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March 2, 2018

VIA RESS AND COURIER

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: EPCOR Southern Bruce Gas Inc. Clarifying Interrogatories
South Bruce Expansion CIP Proposals EB-2016-0137 | EB-2016-0138 | EB-2016-0139

Pursuant to Procedural Order No. 10, please find enclosed EPCOR Southern Bruce Gas Inc.'s response to interrogatories.

If you require any further information, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "Britt Tan", with a long horizontal flourish extending to the right.

Britt Tan
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EPCOR SOUTHERN BRUCE GAS INC.

EB-2016-0137 | EB-2016-0138 | EB-2016-0139

**RESPONSES TO INTERROGATORIES
South Bruce Expansion Project**

Procedural Order No. 10

Filed: March 2, 2018

Clarifications

1. In order to sufficiently respond to the interrogatories included in Procedural Order No. 10, EPCOR Southern Bruce Gas Inc. (“EPCOR”) is including these clarifications as a helpful reference for the Ontario Energy Board (“OEB” or the “Board”) when considering EPCOR’s responses to the interrogatories related to industrial volumes.
2. EPCOR has identified fuel switching as an economic development initiative unique to its CIP which drives demand for natural gas volumes for cooling, which is in addition to normal heating and process loads.
3. A potential industrial customer that EPCOR has worked with to develop its CIP is incurring significant costs and constraints related to the use of electricity. EPCOR has identified a solution to implement natural gas fueled direct fired absorption chillers. This solution would materially reduce electrical costs by eliminating a significant portion of electric consumption and also reduce the customer’s peak electrical load while also increasing its natural gas consumption.
4. The installation of natural gas fueled direct fired absorption chillers for this customer results in a relatively high natural gas consumption load factor as compared to a heating only load profile. EPCOR would provide natural gas for heating during colder months, and, generation of chilled water for cooling and dehumidification which the customer requires for up to 365 days per year. This implementation creates a load profile that is less seasonal, maximizing the customer’s usage of the capacity under contract thereby reducing the effective unit rate of natural gas consumed. The resulting benefit will support the customer’s plans for expansion providing economic growth to the Southern Bruce municipalities; this is an example of how competition has resulted in innovation that will benefit the rate payers and their communities by addressing a problem typical in natural gas distribution systems – high demand during the heating season and excess capacity during the warmer months.

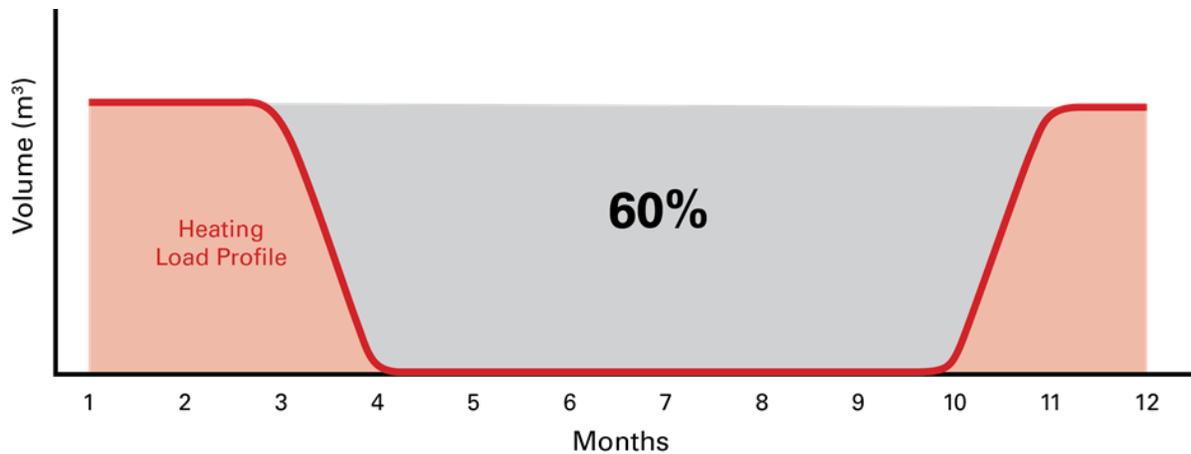
Interrogatory # 1

Please explain why the reduction in EPCOR's industrial volumes is 28% and not greater after adopting a NAC approach.

Response to Interrogatory #1:

1. In suggesting that conversion from capacity to NAC volumes could result in a reduction in volume of up to 60%, Union appears to suggest that the industrial customers with a heat sensitive load accessing the Southern Bruce system could have a combined usage profile as depicted in Figure 1 which is similar to a residential customer load profile where natural gas is typically required for heating and water heating demands. EPCOR's forecast of industrial customers' volumes reflects both year-round process loads and fuel switching loads (as more fully described below) that results in a much higher load factor than what is suggested by Union.

Figure 1 – Implied Natural Gas Usage Profile of Industrial Customers



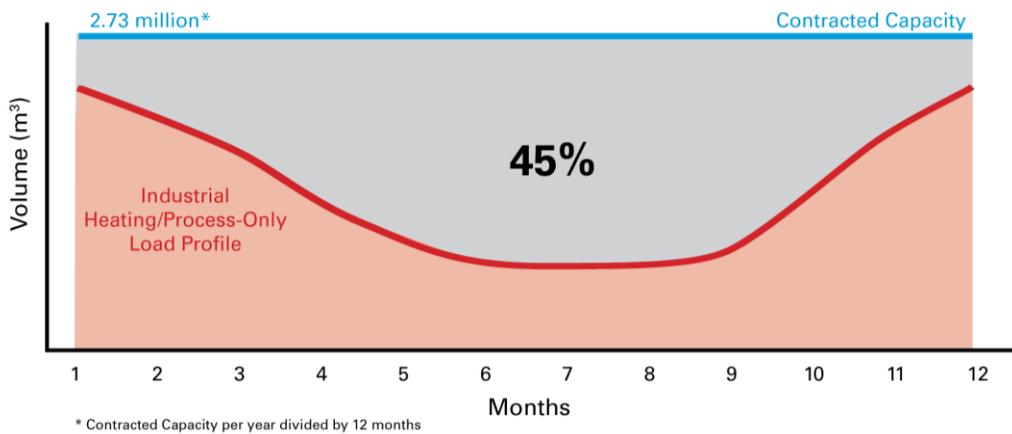
2. EPCOR has worked with its potential industrial customers to understand their needs and has sought to maximize their benefits from natural gas resulting in greater volumes than what Union may have estimated.
3. The figures below detail the steps taken by EPCOR to convert its industrial customers' volumes from capacity to NAC with a resulting 10-year cumulative NAC industrial volume¹ of 214,326 10³m³. This

¹ (342,186,741 m³– 127,860,780 m³) EB-2016-0137/0138/0139, EPCOR Interrogatory Responses dated January 11, 2018, page 4,5, Table 2(b), Table 2(d)ii.

results in an average load factor for all industrial customers of approximately 72% of the total² 300,175 10³m³ industrial capacity volume.

- Figure 2 shows an estimated forecast for the NAC volumes for the combined industrial customers related to heating and process loads. Of note is that these loads alone result in a 10-year cumulative NAC volume of³ 166,665 10³m³ that is approximately 55% of the total 300,175 10³m³ industrial capacity volume.

Figure 2 - EPCOR's Forecast of Cumulative Heating and Process Only Loads for Industrial Customers As Per EPCOR CIP Submission

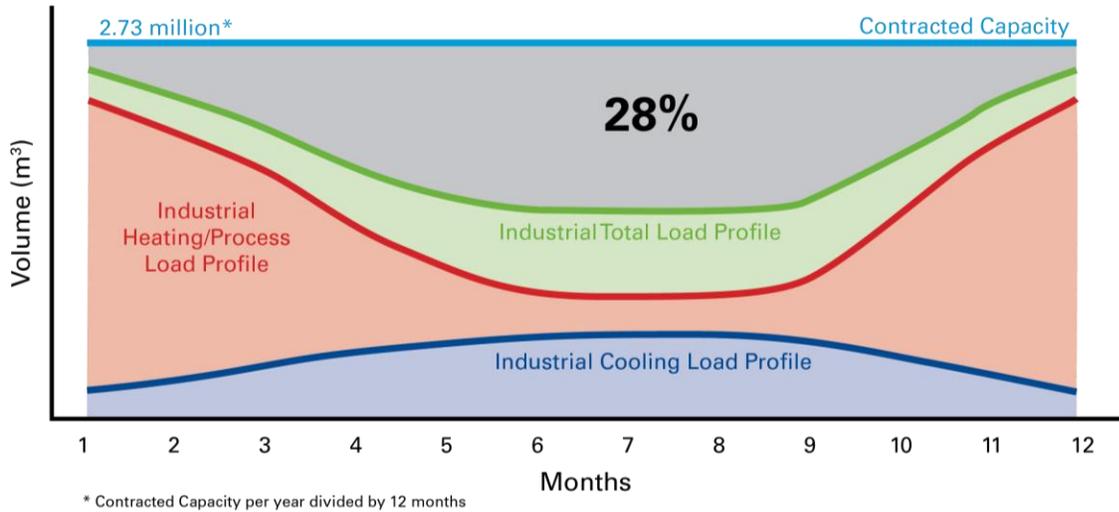


- Figure 3 shows the impact on NAC volumes of adding the fuel switching driven cooling load. This load is highest during the warmer months but extends throughout the year as the customer has a requirement to maintain temperature and strict humidity levels throughout the year. The total of these loads results in a 10-year cumulative NAC volume of 214,326 10³m³ that is approximately 72% of the total 300,175 10³m³ industrial capacity volume.

² (428,035,564 m³ - 127,860,780 m³) EB-2016-0137/0138/0139, EPCOR CIP Submission dated January 25, 2018, Tab 7, page 38 of 41, Table 7 and as above.

³ (214,325,961 m³ - 47,660,708 m³) as provided in these interrogatory responses.

Figure 3 - Forecasted Total Industrial Load Profile
As Per EPCOR CIP Submission



6. In addition, the largest industrial customer in the region has a very substantial process load that operates year-round. The customer has provided EPCOR with its consumption profile and it is similar to the average 72% load factor of all industrial customers as provided for herein.

Interrogatory # 2

Please confirm whether or not an additional source of volumes (i.e., fuel switching) was included in EPCOR’s interrogatory response 2b (when EPCOR recalculated its original CIP cumulative 10-year volume over 110 months using a NAC approach) beyond what was included in its CIP proposal.

Response to Interrogatory #2:

1. EPCOR confirms that no additional source of volumes were included in EPCOR’s interrogatory response 2b beyond what was included in its CIP proposal. When developing its CIP, EPCOR included the volumes and system capacity related to fuel switching.
2. Reference has been made to a table included in EPCOR’s CIP⁴ and this table has been used as a basis for questioning some of the industrial volume values EPCOR has provided to the OEB. That table has been reproduced as a reference in order to provide clarification. The table has been modified from the CIP to include row numbers.

Table 1

| 1 | Description | Under Existing CIP Application with Boiler based HVAC | Based on Co-Gen HVAC with Electricity Generation at existing Facility | Based on Expanded Facility with Co-Gen |
|----------|--|--|--|---|
| 2 | Volumes of Natural Gas Consumed m ³ /year | 2,000,000 | 8,250,000 | 12,500,000 |
| 3 | Impact to \$/m ³ on this CIP Application | 0% | -3% | -8% |
| 4 | Resulting \$/m ³ on this CIP Application | 0.1766 | 0.1710 | 0.1623 |
| 5 | MW of Electricity Produced | 0.0 MWe | 3.3 MWe | 5.0 MWe |
| 6 | MW of Thermal Energy Produced | 2.5 MWth | 5.0 MWth | 7.5 MWth |

3. Row 2 – As included in the description for this row, the volumes listed are those that are consumed by the customer and do not reflect a contract demand / capacity volume. (Note that EPCOR is using contract demand and capacity volume as interchangeable.) Also, the volumes consumed are only those related to the heating and, where applicable with combined heat and power (“CHP”), electric load for

⁴ EB-2016-0137/0138/0139, EPCOR CIP Submission dated January 25, 2018, Tab 7, page 38 of 41, Table 7.

the customer. These customer loads were considered in this row as the intent of the table was to highlight the differences in volume consumed and potential cost benefits related to delivering the heating and electrical load using alternative technologies – boiler or CHP.

4. Row 4 – This row provides cost to deliver a m³ of gas using contract demand / capacity volumes. Capacity volumes are used in this row because in EPCOR’s CIP capacity volumes for industrial customers were used to calculate that metric and EPCOR wanted this row to align with other references of the metric. Also note that the contract volumes used to calculate the metric in this row include total contract volumes for the customer, and therefore include heating and fuel switching (cooling). This also ensured that the metric included in this row aligned with references to the metric throughout the CIP. References to “cooling” in the introductory paragraph⁵ to this table in EPCOR’s CIP are referring to this row.

⁵ EB-2016-0137/0138/0139, EPCOR CIP Submission dated January 25, 2018, Tab 7, page 38 of 41, para. 20.

Interrogatory # 3

Please explain the 58 million m³ higher forecasted industrial demand difference between Union and EPCOR, following EPCOR's adoption of the NAC approach.

Response to Interrogatory #3:

1. Without the per customer data from Union, EPCOR is unable to identify all factors that impact the difference. With the information available, the 58 million m³ higher forecasted industrial demand difference between Union and EPCOR can be largely accounted for with volumes resulting from EPCOR's unique fuel switching initiative included in its CIP submission. Other differences would be related to the divergence in views as to what the future holds over the next 10 years. Such differences in perspective are to be expected when operating in a competitive environment.
2. EPCOR's fuel switching economic opportunity includes the installation of two approximately 2,000 ton direct fired absorption chillers estimated to operate 5,473 hours per year, consuming approximately 950 m³ of natural gas per hour. This equates to 5,199 10³m³ per annum. During the 10-year rate stability period, the industrial customer is forecasted to be attached for approximately 9 years and 2 months, resulting in total volumes associated with fuel switching to be 47,660 10³m³. This accounts for approximately 80% of the 58 million m³ difference in industrial volumes between EPCOR and Union.
3. EPCOR does note that: "Proponents agreed that consumption levels forecast for any industrial customers should not be set in common, but left to competition in each proponent's proposal".⁶ As part of the competitive process each proponent has contacted the industrial customers and developed a consumption profile over 10 years as a result of those discussions. It is not surprising that each proponent would interpret those discussions in a manner that reflects their acceptance of the accuracy of those forecasts, their expectations as to growth, their experience in competitive environments, and their risk tolerance. In fact, it would be more surprising if the proponents, working separately, developed identical 10-year forecasts rather than forecasts that could diverge materially.

⁶ EB-2016-0137/0138/0139, OEB Staff Progress Update dated July 20, 2017, page 6.

Interrogatory #4

Please explain the relatively small \$0.8 million increase in the last ten months of EPCOR's recalculated NPV of the 10-year revenue requirement for 120 months.

Response to Interrogatory #4:

1. In order for EPCOR to sufficiently respond to this interrogatory, including the background information provided by the Board in Procedural Order No. 10, clarifications are required. In Procedural Order No. 10 the following statement is made:

Although the proponents agreed to use a ten year rate stability period, they selected different start and end dates for the collection of revenues within the ten years. As a result, EPCOR's revenue requirement in its CIP proposal were calculated over 110 months while Union Gas' was calculated over 120 months. To test the materiality of the difference, the OEB issued interrogatories that instructed each proponent to recalculate their revenue requirement over the other proponent's timeframe (i.e., EPCOR to calculate over 120 months and Union Gas over 110 months).⁷ (Underlining added for emphasis.)

2. With respect to revenue requirement timelines, EPCOR's CIP submission included a revenue requirement for 120 months and not 110 months as suggested above. EPCOR's 120 months of revenue requirement began on January 1, 2019 and ended on December 31, 2028. As noted below, Union indicated in its CIP submission that it also provided a 10-year revenue requirement beginning on January 1, 2019:

*Union and EPCOR (based on the preamble to this question) each applied the same rate stability term for the revenue requirement, which is 10 calendar years beginning January 1, 2019, with an in-service date of November 1, 2019.*⁸ (Underlining added for emphasis.)

4. To sufficiently respond to this interrogatory, EPCOR has provided the following timetables detailing the revenues, volumes, and timelines as EPCOR understands them. The timetables have been provided to show CIP submitted values as compared to volume changes made by each party in subsequent rounds of the CIP process.
5. Figure 4 highlights the revenue requirements and volumes as submitted in EPCOR's CIP.

⁷ EB-2016-0137/0138/0139, Procedural Order No. 10 dated February 22, 2018, page 4 dated.

⁸ EB-2016-0137/0138/0139, Union Interrogatory Responses dated January 11, 2018, Exhibit I Union.2, Page 1 of 2.

Figure 4- EPCOR CIP Values and Timelines



6. Figure 5 reflects EPCOR’s conversion of industrial volumes from capacity to NAC

Figure 5 - EPCOR CIP with Industrial Volume Converted to NAC



7. Figure 6 highlights EPCOR’s understanding of the revenue requirements and volumes included in Union’s CIP.

Figure 6 - Union’s CIP Values and Timelines



8. Figure 7 highlights EPCOR’s understanding of the revenue requirements and volumes as included in Union’s response to the Board’s interrogatories.⁹

⁹ EB-2016-0137/0138/0139, Union Interrogatory Response dated January 11, 2018, Exhibit I.Union4, page 2 of 3, Table 1: Restated Metrics

Figure 7 - Union's Revised CIP Values and Timelines



9. EPCOR's CIP included 110 months of industrial volume (November 1, 2019 to December 31, 2028), whereas Union's CIP included 120 months of industrial volume (November 1, 2019 to October 31, 2029). In its response to interrogatory No. 8 from the Board to Union, Union adjusted its industrial volume to 110 months (November 1, 2019 to December 31, 2028). This resulted in a reduction in Union's total volume to 286,910 10³m³ from 315,403 10³m³ as seen in the change from Figure 6 to Figure 7.
10. From the above figures, it is clear that EPCOR's volumes and revenue requirements included in Figure 5 are directly comparable with Union's volumes and revenue requirements in Figure 7.
11. In regards to the interrogatories in Procedural Order No. 9, the OEB requested that each of EPCOR and Union recalculate their metrics with the 10-year rate stability period beginning at the time the system was in-service (or when customers were first attached) without changing any other assumptions used in the CIP submission. EPCOR understands that for each of EPCOR and Union, this time period would start November 1, 2019 and end October 31, 2029. The response to this interrogatory would have resulted in both parties providing revenue requirements associated with 120 months beginning November 1, 2019, rather than a 120 month revenue period for EPCOR and a 110 month revenue period for Union as indicated in the statement from Procedural Order No. 10 reproduced above. EPCOR complied with the Board's request and provided its revenue requirement for 120 months beginning November 1, 2019 whereas Union did not. Union determined the most appropriate time parameter for the Board to consider is 10 calendar years¹⁰ (Jan 1, 2019 to Dec 31, 2028) and as such chose not to provide a 120 month revenue requirement beginning November 1, 2019.

¹⁰ EB-2016-0137/0138/0139, Union Interrogatory Response dated January 11, 2018, Exhibit I, Union 4, page 3

12. In its Procedural Order No. 10, the Board also referenced Union’s note regarding the increase of \$0.8M¹¹ in EPCOR’s calculated revenue requirement for the 120 month period beginning November 1, 2019. EPCOR would like to clarify that Union’s statement appeared to be regarding cumulative revenue requirement¹² and not NPV of revenue requirement. For the purposes of this interrogatory, EPCOR will be responding using cumulative revenue requirement values.
13. With this clarification, the increase of \$0.8M in EPCOR’s recalculated cumulative revenue requirement was determined as follows. The revenue provided in its CIP submission of \$75.583M for 120 months is the value of revenue that EPCOR requires in order to achieve its profitability target. This value of revenue does not change regardless of whether the 10-year rate stability period starts on January 1, 2019 or November 1, 2019. What does change is the cost to EPCOR of carrying capital expenditures from January 1, 2019 to November 1, 2019 due to the delay in receiving the total \$75.583M in revenue. The cost to EPCOR of that delay is \$0.795M. This results in a total revenue requirement collected over 120 months of \$76.378M (\$0.795M + \$75.583M). Of note is that EPCOR did not change any other assumption as included in its CIP. As an example, EPCOR did not increase the number of customers, even though there is a 10 month extension to the timeline, from December 31, 2029 to October 31, 2030. Figure 8 highlights the revenue requirements and volumes submitted as it pertains to this response.

Figure 8 - EPCOR Values with Rate Stability Period Starting at In-Service



¹¹ EB-2016-0137/0138/0139, Procedural Order No. 10 dated February 22, 2018, page 5.

¹² EB-2016-0137/0138/0139, Union Submissions dated January 25, 2018, page 9, para 26.