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December 14, 2012

Filed on RESS and Sent by Courier

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, Suite 2700
Toronto, ON M4P 1E4

Your reference
EB-2012-0031

Direct line
+1 (416) 216-1927

Our reference
01015413-0031

Email
john.beauchamp@nortonrose.com

Dear Ms. Walli:

Union Gas Limited – 2013-2014 Large Volume Demand Side Management Plan Application (EB-2012-0337)

Please find attached the intervenor evidence for APPrO in connection with the above-noted proceeding, as follows:

A. the evidence of Todd Williams (Managing Director, Navigant Consulting Ltd.) with attached CV; and

B. the evidence of Sean Russell, an employee (Commercial Manager/Interim Plant Manager) of London District Energy Inc., whose parent company Veresen Inc. is a member of APPrO. Mr. Russell's CV is forthcoming and will be filed on RESS next week.

Union has requested that this evidence be labelled Exhibit C2.

Please do not hesitate to contact me should you have any questions or concerns.

Yours very truly,

Original signed by

John Beauchamp

JB/mnm

cc: All Interested parties

A

EXHIBIT 2:

DSM FUNDING OPTIONS FOR LARGE NATURAL GAS CUSTOMERS

Presented to

The Association of Power Producers of Ontario (APPrO)
25 Adelaide Street East, Suite 1602
Toronto, ON M5C 3A1

December 14, 2012

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NAVIGANT

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NAVIGANT

1 EXECUTIVE SUMMARY

Navigant was retained by the Association of Power Producers of Ontario (APPrO) to undertake research with regards to funding options for Demand Side Management (DSM) program costs applicable to large natural gas customers.

APPrO requested that Navigant undertake this study in response to a discussion before the Ontario Energy Board (OEB) regarding whether the natural gas utilities should offer large natural gas customers[1] an option that would allow them to opt-out of rate payer funded DSM program. Navigant understands that APPrO takes the position that these customers should be provided the ability to opt-out, while Union Gas (Union) is opposed to offering an opt-out program.

To support its position before the OEB[2] Union provided a literature survey to suggest that there are no "opt-out" programs in Canada but there are six jurisdictions in the US that do offer customers the option to opt-out and not participate in the DSM program. A number of jurisdictions also offer "self-direct" options, which Union argues are similar to the "Direct Access Budget Mechanism" included in its proposed large industry DSM program. For the purposes of this paper we define these options as follows:

- Under an "***opt-out***" program a qualifying customer which chose to opt-out would not contribute towards the cost of DSM programs and would not have access to technical advice or incentives offered as part of DSM programs.
- Under a "***self-direct***" program, a qualified customer would be able to directly access funds which it has paid towards DSM programs and use those funds for energy efficiency projects.

Navigant was retained to carry out two specific tasks:

1. A jurisdictional review to better understand the background and specific conditions for the opt-out provisions in the jurisdictions identified in the Union study; and
2. A survey of Union's large gas customers who are APPrO members to explore their recent and projected energy efficiency spending vis-à-vis any DSM funding provided by Union.

A review of jurisdictions across North America found that a number of US states and one Canadian province either exclude some classes of customers from the cost recovery mechanism (CRM) or allow some customers to opt-out of paying some or all DSM related costs. Where opt-out and self-direct provisions are offered they are generally based on customer size or connection conditions which serve as a proxy for size.

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[1] Customers defined by Union Gas as being within the T2 and Rate 100 rate class.

[2] EB-2012-0337 – Union Gas Limited – 2013-2014 Demand Side Management Plan for Large Volume Customers - Proposed Rate T1, Proposed Rate T2 and Rate 100

Comparing the circumstances of large gas customers in Ontario with those in other North American jurisdictions is complicated by the differences in both the regulatory and market structures.

- In the US comparable large natural gas customers have the right to physically interconnect to the inter-state gas pipeline system. The inter-state natural gas pipeline system is separately regulated by the Federal Energy Regulatory Commission (FERC) as opposed to state regulatory bodies. Inter-state pipelines in the United States generally do not offer CRM programs which are related to the distribution systems.
- Many US states do not have independent natural gas generators. Comparable plants burning natural gas to generate electricity would be part of a regulated electric utility. Such customers would not normally be charged a CRM for DSM costs.
- A survey of neighbouring jurisdictions found that most did not include large gas-fired generators in their DSM CRM. ***One of the considerations in the Minnesota Public Utilities Commission's decision to exclude generators from paying the DSM CRM was that this would effectively result in electricity consumers paying these costs twice***; once by paying the CRM as part of natural gas charges and again in paying for the electricity generated from that natural gas consumption.

For the large natural gas customers represented by APPrO, natural gas is almost exclusively consumed as a fuel to generate electricity. Natural gas is clearly a very significant operating cost and these firms pay close attention to managing their fuel consumption. In fact, 86% of the APPrO members surveyed indicated that they had an existing energy management program in place. While some members surveyed indicate that they have used utility DSM program, most (62%) indicated that they would have implemented the project within 3 years had they not received that assistance. Most utility DSM initiatives are not designed to address the technologies and processes used in power generation.

When asked if they had the ability to "opt-out" of utility provided DSM programs, 73% of APPrO members surveyed indicated that they would choose to do so.

2 JURISDICTIONAL REVIEW

Navigant carried out a review of jurisdictions which either: 1) allow large customers the option of not participating in natural gas or electric DSM initiatives and being excluded from cost recovery mechanisms (CRM) for such programs; or 2) simply exclude large customers from providing DSM funding for either natural gas or electric DSM programs.

The focus of the review was to gain a better understanding of the circumstances that allowed the jurisdictions identified in the Union report to be able to offer an opt-out option and how they align with the rate-making principles referred to by Union, that individual customers should not be able to pick and choose the distribution services that they want to use and pay for and that all customers within the rate class should be treated the same from a rate-making standpoint The research was extended to include customer groups that are excluded from the CRM to ensure that the OEB and stakeholders understand the full spectrum of DSM funding arrangements for large customers and to provide additional insight into the rate-making principles applied in other jurisdictions.

DSM Cost Recovery and Opt-out Mechanisms

The mechanisms used for cost recovery vary between jurisdictions. A survey of natural gas DSM programs found that: *"For those twenty-one gas utility companies that do offer gas DSM programs, there are different methods for cost recovery of the expenditures on the programs."* These included use of a systems benefit charge, a rate rider as well as other forms of cost recovery.

Where opt-out and self-direct provisions are offered they are generally based on customer size or connection conditions which serve as a proxy for size. For example, Arizona, Colorado, New Mexico, North Carolina, Ohio, Utah, Wyoming, Michigan, Minnesota, Montana, Ohio, Oregon, and Wisconsin all allow customers to opt-out or "self-direct" based on some level of energy consumption or demand[3]. Kentucky and Texas allow industries to self-direct if they are connected to the transmission system, while Washington qualifies customers to self-direct if they take power from a *"3-phase service at greater than 50,000 volts"*. Vermont bases its self-direct option on the level of energy efficiency charge (their CRM) paid. In Utah and Wyoming, eligibility is also based on size but the utility, Rocky Mountain Power, "allows customer to aggregate multiple meters to meet the programs minimum use requirements". Other states, such as Virginia, have excluded all customers over a given size (10MW in Virginia) from the state's energy efficiency law.

Regulators in some jurisdictions have based their decision to allow "opting out" based on a definition of the type of energy application or the customer's energy intensity. For example in Missouri allows industrial customers to opt-out of the utility's DSM initiatives and CRM fees if:

> *"they have a demand of at least 5,000 kW in the previous twelve months; … they are an inter-state pipeline pumping station, regardless of size; or they … they have a comprehensive demand*

[3] American Council for an Energy-Efficient Economy (ACEEE), Follow the Leaders, Improving Large Customer Self-Direct Programs, October 2011, Report Number IE112.

or energy efficiency program in place that is saving an amount at least equal to "utility-provided programs" and that they have a demand of at least 2,500 kW in the previous twelve months"

Similarly, Kentucky's DSM Statute "*allows industrial customers with energy intensive processes to opt-out entirely from participating in DSM programs. … Consequently, industrial customers who opt-out are not assigned the cost of a utility's DSM programs, and do not pay a DSM surcharge on their energy bills*".[4]

Table 1 below summarizes the different bases used for allowing opt-out or self-direct options in different jurisdictions. As the table indicates, some jurisdictions have indicated multiple reasons why customers may be allowed to opt-out or self-direct.

Table 1: Basis for Opt-out/Self Direct Option

Basis for Opt-Out or Self-Direct	Jurisdictions
Level of Consumption or Demand	Arizona, Colorado, New Mexico, North Carolina, Ohio, Utah, Wyoming Michigan, Minnesota, Montana, Ohio, Oregon, and Wisconsin, Virginia (all over 10MW excluded).
Transmission Connection	Kentucky, Texas
Service size (3 phase over 50kV)	Washington state
Size Aggregated over Multiple Meters	Utah and Wyoming
Amount of energy efficiency charge (CRM)	Vermont
Type of Load	Missouri, Kentucky

Issues Peculiar to Power Producers

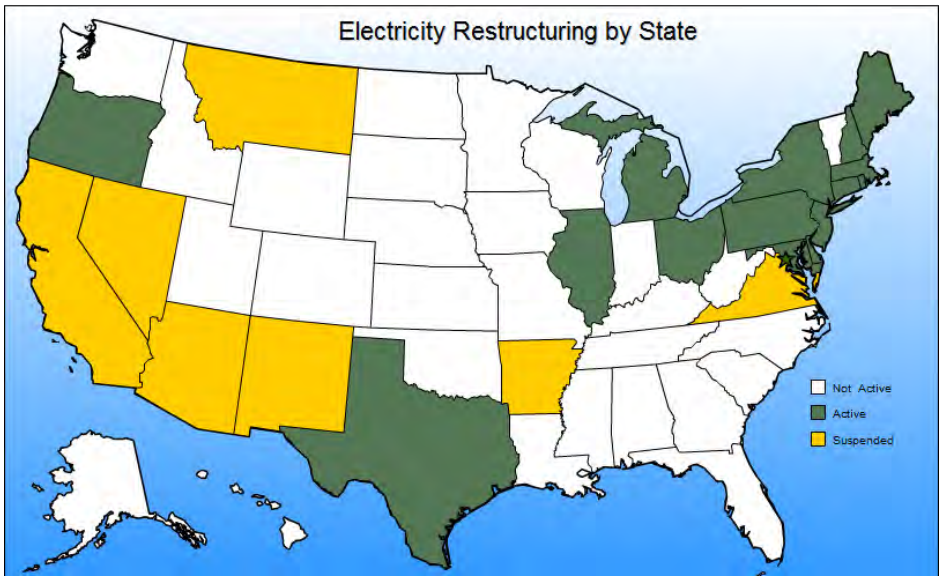
Electricity is essentially a manufactured product rather than a primary form of energy. Natural gas, by contrast, is a fuel which can be used to produce electricity. A survey of APPrO members, discussed in the following section, indicates that natural gas purchased by these "large customers" is primarily used as fuel in the process of generating electricity. In fact, on average the respondents indicated that 96% of the gas purchased was used for generating electricity.

Depending on the structure of the electricity market, natural gas-fired generators in a given jurisdiction may be independent organizations or may be owned and operated by an investor-owned or public utility; normally a regulated entity. As Figure 1 illustrates, most US states have not deregulated their electricity industry. This means that in the majority of US states there are no independent natural gas generators as we have in Ontario and this type of generation is operated by a regulated electric utility.

[4] ACEEE, Follow the Leaders, page 34

A review of DSM programs offered by natural gas utilities across North America found no examples of programs directed at customers who use natural gas to generate electricity.[5]

Figure 1: US Electricity Restructuring



Source: US Energy Information Administration: Status of Electricity Restructuring by State. http://www.eia.gov/cneaf/electricity/page/restructuring/restructure_elect.html

In the US, large industrial customers such as power producers have the option of directly accessing inter-state pipeline system, and the vast majority of natural gas fired electric generators in the US are attached to the inter-state natural gas pipeline system. Where generators are connected to a distribution system, the natural gas distributors often negotiate separate contract rates for such customers to avoid economic by-pass. As a result, electric generators using natural gas as fuel are often not included in general industrial tariffs or subject to cost recovery mechanisms such as a DSM CRM.

A survey of neighbouring jurisdictions[6] was completed to determine how cost recovery of DSM costs for large industries and natural gas-fired generators are treated.

- In ***Minnesota***, customers using natural gas for power generation are not charged the CRM if the generator is over 50 MW in size.[7] Smaller generators would be subject to the CRM depending on how their account is classified. Minnesota has allowed large industrial customers meeting a size threshold to self-direct since 1999 and has just extended this choice more directly to natural gas customers in 2011.[8] One of the

[5] See for example: Suzanne Tegen, University of Colorado and Howard Geller, Southwest Energy Efficiency Project , *Natural Gas Demand-Side Management Programs: A National Survey*

[6] A response was sought from the New York Public Service Commission but was not received within the time available for preparing this report.

[7] Personal communication with the Minnesota Public Utilities Commission.

[8] Prior to 2011, if a customer's electricity demand met the size threshold (20MW), their natural gas account was also deemed to qualify for "self direct".

considerations in the Minnesota Public Utilities Commission's decision to exclude generators from paying the DSM CRM was that this would effectively result in electricity consumers paying these costs twice; once by paying the CRM as part of natural gas charges and again in paying for the electricity generated from that natural gas consumption.

- In ***Michigan***, MichCon Gas has recently reached a settlement agreement[9] which extends the self-direct option to all "end use transportation" customers. Under this agreement, transportation customers would continue to pay a surcharge to support low income programs but will have the option to use the surcharge revenue that they would otherwise pay to MichCon in order to design, implement or enhance their own energy efficiency projects.[10] Customers were able to begin applying to the self-direct process in October 2012.
- ***Wisconsin*** does not have a "hard and fast policy" on the topic of allocating DSM costs and electric generating plants because most gas-fired generation interconnect to the inter-state pipeline system. The inter-state system is regulated by the Federal Energy Regulatory Commission (FERC) and does not have DSM programs because they typically do not serve individual end-use customers (although exceptions do exist for large industrial loads). In cases where a natural gas distribution company does serve a utility-sized generation unit the cost allocation is managed in the cost-of-service (COS) study, with no DSM costs being allocated to the generator. This is not a "hard policy" but appears to be fairly consistent across the utilities.
- ***Illinois*** natural gas distributors do not allocate DSM costs to large generators. The cost allocation occurs in the COS study and generators are not "users" of DSM services. As in Wisconsin, generators in Illinois always have the option to interconnect to the inter-state system, and the pipeline industry is quite competitive. In addition, natural gas distributors in Illinois have traditionally been provided latitude to discount distribution prices to attract load.
- ***Ohio*** enacted an *Energy Efficiency Bill* in 2009 (SB 221) that provides all customers with the ability to opt-out of energy efficiency programs in economic circumstances provided that such programs are uneconomic for that customer. To-date no one has requested to opt-out, but several larger customers served by First Energy are pressuring the company which may trigger the first filings in the near future. A possibility also exists that the current administration may be pressured to reverse that section of SB 221 and discontinue the provision of energy efficiency programs.

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[9] Corrected Settlement Agreement: In the matter of Michigan Consolidated Gas Company's Application for Approval of its Amended Energy Optimization Plan filed pursuant to the provisions of Public Act 295 of 2008, Case No. U-17050. Michigan Public Service Commission Website: http://efile.mpsc.state.mi.us/efile/cases2.php?all=yes&type=gas

[10] Michigan PSC, Case No. U-17050, testimony of Vicky Campbell, in U17050, pages 26-34.

Canadian Jurisdictions

In Ontario, the other large natural gas distributor (Enbridge) does not offer DSM programs for their very large[11] customers. We understand that the only customers currently in this rate class are five large customers which use natural gas to generate power. The DSM Plan submitted to the Board for 2012-2014 shows that the CRM unit rate variance for DSM is not applied to rate 125 accounts[12], though some portion of DSM costs associated with programs for low income customers may be paid by these customers.

The "Jurisdictional Review"[13] included as Appendix A in Union's "Demand Side Management Plan for Large Volume Customers" mentions that *"no other Canadian province currently offers an opt-out or self-direct program option"*.[14] We note that the Nova Scotia Utility and Review Board reviewed an application by Nova Scotia Power Inc. of a DSM rate rider request as part of NSPI's 2009 rate application. A settlement agreement relating to that application excluded the province's two largest industrial electricity customers from the proposed DSM cost recovery mechanism:

> *"It is understood that no payments can be made to customers for projects to be funded by an Energy Savings Account unless and until the Board provides a subsequent order on DSM cost allocation. The Parties agree that at a subsequent date, if the Energy Savings Account option is to be continued by a new administrator, any Party can seek changes or refinements to this option and/or recommend alternative options"*.[15]

The only other jurisdiction in Canada in which independent natural gas-fired electricity generators operate is Alberta, which does not have a CRM for DSM programs.

The only other jurisdictions in Canada in which independent natural gas-fired electricity generators operate are Alberta and BC. Alberta does not have a CRM for DSM programs. Questions were sent to the BC Utilities Commission regarding treatment of independent gas generators in that province; however, a response was not received in time to include in this report.

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[11] Classed as Rate 125 customers who use (>600,000 m^3/day). See: https://www.enbridgegas.com/businesses/accounts-billing/gas-rates/large-volume-rates/rate-125.aspx

[12] See table presented in EB-2011-0295, Exhibit B, Tab 2, Schedule 1, page 2 of 3

[13] "Review of Jurisdictions Which Offer a Self-Direct or Opt-Out Program Funding Mechanism for Large Customers".

[14] Page 2 of EB-2012-0337, Exhibit A, Tab 1, Appendix A, Filed: 2012-08-31.

[15] NOVA SCOTIA UTILITY AND REVIEW BOARD, IN THE MATTER OF an Application to approve Nova Scotia Power Incorporated's Demand Side Management Plan, NSUARB-P-884. Available on CanLi website: www.canlii.org

3 SURVEY OF LARGE INDUSTRY/GAS GENERATORS

A survey was completed of all large volume customers within the subject rate classes (T2 and Rate 100) who are members of APPrO[16]. A census approach was taken to obtain the fullest possible response given the relatively small number of customers. A copy of the survey form is presented in Appendix A and a summary of aggregated results is presented in Appendix B.

The focus of the survey was to determine the level of investment in energy management, in the recent years, the extent to which these customers have utilized DSM programs offered by the natural gas utilities and the interest in an "opt-out" provision. Given the unique nature of the APPrO members use of purchased natural gas, the survey also collected information on the extent to which purchased natural gas was used as fuel in power production compared to more conventional "industrial" uses.

For those customers that received DSM funding in 2011 and 2012, the survey also explored whether the energy management initiative for which the DSM funding was provided would have been undertaken on its own within 3 years from the time that the funding was received, independent of the rate payer funded incentive payments from the utility.

The survey was sent to 32 plant managers, representing 19 different companies. Fifteen responses were received from plant managers representing 12 different companies.

Respondents were asked to indicate what proportion of their natural gas purchases were used as fuel in power production. Fourteen of 15 respondents indicated that more than 95% of the natural gas consumed was used for power production. The average for all respondents was 96%.

Eighty-six percent of respondents indicated that they had an existing energy management program in place. Seven respondents reported that their energy management program had been in place for 15 years or more, while an additional 4 respondents indicated their programs had been in place for more than 3 years.

Almost half (47%) of respondents indicated that they had received some technical or financial DSM assistance through their natural gas supplier, while only 7% had received assistance from an electricity Conservation and Demand Management (CDM) program operated by the Ontario Power Authority or their local electrical utility. For those who had received incentives to assist in implementing a DSM project, 62% indicated that they would have implemented the project within 3 years had they not received that assistance. Twenty percent of respondents indicated that they track energy savings achieved through their energy management program, and 13% indicated that they use a third party to verify energy saving achievements.

When asked if they would choose to "opt-out" of utility provided DSM programs, 73% indicated that they would do so. If given a choice to "self-direct" their energy management costs only 13% indicated they would do so.

[16] Note that not all members of APPrO receive service from Union.

4 SUMMARY AND CONCLUSIONS

A variety of cost recovery mechanisms are used in jurisdictions across North America to recover costs associated with DSM initiatives. A number of US states and one Canadian province either exclude some classes of customers from the cost recovery mechanism (CRM) or allow some customers to opt-out of paying some or all DSM related costs. Where customers are excluded or opt-out of paying the CRM they are, in turn, ineligible for assistance through the DSM initiatives. Where opt-out and self-direct provisions are offered they are generally based on customer size or connection conditions which serve as a proxy for size.

Comparing the circumstances of large gas customers in Ontario with those in other North American jurisdictions is complicated by the differences in both the regulatory and market structures.

- In the US comparable large natural gas customers have access to the inter-state natural gas pipeline system. As a result they would either not be connected to the natural gas distribution system or be in a position to negotiate special contracts which would often exclude payment towards a CRM.

- It is even more difficult to make meaningful cross-jurisdictional comparisons for large natural gas customers, such as APPrO members, who use natural gas to produce electricity. In the majority of US states, generators burning natural gas to generate electricity would be part of a regulated electric utility. Such customers would not normally be charged a CRM for DSM costs, in part because such a charge would be viewed as adding to the cost of electricity produced, which in turn would include a CRM for electricity DSM initiatives.

- A survey of neighbouring jurisdictions found that most did not include large gas-fired generators in their DSM CRM. ***One of the considerations in the Minnesota Public Utilities Commission's decision to exclude generators from paying the DSM CRM was that this would effectively result in electricity consumers paying these costs twice;*** once by paying the CRM as part of natural gas charges and again in paying for the electricity generated from that natural gas consumption.

For the large natural gas customers represented by APPrO, natural gas is almost exclusively consumed as a fuel to generate electricity and natural gas is clearly a very significant operating cost. These firms pay close attention to managing their fuel consumption; in fact, 86% of the APPrO members surveyed indicated that they had an existing energy management program in place. As one respondent stated:

> *All of our resources are focused on the reliable and efficient operation of our facility. You could argue that our O&M budget is all spent to maintain the reliable and efficient operation of the facility*".

While some members surveyed indicate that they have used utility DSM program, most utility DSM initiatives are not designed to address the technologies and processes used in power generation.

Almost half (47%) of respondents to a survey of APPrO members indicated that they had received some technical or financial assistance through their natural gas utility. For those who had received incentives to assist in implementing a DSM project, 62% indicated that they would have implemented the project within 3 years had they not received that assistance. When asked if they would choose to "opt-out" of utility provided DSM programs, 73% indicated that they would do so.

APPENDIX A: SURVEY FORM

APPrO
ASSOCIATION OF POWER PRODUCERS OF ONTARIO

The Ontario Energy Board is currently considering funding options for Demand Side Management (DSM) programs for large natural gas customers. The Association of Power Producers of Ontario (APPrO) has retained Navigant Consulting Ltd. (Navigant) to conduct research related to this issue. We would appreciate your assistance in providing information on existing and planned expenditures on energy management by your firm as a member of this rate class. The survey consists of 10 questions about your firm's energy management activities.

All information provided as part of this survey will be protected as confidential unless except as authorized in question 9.

Questions related to this survey may be directed to:

Glen J. Wood, Associate Director | Energy
Navigant
333 Bay Street, Suite 1250, Toronto, ON M5H 2R2
Office: 647.288.5210 | Mobile: 905.869.3128
glen.wood@navigant.com

Mr. David Butters, President & CEO
The Association of Power Producers of Ontario (APPrO)
25 Adelaide Street East, Suite 1602, Toronto, ON M5C 3A1
david.butters@appro.org

Your name:	
Your title:	
Your phone number:	
Your e-mail address:	
Company name:	
Member of: *(circle one or both)*	**APPrO** **IGUA**

1. What proportion of your natural gas consumption is used as fuel in power production?

   % used to fuel power production _____

2. Does your firm currently have an energy management program in place?
   Yes / No
   a. If yes: How long has your firm's energy management program been in operation?

      _____ years.

3. In the table below, please indicate the following information for the past 3 years. If information is not available for a full 3 year period, please indicate the period covered by the information presented.

Spending on energy management

Cost Category	**Internal**	**External Resources**
Capital costs of efficiency investments		
Operating costs/Materials and Supplies) of efficiency investments over period.		
Incentives Received		
Source of Incentives		
Period over which this spending occurred (i.e. 2011, 2010-2011, etc.).	3 years Other _____	

Any additional information required to understand this investment: _____

_____

4. Has your firm received technical or financial assistance through a Demand Side Management programs offered by Union Gas (or your gas supplier).
   Yes/No

5. Has your firm received technical or financial assistance from a Conservation and Demand Management programs offered by the OPA or your electric utility? Yes /

No

6. If incentives from Union Gas were used to contribute to project costs, please indicate whether this investment would have been made within three years if these incentives had not been available. Yes / No

7. Does your firm track energy savings achieved through the program?

    b. If yes, please indicate the level of annual energy savings achieved over the past 3 years:

Energy Savings Achieved from Energy Management Initiatives

	Units	2009	2010	2011
Natural Gas	cu.m.			
Electricity	MWh			
Other forms of energy savings (please specify energy type): _____				

8. Do you use a third party to verify the level of energy savings achieved by energy management projects? Yes / No

9. Please indicate if the information provided in questions 3 and 7 is public (and can be attributed to your firm) or should be kept confidential.

    c. Question 3 (historic energy management expenditures): Public / Confidential
    d. Question 7 (planned energy management expenditures): Public / Confidential

10. Does your firm plan to invest in energy management in the coming 3 years?

    e. If yes, approximate expected investment per year.

11. If the option of "opting out" of DSM programs was provided by Union Gas would you do so? Customers opting out of the DSM programs would not contribute towards the

cost of these programs and would not have access to technical advice or incentives offered by Union.

Yes / No

12. If provided with a "self-direct" option would you choose to do so? Under a self-direct arrangement your firm would not contribute towards the cost of DSM programs offered by Union but would be required to invest an equivalent amount in energy efficiency investments and to demonstrate the savings resulting from those investments.

    Yes / No

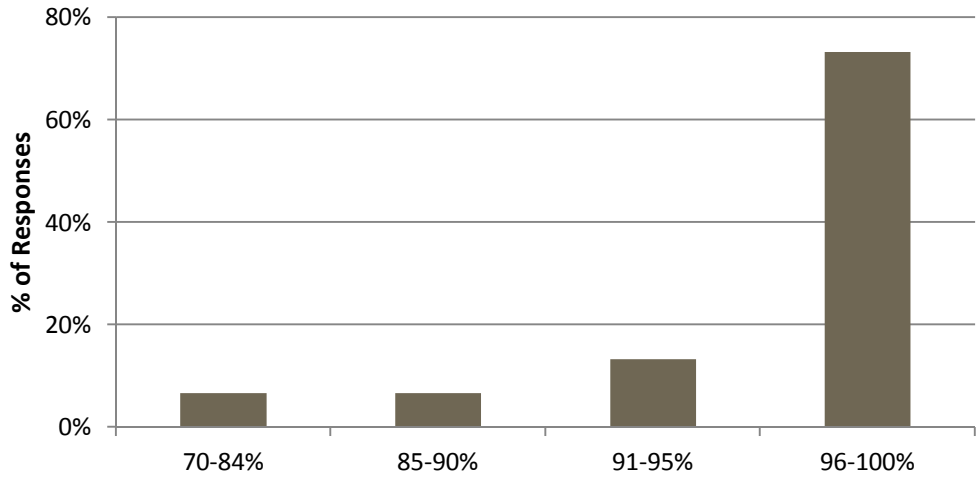
APPENDIX B: SURVEY RESULTS

Of all surveyed participants, 100% indicated they were a part of APPrO, with zero per cent being part of IGUA.

Question #1:

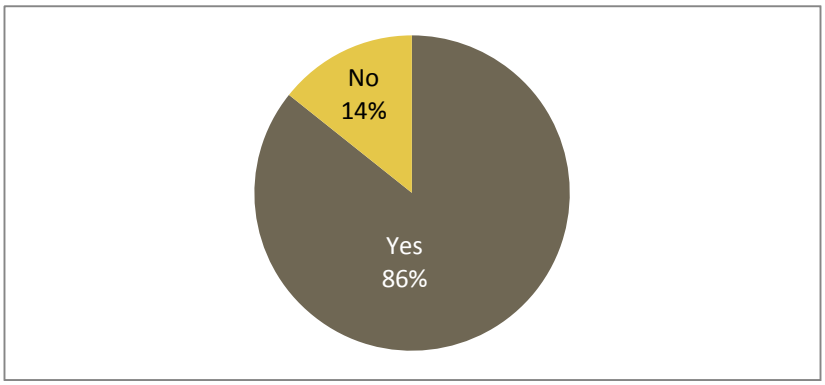
The average proportion of natural gas used as fuel in power production was 96%.

Figure 2: Proportion of natural gas used as fuel in power production



Question #2:

Figure 3: Firms that currently have energy management programs in place



Question #2a:

Table 2: How long has your firm's energy management program been in operation?

Year Range	# of Responses	% of Total
1-10 years	5	42%
11-20 years	4	33%
21-30 years	3	25%

Question #3:

Table 3: Spending on energy management for the past 3 years

Number Reporting Expenditures	Average Capital Costs of Efficiency Investments		Average Operating Costs Over Period		Incentives Received	Source of Incentives (*No. That Received Incentives*)
	Internal Resources	External Resources	Internal	External Resources		
8	$535,000	$499,956	$25,878	$19,667	$29,667	Union Gas (*3*)

Based on this small sample, incentives represented roughly 2.9% of the energy management investments made by this group.

Some of the comments received regarding energy management investments are listed below:

- New power turbine was purchased for gas turbine which improved heat rate. Operating costs/Materials was for replacement of leaking valves and defective steam traps.
- Installed VDF on auxiliary boiler (electrical and gas savings). Install heat trace management system (electrical savings).
- We have received a DSM payment for a construction project.
- Any project that may would be a fit we do anyway. We don't have the staff to track the information required to receive payment.
- Costs associated with steam trap repair/ replacement.
- We have no identifiable programs. Our business is energy conversion and we are constantly looking to operate in the most efficient manner.
- The primary product produced this facility is electrical power. All of our resources are focused on the reliable and efficient operation of our facility. You could argue that our O&M budget is all spent to maintain the reliable and efficient operation of the facility. We have never broken down the actual O&M budget in terms of what we specifically spend on efficiency.
- Large investment included a controls upgrade for gas turbines including new fuel valves and fuel management software and hardware.
- We have had one reimbursement of 15K from Union Gas on an engine tuning task.
- We keep a close eye on the heat rate.

Questions #4-8, & 10:

Table 4: Responses to questions 4-8

Question #		Yes	No
4	Has your firm received technical or financial assistance through a Demand Side Management program offered by Union Gas (or your gas supplier)?	23%	14%
5	Has your firm received technical or financial assistance from a Conservation and Demand Management program offered by the OPA or your electric utility?	3%	23%
6	If incentives from Union Gas were used to contribute to project costs, please indicate whether this investment would have been made within three years if these incentives had not been available	26%	9%
7	Does your firm track energy savings achieved through the program?[17]	10%	21%
8	Do you use a third party to verify the level of energy savings achieved by energy management projects?	6%	23%
10	Does your firm plan to invest in energy management in the coming 3 years? (For yes responses, see below)	32%	9%

Question #10, part 2:

Table 5: Approximate expected investment per year

Response #	Approximate Investment per Year ($)
1	250,000
2	20,000
5	40000
6	2,500
7	Our investment is ongoing.
12	250,000
15	735,000

[17] If individuals answered "Yes" to this question, they were asked to indicate the level of annual energy savings achieved over the past 3 years. No respondent answered this part of the question.

Questions #11-12:

Table 6: Responses to questions 11-12

	Yes	No
If the option of "opting out" of DSM programs was provided by Union Gas would you do so? Customers opting out of the DSM programs would not contribute towards the cost of these programs and would not have access to technical advice or incentives offered by Union.	73%	27%
If provided with a "self-direct" option would you choose to do so? Under a self-direct arrangement your firm would not contribute towards the cost of DSM programs offered by Union but would be required to invest an equivalent amount in energy efficiency investments and to demonstrate the savings resulting from those investments.	13%	87%

NAVIGANT

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Professional History

- Director, Navigant Consulting
- Manager, Resource Management International
- Manager, SRC International Pty. Ltd.
- Supervisor, Energy Management, Ontario Hydro

Education

- MBA – Ivey School of Business, University of Western Ontario, Canada
- B.Sc. (Honours) – Engineering Physics, Queen's University, Canada

Todd Williams

A highly capable professional with over twenty-five years of domestic and international energy market experience. Mr. Williams has expertise across a broad range of disciplines and hands-on DSM experience in both regulated and unregulated energy markets, including the design, implementation and evaluation of electricity and natural gas energy efficiency programs and portfolios and the design of regulatory frameworks and mechanisms to encourage DSM. Mr. Williams has served as an expert witness on DSM and has conducted numerous DSM potential studies, market analyses, end-use studies and evaluations covering the industrial, commercial and residential sector.

Professional Experience

» Led a review of BC Hydro's PowerSmart DSM planning and evaluation processes and framework as part of an internal audit.

» Directed the development of energy and peak demand saving and cost assumptions for over 100 prescriptive and quasi-prescriptive measures for use in natural gas and electricity DSM planning, cost-effectiveness and evaluation. The natural gas measure assumptions were reviewed by stakeholders and subsequently adopted by the Ontario Energy Board. The electricity measure assumptions were adopted by the Ontario Power Authority

» Led process and impact evaluations of several mass market and commercial programs for the Ontario Power Authority including the 2007 Summer Saving and 2008 Summer Sweepstakes reward programs, the Every Kilowatt Counts mass market coupon program and the Cool Savings HVAC incentive program. Feedback from participant and non-participant surveys in these evaluations were used in the development of energy and peak demand savings, incremental costing and net-to-gross ratios for specific program measures and for the overall program.

» Served as expert witness in a regulatory proceeding related to DSM funding, free-ridership and attribution.

» Managing the provision of Measurement and Verification (M&V) services to customers representing approximately 200 MW of demand response for a Canadian electricity agency.

» Evaluated four time-of-use pricing pilots for municipal electric utilities.

» Evaluated a water heater load control pilot program, including an assessment of customer response to changes in the reheating times for electric off-peak water heaters, customer satisfaction with their hot water supply after their heating time was modified and comparison of alternative approaches to inform customers of changes being made to their water heaters and assessed. Following the successful completion of the pilot, the utility introduced a new water heater tariff to 80,000 off-peak water heating customers in its service territory.

» Estimated avoided energy, capacity and transmission costs for Ontario in a study that was accepted by the Ontario Energy Board for use by all electricity distributors in Ontario.

» Analyzed the benefits of a province-wide implementation of advanced (smart) metering in Ontario. The project included an assessment of the impact of time-of-use rates and critical peak pricing on Ontario's system demand and the resultant impact on new generation requirements and supply costs, as well as the operational improvements that smart metering would enable for distribution utilities.

» Managed the development of a several program monitoring systems to support effective DSM program operation and track critical customer information for the various utilities and agencies.

» Supported the development of hourly load forecasts for the Ontario Power Authority in its development of Ontario's Integrated Power System Plan. The load forecasts were derived from a weather-normalized historic base year, with increments and decrements reflecting segment and end-use load growth and decrements for conservation and demand response impacts.

» Worked in Ontario Hydro's DSM group for ten years with responsibility for all aspects of DSM programs ranging from mass market rebate programs to large custom-project programs for industrial and commercial customers. Provided financial and management support to the Program Management Division with annual DSM spending in excess of $200 million, including development of budget and performance reports summarizing key performance parameters by program.

B

Union Gas' DSM Program – "Opt Out" Option for Large Industrial Customers

By Sean Russell

London District Energy, subsidiary of Veresen Inc. (Member of Association of Power Producers of Ontario)

For Filing in the Union Gas Limited – 2013-2014 Large Volume Demand Side Management Plan Application

EB-2012-0337

December 14th, 2012

I am the Commercial Manager and Interim Plant Manager at London District Energy's (LDE) combined heat and power/district energy facility located in London, Ontario (LDE Facility). The LDE Facility, a 17 MW power generation facility, also provides approximately 52 MW of incremental thermal energy to the London district energy system via steam and chilled water services to buildings in London's downtown. Veresen Inc. (Veresen), our parent company, is a member of the Association of Power Producers of Ontario (APPrO). I have been asked by APPrO to offer Veresen's views on an "opt out" option for Union Gas' (Union's) ratepayer funded DSM program.

I am an energy industry professional, with over nine years of diverse experience in energy conservation, green building technologies, renewable energy and cogeneration based district energy systems. I joined LDE and Veresen in 2011, and prior to this current role was employed at the City of London where I served in various roles since 2003, including Corporate Energy Manager. I have a Bachelor of Engineering Science from the University of Western Ontario and am a licensed Professional Engineer. Please see my attached CV for further details.

As Commercial Manager/Interim Plant Manager at the LDE Facility, I am very familiar with Union's ratepayer-funded DSM programs. LDE has have utilized Union's DSM incentives in the past (including various steam-related technologies). Having taken advantage of Union's DSM programs, I firmly believe that generators and other large industrial customers should be given the opportunity to "opt out" of these programs.

As sophisticated customers with our own profit-driven motives to encourage energy efficiency, we believe we are in a much better position than Union to promote demand management at our own facilities. Indeed, the Board has recognized this concept in its *Demand Side Management Guidelines for Natural Gas Utilities*, asserting that large industrial customers "possess the expertise to undertake energy efficiency programs on their own", and that ratepayer funded DSM programs for large industrial customers should no longer be mandatory (see section 8.2 of DSM Guidelines).

We at LDE believe that the Board should allow large industrial customers to "opt out" of Union's ratepayer funded DSM programs for the following reasons:

- <u>We are Self-Motivated to Seek Out Efficiencies:</u> Due to the energy intensive requirements of our facility, any cost savings that may result from natural gas savings initiatives are a top priority for our staff. As an electricity generator, LDE essentially engages in "converting" the energy content of natural gas into three forms of energy. The electricity, steam and chilled water produced from our facility are all made with natural gas as the primary fuel. Thus, we try to reduce any energy losses experienced between our plant and our customers (e.g. by reducing distribution system losses, we directly reduce the amount of steam that must be produced, subsequently reducing the amount of natural gas required for the process). Because natural gas is such an important part of this process, the financial impacts of its usage are always at the forefront of our planning process. We are already alert to these issues and do not require Union's incentives to bring such issues to our attention. Indeed, <u>it is our business</u> to seek out any natural gas savings and energy efficiencies as they affect our bottom line.

- <u>We Have Extensive Expertise on These Matters:</u> Because natural gas usage and any efficiencies and cost savings are vital to our operations and economic performance, we have developed significant expertise in these areas. The LDE Facility has been in operation for over 130 years – we are Canada's oldest district energy system. I myself, was previously the Corporate Energy Manager for the City of London, and was heavily involved with conservation activities and projects for the municipality. I am also a LEED-accredited clean building professional, and use this expertise to seek out natural gas savings wherever I can. Many of our staff and employees have 20-25 years of operating experiences, and are all mindful of energy efficiency and any opportunities to reduce natural gas usage. In addition, Veresen has an "Asset

Management Group" which is dedicated to reducing the cost of natural gas and seeking out any natural gas efficiencies at its plants. I am in constant contact with this group, which brings a large body of expertise to demand side management and natural gas-related issues. With a knowledgeable staff and such resources available to us, we do not believe that we require Union's expertise on such matters. Indeed, if anything, we at LDE believe that the employment hours required to interface with Union representatives on DSM-related matters could be better spent reviewing plant-specific operational issues for efficiencies.

- LDE is Committed to Demand Side Management and Natural Gas Savings and Does Not Requires Union's Assistance: LDE is completely committed to investing in reducing its natural gas usage and does not require Union's incentives to do so. LDE has invested in numerous measures over the past few years designed to reduce gas usage and increase energy efficiency. A few examples include:

    - *Condensate Return Line*: LDE invested in a condensate return line whereby steam condensate from four customer sites is now brought back to LDE's Facility for reuse. This project cost approximately $320,000, and we are expecting a rebate from Union of approximately $20,000. This provides a perfect example of a project that LDE would have supported regardless of Union's incentive or assistance.

    - *New Steam Traps*: LDE recently installed 60 new steam traps on the distribution side in order to save energy costs and improve overall performance (as discussed above, lower steam loss reduces the amount of steam that must be produced which, in turn, reduces the natural gas required to produce said steam). Union was not involved in this project in any way.

  I am not aware of Union's DSM program being a material factor in any decision by LDE (or any other Veresen-owned entity) to undertake an energy efficiency initiative.

- Support from Veresen's Other Ontario Plants: I have conferred with my counterparts at Veresen's other generation plants in Ontario. These include Veresen's East Windsor Cogeneration Centre (84MW facility) and York Energy Centre (400MW facility). While I cannot speak for any other T1 (or proposed T2) customers, I can confirm that officials at Veresen's other Ontario plants are also fully supportive of an "opt out" option.

While we appreciate Union's efforts on these matters, we at LDE do not believe Union's DSM program is imperative to our operations. We are self-motivated, have extensive expertise in these matters, and would be dedicated to seeking natural gas savings regardless of Union's involvement or assistance. The fact is, it is in our economic interest to do so. As such, we fully support the notion that large industrial customers be offered an opportunity to "opt out" of Union's DSM programs.