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14 December 2017

**Kirsten Walli**  
Board Secretary  
Ontario Energy Board  
P.O. Box 2319, 27<sup>th</sup> Floor  
2300 Yonge Street  
Toronto ON M4P 1E4

Dear Ms. Walli:

**Re: EB-2016-0137 / EB-2016-0138 / EB-2016-0139**  
**Applications to serve the Municipality of Arran-Elderslie, the Municipality of Kincardine and the Township of Huron-Kinloss with natural gas distribution services.**

We are counsel to Greenfield Global Inc. (**Greenfield**) in the above-mentioned proceeding (the **Proceeding**). Per Procedural Order No. 9 dated December 7, 2017, please find enclosed Greenfield's essential interrogatories and a blackline of Greenfield's changes and additions to the Board's proposed interrogatories.

Yours very truly,

Lisa (Elisabeth) DeMarco

## **ONTARIO ENERGY BOARD**

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

**AND IN THE MATTER OF** Applications to serve the Municipality of Arran-Elderslie, the Municipality of Kincardine and the Township of Huron-Kinloss with natural gas distribution services.

**EB-2016-0137 / EB-2016-0138 / EB-2016-0139**

**Proposed Interrogatories From  
Greenfield Global Inc. (Greenfield)**

**December 14, 2017**

**Union**            **1**  
**Question:**

Reference:        • Union Gas' Common Infrastructure Plan (**CIP**) Proposal / Page 18  
                         / Table 7

Preamble:        In Table 7, Union Gas provided a 10-year forecast of customer  
                         attachments by customer class.

- a)     What are Union Gas' total market size and assumptions for each customer class?
- b)     *EPCOR has broken out its agricultural customers. We assume that Union Gas has included agricultural customers in the "commercial" class. Both EPCOR and Union Gas should break out agricultural customers as a separate customer segment.*

Please provide separate counts for the forecast agricultural and large industrial customer attachments. For industrial customers, please provide your assumed:

- i.     number of industrial customers;
- ii.    number of agricultural customers;
- iii.   average volume for industrial customers; and
- iv.    the volume range (assumed highest and lowest) for industrial customers.

**Union**            **2**  
**Question:**

Reference:        • Union Gas' CIP Proposal / Page 5 / s. 3

Preamble:        In s. 3, Union Gas reported the results for each of the three metrics resulting from its CIP proposal.

- a) Using the information provided in the CIP proposal, calculate and provide the following metrics.
- i. NPV of 10-year Revenue Requirement per Metre of Pipe (\$/m)
  - ii. Average Number of Customers per Kilometer (customers/km)
  - iii. Cumulative 10-yr Revenue Requirement per Unit of Volume (\$/m<sup>3</sup>)
- b) *EPCOR has provided attachment rates in their bid proposal. It would be helpful for Union Gas to provide the same information to allow comparison with EPCOR's rates.*

Please provide the customer attachment rates used in your original bid and the percentage breakdown between residential, commercial, industrial and agricultural customers (as applicable in your original bid).

- c) *Attachment rates are an important element of competitive bidding. The proponent with the higher estimated attachment rate takes on more risk, but the benefit accrues to all customers who connect to the pipeline, as higher volumes provide lower rates. The lower rates should also have the effect of a higher attachment rate. Greenfield proposes that questions (i)-(viii) below also be answered for the attachment rates used by Union Gas in their bid.*

If Union Gas's customer attachment rates are materially different than 60% residential and 65% commercial/industrial, then use these rates to recalculate and provide the following metrics and CIP criteria.

- i. Net Present Value (**NPV**) of 10-year Revenue Requirement assuming a commercial operation date within 24 months of approval
- ii. Cumulative 10-year Revenue Requirement
- iii. NPV of 10-year Revenue Requirement per Metre of Pipe (\$/m)
- iv. NPV of 10-year Revenue Requirement per 10<sup>3</sup> m<sup>3</sup> delivered (\$/10<sup>3</sup> m<sup>3</sup>)
- v. Average Number of Customers per Kilometer
- vi. Cumulative 10-yr Revenue Requirement per Unit of Volume
- vii. Customer Years

viii. Cumulative 10-yr Volume

- d) *Greenfield assumes the agricultural volume was included in the commercial customer count and volume estimate. Please break out commercial and agricultural customer counts and volumes.*

How much do large agricultural customers make up in both your original bid and in your answer to question c)?

- e) Further to c), please provide the customer attachment rates Union Gas used in its bid and a breakdown between residential and commercial rates.
- f) Assuming no industrial customers (and associated pipe and volumes), recalculate and provide the metrics and CIP criteria listed in a) and c) above.
- g) How do the metrics and CIP criteria listed in a) above as calculated for South Bruce compare with similar projects done by Union (e.g. Union Community Expansion Applications - EB-2017-0179)?
- h) *In order to properly compare the metrics in Union Gas's and EPCOR's CIPs, including the revenue requirements, the proponents must each provide comparable service to all customers, especially large agricultural and industrial customers. Based on the information submitted to the Board, there does not appear to be any evidence demonstrating that the two proponents are providing comparable character of service.*

What assumed gas service parameters did you use to generate your bid and/or any and all data supporting your bid, including:

- i. delivery points and alternate delivery points for industrial customers;
  - ii. storage capacity available for industrial customers; and
  - iii. storage rates for industrial customers?
- i) *EPCOR used capacity consumed metrics in their proposal, while Union Gas provided volume consumed metrics in theirs.*

Please provide your rationale and supporting evidence for using volume consumed metrics instead of capacity consumed metrics in your original bid.

- j) Is potential future demand included or excluded in your bid? If included, please provide all supporting volume and connection assumptions.

**EPCOR**            **1**  
**Question:**

Reference:        • CIP Application / Schedule D / Table D1

Preamble:        EPCOR provided a 10-year forecast of customer attachments by customer class.

- a)    What are EPCOR's assumptions regarding total market size for each customer class?
- b)    *EPCOR has broken out its agricultural customers. We assume that Union Gas has included agricultural customers in the "commercial" class. Both EPCOR and Union Gas should break out agricultural customers as a separate customer segment.*

Please provide separate counts for the forecast agricultural and large industrial customer attachments. For industrial customers, please provide your assumed:

- i.     the number of industrial customers;
  - ii.    average volume for industrial customers; and
  - iii.   the volume range (assumed highest and lowest) for industrial customers.
- c)    *Union Gas and EPCOR used different metrics for volume for large agricultural and industrial customers. Union Gas used volume consumed and EPCOR used capacity contracted. It is important that the conversion back to volume consumed is consistent with the capacity volumes used in EPCOR's original submission.*

Please provide the capacity to volume conversion rates and/or equations that you have used to generate each of your responses to Interrogatories 1a), 1b), 2a), and 2b) for all capacity metric to volume consumed metrics that EPCOR used in the original bid and this response.

**EPCOR 2**  
**Question:**

Reference: • CIP Application / Schedule D / Tables D1 and D3, CIP Application / Tab 2 / p. 6, CIP Application / Tab 5 / p. 18

Preamble: EPCOR provided aggregate annual forecast volumes for its large volume contract customers and calculated its CIP criteria accordingly. EPCOR forecasted attaching 13 out of a total market of 20 potential industrial and large agricultural customers (65%) in the South Bruce area, 4,818 out of a total market of 8,301 potential residential customers (around 60%) and 447 out of a total market of 688 potential commercial customers (around 65%).

a) Using the information provided in the CIP proposal, calculate and provide the following metrics.

- i. NPV of 10-year Revenue Requirement per Metre of Pipe (\$/m)
- ii. Average Number of Customers per Kilometer (customers/km)
- iii. Cumulative 10-yr Revenue Requirement per Unit of Volume (\$/m<sup>3</sup>)

b) *Greenfield would like EPCOR to break out attachment rates for industrial and agricultural customers separately to help comparisons between Union Gas's and EPCOR's proposals.*

Please provide the customer attachment rates used in your original bid and the percentage breakdown between residential, commercial, industrial and agricultural customers (as applicable in your original bid).

c) *Attachment rates are an important element of competitive bidding. The proponent with the higher estimated attachment rate takes on more risk, but the benefit accrues to all customers who connect to the pipeline, as higher volumes provide lower rates. The lower rates should also have the effect of a higher attachment rate. Greenfield proposes that questions (i)-(viii) below be answered for the attachment rates used by EPCOR in their bid.*

Using an annual normalized average consumption (NAC) approach for large agricultural and industrial customers, calculate and provide the following metrics and CIP criteria.

- i. NPV of 10-year Revenue Requirement assuming a commercial operation date within 24 months of approval
- ii. Cumulative 10-year Revenue Requirement

- iii. NPV of 10-year Revenue Requirement per Metre of Pipe (\$/m)
  - iv. NPV of 10-year Revenue Requirement per  $10^3$  m<sup>3</sup> delivered (\$/ $10^3$  m<sup>3</sup>)
  - v. Average Number of Customers per Kilometer
  - vi. Cumulative 10-yr Revenue Requirement per Unit of Volume
  - vii. Customer Years
  - viii. Cumulative 10-yr Volume
- d) How much do large agricultural customers make up in both your original bid and in your answer to question c)?
- e) Further to c), please provide the customer attachment rates EPCOR used in its bid and a breakdown between residential and commercial rates.
- f) Assuming no industrial customers (and associated pipe and volumes), recalculate and provide the metrics and CIP criteria listed in a) and c) above.
- g) How do the metrics and CIP criteria listed in a) above as calculated for South Bruce compare with similar projects done by EPCOR?



- h) *In order to properly compare the metrics in Union Gas's and EPCOR's CIPs, including the revenue requirements, the proponents must each provide comparable service to all customers, especially large agricultural and industrial customers. Based on the information submitted to the Board, there does not appear to be any evidence demonstrating that the two proponents are providing comparable character of service. For example, Union Gas utilizes underground storage for daily load balancing for its T1 and T2 customers. The T1 and T2 service is a semi-unbundled service that offers no-notice storage injections and withdrawals. T1 and T2 customers need to deliver their supply to Union Gas at Dawn and Parkway. Union Gas also provides daily and seasonal load balancing (including checkpoints) services (i.e. Bank Gas Account) for its M4 customers. M4 customers also are required to deliver their supply to Dawn and Parkway.*

*It is unclear whether EPCOR will be offering comparable services to customers, should they be awarded the franchise. A comparison of the proponents' cost of service is meaningful only if the services themselves are comparable.*

- (i) What assumed gas service parameters did you use to generate your bid and/or any and all data supporting your bid, including:
- i. delivery points and alternate delivery points for industrial customers;
  - ii. storage capacity available for industrial customers; and
  - iii. storage rates for industrial customers?

- (ii) *Union Gas offers a semi-unbundled service with no-notice storage injection and withdrawal rights to its T1 and T2 customers.*

Does EPCOR plan to offer comparable services to its large agriculture and industrial customers? If yes, are the balancing costs associated with these services included in the revenue requirement?

- (iii) *Union Gas requires T1, T2 and M4 customers to deliver their gas to them at Dawn and Parkway.*

Where does EPCOR require customers to deliver their gas?

- (iv) *Union Gas's M4 service provides for firm deliveries to a contracted daily demand, with seasonal and annual load balancing obligations.*

Does EPCOR plan to offer a comparable service to its large agricultural and industrial customers? If yes, are the balancing costs associated with these services included in the revenue requirement?

- i) *EPCOR used capacity consumed metrics in their proposal, while Union Gas provided volume consumed metrics in theirs.*

Please provide your rationale and supporting evidence for using capacity metrics instead of volume consumed metrics in your original bid.

- j) Is potential future demand included or excluded in your bid? If included, please provide all supporting volume and connection assumptions.

**Union**            1  
**Question:**

Reference:        • Union Gas' [Common Infrastructure Plan \(CIP\)](#) Proposal / Page 18 / Table 7

Preamble:        In Table 7, Union Gas provided a ~~ten~~-10-year forecast of customer attachments by customer class.

- a)            What are Union Gas' total market size and assumptions for each customer class?
- b)            *EPCOR has broken out its agricultural customers. We assume that Union Gas has included agricultural customers in the "commercial" class. Both EPCOR and Union Gas should break out agricultural customers as a separate customer segment.*

Please provide separate counts ~~over the 10-year period of:~~for the forecast agricultural and large industrial customer attachments, ~~the~~. For industrial customers, please provide your assumed:

- i.            number of industrial customers;<sub>i</sub>
- ii.           number of agricultural customers;
- iii.           average volume for industrial customers;<sub>i</sub> and
- i-iv.        the volume range of volumes per customer(assumed highest and lowest) for industrial customers.

**Union**            **2**  
**Question:**

Reference:        • Union Gas' CIP Proposal / Page 5 / s. 3

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b) *EPCOR has provided attachment rates in their bid proposal. It would be helpful for Union Gas to provide the same information to allow comparison with EPCOR's rates.*

Please provide the customer attachment rates used in your original bid and the percentage breakdown between residential, commercial, industrial and agricultural customers (as applicable in your original bid).

c) *Attachment rates are an important element of competitive bidding. The proponent with the higher estimated attachment rate takes on more risk, but the benefit accrues to all customers who connect to the pipeline, as higher volumes provide lower rates. The lower rates should also have the effect of a higher attachment rate. Greenfield proposes that questions (i)-(viii) below also be answered for the attachment rates used by Union Gas in their bid.*

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- iv. NPV of 10-year Revenue Requirement per 10<sup>3</sup> m<sup>3</sup> delivered (\$/10<sup>3</sup> m<sup>3</sup>)
- v. Average Number of Customers per Kilometer
- vi. Cumulative 10-yr Revenue Requirement per Unit of Volume

- vii. Customer Years
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d) Greenfield assumes the agricultural volume was included in the commercial customer count and volume estimate. Please break out commercial and agricultural customer counts and volumes.

How much do large agricultural customers make up in both your original bid and in your answer to question c)?

⇒e) Further to (bc), please provide the customer attachment rates Union Gas used in its bid and a breakdown between residential and commercial rates.

d)f) Assuming no industrial customers (and associated pipe and volumes), recalculate and provide the metrics and CIP criteria listed in a) and bc) above.

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**EPCOR 1**  
**Question:**

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Please provide separate counts ~~over the 10-year period of:~~for the forecast agricultural and large industrial customer attachments~~;~~. For industrial customers, please provide your assumed:

- i. the number of industrial customers;  
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Please provide ~~uniform~~the capacity to volume conversion rates and/or equations that you have used to generate each of your responses to Interrogatories 1a), 1b), 2a), and 2b) for all capacity metric to volume consumed metrics ~~that~~ EPCOR used in the original bid and this response.

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- iv. NPV of 10-year Revenue Requirement per 10<sup>3</sup> m<sup>3</sup> delivered (\$/10<sup>3</sup> m<sup>3</sup>)
- ~~iv.v.~~ Average Number of Customers per Kilometer
- ~~v.vi.~~ Cumulative 10-yr Revenue Requirement per Unit of Volume
- ~~vi.vii.~~ Customer Years
- ~~vii.viii.~~ Cumulative 10-yr Volume

d) How much do large agricultural customers make up in both your original bid and in your answer to question c)?

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~~e)f)~~ Assuming no industrial customers (and associated pipe and volumes), recalculate and provide the metrics and CIP criteria listed in a) and ~~b)c)~~ above.

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