

ENBRIDGE GAS INC.

Answer to Interrogatory from
Federation of Rental-housing Providers of Ontario (FRPO)

Interrogatory

Reference:

Ex. 4, Tab 2, Schedule 1, Attachment 6

Preamble:

On pages 68-69, the study estimates: *Using the ICF assessment of the likely cost of deliverability associated with high deliverability storage ICF estimated an initial cost of delivered services at \$3.72/GJ/Day for 10 days of delivered services.*

The study goes on estimating the incremental storage value in the remaining pages.

Question(s):

Please provide the complete derivation of the estimated cost including the sources of data and assumptions made.

- a) Please ensure the derivation includes stated \$0.41/GJ and the formula in footnote 35.
- b) Please provide Appendix D referred to later on the same page.
- c) In comparing the information in footnote 36 (the Storage Revenue Report) and footnote 37 (the Storage Parameter Report), it is clear there is no observable linkage between the revenue generated and the parameters associated with the specific contract.
 - i) How did ICF make that linkage for the purpose of the analysis?
 - ii) Would the source of that linkage be available to those using those sources as accessed on EGI's website?
 - (1) If not, why not?
 - iii) While these reports are available through the hyperlinks provided by the study, does EGI provide access to historic indices of customers with this data?
 - (1) If not, why not?
- d) The Storage Parameter Report provides contract identifiers with acronyms LST and LTP.
 - i) Please distinguish these type of contracts

- ii) Are there any LTP contracts that provide proportional deliverability to the current balance in storage?
 - (1) If so, how is the Maximum Firm Daily Withdrawal reported for those customers.
 - (2) How were the unit cost/deliverability used in the ICF analysis for those customers?
- e) Please explain the absence of any storage contracts with deliverability between 1.2% and 1.8% in Exhibit E 1 that are evident in the Storage Parameter Report that is referenced in footnote 37.
 - i) Please provide an updated graph of Exhibit E
- f) Please provide a full derivation of the incremental storage value including source of data and assumptions made.

Response:

The following responses were provided by ICF Resources LLC:

- a) The regression equation separates the value of storage into deliverability, which is positively correlated with the relative amount of deliverability and space, which is constant. Hence the value for 1.2 percent deliverability, excluding the value associated with storage space is: $(1.2 \times 0.3424) + (0.2945 \times 0) = \0.41 per GJ.

Delivered services replace both storage space and storage deliverability. A 10-day delivered services contract would represent 10 percent of the storage deliverability associated with holding the storage contract, plus the value of the space. Hence the cost of the delivered service is estimated to be $(10 \times 0.3424) + (0.2945 \times 1) = \3.72 per GJ/day for 10 days of delivered services, or \$0.372 per GJ if the contract is fully utilized.

- b) Appendix D from the October 2022 report is located at pages 67-68 of the 2022 Enbridge Gas Storage Assessment report. Appendix D was not updated in the addendum due to the minimal changes between the information in the 2022 report and the 2024 report. A revised Appendix D updated for the Addendum is shown below. Note that the link to the STAR report goes to the current version, rather than to the version used in the analysis.

Updated Appendix D: Ontario Market Based Storage Contract Database

The market-based storage deliverability value analysis in section 3 of this report is based on an analysis of storage contract data developed by combining multiple data sources. These data sources include:

1. The Enbridge Gas index of storage customers from January 1, 2024
https://www.enbridgegas.com/-/media/Extranet-Pages/Storage-and-transportation/operational-information/Index-of-customers/Storage_Report.ashx?rev=f1cbc47f701341bc98c29f353995a70d&hash=3C14D646A2882C749640BD536C2EF7F8
2. The Enbridge Gas's Semi-Annual Storage Report (STAR) for the period from March 1, 2023 to August 31, 2023: [STAR storage report for January 2024.xlsx \(enbridgegas.com\)](#)

The STAR report provides unit rates and total revenue for each storage contract, along with the customer's name. ICF used this data to calculate the capacity associated with each contract. The Index of Customer database provides space and deliverability information for each storage contract, along with the customer's name. ICF combined the records from these two public reports by matching customer names and contract capacity in order to develop a database of storage contracts with price, space, and deliverability.

ICF also included in the regression analysis the prices, space, and deliverability data from third party storage offers provided to Enbridge Gas in response to RFPs for storage services. These records are confidential in nature and not included in this report.

- c)
- i) ICF developed the market-based storage deliverability value analysis based on analyzing the Storage contract data (Index of Customers report) as well as the Semi-annual Storage report. ICF estimated the deliverability to capacity ratio for all the customers based on the available Maximum Firm Daily Withdrawal Quantity (GJ) versus the Maximum Storage Quantity (GJ) from the index of customers data. This deliverability to capacity ratio was merged with the Semi-Annual Storage report which provided the unit rates (\$CAD/GJ) for each customer. Contracts reported in one data source that could not be matched with contracts in the other data source were not used in the regression.

As noted in response to Exhibit I.4.2-STAFF-25, ICF excluded the outliers on the deliverability data by performing a z-score analysis. Any customer with a z-score

of 1 was removed from the regression equation estimation. The unit rates provided under the Semi Annual Storage Report were then regressed against the calculated deliverability.

- ii) Links to the current versions of both of the primary data sources used in this analysis to create the regression data are available on the Enbridge Website at the above-noted links provided in part b).

The following responses were provided by Enbridge Gas:

- iii) In accordance with the Storage and Transportation Access Rule (STAR)¹, Enbridge Gas is not required to provide historical versions of Semi-Annual Storage or Index of Customer reports.
- d)
- i) A comparison chart that provides details of Enbridge Gas's Standard Long-Term Peak storage services (LST, LTP, and HDS), including the parameters used to distinguish each service, is available on the Company's website at the following link:
<https://www.enbridgegas.com/-/media/Extranet-Pages/Storage-and-transportation/Services/Storage-Services/Peak-Storage/LongtermPeakStorageServiceComparisonChart-FACT.pdf>
 - ii) While Enbridge Gas has contracted for storage services that provide proportional deliverability to the balance held in storage in the past, and may consider offering such services in the future, the Company currently has no such storage service contracts in place.²

The following responses were provided by ICF Resources LLC:

- e) In order to generate the data for the regression analysis, ICF combined data from two different data sources. While there were a limited number of contracts listed in the Index of Customer data with deliverability ranges of between 1.2 and 1.8 percent, ICF was unable to match these contracts with contracts in the Semi-Annual

¹ EB-2008-0052 Storage and Transportation Access Rule (STAR) Sections 3.1.4 and 4.1.5.

² Enbridge Gas's Index of Customers (Storage holders customers) report lists the Maximum Firm Daily Withdrawal Quantity, which is the maximum firm withdrawal entitlement associated with each contract. The report does not include the lower, ratcheted withdrawal amount that is in effect when the storage balance is less than 25% of the Maximum Storage Balance. You can find the Company's Index of Customers report at the following link: https://www.enbridgegas.com/-/media/Extranet-Pages/Storage-and-transportation/operational-information/Index-of-customers/Storage_Report.xlsx?la=en&rev=1ada4b581f4e4a15834a959d8c48e290&hash=0B2E88D401067C463468D091D551A54D

Storage (STAR) report with the desired level of confidence and the contracts were not included in the regression analysis.

A total of four contracts were excluded for these reasons. For two of the contracts, ICF was unable to match the contract with a related contract in the STAR report. These included the contracts labeled as LST089 and LST110. Two other contracts were excluded due to mismatches between the capacity implied by the reported revenue and the reported rate in the STAR report and the reported capacity in the IOC report. These contracts included the contracts labeled as LST129 and LTP 172. In these two cases we considered the capacity mismatch likely was the result of incomplete or partial year reported revenue, biasing the cost per unit of capacity downward. Including these two contracts would have resulted in a very small reduction in the estimated storage costs, with the regression coefficients changing from:

$$Y = X*0.3424+0.2945$$

to:

$$Y = X*0.3421+0.2942.$$

Certain other contracts, with deliverability at or below 1.2, or at or above 1.8 were also excluded for the same reasons. Including all of the contracts excluded due to the mismatch would have resulted in a minor reduction in the estimated storage costs, with the regression coefficients changing to:

$$Y = X*0.307+0.3194$$

- f) The question is vague and overly broad. The complete methodology of deriving the incremental storage value including the sources of data and assumptions used by ICF are identified in the ICF report and addendum. ICF is prepared to answer additional specific questions on methodology as well as the data sources and assumptions as appropriate.

Additional Question from FRPO July 15, 2024:

To strive for efficiency, we respectfully request EGI file the Excel spreadsheet(s), with working formulae, that derived the cost of deliverability including the data used. This provision would allow for analysis and data to be in front of stakeholders allowing for a more efficient exchange with ICF to achieve understanding.

Additional Response:

f) Please see Attachments 1 and 2.