STAFF INTERROGATORY #9

INTERROGATORY

Issue 2 – Cost Consequences

Topic: RNG Enabling Program – Calculation of Service Fees

Ref: Exhibit B / Tab 1 / Schedule 1 / p. 18, #54 and p. 20, #59
Exhibit B, Tab 1, Schedule 1, Appendices 5-8

Preamble:
Enbridge Gas indicates that each service fee will be derived from a discounted cash flow (DCF) analysis. Also, Enbridge Gas outlines its annual revenue deficiency or sufficiency associated with the RNG Enabling Program in Appendices 5 - 8.

Questions:

a) Please identify and discuss the benefits to ratepayers of Enbridge Gas' RNG Enabling Program – Upgrading Service?

b) Please identify and discuss the benefits to ratepayers of Enbridge Gas' RNG Enabling Program – Injection Service?

c) Will these service fees be fixed over the length of the contract? Please explain.

d) For its RNG Enabling Program – Upgrading Service, how will Enbridge Gas determine the size (or capacity) for each of the site-specific facilities it intends to build?
   i) Please discuss whether some sources of RNG, such as bio-methane from landfill sources, will decline over time?
      1. Please discuss the implications to ratepayers if the feedstock for biogas declines over the next 10 years, over the next 20 years? How will Enbridge Gas mitigate these risks?

   ii) What are the implications of building upgrading facilities if the expected lifespan of the feedstock is less than service life of its upgrading facilities (e.g., the feedstock has a lifespan of 10 years, while the upgrading facilities have a service life of 20 years)? Please explain.
      1. Who will bear these risks?
      2. How will Enbridge Gas mitigate these risks?

e) For its RNG Enabling Program – Injection Service, how will Enbridge Gas determine the size (or capacity) of each of the site-specific pipelines it intends to build?
   i) What are the implications of building pipelines if the expected lifespan of the feedstock is less than service life of its pipelines (e.g., the feedstock has a lifespan of 10 years, while the pipelines have a service life of 40 years)? Please explain.
      1. Who will bear these risks?
      2. How will Enbridge Gas mitigate these risks?

f) Please identify and discuss the service fees calculation methodologies that have been approved in other jurisdictions for programs that are similar to the RNG Enabling Program – Upgrading and Injection Services. For these jurisdictions please discuss the Upgrading and Injection Services separately and include:
   i) What is the service fees calculation methodology (i.e., DCF analysis and/or full-cost based ratemaking)? Please explain.
   ii) Who bears the risk of under collections (the annual utility revenue deficiencies) related to the program (i.e., the RNG producer, the gas ratepayer, the shareholder or some combination)? Please explain.

g) For both the Upgrading and Injection Services, please specify the major cost components for the capital investment.

h) Please explain whether or not the estimated capital cost include contingency cost.
   i) If so, please provide the method, assumptions, and inputs of estimating the contingency cost.
   ii) If not, please explain what is Enbridge Gas' plan to deal with unexpected costs.

i) For the Upgrading Service, please provide the description of property/rate class used for CCA rate for each component of the plant:
   i) Energy component
   ii) Non-Energy component
   iii) Buildings component

j) For the Injection Service, please provide the description of property/rate class used for CCA rate.

k) Please explain the capital structure, return on equity, and cost of debt used in the analysis.

l) For both the Upgrading and Injection Services, please specify the major cost components for O&M expenses.
   i) Please specify the inflation rate assumption used in the analysis.

ii) What are the number of FTEs associated with its RNG Enabling Program? Did Enbridge Gas hire additional FTEs or train internal employees? Please explain.

m) For the Injection Service, Enbridge Gas assumed a municipal tax rate of 0.06%. Please explain how this rate was calculated and provide all supporting documentation including data and assumptions.

n) For the Upgrading Service, please outline Enbridge Gas' municipal tax rate assumptions included in its DCF analysis?
   i) If Enbridge Gas assumed that it would not be paying any municipal taxes, please provide the agreements with the municipalities that allowed for this?
   ii) Please redo Exhibit B, Tab 1, Schedule 1, App 5 and 6 to include a municipal tax rate. Please discuss the impact of including the municipal tax rate on Enbridge Gas' DCF analysis.

o) For both the Upgrading and Injection Services, please provide discounted cash flow analysis and complete Table 1 and Table 2 below by changing each of the following assumptions in the analysis and calculate accumulated NPV and PI for the 20 year forecast horizon (assuming the annual revenue stays at the same level as the base case).
   i) Discount rate (i.e. Cost of debt, ROE, Capital structure)
   ii) Capital investment
   iii) O&M expense

Table 1. Scenario Analysis for RNG Upgrading Service

Scenario	Annual Revenue	Accumulated NPV at Year 20	PI at Year 20
Base Case	$1,281,000	$733,495	1.100
Scenario 1(a) Base case cost of debt + 50 bps	$1,281,000		
Scenario 1(b) Base case cost of debt +100 bps	$1,281,000		
Scenario 1(c) Base case ROE+100 bps	$1,281,000		
Scenario 1(d) Base case ROE+300 bps	$1,281,000		
Scenario 1(e) 50/50 D/E ratio	$1,281,000		
Scenario 1(f) 35/65 D/E ratio	$1,281,000		
Scenario 2 Base case capital investment ($7,419,759) + 10% increase	$1,281,000		
Scenario 3 Base case O&M expense + 10% increase (Year 1 to Year 20)	$1,281,000		

Table 2. Scenario Analysis for RNG Injection Service

Scenario	Annual Revenue	Accumulated NPV at Year 20	PI at Year 20
Base Case	$725,000	$544,297	1.100
Scenario 1(a) Base case cost of debt + 50 bps	$725,000		
Scenario 1(b) Base case cost of debt +100 bps	$725,000		
Scenario 1(c) Base case ROE+100 bps	$725,000		
Scenario 1(d) Base case ROE+300 bps	$725,000		
Scenario 1(e) 50/50 D/E ratio	$725,000		
Scenario 1(f) 35/65 D/E ratio	$725,000		
Scenario 2 Base case capital investment ($5,439,025) + 10% increase	$725,000		
Scenario 3 Base case O&M expense + 10% increase (Year 1 to Year 20)	$725,000		

RESPONSE

a) The benefit to ratepayers from the RNG Enabling Program is the promotion and assurance of a supply of low-carbon RNG in Ontario. The benefits of RNG are discussed at length in the pre-filed evidence and the Company's 2018 Cap and Trade Compliance Plan. Please also see the response to APPrO Interrogatory #2(d) filed at Exhibit I.1.EGDI.APPRO.2.

b) Please see response to part (a).

c) Yes, the Rate 400 and Rate 401 service fees will be set for the life of the applicable contract. This explained at Exhibit B, Tab 1, Schedule 1, paragraph 54 and illustrated by way of an example at Exhibit B, Tab 1, Schedule 1, Appendix 6 and Appendix 7.

d) For the RNG Enabling Program – Upgrading Service, Enbridge will determine the size (or capacity) for each of the site-specific facilities it intends to build on a case by case basis working in conjunction with the biogas producer.
   i) In the case of landfill gas, the expected biogas output will tend to decline over time. However, other sources of biogas have the potential to grow over time as populations grow and creation of biomass accordingly increases (e.g., volumes of municipal waste water, source sorted organics, and agricultural waste).
      1. The Company's RNG proposals mitigate the risk of declining RNG production over time by not linking the fees for these services to RNG production volumes.

   ii) The term of the Rate 400 contract between the Company and the biogas producer will be negotiated on a case by case basis taking into account the expected lifespan of the biogas source. By doing so the implications of building upgrading facilities with an expected lifespan differing from that of the feedstock will be mitigated.
      1. Given the way the Rate 400 fees will be set, this risk will fall on the biogas producer.
      2. The Company's RNG proposals mitigate the risk of declining RNG production over time by not linking the fees for these services to RNG production volumes.

e) For the RNG Enabling Program – Injection Service, Enbridge will determine the size (or capacity) for each of the site-specific facilities it intends to build on a case by case basis working in conjunction with the biogas producer.
   i. The term of the Rate 401 contract between the Company and the biogas producer will be negotiated on a case by case basis taking into account the expected lifespan of the biogas source. By doing so the implications of building upgrading facilities with an expected lifespan differing from that of the feedstock will be mitigated.
      1. Given the way the Rate 401 fees will be set, this risk will fall on the biogas producer.
      2. The Company's RNG proposals mitigate the risk of declining RNG production over time by not linking the fees for these services to RNG production volumes.

f) i) and ii) The most relevant example is Fortis BC Energy Inc. (FEI). FEI has an RNG program dating back to 2010. Fortis offers customers the option to blend RNG with their conventional gas supply. The cost of the raw biogas, the RNG upgrading facilities and the injection station are allocated to the customers purchasing the

RNG. In the event the RNG volumes are undersubscribed the balance of the RNG cost is recovered from all FEI's non-bypass customers.

Similar to the Company's proposal, the RNG upgrading can be completed by FEI, as the regulated utility, or an independent operator.

g) Please see the Company's evidence in this proceeding (Exhibit B, Tab 1, Schedule 1, paragraphs 57 and 58) for an example of the capital and estimated operating costs for both an RNG upgrading and Injection facility.

h) The Capital cost estimate in the example includes contingency.
   i) The level of contingency is dependent on the known and unknown factors associated with the project. As a project moves from a conceptual stage closer to an executable stage the level of contingency decreases.
   ii) Please see response to h) i) above.

i)
   i) Energy component Landfill/Digester Gas Cleaning and Upgrading equipment – CCA Class 43.2 (50%)
   ii) Non-Energy component Other facilities / Balance of Plant – CCA Class 8 (20%)
   iii) Buildings component Buildings – CCA Class 1 (4%)

j) For the Injection station Enbridge utilized CCA Class 51 – Natural Gas Distribution Assets - CCA rate 6%

k) Please refer to Canadian Biogas Association Interrogatory #8 filed at Exhibit I.2.EGDI.CBA.8.

l) The operating costs for the Upgrading facility in Table 2 of Exhibit B, Tab1, Schedule 1 are as follows:

Upgrading Services O&M costs breakdown

Consumables	$204,000
Labour	$163,200
Operation and Maintenance	$81,600
Total	$448,800

The operating costs for the Injection facility in table 3 of Exhibit B, Tab1, Schedule 1 are as follows:

Injection Services O&M costs breakdown

Odourant replacement	$4,200
Measurement and Regulation	$16,500
SCADA	$71,000
Miscellaneous (account management, WMC)	$15,300
Total	$107,000

i. The inflation rate used in the example is 2%.
ii. There are approximately 3.5 FTEs working on the RNG enabling program. Enbridge has not hired any additional employees for the RNG enabling program.

m) The municipal tax rate of 0.06% was incorrect. The Company will update the Appendix 5, 6, 7, 8, with Enbridge's municipal tax rate of 0.59% from its most recent annual feasibility guidelines as a proxy estimate. The rate of 0.59% is Enbridge's trailing five year average municipal taxes expressed as a percentage of Enbridge's trailing five year average total customer-related distribution plant capital. Municipal taxes will be treated as a flow-through cost.

n) The exclusion of municipal taxes in the upgrading service was an error. The evidence and Appendix 5 and Appendix 6 will be updated to reflect the inclusion of municipal taxes.

o) i) to iii) Tables 1 and 2 have been updated with the specific scenario analysis on the RNG upgrading and injection services shown below. The annual revenue detailed in the table, include the updated municipal tax

Table 1. Scenario Analysis for RNG Upgrading Service

Scenario	Annual Revenue	Accumulated NPV at Year 20	PI at Year 20
Base Case	$ 1,329,000	$ 731,134	1.100
Scenario 1(a) Base case cost of debt + 50 bps	$ 1,329,000	$ 605,101	1.083
Scenario 1(b) Base case cost of debt + 100 bps	$ 1,329,000	$ 482,670	1.066
Scenario 1(c) Base case ROE + 100 bps	$ 1,329,000	$ 534,900	1.073
Scenario 1(d) Base case ROE + 300 bps	$ 1,329,000	$ 168,067	1.023

Table 1. Scenario Analysis for RNG Upgrading Service			
Scenario	Annual Revenue	Accumulated NPV at Year 20	PI at Year 20
Scenario 1(e) 50/50 D/E ratio	$ 1,329,000	$ 311,996	1.043
Scenario 1(f) 35/65 D/E ratio	$ 1,329,000	$ (88,010)	0.988
Scenario 2 Base case capital investment ($7,419,759)+10% increase	$ 1,329,000	$ 124,273	1.015
Scenario 3 Base case O&M expense +10% increase (Year 1 to Year 20)	$ 1,329,000	$ 277,926	1.038

Table 2. Scenario Analysis for RNG Injection Service			
Scenario	Annual Revenue	Accumulated NPV at Year 20	PI at Year 20
Base Case	$ 757,000	$ 545,619	1.100
Scenario 1(a) Base case cost of debt + 50 bps	$ 757,000	$ 437,435	1.080
Scenario 1(b) Base case cost of debt + 100 bps	$ 757,000	$ 332,480	1.061
Scenario 1(c) Base csae ROE + 100 bps	$ 757,000	$ 377,238	1.069
Scenario 1(d) Base case ROE + 300 bps	$ 757,000	$ 63,375	1.012
Scenario 1(e) 50/50 D/E ratio	$ 757,000	$ 186,385	1.034
Scenario 1(f) 35/65 D/E ratio	$ 757,000	$ (155,077)	0.971
Scenario 2 Base case capital investment ($7,419,759)+10% increase	$ 757,000	$ 43,588	1.007
Scenario 3 Base case O&M expense +10% increase (Year 1 to Year 20)	$ 757,000	$ 433,586	1.080