Retrofit programs. The spending on, and savings from, the low income participants in those programs are not separately reported, even though the programs have different strategies for the low income segments of the market. Also, it should be noted that as part of a long-standing Vermont state policy Vermont Gas customers pay a 0.5% gross receipts tax on their bills to pay for state administration of a low income home retrofit program. Neither the costs nor the savings from that program are included in the table.

		VT	MA	RI	MN
Number of Customers (2012)					
	Residential	39,917	1,411,717	228,487	1,364,174
	Commercial	5,535	119,742	21,442	125,831
	Industrial	38	6,027	56	1,225
	Total	45,490	1,537,486	249,985	1,491,230
Sales Volumes (m3 in 2012)					
	Residential	85,280,468	3,206,807,568	449,770,294	2,908,609,482
	Commercial	65,522,055	1,966,788,808	285,725,638	2,236,586,473
	Industrial	76,770,020	1,212,578,171	222,023,205	2,877,751,427
	Total	227,572,544	6,386,174,548	957,519,137	8,022,947,382
DSM Spending (2014)					
	Residential	$ 1,536,730	$ 98,897,476	$ 9,829,100	$ 23,545,912
	Low Income	$ -	$ 38,284,014	$ 4,246,800	$ 5,040,259
	C&I	$ 714,125	$ 33,914,584	$ 5,586,800	$ 12,156,533
	Regulatory/other			$ 370,900	$ 3,995,914
	Total	$ 2,250,855	$ 171,096,074	$ 20,033,600	$ 44,738,618
Annual m3 Savings (2014)					
	Residential	838,806	44,433,623	5,203,928	32,434,937
	Low Income	-	7,443,613	837,362	1,433,803
	C&I	1,776,524	29,231,704	5,541,184	49,782,447
	Total	2,615,330	81,108,941	11,582,474	83,651,187
Lifetime m3 Savings (2014)					
	Total	45,196,622	1,084,138,194	168,723,475	n.a.

b) Mr. Neme does not have access to detailed information regarding the characteristics of large customers in these jurisdictions. As noted in response to a) above, large customers in Minnesota are permitted to opt out of DSM programs. To his knowledge, the utilities in Vermont, Massachusetts and Rhode Island serve all customers, including large customers, with their programs.

SUPPLEMENTARY

References: Exhibit L.GEC.1 Page 10 Figure 1, Exhibit M.GEC.UNION.1

1. Please provide the numerator and denominator used for Vermont, Massachusetts, Rhode Island, and Minnesota's savings as a percent of sales provided in Exhibit L.GEC.1, Page

Witness: Chris Neme

10, Figure 1. Please point to the figures in Exhibit M.GEC.UNION.1 Page 3, and provide any other information that would help Union understand how GEC developed the figures.

2. In the table provided in Exhibit M.GEC.UNION.1, Page 3, please also include the number of DSM participants by sector (Residential, Commercial, Industrial).

3. For Vermont, Massachusetts, Rhode Island, and Minnesota, please provide a build-up (or references to where the build-up can be found) for each of their 2014 Annual m^3 Savings by sector (Residential, Commercial, Industrial). Please provide it at a measure level, so that it is clear:
    a. How many of each measure was delivered. For custom projects, please provide the number of projects.
    b. The amount of gas savings (m^3) that was claimed for each measure, including the input assumptions used to determine the claimed savings for each measure. For custom projects, please provide the total gas savings (m^3) and any pertinent input assumptions (including but not limited to free-ridership numbers and EULs)

SUPPLEMENTARY RESPONSE

1. See a copy of the table provided in response to Union #1 below, modified only to address part 2 of this request (i.e. adding number of customers). The numerators are the total annual m^3 savings in 2014 (e.g. 2,615,330 for Vermont) and the denominators are the total sales volumes in 2012 (e.g. 227,572,544 for Vermont). Both sets of values are circled.

Witness: Chris Neme

	VT	MA	RI	MN
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Residential	39,917	1,411,717	228,487	1,364,174
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Sales Volumes (m3 in 2012)				
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Commercial	65,522,055	1,966,788,808	285,725,638	2,236,586,473
Industrial	76,770,020	1,212,578,171	222,023,205	2,877,751,427
Total	227,572,544	6,386,174,548	957,519,137	8,022,947,382
DSM Spending (2014)				
Residential	$ 1,536,730	$ 98,897,476	$ 9,829,100	$ 23,545,912
Low Income	$ -	$ 38,284,014	$ 4,246,800	$ 5,040,259
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C&I	1,776,524	29,231,704	5,541,184	49,782,447
Total	2,615,330	81,108,941	11,582,474	83,651,187
Lifetime m3 Savings (2014)				
Total	45,196,622	1,084,138,194	168,723,475	n.a.
Participants (2014)				
Residential	2,030	590,667	539,032	907,271
Low Income		10,891	8,959	3,998
C&I	68	10,365	3,891	19,132
Total	2,098	611,923	551,882	930,401

2. See response to #1 above. Note that different utilities report participation in different ways; some utilities even report it differently for different programs. In many cases the numbers of participants often reflects numbers of measures installed rather than number of unique customers treated.
3. To Mr. Neme's knowledge, a breakdown of 2014 savings by measure is not publicly available for the Vermont, Massachusetts and Rhode Island utilities. However, Technical Reference Manuals (TRM) which document per unit savings, measure life and other assumptions may help address Union's interest. To Mr. Neme's knowledge, Vermont does not have a gas TRM. However, the Massachusetts and Rhode Island utilities have statewide TRMs that cover standard (i.e. non-custom) electric and gas efficiency measures. They can be found at the following links:

Witness: Chris Neme

- Massachusetts TRM: http://web1.env.state.ma.us/DPU/FileRoomAPI/api/Attachments/Get/?path=12-103%2f11212ngptapxn.pdf

- Rhode Island TRM: http://www.nationalgridus.com/non_html/eer/ri/RI%20PY2014%20TRM.pdf

The Minnesota utilities do appear to provide information in their annual reports regarding savings by measure. Links to those reports are as follows:

- Centerpoint: https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={122F2EE2-ACF8-45F1-94AF-B428CE0694C7}&documentTitle=20155-110013-01

- Great Plains Natural Gas: https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={5BD87C0F-936C-4023-A4B8-6BD3CB711721}&documentTitle=20155-110034-01

- Minnesota Energy Resources: https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={C60607B3-43F0-48DC-9071-82018B712281}&documentTitle=20155-109955-01

- Interstate Power and Light: https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={7620EB55-5CE2-45E8-ACC4-AC4F77E9F35F}&documentTitle=20154-108799-04

- Xcel: http://www.xcelenergy.com/staticfiles/xe-responsive/Admin/Managed%20Documents%20&%20PDFs/MN-DSM-CIP-Status-Report.pdf

GEC Response to Union Gas Interrogatory #2

Question:

Reference: L.GEC.1, Pages 24-25

Preamble: At section V.3, Mr. Neme notes that "a commercial cooling equipment upstream incentive program (blue bars) run by Pacific Gas and Electric in California for over a decade achieved nine times the level of participation that its former "downstream" customer rebate program design (red bars) achieved."

Question:

Union would like to better understand the information provided in Figure 3. Please provide further information and all relevant documentation regarding the following aspects of PG&E's program:

a) Program design
   i. List of the energy efficient equipment incented
   ii. Incentives provided for the upstream and downstream models for each year identified in Figure 3
   iii. Incremental costs of the equipment incented
b) Program delivery
   i. Who was the targeted upstream market actor for each year the upstream incentive model was used?
   ii. Were there any changes to marketing strategies/tactics when PG&E switched from a downstream approach to an upstream strategy and vice versa? If so, please discuss the changes.
c) Program evaluation
   i. Evaluation plans on this program
   ii. Net-to-Gross assessments (approach and results) for this program

d) Please clarify what is meant by "Tons of HVAC Equipment"

Response:

a) Program design
   i) PG&E and the other California IOUs that offer upstream HVAC incentives are continually updating the list of equipment for which upstream incentives are offered to reflect current market opportunities and developments. In its 2013-2014 Energy Efficiency Portfolio Program Implementation Plan, PG&E indicated that incentives would be available for at least the following equipment: [2]

[2] Pacific Gas and Electric Company 2013-2014 Energy Efficiency Portfolio Program Implementation Plan, Statewide Program, Commercial Program, PGE2101, April 23, 2013. (REVISED) p.146. http://eestats.cpuc.ca.gov/EEGA2010Files/PGE/PIP/2013/Clean/13-14_PGE2101_Commercial_PIP_5-29-13-CLEAN.pdf

Witness: Chris Neme

- Air-cooled packaged and split systems <5.4 tons of cooling capacity
- Air-cooled packaged and split systems >=5.4 tons of cooling capacity
- Water or Evaporative cooled systems <5.4 tons of cooling capacity
- Water or Evaporative cooled systems >=5.4 tons of cooling capacity
- Air cooled chiller equipment
- Water cooled chiller equipment
- Variable refrigerant equipment

ii) Mr. Neme does not have access to the specific incentive levels offered for the years in question. However, Mr. James Hanna, former PG&E staff member and now Technical Director of Energy Solutions, the firm that is providing technical support to PG&E on its upstream programs, indicated that the incentives that were paid to the distributors in the upstream model were identical to the incentives that had been previously paid to the end use customers in the downstream model.[3] Current incentive levels, and a variety of additional information regarding participation in the upstream programs, are available to participating distributors for a variety of upstream programs at www.cainstantrebates.com. The information is available on password-protected sections of the website that are only accessible once a participation agreement has been executed by the distributor.

iii) Mr. Neme does not have access to data on the incremental cost of the equipment in question.

b) Program delivery

i) From PG&E's 2013-2014 Program Implementation Plan, "This sub-program element offers incentives to upstream market actors who sell qualifying high efficiency HVAC equipment."[4] It is Mr. Neme's understanding that the upstream incentives were, and are available to the entire market of eligible HVAC distributors.

ii) Mr. Neme does not have access to specific information regarding any changes in marketing strategies that accompanied the shift to upstream incentives, however in its 2013-2014 Program Implementation Plan, PG&E states that "The primary outreach vehicle between the Upstream sub-program element and program participants is via the website: www.cainstantrebates.com and other electronic communication (e.g., e-mail and newsletters…Additional marketing and outreach activities exist through personal contact between the program staff and program participants."[5]

[3] Personal communication between Jim Hanna (Energy Solutions) and Jim Grevatt (Energy Futures Group), who was collecting this information under my direction, July 2015.
[4] Pacific Gas and Electric Company. p.143
[5] ibid. p. 154

c) Program evaluation
   i) The current evaluation plans for the upstream HVAC program can be found in pages 105-120 of the 2013-2014 Energy Division-Investor Owned Utility Energy Efficiency Evaluation, Measurement and Verification Plan.[6]
   ii) Mr. Neme does not have net-to-gross data for this program.

d) "Tons of HVAC equipment" refers to the cumulative capacity, in tons, of the equipment that receives incentives through the program.

SUPPLEMENTARY

Reference: Exhibit M.GEC.UNION.2

In response to part a) ii), GEC states *"Mr. Neme does not have access to the specific incentive levels offered for the years in question. However, Mr. James Hanna, former PG&E staff member and now Technical Director of Energy Solutions, the firm that is providing technical support to PG&E on its upstream programs, indicated that the incentives that were paid to the distributors in the upstream model were identical to the incentives that had been previously paid to the end use customers in the downstream model."*

Please confirm that the incentives were identical to the distributors and end use customers at a measure-level.

SUPPLEMENTARY RESPONSE

Confirmed.

[6] 2013-2014 Energy Division-Investor Owned Utility Energy Efficiency Evaluation, Measurement and Verification Plan Version 4, California Public Utilities Commission, Energy Division, San Francisco, California. November 14, 2014. Available for download at http://www.energydataweb.com/cpuc/home.aspx#.