ENBRIDGE GAS INC.

First Tracks Consulting Service In. Answers to
Interrogatories from School Energy Coalition (OEB)

Exhibit I.7.EGI.SEC.1

[Ex. Reply, p. 10] With respect to cost of capital, please:

a) Confirm that, for ratemaking purposes, cost of capital also includes the tax impacts and gross-up associated with the equity component of capital.
b) Confirm that, at a 26.5% tax rate, a 9% allowed equity return must be grossed up to 12.245% when recovered in rates, to account for taxes, and that at a 36% equity thickness, ROE adds 4.41% to WACC, not 3.24%.
c) Recalculate the 5.8% cost of capital to include the gross-up associated with the tax impact of ROE, and provide a new Table 2.
d) Confirm that Figure 2 does not include the tax impact of ROE.
e) Recalculate the net present value taking into account these tax impacts, and show your calculations.

Response:

a) Confirmed, although the information provided in my report did not calculate tax impacts.

b) Confirmed. Pre-tax contribution to WACC from return on equity is 4.41% and pre-tax WACC is 6.97%

c)

	After Tax			Pre Tax		
	Capital Structure	Cost of Capital	Weighted Averate	Capital Structure	Cost of Capital	Weighted Averate
Long-Term Debt	64%	4.00%	2.56%	64%	4.00%	2.56%
Equity	36%	9.00%	3.24%	36%	12.24%	4.41%
Total Capital	100%		5.80%	100%		6.97%

Combined Income Tax Rate	26.50%
Tax Gross Up Factor	136.1%

d) Confirmed. See after-tax and pre-tax costs of capital shown in response to c).

e) I assume by "present value" you are referring to the values presented in Figure 2, which were calculated from after-tax cash flows and applying an after-tax discount rate. If pre-tax cash flows are instead discounted with a pre-tax discount rate, the present value calculations result in the same answer. That is, with amortization, Enbridge would receive a present value revenue requirement of $142 million and have a resulting discounted cash flow of $0.

   For the calculations, please refer to the excel attachments provided with Exhibit I.7.EGI.STAFF.2 which provide the spreadsheets used to develop the figures in my report and also include revised tools that incorporate tax calculations.

Exhibit I.7.EGI.SEC.2 (Supplemental) /u

[Ex. Reply, p. 11] With respect to the forecast cost of amortization, please:

a) Confirm that the witness has not taken into account the timing difference between deductibility of operating expenses such as DSM spending, and the amortization for rate purposes over a multi-year period.
b) Confirm that the timing difference provides a "tax shield" in which Enbridge has negative taxable income, and thus tax savings, in the first year, and then in subsequent years must take the entire amount recovered from rates (including any tax gross-up), less the debt interest component, into taxable income and pay tax on that amount.
c) Confirm that the spreadsheet model set forth below, and attached in Excel format, correctly sets out the revenue requirement calculations of a ten year amortization with the tax timing taken into account. If not confirmed, please re-do the model to make it accurate.

Revenue Requirement from $1 Million DSM Expenditure										
Amortization Period	10	years								
Interest Rate	4%									
Debt Thickness	64%									
Return on Equity	9%									
Equity Thickness	36%									
Tax Rate	26.50%									
Expenditure	$1,000,000									
Total Collected	$1,348,408									
Year	1	2	3	4	5	6	7	8	9	10
Opening balance	$1,000,000	$900,000	$800,000	$700,000	$600,000	$500,000	$400,000	$300,000	$200,000	$100,000
Amortization	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
Closing balance	$900,000	$800,000	$700,000	$600,000	$500,000	$400,000	$300,000	$200,000	$100,000	$0
Average Rate Base	$950,000	$850,000	$750,000	$650,000	$550,000	$450,000	$350,000	$250,000	$150,000	$50,000
Interest Cost	$24,320	$21,760	$19,200	$16,640	$14,080	$11,520	$8,960	$6,400	$3,840	$1,280
Return on Equity	$30,780	$27,540	$24,300	$21,060	$17,820	$14,580	$11,340	$8,100	$4,860	$1,620
Pre-tax Cost of Capital	$55,100	$49,300	$43,500	$37,700	$31,900	$26,100	$20,300	$14,500	$8,700	$2,900
Taxable income										
Expenditure	-$1,000,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
Interest	-$24,320	-$21,760	-$19,200	-$16,640	-$14,080	-$11,520	-$8,960	-$6,400	-$3,840	-$1,280
Collected in rates	$155,100	$149,300	$143,500	$137,700	$131,900	$126,100	$120,300	$114,500	$108,700	$102,900
Total tax. Income	-$869,220	$127,540	$124,300	$121,060	$117,820	$114,580	$111,340	$108,100	$104,860	$101,620
Tax payable	-$230,343	$33,798	$32,940	$32,081	$31,222	$30,364	$29,505	$28,647	$27,788	$26,929
Revenue Requirement										
Amortization	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000
Cost of capital	$55,100	$49,300	$43,500	$37,700	$31,900	$26,100	$20,300	$14,500	$8,700	$2,900
Tax Grossup	-$313,392	$45,984	$44,816	$43,647	$42,479	$41,311	$40,143	$38,975	$37,807	$36,639
Total	-$158,292	$195,284	$188,316	$181,347	$174,379	$167,411	$160,443	$153,475	$146,507	$139,539

Response:

a) Confirmed.

b) Enbridge Gas Response:

Confirmed. When examining the impact of amortizing DSM expenditures for a single year in isolation, the deductibility of DSM expenditures in the year they occur (i.e. the first year) would result in negative taxable income, and thus tax savings (or a "tax shield") and a reduction in revenue requirement for that year. However, in subsequent years of the amortization term there would be no corresponding tax deductible amounts remaining to offset the amortized amounts to be recovered in rates, and as a result, from a revenue requirement perspective, those annual amortization amounts would need to be grossed-up for taxes.

c) Enbridge Gas Response:

The spreadsheet model prepared by SEC does correctly calculate the annual revenue requirement, inclusive of tax timing impacts, for the recovery of $1 million in expenditures (that would not otherwise be capitalizable) through a ten year amortization methodology, given the provided and/or implied assumptions. In particular, it should be noted that the SEC calculation assumes the $1 million in expenditures occur and are tax deductible in year 1, that they are fully effective in year 1 from a rate base perspective (i.e. they are in the opening balance), and that amortization and recovery commences in year 1. These simplifying assumptions are

appropriate for illustrating the impacts of amortization, but could not actually occur, as expenditures occurring in the year could not also be in that year's opening rate base value.

Edward Weaver response:

The spreadsheet calculations differ from the timing conventions used in the First Tracks report, which assume annual, beginning-of-year cash flows and that amortization begins the year after costs are incurred.

I also believe that some other jurisdictions treat these tax effects differently than the approach outlined in the model. For example, Ameren, in Illinois, applies the tax benefits in the first year as a decrement to the regulatory asset added to rate base, rather than applying it as a decrease in revenue requirement in the first year. Essentially, ComEd breaks the regulatory asset into two components: one funded by the tax benefit (i.e., the "tax component") and a second calculated as the difference between the total expenditures and the tax benefit (i.e., the "residual component").

ComEd then treats the residual as a typical rate base asset, amortizing it over the amortization term, and adding costs required for debt interest, equity earnings, and income taxes on those equity earnings (which are grossed up).

ComEd treats the tax component as amortization alone, recovering it over the amortization term, without amounts for interest or earnings.

With this approach, in effect, ComEd treats the tax benefit as a source of zero-interest capital used to fund a portion of the amortization.

Exhibit I.7.EGI.SEC.3 /u

[Ex. Reply, p. 12] Please re-do Figures 3 to 6 taking into account the tax impacts, and provide a live Excel version of the results.

Response:

Three versions of Figures 3, 4, 5 and 6, which present revenue requirements, are provided below:

- Figure 3A-6A: original figures from my report, with no tax treatment in revenue requirement
- Figure 3B-6B: Including equity earnings grossed up for income taxes, and amortizing DSM expenditures for tax purposes

- Figure 3C-6C: Including equity earnings grossed up for income taxes, treating DSM expenditures as expenses for tax purposes; and applying the tax benefit as a decrement to revenue requirement in year 1
- Figure 3D-6D: Including equity earnings grossed up for income taxes; treating DSM expenditures as expenses for tax purposes; and applying the tax benefit as a decrement to the size of the regulatory asset funded by Enbridge investors in year 1

Excel files are provided in response to Exhibit I.7.EGI.STAFF.2, along with the excel files provided for the calculations used to develop the figures in my original report.

Figure 3A: Revenue Requirements (Original/No Taxes)

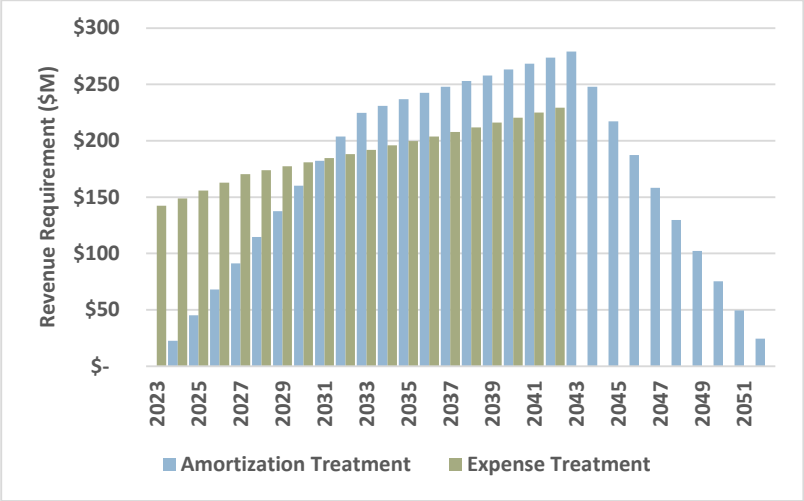

Figure 3B: Revenue Requirements (Capital Tax Treatment)

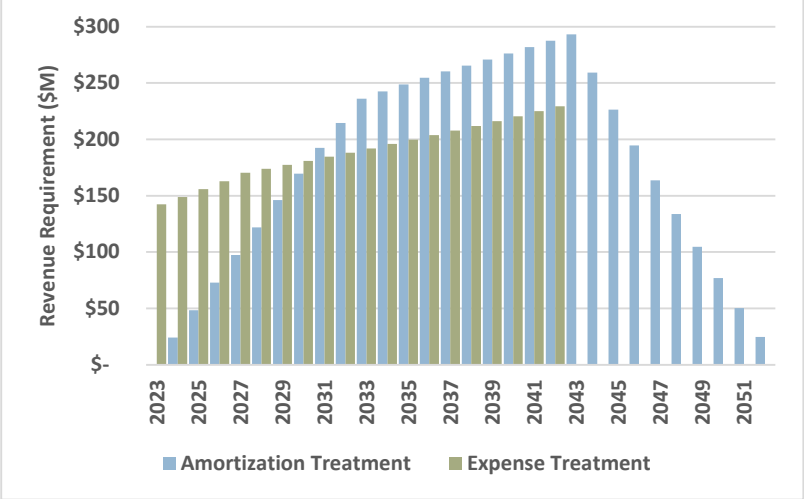

Figure 3C: Revenue Requirements (Expense Tax Treatment); Lower Revenue Requirement)

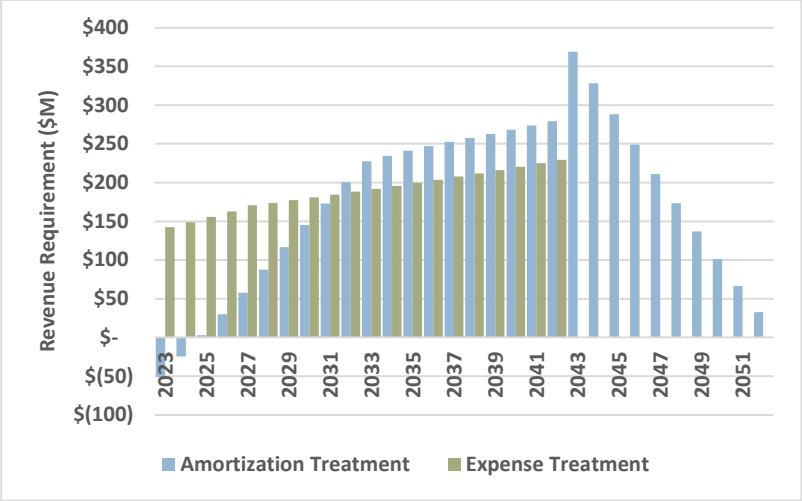

Figure 3D: Revenue Requirements (Expense Tax Treatment; Lower Regulatory Asset)

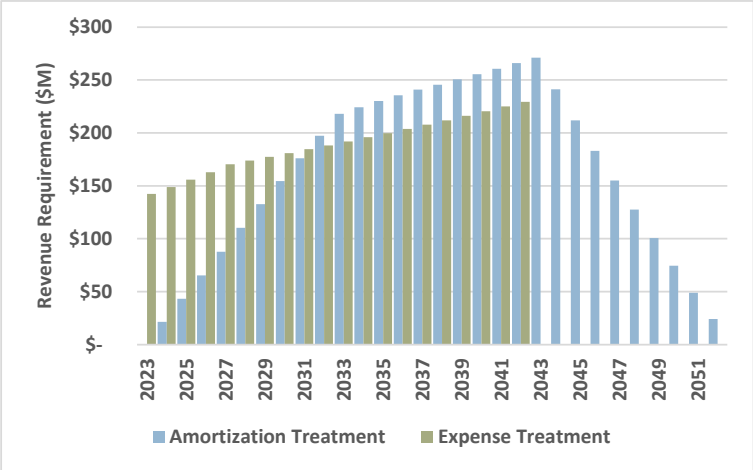

Figure 4A: Asset Balances (Original/No Taxes)

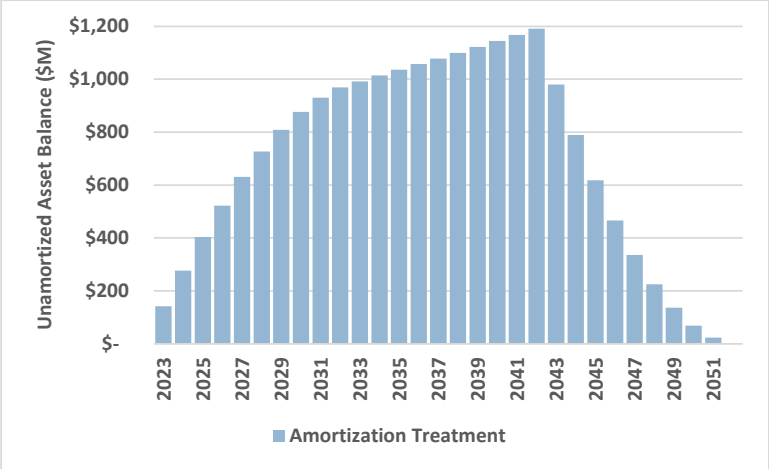

Figure 4B: Asset Balances (Capital Tax Treatment)

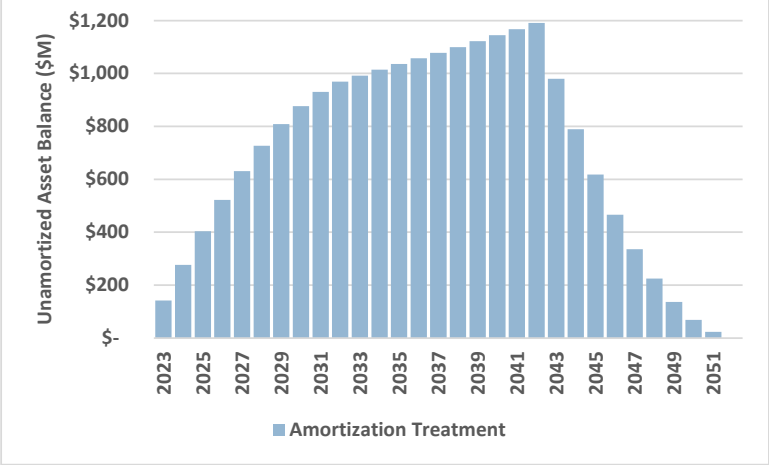

Figure 4C: Asset Balances (Expense Tax; Lower Revenue Requirement)

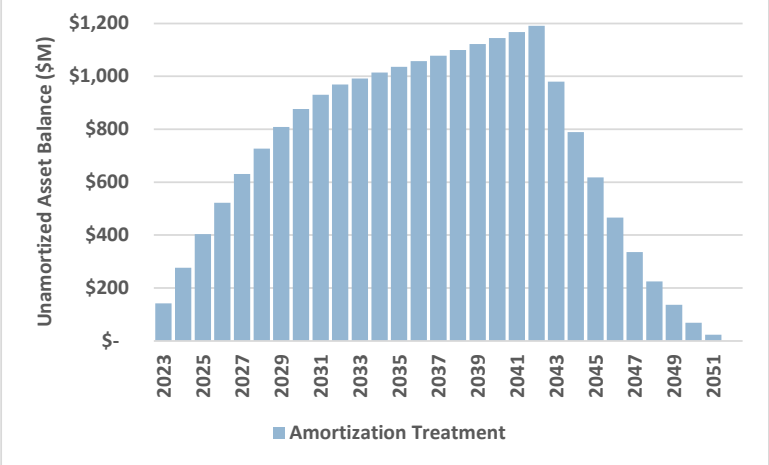

Figure 4D: Asset Balances (Expense Tax Treatment; Lower Regulatory Asset)

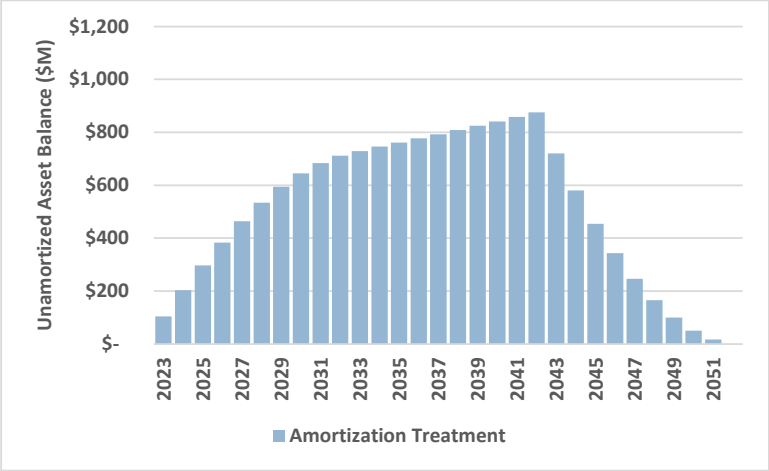

Figure 5A: Revenue Requirement Impact of Amortization Term (No Taxes)

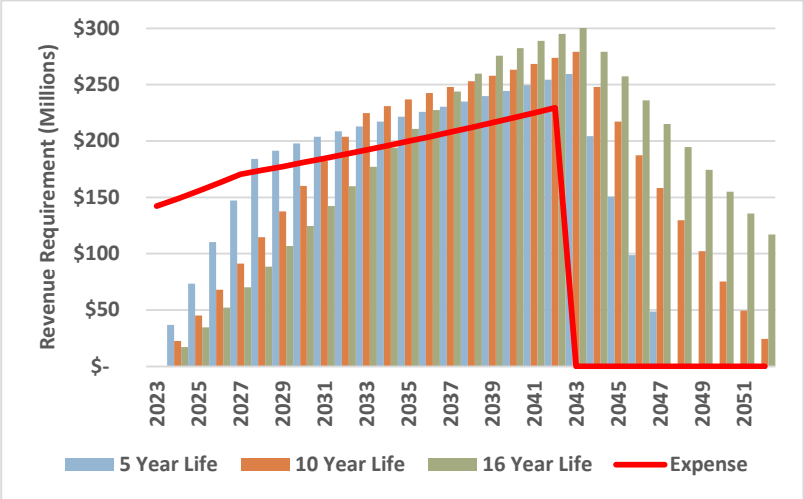

Figure 5B: Revenue Requirement Impact of Amortization Term (Capital Tax Treatment)

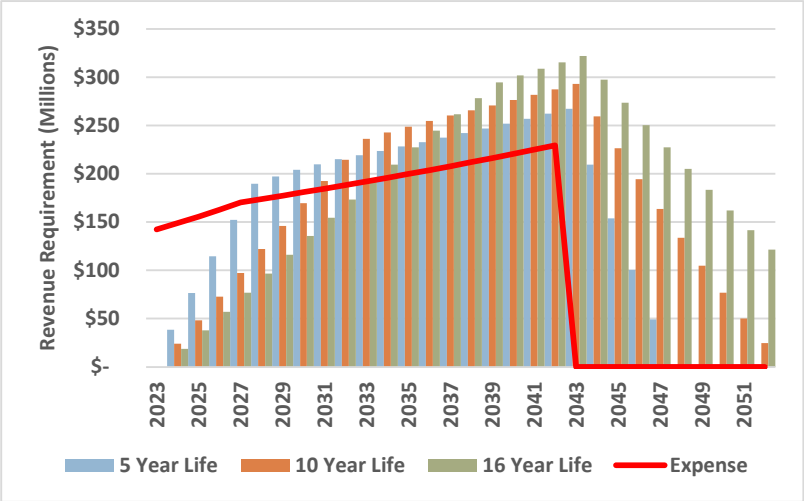

Figure 5C: Revuene Requirment Impact of Amortization Term (Expense Tax Treatment Lower Revenue Requirement)

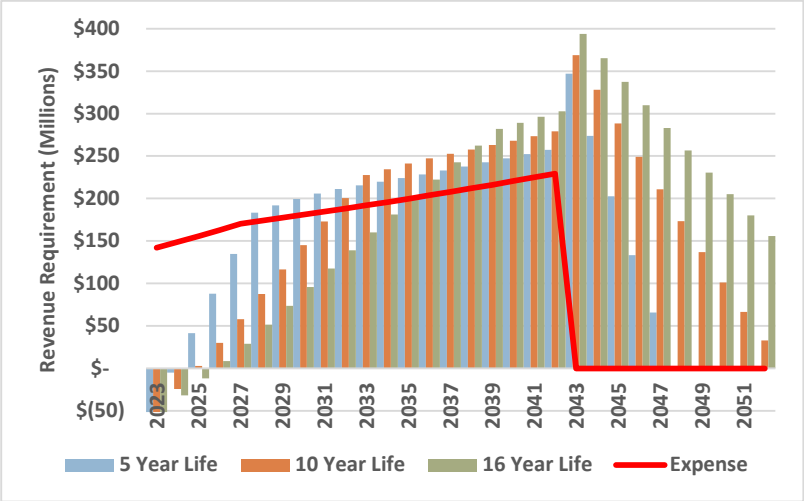

Figure 5D: Revenue Requirement Impact of Amortization Term (Expense Tax Treatment; Lower Regulatory Asset)

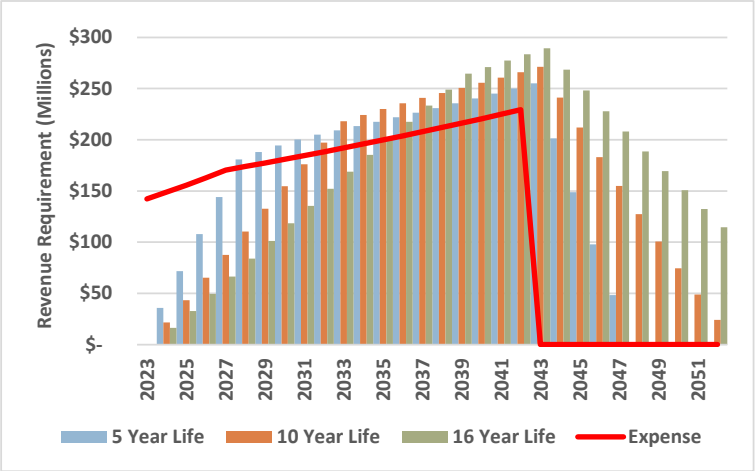

Figure 6A: Asset Balances Impact of Amortization Term (Original/No Taxes)

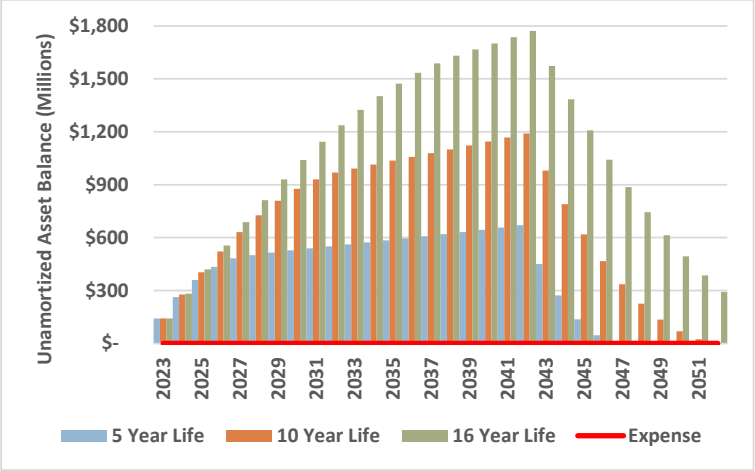

Figure 6B: Asset Balances Impact of Amortization Term (Capital Tax Treatment)

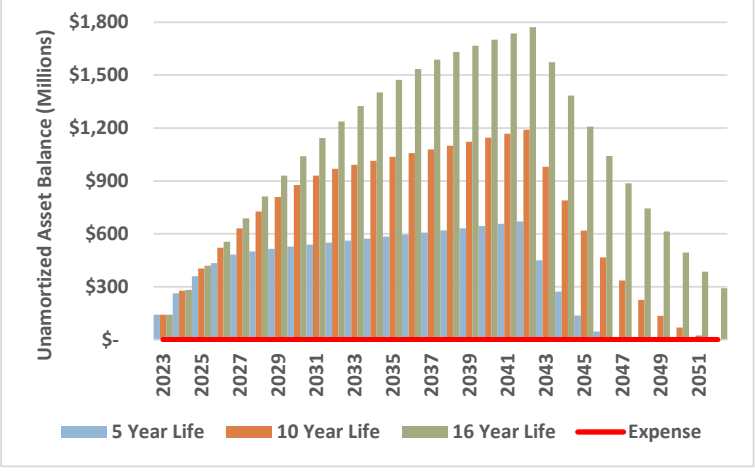

Figure 6C: Asset Balances Impact of Amortization Term (Expense Tax Treatment; Lower Revenue Requirement)

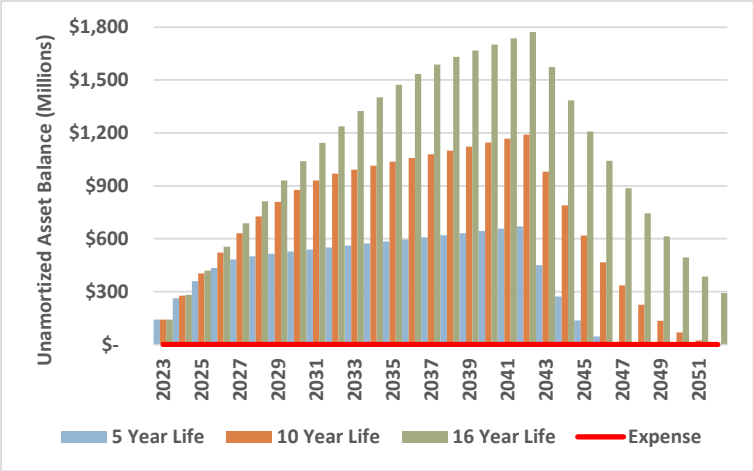

Figure 6D: Asset Balances Impact of Amortization Term (Expense Tax Treatment; Lower Regulatory Asset)

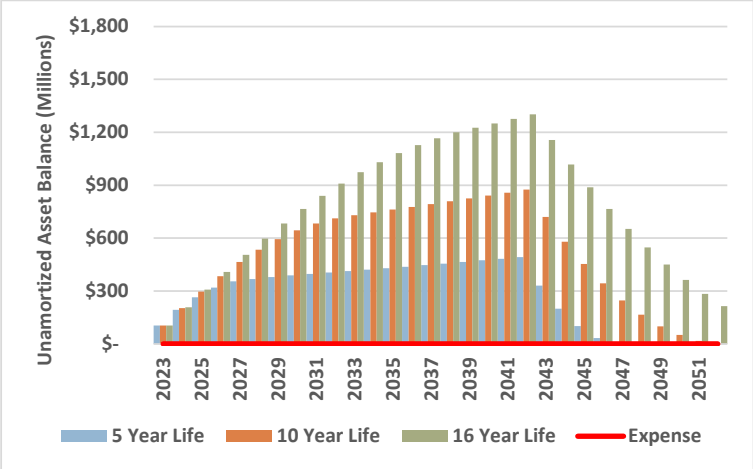

Exhibit I.7.EGI.SEC.4

[Ex. Reply, p. 12] Please explain why the witness assumes 3% real growth for the first five years, and no real growth after that. If that is a recommendation of the witness, please provide the basis of that recommendation. If it is not, please re-do Figures 3 to 6, including the tax impacts, and assuming the continuation of Enbridge's proposed 3% real growth.

Response:

Growing portfolio costs at inflation after 2027 is not a recommendation for Enbridge. It is simply an assumption that allows an illustration of the dynamics of amortization.

I have not performed the calculations described. I provided copies of the spreadsheet tools used in my analyses in response to Exhibit I.7.EGI.STAFF.2. School Energy Coalition may perform this scenario on its own through the use of these tools.

Exhibit I.7.EGI.SEC.5

[Ex. Reply, p. 19 et. seq.] Please confirm that, in the witness's experience, the primary benefit of amortization of DSM current expenditures is lower near term revenue requirements, offset by higher revenue requirements in later years. Please explain how, where a DSM plan has consistent or rising real spending, amortization matches the annual costs of DSM in rates to the annual benefits of DSM, and avoids intergenerational equity. Please discuss how choice of amortization period would impact intergenerational equity.

Response:

In my experience, the amortization of DSM current expenditures, which leads to lower near term revenue requirements, offset by higher revenue requirements in later years, provides the following benefits. The approach:

- Allows jurisdictions that set DSM investment guidelines within constraints on rate increases to fund higher DSM budgets, while maintaining the rate constraint (in the near term). These increased DSM budgets in turn lead to increased net benefits in the form of lower NPV TRC costs, lower NPV revenue requirements (i.e., PAC costs), and lower greenhouse gas emissions, among others.
- Ensures a more gradual increase in rates from new or expanded portfolios.
- Increases generational equity by better aligning the payment of DSM expenditures with the benefits that customers receive from those expenditures. As I stated on page 15 of my report, regarding those jurisdictions that set the amortization term to the weighted average measure life (WAML) of the DSM

> portfolio: “Applying the WAML has the advantage of exactly matching the recovery term to the duration over which the measures save energy. This alignment helps ensure that the customers paying for DSM are also those receiving the associated benefits, in the form of direct energy savings for participants and utility system benefits for all customers.” While setting the amortization term to the WAML does the best job of ensuring intergenerational equity, applying any amortization term improves intergenerational equity compared to expense treatment.

In my experience, the amortization of DSM current expenditures also has some drawbacks, which include:

- Higher revenue requirements in later years.
- Higher amortized asset balances associated with regulatory assets, which can cause concerns for investors and rating agencies.

Exhibit I.7.EGI.SEC.6

[Ex. Reply, p. 23-24] Please confirm the witness’s view that amortization of DSM current expenditures is best undertaken as part of a program to increase DSM spending over time. Please discuss the advantages and disadvantages of using amortization for this purpose.

Response:

As I stated in my response above to Exhibit I.7.EGI.SEC.5, amortization can provide three advantages compared to expense treatment: allowing higher DSM budgets while maintaining a cap on rate increases; ensuring more gradual rate increases from new and expanded portfolios; and increasing intergenerational equity. While the first two benefits are associated with increasing DSM spending, the benefit of improved intergenerational equity occurs even without increased spending.

Exhibit I.7.EGI.SEC.7

[Ex. Reply, p. 25] Please discuss the advantages and disadvantages of amortizing incentive payments to customers (i.e. investments in their efficiency measures) and expensing all other program costs, in a manner similar to the distinction between capital and operating costs for the traditional pipes business.

Response:

Please see response to Exhibit I.7.EGI.LPMA.20.

Exhibit I.7.EGI.SEC.8

[Ex. Reply, p. 31] Please provide the witness's view on whether it would be appropriate for the OEB, or any regulator, to reduce or eliminate the collection of amortized costs of DSM in rates, including requiring those costs to be stranded and a shareholder responsibility, if future evaluation and measurement of DSM results demonstrates that the actual DSM benefits were materially less than claimed at the time the programs were implemented. Please specifically comment on the extent, if any, to which it is appropriate for the utility delivering the DSM program to bear some or all of the risk for the forecast results to actually occur.

Response:

As I discuss in Exhibit 1.5.EGI.ED.2, a key objective of DSM performance incentive mechanisms is to make DSM the preferred investment opportunity and management priority of utility managers. It is my understanding that the OEB, by implementing a performance incentive mechanism in Ontario, wishes to provide that direction to Enbridge management. If the OEB were to put a policy in place consistent with your hypothetical, in my opinion, it would instead give Enbridge management the direction that DSM is a risky, unmanageable activity, especially compared to most other investment and management activities within Enbridge that do not carry this long term, retroactive risk. If that were to occur, Enbridge's management incentives would not be aligned with my understanding of OEB's policy objectives.

It is also unclear to me what is meant by the term "materially less". Enbridge's DSM programs are highly cost effective. For example, Table 11 on EB-2021-0002 Exhibit D, Tab 1, Schedule 2, Page 13 of 16 shows forecast TRC Plus net benefits for the 2023 portfolio of over $372 million, delivered by a (utility only) budget of $142 million. Future benefits could show a substantial decline and yet still remain cost effective.

Exhibit I.7.EGI.SEC.9

[Ex. Reply, p. 31] Please provide the witness's view on whether the increasing balance of unamortized DSM costs could result in customers, already responding to increasing costs of carbon and other cost pressures associated with natural gas use, to be more likely to cease use of natural gas to avoid any future obligation to pay for unamortized capital, including unamortized DSM (i.e. the so-called "death spiral").

Response:

Customers would consider a range of factors in determining whether they wish to cease natural gas use, including costs and environmental performance of alternative fuels; costs and transaction costs of changing out gas equipment; government and utility policies; and expectation of future costs and policies. Increasing balance of unamortized DSM costs might be one consideration in this determination. My view is that it would be a minor consideration relative to the other factors.

Exhibit I.7.EGI.SEC.10

[Ex. Reply, p. 31] Please discuss whether one of the effects of amortizing DSM expenditures is to lock in continuation of DSM programs, since the result of terminating those programs is to require customers to bear in rates costs for past programs with no new benefits.

Response:

I don't believe that DSM programs are ever "locked in". Future OEB panels will need to make the ongoing determinations regarding the scale and scope of Enbridge's DSM portfolio. Ongoing obligations of customers to repay Enbridge investors for past DSM investments would be a consideration in those determinations.

Exhibit I.8.EGI.SEC.11

[Ex. Reply, p. 10, 28] Please confirm that the OEB does not allow Enbridge to charge any profit margin based on DSM expenditures, but does provide a separate incentive mechanism allowing profit incentives that are based on performance but are unrelated to amounts expended.
Response:

The OEB provides Enbridge an incentive mechanism that allows profit incentives that are based on performance. This has the effect of allowing Enbridge to charge customers for earnings/profit in addition to the costs associated with delivering the DSM portfolio. This creates a business model that is "like a markup on expenditures", i.e., it is mathematically identical to business models involving net margins that apply to many businesses in service industries.

Exhibit I.8.EGI.SEC.12

[Ex. Reply, p. 28] Please explain the accounting rule that provides an earned incentive that is collected through regulator-sanctioned amortization is not recognized as income in the year earned, just as any other receivable.

Response:

Enbridge Gas Response:

Enbridge Gas's DSM incentive revenue is currently recognized as a Type A Alternative Revenue Program, as per USGAAP ASC 980 (ASC 980-605-25-4). Type A programs are defined as rate normalization plans that adjust billings for the effects of weather abnormalities, broad external factors, or compensate the regulated utility for demand-side management initiatives. In order to recognize revenue under a Type A Alternative Revenue Program prior to billing and collecting amounts from customers, all the following criteria need to be met:

a) The program is established by an order from the utility's regulatory commission that allows for automatic adjustment of future rates. Verification of the adjustment to future rates by the regulator would not preclude the adjustment from being considered automatic.
b) The amount of additional revenues for the period is objectively determinable and is probable of recovery.
c) The additional revenues will be collected within 24 months following the end of the annual period in which they are recognized.

In accordance with criteria c) noted above, if the collection of an earned DSM incentive is expected to extend beyond 24 months following the end of the period in which it is earned, as a result of recovery through an amortization mechanism, it could impact the timing of when the incentive is recognized as revenue. However, a definitive assessment of the accounting impacts of any amortization mechanism would need to occur once all the parameters of the mechanism have been defined and approved.

Exhibit I.8.EGI.SEC.13

[Ex. Reply, p. 30] Please provide the basis on which the witness concludes that Enbridge is not obligated to deliver DSM programs, and they are thus "voluntary". Please discuss the extent to which this conclusion has affected the other conclusions of the witness in the report.

Response:

In the 2015-2020 DSM Framework, the OEB stated: “Natural gas utilities are not licensed by the Board. They operate under franchise agreements with the municipalities they serve. Therefore, there is no licence condition mandating that the gas utilities undertake DSM activities. These activities therefore remain a voluntary business function.”

It is also my understanding that EPCOR Natural Gas, which is regulated by the OEB, does not offer DSM programs.

Exhibit I.8.EGI.SEC.14

[Ex. Reply, p. 39] Please confirm that the witness’s support of the 50% lower and 150% upper bounds includes an assumption that the risk and effort associated with achieving 50% is linearly the same as achieving 150% of target. Please provide evidence or analysis demonstrating that the risk and effort associated with achieving 150% of target is three times the risk and effort associated with achieving 50% of target. Please discuss the witness’s view of the alternate proposition, i.e. that as performance increases relative to target, generally speaking each increment of performance becomes more difficult to achieve.

Response:

The choice of 50% lower and 150% upper bounds does not include an assumption that the risk and effort is linearly the same. The bounds are simply an approach for assigning incentive payments as a function of performance.

Exhibit I.8.EGI.SEC.15

[Ex. Reply, p. 45] Please explain the witness’s basis for characterizing the Net Benefit component as “a good faith response” to input during the Mid-Term Review.

Response:

See response to Exhibit I.8.EGI.FRPO.4.

Exhibit I.8.EGI.SEC.16

[Ex. Reply, p.47] Please comment on Enbridge's proposal to use gross savings for the GHG incentive rather than net savings.

Response:

See discussion in Section 3.4.1.2 in my report.

Exhibit I.8.EGI.SEC.17

[Ex. Reply, p. 49] Please comment on the appropriateness of capping shareholder incentives based on an empirically-determined measure of reduced natural gas consumption, for example normalized for weather, GDP, or other similar external factors. Please advise to what extent, if any, it is reasonable for the regulator (and through the regulator, the customers) to require top-down confirmation that natural gas use is declining as a result of customer-funded DSM programs.

Response:

Please see my discussion in Section 3.4.1.4 of my report.

Exhibit I.8.EGI.SEC.18

[Ex. Reply, p. 50] Please explain why, if the shareholder incentive metric is shifted from lifecycle savings (the basis of the current program design) to annual savings, Enbridge will not be incented to redesign its program offerings to maximize annual savings, including at the expense of lifecycle savings. Please advise how the regulator should ensure that this type of redesign to the detriment of customers does not occur.

Response:

Please see response to Exhibit I.9.EGI.GEC.14.

Exhibit I.8.EGI.SEC.19

[Ex. Reply, p. 51] Please explain why the witness believes that adjusting baselines to fit the reasonable counterfactual presents an evaluation risk to Enbridge. Please explain why customers should compensate Enbridge for savings that assume the present situation will continue without change for decades into the future, or why customers should compensate Enbridge for savings calculated by Enbridge, rather than calculated by independent evaluators.

Response:

I did not propose that customers should "compensate Enbridge for savings that assume the present situation will continue without change for decades into the future" or that savings should be calculated by assuming no change to underlying equipment efficiency for measures like building insulation. I instead proposed that policies be put in place to ensure that the assumptions and calculations used to set Enbridge savings targets be the same as those used to measure performance against those targets.

Exhibit I.8.EGI.SEC.20

[Ex. Reply, p. 52] Please provide the basis on which the witness claims that "annual savings are basically collinear with lifecycle savings and so also correlate well with long-term objectives like GHG reductions and net benefits", including references to the academic literature if available. Please provide a numerical comparison of annual savings to TRC plus with respect to a representative measure, and provide all backup calculations in Excel format.

Response:

See my discussion in Section 3.4.3.1 regarding my opinion that, for Enbridge's proposed portfolio, annual savings are basically colinear with lifecycle savings. Because lifecycle savings create the vast majority of benefits from the TRC and PAC perspectives, and because lifecycle savings are colinear with GHG reductions from natural gas combustion, for Enbridge's portfolio, an annual savings metric correlates well with these long-term objectives. I have not developed a numerical comparison in Excel format.

Exhibit I.8.EGI.SEC.21

[Ex. Reply, p. 54] Please advise whether the witness believes that the net-to-gross results are mostly within Enbridge's control through program design. Please explain why ratepayers should bear entirely the risk that actual net to gross declines over the DSM plan.

Response:

See my discussion in Section 3.4.5.1 of my report.

Exhibit I.8.EGI.SEC.22

[Ex. Reply, p. 56] Please explain how the 15% would work if there is no annual target to meet before the 15% overspend can be accessed.

Response:

Please see response to Exhibit I.8.EGI.STAFF.24 b).

Exhibit I.8.EGI.SEC.23

[Ex. Reply, p. 56] Please provide a list of jurisdictions in which utilities are paid shareholder incentives based on their own unverified performance claims.

Response:

I don't know of any specific utilities who are paid shareholder incentives that employ this approach. But I agree with Optimal's suggestion. As they state on page iv of their report: "Savings verifications could still happen annually, especially for programs with uncertain estimates, but could also be reduced for well-established programs, particularly where the verification process does not entail significant site visits." This seems like a reasonable approach for reducing the costs and burdens of evaluation.

If the OEB has concerns about this approach, they could establish additional guard rails to provide greater quality control regarding utility verification procedures. For example, the evaluator could audit a random sample of Enbridge's verification calculations.

Exhibit I.8.EGI.SEC.24

[Ex. Reply, Appendix A] Please provide a list of consulting engagements of Fast Tracks related to regulated energy matters, in which Mr. Weaver was involved, from 2000 to 2017.

Response:

See my CV, which was provided along with the submission of my report in this proceeding.