May 24, 2017

BY COURIER & RESS

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, Ontario
M4P 1E4

Dear Ms. Walli:

RE: EB-2015-0179 – Union Gas Limited ("Union") – Community Expansion Interrogatory Responses

Please find enclosed Union's responses to the interrogatories received in the above proceeding. These responses were filed in RESS and copies were sent to the Board.

As stated in its response to Exhibit C.SEC.11, a live Excel spreadsheet as requested has been provided to the requesting party via email, copying the Board. Other parties who wish to receive a copy of the document can contact Union directly.

Should you have any questions on the above or would like to discuss in more detail, please contact me at 519-436-5473.

Yours truly,

[Original signed by]

Karen Hockin
Manager, Regulatory Initiatives

Encl.

cc: EB-2015-0179 Intervenors
C. Keizer, Torys

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 1, Addendum, p.2, Lines 10-16 and Opportunity Assessment Summary, Exhibit A, Tab 1, Appendix D Updated – December 14, 2015

In its evidence, Union has noted that without the ability to cross-subsidize specific community expansion projects and absent other sources of funding, Union is able to expand in only four communities: Kettle and Stony Point First Nation and Lambton Shores, Milverton, Prince Township and the Delaware Nation of Moraviantown First Nation.
The Opportunity Assessment Summary in Union's original evidence, dated December 14, 2015, provided a list of 103 potential community expansion projects. In the summary, the Natural Profitability Index (PI) of Lagoon City (Orillia), Hidden Valley, Huntsville and Santa's Village, Beaumont Dr, and Bracebridge are higher than the Delaware Nation of Moraviantown First Nation.

a) Please explain why Union has selected the Delaware Nation of Moraviantown First Nation as a community expansion project as compared to the three communities listed above that have higher PI ratios.

b) What would be the capital cost, forecasted attachments and the SES term if Union were to offer natural gas distribution services in Lagoon City (Orillia)?

Response:

a) Union would like to clarify a statement in the preamble of the question. Union's evidence did not indicate "without the ability to cross-subsidize specific community expansion projects and absent other sources of funding, Union is able to expand in only four communities: Kettle and Stony Point First Nation and Lambton Shores, Milverton, Prince Township and the Delaware Nation of Moraviantown First Nation". Rather, Union stated in its evidence that absent other direct sources of funding, the number of economically feasible communities identified in its initial filing would be "significantly reduced".[1]

   For its initial community expansion proposal filed in July, 2015, Union selected Delaware Nation of Moraviantown due to a high level of interest expressed from the First Nation Band leadership, coupled with feasibility level costing that indicated the project would require a shorter surcharge period than the other projects noted. This is evident from the positioning of the Moraviantown project relative to the other projects in Exhibit A, Tab 1, Appendix D of the initial evidence. Although its natural P.I. was lower than the other projects noted, Union

[1] EB-2015-0179 Exhibit A, Tab 1, Addendum, p.2

selected it because it provided more flexibility if the Board did not approve Union's proposed P.I. at 0.4. For example, had the Board instead approved a minimum P.I. of 0.6, Moraviantown required fewer months of expansion surcharge (50 months) than the other projects.

Subsequent to reviewing the EB-2016-0004[2] Decision, Union contacted Moraviantown to explain that the project would require a grant or Aid-to-Construction along with a 40 year expansion surcharge. The First Nation Band leaders asked that the project remain in Union's application even if it was contingent on receiving a grant, and in recognition of the Band's interest and the advanced stage of project development, Union has supported that request.

b) The requested information cannot be provided because Union has not completed a detailed assessment of feasibility (costing and market surveys) for the Ramara Township-Lagoon City project.

[2] OEB Generic Community Expansion proceeding

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2A
Exhibit A, Tab 2B
Exhibit A, Tab 2C
Exhibit A, Tab 2D

Union's updated evidence indicates that in the area of Lambton Shores, the Ipperwash Beach will be the only community to receive natural gas service. Union similarly indicates that it intends to service specific streets in the Delaware Nation of Moraviantown area.

Are there any other communities that Union may expand its service to in the area of Lambton Shores in the future? Will Union expand its service in Moraviantown?

Response:

Union may expand in the future beyond the identified core areas if there is interest and if it is economical to do so.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 1 Addendum, pp.6-10 and p.15

Union has proposed the implementation of a volumetric-based System Expansion Surcharge (SES) to recover the cost of expansion into the four new communities. Union has proposed the SES for a maximum duration of 40 years or until the project reaches the minimum PI of 1.0. For Kettle and Stony Point First Nation and Lambton Shores, the SES will expire in 2029, for Milverton, Rostock and Wartburg, the SES will expire in 2032 and for Prince Township, the SES will expire in 2039.

a) Please confirm that the customers in the proposed expansion communities will pay the surcharge until a P.I. of 1.0 is reached and that Union will remove the SES as soon as the P.I. of 1.0 is achieved. Is it possible for Union to remove the SES mid-year, if applicable?

b) If Union is not able to achieve the forecasted attachments or volumes, would it extend the SES beyond the proposed period to reach a minimum PI of 1.0?

c) Considering the risk of attaching lower than forecasted customers in the proposed communities, for the term of the surcharge period, please confirm whether existing customers of Union will bear the risk of any unrecovered amounts to meet a PI of 1.0?

d) Considering the OEB's Decision in the Generic Community Expansion Proceeding (EB-2016-0004), please confirm that Union's proposal to provide natural gas in the four communities will not require any contribution from Union's existing customers prior to and after the expiration of the SES.

e) To the extent future upstream system upgrades are required in the four communities; please clarify if only new customers will pay for related upgrades through the SES or whether Union's existing customers will cover the cost of upgrades too?

f) Please clarify Union's approach to the SES and the term of the SES for "extension customers" that may be attached with additional facilities at a later date that are not included in the current attachment forecasts for the four communities. How will Union determine which facilities are "paid off" first? Could the extension customers have to continue paying an SES longer than the initial customers? Could the initial customers have to continue paying an SES longer because of the additional facilities being added?

Response:

a) Not confirmed. The SES term has been set at the number of calendar years the SES revenue is required for the project to achieve a P.I. of 1.0 over its full 40 year DCF period. For example, for the Prince Township project, the P.I. reaches 1.0 in year 38, but the SES will only be collected until the end of year 22. If Union had set the SES term at 21 years rather than 22 years, the project would not reach a P.I. of 1.0 over 40 years.

   Union has not proposed that the SES terms expire part way through a year for several reasons. The first is that meter reads for each customer in a project area are likely to occur at various times throughout a month, which would then require a high degree of estimation in determining exactly when during the course of a year the SES could be discontinued. Similarly, because of the variation in meter reading schedules, Union's month-end revenue estimates would be less accurate than year-end figures. Secondly, the impact of terminating the SES at year end as opposed to a few months earlier is not significant. The NPV of the four projects ranges from $0 to $73,000, and for all four projects totals $154,000. This amount is not significant relative to the capital cost of $11.36 million.

b) No. Union would not extend the SES term. Union does not intend to update the SES rate, amount or term, during its duration, unless provincial grant funding becomes available which would enable the SES term for a project to be reduced[1]. Union does not propose to make any other adjustments for several reasons:

   - Customers will look for as much certainty on rates as possible in making the decision to convert to natural gas. The potential for Union to make adjustments to the SES rate, amount or term, would increase uncertainty. Customers who convert will have done so based on the rates Union has communicated, and Union is reluctant to in the future break the commitment it made on the SES at the time the customer made a decision to attach.

   - The SES is designed as a means to recover the portion of the up-front capital costs of the project that base Rate M1, 01, M2 and 02 delivery charges will not recover. Those costs are largely incurred for the mains in year 1, along with the customer's service and meter in the year a customer connects. For this reason any necessary adjustments related to the capital costs of a project would be known in the early years of the project. If adjustments in the SES rate were driven in the early years as a result of variances in capital costs, the Board's suggested minimum 10 year rate stability period would be impeded.

   - Any variance in SES revenue from that forecasted would be attributed to the utility during the 10 year forecast period.

c) Union is proposing that it would bear the risk of fewer customers than forecasted attaching to the system through the 10 year customer forecast period. Throughout that period, in any rates

[1] EB-2015-0179 Exhibit A, Tab 1, Addendum, p. 13

application for ratemaking purposes, Union's forecasted number of customers for the expansion communities would be the Board approved EB-2015-0179 forecasted attachment level. The same approach will be taken for SES related revenue. Consequently, pre-existing customers of Union will not bear the risk of underachievement of the attachment forecast through that period.

Following conclusion of the 10 year forecast period, Union will continue to bear customer forecast risk until such time as it otherwise seeks approval from the Board in a rates application. In the future rates application Union would seek approval to reset the historical expansion area customer forecast at actual levels for ratemaking purposes. The Board would then have the opportunity to approve or adjust any resulting rate impacts as part of the rates application process.

Annual reporting at the project level for the duration of the customer forecast period at the annual stakeholder meeting, as proposed by Union, would provide ongoing information on forecast achievement levels[2].

d) In the EB-2016-0004 Decision the Board indicated that "there is no need to modify the parameters or depart from the principles embodied in E.B.O. 188[3]". E.B.O. 188 requires the use of a discounted cash flow analysis ("DCF") to demonstrate that a project meets the minimum required P.I. over the period of the DCF. Each of the four proposed projects meets this requirement with a minimum P.I. of 1.0 over a 40 year period.

   A project P.I. of 1.0 indicates that the project is self-financing and that existing customers will not incur a rate increase over the long term as a result of the project. However, even with a project P.I. of 1.0, a revenue deficiency or revenue sufficiency still exists in each year of the project. Union will treat the community expansion projects no differently than every other expansion project (i.e. a new housing subdivision in an established service area) and include the impacts of the project in future rate applications.

e) Union assumes the reference to "future upstream upgrades" is related to some future reinforcement or main extensions added within the project areas. Reinforcement would be treated the same as any other reinforcement in Union's system. By virtue of the Board's E.B.O. 188 requirement to manage the Rolling P.I. to a level of 1.0 or better, pre-existing ratepayers, including both those in currently serviced areas and those already attached in the expansion communities, are not harmed over the long term. Future main extension within the project areas will be treated as noted in part f) below.

f) The initial customers will not be required to continue paying an SES for a longer term because of additional facilities being added to the system in the future. If the system installed as proposed is extended in the future, Union would apply the initial SES term for the

[2] EB-2015-0179 Exhibit A, Tab 1, Addendum, p. 12
[3] EB-2016-0004 Decision with Reasons, p. 18

community to any customers attaching to that extension. For example, if in 2030 a main extension is added to the Milverton system, customers who attach to that extension would be required to pay the SES until the Milverton project SES termination date of December 31, 2032. In contrast, if the extension occurs in 2033 or later, any customers who attach would not pay an SES charge. The SES term for the community will not be extended in order to make a future main extension economic.

It may be possible that at some time in the future another community expansion project, fed from the Milverton system, can be made economic by applying a new SES term to that future project. In that case, the SES term for customers in Milverton would remain unchanged, and Union would be required to apply to the OEB for a new SES charge and term for any customers who attach to the new project.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section A, p.7

Union notes that for the Lambton Shores expansion 'The PI is slightly above 1.0 due to rounding effects of the SES term which will end on the calendar year end of Dec 31st."

Please explain the rationale for ending the SES on the calendar year, rather than when a PI of 1.0 is reached.

Response:

Please see the response at Exhibit C.Staff.3 a) for Union's rationale for terminating SES charges at the end of a calendar year.

For the Kettle and Stony Point and Lambton Shores project, the P.I. reaches 1.0 in year 30, and the P.I. reaches 1.03 over 40 years. The SES will be collected for 12 years. If Union had set the SES term at 11 years rather than 12 years, the project would not reach a P.I. of 1.0 over 40 years.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 1 Addendum, p.13, Lines 4-7 and Opportunity Assessment Summary
Exhibit A, Tab 1, Appendix D Updated – December 14, 2015
Exhibit A, Tab 2, Section C, p.3, para.9 – Evidence 2015-12-14
Exhibit A, Tab 2, Section C, p.3, para.9
Exhibit A, Tab 2, Section C, p.6, para.28 – Evidence 2017-03-31

Union has indicated that the Delaware Nation of Moraviantown First Nation expansion project (Moraviantown) is contingent on receipt of Provincial grant funding or another means of direct Aid-to-Construction to meet a minimum PI of 1.0.

In its original evidence, Union indicated that if the application is approved, 60 customers in the Delaware Nation of Moraviantown would have natural gas service by year 3 of the project. However, in its updated evidence, Union has forecasted that 38 customers in the project area will have nature gas service by year 10 of the project.

a) What would be the capital contribution per expansion customer if the forecasted customers in the Delaware Nation of Moraviantown First Nation were to make the required upfront capital contribution of $311,467?

b) Union has stated in paragraph 31 (Tab 2, Section C) that if a direct Aid to Construct, such as a Provincial Grant is not received then the Moraviantown gas expansion project would not proceed. If a direct Aid to construct is not received for Moraviantown, could Union increase the rate of the SES? Did Union consider other options to make the project viable?

c) Please provide reasons why Union did not choose to complete a customer survey for Moraviantown?

d) Please explain why the forecast attachments in the updated evidence have changed from the previous evidence.

Response:

a) The customer forecast has 38 attachments through year 10 for the Delaware Nation of Moraviantown First Nation Project. If all forecasted attachments made a capital contribution (Aid-to-Construction) in advance the average capital contribution per attachment would be:

$311,467 / 38 = $8,197

b) Union considered an increased SES specific to this project, but proposed the $0.23/$m^3$ because it has been set at a level where savings are evident if switching from propane, oil or electricity, to natural gas. If Union were to increase the SES, annual savings relative to other fuels would be impacted, and the simple payback periods for converting would be extended. In this case the customer forecast would be negatively affected. Union tested this concept in the other three proposed project areas by testing various surcharge amounts in the residential telephone surveys conducted with customers in February, 2017. Based on results from those surveys, the likelihood of connecting dropped by 9% to 11% for each area when the SES was increased from $0.23/$m^3$ to $0.40/$m^3$. Union has no reason to believe that results of testing various SES values would be different for the Moraviantown project. For this reason a higher value was not proposed.

   As an example, if Union were to set the SES at $0.35/$m^3$ for 40 years, annual after tax savings for an average home compared to the lowest cost alternative ($0.55/litre nominally priced propane) would decrease from $1,017 to $719, and the simple payback period for a forced air furnace replacement and a water heater would increase from 6.3 to 9.0 years. A change of this nature, assuming the customer forecast was not affected, would still result in a grant or Aid-to-Construction requirement for the project of $193,516. Union believes a change in pay-back periods of this magnitude would result in decreased attachments.

c) Due to the small scope of the Moraviantown project, Union relied on conversations with Band leadership and applied attachment rates similar to other Indigenous Nations projects completed in Southwestern Ontario.

d) The attachment rate has been reduced because, in Union's opinion, it provides a more realistic reflection of the potential for this community. Ontario's Fair Hydro Plan (announced March 2, 2017), which indicates First Nations will not be charged the delivery component of the bill along with other reductions, was a factor that supported a reduction in the attachment forecast for Moraviantown.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section A, pp.3-5 Updated (2017-03-31)
Exhibit A, Tab 2, Section A, p.3 (2015-12-14)

In Union's original evidence dated December 14, 2015, Union noted that if the application to provide service to Kettle and Stony Point First Nation and Lambton Shores (Lambton Shores) is approved, 281 customers in the project area will have natural gas service by year 10 of the project. In its recent evidence, Union forecasts that 364 of the potential 512 customers in the project area will have natural gas service by year 10 of the project.
In the updated evidence Union notes that it had 13% survey response rate and that 69% of those respondents indicated their interest in obtaining natural gas service.

a) Please reconcile the two numbers for forecast attachments in Lambton Shores and provide reasons for a larger forecast attachment rate in the updated evidence as compared to the evidence of December 2015.

b) Did Union conduct additional market research in the Lambton Shores project area to determine the forecast of 364 attachments?

c) Please discuss if a 13% response rate is statistically representative? What confidence does Union have in the accuracy of the forecast based on the results of this survey? Did Union use any alternative methods of reaching customers to determine their interest, such as through mail outs or open houses?

d) In Union's experience, do more or less customers typically end up converting than they initially said they would through these types of surveys?

Response:

a) In its original EB-2015-0179 Community Expansion proposal, Union determined an overall attachment forecast by using data from the July 2015 survey. Customers who indicated that they were extremely likely or very likely, and 50% of those who indicated they were likely to convert to natural gas were included in the attachment forecast. In the 2017 update, Union utilized data from customers that indicated they were extremely likely, very likely and likely to convert from a February 2017 survey. This accounts for the difference in forecast rates.

b) Yes. Union re-surveyed the Lambton Shores project area in February 2017. Results are provided in the response at Exhibit C.SEC.5, Attachment 2.

c) A total of 48 telephone and door-to-door interviews were completed from a list of 168 home and business owners in Lambton Shores, yielding a +/- 12.0% margin of error at the 95% confidence level. The margin of error for Lambton Shores is relatively high, but the results are consistent with a similar survey completed in 2015.

   Union did not use any alternative methods of reaching customers to determine their interest. Union took a sampling approach. Telephone and door-to-door surveying were determined to be the best approaches in terms of achieving a random sample in this case.

d) In Union's recent experience, the number of customers who actually convert is within the margin of error of those who indicated they would convert on a survey. The Red Lake project, which went into service in 2012, provides an example. For that project 1,175 services had been installed by the end of 2016, in comparison to 1,183 forecasted attachments. This represents 99.3% forecast achievement, which is well within the margin of error of the survey Union conducted to develop the attachment forecast.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section A, p.5 Updated (2017-03-31)
Exhibit B. Staff 11, 2015-12-09

In its updated evidence, Union has forecasted 262 existing residential customers that will be attached in Lambton Shores by year 10 of the project. Union has indicated that the forecast has been developed using results of the telephone and door-to-door survey.
Please indicate when the telephone and door-to-door survey was completed.

Response:

The telephone and door-to-door survey was completed in February 2017.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section B, p.2, para.5

Union has proposed to serve the Township of Perth East, which includes the town of Milverton and surrounding areas. The evidence notes that Union is also planning to develop a local distribution network which will service approximately 185 customers in the first year of the project. These customers were not known at the time of filing.

a) Are the 185 customers referred to in the evidence included in the 739 customers that Union has forecasted it will serve in the project area by year 10 of the project?

b) Does Union have any further information on where the 185 customers will be located or how they will be served at this time?

c) In paragraph 24 of the evidence (Tab 2, Section B), Union has indicated that it has conducted an updated survey in the project area. Did Union survey the 185 customers that will be connected through a local distribution network?

Response:

a) The 185 customers are those forecast to connect in the first year of the 10 year forecast. The 185 customers indicated are included in the 739.

b) The 185 customers will be located within the project area and are expected to attach within the first year.

c) The updated survey was conducted in the described area of the Milverton, Wartburg and Rostock project. The names of specific customers who were contacted were not recorded.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section B, p.3, Union Evidence 2017-12-14
Exhibit A, Tab 2, Section B, p.4, Updated (2017-03-31)

In its original evidence Union proposed natural gas expansion in the community of Milverton and businesses between Sebringville and Milverton. In its updated evidence, Union has proposed expansion in the communities of Milverton, Rostock and Wartburg as well as the residents and businesses between Sebringville and Milverton.

Please confirm whether the scope of the expansion project has changed as compared to the proposal in the original evidence. If yes, please explain the changes and how they impact costs and forecast attachments.

Response:

Confirmed. The scope has changed to include the hamlets of Rostock and Wartburg. The cost increased by approximately $700,000 and the attachment forecast increased by 107 customers for Rostock and Wartburg.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section B, pp.4-5, para.22, Union Evidence 2017-12-14
Exhibit A, Tab 2, Section B, pp.4-5 Updated (2017-03-31)

In Union's original evidence, it indicated that based on experience of attachment rates with past projects, Union had taken a conservative approach and reduced the attachment forecast in the Milverton community to 59% (extremely likely, very likely, 50% of likely) for the existing residential, small commercial and medium commercial customers. However, in its updated evidence it has used a 74% attachment rate reflecting the top 3 box scores (extremely likely, very likely and likely to convert).

a) Please confirm that Union has used a different methodology to forecast attachment rates in its updated application as compared to the original application. Please provide reasons for the change in methodology.

b) Please provide the forecasted attachment rate using the results from the 2017 survey and the methodology adopted in the original evidence.

c) Has Union followed a similar approach for forecasting the number of attachments for all the four proposed communities in its application? If yes, please provide a rationale for the change in the methodology to forecast attachment rates as compared to the original application filed in July 2015.

Response:

a) Union did change its methodology for determining attachment forecasts. Please see the response at Exhibit C.Staff.6 a).The rationale for the change was that in its original EB-2015-0179 proposal, Union applied a conservative approach to forecasting customer attachments because the initial filing proposed that ratepayers would bear the risk for forecast error. As per the EB-2016-0004 Decision, forecast attachment risk is now borne by the utility, and Union feels confident in achieving the updated attachment forecast[1].

b) Due to the difference in survey design, it is not possible to provide the 2017 Milverton survey results using the methodology adopted in the original evidence. Union tested three surcharge scenarios ($500, $750, and $1000 annually for a typical residential customer) in the 2017 survey; this design does not allow "extremely likely", "very likely" and "likely" responses to

[1] EB-2016-0004 OEB Decision (November 17, 2016) p.20

be tabulated separately for the $500/year surcharge level. The 2017 results can only be tabulated as a "Top 3" box score.

c) Yes. Union followed a similar approach for other projects surveyed in 2017, which include Lambton Shores and Prince Township. Union took a different approach for Moraviantown as noted in the response at Exhibit C.Staff.5 c).

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section B, p.5, para.28

Union has noted that based on discussions with the Milverton Business Association, Union has assumed 100% of the large commercial and seasonal customers will convert to natural gas.

a) Please provide the basis for using an attachment rate of 100% for large commercial and seasonal customers.

b) How many large commercial and seasonal customers are expected to convert to natural gas and what is the expected timeframe?

c) Did Union conduct a survey of large commercial and seasonal customers to confirm that 100% of the customers are likely to convert to natural gas?

Response:

a) Conversations were held with the commercial customers and the local Business Association in the Milverton area. This formed the basis for Union's 100% attachment rate for these types of customers.

b) Union expects a total of six large commercial customers and one seasonal customer to connect within the first two years.

c) No. A survey was not completed. Union had conversations with five of the seven large commercial and seasonal customers.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section B, para.46

The evidence states that Union has included an advancement charge for the Milverton expansion project. The project economics includes a system advancement cost of $126,500. The cost represents the net present value of the cost for the change in timing of reinforcement of the upstream system supplying the particular area.

Please explain how Union arrived at an advancement cost of $126,500. Please also provide the background calculations used to arrive at the specific charge.

Response:

The advancement cost is the difference of the present value ("PV") of the revenue requirement for the planned reinforcement project compared to the PV of the revenue requirement for the advanced reinforcement project. The advanced project provides additional transmission revenue for the period between the planned reinforcement and the advanced reinforcement. This is included in the PV of the advanced reinforcement.

For the Milverton, Rostock and Wartburg project, Union had planned a reinforcement project for 2022 at a capital cost of $1.98 million to satisfy other growth in the area. The community expansion project required that planned reinforcement project be moved forward to 2020 at a capital cost of $1.87 million to maintain growth plans.

The net present value ("NPV") of the required revenue for the planned reinforcement project is $1,957,786. The NPV of the required revenue for the advanced reinforcement project is $2,083,298. The difference between these two figures is $126,512.

Costs in the analysis were rounded to $126,500.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section C, p.3, para.13

Union has indicated that the project to serve the Delaware Nation of Moraviantown is contingent upon approval of a grant from the province or the payment of an aid to construct from another party. In absence of funding, the project will not proceed.

Did the Delaware Nation of Moraviantown apply for Federal funding? If yes, please provide details.

Response:

Union is not aware if the Delaware Nation of Moraviantown Band Council requested any funding from the Federal Government. To the extent they have or will do so, any up-front funding would first be used to satisfy the Aid-to-Construction requirement to make the project economically feasible. If the funding exceeded the Aid requirement of the project, the residual funding would be used as Aid-to-Construction to reduce the 40 year SES term.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section D, p.2, para.8 – Evidence 2015-12-14
Exhibit A, Tab 2, Section D, p.3, para.8 – Evidence 2017-03-31

In its original evidence, Union forecasted 242 customers that would convert to natural gas in the Township of Prince by year 10 of the project. In the updated evidence, this number has been revised to 291 while the number of potential customers has remained constant during this period.

Please explain the reasons for the change in the number of forecasted customers that are expected to convert to natural gas.

Response:

Please see the response at Exhibit C.Staff.10 a).

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Letter dated April 10, 2017 – Estimated Annual Bill Impact in response to a request from OEB staff, Union has provided estimated bill impacts for the four communities inclusive of the System Expansion Surcharge. The bill is based on an annual consumption of 2,200 m^3 for a typical residential customer.

a) Please provide the natural gas applications (furnace, water heater, gas stove etc.) that are included in the assumption of 2,200 m^3 for a typical residential customer.

b) What natural gas applications has Union assumed in its cash flow analysis in the four communities?

c) Does Union expect potential customers in the four communities to convert to other natural gas applications apart from home heating in the first 10 years of the project? If yes, please provide details.

d) Union has noted that it conducted market research in the communities. Did Union inform respondents of the estimated annual bill in the proposed expansion communities?

Response:

a) The 2,200 m^3 annual consumption of a typical residential customer that Union uses to demonstrate bill impacts is based on the average forecast consumption of a residential customer from Union's 2013 Cost of Service proceeding (EB-2011-0210). The 2,200 m^3 annual average consumption was calculated as the forecast throughput divided by the forecast number of customers and was not calculated based on the natural gas applications within a typical residential customer's dwelling.

b) The forecast consumption for residential conversion customers used in the DCF analysis was based on the 2017 Normalized Average Consumption ("NAC") average, not a specific list of gas applications. The Union North NAC of 2,273 m^3 was used for the Prince Township project, the Union South NAC of 2,216 m^3 was used for the other three projects.

   The forecast consumption for the commercial customers is an estimate based on size/type of establishment.

c) Yes. Union expects other natural gas appliances will be connected. However, Union has not attempted to forecast loads at the level of detail in which every connected appliance and the timing in which that appliance is connected are predicted.

d) Yes. Union informed those contacted of the expected annual natural gas costs for a typical home with the SES included, the average up-front cost of converting home heating and water heating, and the expected average savings relative to other fuels.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section B, p.8

In the evidence on the Milverton community expansion Union states that "The pipelines identified above have been optimized to meet the forecast future growth in the Project area". Is this capacity going to be available to address the demand beyond the demand in the current forecast? If so why and by how much?

Response:

The system has been designed to service Milverton for the 10 year forecast plus overachievement of its forecast to be able to service some future growth. The additional cost for the capacity had little impact to the term of the SES and in Union's view was reasonable.

Depending on the location of demands, forecast volumes could be exceeded by approximately 30% without a need for further reinforcement.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section A:"Kettle Point"
Exhibit A, Tab 2, Section B:"Milverton"
Exhibit A, Tab 2, Section B:"Moraviantown"
Exhibit A, Tab 2, Section D:"Prince Township"

The 7th edition of "OEB Environmental Guidelines for Locating Constructing and Operating Hydrocarbon Pipelines in Ontario" published on August 11, (2016 Guidelines) sets the streamlined and enhanced process for the duty to consult on pipeline and storage projects requiring approval by the OEB.

a) Please confirm that Union Gas conducted the Indigenous consultation in accordance with the intent of the 2016 Guidelines.

b) Which sources did Union Gas use to determine Indigenous communities that are directly affected by the each of the proposed community expansion projects?

c) How is Union planning to address issues and concerns identified in the Indigenous consultation process?

Response:

a-c) While the Projects were initiated under the 2011 version of the Environmental Guidelines, Union has conducted its Indigenous Consultation efforts to comply with the intent of the 2016 guidelines.

In developing the Indigenous Consultations program, Union consulted with 11 Métis and First Nations in and around the proposed projects. Union has conducted many years of ongoing and detailed discussions with the two First Nation communities that will be receiving natural gas service from the proposed facilities. Union will continue to consult with all Indigenous Communities during the planning and construction of the Proposed Facilities. Union will be inviting First Nation monitors to participate in the archaeological and environmental studies, providing project updates to the communities, and providing the communities with contact information in the event that issues or concerns may arise. There will also be Union Gas Inspectors on site that can provide information to First Nations or Métis Citizens if questions arise on the site.

Union is aware of and will not be objecting to the Batchewana First Nation of Ojibways' request to intervene in the EB-2015-0179 proceeding. Union submits this intervention request applies only to the Section 90 leave to construct proposal to service Prince Township and in no way impacts the remaining three proposed projects or the Section 36 rate surcharge structure proposal for each project (i.e. System Expansion Surcharge).

Due to the lateness of this intervention request (dated May 18, 2017) and the extent of the consultation undertaken, Union has provided an overview of the consultation efforts that have occurred between Union and the Batchewana First Nation. As noted at Exhibit A, Tab 2, Section D of Union's original evidence submitted in July 2015, Union notified the Batchewana First Nation of the proposed Prince Township Project and provided them with a copy of the Environmental Protection Plan ("EPP") on June 1, 2015. Since filing Union's original evidence, a Stage 1 archaeological assessment has been completed and forwarded to the Ministry of Tourism, Culture and Sport. The Stage 1 assessment did not require any additional assessments be completed. As part of Union's updated application (dated March 31, 2017) Union again contacted the Batchewana First Nation. On April 5, 2017 Union made a presentation to the Batchewana First Nation to provide them with further details of the proposed Prince Township Project. Subsequent to that meeting, Union has attempted to meet with the Batchewana First Nation to discuss the project. Union has, and will continue to, meet with and discuss issues related to its proposal to construct small diameter polyethylene pipelines within the road allowance of Prince Township with the Batchewana First Nation.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 1, Section A, pp.4 and 14

Please confirm that Union has Franchise Agreements and Certificate of Public Convenience and Necessity that include the communities of Rostock and Wartburg.

Response:

Confirmed.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Union requested a decision on the EB-2015-0179 application no later than June 30, 2017 in order to meet the planned in-service date of December 2017.

Please discuss the implications of possible construction delays and measures, if any, that Union could possibly take to shorten the construction schedule to meet the planned in-service date if necessary.

Response:

To ensure customers can be served by November 2017 to avoid converting heating equipment in the winter, Union is required to start construction on these projects by August 1, 2017. A shorter construction season would result in increased costs which would negatively impact the project economics.

A significant delay in the Board issuing a decision would result in these projects being deferred to 2018.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section A:"Kettle Point"
Exhibit A, Tab 2, Section B:"Milverton"
Exhibit A, Tab 2, Section C:"Moraviantown"
Exhibit A, Tab 2, Section D:"Prince Township"

Regarding the design specifications of all the pipelines of the four community expansion projects in this proceeding, please confirm that Union Gas will adhere to all relevant requirements of CSA Z662 "*Oil and Gas Pipeline Systems*" and *Ontario Regulation 210,01* under the *Technical Standards and Safety Act, 2000, Oil and Gas Pipeline Systems*.

Response:

Confirmed.

UNION GAS LIMITED

Answer to Interrogatory from
Board Staff

Reference: Exhibit A, Tab 2, Section A:"Kettle Point"
Exhibit A, Tab 2, Section B:"Milverton"
Exhibit A, Tab 2, Section C:"Moraviantown"
Exhibit A, Tab 2, Section D:"Prince Township"

a) For each of the projects subject to this proceeding please update the status of obtaining the necessary land rights.

b) Please identify any locations along proposed pipelines routes where Union Gas needs to acquire an easement agreement in a form to be approved by the OEB.

Response:

a) Land rights are not required for the Prince Township and Moraviantown Projects. For the Kettle and Stony Point/Lambton Shores Project, Union has acquired in fee simple a small property for the proposed station where the proposed facilities will tie into Union's existing facilities. For the Milverton Project, Union has an agreement in principle for the purchase of the fee simple rights for the proposed station facilities.

b) There are no locations along the proposed pipeline routes that require permanent easement rights.

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A1, Table1, Addendum, Table 1: Comparison of Union's Initial and Updated Proposals

Under "Customer Forecast risk" Union indicates that under the "Updated Proposal" the Utility bears the Customer Forecast risk in the event that actual customer attachments fall below the forecast attachment rate, as opposed to under the Initial Proposal, wherein all ratepayers took on that risk.

a) Please explain how, under the Updated Proposal, Union bears the Customer Forecast risk?

b) Please provide an example of how Union bears the Customer Forecast risk in a hypothetical scenario where Union completes one of the four planned projects by the end of December 2017 as set out in the Application, but no customers ever attach such that the revenue from customers for the project is zero. In particular please describe how Union continues to bear that risk assuming Union rebases its rates in a 2019 Cost of Service application.

Response:

a) Please see the response at Exhibit C.Staff.3 c).

b) Although the question requests a hypothetical scenario Union submits this scenario is highly unlikely.

Using the Prince Township project proposal as an example, for a 2019 rates application, Union would forecast project related customers and related SES revenue based on the EB-2015-0179 approved forecast number of customers in each project area, which would include the 170 customers as provided in the attachment forecast for Prince Township[1]. Union would use the same process for the other three projects. In the case where zero customers have actually attached to Prince Township, the imputed revenue resulting from including 170 customers in the 2019 rates application will offset the revenue requirement impacts of actually having attached fewer customers than forecasted. This approach would protect existing ratepayers from the impacts of customer attachment forecast variances.

[1] Exhibit A, Tab 2, Schedule 2, Section D Updated

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Decision in EB-2016-0004 dated November 17, 2016, p.21

In the EB-2016-0004 Decision the Board stated as follows:

An incumbent utility with existing rates may still propose to collect a surcharge over and above those rates to make up for the shortfall in revenues to cover the cost of the expansion. This form of funding does not depart from the mechanics or principles embodied in the E.B.O. 188 assessment.

a) Did Union consider whether it may be possible and appropriate for one or more of the proposed Projects to be included in Union's portfolio of system expansion projects at an individual PI below 1.0 and at or above .8 in accordance with the existing E.B.O. 188 requirements? If so why was such a proposal rejected, and if not why not?

b) If Union were to include one or more of the proposed Projects at an individual PI of less then 1.0, how would that impact that or those Projects? For example, would it simply be the case that the proposed Project specific term of the System Expansion Surcharge would be lowered, or would there be other alternative or additional changes to the Project?

Response:

a) Union did not consider it appropriate to apply a minimum project P.I. of between 0.8 and 1.0 as provided for in E.B.O. 188 to the four proposed projects. This would result in a cross subsidy from other new ratepayers in established service areas in favour of the new ratepayers in a community expansion area. The reason for taking this approach is that the EB-2016-0004 decision clearly indicates that the communities that receive the benefits should be the ones who are paying the costs[1].

   Union is proposing an expansion surcharge (SES) for the four proposed projects, and as such the projects are being proposed under the alternative framework provided by the EB-2016-0004 Decision.

b) If Union were to include any one of the Kettle and Stony Point/Lambton Shores, Milverton/Rostock/Wartburg or Prince Township projects at a P.I. of less than 1.0, the result would be a shortened SES term for the project. For the Moraviantown project, the impact would be a reduction in the value of the grant or Aid-to-Construction required.

[1] EB-2016-0004 OEB Generic Community Expansion Decision With Reasons, p.4

Assuming the New Business Investment Portfolio could still maintain a P.I. above 1.0, the Table below provides an overview of the impact if the P.I. for each project was reduced to 0.8:

Project	**SES Term Expiry (Years)**		**Aid Required (Thousands)**	
	P.I = 1.0	**P.I.=0.8**	**P.I = 1.0**	**P.I = 0.8**
Kettle Point/Lambton Shores	12	7	$0	$0
Milverton/Rostock/Wartburg	15	10	$0	$0
Moraviantown F.N.	40	40	$311	$235
Prince Township	22	12	$0	$0

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Table1, Addendum, p.8

Union asserts as follows:

There are no potential customers in the areas proposed to be served that meet eligibility criteria for Union's contract rate classes. However, to the extent that having natural gas available attracts new customers eligible for contract rate classes in the areas serviced by the four proposed Projects; Union's proposal does not extend the SES to these customers (Rates M4, M5, M7, T1, T2, 20, 100). Rather, any future contract customers in the areas serviced by the four Projects will be required to commit to contract terms that will ensure their attachment can meet a minimum P.I. of 1.0.

a) What benefits, if any, will the existing customers of one of the Projects experience if and when a Contract Customer connects to the Project? For example, would the attachment of a Contract Customer change the Project economics in such a way as to allow the term of the System Expansion Charge to be lowered?

Response:

a) If a contract customer connects to one of the proposed projects, existing customers of the specific project area will not experience any noticeable rate related benefits. Since the contract customer would connect with a P.I. of 1.0, with the exception of economies of scale resulting from fixed costs being spread over greater volumes in rates, there would be no long term rate impacts for any other ratepayers regardless of their being located in an established service area or a community expansion service area.

   At this time, Union is unaware of any situation where a contract customer is likely to connect to any of the four proposed projects.

UNION GAS LIMITED

Answer to Interrogatory from
Consumers Council of Canada ("CCC")

Reference: Exhibit A, Table1, Addendum, p.8

The SES will be fixed at $\$0.23/m^3$ throughout the duration of 1 the SES term. Union proposes that this approach meets the Board requirement for "a minimum rate stability period of 10 years (for example)". While the SES for applicable customers will be added to the existing Rate M1, M2, 01 or 10 delivery charges on each bill, and the existing rates may change over time, a fixed SES rate provides a large measure of stability for periods of longer than 10 years.

a) In forecasting the revenue generated by the SES over the proposed term for each Project, did Union account for the impacts of Demand Side Management, declining average use, Climate Change Action Plan spending, or any other impacts on the volumes that customers will be consuming that may materially reduce the revenue that will be generated by the SES? If so how, and if not why not?

Response:

a) Union did not account for the impacts of DSM, declining average use, Climate Change Action Plan spending, or any other impacts on the volumes customers will be consuming. The reasons for not accounting for these factors are that any resulting impacts on volumes are unknown at this time, and that the customer forecast revenue risk related to the SES will be borne by the utility as noted in Exhibit C.Staff.3 c).

Impact of consumption changes on base Rate M1, 01, M2 and 10 delivery revenues will be treated consistently with how they are treated for all other customers at Union. This currently includes NAC deferral treatment during the IRM period, and resetting of NAC and volume forecasts through periodic rate applications.

UNION GAS LIMITED

Answer to Interrogatory from
Canadian Propane Association ("CPA")

Reference: Tab 1, p.3 of 15, Table 1.

The CPA wishes to better understand whether and how the rates applied for and the duration of the rate stability period will place forecast risk for the rate stability period on the utility, in order to help the Board determine whether the rates applied for and the duration of the rate stability period are sufficient to fund the actual long-term costs, and to help the Board confirm that forecast risk for the rate stability period in fact does rest with the utility.

Union asserts in Table 1 that "Customer forecast risk" rests with "Utility". We wish to better understand how this will be ensured.

a) Does the phrase "Customer forecast risk" as used here and elsewhere in the Application, refer to:

   i. The risk that fewer customers connect than forecast?

   ii. The risk that customers connect later than forecast, resulting in a shorter effective SES Term for those customers?

   iii. The risk that, regardless of the number of connections, distributed gas volumes are lower than forecast?

   iv. The risk that customers who are forecasted to remain as customers for the duration of the SES Term disconnect before the end of the SES Term?

   v. All of the above?

b) If the answer to (a) above is (i), (ii), (iii) or (iv) (but not "all of the above"), who will bear the risks of each of remaining scenarios described in (i), (ii), (iii) and (iv) above? Please describe the mechanism by which such at-risk entities or groups will fund the shortfalls associated with each such risk.

c) What does Union mean by the reference to "Utility" as bearing the Customer forecast risk? Does this mean that:

   i. There will be a capital call from shareholders to pay for the unfunded capital expense?

   ii. Union Gas Limited will pay for the unfunded capital expense from revenues earned from its operations distributing gas to customers across Ontario?

iii. The unfunded capital expense will be paid for from another source, in which case please describe such funding source.

d) If the project revenues are lower than forecast (whether due to Customer forecast risk or otherwise, including because SES Term was too short), is it possible that any part of the shortfall might be:

i. Included in financial statements or projections included as part of any future M1/M2 rate application process *during the SES Term*, and therefore (if approved by the OEB) eventually funded in whole or in part by M1/M2 customers across the province?

ii. Included in financial statements or projections included as part of any future M1/M2 rate application process *after the SES Term*, and therefore (if approved by the OEB) eventually funded in whole or in part by M1/M2 customers across the province?

iii. included in financial statements or projections included as part of any future application *during the SES Term* for a change to the SES amount, and therefore funded by M1/M2 rate application process during the SES Term, and therefore (if approved by the OEB) eventually funded in whole or in part by expansion customers?

iv. included in financial statements or projections included as part of any future application *after the SES Term* for a change to the SES amount, and therefore funded by M1/M2 rate application process during the SES Term, and therefore (if approved by the OEB) eventually funded in whole or in part by expansion customers?

v. Included in financial statements or projections included as part of any future application to extend the SES Term, and therefore (if approved by the OEB) eventually funded in whole or in part by expansion customers?

e) If the answer to any of the five sub-questions in (d)(i) to (d)(v) above is "No", what assurance does the OEB have, or what assurance can Union provide to the OEB and customers, that the situation described in each such sub-question will never occur

i. during the SES Term; nor
ii. Following the SES Term?

Response:

The Board, in their letter accepting CPA's intervention request[1], was clear that CPA's allowed intervention was limited to the issue of term of the rate stability period. The Board went on to note and provide reasons that the evidence related to forecasted customer connections does not need to be tested. As such, responses given by the applicant in respect of interrogatories related to forecast questions should not be taken as accepting an expanded scope of CPA's intervention.

[1] OEB letter dated May 2, 2017

The responses are provided without prejudice to Union's right to object to or make submissions at a later time as to whether CPA can cross examine or argue topics broader than their allowed intervention.

a) The phrase "customer forecast risk" applies to all of the above during the 10 year customer attachment forecast period, with the exception of any impact of gas volumes on the base Rate M1, M2, 01 and 10 delivery charges for forecasted attachments. Please see the response at Exhibit C.Staff.3 c) for details.

b) Impact of consumption changes on base Rate M1, 01, M2 and 10 delivery revenues for the forecasted attachments will be treated consistently with how they are treated for all other customers at Union. This currently includes Normalized Average Consumption ("NAC") deferral treatment during the current incentive regulation ("IRM") period, and resetting of NAC and volume forecasts through periodic rate applications. Note that SES derived revenue is not included in this exception. Because the SES is fixed, Union would bear the risk that lower consumption would reduce SES rate derived revenues throughout the 10 year forecast period.

c) By the reference to "utility", Union means that shareholders rather than ratepayers bear the risk and any resulting costs if the risks are manifested in results.

d)

i. Please see the responses at Exhibit C.Staff.3 c,d).
ii. Please see the responses at Exhibit C.Staff.3 c,d).
iii. Please see the responses at Exhibit C.Staff.3 b).
iv. Please see the responses at Exhibit C.Staff.3 b).
v. Please see the responses at Exhibit C.Staff.3 b).

e) The assurance provided is that any variance in customer forecast or capital costs would be approved by the Board before any customer rates were impacted.

Please see the response at Exhibit C.Staff.3 c) for forecast risk related details.

Please see the response at Exhibit C.SEC.1 for capital cost treatment.

As noted in Exhibit C.Staff.3 b) Union does not intend to apply to adjust the SES rate (amount or term) for any reason other than government grant funding. The Board will need to approve any such request.

UNION GAS LIMITED

Answer to Interrogatory from
Canadian Propane Association ("CPA")

Reference: Tab 1, p.6 of 15, Lines 1-8

Union proposes that the capital investments for these projects no longer be subject to capital pass through treatment.

a) Please describe the comparative impact

   i. on expansion customers, and
   ii. on all M1/M2 customers.

   of capital pass through treatment for these projects *versus* non-capital pass through treatment for these projects. Without limiting the foregoing, please include in your response answers to the following questions:

b) whether capital pass through treatment would require a higher SES or a longer SES Term, and

   i. if so, the extent of the difference
   ii. if not, why not.

c) whether not seeking capital pass through treatment means that any part of the capital costs of or capital investments in these projects could ever be included in financial statements or projections included as part of any future M1/M2 rate application process *during the SES Term* (including after the end of the 2014-18 IRM framework), and therefore (if approved by the OEB) eventually funded in whole or in part by M1/M2 customers across the province?

d) whether not seeking capital pass through treatment means that any part of the capital costs of or capital investments in these projects could ever be included in financial statements or projections included as part of any future M1/M2 rate application process *after the SES Term* (being after the end of the 2014-18 IRM framework), and therefore (if approved by the OEB) eventually funded in whole or in part by M1/M2 customers across the province?

Response:

a) Capital pass-through treatment enables Union to include the net revenue requirement of the project in rates during its 2014 - 2018 IRM in the year the project is in-service. The impact of not having a capital pass-through mechanism for these projects is that Union cannot include net revenue requirements in rates for years during the IRM term. Therefore, the impact on

expansion and existing customers is that any revenue deficiency or sufficiency in these years is borne by Union without a corresponding rate impact for customers.

Because the projects are now being proposed at a P.I. of 1.0 as opposed to the P.I. of 0.4 in Union's initial proposal, there are no long term rate impacts.

b) Capital pass-through treatment for the project would not affect the SES term. The SES term has been set to allow the project to achieve a P.I. of 1.0 in a discounted cash flow ("DCF") analysis, as required by the EB-2016-0004 Decision.

c-d) Please see the response at Exhibit C.SEC.1 which addresses the treatment of capital costs.

UNION GAS LIMITED

Answer to Interrogatory from
Canadian Propane Association ("CPA")

Reference: Tab 1, p.7 of 15, Lines 8-9

Union submits that the potential customers will be informed of the details of the SES as a project is developed, as well as at the time their application to Union for service is made.

a) Will Union disclose details of the SES at other times, such as when Union is marketing the project in an effort to generate applications for service, or when potential customers are considering whether or not to apply for service? What is the form and content of Union's proposed disclosure?

b) No mention is made in Union's Application of any disclosure with respect to the SES Term. Will Union also disclose details of the SES Term at each of the times listed in (a) above?

c) What will Union disclose or market to potential customers about the Rate Stability Term, and in particular what will or may happen after the end of the Rate Stability Term, in order to ensure that potential customers have a complete and comprehensive understanding of the impact of the rate stability program?

d) What will Union disclose or market to potential customers about the potential need to convert their equipment to natural gas-compatible equipment, the costs of such conversion, the responsibility for such costs, and any available mechanisms to levelize such costs throughout the rate stability period?

e) What will Union disclose or market to potential customers about the potential need to install lateral gas lines across their properties to connect to the expansion project, the costs of such installation, the responsibility for such costs, and any available mechanisms to levelize such costs throughout the rate stability period?

Response:

a-b) Union will communicate to customers the SES amount and term (together the SES rate) defined specifically for each community. Union has and will continue to inform potential customers in these communities through open house events, Union's community expansion website, and marketing material. Union will also require customers to acknowledge their consent to pay the SES for the appropriate term when applying for service and opening a Union Gas account.

c) The Board has not defined the rate stability term; however Union supports a minimum 10 years[1] and in each case in this application the SES term exceeds 10 years. Union will inform potential residential customers of the SES amount, the SES term, and average annual costs a typical residential customer can expect. Commercial customers will be informed of the SES amount, SES term, and applicable underlying base rate (M1, 01, M2 and 02) tolls.

d) Union will advise customers of the average cost of conversion for a typical residence; however Union has and will continue to refer customers to approved Heating, Ventilation, and Air Conditioning ("HVAC") companies to better understand their individual conversion costs. This will be done through the Union Gas community expansion website, Union's open houses and marketing material. The cost for the conversion of equipment in the communities specific to this filing will be borne by the customer and do not impact the proposed rates.

e) Union has and will continue to inform potential customers in these communities regarding the costs of installing service and meter facilities. Union's current residential policy of installing the first 30 metres of service line from the property line to the building at no charge will remain in effect. Union will rely on open houses, its website, marketing material and information provided when the customer makes an application for service.

[1] Exhibit A, Tab 1, Addendum, p. 9

UNION GAS LIMITED

Answer to Interrogatory from
Canadian Propane Association ("CPA")

Reference: Tab 1, p.6 of 15, Lines 15-18
Tab 1, p.15 of 15, Table 3
Tab 2, Sections A, B, D, Schedule 6
OEB Decision with Reasons, EB-2016-0004, pp.18-20

The OEB determined in EB-2016-0004 that the principles embodies in EBO 188, which include an economic test to ensure that projects are self-financing and pose no risk to existing ratepayers, should continue to apply to expansion projects. The OEB called for minimum rate stability periods to ensure that the expansion rates are representative of the actual underpinning long-term costs.

Union proposes a fixed SES Terms of 12 years for the Kettle and Stony Point FN and Lambton Shores project. Union claims in Table 3 that the Profitability Index for such Project, based on a 12 year SES Term, is P.I. = 1.03. However, Schedule 6 indicates that the Profitability Index after 12 years is P.I. = 0.8, and does not reach P.I. = 1.0 until Year 30, and does not reach P.I. = 1.03 until Year 40.

a) Please explain the discrepancy.

b) Please revise Schedule 6 of Section A to reflect the scenario where the SES continues to be collected until the Profitability Index is P.I.= 1.0, and identify what year, between 13 and 30, that would occur in this scenario ("**Year X**" for the purposes of question (c) below).

c) Why has Union not proposed an SES Term of Year X, in order to "ensure" that the project is self-financing (P.I.= 1.0) and that no part of the project costs will ever be borne by other ratepayers?

   Union proposes a fixed SES Terms of 15 years for the Milverton, Rostock, and Wartburg project.
   Union claims in Table 3 that the Profitability Index for such Project, based on a 15 year SES Term, is P.I. = 1.01. However, Schedule 6 indicates that the Profitability Index after 15 years is P.I. = 0.9, and does not reach P.I. = 1.0 until Year 31, and does not reach P.I. = 1.01 until Year 36.

d) Please explain the discrepancy.

e) Please revise Schedule 6 of Section B to reflect the scenario where the SES continues to be collected until the Profitability Index is P.I.= 1.0, and identify what year, between 16 and 31, that would occur in this scenario ("**Year X**" for the purposes of question (f) below).

f) Why has Union not proposed an SES Term of Year X, in order to "ensure" that the project is self-financing (P.I.= 1.0) and that no part of the project costs will ever be borne by other ratepayers?

Union proposes a fixed SES Terms of 22 years for the Prince Township project. Union claims in Table 3 that the Profitability Index for such Project, based on a 22 year SES Term, is P.I.= 1.0. However, Schedule 6 indicates that the Profitability Index after 22 years is PI=0.9, and does not reach P.I. = 1.0 until Year 38.

g) Please explain the discrepancy.

h) Please revise Schedule 6 of Section D to reflect the scenario where the SES continues to be collected until the Profitability Index is P.I.= 1.0, and identify what year, between 23 and 38, that would occur in this scenario ("**Year X**" for the purposes of question (i) below).

i) Why has Union not proposed an SES Term of Year X, in order to "ensure" that the project is self-financing (P.I.= 1.0) and that no part of the project costs will ever be borne by other ratepayers?

j) We assume from the Application that, in Union's view, the proposed SES Terms are mathematically appropriate to "ensure" that the projects are self-financing and represent the actual underpinning long-term costs of the projects if Union's customer and volume forecasts are accurate. Is it Union's view that the proposed SES Terms are also mathematically appropriate to "ensure" that the projects are self-financing and represent the actual underpinning long-term costs of the projects even if Union's customer and volume forecasts are inaccurate? Please explain.

k) Is there any chance that Union's customer and volume forecasts could turn out to be inaccurate? If there is any such chance, wouldn't a longer SES Term or a higher SES rate be more likely to "ensure" that the projects are self-financing and that the SES and the SES Term represent the actual underpinning long-term costs of the projects?

l) Why has Union not proposed to continue charging the SES beyond the SES Term until the project has been fully paid for, in order to actually "ensure" that the projects are self-financing and that no part of the project costs will ever be borne by other ratepayers?

Response:

The Board, in their letter accepting CPA's intervention request[1], was clear CPA's allowed intervention was limited to the issue of term of the rate stability period. The Board went on to note and provide reasons that the evidence related to forecasted customer connections does not need to be tested. As such, responses given by the applicant in respect of interrogatories related to forecast questions should not be taken as accepting an expanded scope of CPA's intervention. The responses are provided without prejudice to Union's right to object to or make submissions at a later time as to whether CPA can cross examine or argue topics broader than their allowed intervention.

a-i) There is no discrepancy. Union's interpretation of self-financing is that the present value cost of the project will be recovered from the present value of customers' revenues over the life of the DCF term. These projects meet a minimum P.I. of 1.0 and are therefore self-financing. Customers in the project area will pay the SES in addition to Union's existing rates in order to meet a P.I. of 1.0 through the end of the 40 year DCF term. The term of the SES is an outcome of the calculation to meet a P.I. of 1.0 at year 40.

The questions request a calculation to determine the length of SES term to meet a P.I. of 1.0 that would coincide with the term of the SES. In effect this is a request to shorten the DCF from 40 years to a term variable by project coinciding with a back calculation of a SES term. Union disagrees with this logic.

Customers will continue to pay Union's base rates at the expiry of the SES term. The calculation requesting a scenario of increasing the SES term will raise the P.I. of the project beyond 1.0 requiring these customers to contribute in excess of their costs. Since the SES charge is a bridging mechanism to meet a P.I. of 1.0 extending the term beyond that required for an overall P.I. of 1.0 is inappropriate.

However as an illustration, the Table below provides the SES term and the resulting P.I. as requested.

Project	Proposed SES Term	P.I. with Proposed SES Term	SES Term as Requested in Question	P.I. with SES Term Requested in Question
Kettle Point (et al)	12	1.03	16	1.18
Milverton (et al)	15	1.01	17	1.08
Prince Township	22	1.00	27	1.06

(Note: SES charge $0.23/m^3)

[1] OEB letter dated May 2, 2017

j-k) In Union's view the SES terms are appropriate to ensure the projects meet the financial parameters outlined in EB-2016-0004. If the number of customers or volumes forecast are inaccurate, Union bears the risk of the inaccuracy for the 10 year forecast period and would seek Board approval for any necessary relief if required after that period. Forecast risk is addressed in the response at Exhibit C.Staff.3 c).

The SES terms are mathematically correct for the projects to be self-financing over the term of the DCF. All data in the DCF are based on estimates and as with any forecast the actuals will be somewhat higher or lower than the forecasts. Union believes the data (costs, attachments, usage, revenue etc.) are reasonable estimates for the 40 year NPV of the data.

l) The projects meet a P.I. of 1.0 and are self-financing. As noted in the Table for parts a) to i) above, increasing the SES would raise the P.I. above 1.0 creating a subsidy from community expansion area ratepayers in favour of pre-existing ratepayers. Union does not believe that is the intent of the EB-2016-0004 Decision.

UNION GAS LIMITED

Answer to Interrogatory from
Canadian Propane Association ("CPA")

Reference: Ontario Ministry of Infrastructure Natural Gas Grant Program Application Form [http://www.infrastructureontario.ca/NGGP]

Tab 2, Sections A, B, C, D, Schedule 6
Tab 1, p.13 of 15, Lines 9-15
OEB Decision with Reasons, EB-2016-0004, p.20

a) With respect to each Project, does Union intend to apply for a grant under the Ministry of Infrastructure's Natural Gas Grant Program?

b) If the response to (a) is "yes" or "maybe" (or any anything other than "no") for one or more Projects, please complete, to the best of your ability given current estimates and projections, the table below for each such Project. This is taken from Table 1 of the Natural Gas Grant Program Application Form.

Total Eligible Project Costs (A)	$
Recovery from prevailing rates over 40 years (B)	$
Recovery from System Expansion Surcharge (C)	$
Contribution from municipality or First Nation (D)	$
Other Contributions (e.g. from businesses or industry) (E)	$
Total Grant Funding Requested (F) (A-B-C-D-E=F)	$

c) According to Schedule 6 of Sections A, B, C, and D of the Application, over a 40 year term, the net present value of cash inflows (with $0 in Natural Gas Grants) equals the net present value of cash outflows, such that the Projects are self-financing without any Natural Gas Grants. Accordingly, the calculation (A-B-C-D-E) will result in F being zero or negative for each Project.

i. If the response to (b) shows F being any positive number, please explain how that is the case and why any of the figures for (A), (B), (C), (D) or (E) above differ from the related figures in Schedule 6 of the Application.

ii. If the response to (b) shows F being zero or negative, then Union would not appear to be eligible for a Natural Gas Grant. If the response to (a) was "yes" or "maybe" (or any anything other than "no") for one or more Projects, please explain the contradiction between such response and the apparent ineligibility.

d) Union states at Page 13 of its Application that if Natural Gas Grant Program funding is awarded, Union would reduce the SES Term.

i. Now that the details and criteria for the Natural Gas Grant Program have been released, please advise whether the statement above continues to be true.

ii. If Natural Gas Grant Program funding is awarded and then, due to a change in government policy, subsequently revoked, would Union proposed to once again alter the SES Term?

iii. If the answer to either of i or ii above is "Yes", such that the SES Term may change from time to time, please explain how such an SES Term can be considered a "rate stability period" as described by the OEB in EB- 2016-0004.

Response:

a) Union intends to apply for a grant for the Moraviantown project. Union does not intend to apply for a grant for the Kettle and Stony Point/Lambton Shores project because the municipality was unwilling to commit to a contribution as required by the Natural Gas Grant Program ("NGGP") 2017 Program guidelines[1].

Union has been in consultation with municipal leaders regarding the potential for a successful grant application for the Milverton and Prince Township projects, however a decision has not been finalized.

b) Union has initiated a request for clarification from the Ministry of Energy on Table 1 of the NGGP application form. In Union's view, the Table requires an additional row because it does not provide for non-eligible project costs. Examples of these costs include annual operating and maintenance costs or income taxes. For the Moraviantown project, Union has completed an adjusted version of the Table that accounts for this change (line A2) below.

Line	Amount (Thousands)
Total Eligible Project Costs (A1)	$564
Total Ineligible Project Costs (A2)	$207
Recovery from prevailing rates over 40 years (B)	$160
Recovery from Expansion Surcharge (C)	$260
Recovery from Municipality or First Nation (D)	$40
Other Contributions (E)	$0
Total Grant Funding Requested (F) (A1+A2-B-C-D-E)	$311

c) Please refer to part (b) above.

[1] Municipal contribution requirements are addressed at p.3 of the Guidelines, which are provided at Exhibit C.SEC.9.

d)

i. Union's position has not changed. To the extent that NGGP funding is available for any of the four projects, the funding will be first used to reduce any necessary Aid-to-Construction for the project, and any residual grant funding would be used to reduce the SES term.

ii. If grant funding is awarded for Moraviantown, Union would not begin construction until such time as a legally binding commitment to provide the funding is in place. For other projects, since the funding would serve to reduce the SES term, Union would proceed with construction of the project as proposed and adjust the SES term once a binding funding commitment is in place.

iii. Union does not consider the SES term to be the equivalent of the rate stabilization period. Instead, Union considers the rate stabilization period to be the 10 year customer forecast period. The fact that the SES terms may extend beyond the 10 year stabilization period should be considered an added benefit of Union's proposal. Provincial funding, if made available for any of the projects, would result in either less Aid-to-Construction required, or a reduced SES term. In both cases the impact to the project area customers is either neutral or beneficial. Union does not believe the project area customers would be alarmed if the SES term was shortened, and would be surprised that any stakeholder would object to a change that benefits the customers.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p.3

If the actual capital costs and/or OM&A costs are higher than forecasted, please explain how those costs will be recovered by Union.

Response:

Union proposes to treat the community expansion projects no differently than every other expansion project (i.e. a new housing subdivision in an established service area) and include the net revenue requirement based on incurred capital expenditures of the project in future rate applications. As noted in Exhibit C.Staff.3 d) the proposed projects are self-financing. In the event that the actual capital cost of a project exceeds the forecast capital cost used in the economic analysis, Union will submit an explanation of the variance between the actual cost and the forecast cost in a future rates application. This will provide the Board the opportunity to review the incremental capital cost incurred for prudence and decide whether to approve the inclusion of the actual project cost in rates. It is Union's expectation that prudently incurred capital cost variances (for example if incurred because the actual customer attachments were greater than forecast) would be approved for inclusion in rates.

Union cannot track or report on the actual OM&A costs by expansion project. Union expects the OM&A costs for these expansion projects to be similar to the costs for new attachments or pre-existing ratepayers in the currently served areas surrounding them. The OM&A costs attributed to the DCF are the average incremental OM&A costs in rates. This is the same approach for all system expansion projects whether new community or within an existing area. Although the SES will be fixed at $\$0.23/m^3$ throughout the term within each community expansion project area, any average OM&A cost changes in future years will be reflected in changes in the underlying Rate M1, M2, 01 and 10 rates applicable to all of Union's ratepayers. Any of these underlying rate changes would require Board approval prior to implementation.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p.3

Does the Applicant intend to update the SES rate or its duration over time to ensure the PI remains at 1.0 or above? If so, please provide details. If not, please explain why Union would not do so.

Response:

Please see the response at Exhibit C.Staff.3 b).

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p.3

Table 1 states that Customer Forecast Risk is that of the Utility. Please explain what Union means by this.

Response:

Please see the response at Exhibit C.Staff.3 c).

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p.3

Please confirm that existing customers will never be required to cover the revenue shortfall that would occur over the life of the underlying project assets, if the capital costs are higher than forecasted, or customer connections are less than forecast. If not, please explain.

Response:

Please see the response at Exhibit C.Staff.3 c) for a description of the treatment of customer forecast variances and Exhibit C.SEC.1 for detail on the treatment of capital cost variances.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p.8

Please provide a copy of the full results of the referenced telephone survey conducted in Milverton, Lampton Shores, and Price Township in February 2017.

Response:

Please see Attachments 1, 2 and 3 for the survey information for Milverton, Lambton Shores and Prince Township.

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Gas Pipeline Expansion Study - Milverton
(including Wartburg and Rostock)

Research Report Prepared for: Union Gas Limited

April, 2017

Marketing Research and Intelligence Association
Accredited
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Table of Contents

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Background

Union Gas (Union) operates in northern, southwestern, and eastern Ontario delivering natural gas services to over 1.3 million residential, commercial, and industrial customers in more than 400 communities. However, the community of Milverton, located in southwestern Ontario is not currently serviced by Union. Given the operating cost advantages of natural gas, Union believes that there is significant interest in converting to natural gas, particularly for space and water heating. Union is reviewing the feasibility of extending the gas pipeline that will service the citizens of Milverton Ontario.

In addition to the cost of converting space and water heating equipment to natural gas, households typically are required to make a contribution toward the pipeline capital costs of extending service to the community. Union has developed a volumetric surcharge for those that elect to convert, as a means to overcome the upfront capital cost barrier that households would face upon conversion. Market research in Milverton Ontario is needed to measure the likelihood of converting to natural gas given potential savings, conversion costs and the volumetric surcharge alternative for recovering upfront pipeline extension costs.

Research Objectives

The objective of this research is to ascertain interest in obtaining natural gas service amongst the residential household and commercial business populations of Milverton Ontario. Specifically, this research is designed to:

- Measure the likelihood of converting heating equipment based on a range of typical equipment conversion costs.
- Gauge interest in switching to natural gas water heating based on a range of typical equipment conversion costs.
- Measure the impact on likelihood of conversion based on a volumetric surcharge (cents per m^3) that would apply to natural gas consumption following conversion.

Methodology

To achieve the research objectives, Union retained the services of Forum Research, a third party research supplier, to conduct the quantitative study. A total of 245 telephone interviews were completed from a list of 710 home and business owners in Milverton between February 3 and February 18 yielding a +/- 5.1% margin of error at the 95% confidence level. The level of completes represents a 45% response rate.

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Reading the Charts

Colours have been used in the charts to indicate where differences exist:

indicates a significantly higher number

indicates a significantly lower number

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Highlights

- Overall, 82% of respondents would be likely ("extremely likely", "very likely" or "likely") to convert their **space heating** systems to natural gas based on the cost of converting their equipment.
    - The most prevalent space heating systems used in Milverton are propane (44%) and oil (36%). Wood and electric systems heat 10% and 9% of Milverton households respectively.

- Three-quarters of respondents (75%) are "extremely likely", "very likely" or "likely" to convert their **water heaters** to natural gas.
    - Virtually all Milverton respondents own their water heaters (93%) and the majority currently uses electricity as the main fuel source (65%).

- With an additional contribution to pipeline construction, 74% of respondents overall are likely ("extremely likely", "very likely" or "likely") to convert their space heating systems and/or water heaters to natural gas (both space heater and water heater or space heating only).

- Of those likely to convert their space heating systems and/or water heaters to natural gas if a surcharge was required, 63% are likely to convert within the first 12 months, 26% are likely to convert within 1-2 years, 9% are likely to convert within 2-3 years and the remaining 3% are likely to convert after 3 years.

- Among respondents who are likely to convert their space heating systems and/or water heaters to natural gas, 43% and 42% are also interested in converting their BBQs and fireplaces to natural gas respectively, followed by 32% for ovens/stoves and 31% for clothes dryers.

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Findings

Space Heating

This study indicates that the most prevalent space heating systems used in Milverton are propane (44%) and oil (36%). Wood and electric systems heat 10% and 9% of Milverton households respectively.

Propane systems tend to have been installed more recently than all other systems, especially oil and electric heating systems (56% are five years old or less). Therefore, propane users are least likely to replace their space heating systems in the next two years (28% are extremely likely/very likely/likely to replace them).

Electric systems tend to be the oldest systems (55% are over 25 years old), followed by oil systems. Therefore, users are more likely to replace them in the next two years (55% and 56% are extremely likely/very likely/likely to replace them respectively).

Households using wood sources appear to fall between propane and electric/oil users in terms of the age of their systems (29% are five years old or less) and their likelihood to replace them (38% are extremely likely/very likely/likely to replace them).

Overall, 82% of respondents would be likely ("extremely likely", "very likely" or "likely") to convert their space heating systems to natural gas (when given the equipment conversion cost only). Propane users are more likely to convert (91%) than those with other systems. This is consistent with trends in other regions.

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Table 1: Space Heating
Base: Primary Energy Source of Heat is Oil, Propane, Electricity or Wood

	Total (n=245)	Oil (n=88)	Propane (n=108)	Electric (n=22)	Wood (n=24)
Penetration		36%	44%	9%	10%
Likely to replace in the next 2 years (Top 3-Extremely/very/likely to replace)	41%	56%	28%	55%	38%
Age of heating system					
Less than 1 year	4%	-	9%	-	4%
1 to 5 years	26%	5%	47%	5%	25%
6 to 10 years	22%	24%	20%	-	38%
11 to 15 years	13%	19%	10%	9%	8%
16 to 25 years	17%	29%	9%	14%	17%
Over 25 years	12%	16%	2%	55%	8%
Top 2-Extremely/very likely to convert to NG (Equipment conversion cost only)	**58%**	**58%**	**66%**	**46%**	**33%**
Top 3-Extremely/very/likely to convert to NG (Equipment conversion cost only)	**82%**	**81%**	**91%**	**55%**	**79%**
Extremely likely	36%	36%	44%	23%	12%
Very likely	22%	22%	22%	23%	21%
Likely	24%	23%	25%	9%	46%
Not very likely	10%	10%	7%	23%	13%
Not at all likely	8%	9%	2%	22%	8%

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Those not likely to convert their space heating systems to natural gas cite cost and a lack of interest as the main barriers.

Table 2: Reasons unlikely to convert space heating system to Natural Gas
Base: Those not very/not at all likely to convert

	Have Forced Air (Oil, Electric, Propane) or Electric Baseboard (n=34)	Other Source* (n=6)**
Too expensive	47%	50%
Not interested now/maybe in future	26%	-
Not interested/No plans to change	21%	33%
Not worth it	18%	50%
Plan on building a new home/moving	15%	17%
Prefer current heating system	9%	-
Senior/too old to change	9%	-
Don't believe promise of savings	9%	-
Dislike natural gas	6%	-
Current heating system is new	-	-
Other	9%	17%

* No heating system, oil boiler, propane boiler, geothermal, heat pump or something else
** *Extremely small base*
Totals may exceed 100% due to multiple mentions
Question: You indicated that you are unlikely to convert your heating system to natural gas. Can you tell me why? (PROBE) Are there any other reasons?

Water Heating

Virtually all Milverton respondents own their water heaters (93%). The majority use electricity as the main fuel source (65%), followed by propane (23%).

Over one-third of respondents (39%) have had their water heaters for five years or less. Propane water heaters tend to have been installed more recently than electric or oil heaters (61% within the past 5 years). Oil water heaters are the oldest systems (63% are over 10 years old).

Overall, 75% of respondents would be "extremely likely", "very" likely" or "likely" to convert their water heaters to natural gas. Those who currently own propane water or oil heaters are more interested in natural gas than those who own electric heaters (88%, 90% and 68% extremely/very/likely to convert).

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Table 3: Water Heating
Base: All respondents

	Total (n=245)	Propane (n=57)	Electricity (n=160)	Oil (n=27)
Penetration		23%	65%	11%
Own water heater	93%	88%	98%	81%
Age of water heater				
5 years or less	39%	61%	36%	11%
6 to 10 years	24%	21%	26%	22%
11 to 15 years	18%	9%	18%	37%
16+ years	15%	6%	17%	26%

	Rent (n=16)	Own (n=229)
Top 2-Extremely/very likely to convert water heater to NG	**45%**	
Top 3-Extremely/very/likely to convert water heater to NG	**75%**	

		Total	Propane (n=50)	Electric (n=156)	Oil (n=22)
Extremely likely	38%	26%	38%	19%	45%
Very likely	19%	19%	22%	18%	18%
Likely	38%	30%	28%	31%	27%
Not very likely	6%	17%	12%	20%	5%
Not at all likely	-	9%	-	12%	5%

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Likelihood to Convert with Surcharge

Respondents who indicated they are likely to convert either their space or water heating systems to natural gas were asked their likelihood to convert if an additional financial contribution toward pipeline construction were required, in addition to the equipment conversion cost. Three different surcharge scenarios were presented to respondents:

- $1,000 per year for 15 years
- $750 per year for 15 years
- $500 per year for 15 years.

For the typical residential home, respondents were told that the annual savings resulting from converting space and/or water heating to natural gas would be as follows:

Table 4: Savings For Each Fuel Option

	Savings While Surcharge is Active	Savings When Surcharge Ends
If Converting Both Space and Water Heaters to Natural Gas and Fuel Source is:	**With the $1,000, $750, or $500 surcharge scenarios, savings are respectively:**	
*Oil Forced Air, Propane Forced Air or Other**	$200–$450–$700	$1,200
Electric Forced Air/Electric Baseboard	$1,300–$1,550–$1,800	$2,300
Wood	"Minimal amount"**	$550
If Converting Space Heater Only to Natural Gas and Fuel Source is:		
*Oil Forced Air, Propane Forced Air or Other**	"Minimal amount"***–$250–$500	$1,000
Electric Forced Air/Electric Baseboard	$1,100–$1,350–$1,600	$2,100
Wood	"Minimal amount"**	$350

* No heating system, oil boiler, propane boiler, geothermal, heat pump, or something else.
** Respondents were told: "You will save a minimal amount while the higher rate is active and $550 a year after 15 years" (or $350 if converting the space heater only).
***Respondents who were given the $1,000 surcharge scenario, were told: "You will save a minimal amount while the higher rate is active and $1,000 a year after 15 years".

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When respondents consider both the **conversion cost** and **a volumetric surcharge of $500 per year for 15 years**, in aggregate, 74% of respondents are likely ("extremely likely", "very likely" or "likely") to convert their space heating and/or water heating to natural gas (both space heater and water heater or space heating only). Likelihood to convert with the surcharge, depending on energy source used, is broken down in the following chart.

Table 5: Likely to Convert – With Surcharge of $500 per year for 15 years
Base: Those likely to convert to Natural Gas (Equipment conversion cost only)

		Likely to Convert Both Space Heater and Water Heater (Extremely/Very/Likely)			Likely to Convert Space Heating Only (Extremely/Very/Likely)		
	TOTAL POPULATION (n=42)	Oil or Propane Forced Air, Other* (n=34)	Wood (n=1)**	Electric Forced Air/ Electric Baseboard (n=1)**	Oil or Propane Forced Air, Other* (n=5)**	Wood (n=1)**	Electric Forced Air/ Electric Baseboard (n=0)**
Likelihood to convert with surcharge							
Top 3 Extremely/ Very/Likely	**74%**	**72%**	**83%**	**83%**	**80%**	**83%**	**–**

* No heating system, oil boiler, propane boiler, geothermal, heat pump or something else
** Extremely small base

Considering the **conversion cost only**, in aggregate, 85% of respondents are "extremely likely", "very likely" or "likely" to convert their space heating and/or water heating to natural gas (both space heater and water heater or space heating only).

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Conversion Time

Respondents who indicated they are likely (extremely, very, or likely) to convert their space heating systems and/or water heaters to natural gas if a surcharge was required were asked when they are likely to do so if natural gas is available after December 2017.

For those indicating extremely/very/likely to convert, 63% are likely to convert within the first 12 months, 26% are likely to convert within 1-2 years, 9% are likely to convert within 2-3 years and the remaining 3% are likely to convert after 3 years.

Other Appliances

Respondents who are likely to convert their space heating systems and/or water heaters to natural gas were asked if they would be interested in converting other appliances to natural gas as well. BBQs and fireplaces are the appliances that they would be most interested in converting to natural gas (43% and 42% "extremely" or "very" interested respectively). One-in-three would be interested in converting their ovens/stoves (32%) or clothes dryers (31%) to natural gas.

Table 6: Interest in Converting Other Appliances to Natural Gas
Base: Those likely to convert to Natural Gas (with surcharge)

	BBQ (n=176)	Fireplace (n=176)	Oven/ Range/Stove (n=176)	Clothes Dryer (n=176)
Extremely/very interested in converting other appliances	43%	42%	32%	31%
Extremely interested	24%	21%	14%	12%
Very interested	19%	21%	19%	19%
Interested	23%	18%	27%	29%
Not very interested	13%	15%	22%	17%
Not at all interested	20%	21%	16%	19%
Don't know/not stated	1%	4%	3%	4%

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Demographics and Housing Characteristics

One and two storey houses make up the majority of homes in Milverton, accounting for 79% of all respondent households. The average house size is 2,005 square feet and the age of the home varies: 36% are under 37 years of age (i.e., built since 1980) and 36% are over 66 years of age (i.e., built before 1950).

Just over half (53%) of Milverton respondents are 55 years or older, while only 7% are under 35 years of age. The majority of residences house 1 or 2 adults (79%) and no children (67%).

About three-quarters of households (72%) have incomes of $40,000 or more: 34% earn $40,000 to $80,000 and 38% earn more than $80,000. About 1-in-3 households (32%) reported income of $60,000 or less.

In aggregate, 74% of respondents are likely to convert their space heating and/or water heating to natural gas when both the **conversion cost** and a **volumetric surcharge** are considered. Those who are more likely to convert are:

- Living in larger houses
  - 80% living in houses of 2,000 square feet or more versus 69% living in smaller houses
  - 76% living in 2-storey or 3-storey houses versus 61% living in bungalows.

Other demographic attributes of interest are that:

- Smaller houses are more likely to use wood for space heating than larger ones (12% of houses less than 2,500 square feet versus 2% of larger houses of 2,500 square feet or more). Otherwise, there are no significant differences in heating sources by size of house.

- For space heating:

  - Older houses are more likely to use oil as their primary source of heat (48% of houses built before 1960 and 16% of houses built since 1980) or wood (15% of houses built before 1960 and 6% of houses built since 1980).

  - Newer houses are more likely to use propane as the primary heat source (31% of houses built before 1960 and 66% of houses built since 1980).

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- For water heaters:
  - Older houses are more likely to use electricity (77% of houses built before 1960 and 44% of houses built since 1980 use electric water heaters).
  - Newer houses are more likely to use propane water heaters (14% of houses built before 1960 and 43% of houses built since 1980).

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Table 7: Demographics – Residence
Base: All "Residence" Respondents

	Total (n=239)
Building Type	
Two storey	41%
Bungalow/One storey ranch	38%
Split level	7%
Three storey house	5%
Raised ranch	4%
Other	5%
Approximate size of home (in sq. feet)	
Less than 1,000	3%
1,000 to 1,499	23%
1,500 to 1,999	24%
2,000 to 2,499	13%
2,500 or more	21%
Don't know	15%
Average size	**2,005 sq. ft.**
Age of home	
0 to 36 years	36%
37 to 66 years	26%
67+ years	36%
Don't know/not stated	2%
Age of respondent	
18 to 34 years	7%
35 to 44 years	15%
45 to 54 years	25%
55 to 64 years	26%
65+ years	27%
Number of adults 18 years or older living in house	
1-2	79%
3+	21%
Number of children 17 years or younger living in house	
0	67%
1-2	25%
3+	7%
Total Household Income	
Less than $40,000	15%
40,000 to $80,000	34%
More than $80,000	38%
Refused	14%

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Appendix: Questionnaire and Record of Contact

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2017 Community System Expansion Questionnaire
Draft February 6, 2017

SCR1.
FOR ALL COMMUNITIES EXCEPT WARTBURG AND ROSTOCK:
Good morning/evening. My name is _____ and I am calling from Forum Research on behalf of Union Gas. We are conducting a survey to assist in determining whether natural gas will be extended to <INSERT COMMUNITY> and surrounding areas. Are you 18 years or older and the person responsible for making energy decisions for the property at <INSERT COMMUNITY> or surrounding areas? (INTERVIEWER NOTE: ONLY CONTINUE IF YES) You may have participated in a survey on this issue several years ago, which asked about your interest in converting to natural gas with a temporary surcharge added to your natural gas bill for 5-10 years. The results of that survey were used to inform a proposal Union Gas made to the Ontario Energy Board in 2015. The Ontario Energy Board reviewed the Union Gas proposal and made a decision that will either lead to a higher temporary surcharge, or the surcharge being applied for more than 10 years. We therefore need to survey members of your community again to understand if there is still interest in converting to natural gas in light of these changes. The results of this new survey are very important, as they will help us to evaluate whether extending the gas system can be proposed to the Ontario Energy Board later this year. I want to assure you that we are not selling anything and the information you provide to us will be aggregated with others for reporting purposes.

IF COMMUNITY = WARTBURG OR ROSTOCK:
Good morning/evening. My name is _____ and I am calling from Forum Research on behalf of Union Gas. We are conducting a survey to assist in determining whether natural gas will be extended to <INSERT COMMUNITY> and surrounding areas. Are you 18 years or older and the person responsible for making energy decisions for the property at <INSERT COMMUNITY> or surrounding areas? (INTERVIEWER NOTE: ONLY CONTINUE IF YES) You may have previously participated in a survey on this issue, but the results of this particular survey are very important, as they will help us to evaluate whether extending the gas system can be proposed to the Ontario Energy Board in the next year. I want to assure you that we are not selling anything and the information you provide to us will be aggregated with others for reporting purposes.
Yes, speaking
No, I'll get them
No, not available
[IF YES, SPEAKING, CONTINUE]
[IF NO, I'LL GET THEM, REINTRODUCE]
[IF NO, NOT AVAILABLE, SCHEDULE CALLBACK THEN THANK AND TERMINATE]
[IF NOT AT THIS LOCATION, RECORD DECISION MAKER'S CONTACT INFORMATION (FIRST, LAST, PHONE, ADDRESS – IF POSSIBLE) THANK AND TERMINATE. ADD REFERRAL TO CONTACT LIST]

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SCR3. Do you own or rent this property at <INSERT COMMUNITY> or surrounding areas?
Own
Rent

[IF OWN, CONTINUE]
[IF RENT, GET CONTACT INFO – FIRST, LAST, PHONE, ADDRESS – IF POSSIBLE - OF OWNER AND TERMINATE. IF REF, THANK AND TERMINATE]

SCR4. **(DO NOT ASK) RECORD GENDER**
Male
Female

SCR5 (2015). Is this a residence or a business?
Residence
Business
Both Residence and a Business

IF (COMMUNITY = Lambton Shores OR COMMUNITY = Prince Township) AND SCR5 (2015) = Business THEN THANK AND TERMINATE.

NOTE:
IF SCR5 (2015) = "BOTH RESIDENCE AND A BUSINESS" THEN CONSIDER IT A "RESIDENCE" FOR INTERVIEW PURPOSE.

SCR6. On average, how much is your annual heating cost for this premise including taxes?

[ACCEPT 5 DIGIT NUMBER]

[RECORD ANSWER]

SECTION H: Home Heating
H1A. What is the primary energy source of heat for this premise? Is it…?

[READ, RANDOMIZE]
Oil
Propane
Electricity
Wood

No heating
Other [SPECIFY]

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H1B. What type of system provides the primary source of heat for this premise? Is it…?

IF H1A = OIL THEN ASK
Oil Forced Air, or
Oil Boiler (Hot Water Radiators)

IF H1A = PROPANE THEN ASK
Propane Forced Air, or
Propane Boiler (Hot Water Radiators)

IF H1A = ELECTRICITY THEN ASK
Electric Forced Air,
Electric Baseboard,
Geothermal, or
Heat Pump

IF H1A = WOOD THEN ASK
Wood Forced Air, or
Wood Stoves/Fireplace

No heating system
Or Something Else (SPECIFY)

IF H1B = NO HEATING SYSTEM, SKIP TO H8, ELSE CONTINUE
Other **[SPECIFY]**

H2. How old is your heating system? **(READ)**
[PLEASE ENTER A NUMBER]

NOTE: FOR CROSS-TABS USE THE FOLLOWING RANGES:
5 YEARS OR LESS
6 TO 10 YEARS OLD
11 TO 15 YEARS OLD
16 TO 25 YEARS OLD
OVER 25 YEARS OLD

H3. How likely are you to replace your heating system in the next 2 years? Are you…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

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SECTION H: CONVERSION LIKELIHOOD WITH EQUIPMENT COSTS BUT EXCLUDING SURCHARGE

[ASK H5 IF H1B = OIL FORCED AIR, ELSE SKIP TO INSTRUCTIONS BEFORE H5a]

H5. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to a natural gas high efficiency furnace is in the range of $4,500 to $5,500 including taxes depending on the type of equipment you currently have. However, with natural gas, you may save up to $1,000 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK H5a IF H1B = ELECTRIC FORCE AIR, ELSE SKIP TO INSTRUCTIONS BEFORE H6]

H5a. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to a natural gas high efficiency furnace is in the range of $4,500 to $5,500 including taxes depending on the type of equipment you currently have. However, with natural gas, you may save up to $2,100 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK H6 IF H1B = PROPANE FORCED AIR, ELSE SKIP TO INSTRUCTIONS BEFORE H7]

H6. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to natural gas is likely in the range of $400 to $1,000 including taxes depending on the type of equipment you currently have. However, with natural gas, you may save up to $1,000 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

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Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK H7 IF H1B = ELECTRIC BASEBOARD, ELSE SKIP TO INSTRUCTIONS BEFORE H7a]

H7. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to a high efficiency natural gas furnace is likely to be about $12,500 including taxes depending on the specific style and/or size of your premise. However, with natural gas, you may save up to $2,100 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ONLY ASK H7a IF H1A = WOOD, ELSE SKIP TO INSTRUCTION BEFORE H8]

H7a. Installing a high efficiency natural gas furnace is likely to cost about $4,500-$5,500 if you already have forced air ductwork and $12,500 if it doesn't, including taxes. A natural gas fireplace or wall heater would also cost about $4,500-$5,500. However, with natural gas, you may save up to $350 off of your heating cost every year, and you can avoid the need for splitting and/or storing the wood. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are...?(READ)

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

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[ONLY ASK H8 IF H1B = NO HEATING SYSTEM, OIL BOILER, PROPANE BOILER OR SOMETHING ELSE.]

H8. Installing a high efficiency natural gas furnace is likely to cost about $4,500-$5,500 if you already have forced air ductwork and $12,500 if it doesn't, including taxes. A natural gas fireplace or wall heater would also cost about $4,500-$5,500. However, with natural gas, you may save up to $1,000 off the annual cost compared to heating with oil or propane, or $2,100 compared to heating with electricity. If natural gas service was extended to your area, how likely are you to install a natural gas heating system? Would you say you are...?
(READ)

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK H9A IF H5/H5a/H6/H7 = NOT VERY LIKELY *OR* NOT AT ALL LIKELY]

H9a. You indicated that you are unlikely to convert your heating system to natural gas. Can you tell me why? (PROBE) Are there any other reasons?

(DO NOT READ)
Don't like natural gas
Not interested/ have no plans to change
Not interested at this time/ maybe in the future
Not worth it
Plan on building a new home (or facility) / moving
Too expensive
Other: **[SPECIFY]**

[ASK H9B AND H9C IF H8 = NOT VERY LIKELY OR NOT AT ALL LIKELY]

H9b. You indicated that you are unlikely to install a natural gas space heating system. Can you tell me why? (PROBE) Are there any other reasons?

(DO NOT READ)
This is a cottage occupied only in the summer
Don't like natural gas
Not interested/ have no plans to change
Not interested at this time/ maybe in the future
Not worth it
Plan on building a new home/ moving
Too expensive
Other: **[SPECIFY]**

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H9C. If low interest financing is available for the purchase of new natural gas equipment, how likely **are you to** reconsider converting? Would you say...?

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

SECTION W: Water Heating

ASK ALL
Now, I would like to ask you a few questions about your water heater.

W1. What is the MAIN fuel source for heating your water?

Propane
Oil
Electricity
Other: **[SPECIFY]**

W2. How old is your water heater?

(READ)
5 years or less
6 to 10 years old
11 to 15 years old
16 to 25 years old
Over 25 years old

W3. Is your water heater owned or rented?

Owned
Rented

[ASK W5 IF W3=OWNED]
W5. The purchase and installation of a typical natural gas water heater costs about $1,700 including taxes depending on the complexity of the installation. However, with natural gas, you may save up to $200 compared to propane water heating costs every year, or $350 compared to electric water heating costs. Considering this, how likely are you to convert your water heater to natural gas? Would you say you are…? **(READ)**

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Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK W5a IF W3=RENTED]
W5a. Natural Gas water heaters can also be rented. Typical monthly rental rates range from $23 per month to $30 per month including taxes. Depending on the specific style of your premises, the property owner may incur additional expenses for the conversion. However, with natural gas, you may save up to $200 compared to propane water heating costs every year, or $350 compared to electric water heating costs. Considering this, how likely are you to convert your water heater to natural gas? Would you say you are...? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

SECTION S: CONVERSION LIKELIHOOD WITH SURCHARGE

Natural gas expansion projects are costly and the Ontario Energy Board has indicated that the costs of connecting a new community must be fully covered through the rates new customers pay. In your community, Union Gas' regular rates will not be high enough to cover costs, so connecting customers will be asked to pay a temporary surcharge to make up the difference. The exact amount of the surcharge will depend on how many customers are expected to connect. Now, depending on your answers in this survey so far, I will now go through one or more scenarios that will help Union Gas evaluate possible surcharge scenarios. The surcharge will only be as high as it needs to be to recover costs.

INTERVIEWER NOTE:
IF RESPONDENT ASKS ABOUT THE OPTION OF A GOVERNMENT LOAN OR GRANT FOR CONSTRUCTING THE GAS PIPELINE, INTERVIEWER SHOULD MENTION THAT THIS IS NOT PART OF THE UNION GAS PROPOSAL AT THIS TIME.

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SECTION S-1: COMMUNITY = LAMBTON SHORES

SCENARIOS TO TEST:

LAMBTON SHORES	BASE	DURATION	SURCHARGE LEVEL		
			$1,000/YEAR	$750/YEAR	$500/YEAR
	ALL RESPONDENTS WHO QUALIFY	15 YEARS	SCENARIO 1	SCENARIO 2	SCENARIO 3

SCENARIO 1: $1,000 per year for 15 years.
SCENARIO 2: $750 per year for 15 year.
SCENARIO 3: $500 per year for 15 years.

PROGRAMMER NOTE:
FOR QUESTIONS SUR #A1 THROUGH SUR #A6, START WITH SCENARIO 1, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 1, THEN DO NOT ASK SCENARIO 2 AND SCENARIO 3. IF EXTREMLY LIKLEY, VERY LIKEYLY OR LIKELY IN SCENARIO 2, THEN TO NOT ASK SCENARIO 3.

[IF H5 OR H6 OR H8 =EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #A1 FOR EACH SCENARIO

SUR #A1. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,000 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,000 a year after 15 years. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A1, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,000 a year after 15 years".

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[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #A2 FOR EACH SCENARIO

SUR #A2. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[350 – SURCHARGE LEVEL] a year while the surcharge is active, and $350 a year after 15 years. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A2, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $350 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #A3 FOR EACH SCENARIO

SUR #A3. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,100 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,100 a year after 15 years. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,100 a year after 15 years".

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[IF H5 OR H6 OR H8=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #A4 FOR EACH SCENARIO

SUR #A4. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,200 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,200 a year after 15 years. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A4, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,200 a year after 15 years".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #A5 FOR EACH SCENARIO

SUR #A5. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[550 – SURCHARGE LEVEL] a year while the surcharge is active, and $550 a year after 15 years. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A5, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $550 a year after 15 years".

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[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #A6 FOR EACH SCENARIO

SUR #A6. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,300 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,300 a year after 15 years. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A6, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,300 a year after 15 years".

SECTION S-2: COMMUNITY = MILVERTON (INCLUDING WARTBURG AND ROSTOCK)

SCENARIOS TO TEST:

	BASE	DURATION (N)	SURCHARGE LEVEL		
			$1,000/YEAR	$750/YEAR	$500/YEAR
MILVERTON	ALL RESPONDENTS WHO QUALIFY	25 YEARS	SCENARIO 1	SCENARIO 2	SCENARIO 3
	EVERY THIRD RESPONDENT WHO QUALIFY	15 YEARS	SCENARIO 4	SCENARIO 5	SCENARIO 6

SCENARIO 1: $1,000 per year for 25 years.
SCENARIO 2: $750 per year for 25 years.
SCENARIO 3: $500 per year for 25 years.
SCENARIO 4: $1,000 per year for 15 years.
SCENARIO 5: $750 per year for 15 years.
SCENARIO 6: $500 per year for 15 years.

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PROGRAMMER NOTES:

FOR SCENARIO 1, 2, AND 3:

FOR QUESTIONS SUR #B1 THROUGH SUR #B6, START WITH SCENARIO 1, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 1, THEN DO NOT ASK SCENARIO 2 AND SCENARIO 3. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 2, THEN DO NOT ASK SCENARIO 3.

FOR SCENARIO 4, 5, AND 6:

FOR QUESTIONS SUR #B1 THROUGH SUR #B6, START WITH SCENARIO 4, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 4, THEN DO NOT ASK SCENARIO 5 AND SCENARIO 6. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 5, THEN DO NOT ASK SCENARIO 6.

[IF H5 OR H6 OR H8 =EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #B1 FOR EACH SCENARIO

SUR #B1. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,000 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,000 a year after the surcharge duration. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:

IN QUESTION SUR #B1, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,000 a year after the surcharge duration".

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[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #B2 FOR EACH SCENARIO

SUR #B2. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[350 – SURCHARGE LEVEL] a year while the surcharge is active, and $350 a year after the surcharge duration. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B2, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $350 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #B3 FOR EACH SCENARIO

SUR #B3. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,100 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,100 a year after the surcharge duration. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,100 a year after 15 years".

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[IF H5 OR H6 OR H8=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #B4 FOR EACH SCENARIO

SUR #B4. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,200 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,200 a year after the surcharge duration. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B4, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,200 a year after 15 years".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #B5 FOR EACH SCENARIO

SUR #B5. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[550 – SURCHARGE LEVEL] a year while the surcharge is active, and $550 a year after the surcharge duration. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B5, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $550 a year after 15 years".

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[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #B6 FOR EACH SCENARIO

SUR #B6. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,300 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,300 a year after the surcharge duration. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B6, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,300 a year after 15 years".

SECTION S-3: COMMUNITY = PRINCE TOWNSHIP

SCENARIOS TO TEST:

	BASE	DURATION (N)	SURCHARGE LEVEL		
			$1,000/YEAR	$750/YEAR	$500/YEAR
PRINCE TOWNSHIP	ALL RESPONDENTS WHO QUALIFY	25 YEARS	SCENARIO 1	SCENARIO 2	SCENARIO 3
	EVERY THIRD RESPONDENT WHO QUALIFY	PERMANENT	SCENARIO 4	SCENARIO 5	SCENARIO 6

SCENARIO 1: $1,000 per year for 25 years.
SCENARIO 2: $750 per year for 25 years.
SCENARIO 3: $500 per year for 25 years.
SCENARIO 4: A permanent charge of $1,000 per year.
SCENARIO 5: A permanent charge of $750 per year.
SCENARIO 6: A permanent charge of $500 per year.

PROGRAMMER NOTES:

FOR SCENARIOS 1 - 3:
FOR QUESTIONS SUR #C1 THROUGH SUR #C6, START WITH SCENARIO 1, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 1, THEN DO NOT ASK SCENARIO 2 AND SCENARIO 3. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 2, THEN DO NOT ASK SCENARIO 3.

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FOR SCENARIOS 4 - 6:

FOR QUESTIONS SUR #C1 THROUGH SUR #C6, START WITH SCENARIO 4, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 4, THEN DO NOT ASK SCENARIO 5 AND SCENARIO 6. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 4, THEN DO NOT ASK SCENARIO 5.

[IF H5 OR H6 OR H8 =EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #C1 FOR EACH SCENARIO

SUR #C1. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.

IF SCENARIO 1, 2 OR 3 THEN SAY: With this surcharge, you will save $[1,000 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,000 a year after the surcharge duration.

IF SCENARIO 4, 5, OR 6 THEN SAY: With this surcharge, you will save $[1,000 – SURCHARGE LEVEL] a year.

Considering this, how likely are you to convert your heating system to natural gas? Would you say...?

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:

IN QUESTION SUR #C1, FOR SCENARIO 1, 2, AND 3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,000 a year after the surcharge duration".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #C2 FOR EACH SCENARIO

SUR #C2. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.

IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[350 – SURCHARGE LEVEL] a year while the surcharge is active, and $350 a year after the surcharge duration.

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IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[350 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your heating system to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C2, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $350 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #C3 FOR EACH SCENARIO

SUR #C3. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[2,100 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,100 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[2,100 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your heating system to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,100 a year after 15 years".

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[IF H5 OR H6 OR H8=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #C4 FOR EACH SCENARIO

SUR #C4. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[1,200 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,200 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[1,200 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C4, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,200 a year after 15 years".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #C5 FOR EACH SCENARIO

SUR #C5. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[550 – SURCHARGE LEVEL] a year while the surcharge is active, and $550 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[550 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

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PROGRAMMER NOTE:
IN QUESTION SUR #C5, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $550 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #C6 FOR EACH SCENARIO

SUR #C6. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[2,300 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,300 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[2,300 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C6, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,300 a year after 15 years".

SECTION E: EXPANSION TIMELINE

[ASK E1 AND E2 IF EXTREMELY LIKELY, VERY LIKELY, OR LIKELY FOR ANY OF SUR #A1 – SUR #A6, SUR #B1 – SUR #B6, SUR #C1 – SUR #C6]
E1. You indicated that you are likely to convert to natural gas. Assuming gas service is available after December 2017, when would you likely convert?
(READ LIST)

Within the first 12 months
Within 1 to 2 years
Within 2 to 3 years
After 3 years

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E2. I am going to read you a list of appliances that could be powered by natural gas. For each appliance, please tell me if you would be extremely interested, very interested, interested, not very interested or not at all interested in natural gas for the appliance.

[READ; RANDOMIZE]
Fireplace
Oven, range or stove
Clothes dryer
BBQ
Other [**SPECIFY**]

[SCALE]
Extremely interested
Very interested
Interested
Not very interested
Not at all interested

ASK QUESTIONS IN SECTION D IF SCR5 (2015) = RESIDENCE
SECTION D: Demographics

I just have a few additional questions for you that will help us group your answers with others who have also participated in the research. As a reminder, your answers will be kept completely confidential and they will not be tied back to you.

D1. Which of the following best describes the style of your house? Is it a …?

(READ LIST)
A bungalow or one story ranch
A raised ranch
A split level
A two story
Or a three story house
Some other style

D2. In order to have some idea as to the approximate size of your home in square feet (not including any unfinished basement) can you tell me how many square feet your home is?
[RECORD NUMBER. RANGE: 100 – 10000]

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D3. In what year was your house built? Your best estimate is fine.
[RECORD YEAR]

ASK D3a IF COMMUNITY = PRINCE TOWNSHIP OR COMMUNITY = LAMBTON SHORES.
D3a. Which statement best describes the occupancy of this dwelling?

(READ LIST)
Occupied all-year round
Occupied mostly in the summer months
Occupied mostly in the winter months
Occupied occasionally year round

[SKIP TO D4 IF D3A = OCCUPIED ALL YEAR ROUND, ELSE CONTINUE]

D3b. For approximately how many months did you use this residence during 2016?

(RECORD NUMBER OF MONTHS)
[SCALE: 1-12]

D4. How many adults 18 years or over do you have living in your household, including yourself?

[RECORD NUMERIC RESPONSE. RANGE: 1 TO 20]

D5. And how many children 17 years or younger, if any, do you have living in your household?

[RECORD NUMERIC RESPONSE. RANGE: 0 TO 20]

D6. In what year were you born?

[RECORD YEAR]

[ASK D6a IF REFUSE/DON'T KNOW AT D6, ELSE SKIP TO D7]

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D6a. Can you please tell me into which of the following age groups you fall? Are you…?

(READ LIST UNTIL RESPONSE GIVEN)
18 to 24
25 to 34
35 to 44
45 to 54
55 to 64
65 or over

D7. And lastly, which of the following best describes your total household income before taxes? Please stop me when I reach your category. Is it…?

(READ LIST)
Under $20,000
$20,000 to less than $40,000
$40,000 to less than $60,000
$60,000 to less than $80,000
$80,000 to less than $100,000
$100,000 to less than $120,000
$120,000 to less than $140,000
$140,000 or more

ASK QUESTIONS IN SECTION E IF SCR5 (2015) = BUSINESS
SECTION E: Firmographics

I just have a few additional questions for you that will help us group your answers with others who have also participated in the research. As a reminder, your answers will be kept completely confidential and they will not be tied back to you.

E1. How many buildings (are at this location?)
NOTE: IF LESS THAN ONE BUILDING, E.G. IF LOCATED IN A BUILDING OR SHOPPING PLAZA, ENTER “PART OF A BUILDING”
1,
2,
3,
OTHER (SPECIFY),
PART OF A BUILDING,
REFUSED
DON’T KNOW

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E2. What is the approximate square footage of the indoor floor space (at this location of the first/second/third building), including basement and storage, but not including parking or loading areas?
Please consider only the area that is affected by a heating system.
[RECORD NUMBER]

E3. What is the age of the building at this location (of the first/second/third building)?

1 YEAR OR LESS,
2 TO 5 YEARS,
6 TO 10 YEARS,
11 TO 20 YEARS,
21 TO 30 YEARS,
31 TO 40 YEARS,
MORE THAN 40 YEARS OLD,
DON'T KNOW

DB3. How many floors does the building have?
(SPECIFY)

Thank you for your feedback. We appreciate your willingness to participate in this survey.

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Record of Contact

	Milverton/Rostock/ Wartburg
Complete	**245**
Refusal	115
Callback	3
Answering machine	4
Vacation	6
Terminate partway	16
Language	3
Not in	8
Wrong number	13
Duplicate	3
Dialer - No answer	67
Dialer - Busy	7
Dialer - Operator intercept	98
Dialer - Dropped call	3
Dialer - Answering machine	75
Dialer - Fax/modem	0
Disqualified	23
Other	14
Total	**710**

Response rate: 45%

The response rate is calculated as follows:
(Completes + Duplicates + Disqualified) ÷
Total Contacts minus known unqualified numbers (i.e., Wrong Numbers, Not-in-service, Dialer–Operator Intercept, Dialer–Dropped Call, Dialer –Fax/Modem)

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Gas Pipeline Expansion Study
Lambton Shores

Research Report Prepared for: Union Gas Limited

April, 2017

Accredited Gold Seal Corporate Member
Marketing Research and Intelligence Association
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Background

Union Gas (Union) operates in northern, southwestern, and eastern Ontario delivering natural gas services to over 1.3 million residential, commercial, and industrial customers in more than 400 communities. However, the community of Lambton Shores, located in southwestern Ontario is not currently serviced by Union Gas. Given the operating cost advantages of natural gas, Union Gas believes that there is significant interest in converting to natural gas, particularly for space and water heating. Union Gas is reviewing the feasibility of extending the gas pipeline that will service the citizens of Lambton Shores Ontario.

In addition to the cost of converting space and water heating equipment to natural gas, households typically are required to make a contribution toward the pipeline capital costs of extending service to the community. Union has developed a volumetric surcharge for those that elect to convert, as a means to overcome the upfront capital cost barrier that households would face upon conversion. Market research in Lambton Shores Ontario is needed to measure the likelihood of converting to natural gas given potential savings, conversion costs and the volumetric surcharge alternative for recovering upfront pipeline extension costs.

Research Objectives

The objective of this research is to ascertain interest in obtaining natural gas service amongst the residential household and commercial business populations of Lambton Shores Ontario. Specifically, this research is designed to:

- Measure the likelihood of converting heating equipment based on a range of typical equipment conversion costs
- Gauge interest in switching to natural gas water heating based on a range of typical equipment conversion costs
- Measure the impact on likelihood of conversion based on a volumetric surcharge (cents per m^3) that would apply to natural gas consumption following conversion.

Methodology

To achieve the research objectives, Union Gas retained the services of Forum Research, a third party research supplier, to conduct the quantitative study. A total of 48 telephone and door-to-door interviews were completed from a list of 168 home and business owners in Lambton Shores between February 3 and February 26, yielding a +/- 12.0% margin of error at the 95% confidence level. The level of completes represents a 36% response rate.

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Reading the Charts

Colours have been used in the charts to indicate where differences exist:

indicates a significantly higher number

indicates a significantly lower number

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Highlights

- Overall, 75% of respondents are likely ("extremely likely", "very likely" or "likely") to convert their **space heating** systems to natural gas based on the cost of converting their equipment.
    - Propane is the most prevalent space heating system used in Lambton Shores (48%). Wood and electric sources each heat 21% of Lambton Shores households. A further 6% of households use oil heating.

- Similarly, 69% of respondents are "extremely likely", "very likely" or "likely" to convert their **water heaters** to natural gas.
    - Virtually all Lambton Shores respondents own their water heaters (96%) and the majority currently uses electricity as the main fuel source (83%).

- With an additional contribution to pipeline construction, 69% of respondents overall are likely ("extremely likely", "very likely" or "likely") to convert their space heating systems and/or water heaters to natural gas (both space heater and water heater or space heating only).

- Of those likely to convert their space heating systems and/or water heaters to natural gas if a surcharge was required, 66% are likely to convert within the first 12 months, 25% are likely to convert within 1-2 years, 3% are likely to convert within 2-3 years and the remaining 6% are likely to convert after 3 years.

- Among those who are likely to convert their space heating systems and/or water heaters to natural gas, between about half and two-thirds of respondents would be interested in converting other appliances to natural gas as well (63% are interested in converting their BBQs, 59% for fireplaces, 50% for ovens/stoves and 47% for clothes dryers).

- Six-in-ten (60%) of Lambton Shores homes are used year-round.

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Findings

Space Heating

This study indicates that the most prevalent space heating system used in Lambton Shores is propane (48%). Wood and electric systems each heat 21% of Lambton Shores households. A further 6% of households use oil heating.

The age of heating systems in Lambton Shores varies: 38% have been installed within the past 5 years, 30% were installed 6 to 15 years ago and 25% of heating systems are over 15 years old. Overall, almost half of respondents (47%) would be extremely likely/very likely/likely to replace their heating systems within the next two years.

Overall, 75% of respondents would be likely ("extremely likely", "very likely" or "likely") to convert their space heating systems to natural gas (when given the equipment conversion cost only).

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Table 1: Space Heating
Base: All respondents

	Total (n=48)	Oil (n=3)*	Propane (n=23)	Electric (n=10)	Wood (n=10)
Penetration		6%	48%	21%	21%
Likely to replace in the next 2 years (Top 3-Extremely/very/likely to replace)	47%	67%	52%	40%	40%
Age of heating system					
Less than 1 year	2%	-	4%	-	-
1 to 5 years	36%	-	43%	40%	30%
6 to 10 years	17%	33%	22%	-	10%
11 to 15 years	13%	33%	9%	20%	10%
16 to 25 years	8%	-	17%	-	-
Over 25 years	17%	-	4%	30%	40%
Don't know	6%	33%	-	10%	10%
Top 2-Extremely/very likely to convert to NG (Equipment conversion cost only)	**65%**	**67%**	**74%**	**60%**	**50%**
Top 3-Extremely/very/likely to convert to NG (Equipment conversion cost only)	**75%**	**67%**	**87%**	**70%**	**60%**
Extremely likely	42%	33%	43%	50%	30%
Very likely	23%	33%	30%	10%	20%
Likely	10%	-	13%	10%	10%
Not very likely	15%	33%	13%	20%	10%
Not at all likely	10%	-	-	10%	30%

* *Extremely small base*

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Those not likely to convert to natural gas cite a variety of barriers including lack of interest, plans for a new home, home only occupied during the summer, and "not worth it".

Table 2: Reasons unlikely to convert space heating system to Natural Gas
Base: Those not very/not at all likely to convert

	Have Forced Air (Oil, Electric, Propane) or Electric Baseboard (n=6)**	Other Source* (n=2)**
Not interested/No plans to change	33%	50%
Not worth it	33%	-
Plan on building a new home/moving	33%	-
Not interested now/maybe in future	17%	-
Cottage occupied only in the summer	-	50%

* No heating system, oil boiler, propane boiler, geothermal, heat pump or something else
*** Extremely small base*
Totals may exceed 100% due to multiple mentions
Question: You indicated that you are unlikely to convert your heating system to natural gas. Can you tell me why? (PROBE) Are there any other reasons?

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Water Heating

Virtually all Lambton Shores respondents own their water heaters (96%), and the majority use electricity as the main fuel source (83%).

The majority of respondents (85%) have had their water heaters for 10 years or less. Half of respondents (50%) have had them for five years or less.

Overall, 69% of respondents would be "extremely likely", "very likely" or "likely" to convert their water heaters to natural gas.

Table 3: Water Heating
Base: All respondents

	Total (n=48)	Propane (n=7)**	Electricity (n=40)
Penetration		15%	83%
Own water heater	96%	86%	98%
5 years or less	50%	57%	48%
6 to 10 years	35%	14%	40%
11 to 15 years	8%	14%	7%
16+ years	6%	14%	5%

	Rent (n=2)**	Own (n=46)
Top 2-Extremely/very likely to convert water heater to NG	**50%**	
Top 3-Extremely/very/likely to convert water heater to NG	**69%**	

		Total	Propane (n=6)**	Electric (n=39)
Extremely likely	-	28%	50%	26%
Very likely	50%	22%	33%	21%
Likely	-	20%	-	23%
Not very likely	-	13%	-	15%
Not at all likely	50%	17%	17%	15%

*** Extremely small base*
Note: The sample size of respondents using "other sources" is too small for separate analysis (n=8)

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Likelihood to Convert with Surcharge

Respondents who indicated they are likely to convert either their space or water heating systems to natural gas were asked their likelihood to convert if an additional financial contribution toward pipeline construction were required, in addition to the equipment conversion cost. Three different surcharge scenarios were presented to respondents:

- $1,000 per year for 15 years
- $750 per year for 15 years
- $500 per year for 15 years.

For the typical residential home, respondents were told that the annual savings resulting from converting space and/or water heating to natural gas would be as follows:

Table 4: Savings For Each Fuel Option

	Savings While Surcharge is Active	Savings When Surcharge Ends
If Converting Both Space and Water Heaters to Natural Gas and Fuel Source is:	**With the $1,000, $750, or $500 surcharge scenarios, savings are respectively:**	
*Oil Forced Air, Propane Forced Air or Other**	$200–$450–$700	$1,200
Electric Forced Air/Electric Baseboard	$1,300–$1,550–$1,800	$2,300
Wood	"Minimal amount"**	$550
If Converting Space Heater Only to Natural Gas and Fuel Source is:		
*Oil Forced Air, Propane Forced Air or Other**	"Minimal amount"***–$250–$500	$1,000
Electric Forced Air/Electric Baseboard	$1,100–$1,350–$1,600	$2,100
Wood	"Minimal amount"**	$350

* No heating system, oil boiler, propane boiler, geothermal, heat pump, or something else.
** Respondents were told: "You will save a minimal amount while the higher rate is active and $550 a year after 15 years" (or $350 if converting the space heater only).
***Respondents who were given the $1,000 surcharge scenario, were told: "You will save a minimal amount while the higher rate is active and $1,000 a year after 15 years".

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When respondents consider both the **conversion cost** and **a volumetric surcharge of $500 per year for 15 years**, in aggregate, 69% of respondents are likely ("extremely likely", "very likely" or "likely") to convert their space heating and/or water heating to natural gas (both space heater and water heater or space heating only). Likelihood to convert with the surcharge, depending on energy source used, is broken down in the following chart.

Table 5: Likely to Convert – With Surcharge of $500 per year for 15 years
Base: Those likely to convert to Natural Gas (Equipment conversion cost only)

		Likely to Convert Both Space Heater and Water Heater (Extremely/Very/Likely)			Likely to Convert Space Heating Only (Extremely/Very/Likely)		
	TOTAL POPULATION (n=48)	Oil or Propane Forced Air, Other* (n=22)	Wood (n=6)**	Electric Forced Air/ Electric Baseboard (n=4)**	Oil or Propane Forced Air, Other* (n=4)**	Wood (n=0)**	Electric Forced Air/ Electric Baseboard (n=1)**
Likelihood to convert with surcharge							
Top 3 Extremely/ Very/Likely	69%	86%	100%	100%	75%	–	100%

* No heating system, oil boiler, propane boiler, geothermal, heat pump or something else
** Extremely small base

Considering the **conversion cost only**, in aggregate 77% of respondents are "extremely likely", "very likely" or "likely" to convert their space heating and/or water heating to natural gas (both space heater and water heater or space heating only).

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Conversion Time

Respondents who indicated they are likely (extremely, very, or likely) to convert their space heating systems and/or water heaters to natural gas if a surcharge was required were asked when they are likely to do so if natural gas is available after December 2017.

For those indicating extremely/very/likely to convert, 66% are likely to convert within the first 12 months, 25% are likely to convert within 1-2 years, 3% are likely to convert within 2-3 years and the remaining 6% are likely to convert after 3 years.

Other Appliances

Respondents who are likely to convert their space heating systems and/or water heaters to natural gas were asked if they would be interested in converting other appliances to natural gas as well. Between about half and two-thirds of respondents would be interested in converting each of the appliances listed below. Directionally, BBQs and fireplaces appear to be the appliances that they would be most interested in converting to natural gas (63% and 59% "extremely" or "very" interested respectively). About half would be interested in converting their ovens/stoves (50%) or clothes dryers (47%) to natural gas.

Table 6: Interest in Converting Other Appliances to Natural Gas
Base: Those likely to convert to Natural Gas (with surcharge)

	BBQ (n=32)	Fireplace (n=32)	Oven/ Range/Stove (n=32)	Clothes Dryer (n=32)
Extremely/very interested in converting other appliances	63%	59%	50%	47%
Extremely interested	41%	44%	22%	25%
Very interested	22%	16%	28%	22%
Interested	9%	6%	9%	9%
Not very interested	3%	16%	9%	22%
Not at all interested	22%	16%	25%	19%
Don't know/not stated	3%	3%	6%	3%

Based on partial sample

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Demographics and Housing Characteristics

Bungalows make up the majority of homes in Lambton Shores, accounting for 52% of all respondent households. The average house size is 1,771 square feet and the age of the home varies: 80% of homes have been built since 1950, with 40% being built since 1980. Six-in-ten homes (60%) are used by year-round, full-time residents, and 29% are used mostly as summer homes.

About two-thirds of Lambton Shores respondents (66%) are 55 years or older, while only 4% are under 35 years of age. Therefore, the majority of residences house 1 or 2 adults (79%) and no children (71%).

Just over half of households (54%) have incomes of $40,000 or more: 23% earn $40,000 to $80,000 and 31% earn more than $80,000.

In aggregate, 69% of respondents are likely to convert their space heating and/or water heating to natural gas when both **conversion cost** and **volumetric surcharge** are considered. Directional findings suggest that those who are more likely to convert tend to be *living in larger houses, newer homes* or are *younger residents*.

Directional findings further suggest that other demographic attributes of interest are:

- Newer houses are more likely to use propane as their primary source of home heating. This is consistent with findings in other communities.
    - 38% of houses built before 1980 and 58% houses built since 1980 use propane as their primary heat source

- Older homes are more likely to use oil or electric heat
    - 39% of houses built before 1980 and 11% houses built since 1980 use some type of oil or electric space heating.

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Table 7: Demographics – Residence
Base: All "Residence" Respondents

	Total (n=48)
Building Type	
Bungalow/One storey ranch	52%
Two storey	23%
Split level	13%
Three storey	-
Raised ranch	6%
Approximate size of home (in sq. feet)	
Less than 1,000	8%
1,000 to 1,499	29%
1,500 to 1,999	13%
2,000 to 2,499	17%
2,500 or more	16%
Don't know	17%
Average size	**1,771 sq. ft.**
Occupancy of Dwelling	
All-year round	60%
Mostly in the summer months	29%
Occasionally year round	10%
Ave months (among partial year occupants n=19)	**7 months**
Age of home	
0 to 36 years	40%
37 to 66 years	40%
67+ years	15%
Don't know/not stated	6%
Age of respondent	
18 to 34 years	4%
35 to 44 years	4%
45 to 54 years	19%
55 to 64 years	33%
65+ years	33%
Number of adults 18 years or older living in house	
1-2	79%
3+	18%
Number of children 17 years or younger living in house	
0	71%
1-2	18%
3+	8%
Total Household Income	
Less than $40,000	2%
40,000 to $80,000	23%
More than $80,000	31%
Refused	44%

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Appendix: Questionnaire and Record of Contact

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2017 Community System Expansion Questionnaire
Draft February 6, 2017

SCR1.
FOR ALL COMMUNITIES EXCEPT WARTBURG AND ROSTOCK:
Good morning/evening. My name is _____ and I am calling from Forum Research on behalf of Union Gas. We are conducting a survey to assist in determining whether natural gas will be extended to <INSERT COMMUNITY> and surrounding areas. Are you 18 years or older and the person responsible for making energy decisions for the property at <INSERT COMMUNITY> or surrounding areas? (INTERVIEWER NOTE: ONLY CONTINUE IF YES) You may have participated in a survey on this issue several years ago, which asked about your interest in converting to natural gas with a temporary surcharge added to your natural gas bill for 5-10 years. The results of that survey were used to inform a proposal Union Gas made to the Ontario Energy Board in 2015. The Ontario Energy Board reviewed the Union Gas proposal and made a decision that will either lead to a higher temporary surcharge, or the surcharge being applied for more than 10 years. We therefore need to survey members of your community again to understand if there is still interest in converting to natural gas in light of these changes. The results of this new survey are very important, as they will help us to evaluate whether extending the gas system can be proposed to the Ontario Energy Board later this year. I want to assure you that we are not selling anything and the information you provide to us will be aggregated with others for reporting purposes.

IF COMMUNITY = WARTBURG OR ROSTOCK:
Good morning/evening. My name is _____ and I am calling from Forum Research on behalf of Union Gas. We are conducting a survey to assist in determining whether natural gas will be extended to <INSERT COMMUNITY> and surrounding areas. Are you 18 years or older and the person responsible for making energy decisions for the property at <INSERT COMMUNITY> or surrounding areas? (INTERVIEWER NOTE: ONLY CONTINUE IF YES) You may have previously participated in a survey on this issue, but the results of this particular survey are very important, as they will help us to evaluate whether extending the gas system can be proposed to the Ontario Energy Board in the next year. I want to assure you that we are not selling anything and the information you provide to us will be aggregated with others for reporting purposes.
Yes, speaking
No, I'll get them
No, not available
[IF YES, SPEAKING, CONTINUE]
[IF NO, I'LL GET THEM, REINTRODUCE]
[IF NO, NOT AVAILABLE, SCHEDULE CALLBACK THEN THANK AND TERMINATE]
[IF NOT AT THIS LOCATION, RECORD DECISION MAKER'S CONTACT INFORMATION (FIRST, LAST, PHONE, ADDRESS – IF POSSIBLE) THANK AND TERMINATE. ADD REFERRAL TO CONTACT LIST]

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SCR3. Do you own or rent this property at <INSERT COMMUNITY> or surrounding areas?
Own
Rent

[IF OWN, CONTINUE]
[IF RENT, GET CONTACT INFO – FIRST, LAST, PHONE, ADDRESS – IF POSSIBLE - OF OWNER AND TERMINATE. IF REF, THANK AND TERMINATE]

SCR4. **(DO NOT ASK) RECORD GENDER**
Male
Female

SCR5 (2015). Is this a residence or a business?
Residence
Business
Both Residence and a Business

IF (COMMUNITY = Lambton Shores OR COMMUNITY = Prince Township) AND SCR5 (2015) = Business THEN THANK AND TERMINATE.

NOTE:
IF SCR5 (2015) = "BOTH RESIDENCE AND A BUSINESS" THEN CONSIDER IT A "RESIDENCE" FOR INTERVIEW PURPOSE.

SCR6. On average, how much is your annual heating cost for this premise including taxes?

[ACCEPT 5 DIGIT NUMBER]

[RECORD ANSWER]

SECTION H: Home Heating
H1A. What is the primary energy source of heat for this premise? Is it…?

[READ, RANDOMIZE]
Oil
Propane
Electricity
Wood

No heating
Other [SPECIFY]

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H1B. What type of system provides the primary source of heat for this premise? Is it…?

IF H1A = OIL THEN ASK
Oil Forced Air, or
Oil Boiler (Hot Water Radiators)

IF H1A = PROPANE THEN ASK
Propane Forced Air, or
Propane Boiler (Hot Water Radiators)

IF H1A = ELECTRICITY THEN ASK
Electric Forced Air,
Electric Baseboard,
Geothermal, or
Heat Pump

IF H1A = WOOD THEN ASK
Wood Forced Air, or
Wood Stoves/Fireplace

No heating system
Or Something Else (SPECIFY)

IF H1B = NO HEATING SYSTEM, SKIP TO H8, ELSE CONTINUE
Other **[SPECIFY]**

H2. How old is your heating system? **(READ)**
[PLEASE ENTER A NUMBER]

NOTE: FOR CROSS-TABS USE THE FOLLOWING RANGES:
5 YEARS OR LESS
6 TO 10 YEARS OLD
11 TO 15 YEARS OLD
16 TO 25 YEARS OLD
OVER 25 YEARS OLD

H3. How likely are you to replace your heating system in the next 2 years? Are you…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

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SECTION H: CONVERSION LIKELIHOOD WITH EQUIPMENT COSTS BUT EXCLUDING SURCHARGE

[ASK H5 IF H1B = OIL FORCED AIR, ELSE SKIP TO INSTRUCTIONS BEFORE H5a]

H5. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to a natural gas high efficiency furnace is in the range of $4,500 to $5,500 including taxes depending on the type of equipment you currently have. However, with natural gas, you may save up to $1,000 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK H5a IF H1B = ELECTRIC FORCE AIR, ELSE SKIP TO INSTRUCTIONS BEFORE H6]

H5a. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to a natural gas high efficiency furnace is in the range of $4,500 to $5,500 including taxes depending on the type of equipment you currently have. However, with natural gas, you may save up to $2,100 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK H6 IF H1B = PROPANE FORCED AIR, ELSE SKIP TO INSTRUCTIONS BEFORE H7]

H6. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to natural gas is likely in the range of $400 to $1,000 including taxes depending on the type of equipment you currently have. However, with natural gas, you may save up to $1,000 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

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Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK H7 IF H1B = ELECTRIC BASEBOARD, ELSE SKIP TO INSTRUCTIONS BEFORE H7a]

H7. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to a high efficiency natural gas furnace is likely to be about $12,500 including taxes depending on the specific style and/or size of your premise. However, with natural gas, you may save up to $2,100 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ONLY ASK H7a IF H1A = WOOD, ELSE SKIP TO INSTRUCTION BEFORE H8]

H7a. Installing a high efficiency natural gas furnace is likely to cost about $4,500-$5,500 if you already have forced air ductwork and $12,500 if it doesn't, including taxes. A natural gas fireplace or wall heater would also cost about $4,500-$5,500. However, with natural gas, you may save up to $350 off of your heating cost every year, and you can avoid the need for splitting and/or storing the wood. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are...?(READ)

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

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[ONLY ASK H8 IF H1B = NO HEATING SYSTEM, OIL BOILER, PROPANE BOILER OR SOMETHING ELSE.]

H8. Installing a high efficiency natural gas furnace is likely to cost about $4,500-$5,500 if you already have forced air ductwork and $12,500 if it doesn't, including taxes. A natural gas fireplace or wall heater would also cost about $4,500-$5,500. However, with natural gas, you may save up to $1,000 off the annual cost compared to heating with oil or propane, or $2,100 compared to heating with electricity. If natural gas service was extended to your area, how likely are you to install a natural gas heating system? Would you say you are...?
(READ)

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK H9A IF H5/H5a/H6/H7 = NOT VERY LIKELY *OR* NOT AT ALL LIKELY]

H9a. You indicated that you are unlikely to convert your heating system to natural gas. Can you tell me why? (PROBE) Are there any other reasons?

(DO NOT READ)
Don't like natural gas
Not interested/ have no plans to change
Not interested at this time/ maybe in the future
Not worth it
Plan on building a new home (or facility) / moving
Too expensive
Other: **[SPECIFY]**

[ASK H9B AND H9C IF H8 = NOT VERY LIKELY OR NOT AT ALL LIKELY]

H9b. You indicated that you are unlikely to install a natural gas space heating system. Can you tell me why? (PROBE) Are there any other reasons?

(DO NOT READ)
This is a cottage occupied only in the summer
Don't like natural gas
Not interested/ have no plans to change
Not interested at this time/ maybe in the future
Not worth it
Plan on building a new home/ moving
Too expensive
Other: **[SPECIFY]**

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H9C. If low interest financing is available for the purchase of new natural gas equipment, how likely **are you to** reconsider converting? Would you say...?

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

SECTION W: Water Heating

ASK ALL
Now, I would like to ask you a few questions about your water heater.

W1. What is the MAIN fuel source for heating your water?

Propane
Oil
Electricity
Other: **[SPECIFY]**

W2. How old is your water heater?

(READ)
5 years or less
6 to 10 years old
11 to 15 years old
16 to 25 years old
Over 25 years old

W3. Is your water heater owned or rented?

Owned
Rented

[ASK W5 IF W3=OWNED]
W5. The purchase and installation of a typical natural gas water heater costs about $1,700 including taxes depending on the complexity of the installation. However, with natural gas, you may save up to $200 compared to propane water heating costs every year, or $350 compared to electric water heating costs. Considering this, how likely are you to convert your water heater to natural gas? Would you say you are…? **(READ)**

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Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK W5a IF W3=RENTED]
W5a. Natural Gas water heaters can also be rented. Typical monthly rental rates range from $23 per month to $30 per month including taxes. Depending on the specific style of your premises, the property owner may incur additional expenses for the conversion. However, with natural gas, you may save up to $200 compared to propane water heating costs every year, or $350 compared to electric water heating costs. Considering this, how likely are you to convert your water heater to natural gas? Would you say you are...? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

SECTION S: CONVERSION LIKELIHOOD WITH SURCHARGE

Natural gas expansion projects are costly and the Ontario Energy Board has indicated that the costs of connecting a new community must be fully covered through the rates new customers pay. In your community, Union Gas' regular rates will not be high enough to cover costs, so connecting customers will be asked to pay a temporary surcharge to make up the difference. The exact amount of the surcharge will depend on how many customers are expected to connect. Now, depending on your answers in this survey so far, I will now go through one or more scenarios that will help Union Gas evaluate possible surcharge scenarios. The surcharge will only be as high as it needs to be to recover costs.

INTERVIEWER NOTE:
IF RESPONDENT ASKS ABOUT THE OPTION OF A GOVERNMENT LOAN OR GRANT FOR CONSTRUCTING THE GAS PIPELINE, INTERVIEWER SHOULD MENTION THAT THIS IS NOT PART OF THE UNION GAS PROPOSAL AT THIS TIME.

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SECTION S-1: COMMUNITY = LAMBTON SHORES

SCENARIOS TO TEST:

LAMBTON SHORES	BASE	DURATION	SURCHARGE LEVEL		
			$1,000/YEAR	$750/YEAR	$500/YEAR
	ALL RESPONDENTS WHO QUALIFY	15 YEARS	SCENARIO 1	SCENARIO 2	SCENARIO 3

SCENARIO 1: $1,000 per year for 15 years.
SCENARIO 2: $750 per year for 15 year.
SCENARIO 3: $500 per year for 15 years.

PROGRAMMER NOTE:
FOR QUESTIONS SUR #A1 THROUGH SUR #A6, START WITH SCENARIO 1, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 1, THEN DO NOT ASK SCENARIO 2 AND SCENARIO 3. IF EXTREMLY LIKLEY, VERY LIKEYLY OR LIKELY IN SCENARIO 2, THEN TO NOT ASK SCENARIO 3.

[IF H5 OR H6 OR H8 =EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #A1 FOR EACH SCENARIO

SUR #A1. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,000 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,000 a year after 15 years. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A1, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,000 a year after 15 years".

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[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #A2 FOR EACH SCENARIO

SUR #A2. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[350 – SURCHARGE LEVEL] a year while the surcharge is active, and $350 a year after 15 years. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A2, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $350 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #A3 FOR EACH SCENARIO

SUR #A3. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,100 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,100 a year after 15 years. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,100 a year after 15 years".

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[IF H5 OR H6 OR H8=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #A4 FOR EACH SCENARIO

SUR #A4. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,200 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,200 a year after 15 years. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A4, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,200 a year after 15 years".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #A5 FOR EACH SCENARIO

SUR #A5. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[550 – SURCHARGE LEVEL] a year while the surcharge is active, and $550 a year after 15 years. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A5, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $550 a year after 15 years".

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[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #A6 FOR EACH SCENARIO

SUR #A6. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,300 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,300 a year after 15 years. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A6, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,300 a year after 15 years".

SECTION S-2: COMMUNITY = MILVERTON (INCLUDING WARTBURG AND ROSTOCK)

SCENARIOS TO TEST:

	BASE	DURATION (N)	SURCHARGE LEVEL		
			$1,000/YEAR	$750/YEAR	$500/YEAR
MILVERTON	ALL RESPONDENTS WHO QUALIFY	25 YEARS	SCENARIO 1	SCENARIO 2	SCENARIO 3
	EVERY THIRD RESPONDENT WHO QUALIFY	15 YEARS	SCENARIO 4	SCENARIO 5	SCENARIO 6

SCENARIO 1: $1,000 per year for 25 years.
SCENARIO 2: $750 per year for 25 years.
SCENARIO 3: $500 per year for 25 years.
SCENARIO 4: $1,000 per year for 15 years.
SCENARIO 5: $750 per year for 15 years.
SCENARIO 6: $500 per year for 15 years.

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PROGRAMMER NOTES:

FOR SCENARIO 1, 2, AND 3:
FOR QUESTIONS SUR #B1 THROUGH SUR #B6, START WITH SCENARIO 1, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 1, THEN DO NOT ASK SCENARIO 2 AND SCENARIO 3. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 2, THEN DO NOT ASK SCENARIO 3.

FOR SCENARIO 4, 5, AND 6:
FOR QUESTIONS SUR #B1 THROUGH SUR #B6, START WITH SCENARIO 4, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 4, THEN DO NOT ASK SCENARIO 5 AND SCENARIO 6. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 5, THEN DO NOT ASK SCENARIO 6.

[IF H5 OR H6 OR H8 =EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #B1 FOR EACH SCENARIO

SUR #B1. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,000 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,000 a year after the surcharge duration. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B1, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,000 a year after the surcharge duration".

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[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #B2 FOR EACH SCENARIO

SUR #B2. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[350 – SURCHARGE LEVEL] a year while the surcharge is active, and $350 a year after the surcharge duration. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B2, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $350 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #B3 FOR EACH SCENARIO

SUR #B3. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,100 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,100 a year after the surcharge duration. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,100 a year after 15 years".

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[IF H5 OR H6 OR H8=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #B4 FOR EACH SCENARIO

SUR #B4. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,200 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,200 a year after the surcharge duration. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B4, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,200 a year after 15 years".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #B5 FOR EACH SCENARIO

SUR #B5. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[550 – SURCHARGE LEVEL] a year while the surcharge is active, and $550 a year after the surcharge duration. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B5, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $550 a year after 15 years".

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[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #B6 FOR EACH SCENARIO

SUR #B6. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,300 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,300 a year after the surcharge duration. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B6, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,300 a year after 15 years".

SECTION S-3: COMMUNITY = PRINCE TOWNSHIP

SCENARIOS TO TEST:

	BASE	DURATION (N)	SURCHARGE LEVEL		
			$1,000/YEAR	$750/YEAR	$500/YEAR
PRINCE TOWNSHIP	ALL RESPONDENTS WHO QUALIFY	25 YEARS	SCENARIO 1	SCENARIO 2	SCENARIO 3
	EVERY THIRD RESPONDENT WHO QUALIFY	PERMANENT	SCENARIO 4	SCENARIO 5	SCENARIO 6

SCENARIO 1: $1,000 per year for 25 years.
SCENARIO 2: $750 per year for 25 years.
SCENARIO 3: $500 per year for 25 years.
SCENARIO 4: A permanent charge of $1,000 per year.
SCENARIO 5: A permanent charge of $750 per year.
SCENARIO 6: A permanent charge of $500 per year.

PROGRAMMER NOTES:

FOR SCENARIOS 1 - 3:
FOR QUESTIONS SUR #C1 THROUGH SUR #C6, START WITH SCENARIO 1, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 1, THEN DO NOT ASK SCENARIO 2 AND SCENARIO 3. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 2, THEN DO NOT ASK SCENARIO 3.

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FOR SCENARIOS 4 - 6:

FOR QUESTIONS SUR #C1 THROUGH SUR #C6, START WITH SCENARIO 4, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 4, THEN DO NOT ASK SCENARIO 5 AND SCENARIO 6. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 4, THEN DO NOT ASK SCENARIO 5.

[IF H5 OR H6 OR H8 =EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #C1 FOR EACH SCENARIO

SUR #C1. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: With this surcharge, you will save $[1,000 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,000 a year after the surcharge duration.

IF SCENARIO 4, 5, OR 6 THEN SAY: With this surcharge, you will save $[1,000 – SURCHARGE LEVEL] a year.

Considering this, how likely are you to convert your heating system to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C1, FOR SCENARIO 1, 2, AND 3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,000 a year after the surcharge duration".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #C2 FOR EACH SCENARIO

SUR #C2. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[350 – SURCHARGE LEVEL] a year while the surcharge is active, and $350 a year after the surcharge duration.

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IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[350 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your heating system to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C2, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $350 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #C3 FOR EACH SCENARIO

SUR #C3. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[2,100 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,100 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[2,100 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your heating system to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,100 a year after 15 years".

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[IF H5 OR H6 OR H8=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #C4 FOR EACH SCENARIO

SUR #C4. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[1,200 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,200 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[1,200 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C4, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,200 a year after 15 years".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #C5 FOR EACH SCENARIO

SUR #C5. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[550 – SURCHARGE LEVEL] a year while the surcharge is active, and $550 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[550 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

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PROGRAMMER NOTE:
IN QUESTION SUR #C5, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $550 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #C6 FOR EACH SCENARIO

SUR #C6. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[2,300 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,300 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[2,300 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C6, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,300 a year after 15 years".

SECTION E: EXPANSION TIMELINE

[ASK E1 AND E2 IF EXTREMELY LIKELY, VERY LIKELY, OR LIKELY FOR ANY OF SUR #A1 – SUR #A6, SUR #B1 – SUR #B6, SUR #C1 – SUR #C6]
E1. You indicated that you are likely to convert to natural gas. Assuming gas service is available after December 2017, when would you likely convert?
(READ LIST)

Within the first 12 months
Within 1 to 2 years
Within 2 to 3 years
After 3 years

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E2. I am going to read you a list of appliances that could be powered by natural gas. For each appliance, please tell me if you would be extremely interested, very interested, interested, not very interested or not at all interested in natural gas for the appliance.

[READ; RANDOMIZE]
Fireplace
Oven, range or stove
Clothes dryer
BBQ
Other [**SPECIFY**]

[SCALE]
Extremely interested
Very interested
Interested
Not very interested
Not at all interested

ASK QUESTIONS IN SECTION D IF SCR5 (2015) = RESIDENCE
SECTION D: Demographics

I just have a few additional questions for you that will help us group your answers with others who have also participated in the research. As a reminder, your answers will be kept completely confidential and they will not be tied back to you.

D1. Which of the following best describes the style of your house? Is it a …?

(READ LIST)
A bungalow or one story ranch
A raised ranch
A split level
A two story
Or a three story house
Some other style

D2. In order to have some idea as to the approximate size of your home in square feet (not including any unfinished basement) can you tell me how many square feet your home is?
[RECORD NUMBER. RANGE: 100 – 10000]

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D3. In what year was your house built? Your best estimate is fine.
[RECORD YEAR]

ASK D3a IF COMMUNITY = PRINCE TOWNSHIP OR COMMUNITY = LAMBTON SHORES.
D3a. Which statement best describes the occupancy of this dwelling?

(READ LIST)
Occupied all-year round
Occupied mostly in the summer months
Occupied mostly in the winter months
Occupied occasionally year round

[SKIP TO D4 IF D3A = OCCUPIED ALL YEAR ROUND, ELSE CONTINUE]

D3b. For approximately how many months did you use this residence during 2016?

(RECORD NUMBER OF MONTHS)
[SCALE: 1-12]

D4. How many adults 18 years or over do you have living in your household, including yourself?

[RECORD NUMERIC RESPONSE. RANGE: 1 TO 20]

D5. And how many children 17 years or younger, if any, do you have living in your household?

[RECORD NUMERIC RESPONSE. RANGE: 0 TO 20]

D6. In what year were you born?

[RECORD YEAR]

[ASK D6a IF REFUSE/DON'T KNOW AT D6, ELSE SKIP TO D7]

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D6a. Can you please tell me into which of the following age groups you fall? Are you…?

(READ LIST UNTIL RESPONSE GIVEN)
18 to 24
25 to 34
35 to 44
45 to 54
55 to 64
65 or over

D7. And lastly, which of the following best describes your total household income before taxes? Please stop me when I reach your category. Is it…?

(READ LIST)
Under $20,000
$20,000 to less than $40,000
$40,000 to less than $60,000
$60,000 to less than $80,000
$80,000 to less than $100,000
$100,000 to less than $120,000
$120,000 to less than $140,000
$140,000 or more

ASK QUESTIONS IN SECTION E IF SCR5 (2015) = BUSINESS
SECTION E: Firmographics

I just have a few additional questions for you that will help us group your answers with others who have also participated in the research. As a reminder, your answers will be kept completely confidential and they will not be tied back to you.

E1. How many buildings (are at this location?)
NOTE: IF LESS THAN ONE BUILDING, E.G. IF LOCATED IN A BUILDING OR SHOPPING PLAZA, ENTER “PART OF A BUILDING”
1,
2,
3,
OTHER (SPECIFY),
PART OF A BUILDING,
REFUSED
DON’T KNOW

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E2. What is the approximate square footage of the indoor floor space (at this location of the first/second/third building), including basement and storage, but not including parking or loading areas?
Please consider only the area that is affected by a heating system.
[RECORD NUMBER]

E3. What is the age of the building at this location (of the first/second/third building)?

1 YEAR OR LESS,
2 TO 5 YEARS,
6 TO 10 YEARS,
11 TO 20 YEARS,
21 TO 30 YEARS,
31 TO 40 YEARS,
MORE THAN 40 YEARS OLD,
DON'T KNOW

DB3. How many floors does the building have?
(SPECIFY)

Thank you for your feedback. We appreciate your willingness to participate in this survey.

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Record of Contact

	Lambton Shores
Complete	**48**
Refusal	38
Callback	2
Answering machine	4
Vacation	1
Terminate partway	9
Language	2
Not in	0
Wrong number	7
Duplicate	0
Dialer - No answer	14
Dialer - Busy	1
Dialer - Operator intercept	16
Dialer - Dropped call	5
Dialer - Answering machine	15
Dialer - Fax/modem	2
Disqualified	2
Other	2
Total	**168**

Response rate: 36%

The response rate is calculated as follows:
(Completes + Duplicates + Disqualified) ÷
Total Contacts minus known unqualified numbers (i.e., Wrong Numbers, Not-in-service, Dialer–Operator Intercept, Dialer–Dropped Call, Dialer –Fax/Modem)

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Gas Pipeline Expansion Study
- Prince Township –

Research Report Prepared for: Union Gas Limited

April, 2017

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Background

Union Gas (Union) operates in northern, southwestern, and eastern Ontario delivering natural gas services to over 1.3 million residential, commercial, and industrial customers in more than 400 communities. However, Prince Township, located in northern Ontario is not currently serviced by Union. Given the operating cost advantages of natural gas, Union believes that there is significant interest in converting to natural gas, particularly for space and water heating. Union is reviewing the feasibility of extending the gas pipeline that will service the citizens of Prince Township Ontario.

In addition to the cost of converting space and water heating equipment to natural gas, households typically are required to make a contribution toward the pipeline capital costs of extending service to the community. Union has developed a volumetric surcharge for those that elect to convert, as a means to overcome the upfront capital cost barrier that households would face upon conversion. Market research in Prince Township Ontario is needed to measure the likelihood of converting to natural gas given potential savings, conversion costs and the volumetric surcharge alternative for recovering upfront pipeline extension costs.

Research Objectives

The objective of this research is to ascertain interest in obtaining natural gas service amongst the residential household and commercial business populations of Prince Township Ontario. Specifically, this research is designed to:

- Measure the likelihood of converting heating equipment based on a range of typical equipment conversion costs.
- Gauge interest in switching to natural gas water heating based on a range of typical equipment conversion costs.
- Measure the impact on likelihood of conversion based on a volumetric surcharge (cents per m^3) that would apply to natural gas consumption following conversion.

Methodology

To achieve the research objectives, Union retained the services of Forum Research, a third party research supplier, to conduct the quantitative study. A total of 112 telephone interviews were completed from a list of 378 home and business owners in Prince Township between February 3 and February 19, yielding a +/- 7.8% margin of error at the 95% confidence level. The level of completes represents a 44% response rate.

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Reading the Charts

Colours have been used in the charts to indicate where differences exist:

indicates a significantly higher number

indicates a significantly lower number

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Highlights

- Overall, 89% of respondents are likely ("extremely likely", "very likely" or "likely") to convert their **space heating** systems to natural gas based on the cost of converting their equipment.
    - An array of space heating systems is used in Prince Township. Propane, oil, electric and wood heating are equally prevalent, each used by between 22% and 28% of Prince Township households.

- Over three-quarters of respondents (79%) are "extremely likely", "very" likely" or "likely" to convert their **water heaters** to natural gas.
    - The majority of Prince Township respondents owns their water heaters (79%) and currently uses electricity as the main fuel source (88%).

- With an additional contribution to pipeline construction, 72% of respondents overall are likely ("extremely likely", "very likely" or "likely") to convert their space heating systems and/or water heaters to natural gas (both space heater and water heater or space heating only).

- Of those likely to convert their space heating systems and/or water heaters to natural gas if a surcharge was required, 69% would do so within the first 12 months, 25% would convert within 1-2 years, and the remaining 6% would convert in 2 years or more.

- Among respondents who are likely to convert their space heating systems and/or water heaters to natural gas, between 40% and 48% are also interested in converting each of their BBQs, fireplaces or ovens/stoves to natural gas, followed by 26% who are interested in converting their clothes dryers.

- Virtually all Prince Township homes are used year-round (99%).

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Findings

Space Heating

An array of space heating systems is used in Prince Township. Propane, oil, electric and wood heating are equally prevalent, each used by between 22% and 28% of Prince Township households.

Propane systems tend to have been installed more recently than other heating systems (75% are five years old or less). Therefore, propane users are least likely to replace their space heating systems in the next two years (26% are extremely likely/very likely/likely to replace them).

Electric systems tend to be the oldest systems (50% are over 25 years old), followed by oil systems. Therefore, users are more likely to replace them in the next two years (68% and 56% are extremely likely/very likely/likely to replace them respectively).

Households using wood sources fall between propane and electric/oil users in terms of the age of their systems (33% are five years old or less). Like electric and oil systems, wood heating is more likely to be replaced in the next two years than propane systems (52% are extremely likely/very likely/likely to replace them).

Overall, 89% of respondents would be likely (“extremely likely”, “very likely” or “likely”) to convert their space heating systems to natural gas (when given the equipment conversion cost only). This is relatively consistent regardless of energy source used.

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Table 1: Space Heating
Base: All respondents

	Total (n=112)	Oil (n=25)	Propane (n=31)	Electric (n=28)	Wood (n=27)
Penetration		22%	28%	25%	24%
Likely to replace in the next 2 years (Top 3-Extremely/very/likely to replace)	49%	56%	26%	68%	52%
Age of heating system					
Less than 1 year	6%	-	23%	-	-
1 to 5 years	27%	4%	52%	14%	33%
6 to 10 years	22%	36%	23%	7%	26%
11 to 15 years	7%	16%	-	-	11%
16 to 25 years	16%	28%	3%	21%	15%
Over 25 years	17%	8%	-	50%	11%
Top 2-Extremely/very likely to convert to NG (Equipment conversion cost only)	**69%**	**80%**	**87%**	**61%**	**52%**
Top 3-Extremely/very/likely to convert to NG (Equipment conversion cost only)	**89%**	**92%**	**97%**	**86%**	**82%**
Extremely likely	40%	44%	58%	29%	30%
Very likely	29%	36%	29%	32%	22%
Likely	20%	12%	10%	25%	30%
Not very likely	5%	-	3%	7%	11%
Not at all likely	5%	8%	-	7%	7%

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Those not likely to convert to natural gas cite cost as the main barrier.

Table 2: Reasons unlikely to convert space heating system to Natural Gas
Base: Those not very/not at all likely to convert

	Have Forced Air (Oil, Electric, Propane) or Electric Baseboard (n=7)**	Other Source* (n=0)**
Too expensive	57%	-
Not worth it	14%	-
Plan on building a new home/moving	14%	-
Current heating system is new	14%	-
Senior/too old to change	14%	-
Dislike natural gas	14%	-
Not interested/No plans to change	14%	-

* No heating system, oil boiler, propane boiler, geothermal, heat pump or something else
*** Extremely small base*
Totals may exceed 100% due to multiple mentions
Question: You indicated that you are unlikely to convert your heating system to natural gas. Can you tell me why? (PROBE) Are there any other reasons?

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Water Heating

Just over three-quarters of Prince Township respondents own their water heaters (79%). The vast majority use electricity as the main fuel source (88%). "Other sources" including propane, oil or wood are used by 12% of households (propane dominates most of the "other sources", used by 8% of households).

Sixty percent (60%) of respondents have had their water heaters for ten years or less. Just over one-third of respondents (35%) have had their heaters for five years or less.

Overall, 79% of respondents would be "extremely likely", "very likely" or "likely" to convert their water heaters to natural gas. Renters are more likely to say that they would convert – and that they would be "extremely" likely to convert – than owners of their water heaters.

Table 3: Water Heating
Base: All respondents

	Total (n=112)	Electricity (n=98)	Other Source* (n=14)
Penetration		88%	12%
Own water heater	79%	77%	93%
Age of Water Heater			
5 years or less	35%	34%	43%
6 to 10 years	25%	23%	36%
11 to 15 years	16%	18%	-
16+ years	19%	19%	14%
	Own (n=88)	**Rent (n=24)**	
Top 2-Extremely/very likely to convert water heater to NG	**53%**		
Top 3-Extremely/very/likely to convert water heater to NG	**79%**		
Extremely likely	25%	46%	
Very likely	20%	33%	
Likely	28%	17%	
Not very likely	11%	-	
Not at all likely	15%	4%	

* Oil, propane, wood, or something else

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Likelihood to Convert with Surcharge

Respondents who indicated they are likely to convert either their space or water heating systems to natural gas were asked their likelihood to convert if an additional financial contribution toward pipeline construction were required, in addition to the equipment conversion cost. Three different surcharge scenarios were presented to respondents:

- $1,000 per year for 25 years
- $750 per year for 25 years
- $500 per year for 25 years.

For the typical residential home, respondents were told that the annual savings resulting from converting space and/or water heating to natural gas would be as follows:

Table 4: Savings For Each Fuel Option

	Savings While Surcharge is Active	Savings When Surcharge Ends
If Converting Both Space and Water Heaters to Natural Gas and Fuel Source is:	**With the $1,000, $750, or $500 surcharge scenarios, savings are respectively:**	
*Oil Forced Air, Propane Forced Air or Other**	$200–$450–$700	$1,200
Electric Forced Air/Electric Baseboard	$1,300–$1,550–$1,800	$2,300
Wood	"Minimal amount"**	$550
If Converting Space Heater Only to Natural Gas and Fuel Source is:		
*Oil Forced Air, Propane Forced Air or Other**	"Minimal amount"***–$250–$500	$1,000
Electric Forced Air/Electric Baseboard	$1,100–$1,350–$1,600	$2,100
Wood	"Minimal amount"**	$350

* No heating system, oil boiler, propane boiler, geothermal, heat pump, or something else.
** Respondents were told: "You will save a minimal amount while the higher rate is active and $550 a year after 25 years" (or $350 if converting the space heater only).
***Respondents who were given the $1,000 surcharge scenario, were told: "You will save a minimal amount while the higher rate is active and $1,000 a year after 25 years".

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When respondents consider both the **conversion cost** and **a volumetric surcharge of $500 per year for 25 years**, in aggregate, 72% of respondents are likely ("extremely likely", "very likely" or "likely") to convert their space heating and/or water heating to natural gas (both space heater and water heater or space heating only). Likelihood to convert with the surcharge, depending on energy source used, is broken down in the following chart.

Table 5: Likely to Convert – With Surcharge of $500 per year for 25 years
Base: Those likely to convert to Natural Gas (Equipment conversion cost only)

		Likely to Convert Both Space Heater and Water Heater (Extremely/Very/Likely)			Likely to Convert Space Heating Only (Extremely/Very/Likely)		
	TOTAL POPULATION (n=112)	Oil or Propane Forced Air, Other* (n=49)	Wood (n=21)	Electric Forced Air/ Electric Baseboard (n=17)	Oil or Propane Forced Air, Other* (n=7)**	Wood (n=1)**	Electric Forced Air/ Electric Baseboard (n=5)**
Likelihood to convert with surcharge							
Top 3 Extremely/ Very/Likely	**72%**	**92%**	**67%**	**76%**	**71%**	**100%**	**60%**

* No heating system, oil boiler, propane boiler, geothermal, heat pump or something else
** Extremely small base

Considering the **conversion cost only**, in aggregate, 90% of respondents are "extremely likely", "very likely" or "likely" to convert their space heating and/or water heating to natural gas (both space heater and water heater or space heating only).

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Conversion Time

Respondents who indicated they are likely (extremely, very and likely) to convert their space heating systems and/or water heaters to natural gas if a surcharge was required were asked when they are likely to do so if natural gas is available after December 2017.

For those indicating they are extremely/very/likely to convert, 69% would do so within the first 12 months, 25% would convert within 1-2 years, and the remaining 6% would convert in 2 years or more.

Other Appliances

Respondents who are likely to convert their space heating systems and/or water heaters to natural gas were asked if they would be interested in converting other appliances to natural gas as well. BBQs, fireplaces and ovens/stoves are the appliances that they would be most interested in converting to natural gas (between 40% and 48% extremely or very interested). About 1-in-4 would be interested in converting their clothes dryers to natural gas.

Table 6: Interest in Converting Other Appliances to Natural Gas
Base: Those likely to convert to Natural Gas (with surcharge)

	BBQ (n=81)	Fireplace (n=81)	Oven/ Range/Stove (n=81)	Clothes Dryer (n=81)
Extremely/very interested in converting other appliances	**40%**	**40%**	**48%**	**26%**
Extremely interested	26%	15%	25%	15%
Very interested	14%	25%	23%	11%
Interested	28%	25%	20%	27%
Not very interested	10%	13%	15%	19%
Not at all interested	22%	18%	15%	23%
Don't know/not stated	-	4%	2%	5%

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Demographics and Housing Characteristics

One and two storey houses make up the majority of homes in Prince Township, accounting for 77% of all respondent households. The average house size is 2,025 square feet and the vast majority of houses are under 67 years of age (90%) (i.e., built since 1950). Virtually all homes are used year-round.

Almost two-thirds (63%) of Prince Township respondents are 55 years or older, while only 5% are under 35 years of age. The majority of residences house 1 or 2 adults (84%) and no children (73%).

Household incomes tend to be relatively high among Prince Township respondents: 47% earn $80,000 or more and 18% earn at least $120,000.

In aggregate, 72% of respondents are likely to convert their space heating and/or water heating to natural gas when both the **conversion cost** and a **volumetric surcharge** are considered. Those who are more likely to convert are:

- Living in larger houses
  - 80% are living in houses of 2,000 square feet or more versus 69% living in smaller houses
  - 80% are living in 2-storey or 3-storey houses versus 68% living in bungalows
- Younger
  - 83% are under 55 years of age versus 68% of those 55 years of age or older
- With higher household income levels
  - 81% have incomes of $80,000 or more versus 61% with incomes under $80,000.

Other demographic attributes of interest are that:

- For space heating:
  - Older houses are more likely to use oil as their primary source of heat (34% of houses built before 1980 and 14% of houses built since 1980).
  - Newer houses are more likely to use propane as the primary heat source (17% of houses built before 1980 and 36% of houses built since 1980).

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- For water heaters:
  - Older houses are more likely to use electricity (96% of houses built before 1980 and 81% of houses built since 1980 use electric water heaters).
  - Newer houses are more likely to use propane water heaters (0% of houses built before 1980 and 14% of houses built since 1980).

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Table 7: Demographics – Residence
Base: All "Residence" Respondents

	Total (n=112)
Building Type	
Bungalow/One storey ranch	51%
Two storey	26%
Split level	12%
Raised ranch	7%
Three storey house	1%
Other	4%
Approximate size of home (in sq. feet)	
Less than 1,000	6%
1,000 to 1,499	21%
1,500 to 1,999	25%
2,000 to 2,499	25%
2,500 to 2,999	5%
3,000 or more	13%
Don't know	4%
Average size	**2,025 sq. ft.**
Occupancy of Dwelling	
All-year round	99%
Mostly in the summer	1%
Age of home	
0 to 36 years	53%
37 to 67 years	37%
67+ years	5%
Don't know/not stated	5%
Age of respondent	
18 to 34 years	5%
35 to 44 years	13%
45 to 54 years	19%
55 to 64 years	36%
65+ years	27%
Number of adults 18 years or older living in house	
1-2	84%
3+	16%
Number of children 17 years or younger living in house	
0	73%
1-2	24%
3+	3%
Total Household Income	
Less than $40,000	14%
40,000 to $80,000	26%
More than $80,000	47%
Refused	14%

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Appendix: Questionnaire and Record of Contact

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2017 Community System Expansion Questionnaire
Draft February 6, 2017

SCR1.
FOR ALL COMMUNITIES EXCEPT WARTBURG AND ROSTOCK:
Good morning/evening. My name is _____ and I am calling from Forum Research on behalf of Union Gas. We are conducting a survey to assist in determining whether natural gas will be extended to <INSERT COMMUNITY> and surrounding areas. Are you 18 years or older and the person responsible for making energy decisions for the property at <INSERT COMMUNITY> or surrounding areas? (INTERVIEWER NOTE: ONLY CONTINUE IF YES) You may have participated in a survey on this issue several years ago, which asked about your interest in converting to natural gas with a temporary surcharge added to your natural gas bill for 5-10 years. The results of that survey were used to inform a proposal Union Gas made to the Ontario Energy Board in 2015. The Ontario Energy Board reviewed the Union Gas proposal and made a decision that will either lead to a higher temporary surcharge, or the surcharge being applied for more than 10 years. We therefore need to survey members of your community again to understand if there is still interest in converting to natural gas in light of these changes. The results of this new survey are very important, as they will help us to evaluate whether extending the gas system can be proposed to the Ontario Energy Board later this year. I want to assure you that we are not selling anything and the information you provide to us will be aggregated with others for reporting purposes.

IF COMMUNITY = WARTBURG OR ROSTOCK:
Good morning/evening. My name is _____ and I am calling from Forum Research on behalf of Union Gas. We are conducting a survey to assist in determining whether natural gas will be extended to <INSERT COMMUNITY> and surrounding areas. Are you 18 years or older and the person responsible for making energy decisions for the property at <INSERT COMMUNITY> or surrounding areas? (INTERVIEWER NOTE: ONLY CONTINUE IF YES) You may have previously participated in a survey on this issue, but the results of this particular survey are very important, as they will help us to evaluate whether extending the gas system can be proposed to the Ontario Energy Board in the next year. I want to assure you that we are not selling anything and the information you provide to us will be aggregated with others for reporting purposes.
Yes, speaking
No, I'll get them
No, not available
[IF YES, SPEAKING, CONTINUE]
[IF NO, I'LL GET THEM, REINTRODUCE]
[IF NO, NOT AVAILABLE, SCHEDULE CALLBACK THEN THANK AND TERMINATE]

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[IF NOT AT THIS LOCATION, RECORD DECISION MAKER'S CONTACT INFORMATION (FIRST, LAST, PHONE, ADDRESS – IF POSSIBLE) THANK AND TERMINATE. ADD REFERRAL TO CONTACT LIST]

SCR3. Do you own or rent this property at <INSERT COMMUNITY> or surrounding areas?
Own
Rent

[IF OWN, CONTINUE]
[IF RENT, GET CONTACT INFO – FIRST, LAST, PHONE, ADDRESS – IF POSSIBLE - OF OWNER AND TERMINATE. IF REF, THANK AND TERMINATE]

SCR4. **(DO NOT ASK) RECORD GENDER**
Male
Female

SCR5 (2015). Is this a residence or a business?
Residence
Business
Both Residence and a Business

IF (COMMUNITY = Lambton Shores OR COMMUNITY = Prince Township) AND SCR5 (2015) = Business THEN THANK AND TERMINATE.

NOTE:
IF SCR5 (2015) = "BOTH RESIDENCE AND A BUSINESS" THEN CONSIDER IT A "RESIDENCE" FOR INTERVIEW PURPOSE.

SCR6. On average, how much is your annual heating cost for this premise including taxes?

[ACCEPT 5 DIGIT NUMBER]

[RECORD ANSWER]

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SECTION H: Home Heating
H1A. What is the primary energy source of heat for this premise? Is it…?

[READ, RANDOMIZE]
Oil
Propane
Electricity
Wood

No heating
Other [SPECIFY]

H1B. What type of system provides the primary source of heat for this premise? Is it…?

IF H1A = OIL THEN ASK
Oil Forced Air, or
Oil Boiler (Hot Water Radiators)

IF H1A = PROPANE THEN ASK
Propane Forced Air, or
Propane Boiler (Hot Water Radiators)

IF H1A = ELECTRICITY THEN ASK
Electric Forced Air,
Electric Baseboard,
Geothermal, or
Heat Pump

IF H1A = WOOD THEN ASK
Wood Forced Air, or
Wood Stoves/Fireplace

No heating system
Or Something Else (SPECIFY)

IF H1B = NO HEATING SYSTEM, SKIP TO H8, ELSE CONTINUE
Other **[SPECIFY]**

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H2. How old is your heating system? **(READ)**
[PLEASE ENTER A NUMBER]

NOTE: FOR CROSS-TABS USE THE FOLLOWING RANGES:
5 YEARS OR LESS
6 TO 10 YEARS OLD
11 TO 15 YEARS OLD
16 TO 25 YEARS OLD
OVER 25 YEARS OLD

H3. How likely are you to replace your heating system in the next 2 years? Are you…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

SECTION H: CONVERSION LIKELIHOOD WITH EQUIPMENT COSTS BUT EXCLUDING SURCHARGE

[ASK H5 IF H1B = OIL FORCED AIR, ELSE SKIP TO INSTRUCTIONS BEFORE H5a]

H5. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to a natural gas high efficiency furnace is in the range of $4,500 to $5,500 including taxes depending on the type of equipment you currently have. However, with natural gas, you may save up to $1,000 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

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[ASK H5a IF H1B = ELECTRIC FORCE AIR, ELSE SKIP TO INSTRUCTIONS BEFORE H6]

H5a. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to a natural gas high efficiency furnace is in the range of $4,500 to $5,500 including taxes depending on the type of equipment you currently have. However, with natural gas, you may save up to $2,100 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK H6 IF H1B = PROPANE FORCED AIR, ELSE SKIP TO INSTRUCTIONS BEFORE H7]

H6. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to natural gas is likely in the range of $400 to $1,000 including taxes depending on the type of equipment you currently have. However, with natural gas, you may save up to $1,000 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ASK H7 IF H1B = ELECTRIC BASEBOARD, ELSE SKIP TO INSTRUCTIONS BEFORE H7a]

H7. Converting your heating system to natural gas requires some initial investment by the property owner. The cost of converting your heating system to a high efficiency natural gas furnace is likely to be about $12,500 including taxes depending on the specific style and/or size of your premise. However, with natural gas, you may save up to $2,100 off of your heating cost every year. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are…? **(READ)**

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Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ONLY ASK H7a IF H1A = WOOD, ELSE SKIP TO INSTRUCTION BEFORE H8]

H7a. Installing a high efficiency natural gas furnace is likely to cost about $4,500-$5,500 if you already have forced air ductwork and $12,500 if it doesn't, including taxes. A natural gas fireplace or wall heater would also cost about $4,500-$5,500. However, with natural gas, you may save up to $350 off of your heating cost every year, and you can avoid the need for splitting and/or storing the wood. Considering this, how likely are you to convert your heating system to natural gas? Would you say you are...?(READ)

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

[ONLY ASK H8 IF H1B = NO HEATING SYSTEM, OIL BOILER, PROPANE BOILER OR SOMETHING ELSE.]

H8. Installing a high efficiency natural gas furnace is likely to cost about $4,500-$5,500 if you already have forced air ductwork and $12,500 if it doesn't, including taxes. A natural gas fireplace or wall heater would also cost about $4,500-$5,500. However, with natural gas, you may save up to $1,000 off the annual cost compared to heating with oil or propane, or $2,100 compared to heating with electricity. If natural gas service was extended to your area, how likely are you to install a natural gas heating system? Would you say you are...?
(READ)

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

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[ASK H9A IF H5/H5a/H6/H7 = NOT VERY LIKELY *OR* NOT AT ALL LIKELY]
H9a. You indicated that you are unlikely to convert your heating system to natural gas. Can you tell me why? (PROBE) Are there any other reasons?

(DO NOT READ)
Don't like natural gas
Not interested/ have no plans to change
Not interested at this time/ maybe in the future
Not worth it
Plan on building a new home (or facility) / moving
Too expensive
Other: **[SPECIFY]**

[ASK H9B AND H9C IF H8 = NOT VERY LIKELY OR NOT AT ALL LIKELY]
H9b. You indicated that you are unlikely to install a natural gas space heating system. Can you tell me why? (PROBE) Are there any other reasons?

(DO NOT READ)
This is a cottage occupied only in the summer
Don't like natural gas
Not interested/ have no plans to change
Not interested at this time/ maybe in the future
Not worth it
Plan on building a new home/ moving
Too expensive
Other: **[SPECIFY]**

H9C. If low interest financing is available for the purchase of new natural gas equipment, how likely **are you to** reconsider converting? Would you say...?

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

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SECTION W: Water Heating

ASK ALL
Now, I would like to ask you a few questions about your water heater.

W1. What is the MAIN fuel source for heating your water?

Propane
Oil
Electricity
Other: **[SPECIFY]**

W2. How old is your water heater?

(READ)
5 years or less
6 to 10 years old
11 to 15 years old
16 to 25 years old
Over 25 years old

W3. Is your water heater owned or rented?

Owned
Rented

[ASK W5 IF W3=OWNED]
W5. The purchase and installation of a typical natural gas water heater costs about $1,700 including taxes depending on the complexity of the installation. However, with natural gas, you may save up to $200 compared to propane water heating costs every year, or $350 compared to electric water heating costs. Considering this, how likely are you to convert your water heater to natural gas? Would you say you are…? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

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[ASK W5a IF W3=RENTED]

W5a. Natural Gas water heaters can also be rented. Typical monthly rental rates range from $23 per month to $30 per month including taxes. Depending on the specific style of your premises, the property owner may incur additional expenses for the conversion. However, with natural gas, you may save up to $200 compared to propane water heating costs every year, or $350 compared to electric water heating costs. Considering this, how likely are you to convert your water heater to natural gas? Would you say you are...? **(READ)**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

SECTION S: CONVERSION LIKELIHOOD WITH SURCHARGE

Natural gas expansion projects are costly and the Ontario Energy Board has indicated that the costs of connecting a new community must be fully covered through the rates new customers pay. In your community, Union Gas' regular rates will not be high enough to cover costs, so connecting customers will be asked to pay a temporary surcharge to make up the difference. The exact amount of the surcharge will depend on how many customers are expected to connect. Now, depending on your answers in this survey so far, I will now go through one or more scenarios that will help Union Gas evaluate possible surcharge scenarios. The surcharge will only be as high as it needs to be to recover costs.

INTERVIEWER NOTE:
IF RESPONDENT ASKS ABOUT THE OPTION OF A GOVERNMENT LOAN OR GRANT FOR CONSTRUCTING THE GAS PIPELINE, INTERVIEWER SHOULD MENTION THAT THIS IS NOT PART OF THE UNION GAS PROPOSAL AT THIS TIME.

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SECTION S-1: COMMUNITY = LAMBTON SHORES

SCENARIOS TO TEST:

LAMBTON SHORES	BASE	DURATION	SURCHARGE LEVEL		
			$1,000/YEAR	$750/YEAR	$500/YEAR
	ALL RESPONDENTS WHO QUALIFY	15 YEARS	SCENARIO 1	SCENARIO 2	SCENARIO 3

SCENARIO 1: $1,000 per year for 15 years.
SCENARIO 2: $750 per year for 15 year.
SCENARIO 3: $500 per year for 15 years.

PROGRAMMER NOTE:
FOR QUESTIONS SUR #A1 THROUGH SUR #A6, START WITH SCENARIO 1, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 1, THEN DO NOT ASK SCENARIO 2 AND SCENARIO 3. IF EXTREMLY LIKLEY, VERY LIKEYLY OR LIKELY IN SCENARIO 2, THEN TO NOT ASK SCENARIO 3.

[IF H5 OR H6 OR H8 =EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #A1 FOR EACH SCENARIO

SUR #A1. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,000 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,000 a year after 15 years. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A1, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,000 a year after 15 years".

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[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #A2 FOR EACH SCENARIO

SUR #A2. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[350 – SURCHARGE LEVEL] a year while the surcharge is active, and $350 a year after 15 years. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A2, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $350 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #A3 FOR EACH SCENARIO

SUR #A3. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,100 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,100 a year after 15 years. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,100 a year after 15 years".

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[IF H5 OR H6 OR H8=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #A4 FOR EACH SCENARIO

SUR #A4. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,200 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,200 a year after 15 years. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A4, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,200 a year after 15 years".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #A5 FOR EACH SCENARIO

SUR #A5. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[550 – SURCHARGE LEVEL] a year while the surcharge is active, and $550 a year after 15 years. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A5, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $550 a year after 15 years".

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[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #A6 FOR EACH SCENARIO

SUR #A6. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,300 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,300 a year after 15 years. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #A6, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,300 a year after 15 years".

SECTION S-2: COMMUNITY = MILVERTON (INCLUDING WARTBURG AND ROSTOCK)

SCENARIOS TO TEST:

	BASE	DURATION (N)	SURCHARGE LEVEL		
			$1,000/YEAR	$750/YEAR	$500/YEAR
MILVERTON	ALL RESPONDENTS WHO QUALIFY	25 YEARS	SCENARIO 1	SCENARIO 2	SCENARIO 3
	EVERY THIRD RESPONDENT WHO QUALIFY	15 YEARS	SCENARIO 4	SCENARIO 5	SCENARIO 6

SCENARIO 1: $1,000 per year for 25 years.
SCENARIO 2: $750 per year for 25 years.
SCENARIO 3: $500 per year for 25 years.
SCENARIO 4: $1,000 per year for 15 years.
SCENARIO 5: $750 per year for 15 years.
SCENARIO 6: $500 per year for 15 years.

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PROGRAMMER NOTES:

FOR SCENARIO 1, 2, AND 3:

FOR QUESTIONS SUR #B1 THROUGH SUR #B6, START WITH SCENARIO 1, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 1, THEN DO NOT ASK SCENARIO 2 AND SCENARIO 3. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 2, THEN DO NOT ASK SCENARIO 3.

FOR SCENARIO 4, 5, AND 6:

FOR QUESTIONS SUR #B1 THROUGH SUR #B6, START WITH SCENARIO 4, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 4, THEN DO NOT ASK SCENARIO 5 AND SCENARIO 6. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 5, THEN DO NOT ASK SCENARIO 6.

[IF H5 OR H6 OR H8 =EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #B1 FOR EACH SCENARIO

SUR #B1. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,000 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,000 a year after the surcharge duration. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:

IN QUESTION SUR #B1, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,000 a year after the surcharge duration".

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[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #B2 FOR EACH SCENARIO

SUR #B2. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[350 – SURCHARGE LEVEL] a year while the surcharge is active, and $350 a year after the surcharge duration. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B2, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $350 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #B3 FOR EACH SCENARIO

SUR #B3. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,100 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,100 a year after the surcharge duration. Considering this, how likely are you to convert your heating system to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,100 a year after 15 years".

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[IF H5 OR H6 OR H8=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #B4 FOR EACH SCENARIO

SUR #B4. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[1,200 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,200 a year after the surcharge duration. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B4, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,200 a year after 15 years".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #B5 FOR EACH SCENARIO

SUR #B5. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[550 – SURCHARGE LEVEL] a year while the surcharge is active, and $550 a year after the surcharge duration. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B5, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $550 a year after 15 years".

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[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #B6 FOR EACH SCENARIO

SUR #B6. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use. **You will save $[2,300 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,300 a year after the surcharge duration. Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?**
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #B6, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,300 a year after 15 years".

SECTION S-3: COMMUNITY = PRINCE TOWNSHIP

SCENARIOS TO TEST:

	BASE	DURATION (N)	SURCHARGE LEVEL		
			$1,000/YEAR	$750/YEAR	$500/YEAR
PRINCE TOWNSHIP	ALL RESPONDENTS WHO QUALIFY	25 YEARS	SCENARIO 1	SCENARIO 2	SCENARIO 3
	EVERY THIRD RESPONDENT WHO QUALIFY	PERMANENT	SCENARIO 4	SCENARIO 5	SCENARIO 6

SCENARIO 1: $1,000 per year for 25 years.
SCENARIO 2: $750 per year for 25 years.
SCENARIO 3: $500 per year for 25 years.
SCENARIO 4: A permanent charge of $1,000 per year.
SCENARIO 5: A permanent charge of $750 per year.
SCENARIO 6: A permanent charge of $500 per year.

PROGRAMMER NOTES:

FOR SCENARIOS 1 - 3:
FOR QUESTIONS SUR #C1 THROUGH SUR #C6, START WITH SCENARIO 1, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 1, THEN DO NOT ASK SCENARIO 2 AND SCENARIO 3. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 2, THEN DO NOT ASK SCENARIO 3.

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FOR SCENARIOS 4 - 6:

FOR QUESTIONS SUR #C1 THROUGH SUR #C6, START WITH SCENARIO 4, IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 4, THEN DO NOT ASK SCENARIO 5 AND SCENARIO 6. IF EXTREMELY LIKELY, VERY LIKELY OR LIKELY IN SCENARIO 4, THEN DO NOT ASK SCENARIO 5.

[IF H5 OR H6 OR H8 =EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #C1 FOR EACH SCENARIO

SUR #C1. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: With this surcharge, you will save $[1,000 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,000 a year after the surcharge duration.

IF SCENARIO 4, 5, OR 6 THEN SAY: With this surcharge, you will save $[1,000 – SURCHARGE LEVEL] a year.

Considering this, how likely are you to convert your heating system to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C1, FOR SCENARIO 1, 2, AND 3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,000 a year after the surcharge duration".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #C2 FOR EACH SCENARIO

SUR #C2. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[350 – SURCHARGE LEVEL] a year while the surcharge is active, and $350 a year after the surcharge duration.

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IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[350 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your heating system to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C2, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $350 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a = NOT VERY LIKELY OR NOT AT ALL LIKELY]

REPEAT SUR #C3 FOR EACH SCENARIO

SUR #C3. In addition to the cost of converting your heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[2,100 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,100 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[2,100 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your heating system to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C3, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,100 a year after 15 years".

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[IF H5 OR H6 OR H8=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #C4 FOR EACH SCENARIO

SUR #C4. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[1,200 – SURCHARGE LEVEL] a year while the surcharge is active, and $1,200 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[1,200 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?

Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C4, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $1,200 a year after 15 years".

[IF H7A=EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #C5 FOR EACH SCENARIO

SUR #C5. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[550 – SURCHARGE LEVEL] a year while the surcharge is active, and $550 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[550 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?

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Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C5, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $550 a year after 15 years".

[IF H5A OR H7 = EXTREMELY LIKELY, VERY LIKELY OR LIKELY AND W5 OR W5a= LIKELY, VERY LIKELY OR LIKELY]

REPEAT SUR #C6 FOR EACH SCENARIO

SUR #C6. In addition to the cost of converting the SPACE AND WATER heating equipment in your dwelling, **an average** converting customer would be required to make a financial contribution of **[SCENARIO]** toward the cost of constructing the pipeline, which will be split into monthly payments based on how much gas you use.
IF SCENARIO 1, 2 OR 3 THEN SAY: You will save $[2,300 – SURCHARGE LEVEL] a year while the surcharge is active, and $2,300 a year after the surcharge duration.
IF SCENARIO 4, 5 OR 6 THEN SAY: With this surcharge, you will save $[2,300 – SURCHARGE LEVEL] a year.
Considering this, how likely are you to convert your space and water heating systems to natural gas? Would you say...?
Extremely likely
Very likely
Likely
Not very likely
Not at all likely

PROGRAMMER NOTE:
IN QUESTION SUR #C6, IF THE SAVING AMOUNT IS ZERO OR NEGATIVE, THEN SAY "You will save a minimal amount while the surcharge is active and $2,300 a year after 15 years".

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SECTION E: EXPANSION TIMELINE

[ASK E1 AND E2 IF EXTREMELY LIKELY, VERY LIKELY, OR LIKELY FOR ANY OF SUR #A1 – SUR #A6, SUR #B1 – SUR #B6, SUR #C1 – SUR #C6]
E1. You indicated that you are likely to convert to natural gas. Assuming gas service is available after December 2017, when would you likely convert?
(READ LIST)

Within the first 12 months
Within 1 to 2 years
Within 2 to 3 years
After 3 years

E2. I am going to read you a list of appliances that could be powered by natural gas. For each appliance, please tell me if you would be extremely interested, very interested, interested, not very interested or not at all interested in natural gas for the appliance.

[READ; RANDOMIZE]
Fireplace
Oven, range or stove
Clothes dryer
BBQ
Other [**SPECIFY**]

[SCALE]
Extremely interested
Very interested
Interested
Not very interested
Not at all interested

ASK QUESTIONS IN SECTION D IF SCR5 (2015) = RESIDENCE
SECTION D: Demographics

I just have a few additional questions for you that will help us group your answers with others who have also participated in the research. As a reminder, your answers will be kept completely confidential and they will not be tied back to you.

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D1. Which of the following best describes the style of your house? Is it a …?

(READ LIST)
A bungalow or one story ranch
A raised ranch
A split level
A two story
Or a three story house
Some other style

D2. In order to have some idea as to the approximate size of your home in square feet (not including any unfinished basement) can you tell me how many square feet your home is?
[RECORD NUMBER. RANGE: 100 – 10000]

D3. In what year was your house built? Your best estimate is fine.
[RECORD YEAR]

ASK D3a IF COMMUNITY = PRINCE TOWNSHIP OR COMMUNITY = LAMBTON SHORES.
D3a. Which statement best describes the occupancy of this dwelling?

(READ LIST)
Occupied all-year round
Occupied mostly in the summer months
Occupied mostly in the winter months
Occupied occasionally year round

[SKIP TO D4 IF D3A = OCCUPIED ALL YEAR ROUND, ELSE CONTINUE]

D3b. For approximately how many months did you use this residence during 2016?

(RECORD NUMBER OF MONTHS)
[SCALE: 1-12]

D4. How many adults 18 years or over do you have living in your household, including yourself?

[RECORD NUMERIC RESPONSE. RANGE: 1 TO 20]

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D5. And how many children 17 years or younger, if any, do you have living in your household?

[RECORD NUMERIC RESPONSE. RANGE: 0 TO 20]

D6. In what year were you born?

[RECORD YEAR]

[ASK D6a IF REFUSE/DON'T KNOW AT D6, ELSE SKIP TO D7]

D6a. Can you please tell me into which of the following age groups you fall? Are you…?

(READ LIST UNTIL RESPONSE GIVEN)
18 to 24
25 to 34
35 to 44
45 to 54
55 to 64
65 or over

D7. And lastly, which of the following best describes your total household income before taxes? Please stop me when I reach your category. Is it…?

(READ LIST)
Under $20,000
$20,000 to less than $40,000
$40,000 to less than $60,000
$60,000 to less than $80,000
$80,000 to less than $100,000
$100,000 to less than $120,000
$120,000 to less than $140,000
$140,000 or more

ASK QUESTIONS IN SECTION E IF SCR5 (2015) = BUSINESS
SECTION E: Firmographics

I just have a few additional questions for you that will help us group your answers with others who have also participated in the research. As a reminder, your answers will be kept completely confidential and they will not be tied back to you.

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E1. How many buildings (are at this location?)
NOTE: IF LESS THAN ONE BUILDING, E.G. IF LOCATED IN A BUILDING OR SHOPPING PLAZA, ENTER “PART OF A BUILDING”
1,
2,
3,
OTHER (SPECIFY),
PART OF A BUILDING,
REFUSED
DON’T KNOW

E2. What is the approximate square footage of the indoor floor space (at this location of the first/second/third building), including basement and storage, but not including parking or loading areas?
Please consider only the area that is affected by a heating system.
[RECORD NUMBER]

E3. What is the age of the building at this location (of the first/second/third building)?

1 YEAR OR LESS,
2 TO 5 YEARS,
6 TO 10 YEARS,
11 TO 20 YEARS,
21 TO 30 YEARS,
31 TO 40 YEARS,
MORE THAN 40 YEARS OLD,
DON’T KNOW

DB3. How many floors does the building have?
(SPECIFY)

Thank you for your feedback. We appreciate your willingness to participate in this survey.

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Record of Contact

	Prince Township
Complete	**112**
Refusal	58
Callback	1
Answering machine	16
Vacation	2
Terminate partway	11
Language	1
Not in	1
Wrong number	10
Not in Service	1
Duplicate	1
Dialer - No answer	18
Dialer - Busy	1
Dialer - Operator intercept	106
Dialer - Dropped call	0
Dialer - Answering machine	30
Dialer - Fax/modem	3
Disqualified	0
Other	6
Total	**378**

Response rate: 44%

The response rate is calculated as follows:
(Completes + Duplicates + Disqualified) ÷
Total Contacts minus known unqualified numbers (i.e., Wrong Numbers, Not-in-service, Dialer–Operator Intercept, Dialer–Dropped Call, Dialer –Fax/Modem)

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UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p.10

Please provide the SES rate, for each project, that would be required if the maximum duration of the SES rate was, a) 10 years, b) 20 years, c) 30 years, and d) 40 years.

Response:

The SES for each project based on the scenarios identified above are shown in the Table below:

Community	**Proposed Term at $0.23 SES** ($/m^3)	**Required SES Rate for PI = 1.0** ($/m^3)			
	Yrs.	10 yrs.	20 yrs.	30 yrs.	40 yrs.
Kettle and Stony Point First Nation and Lambton Shores	12	$0.29	$0.15	$0.12	$0.11
Milverton, Rostock and Wartburg	15	$0.37	$0.19	$0.16	$0.15
Delaware Nation of Moraviantown First Nation	40	$0.50	$0.28	$0.25	$0.23
Prince Township	22	$0.53	$0.25	$0.20	$0.17

Notes:

1. SES rates, amount and term, are the figures required to meet a PI = 1.0 at the end of the 40 year analysis.
2. For Moraviantown, the rates provided assume the same level of Aid-to-Construction as proposed, at $311,000

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p.10

Union has proposed a standard SES rate for its four proposed expansion projects with different durations for each. If the Board were to determine that it was more appropriate to have the Same SES duration for each project, but a different SES rate for each, please provide Union's view on what that the appropriate SES duration should be. Please provide the corresponding SES for each project.

Response:

Union believes consistency in the SES amount is preferable to consistency in SES term. Rate levels are more often communicated with and between customers, as well as in the media, and there is less opportunity for miscommunication or confusion if the rate is standardized. As well, the SES amount was carefully selected to ensure that customers would have an economic benefit by converting to natural gas and ensuring a reasonable payback period. Having a variable SES amount would result in customers in differing communities having differing economic benefits.

If however, the Board was to determine a standardized SES term was preferred, Union would need to address that at the time.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p.11

Please explain why Union will treat an annual form of payment by municipal or First Nation communities as revenue and not also as aid-to-construct.

Response:

A contribution in Aid-to-Construction ("CIAC") is an amount collected at the time of construction and recorded as a reduction to the asset. The payments from the municipalities will be received over time (10 years) similar to the SES and treated as an offset to the annual cost of owning and operating the assets.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p.12

Please provide an updated information Union has since the filing of the amended application regarding the regarding the Government of Ontario grant program.

Response:

On April 21, 2017, the Ontario Ministry of Infrastructure released the Natural Gas Grant Program guidelines, which are provided at Attachment 1. The Application Form is provided at Attachment 2.

Ontario

Natural Gas Grant Program

2017 PROGRAM GUIDELINES

MINISTRY OF INFRASTRUCTURE

Table of Contents

Program Overview

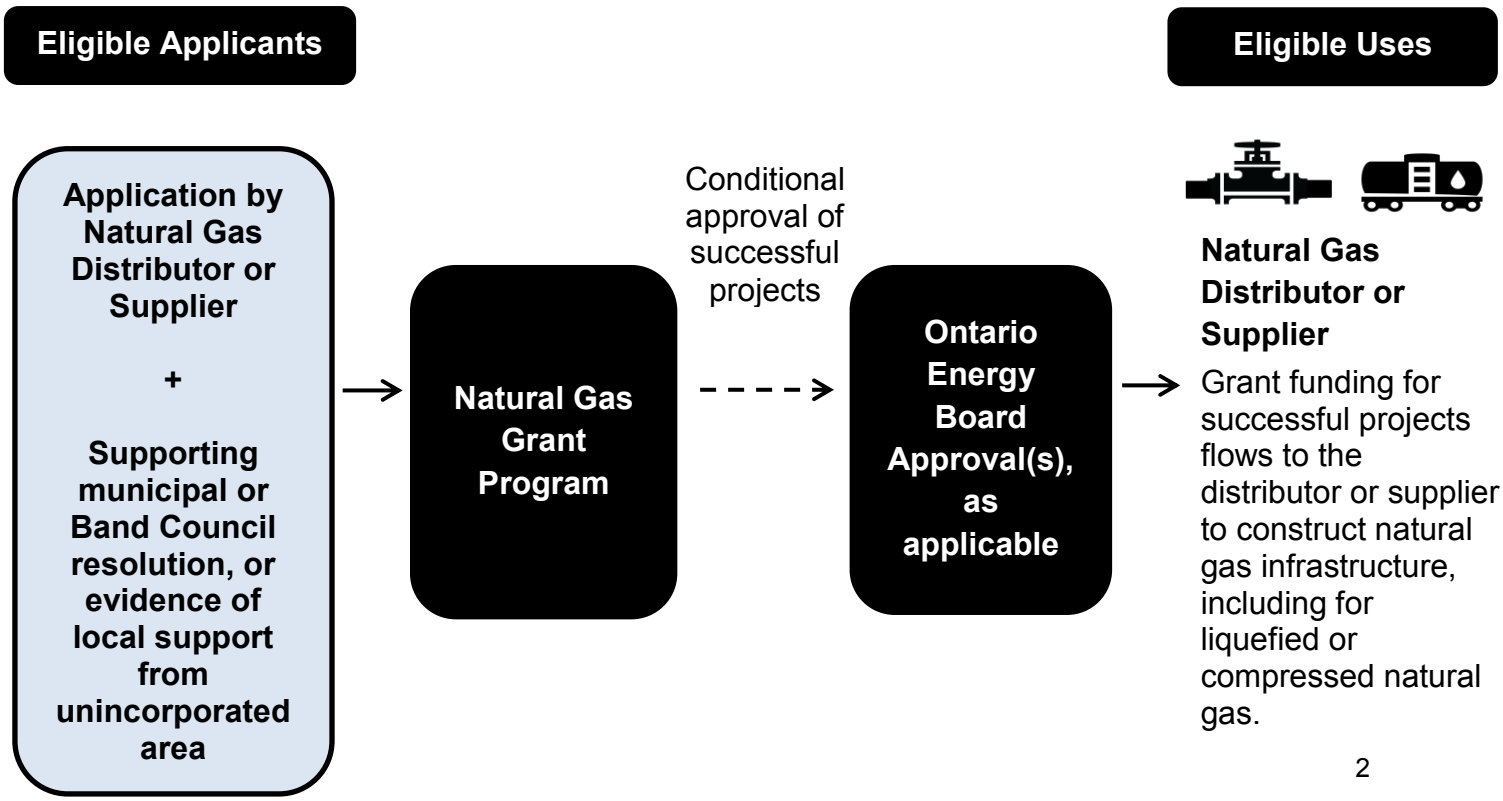
The province is helping expand natural gas access to more communities in Ontario through the new **$100 million Natural Gas Grant Program** ("the Grant Program"). The Grant Program is part of *Moving Ontario Forward*; the province's $31.5 billion plan to invest in public transit, transportation and other priority infrastructure over ten years.

The objective of the Grant Program is to support the building of new natural gas infrastructure in order to **expand access** to more communities and to accelerate projects with **economic development** potential, especially in First Nations, northern and rural communities. To support both these objectives, the Grant Program includes two funding streams – an Expansion Projects Stream and an Economic Development Projects Stream (see pg. 5 for details).

The Grant Program is open to expansion projects in municipalities, First Nations and unincorporated areas. Projects to expand natural gas pipelines as well as liquefied or compressed natural gas infrastructure are eligible. Applications to the Grant Program are made by the natural gas distributor or supplier. Applications must be accompanied by a supporting resolution from the municipality or First Nation or, in the case of unincorporated areas, other evidence of local support.

The costs of converting heating equipment (such as furnaces, ducting, etc.) and connecting individual properties to pipelines are **not** eligible under the Grant Program.

The application process is as follows:



APPLYING UNDER THE GRANT PROGRAM

Applications to the Grant Program should be made by the distributor or supplier. This includes ensuring there is adequate demand, proposed rates are appropriate, contributions from municipalities and First Nations are utilized where possible, and opportunities for local partnerships and alignment with other infrastructure works occurring along the same corridor (e.g., broadband, water and wastewater infrastructure, etc.) are being leveraged.

Assess Demand and Benefits

Distributors/suppliers work with the municipality, First Nation or unincorporated area to determine the demand for natural gas and any expected economic benefits resulting from natural gas access (for projects under the Economic Development Projects Stream). This includes surveying households, businesses, industry, schools, hospitals, etc. to gauge potential customer interest at various rates and associated savings in energy costs, as well as engaging with larger energy users such as agricultural producers, agribusinesses and other local industries that could benefit from increased natural gas access. These calculations should reflect current and projected energy costs, including cap and trade costs and reductions in the cost of electricity.

Determine Costs and Timelines

Distributors/suppliers determine the cost of providing servicing as well as mapping out required approvals from the Ontario Energy Board and estimated timelines.

Determine Financial Need

If it is economical to expand natural gas access in the area (i.e., the distributor or suppliers' anticipated revenues are sufficient to cover the expansion costs), the project should proceed without assistance from the Grant Program. This calculation must utilize stand-alone rates or surcharges made available under the Ontario Energy Board's recent decision on the framework for natural gas expansion in Ontario (more information is available under "EB-2016-0004" at www.ontarioenergyboard.ca).

Where expansion is not economical, distributors or suppliers may apply to the Grant Program. The grant amount requested should be net of contributions from the municipality or First Nation equivalent, at minimum, to the property tax (or other applicable levies in the case of First Nations) that would be recovered on the new infrastructure being built for a period of 10 years. Where necessary, applicants may explain why such a contribution from the municipality or First Nation is not feasible.

In some areas, the cost of building gas pipelines is too large relative to the revenues that could be recovered. In these instances, one option is to examine liquefied or compressed natural gas as an alternative. Liquefied or compressed natural gas is delivered using surface transportation (i.e., trucks) to a local distribution center in the community. By avoiding the need to lay down long-distance transmission pipelines, this method can be a cost-effective alternative for some communities.

Continued on next page

Continued from previous page

WHEN APPLYING TO THE GRANT PROGRAM:

Submit Application Form and Supporting Documentation

Applications to the Grant Program should be made by the distributor or supplier. In parallel, the municipality or First Nation must submit a council or band council resolution in support of gaining natural gas for their jurisdiction (irrespective of the distributor or supplier providing the services, in cases where there are multiple parties interested in servicing the area). The resolution may be submitted with the application or sent separately to the Grant Program administrator.

IF SUCCESSFUL UNDER THE GRANT PROGRAM:

Seek Approval(s) from the Ontario Energy Board

Approvals under the Grant Program will be conditional on the natural gas project receiving all necessary approvals from the Ontario Energy Board to proceed. Project details submitted to the Ontario Energy Board for approval must be materially the same as the project details submitted for review under the Grant Program, otherwise grant approvals may be withdrawn. Grant funding would flow to successful distributor/supplier after the project has received approval from the Ontario Energy Board to proceed.

Enter into a Contract with a Municipality or First Nation

The natural gas distributor or supplier should enter into a contractual agreement with Municipalities and First Nations making contributions to the natural gas expansion project. See sample tip sheet at the end of the guidelines.

Program Guidelines

1. Who can apply?

Applications to the Grant Program must be made by the natural gas distributor or supplier, working with the municipality, First Nation or unincorporated area where the project is located, as necessary.

2. What types of projects are eligible?

To ensure the Grant Program supports both improved access to natural gas as well as economic development in communities, there are two separate project streams:

- **Expansion Projects Stream ($70 million planned allocation*)**: supports projects that are primarily about converting residential customers to natural gas. Only projects to service unserved communities are eligible.

- **Economic Development Projects Stream ($30 million planned allocation*)**: supports projects that are primarily about converting businesses (e.g., farms, manufacturing facilities, mining operations, forestry operations, etc.) to natural gas or expanding service to businesses. Projects must benefit one or more of the following:
  - Rural Ontario (defined as Statistics Canada's census subdivisions, including lower-tier and single-tier municipalities, with population less than 100,000 and/or density of 100 people per km^2 or less)
  - Registered farming businesses (as defined under the *Farm Registration and Farm Organizations Funding Act, 1993)* and/or agri-businesses, including grain elevators, feed manufacturing facilities and crop input supply businesses
  - First Nations
  - Unincorporated areas

*These are initial allocations and may be changed based on program demand.

All projects must be for net new connections or increased volumes of natural gas. Prospective connections (e.g., connections to new residential or commercial developments that have not yet been built) should be excluded from applications under the Expansion Stream. Prospective connections (e.g., attraction of new business and investments) may be included under the Economic Development Stream with appropriate supporting evidence showing when these connections would occur and how they would benefit the area.

3. What project costs are eligible?

Under both streams, grant funding may be used towards:

- Capital projects to build new natural gas pipelines or compressors and other related capital works.

- Capital projects to build liquefied or compressed natural gas infrastructure, including pipelines, compressors, liquefaction facilities, regasification facilities, storage facilities and other related capital works.

Operational and maintenance costs and the cost of purchasing gas are not eligible under the Grant Program. Full list of eligible costs will be provided as part of grant agreements.

4. What is the role of municipalities and First Nations?

Applications will only be considered where Municipalities and First Nations:

- **Make a financial contribution towards project costs.** The contribution should be, at minimum, equivalent to the property tax (or other levies in the case of First Nations) that would be recovered on the new infrastructure being built for a period of 10 years. How this contribution will be made (e.g., up front or over time, through municipal loans, etc.) is up to the discretion of the municipality or the First Nation in consultation with the distributor or supplier. Alternatively, municipalities or the First Nation may provide evidence either separately or as part of the application form to explain why making such a contribution is not feasible.

- **Provide a supporting council or band council resolution.** The resolution must, at minimum indicate:

    a. The municipality or First Nation is supportive of projects to provide natural gas access to areas under their jurisdiction, irrespective of the distributor or supplier proposing to do so.

    b. (Where applicable) The municipality or First Nation will make a financial contribution to the natural gas expansion project that is approved by the Ontario Energy Board. The contribution will be, at minimum, equivalent to the property tax that would be recovered on the new natural gas infrastructure being built for a period of 10 years beginning from the time that property taxes first become due.

    Note: municipalities and First Nations are expected to estimate the amount of property taxes that would be recovered over ten years for the purposes of completing the application form but are not required to specify this amount as part of the municipal or band council resolution since the actual amounts may vary.

- **Provide supporting evidence for economic development benefits** that natural gas access will bring to the community and/or region (for applications under the Economic Development Project Stream only). Municipalities and First Nations should work with the natural gas distributor or supplier to include this information in the application form. Please refer to the application form for examples of supporting evidence and guidance on the types of economic development benefits to consider.

The natural gas distributor or supplier should enter into a contractual agreement with municipalities and First Nations making contributions to the natural gas expansion project. See sample tip sheet at the end of the guidelines.

5. What share of project costs will the program cover?

There is no funding cap under the Grant Program. However, applicants must demonstrate need as part of their application for grant funding, i.e., that there remains a financial gap even after utilizing standalone rates and surcharges, and contributions from benefitting communities or businesses.

Applicants must provide accounting for the total amount requested and demonstrate how it will be allocated to eligible expenses. Final funding amounts will be based on availability of funding and other projects being considered under the program.

Costs are eligible to the extent that they would not be recovered from natural gas rate-payers by natural gas distributors or suppliers, including stand-alone rates or surcharges, and contributions from municipalities and First Nations. The process of determining which amounts can be charged by natural gas distributors will be determined by the Ontario Energy Board.

6. What criteria will be used to evaluate applications?

Applications and supporting documentation will be made available to, and be assessed by, technical reviewers from Infrastructure Ontario, Ministry of Infrastructure, Ministry of Agriculture, Food and Rural Affairs, Ministry of Energy, Ministry of the Environment and Climate Change, Ministry of Indigenous Relations and Reconciliation, Ministry of Northern Development and Mines, and other ministries as required. Assessment criteria include the following metrics:

EXPANSION STREAM	
Criteria	**Details**
Cost-Effective Access (Primary)	Projects will be assessed based on the number of new connections that are made possible relative to the amount of grant funding requested.
Energy Affordability (Primary)	Projects will be assessed based on how much the community is currently paying in annual heating costs relative to other parts of the province.
Project Revenues and Customer Engagement (Secondary)	Projects will be assessed based on the extent to which various rate options were considered and whether the proposed rate(s) reflects feedback from the community being served. *Please note, the determination of whether the proposed rates are appropriate and can be implemented falls under the purview of the Ontario Energy Board, and will not be assessed as part of the application.*
Greenhouse Gas Emissions (Secondary)	Projects will be assessed based on the impact they will have on greenhouse gas emissions. All projects will be required to report on which fuel sources are being converted to natural gas and the estimated impact on greenhouse gas emissions. Projects will also be required to identify conservation measures that will be implemented or made available to newly connected customers (e.g., participation in demand side management programs).
Partnerships and Innovation (Secondary)	Projects will be assessed based on how they leverage partnerships and innovative approaches to make the project more economical (i.e., lower project costs or improve project revenues) or to provide better outcomes. Examples include funding contributions from third parties (exclusive of rates and contributions from municipalities or First Nations), providing assistance to help consumers convert heating equipment, contributions in aid of construction from property owners, partnering with nearby communities, timing project construction to leverage other municipal works occurring along the same corridor (e.g., wastewater, telecommunications), supporting a new technology such as renewable natural gas, etc.
Geographic (Tertiary)	Additional consideration will be given to projects that are in northern areas or located within First Nations Reserves.

OR:

ECONOMIC DEVELOPMENT STREAM	
Criteria	**Details**
Economic Development (Primary)	Projects will be assessed based on the expected economic benefits to businesses (e.g., agriculture, forestry, mining, manufacturing etc.) that support rural Ontario, First Nations or unincorporated areas, or to registered farming businesses and/or agri-businesses including grain elevators, feed manufacturing facilities and crop input supply businesses located anywhere in Ontario. For the purposes of the program, rural Ontario means all Statistics Canada's Census subdivisions (including lower-tier and single-tier municipalities) that meet at least one of the following criteria: • Have a population of less than 100,000 people, and/or • Have a population density of 100 people/km^2 or less. Assessments will consider how the projects support economic development in the community and/or region. Considerations could include: • Alignment with any community and/or regional economic development plans or strategies; and, • Business retention, expansion and attraction. Applicants are expected to address all economic development benefits that are relevant to their project. The types of economic development benefits may differ between projects (e.g., supporting investment attraction, supporting business retention/expansion, etc.). Applicants will also need to provide supporting evidence (e.g., analysis, letters from business or industry organizations, surveys, studies, etc.) to substantiate responses.
Energy Cost Savings (Primary)	Projects will be assessed based on expected energy cost savings to businesses with greater consideration expected for those projects that accommodate a higher density of connections to the pipeline (e.g., clusters and collaborative ventures such as business parks or corridors).
Project Revenues and Customer Engagement (Secondary)	Projects will be assessed based on the extent to which various rate options were considered and whether the proposed rate(s) reflects feedback from the community being served. *Please note, the determination of whether the proposed rates are appropriate and can be implemented falls under the purview of the Ontario Energy Board, and will not be assessed as part of the application.*

Greenhouse Gas Emissions (Secondary)	Projects will be assessed based on the impact they will have on greenhouse gas emissions. All projects will be required to report on which fuel sources are being converted to natural gas and the estimated impact on greenhouse gas emissions. Projects will also be required to identify conservation measures that will be implemented or made available to newly connected customers (e.g., participation in demand side management programs).
Partnerships and Innovation (Secondary)	Projects will be assessed based on how they leverage partnerships and innovative approaches to make the project more economic (i.e., lower project costs or improve project revenues) or to provide better outcomes. Examples include funding contributions from third parties (exclusive of rates and contributions from municipalities or First Nations), providing assistance to help consumers convert heating equipment, contributions in aid of construction from property owners, partnering with nearby communities, timing project construction to leverage other municipal works occurring along the same corridor (e.g., wastewater, telecommunications), supporting a new technology such as renewable natural gas, etc.
Geographic (Tertiary)	Additional consideration will be given to projects that are in northern areas or located within First Nations reserves.

7. What is the role of the Ontario Energy Board?

The Ontario Energy Board oversees expansion of the natural gas network in the province which typically includes three elements:

1. **Municipal Franchise Agreement (MFA) and Certificate for Public Convenience and Necessity: Securing the approval to serve an area of the province**

   The MFA is an agreement between a municipality that wants to have a natural gas distribution system installed within its boundaries and a natural gas distributor that wants to provide that service. The MFA must be submitted to the Ontario Energy Board for approval under section 9 of the *Municipal Franchises Act*. To standardize the format and content of MFA's the Ontario Energy Board, with input from municipal leaders, developed the Franchise Handbook and a Model Franchise Agreement which are available on the Ontario Energy Board's website.

   Under section 8(2) of the *Municipal Franchises Act*, prior to constructing works to supply gas, a natural gas distributor must apply to the Ontario Energy Board for a Certificate for Public Convenience and Necessity (Certificate). If the Ontario Energy Board approves the application, it will issue a Certificate to the gas distributor. The

exact area within a municipality where a gas distributor is permitted to construct gas works is defined by the Ontario Energy Board's Certificate.

Typically, the gas distributor will submit to the Ontario Energy Board a signed MFA for approval and an application for a Certificate at the same time.

2. **Leave-to-Construct Approval: Securing approval to construct facilities that meet certain size and cost criteria**

Natural gas expansion projects that meet at least one of the following criteria require leave-to-construct approval from the Ontario Energy Board to proceed:

a. The diameter of the new pipe is 12 inches or greater;
b. The operating pressure is equal to or greater than 2,000 kilopascals (unit of pressure);
c. The cost of the project is greater than or equal to $2,000,000;
d. The length of the new pipe required exceeds 20km.

Applications are assessed by the Ontario Energy Board based on the public interest test which includes the need for the project and the alternatives sought, economic feasibility (e.g., the expected project costs and revenues and anticipated impact on rates), and environmental and landowner impacts.

3**. Rate Setting: Securing approval to charge customers for regulated services**

The Ontario Energy Board sets the rates that gas distributors are allowed to charge their customers for:

- Gas supply (unless the consumer purchases directly from a retailer)
- Transportation and delivery
- Storage

Natural gas expansion proposals will require an order from the Ontario Energy Board authorizing the rates the distributor wishes to charge its customers.

Approvals for natural gas expansion projects under the Grant Program will be conditional on the projects receiving all applicable approvals from the Ontario Energy Board. Project details submitted to the Ontario Energy Board for approval must be materially the same as the project details submitted for review under the Grant Program, or grant approvals may be withdrawn.

Projects must be submitted to the Ontario Energy Board within six months of receiving approval under the Grant Program. An electronic copy of the application(s) to must be shared with the ministry (email: NGGP@infrastructureontario.ca) within one week of making the application to the Ontario Energy Board.

8. How does the program align with new rules issued by the Ontario Energy Board?

New Rules for Natural Gas Expansion in Ontario

On November 17, 2016 the Ontario Energy Board introduced new rules for natural gas expansion in the province. Under the new rules, natural gas distributors may implement stand-alone rates or surcharges for expansion projects to new areas to recover costs. Previously, distributors had to charge the same rates to all customers in the same rate class. This limited the ability to expand, particularly into rural and remote areas which face higher expansion costs.

Under the new rules, the Ontario Energy Board will also consider proposals from competing distributors or suppliers to service the same community in order to enhance competition. In situations where there is competition to serve a new community, the Ontario Energy Board will first evaluate the proponents' leave-to-construct and rate-setting plans.

The Grant Program is complementary to these new rules introduced by the Ontario Energy Board. Under the Grant Program, projects to build new natural gas infrastructure must utilize stand-alone rates or surcharges to recover capital costs to lower the net grant funding required.

More details on the Ontario Energy Board's decision can be found by looking at Case Number EB-2016-0004 on the Ontario Energy Board's website: www.ontarioenergyboard.ca.

9. What if more than one distributor or supplier is interested in expanding natural gas service to the same project area?

Consistent with the Ontario Energy Board's efforts to encourage competition, multiple applications to service the same project area by different distributor or suppliers will be accepted under the Grant Program. Project area is the combination of communities' geographic boundaries within which the new infrastructure is being built and customers being connected are located.

Based on the results of project assessment, conditional approval may be granted to more than one distributor and/or supplier for the same project area under the Grant Program.

This would provide flexibility for multiple proposals to proceed to the Ontario Energy Board for the same project area and enhance competition. Grant funding would only be

provided for the one project that is approved by the Ontario Energy Board (e.g., with Distributor A or B only).

It is possible that additional distributors or suppliers may come forward when the project proceeds to the Ontario Energy Board for review. The Ontario Energy Board would ultimately review all proposals and determine the best distributor/supplier to service the area.

10. Some distributors already have a Certificate to serve a municipality but a portion of the municipality is still not served. Is that the only distributor or supplier that can apply under the Grant Program?

No. The Ontario Energy Board has indicated that the *Municipal Franchises Act, 1990* does not prevent the Ontario Energy Board from issuing multiple Certificates within a defined geographic area following a competitive process.

11. Can individual property owners apply to the Grant Program directly?

No. Property owners (i.e., residential and business consumers) cannot apply to the Grant Program. Interested individuals should contact their local community or natural gas distributor to express interest.

Property owners remain responsible for any individual contributions in aid of construction (e.g., cost to bring natural gas pipelines across large properties) that may be required by the natural gas distributor or supplier.

12. Is there a duty to consult with Indigenous groups?

The Government of Ontario and municipalities may have a duty to consult and, where appropriate, accommodate Indigenous groups (e.g., First Nation and Métis peoples) where an activity is contemplated that may adversely impact an Indigenous or treaty right.

Before deciding whether a project should receive funding, the Government of Ontario will assess whether its duty to consult obligations are engaged. The day-to-day, procedural aspects of consultation may be delegated to project proponents (e.g., natural gas distributors or suppliers) who may also have their own obligations. Ontario's delegation to proponents of aspects of consultation is a routine practice and the procedural aspects of consultation will be delegated to project proponents on this initiative. Therefore, it is important that all applicants recognize this process and appropriately plan for this work (e.g., resources, time, etc.) as part of their funding submission.

Consultation requirements will vary depending on the size and location of the project in question. For successful applications, further details surrounding specific consultation requirements, including which communities require consultation, will be provided by provincial officials. Applicants should ensure duty-to-consult requirements are met prior to commencing the construction process.

13. When do projects need to be completed?

Project-specific timelines will be included in individual grant agreements for successful projects. In general, eligible expenses must be incurred no later than March 31, 2021.

14. How many intakes are planned?

There will be one intake held to allocate the $100 million in grants. The deadline for applications is **July 31, 2017**.

15. How many applications can be submitted?

Multiple applications for the same project area may be submitted as long as the proposed natural gas distributor or supplier is different for each application.

Grant funding would only be provided for the one project that is approved by the Ontario Energy Board.

16. When will applicants be notified of the results?

Applicants will be notified of the results as quickly as possible following the closing of the intake window. Both successful and unsuccessful applicants will be notified. Infrastructure Ontario, the Ministry of Infrastructure and the Ministry of Agriculture, Food and Rural Affairs will be available to provide feedback to unsuccessful applicants, if requested.

17. When will successful applicants receive grant funding?

Once the project has received approval from the Ontario Energy Board, the grant agreement has been fully executed, and all conditions satisfied, grant payments will be advanced to successful distributors/suppliers.

18. What are the obligations of successful grant recipients?

Successful applicants will be required to sign a contribution agreement with the Ministry of Infrastructure. Recipients will be subject to the *Freedom of Information and Protection Act,* and may be subject to audit. Additional requirements will be outlined in grant agreements.

19. What are the reporting requirements?

Successful applicants will be required to report back to Infrastructure Ontario on the use of the grant funding. Successful applicants should be prepared to report on how the grant has allowed them to expand natural gas access and achieve the benefits described in their application. Specific reporting requirements will be outlined in individual grant agreements.

20. How do you submit an application?

Please email the completed application form and supporting documents to NGGP@infrastructureontario.ca. Applications will be accepted electronically.

Once the completed application has been submitted, an acknowledgement of receipt will be sent to the applicant within 10 business days. If you do not receive this notification or would like to send the completed application package by mail, please contact NGGP@infrastructureontario.ca.

Infrastructure Ontario may contact an applicant to further discuss the application and/or request more information.

21. Where can I get more information?

Electronic mail: NGGP@infrastructureontario.ca
Website: www.infrastructureontario.ca/NGGP
Telephone: 1-844-357-0725

TIPSHEET: Municipal Capital Facilities Agreement or Similar Contract

Here are some of the things distributors and suppliers may wish to consider in developing an agreement (e.g., a capital facilities agreement or similar) with municipalities and First Nations that are making a financial contribution towards the natural gas expansion project. As each distributor/supplier, municipality and First Nation is different and is responsible for its decisions, what goes into an agreement will vary. In the case of municipalities, local bylaws would be needed for a capital facilities agreement, a debenture loan, and any fee or other cost recovery arrangements. It is recommended that all parties obtain legal and professional advice.

PREAMBLE

- Who are **the parties to the agreement** (i.e. municipality or First Nation and gas company)
- A statement of the **broader purposes and expectations** of the agreement, such as expected long term energy savings or environmental benefits
- For municipalities, reference to the **municipal capital facilities provision** in the legislation (section 110 of the Municipal Act, 2001)
- References to any **other legislation**

DETAILED PROJECT DEFINITION

- **Terms providing for the construction of a** pipeline asset for the municipality or First Nation in a defined area of the municipality, the costs and expected timing or stages for construction, related engineering or other technical requirements and identifying which party has responsibility for each of these
- Length of the agreement
- **Ownership of the asset** (including specifying where ownership is with the gas company)

GENERAL TERMS AND CONDITIONS

- Method for recovering Unused Funds
- Default and Termination
- Remedies
- Joint and Several Liability where the recipient is comprised of more than on entity

OBLIGATIONS OF THE PARTIES

- **The amount of funding** provided by the municipality or First Nation, and how and when the municipality or First Nation would make payments under the agreement.
- **Determine eligible costs.** Funding can only be provided for capital costs rather than operating needs
- **Any specific information or methodology** the municipality or First Nation might need to be able to calculate and justify local fees (if being imposed) for its costs under the agreement

- **Responsibilities of the gas company** to build and maintain the pipelines, and to execute or obtain all necessary permits, approvals and agreements necessary to carry out and complete the project
- **Reporting requirements** (e.g., interim and final progress and costs/expenditure reports to the municipality or First Nation).
- **Responsibilities related to risk allocation** and corresponding financial assurances (e.g., insurance and indemnities, cross-liability, contractual liability coverage, notice period for cancellation, termination or material change from the recipient to such policy's insurers, etc.)
- **Other assurances** that may be required by the municipality or First Nation such as ongoing supply service standards; further expansion of the serviced area; responsibility for extraordinary costs related to maintenance, repair or remediation; potential sale of the new asset; how funds are to be used and procedures for possible conflicts of interest

Ontario

Ministry of Infrastructure

Natural Gas Grant Program

Natural Gas Grant Program Application Form

This application should be completed and submitted by the natural gas distributor or supplier, working with the municipality, First Nation or unincorporated area where the project is located, as necessary.

Please ensure that you have read the **Guidelines for the Natural Gas Grant Program** prior to completing this application.

More than one application for the same project area may be submitted as long as the distributor or supplier is different for each application.

Deadline for applications is July 31, 2017.

A. Applicant Information

A1. Applicant Name

Applicant Type

☐ Natural Gas Distributor ☐ Natural Gas Supplier

A2. The project is located within a

☐ Municipality: _____

☐ First Nations Reserve: _____

☐ Unincorporated Territory: _____

A3. Mailing Address

Unit Number	Street Number	Street Name	PO Box

Rural Route	City/Town	County/District	Postal Code

A4. Authorized Contact for Project Information

Last Name	First Name	Middle Initial

Telephone Number	Email Address	Position

B. Project Information

B1. Project Name

B2. Project Stream **(select one)**:

☐ **Expansion Project:** supports projects that are primarily about converting residential customers to natural gas. Only projects to service unserved communities (i.e., a municipality, First Nation or part thereof) are eligible.

☐ **Economic Development Project:** supports projects that are primarily about converting businesses (e.g., farms, manufacturing facilities, mining operations, forestry operations, etc.) to natural gas or expanding service to businesses that are seeking more capacity. Projects must benefit one or more of the following:

- Rural Ontario (defined as Statistics Canada's census subdivisions, including lower-tier and single-tier municipalities, with population less than 100,000 and/or density of 100 people per km^2 or less)
- Registered farming businesses (as defined under the *Farm Registration and Farm Organizations Funding Act*, 1993) and/or agri-businesses, including grain elevators, feed manufacturing facilities and crop input supply businesses
- First Nations
- Unincorporated areas

B3. Project Type

☐ Pipeline extension

☐ Liquefied or compressed natural gas infrastructure (pipelines, compressors, liquefaction facilities, regasification facilities, storage facilities and other related infrastructure)

B4. Current Status

☐ Unserved Area (no existing natural gas service in any part of the Municipality, First Nation or Unincorporated Area)

☐ Partially-served Area (some parts of Municipality, First Nation or Unincorporated Area already have natural gas)

☐ Fully-served Area (the Municipality, First Nation or Unincorporated Area has natural gas access but is looking to add more capacity)

B5. Project Location

Longitude*	Latitude*

*Latitude and Longitude coordinates can be pulled from Google Maps by right-clicking and selecting “What’s here”.

If only parts of the municipality or First Nations are being provided access to natural gas, please provide the names of the communities below

B6. Project Description

Please provide a high-level overview of the project, including key activities, timelines and expected outcomes. Please include supporting evidence with your response and attach additional documentation, as needed. Maximum 2000 characters.

B7. Key Project Dates (Proposed)

Construction Start Date (yyyy/mm/dd)	Construction End Date (yyyy/mm/dd)	Project In-Service Date (yyyy/mm/dd)

B8. Ontario Energy Board

Please identify any existing Ontario Energy Board approvals that you have received for this project

Municipal Franchise Agreement? ☐ Yes ☐ No

If No, what is the estimated date for seeking approval (yyyy/mm/dd)

Certificate for Public Convenience and Necessity? ☐ Yes ☐ No

If No, what is the estimated date for seeking approval (yyyy/mm/dd)

Leave-to-construct approval? ☐ Yes ☐ No

If No, what is the estimated date for seeking approval (yyyy/mm/dd)

Rate-Setting approval? ☐ Yes ☐ No

If No, what is the estimated date for seeking approval (yyyy/mm/dd)

Have any other applications for this project area been filed with the Ontario Energy Board (with the same or a different distributor or supplier)? ☐ Yes ☐ No

If yes, please provide the application number

C. Project Financials

Note: If the proposed project would connect more than one municipality, reserve or unincorporated area, please provide the aggregate, project-level totals for the combined service area in the following tables and submit a community-by-community breakdown in supporting materials with your application.

Table 1: Summary Table

Total Eligible Project Costs* (A)	$
Recovery from prevailing rates over 40 years (B)	$
Recovery from Expansion Surcharge** (ES) (C)	$
Contribution from municipality or First Nation (D)	$
Other Contributions (e.g., from businesses or industry) (E)	$
Total Grant Funding Requested (F) (A-B-C-D-E = F)	$

*Please see Guidelines for the Natural Gas Grant Program for a description of eligible costs.

**For new utilities or where standalone rates are being charged by existing utilities, the surcharge value is the difference between prevailing and proposed natural gas rates.

Table 2: Profitability Index

Existing Profitability Index* - at prevailing rates without ES, contributions from municipalities, First Nations or other parties, or grant funding	$
Revised Profitability Index* - after applying ES, contributions from municipalities, First Nations or other parties, or grant funding	$

*Profitability Index to be determined consistent with Ontario Energy Board Guidelines For Assessing And Reporting On Natural Gas System Expansion In Ontario.

Table 3: Rate-Based Revenues

	Existing Base Rate (charged to non-expansion customers in same rate class) per m^3	Proposed Rates (exclusive of Expansion Surcharge*) per m^3	Expansion Surcharge (if applicable) per m^3	Total Rate per m^3	Total Recoveries
Residential					
Commercial (excluding farms and agribusinesses)					
Industrial (excluding farms and agribusinesses)					
Farms and Agribusinesses (grain elevators, feed manufacturing facilities, crop input supply businesses)					
Institutional Buildings (municipal facilities, schools, hospitals, etc.)					

Length of Expansion Surcharge:_____months

*For new utilities or where standalone rates are being charged, the surcharge value is the difference between prevailing and proposed natural gas rates.

D. Market Survey

D1. Please indicate the survey methodology and sample size used to complete the tables below.

Sample Size	Total Sample Population

Survey Methodology (Maximum 2000 characters)

Table 1: Current Heating System Profile for Project Area - Residential

Primary Fuel Type	Penetration (#)	Penetration (%)	Annual Space Heating Bill - Current	Annual Space Heating Bill - Natural Gas (including ES, where applicable)	Projected Savings
Electric – Baseboard			$	$	$
Electric – Forced Air			$	$	$
Propane			$	$	$
Oil			$	$	$
Wood			$	$	$
Other			$	$	$

Annual Weighted Average Space Heating Costs for Project Area – Current Bills

$

Annual Weighted Average Space Heating Costs for Project Area – with Natural Gas (including ES)

$

Please identify any additional savings in annual energy costs that are expected from the conversion of other systems to natural gas (e.g., water heater, cooking stoves, etc). Please identify the systems and the amount. Maximum 2000 characters.

Table 2: Current Heating System Profile for Project Area - Non-Residential					
Primary Fuel Type	Penetration (#)	Penetration (%)	Annual Space Heating Bill - Current	Annual Space Heating Bill - Natural Gas (including ES, where applicable)	Projected Savings
Electric – Baseboard			$	$	$
Electric – Forced Air			$	$	$
Propane			$	$	$
Oil			$	$	$
Wood			$	$	$
Other			$	$	$

Annual Weighted Average Space Heating Costs for Project Area – Current Bills

$ _____

Annual Weighted Average Space Heating Costs for Project Area – with Natural Gas (including ES)

$ _____

Please identify any additional savings in annual energy costs that are expected from the conversion of other systems to natural gas (e.g., water heater etc). Maximum 2000 characters.

Table 3: Impact on Natural Gas Access

	Potential Connections	Potential Volume (annual)	Forecasted Connections within 10 years (based on market survey)	Forecasted Volume (annual) (based on market survey)	Forecasted Cost Savings (annual)	Forecasted Cost Savings (annual) of switching from interruptible to non-interruptible supplies*
Residential						
Commercial (excluding farms and agribusinesses)						
Industrial (excluding farms and agribusinesses)						
Farms and Agribusinesses (grain elevators, feed manufacturing facilities, crop input supply businesses)						
Institutional Buildings (municipal facilities, schools, hospitals, etc.)						
Total						

*This section only applies to those customers switching from interruptible to non-interruptible supplies of natural gas. This is intended to capture the cost savings associated with not having to use an alternative fuel source during peak periods. Estimates should be based on the average amount of natural gas that could have been used but was interrupted during peak periods over the past three years.

Table 4: Estimated Payback Period - Residential

Conversion Type	Conversion Applicability (#)	Conversion Applicability (%)	Average Cost	Payback – (# of years)
Electric – Baseboard (Furnace Replacement + Ductwork)			$	
Electric – Forced Air (Furnace Replacement)			$	
Propane - Furnace Replacement			$	
Propane – Furnace Conversion			$	
Oil			$	
Wood			$	
Water Heater			$	
Other			$	

Table 5: Estimated Payback Period – Non-Residential

Conversion Type	Conversion Applicability (#)	Conversion Applicability (%)	Average Cost	Payback – (# of years)
Electric – Baseboard (Furnace Replacement + Ductwork)			$	
Electric – Forced Air (Furnace Replacement)			$	
Propane - Furnace Replacement			$	
Propane – Furnace Conversion			$	
Oil			$	
Wood			$	
Water Heater			$	
Other			$	

Table 6: Greenhouse Gas Emissions Impact

	Baseline / Current Average Annual GHG Emissions (tCO2e/year)	Forecasted Average Annual GHG Emissions (tCO2e/year)	Change in Annual Average (%)	Baseline / Current GHG Emissions, Cumulative to 2030 (tCO2e)	Forecasted GHG Emissions, Cumulative to 2030 (tCO2e)	Change (%), Cumulative to 2030
Residential						
Commercial (excluding farms and agribusinesses)						
Industrial (excluding farms and agribusinesses)						
Farms and Agribusinesses (grain elevators, feed manufacturing facilities, crop input supply businesses)						
Institutional Buildings (municipal facilities, schools, hospitals, etc.)						
Total						

D2: Project Revenues and Customer Engagement

An evidence-based evaluation will be used to assess how the applicant arrived at the proposed rate, including expansion surcharges, and whether community feedback was reflected in this process.

Please note, the determination of whether the proposed rates are appropriate and can be implemented falls under the purview of the Ontario Energy Board. This will not be assessed as part of the application. The intent of this section is to assess the extent to which the applicant can demonstrate that various rate options were assessed and that the rates being proposed reflect feedback from the community being served.

Please provide a survey of customers in the proposed service area at different proposed rates (including at higher than the final rate being proposed) and projected attachment levels at those rates, as part of your application.

1. Please describe the various rate options that were considered. Maximum 2000 characters.

2. Please describe how the final rate being proposed was determined (e.g., highest combination of rates and customer attachment possible). Maximum 2000 characters.

3. Please describe what community engagement activities were undertaken in the proposed project area to help determine rates and how customer feedback has been integrated into proposed rates. Maximum 2000 characters.

D3: Contributions from Municipalities and First Nations

Municipalities and First Nations must make a financial contribution towards project costs. The contribution should be, at minimum, equivalent to the property tax (or other levies in the case of First Nations) that would be recovered on the new infrastructure being built for a period of 10 years.

1. What is the incremental property tax (or other levies in the case of First Nations) that would be recovered on the new infrastructure assets being built over ten years?

2. How much will the municipality or First Nation be contributing towards projects costs and over what period of time? Maximum 2000 characters.

3. If this amount is less than the amount in (1) above, please explain why and provide evidence with the application form, as appropriate. Alternatively, the municipality or First Nation may submit the explanation and evidence directly to NGGP@infrastructureontario.ca. Maximum 2000 characters.

D4: Fiscal Need

Please describe why a grant is required for this project to proceed. Maximum 2000 characters.

D5: Partnerships and Innovation

Please describe how your project is leveraging partnerships or innovation to make the project more economic (i.e., lower project costs or improve project revenues). Examples include third party contributions to the project (exclusive of ES and contribution from municipalities and First Nations), providing support for consumer conversion costs, timing project construction to leverage other municipal works occurring along the same corridor (e.g., wastewater, telecommunications), supporting a new technology such as renewable natural gas, etc. Maximum 2000 characters.

For projects under the Economic Development Stream only

D6: Economic Development in Rural Ontario, First Nations or Unincorporated Territories, or projects supporting Farms and/or Agribusinesses

The following section applies to applicants submitting a project under the Economic Development Projects Stream. This section is intended to build upon the business connections and energy cost savings information provided in section D1 of the application. This section should be completed in partnership with the municipality and/or First Nations communities.

A merit-based evaluation will be used to assess whether the project would support economic development in the identified community and/or region. To support this evaluation, applicants must be specific about how natural gas access will support economic development in their community and/or region and provide relevant examples and supporting evidence wherever possible to substantiate their responses (see list below for examples of supporting evidence). Providing concrete examples and relevant supporting evidence will result in a stronger application.

Preference will be given to projects that:

1. Provide a greater amount of forecasted business energy cost savings relative to provincial funding requested (based on figures in section D1);

   and

2. Clearly demonstrate how natural gas access (resulting from the proposed project) will support economic development within the identified community and/or region.

Examples of supporting evidence could include any or all of the following:

- Analysis that demonstrates the local and/or regional economic importance of businesses that will be connected to natural gas (e.g. industry competitiveness study, location quotients, etc.). Analysis could be developed by your community (e.g. a municipal office) or a third party.
- Letters, market surveys and/or studies from local businesses that indicate how the energy cost savings from natural gas access will reduce barriers and support their operations. This should include details on any plans to retain operations, increase production or expand activities.
- Analysis from sector and/or industry organizations that indicate how natural gas access will support key sectors and/or businesses in your community and/or region.
- Local and/or regional economic development plans or strategies to demonstrate how natural gas access aligns with your community and/region's economic development priorities.

Please answer all questions that apply to your project.

1. Provide an overview of any community and/or regional economic development plans or strategies that would be supported by this natural gas project. Reference and describe how this project would support any key industries and/or businesses clusters (e.g. business parks). **Please include supporting evidence with your response. Attach additional documentation as required.** Maximum 2000 characters.

2. Provide an overview (e.g. employment, industry type) of existing businesses in your community and/or region that are forecasted to connect to natural gas through this project. Describe the economic importance of these businesses to your community and/or region. **Please include supporting evidence with your response. Attach additional documentation as required.** Maximum 2000 characters.

3. Provide an overview of how access to natural gas would reduce barriers for existing businesses in your community and/or region. Reference and describe any businesses that have indicated their intent to increase production and/or expand their operations if they obtain access to natural gas through this project. **Please include supporting evidence with your response. Attach additional documentation as required.** Maximum 2000 characters.

4. Describe how access to natural gas would support the economic competitiveness of your community and/or region. Reference and describe any businesses (or business operations) that would be retained as well as any investors outside of your community and/or region that have indicated a desire to invest in your community and/or region if natural gas access were available through this project. **Please include supporting evidence with your response. Attach additional documentation as required.** Maximum 2000 characters.

5. Please describe any other ways in which access to natural gas through this project would support economic development in your community and/or region. **Please include supporting evidence with your response. Attach additional documentation as required.** Maximum 2000 characters.

Note: For the purposes of the program, rural Ontario means project areas that meet at least one of the following criteria:

- have a population of less than 100,000 people
- have a population density of 100 people/km^2 or less

E. Documents to Submit with Application Form

For projects under either of the streams, please provide:

- Copy of supporting municipal council or band council resolution. If the proposed project is located in an unincorporated area, please provide evidence of local support (e.g., letters of support, evidence of local community meetings and feedback)
- Map of the proposed expansion area showing the project area and proposed natural gas distribution infrastructure
- Articles of Incorporation/Letters Patent for the natural gas distributor or supplier
- Description of the distributor or supplier's corporate legal structure
- Project Construction Schedule, including: planned expenditures per fiscal year (April 1 to March 31), percentage project completion per year (based on the value of total construction completed) and overall completion timeline (spreadsheet format)
- Type of construction contract (CCDC2 fixed price contract, project management or turnkey, etc.) with copy of draft or executed contracts, if available at the time of submission
- Evidence supporting proposed project costs (e.g., quotes or proposals)
- Customer Survey showing projected attachment rates, including forecasted year-over-year attachment rates over ten years
- A survey of customers in the proposed service area at different proposed rates (including at higher than the final rate being proposed) and projected attachment levels at those rates
- If the proposed project makes use of new technology (e.g., renewable natural gas, liquefied or compressed natural gas), please include an assessment of technical feasibility in this application
- If more than one community is covered by the proposed project, please provide a community-by-community breakdown of the information requested under the Project Financials section

In addition, for projects under the economic development stream, please provide:

- Evidence (e.g., contract, letter of intent) that large business and industrial customers will be converting to natural gas
- Where applicable, supporting materials and evidence (e.g. analysis, reports, letters of support), where applicable, that demonstrate how project will support economic development in your community and/or region.
- Where applicable, documentation (e.g. recent energy bills for the past year) that demonstrate current business energy costs and expected cost savings for businesses that have expressed interest in connecting to natural gas (calculations will require support/validation from utility company).

Please outline any additional files or documents you will be submitting along with this application form. Attach all documents to the same email as this form. If the file exceeds 10 MB, please send separately (indicate in the original email documents will be sent separately).

Description of file or document attached	File name or hyperlink	
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Add item (+)

You will receive an email from the Infrastructure Ontario confirming the receipt of your submission. If you do not receive this notification within 10 business days, please contact NGGP@infrastructureontario.ca.

F. Declaration

I, the applicant, certify that:

- I have read and understood the project criteria outlined in the Natural Gas Grant program guidelines.
- The information in this application form and supporting documents is factually accurate.
- I have the authority to bind the applicant.
- The natural gas project would not proceed without a grant under the Natural Gas Program.
- I acknowledge that I may be asked to provide additional information by the Ministry of Infrastructure to support project assessment.
- I acknowledge that where municipalities and First Nations are making a financial contribution to the project, I will be required to enter into a contractual agreement with these parties for the purposes of accepting and utilizing this contribution.

Applicant Name (Last, First) on Distributor or Supplier	Position
Applicant Signature	Date (yyyy/mm/dd)

Note: Please include a **separate signed and scanned version** of the form. (click “Print Form” below to print and sign the completed form).

Please email the completed application form to NGGP@infrastructureontario.ca. If you would like to send the form by mail or have questions about the application, please contact:

Infrastructure Ontario
Phone: 1-844-357-0725
Email: NGGP@infrastructureontario.ca
Web: www.infrastructureontario.ca/NGGP

Print Form Save Form Clear Form

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Please confirm the accuracy of the attached MS Excel table. Please explain all variances between the original and updated application

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Response:

The information in the spreadsheet attached to this interrogatory (see Attachment 1) is accurate with the exception that the Lambton Shores/Kettle and Stony Point First Nation minimum design cost in the original evidence was $1.79 million.[1]

The differences in the capital cost data from 2015 to 2017 for Milverton and Lambton Shores/Kettle and Stony Point are due to an increased attachment forecast and cost increases to support those additional attachments as well as general increase in construction costs from year to year.

For Moraviantown the attachment forecast decreased to reflect updated knowledge. The main costs increased due to a change in Union's construction costs in that District, and timing of the construction.

For Prince Township there was an increase in the attachment forecast but the capital costs remained the same. The design of the system changed and a pipe size decrease offset any cost increase due to the attachment increase.

For Moraviantown, explanations for changes in the customer forecast are provided at Exhibit C.Staff.5 d). For the other projects, the rationale for adjusting the forecast is consistent with that provided at Exhibit C.Staff.10 a), along with the increased scope for the Milverton project provided at Exhibit C.Staff.9.

[1] EB-2015-0179 Exhibit A, Tab 1, p. 47 Updated

Attachment 1 Provided by SEC

	Original Evidence (A-1, p.45, Table 1)				Revised Application (A-1, Addendum, p.15)		
Project	**Maximum Potential Customers**	**Forecast Customers**	**Capital Cost - Preferred Design ($M)**	**Minimum Design - Preferred Design ($M)**	**Maximum Potential Customers**	**Forecast Customers**	**Capital Cost ($M)**
Milverton	**818**	**526**	**4.93**	**4.77**	**961**	**739**	**5.98**
Prince Township	**375**	**242**	**2.72**	**2.72**	**395**	**291**	**2.72**
Lambton Shores Kettle Point FN	**496**	**281**	**2.42**	**1.7**	**512**	**364**	**2.1**
Moraviantown FN	**70**	**61**	**0.54**	**0.49**	**71**	**38**	**0.56**

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Please provide the following Discount Cash Flow (DCF) analysis schedules in excel format with all formulas intact

a. Exhibit A, Tab 2, Section A, Schedule 6
b. Exhibit A, Tab 2, Section B, Schedule 6
c. Exhibit A, Tab 2, Section C, Schedule 6
d. Exhibit A, Tab 2, Section D, Schedule 6

Response:

The Discounted Cash Flow ("DCF") analysis filed as Schedule 6 in the Exhibit A, Tab 2 evidence is a reporting sheet within Union's Economic Evaluation Model ("EEM"). Schedule 6 is not a calculation engine in and of itself. The EEM is a large complex excel workbook with capabilities beyond the DCF portion of reporting. Its use requires specific knowledge of its structure and financial skills. The Excel file Union has prepared for this request is a modified version of Schedule 6 which re-produces the significant calculations embedded elsewhere in the EEM. These demonstrate the inputs and assumptions of the DCF analysis.

Union has provided a live Excel Spreadsheet (Exhibit C.SEC.11, Attachment 1) directly to SEC via email, copying the Board. Should any other interested parties wish to receive the document, please contact Union directly.

The average use and distribution margins for residential customer types are included in the file. The average use and distribution margin for the commercial and industrial customers are presented as an average for the entire C/I group to maintain customer confidentiality.

The discount methodology is beginning of period for outflows and mid-period for inflows. Please refer to Exhibit A, Tab 2, Schedules 2 and 7 for other specific project inputs.

UNION GAS LIMITED

Answer to Interrogatory from
School Energy Coalition ("SEC")

Reference: Exhibit A, Tab 1, p.18

Please update Table 1 for the most recent competing energy source cost information available, including the announced Fair Hydro Plan. Please provide all assumptions used and a step-by-step breakdown of the calculation.

Response:

The requested information is separated by project area in the tables below because differing electric LDC's rate structures are in place for the various projects, differing Fair Hydro Plan elements are expected for each, and Union now has project specific fuel type penetration rates for most of the areas. All costs in the tables below are expressed in total bill after tax terms in order to account for the PST credit on electricity bills introduced in early 2017, and Cap-and-Trade fees on other fuels.

Table 1: Annual Residential Energy Savings Estimates

Kettle and Stony Point/Lambton Shores and Milverton/Wartburg/Rostock Projects

Competing Energy Source	**Current Penetration**		**Annual Cost**	**Natural Gas (Incl. SES) Annual Cost Advantage**
	Kettle and Stony Point Lambton Shores	Milverton Rostock Wartburg		
Propane	48%	44%	$2,162	$672
Oil	6%	36%	$2,206	$716
Wood	21%	9%	$1,745	$255
Electric less PST	21%	10%	$4,025	$2,535
Electric Fair Hydro Plan			$2,868	$1,378
Natural Gas (during SES term)	0%		$1,490	$0
Natural Gas (after SES term)	0%		$918	$(572)

Details and Assumptions:

1. All costs include 13% HST except electric which includes only 5% GST.

2. Costs assume both heating and water heating are using the same fuel source for propane, oil, electric and natural gas, and that wood heating is accompanied by electric water heating.

3. Propane prices are based on prices obtained from Dowler Karn invoices from a residential consumer in southwestern Ontario, at nominal prices of $0.499/litre in April 2016, and $0.569/litre in November, 2016, and weighted 25% spring/summer and 75% autumn/winter prices, respectively. A cap and trade obligation fee of $0.0278 per litre has been added to 2016 propane prices. Tank rental fees and delivery fees have not been included. Annual consumption is estimated at 3,302 litres (equivalent to 2,200 m^3 of natural gas).

4. Fuel Oil costs are based on 12 month average nominal price from Kent Group (January 2017) of $0.839/litre for the London area, and annual consumption of 2,231 litres/year (equivalent to 2,200 m^3 of natural gas). A cap and trade obligation fee of $80/year has been added to the nominal price.

5. Electric less PST costs are based on Hydro One medium density[1] January 2017 time of use rates. The PST credit introduced for Hydro One customers in January, 2017 has been reflected in the Electricity Less PST costs. Annual heating and water heating consumption of 23,633 kWh has been used (equivalent to 2,200 m^3 of natural gas), and fixed monthly charges have been excluded.

6. Union has based estimated impacts of the Fair Hydro Plan on information from the Hydro One website, which indicates assumptions include "Time-of-Use prices reduced by 30 per cent, distribution charges (included under Delivery) capped at $38 for residential customers with a low or medium density service type, and Rural or Remote Rate Protection charge (included under Regulatory Charges) reduced by 0.17¢ per kWh.[2]" The PST credit introduced for Hydro One customers in January, 2017 has been reflected in the Fair Hydro Plan estimates, and fixed monthly charges have been excluded.

7. Wood costs are based on 3.6 cords of hardwood per year averaging 22 MBTU/cord, at a cost of $330/cord.

8. Natural gas costs are based on January 2017 rates which include cap and trade costs, with annual consumption estimated at 2,200 m^3. A $21.00/month fixed monthly charge is included in the estimates.

9. Current penetration is from market surveys conducted in winter 2017, and provided at Exhibit C.SEC.5. Totals may not add to 100% as a result of some homes with other types of systems or with no heating system.

[1] Medium density is defined as 100-2,999 customers and 15-59 customers per km of power lines used to supply energy to the zone.
[2] http://www.hydroone.com/Affordability/Pages/AffordabilityAnnouncement.aspx

Table 2: Annual Residential Energy Savings Estimates

Moraviantown Project

Competing Energy Source	Estimated Current Penetration	Annual Cost	Natural Gas (Incl. SES) Annual Cost Advantage
Propane	16%	$2,162	$672
Oil	32%	$2,206	$716
Wood	22%	$1,779	$289
Electric less HST	20%	$4,254	$2,764
Electric Fair Hydro Plan		$1,980	$490
Natural Gas (during SES term)	0%	$1,490	$0
Natural Gas (after SES term)	0%	$918	$(572)

Details and Assumptions:

All details and assumptions are consistent with those for Table 1 except for the following:

1. Electric less PST costs are based on Hydro One low density time of use rates and a full credit on both HST and PST has been reflected in the Electricity Less PST costs.

2. In addition to the impacts of the Fair Hydro Plan as noted for Table 1, the delivery charge has been eliminated as indicated by the Province's Fair Hydro Plan announcement[3] on March 2, 2017.

3. Estimated penetration is sourced from Southwestern Ontario figures from Exhibit B.SEC.9 Attachment 1, p. 6. Totals do not add to 100% because "don't know" responses have been included in the base.

[3] https://www.ontario.ca/page/ontarios-fair-hydro-plan

Table 3: Annual Residential Energy Savings Estimates

Prince Township Project

Competing Energy Source	Estimated Current Penetration	Annual Cost	Natural Gas (Incl. SES) Annual Cost Advantage
Propane	28%	$2,486	$824
Oil	22%	$2,329	$667
Wood	24%	$1,754	$92
Electric less PST	25%	$4,089	$2,427
Electric Fair Hydro Plan		$3,173	$1,511
Natural Gas (during SES term)	0%	$1,662	$0
Natural Gas (after SES term)	0%	$1,090	$(572)

Details and Assumptions:

All details and assumptions are consistent with those for Table 1except for the following:

1. Propane prices are based on telephone quoted prices in 2016 obtained from Superior Propane and McDougall Propane in the Sault Ste. Marie area. A Cap-and-Trade obligation fee of $0.0278 has been added to 2016 propane prices. Tank rental fees and delivery fees have not been included. Annual consumption is estimated at 3,302 litres (equivalent to 2,200 m^3 of natural gas).

2. Fuel Oil costs are based on 12 month average nominal price from Kent Group (Jan 2017) of $0.888/litre for the Sault Ste. Marie area.

3. Electric less PST costs are based on Sault Ste. Marie PUC January 2017 time of use rates.

4. Fair Hydro Plan impacts have been assumed to be similar to the Hydro One assumptions reflected in Table 1, with the exception that distribution volume charges will not be capped at $38/month, since Sault Ste. Marie PUC is not a recipient of rural rate assistance.