INTRODUCTION

As part of its 2020 Rates Application, Enbridge Gas Inc. ("EGI") requested and the Board granted a two-phase proceeding allowing for the implementation of base rate adjustments through the IRM. As a result, the following issues are yet to be determined in Phase 2 of the Application:

1) Appropriateness of the Projects Qualification for ICM Treatment
2) Implementation of Cost Allocation Study
3) Implications of EGI's Approach to E-billing Conversion
4) Implications of EGI's Reporting on UFG

The following are the submissions of the Federation of Rental-housing Providers of Ontario ("FRPO") on the above issues. Having the benefit of the deferral submission date, we have read the submissions of most other parties and will attempt not to be duplicative while focusing on where we can support or reinforce party's views and make recommendations that we believe will assist the Board.

PHASE 2 ISSUES

1) Projects do not Completely Qualify for ICM Treatment

For the Don River project, FRPO agrees with concerns expressed by BOMA and LPMA on the movement of projects "creating" proposed ICM qualification. In addition, we concur with and support the concerns expressed by LPMA regarding the increase in capital for 2019 flowing into 2020.

EGI applied for ICM Treatment of the Windsor Line project in parallel with its application for Leave to Construct approval. We adopt the submissions of LPMA in its analysis to determine two material reductions in the amount of eligible ICM. However, given the timing of LPMA's submission on April 1st and the Board's decision on the Windsor Line project the following day, we submit that further information ought to be provided to the Board prior to their decision on the appropriate level of ICM funding.

There were significant issues in the Windsor Line proceeding with the sizing of the eastern half of the project and cost differences associated with smaller size alternatives. In its April 2nd decision, the Board did not approve NPS 6 used in the estimate for this ICM application but NPS 4. While we understand there were difference of opinions between FRPO and EGI on the quantum of differences, **we respectfully submit that the Board ought to order the filing, under confidentiality provisions of the Board, of the results of a binding RFP from at least two contractors providing their respective binding offers using both NPS 4 and NPS 6.** With that information, EGI can choose the preferred size to install and the Board would have confidence in the difference in cost associated with the two sizes. With that information and an updated completion date, EGI could determine how it may apply for the appropriate amount of ICM for which the project would potentially qualify.

2) Implementation of the Cost Allocation Study

FRPO supports and adopts the submissions of LPMA in their call to defer any cost allocation changes until a more comprehensive review with all costs during that rebasing proceeding. Beyond LPMA's well-articulated reasons for deferral, we add that the Panel hearing that case should in no way have its decision-making fettered by evidence, submissions and decisions of a previous proceeding. In addition, in that future proceeding, it is possible that some interest groups or intervenors may invest more resources in that rebasing process. However, they may not have known that the Applicant would propose that the onus to evolve a past decision made in this proceeding would fall to them[1].

3) Implications of EGI's Approach to E-billing Conversion

As most parties were, FRPO was surprised to learn of EGI's unilateral approach to converting customers to e-billing. During the development of our understanding, our views on the concerns and policy principles aligned most with those of the Vulnerable Energy Consumers Coalition. By request, we received an advanced draft copy of their submission and we support and adopt their submission.

4) Implications of EGI's Reporting on UFG

EGI filed evidence its report on Unaccounted for Gas (UFG) with the Board Dec. 19, 2019. The Executive Summary from the ScottMadden report states that "the report was prepared in compliance with the Ontario Energy Board's ("OEB" or the "Board") Decision and Order in EB-2017-0306 / EB-2017-0307, which directed Enbridge to file a report regarding UFG by December 31, 2019"[2]. While that is factual, and in no slight to ScottMadden, the original impetus for the report was actually part of an Enbridge Gas Distribution ("EGD") settlement approved by the Board for 2016 ESM and Deferral and Other Variance Accounts Clearance proceeding[3]. We point out this difference to emphasize that while EGI is stating that it is not seeking any relief and will report upon its progress in its 2022 rates filing[4], we respectfully submit that the utility ought to be held to a higher standard when managing ratepayers risk.

As we will outline herein, there are a number of steps that even without all of the resources of EGI, we can identify steps that EGI could take for the Board's consideration.

[1] Exhibit I.LPMA.2 (e)
[2] EGI_Report on UFG_ 20191219, page 2, Executive Summary, paragraph 1
[3] EB-2017-0102 Decision and Order, issued August 31, 2017, page 4
[4] EGI_ARGChief_20200311, page 30, para. 92

a) EGD UAF and UGL UFG are Not Equivalent

Further in the executive summary, ScottMadden adopts UFG as the designated acronym for the generic term Unaccounted for Gas[5]. While respecting the efficiency of using one acronym, it is important to recognize the difference in how the legacy utilities measured and accounted for lost gas. For EGD, the term for unaccounted for gas, UAF, applies to unaccounted for gas in its distribution system. For Union Gas Ltd. ("UGL"), the term UFG applied to its entire operation including storage and transmission. These differences were not highlighted in the report nor by EGI until the interrogatory phase[6].

In our view, it is disconcerting that instead of asserting it is not an "apples to apples" comparison[7], EGI could have made an equivalent comparison. Legacy EGD does have another unaccounted for gas category, Lost and Unaccounted for Gas ("LUF"). EGI uses this category to measure and account for loses at its storage facilities. The losses at the EGD storage facilities are more than material as they contribute $20.3 M annually to EGD rate zone gas costs as a result of their inclusion in the 2018 base rates[8].

These operations were not included in the Madden report except under EGD Investment in Facilities[9]. The fact that the investment in storage metering was included in the report is interesting in given the scope of the work provided to ScottMadden was to compare the respective legacy utilities against other utilities and the metric used by EGD did not include storage. Clearly these improvement in storage metering could not be viewed as assisting with UFG.

More importantly, to compare apples to apples for the Board's knowledge and potential ability to compare the utilities, EGI could have included the EGD storage and its LUF measurements over the period. This comparison would provide the Board with more meaningful comparative information and the opportunity to inform its decisions when unaccounted for gas related to storage arises.

We respectfully submit that the Board ought to direct EGI to include EGD LUF to its future reporting on unaccounted for gas.

b) Measurement Differences Can be Mitigated

A fundamental aspect that is worth expanding upon upfront is the broad category of measurement differences. Natural gas combustion provides energy for home and businesses. While the amount of energy dictates the value, natural gas at the distribution level is transacted in increments of volume which is simplest attribute to measure.

[5] EGI_Report on UFG_ 20191219, page 2, Executive Summary, paragraph 1. footnote 2
[6] Exhibit I.STAFF.28 (b) and Exhibit I.EP.21(b)
[7] EGI_ARGChief_20200311, page 29, para 87
[8] EB-2017-0086 Exhibit D1, Tab 2, Schedule 5, page 2 of 2
[9] EGI_Report on UFG_ 20191219, page 39

These measurements are adjusted for the pressure and temperature of the gas to ensure that standard volume and standard conditions of pressure and temperature used for the purpose of billing (in Canada, cubic metres for utilities). At larger commercial and industrial customer and at all gate station, for efficiency, the gas is measured prior to pressure reduction. As a result, these stations have Electronic Volume Integrators (EVI's) to measure the changing pressure and temperature conditions and apply a correction factor adjust the volume increment measured back to the standard conditions to ensure fairness in trade.

One of the most applied versions of an EVI is an electronic instrument which also provides the opportunity to set the instrument to apply Supercompressibility. The density of gas tends to vary proportionally with pressure and temperature especially at low pressures which are normal for delivery to residential or smaller commercial/industrial customers. However, at the relatively moderate delivery pressures used to measure deliveries to larger commercial//industrial plants and institutions, Supercompressibility starts to increase the relative density of the gas stream beyond the proportional adjustments for pressure and temperature[10].

These volumetric measurements are the foundational unit for billing the utility's end-use customers. However, at a larger scale, producers, pipelines, marketers and utilities respect that the most important attribute for trade is energy. As a result, while these major industry participants still measure the volume and adjust it for pressure and temperature, they also measure the Heat Value of the stream of gas during the period.

While the vast majority of any natural gas stream is methane, there are many other higher-level hydrocarbons (such as ethane, propane, etc.) and other constituents (such as carbon dioxide and nitrogen). The composition of the gas dictates the amount of heat that can be released upon combustion resulting in a Heat Value (in Canada, gigajoules per cubic metre). This determination is generally performed by an instrument called a chromatograph which is deployed at strategic locations to minimize error in custody transfer of natural gas energy.

The various types of meters and instruments are afforded respective ranges of error by the Measurement division of Industry Canada, but all forms have a range that is bound by plus or minus 2% are subject to periodic inspection by the company that is responsible for the equipment which is generating the quantity to be billed.

[10] https://www.aga.org/natural-gas/glossary/s/ **Supercompressibility Factor:** A factor used to account for the following effect: Boyle's law for gases states that the specific weight of a gas is directly proportional to the absolute pressure, the temperature remaining constant. All gases deviate from this law by varying amounts, and within the range of conditions ordinarily encountered in the natural gas industry, the actual specific weight under the higher pressure is usually greater than the theoretical. The factor is used to calculate actual volumes from volumes at standard temperatures and pressures from actual volumes.

i) Gate Station Measurement Differences

The ScottMadden report provides a breakdown of the major sources of UFG for the respective legacy utilities over the last 10 years[11]. Accepting that the predominant sources of UFG can vary from utility to utility[12], it is still evident that the major source of EGD's historic UFG is Gate Station measurement differences.

Without a full knowledge of how EGI determines it measurement differences, it is hard to be prescriptive with specific approaches to apply. However, given the only evidence that we have, in our view, EGD has not exercised a timely improvement in a known issue that has been the source of ratepayer cost for years.

As noted earlier, the level UFG at EGD stations was first identified as a concern by ratepayers in 2017. Through interrogatories in the clearance of variance account proceedings, it was identified that Victoria Square station was the major contributor to the total differences with a volumetric difference of 12.4 $10^6 m^3$ between the TCPL meter and EGD's check meter in 2016[13]. EGD committed in the Board-approved Settlement Agreement to report on the steps taken[14]:

> *"Enbridge agrees that as part of its 2018 Rate Adjustment Application, it will file evidence explaining the steps that have been taken to address UAF that may be associated with metering differences at gate stations (as described in response to BOMA Interrogatory#21). Enbridge's evidence will address any reductions in UAF achieved to date from review of metering at gate stations, as well as plans for any future actions to address this item".*

As the record shows, EGD provided a page or so of explanation within its 2018 Rate Adjustment Application[15] minimizing (but not decreasing) the overall difference at Gate Stations resulting in a deferral of this commitment through the merger proceeding resulting in the UFG report in this proceeding. But the most disconcerting part is that this evidence speaks to EGD progress with "Legacy EGD implemented various practices and initiatives to monitor and manage gate station meter variations" and the first item under Investment in Facilities is "Redesigned the Victoria Square Gate Station to more accurately measure gas flows. The project is scheduled to commence in 2020."

However, following the timeline provided above, it was in 2017 when it was determined by EGD that the major single contributor to its UAF problem was Victoria Square Station quantified at 12.4 $10^6 m^3$. The financial value of that difference in 2016 cost of gas was over $2 million[16]. Specific reporting on these differences in the next few years is not available but a lack of reporting does not mean the problem went away.

[11] EGI_Report on UFG_ 20191219, pages 6 and 7.
[12] EGI_Report on UFG_ 20191219, pages 18 and 19.
[13] EB-2017-0102, Exhibit I.BOMA.21
[14] EB-2017-0102, Exhibit N1 Tab 1 Schedule 1 Page 14
[15] EB-2017-0086 Exhibit D1, Tab 2, Schedule 4, Page 4
[16] EB-2019-0105 Exhibit I.EP.2 provided that the total UAF was 133.1 $10^6 m^3$ valued at $22.4M

Unfortunately, improvements have not been committed to by EGD until it is part of a Board-ordered report.

A major difference between the respective legacy utilities responsibility for UFG, as has been noted by others, is that while UGL bore an element of risk beyond a threshold (both positive and negative), EGD was risk free on UFG. However, in our view, the fact that EGD and its current rate zone was/is not incented financially to manage UFG should not relieve it of its obligation to handle ratepayer's money in a prudent fashion. If it takes reporting to the Board to drive the proper priority on reducing ratepayer cost, then waiting for the next report as part of the 2022 rate filing is not soon enough. We urge the Board to require EGI to continue to report on its initiatives to address UFG problems in the 2021 rate filing and each year until re-basing where consideration can be given to more balanced outcomes for ratepayers**.**

While EGI may respond in its Reply that the company's lack of risk had anything to do with the priority on investment, we would ask EGI to provide how much was spent on replacing "all of the measurement equipment at storage facilities"[17]. Ironically, this was the next item reported on in the Investment in Facilities for legacy EGD. If EGI would provide in its Reply the estimated cost of measurement changes at Victoria Square station compared to the amount spent on the measurement changes at storage facilities including when it was spent, we believe that would be helpful for the Board to understand the prioritization in context.

Further, on the replacement of storage measurement equipment, its simple inclusion in the report was of interest since the issue of LUF versus UFG (or EGD's former UAF) was not detailed in the report. We are interested in the timing of the investment in replacing the measurement at the storage facilities given that as part of the 2016 Rate Adjustment Settlement Proposal approved by the Board, EGD agreed to fully allocate the costs of LUF between its utility and non-utility operations[18].

ii) Retail Station Measurement Differences

Another large component of legacy EGD's UFG was found to be Retail Station differences. Again, without a full understanding of how EGI determines these measurement differences, it is difficult to be too prescriptive. However, in inquiring about Supercompressibility, we are encouraged that EGD has begun to understand the impact of Supercompressibility at moderate pressures[19]. We were frankly surprised that this was a revelation as Ontario gas utilities including UGL have been applying the Supercompressibility factor at distribution pressures for decades. Moving forward, this one change could significantly impact UFG from retail station measurement differences. We respectfully submit that, as part of on-going reporting, EGD ought to report on the steps taken to implement greater application of Supercompressibility in its rate zone and the estimated impacts on UFG.

[17] EGI_Report on UFG_ 20191219, page 39.
[18] EB-2015-0114 Decision and Interim Order, Dec. 10, 2015, Appendix A, pages 9 and 10.
[19] Exhibit I.FRPO.9 indicates EGD had initial awareness in the summer of 2019

iii) Available Data should be Mined to Improve Measurement Differences

The Board is aware of the changing nature of gas supply in and through Ontario. These dynamic changes in flow patterns in North America over the last decade have resulted in changes to the constituents of the natural gas stream in Ontario. FRPO assisted EGD and the Board with addressing the impact of Heat Value changes on its direct purchase and system gas programs in 2016[20]. From our experience, we would respectfully submit that EGI should assess the various sources of data that it has as a combined company to mine those data to discover and exploit insights that the broad expanse of the company now provides.

For example, FRPO asked a number of interrogatories regarding an incident on the TCPL system in late 2018 that affected measurement of gas Heat Value predominantly in eastern and central Ontario[21]. We did not receive all of the expected responses mostly due to the answer that EGI did not have the answer, but their upstream gas pipeline provider did. We respectfully submit that EGI should ask its upstream pipeline providers where they employ their equipment that measures the Heat Value in the gas stream and use that information to develop diagnostic that may provide the company with early warning of issues that are better resolved as soon as practicable as opposed to weeks or months later when establishment of precise measurement is impossible.

We were pleased though to receive data that we requested from EGI on the Heat Values recorded at Victoria Square (EGD) and Parkway (UGL). Clearly, the company has access to its own information. This fact can be used in other areas of the province where the two former legacy franchises are in reasonably proximity. To demonstrate the effect of using data, we have used the data provided to create a simple example to show the effect of comparing Heat Value results from locations of reasonable proximity.

Given the change in North American natural gas flow patterns and the subsequent construction of an additional loop in the Parkway to Maple corridor, the predominant flow of gas is from legacy UGL at Parkway to through Maple to legacy EGD's major station at Victoria Square especially during high consumption periods. This flow changes seasonally and there are still some periods in the spring or summer where Victoria Square is fed from the north instead (through TCPL's Barrie Line), but the vast majority of Victoria Square gas comes via Parkway. TCPL measures the Heat Value of the gas at Victoria Square while UGL measures the Heat Value of the gas exiting Parkway. The result is that the difference in heat value should be small and seasonally correlated[22].

[20] EB-2016-0215 Decision and Order, Schedule 1, pages 10-11 and Exhibits I.FRPO.16-19
[21] Exhibits I.FRP0.10-16
[22] Even precise instruments can have biases that are within the reasonable tolerances of the equipment and would be apparent with identical natural gas constituents but seasonal flow patterns result in a mixing of the gas.

TABLE 1
SUMMARY OF DIFFERENCES BETWEEN HEAT VALUES

	PERIOD	TOTAL ENERGY USING PARKWAY HEAT VALUE	DIFFERENCE IN CALCULATED ENERGY (PARKWAY-EGI VALUE)	PERCENTAGE DIFFERENCE (%)
2016	ANNUAL TOTAL	72,598,578	181,954	0.251
	OCT-DEC TOTAL	18,442,438	57,565	0.312
2017	ANNUAL TOTAL	56,646,431	162,829	0.287
	OCT-DEC TOTAL	8,390,794	24,306	0.290
2018	JAN.-SEPT. TOT.	48,070,206	125,883	0.262
	OCT-DEC TOTAL	17,835,967	285,954	1.603

As depicted in Table 1 above, we have provided a summary that was extracted from some simple math applied to the Excel spreadsheet that accompanied our request[23]. In that interrogatory, we asked for EGI to provide the energy amount that would be calculated by applying the daily Heat Value measured at Parkway to the daily volumes measured at Victoria Square. By then taking the difference between the resulting daily energy amounts, one can infer difference in Heat Value over specific periods of time.

This summary Table 1 above was generated by totaling the annual energy amount calculated for Parkway and taking the difference between that amount and the energy amount determined for Victoria Square. By summing the two columns over a specified period, you can determine a percentage difference between energy values measured at the two locations on a weighted basis proportional to the flow through Victoria Square. We have performed these simple calculations on the spreadsheet that was provided by EGI in Excel format. To be of assistance to the company and the Board, we will provide the resulting Excel Workbook for review with the Summary Table in the second sheet.

As one can see for 2016 and 2017, the difference on an annual basis is relatively small at a range of 0.251-0.287%. Looking specifically at the October to December period, difference increases marginally to 0.290-0.312%. Knowing the flow dynamics and potential for instrument bias, these results look entirely reasonable. However, knowing there was an issue in the fall of 2018, we calculated the percentage difference for the period of January to September of 2018 to determine a difference of 0.262%. Given that this figure is squarely within the previous annual differences of 0.251 to 0.287%, we would conclude that the instruments are still operating as they should. But when the difference is calculated for the period of October to December in 2018, one can see that

[23] Exhibits I.FRPO.12, Attachment 1

the difference increases by a factor of more than 5 to 1.6%. This would be evidence that there is something materially wrong with the Heat Value measurement at one of the stations.

Now, interpreting the answer that we received in FRPO.11 through our understanding of conditions in this period, we understand EGI to be saying that the values for Victoria Square were inferred to overcome a set of circumstances that were found several weeks after the initial problem. However, as can be seen from the table, perhaps in the interest of fairness in trade, TCPL and EGI could have done a similar analysis to come up with a more effective estimate of the inferred Heat Value at Victoria Square. Nonetheless, the result was in the favour of EGI ratepayers to reduce the 2018 UFG which had increased from the previous year[24].

Our point is that the above analysis is one simple example of insight that EGI can gain given multiple gate stations and data points that can mined in its system that now covers almost all of Ontario. A further example can be applied to EGD's recent adoption of evolving its parameters for the calculation of Supercompressibility through its instruments[25]. While we endorse annual updates, the updated figures seem dated or different from recent parameters we have seen in Ontario[26]. Using data on gas stream composition in its respective locations would assist in ensuring more precise determination of the effects of Supercompressibility.

We respectfully submit that EGI should add data mining as a UFG mitigation strategy and report on the steps and results in its reporting on UFG to the Board.

iv) Complexity & Lack of Incentives are No Excuse for Inadequate Mitigation

We respect that ScottMadden performed a service and resulting report according to the scope of work requested by EGI. While there are helpful comparisons and some steps, in the right direction, we respectfully submit that more can be done. With insight, these steps can be done efficiently and effectively. We know that UGL managed its UFG at a materially lower level over the period which is demonstrable in the comparison provided. EGD and UGL are now one company that are in the process of integrating and, we trust, seeking to adopt best practices. On behalf of ratepayers, we respectfully submit that EGD should learn from UGL practices and report on the additional steps undertaken.

Further, we respectfully submit that this learning need not wait for reporting in the 2022 rate case or worse, until rebasing changes the incentives. We touched on the lack of incentives earlier and we want to expand on that though we cannot do a better job

[24] EB-2019-0105 Exhibit I.EP.2
[25] Exhibits I.FRPO.1-2
[26] FRPO would be happy to share our data with EGI upon simple request

than the National Institute of Research Institute ("NRRI") in its study across a broader cross-section of State Utility Commissions in the U.S.[27].

III. Regulatory Concerns and Questions

A. The incentive problem

One concern of commissions is that utilities may have a weak incentive for managing LAUF gas. This problem especially exists whenever a utility is able to pass through LAUF-gas costs to their customers with minimal regulatory scrutiny. As discussed in Part IV, several survey respondents stated that utilities have little or even no incentive to mitigate LAUF gas. Whether or not these observations are valid or even represent a commission's position, the responses do indicate the perception of an incentive problem. Some commissions have tried to elicit better utility performance through explicit incentive mechanisms or the capping of LAUF gas costs recoverable from customers. Most commissions implicitly have taken the position that it is easier to spread the costs of LAUF gas across all customers than to burden utility shareholders with those costs. The outcome creates little motivation for utilities to control LAUF gas. It also raises a "fairness" question of why utility customers should fully shoulder the burden of costs that are difficult to justify, let alone measure with reasonable accuracy.

The combination of poor incentive for managing LAUF gas and a utility's ability to control LAUF-gas levels seems disjointed from sound regulatory policy. The incentive problem arises from the ease of cost recovery by utilities. Yet, because utilities have some control over LAUF-gas levels, it seems likely that existing levels are above socially optimal levels: Most utilities are not held accountable for poor management of LAUF gas; accentuating this problem is the fact that most utilities also do not benefit when they manage LAUF gas exceptionally well. They might benefit indirectly, however, if a lower level of LAUF gas results in a safer pipeline network or less likelihood of commission scrutiny.

In this environment, the utility's objective would be to minimize risk, or to minimize non-recovery of costs. That is, the major utility motivator is to minimize regulatory risk premised on the fact that it would not benefit from higher performance, even if its customers do. Without the possibility of profit, utilities would therefore have as its major objective the minimization of cost disallowances.

[27] Exhibit I.FRPO.5, Attachment 1, NRRI: Lost and Unaccounted-for Gas: Practices of State Utility Commissions, dated June 2013, page 20 of 106

c) **UFG Conclusion**

As outlined above, we respectfully urge the Board to direct EGI to file an update report in its 2021 rate filing and every year after until re-basing that reports on initiatives undertaken to mitigate UFG and the estimated results. This report should include, but not be limited to:

A) Initiatives identified in its UFG report
B) Include LUF from EGD Storage Operations
C) Gate Station Measurement Differences
D) Retail Station Measurement Differences
E) Mining of Data
F) Transfer of Initiatives from legacy UGL to EGD

All of Which is Respectfully Submitted on Behalf of FRPO,

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