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January 12, 2018

Delivered by Email, RESS & Courier

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
2300 Yonge Street
Suite 2701
Toronto, ON M4P 1E4

Dear Ms. Walli:

**Re: Enbridge Gas Distribution Inc., Union Gas Limited, EPCOR Natural Gas Limited Partnership
2018 Cap-and-Trade Compliance Plan
(EB-2017-0224/EB-2017-0255/EB-2017-0275)
Interrogatories Related to Draft Issue 1.10.1 from The Association of Power Producers of Ontario**

Please find attached the interrogatories of the Association of Power Producers of Ontario (APPrO) to both Enbridge and Union Gas regarding issue 1.10.1 of the Draft Issues List.

Yours very truly,

BORDEN LADNER GERVAIS LLP

Per:

Original signed by John A.D. Vellone

John A.D. Vellone

cc: Intervenors of record in EB-2017-0224/EB-2017-0255/EB-2017-0275

ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998*,
S.O. 1998, c. 15 (Sched. B), as amended;

AND IN THE MATTER OF an Application by Enbridge Gas Distribution Inc. (Enbridge Gas), Union Gas Limited (Union Gas) and EPCOR Natural Gas Limited Partnership (EPCOR Natural Gas) pursuant to section 36(1) of the *Ontario Energy Board Act, 1998*, for an order or orders approving rates resulting from the 2018 Cap-and-Trade Compliance Plan.

EB-2017-0224/EB-2017-0255/EB-2017-0275

Interrogatories Related to Draft Issue 1.10.1

To

Enbridge Gas Distribution Inc.

AND

Union Gas Limited

From

The Association of Power Producers of Ontario (APPrO)

January 12, 2018

Interrogatories to Enbridge Gas Distribution Inc.

ISSUE: 1.10.1: *Are the gas utility's RNG procurement and funding proposals reasonable and appropriate?*

1.10.1-APPrO-1

Location and Nature of RNG Supplies

Reference: i) EB-2017-0224 Exhibit C Tab 5 Schedule 2:

Preamble: Enbridge is seeking approval to develop a renewable natural gas (RNG) program, whereby Enbridge would enter into long term contracts to acquire RNG. APPrO would like to better understand the nature of the supplies.

Questions:

- a) Table 2 provides Enbridge's procurement model from a pricing perspective and includes Enbridge's 10-year price forecast for traditional supplies for the Enbridge CDA:
 - i. Is this 10-year forecast, Enbridge's current official 10-year forecast for traditional gas supplies?
 - ii. Does this price forecast include the upstream costs of firm transportation to deliver gas to the CDA?
 - iii. Please discuss the RNG producer's performance obligations over the term of the contract.
 - iv. If the RNG supplier's performance is not firm over the duration of the contract, should the reference price for traditional supply reflect a non-firm supply?
- b) Table 2 illustrates the required subsidy on a unit of energy basis. Please discuss how the required subsidy will be recovered. In particular, please discuss how the subsidy will be determined in the event that the actual volume differs from the forecasted volume.
- c) Please indicate if there are any limitations as to the pipeline systems that would be used to transport RNG.

1.10.1-APPrO-2

Gas Quality Standards

Reference: i) EB-2017-0224 Exhibit C Tab 5 Schedule 2 paragraph 12, Enbridge states:

RNG has similar physical properties to conventional natural gas. Once upgraded to pipeline quality RNG can be comingled with traditional gas supplies in the pipeline system, thereby displacing traditional fossil based gas supplies.

i) EB-2017-0224 Exhibit C Tab 5 Schedule 2 paragraph 24, Enbridge states:

As there is no established RNG market in Ontario, in order to ensure the lowest cost for RNG, Enbridge will utilize a tendering process for RNG supplies. Terms of the tendering process will be subject to pre-defined criteria. These criteria will include the volume of RNG to be purchased, the term of the procurement contracts, quality standards, identification of receipt points, etc.

Preamble: Enbridge discusses the need to upgrade the quality of RNG, but is vague about the specific quality standards that are being proposed for RNG. Since some potential components of RNG are not found in traditional natural gas supplies and are known to cause damage to customers' equipment and potentially impact customers' health, it is important that a rigorous RNG quality standard be met and maintained to minimize the risk to customers. APPrO would like to understand the detailed quality standards that are being proposed for RNG.

Questions:

- a) Has Enbridge developed a comprehensive set of RNG gas quality specifications such as the specifications currently used in the Province of Quebec: BNQ 3672-100 - Quality Specifications for Injection into Natural Gas Distribution and Transmission Systems? If so, please provide a copy of the proposed RNG gas quality specifications.
- b) Is Enbridge seeking approval of the quality specifications for RNG at this time? If not, please explain.

- c) Please compare Enbridge's proposed RNG quality specifications (or its current traditional natural gas quality specifications if no RNG quality specifications are currently available) to the BNQ 3672-100 specification.
- d) Are there other quality standards for RNG from organizations such as the CSA or ISO? If so, please indicate how Enbridge's RNG quality standards compare with these other standards.
- e) Please confirm that the term 'pipeline quality' does not explicitly address potential RNG components such as:
- i. Heavy Metals,
 - ii. Siloxanes,
 - iii. Volatile and Semi-Volatile Organic Compounds,
 - iv. Halocarbons and Organochlorinated Compounds,
 - v. Microbiological organisms, including bacteria and viruses, and
 - vi. Other biological, chemical, corrosive or other potential hazards.
- f) Please indicate how Enbridge will be addressing potential contaminants in the raw RNG that could be detrimental or hazardous to either customers' equipment or customers' health from such things as:
- i. Heavy Metals,
 - ii. Siloxanes,
 - iii. Volatile and Semi-Volatile Organic Compounds,
 - iv. Halocarbons and Organochlorinated Compounds,
 - v. Microbiological organisms, including bacteria and viruses, and
 - vi. Other biological, chemical, corrosive or other potential hazards.
- g) Please indicate how Enbridge will assure that the ongoing quality of RNG will be comparable with traditional natural gas supplies and free from potentially hazardous compounds. Please include a description of how the RNG process facilities will be designed, inspected, and how testing and other quality assurance protocols that will be used to ensure that the RNG gas quality meet the minimum quality specifications at all times, including:
- i. During the initial startup period (i.e. from the first day of delivery until the volume of RNG and the quality of RNG has stabilized and meets the contractual requirements), and
 - ii. On a long-term basis after the startup period.
- h) The gas industry has relied on Natural Gas Interchangeability Indices (NGII) to ensure the ability to substitute one gaseous fuel for another in a combustion application without materially changing operational safety, efficiency, performance or emissions. Please provide Enbridge's proposed NGII specifications for RNG and the

basis for such specifications and indicate how these specifications compare to the current specifications for traditional natural gas. As a minimum, please include the following:

- i. Minimum and Maximum Wobbe Indices,
 - ii. AGA Yellow Tipping Index, and
 - iii. Weaver Incomplete Combustion Index
- i) How will Enbridge address the situation where RNG is tendered for sale by the producer but does not meet all the required gas quality specifications.

1.10.1-APPrO-3

RNG Risk Assessment

Reference: i) EB-2017-0224 Exhibit C Tab 5 Schedule 2:

Preamble: Enbridge is seeking approval to develop a renewable natural gas (RNG) program, whereby Enbridge would enter into long term contracts to acquire RNG. APPrO would like to better understand the cost and long-term risks to customers associated with these new supplies. It is understood that Enbridge is seeking provincial funding to make up the difference between the cost to acquire the RNG and the sum of the cost of conventional gas supply and the avoided cost of carbon.

Questions:

- a) Please indicate if the provincial funding that is being sought is a one-time up-front payment or if the funding will be obtained annually, and how the funding will be applied to the revenue requirement.
- b) Please provide the specific economic test that will be used to address the long-term cost to develop and operate the incremental facilities to attach RNG. Please include an illustrative example including the incremental capital and operating costs for new facilities.
- c) At paragraphs 39-40, Enbridge indicates that it will use the principles in EBO 188, which could result in a deficiency in the early years and a sufficiency in the later years. Could Enbridge shape the timing of the provincial subsidy to eliminate these financial distortions?
- d) Please discuss how the volume of available RNG will be forecasted over the life of a RNG project, for various types of RNG sources.
- e) Please confirm that some sources of RNG, such as bio-methane from landfill sources, can decline over time, and discuss the implications.
- f) Please discuss who will bear the volumetric risk associated with RNG sources.
- g) Please identify and discuss all the financial risks that existing ratepayers will bear for projects associated with attaching RNG supplies. Please also discuss which customer rate classes are expected to bear these financial risks.
- h) Please identify all and any other risks that existing ratepayers will bear for projects associated with attaching RNG supplies. Please also discuss which customer rate classes are expected to bear these other risks.

Interrogatories to Union Gas Limited

ISSUE: 1.10.1: *Are the gas utility's RNG procurement and funding proposals reasonable and appropriate?*

1.10.1-APPrO-1

Location and Nature of RNG Supplies

Reference: I) EB-2017-0255 Exhibit 3 Tab 4:

Preamble: Union is seeking approval to develop a renewable natural gas (RNG) program, whereby Union would enter into long term contracts to acquire RNG. APPrO would like to better understand the nature of the supplies.

Questions:

- a) Please describe the nature of the facilities that Union proposes to develop, own and operate to accommodate acquiring RNG supplies.
- b) Please describe the nature of the facilities that the RNG producer would be responsible to develop, own and operate to accommodate delivering RNG to Union.

[For example, Union may be responsible to extend a pipeline to the RNG production point, and install metering, odourization and quality control equipment, but the facilities required to gather, process and compress the RNG would be the responsibility of the producer.]

- c) Please indicate if there are any limitations as to the pipeline systems that would be used to transport RNG.
- d) Union relies on firm supplies being delivered into the distribution system to meet its design day requirements. Please discuss the RNG supplier delivery obligations and if RNG supplies will be treated as firm supplies to meet such design day loads, or if the natural gas reference price for RNG should reflect a non-firm supply?
- e) Union discusses that RNG will be procured (page 22 of 60) through a RFP process:
 - i. Does this suggest that the producers will determine the price of RNG, and if so how will Union decide which supplies to acquire?
 - ii. How will Union address the capital and ongoing operating costs to develop the distribution system necessary to connect such RNG sources?

1.10.1-APPrO-2

Gas Quality Standards

Reference: i) EB-2017-0255 Exhibit 3 Tab 4:

Preamble: Union is seeking approval to develop a renewable natural gas (RNG) program, whereby Union would enter into long term contracts to acquire RNG. APPrO would like to better understand the quality specifications that Union is proposing for these new supplies.

Questions:

- a) Has Union developed a comprehensive set of RNG gas quality specifications such as the specifications current used in the Province of Quebec: BNQ 3672-100 - Quality Specifications for Injection into Natural Gas Distribution and Transmission Systems?
- b) Please provide a copy of the gas specifications that Union will be using to purchase RNG.
- c) Is Union seeking approval of the quality specifications for RNG at this time? If not, please explain.
- d) If Union has not developed a comprehensive set of specifications for RNG, please compare Union's existing natural gas quality specifications to BNQ 3672-100.
- e) Are there other quality standards for RNG from organizations such as the CSA or ISO? If so, please indicate how Union's standards compare with these other standards.
- f) Please confirm that the term 'pipeline quality' does not explicitly address potential RNG components such as:
 - i. Heavy Metals,
 - ii. Siloxanes,
 - iii. Volatile and Semi-Volatile Organic Compounds,
 - iv. Halocarbons and Organochlorinated Compounds,
 - v. Microbiological organisms, including bacteria and viruses, and
 - vi. Other biological, chemical, corrosive or other potential hazards.
- g) Please indicate how Union will be addressing potential contaminants in the raw RNG that could be detrimental or hazardous to either customers' equipment or customers' health from such things as:
 - i. Heavy Metals,
 - ii. Siloxanes,

- iii. Volatile and Semi-Volatile Organic Compounds,
 - iv. Halocarbons and Organochlorinated Compounds,
 - v. Microbiological organisms, including bacteria and viruses, and
 - vi. Other biological, chemical, corrosive or other potential hazards.
- h) Please indicate how Union will assure that the ongoing quality of RNG will be comparable with traditional natural gas supplies. Please include a description of the testing and other quality assurance protocols that will be used to ensure quality:
- a) During the initial startup period (i.e. from the first day of delivery until the volume of RNG and the quality of RNG has stabilized), and
 - b) On a long-term basis after the startup period.
- i) The gas industry has relied on Natural Gas Interchangeability Indices (NGII) to ensure the ability to substitute one gaseous fuel for another in a combustion application without materially changing operational safety, efficiency, performance or emissions. Please provide Union's proposed NGII specifications for RNG and the basis for such specifications and compare these specifications to the specifications to traditional natural gas. As a minimum, please include the following:
- i. Minimum and Maximum Wobbe Indices,
 - ii. AGA Yellow Tipping Index, and
 - iii. Weaver Incomplete Combustion Index
- j) How will Union address the situation where RNG is tendered for sale by the producer but does not meet all the gas quality specifications.

1.10.1-APPrO-3

RNG Risk Assessment

Reference: i) EB-2017-0255 Exhibit 3 Tab 4:

Preamble: Union is seeking approval to develop a renewable natural gas (RNG) program, whereby Union would enter into long term contracts to acquire RNG. APPrO would like to better understand the cost and long-term risks to customers associated with these new supplies. It is understood that Union is seeking provincial funding to make up the difference between the cost to acquire the RNG and the sum of the cost of conventional gas supply and the avoided cost of carbon.

Questions:

- a) Please indicate if the provincial funding that is being sought is a one-time up-front payment or if the funding will be obtained annually.
- b) Please provide the economic test that will be used to address the long-term cost to develop and operate the incremental facilities to attach RNG. Please include an illustrative example including the incremental capital and operating costs for new facilities.
- c) Union notes on page 21 of 60, that the forecasted cost of traditional supplies, will be based on the most recent forecasts that are available. What is the source and term of such long-term gas price forecasts and how will Union address the situation where the term of the forecast may be less than the effective term of the RNG project? Please provide Union's current 10-year traditional gas price forecast.
- d) Please discuss how the volume of available RNG will be forecasted over the life of a RNG project.
- e) Please confirm that some sources of RNG, such as bio-methane from landfill sources, can decline over time.
- f) Please discuss who will bear the volumetric risk associated with RNG sources.
- g) Please identify and discuss all the financial risks that existing ratepayers will bear for projects associated with attaching RNG supplies. Please also discuss which customer rate classes are expected to bear these financial risks.
- h) Please identify all and any other risks that existing ratepayers will bear for projects associated with attaching RNG supplies. Please also discuss which customer rate classes are expected to bear these other risks.