EB-2022-0200

Enbridge Gas 2024 Rebasing

TFG Compendium for Panel #15 – EGI Depreciation Expense / Site Restoration Costs

ENBRIDGE GAS INC.

Answer to Interrogatory from
Ontario Greenhouse Vegetable Growers (OGVG)

Interrogatory

Reference:

Exhibit 4, Tab 5, Schedule 1, Attachment 1, Page 19
Exhibit 1 Tab 10 Schedule 4 Page 18

Question(s):

Concentric has attached Appendix 1 that shows the depreciation rate calculations using the same recommended depreciation parameters as the current study, with the introduction of a 2050 EPH [economic planning horizon]. While Concentric is not recommending this move at this time, the calculations are provided as an example of what would be expected if a 2050 EPH were approved.

EGI estimates the impact of the theoretical EPH relative to the applied for depreciation expense of $921.4M to be an additional $282M in 2024.

a) Please describe how the level of depreciation expense would be impacted in the years following 2024 assuming an EPH of 2050 were to remain in place. If feasible, please estimate the annual depreciation expense using the 2050 EPH for the 2024 to 2028 period based on EGI's proposed capital spending as set out in Exhibit 2 Tab 6 Schedule 1 Page 36 (as updated).

b) Please break out the estimated $282M impact of the theoretical EPH into storage, transmission, and Distribution related impacts.

c) Please comment on the feasibility of, instead of implementing an EPH, increasing EGI's depreciation rates by a fixed amount, either across all assets or across specific asset types (for example, a scenario where the depreciation rates applied to all distribution assets were to be increased by 10%) as a measure to mitigate against the risk of future stranded asset value. Please describe the impact such increases would have (for example, does a 10% increase in a depreciation rate correlate to a linear 10% increase in depreciation cost for the affected asset class?).

Response:

a) The impact of applying rates with a 2050 EPH has been updated to approximately $290 million, please see Exhibit 1, Tab 10, Schedule 4, page 18, updated March 8, 2023. Please see Table 1 for the estimated depreciation expense for the 2024 to 2026 forecast. Enbridge Gas is unable to provide the estimate including rate base additions from 2027 to 2028 due to the forecasting horizon used for planning purposes. The forecasts for 2025 and 2026 do not include the changes to depreciation expense reflected in the March 8, 2023 update. Please see response at Exhibit I.1.2-SEC-6.

Table 1
Estimated Depreciation Expense

$ Billions	2024	2025	2026
EGI Depreciation – 2050 EPH	$1.2	$1.3	$1.3

b) Please see the breakdown below for the estimated impacts of the updated $290 million, by the categories of storage, transmission and distribution assets by applying the 2050 EPH rates:

- Distribution impact is estimated at $232 million
- Transmission impact is estimated at $48 million
- Storage impact is estimated at $10 million

c) The following response was provided by Concentric Energy Advisors, Inc.:

Depreciation rates are primarily driven by a number of factors – the average service life estimate, the Iowa curve chosen, the net salvage estimate, the age of the assets and the depreciation procedure used. There is not the ability within accepted depreciation methods to simply increase rates by a set percentage. Between the time of the depreciation study and the expected end of life due to economic factors, there is the expectation that assets will continue to retire due to other forces of retirement – roads moves will continue to occur, as will preventative replacement of mains and services, for example. Changing any of the depreciation parameters (average service life, Iowa curve, or net salvage estimates) will impact the ability to match the expected lives of these interim retirements with the life of the account as a whole.

Due to the above, the only ways to impact the depreciation rate without changing the depreciation parameters are to change the depreciation procedure (Average Life Group versus Equal Life Group for example) or to include the use of an economic planning horizon. The choice of Equal Life Group as a depreciation method allows for the same total depreciation expense to be collected over the life of the assets as

under Average Life Group while also ensuring that the depreciation expense is properly collected from the tollpayers using the assets today. However, the use of an economic planning horizon remains the best solution to ensure all assets are properly recovered over the useful life of the account.

If Enbridge Gas were to institute a broad increase in depreciation expense of 10%, there are a couple of ways that this increase could be calculated. For example, it would be possible to decrease the average service life estimates to all accounts by 10%. This would not have a linear relationship with the final depreciation rates as the position of the calculated accumulated depreciation accounts would impact the total depreciation rates. If the OEB were to simply order an increase in the depreciation rates of 10% for each account, that would have a linear impact on the total depreciation expense collected. If the OEB were to order this increase in depreciation expense, Concentric would recommend the use of a rate rider or other mechanism to recover this cost with the collected amount going into the accumulated depreciation reserve. This would allow the correct interim retirements and depreciation expense to be collected while also increasing the total depreciation expense. However, Concentric notes that the best method of collecting for uncertainty in the future is the use of an economic planning horizon.

DEPRECIATION EXPENSE

DANIELLE DREVENY, MANAGER CAPITAL FINANCIAL PLANNING & ANALYSIS

1. The purpose of this evidence is to request OEB approval of Enbridge Gas's depreciation rates and depreciation expense for the 2024 Test Year. This evidence provides details of depreciation and amortization by asset group (storage, transmission, distribution and general) and plant account. The depreciation rates set out in this evidence are derived through a depreciation study completed by Concentric Advisors, ULC. (Concentric) for Enbridge Gas (Enbridge Gas Depreciation Study), which is provided at Attachment 1. Concentric has provided recommendations on depreciation and net salvage methodologies as well as asset useful lives. Enbridge Gas also requests approval for the alignment of 1) asset groups and plant accounts for the EGD and Union rate zones, 2) depreciation methodologies and 3) net salvage approaches for site restoration costs (SRC), all of which are included in the Enbridge Gas Depreciation Study and resulting depreciation rates. Finally, the evidence addresses the consideration of the potential impact of energy transition on the expected useful lives of Enbridge Gas's assets.

2. This evidence also addresses the OEB directive from EGD's 2014 to 2018 IRM Decision[1] to examine the issue of whether a segregated fund for SRC should be established and to undertake additional work regarding the discount rate used in the determination of SRC.

[1] EB-2012-0459, OEB Decision with Reasons, July 17, 2014, pp.56-58.

unregulated storage. Enbridge Gas engaged Ernst & Young LLP (EY) to assist management in its determination of the Company's harmonized unregulated storage allocation methodology. The aligned methodology for Enbridge Gas adopts the Union methodology of allocating general plant assets to unregulated storage. Further details, including impacts to 2024 Test Year depreciation expense are provided at Exhibit 1, Tab 13, Schedule 2.

3.5. Summary of Impacts of Harmonization of Depreciation Policies at Rebasing

33. Enbridge Gas is proposing a depreciation expense of $892 million for the 2024 Test Year. A comparison of the proposed depreciation rates and the provision for the 2024 Test Year is provided at Attachment 2. /u

4. Energy Transition Considerations

34. In developing the proposed depreciation rates, Enbridge Gas and Concentric considered the introduction of an Economic Planning Horizon (EPH) or truncation date to reflect the potential impact that energy transition could have on the economic life of Enbridge Gas's system.

35. Enbridge Gas and Concentric concluded that introducing an EPH is not appropriate at this time. As provided at Exhibit 1, Tab 10, Schedule 5, Section 3, there remains significant uncertainty around the impacts that energy transition could potentially have on Enbridge Gas's system. However, future depreciation studies may warrant the introduction of a regional or system wide EPH, as the energy transition unfolds and more information on the future utilization of Enbridge Gas's assets becomes available.

2021 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUAL RATES
APPLICABLE TO NATURAL GAS PLANT IN SERVICE

Prepared for Enbridge Gas Inc.
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The ELG procedure was specifically developed for use by rate regulated companies. The ELG procedure was popularized in a publication of the Iowa State University entitled "Depreciation of Group Properties – Bulletin 155" by Robley Winfrey in 1942. At the time of the publication of Bulletin 155, what is currently known as the Equal Life Group Procedure was at that time published as the "Unit Summation" Procedure. Initially, the use of the ELG procedure was somewhat limited because of the extremely large number of calculations that are required when this procedure is used. However, in the 1970's and more so in the 1980's this method became more popular due to the increased use of computerized software, rendering the number of calculations to be a non-issue. At that time, many regulated telephone companies adopted the use of the ELG procedure, including virtually all of the regulated telephone companies that were regulated by the Canadian Radio and Telecommunications Commission (CRTC). In the late 1980's many other utility sectors began to adopt the use of the ELG procedure throughout North America.

The use of the ELG Procedure enhances the generational equity to all toll payers when all relevant costs are considered. Furthermore, use of the ELG Procedure provides ratepayers an enhanced matching of the depreciation expense component of the revenue requirement to the consumption of the service value of assets providing utility service. As indicated by Robley Winfrey in Bulletin 155, "the unit summation procedure of the present worth method is shown to be the only mathematically correct method".

This study calculates the annual and accrued depreciation using the Straight-Line method and ELG procedure for most accounts. For certain general plant accounts, the annual and accrued depreciation are based on amortization accounting. Both types of calculations were based on original cost, attained ages and estimates of service lives. Variances between the calculated accrued depreciation and the book accumulated depreciation are amortized over the composite remaining life of each account.

Continued monitoring and maintenance of the accumulated depreciation reserve at the account level is recommended. Concentric has determined an amortization amount to adjust the present variance with the calculated accrued depreciation (theoretical reserve) over the composite remaining life of each account.

3.2 Economic Planning Horizon and Decarbonization

3.2.1 Concept of Economic Planning Horizon

The life of long-lived assets such as those comprising EGI's system can be restricted not only by physical forces of retirement such as wear and tear and physical deterioration, but also and to a much greater extent, by economic forces of retirement. Specifically, the changing North American marketplace for natural gas demand and the rapidly emerging trend of decarbonization legislation may have a significant impact on the estimated service lives of the EGI system.

There are several factors affecting the economic viability of the EGI system. Long life assets, such as natural gas storage, transmission and distribution systems, are subject to a number of different forces of economic retirement, including changes in legislation constricting the use of carbon-based fuels.

The concept referred to with the terms "economic planning horizon", "economic life", or "truncation date" (each of which have similar meaning within depreciation literature) is one of the parameters

that can be used to set depreciation rates that accurately reflect the annual consumption in service value. Appropriate depreciation rates also help to ensure that both long term intergenerational equity among customers and a reasonable opportunity for the recovery of investment are achievable.

The pipeline system will experience both interim and final retirement activity. Interim or ongoing retirements represent those retirements described by the interim survivor curve, which is commonly referred to as the Iowa curve. Terminal or final retirements represent those retirements described by the truncation of the interim survivor curve at the truncation date (or economic life). Interim retirements include retirements related to replacements that are primarily caused by wear and tear, deterioration, and technological obsolescence, i.e. the replacement of an item of equipment with a newer item with greater functionality. Terminal retirements include retirements related to the final abandonment of major components of the system caused by the economic obsolescence of the system. Such retirements are not expected to occur all at once. Rather, it is anticipated that there will be a relatively restricted period during which these major retirements will occur. In order to readily perform the mathematical calculations of average and remaining life, the timing of the terminal and final retirements is represented by a single point, the economic planning horizon (or life span date).

3.2.2 Decarbonization

On June 8th, 2016, the Office of the Ontario Premier Kathleen Wynne released its plan for a "low-carbon future" in its "Climate Change Action Plan". The action plan outlined Ontario's plan to begin phasing out natural gas for heating by providing incentives to retrofit buildings. This plan was replaced on November 29, 2018 with the Made-in-Ontario Environment Plan released by Premier Doug Ford. The Made-in-Ontario Environment Plan commits to reducing greenhouse gas emissions to 30 percent below 2005 levels by 2030.

EGI has responded to the Made-in-Ontario-Plan with a number of low carbon strategies, including a pilot program to test the blending of hydrogen, a voluntary RNG program, and the filing of a new DSM 2022-2027 Plan. The pilot program will provide EGI with a better understanding of the future use of hydrogen within the gas distribution system. These strategies will enable EGI to better plan for a lower carbon future.

In addition to the Made-in-Ontario Environment Plan, the Canadian federal government has passed a number of acts and regulations intended to bring Canada in line with Paris Accord. Prime Minister Justin Trudeau signed the Canadian Net-Zero Emissions Accountability Act on June 30, 2021. This act sets the goal of 2030 greenhouse gas emissions being 40-45 percent below 2005 levels by 2030. Further, there is the requirement that greenhouse gas emission goals be set for 2035, 2040, and 2045 at least ten years in advance. Ultimately, the goal is for Canada to attain net-zero emissions by 2050. It is noted that both the cities of Hamilton and Toronto have made net-zero commitments independent of federal or provincial mandates.

The federal government notes that the movement to hydrogen may be an important step in order to achieve a net-zero emissions target by 2050. The federal government has created a fund intended to increase production of low-carbon fuels, including hydrogen and renewable natural gas. The use of

hydrogen and renewable natural gas may have a significant impact on the business of EGI in the foreseeable future.

3.2.3 Economic Planning Horizon Recommendations

While there is strong evidence that the future of natural gas in Ontario may be impacted by climate change legislation, it is still unknown to what extent this change will impact EGI's system. The introduction of hydrogen may have a life lengthening impact on the system if it is determined that hydrogen is a sustainable replacement fuel. The same may be true of renewable natural gas or other low carbon fuels. However, it may also be true that the move from carbon based fuels necessitates a greater electrification, in which case there may be a life shortening impact on some or all of the EGI system.

The future growth and retirement programs of the EGI system may be significantly different than the retirement patterns witnessed in the past. While future retirements that are caused by physical forces of retirement such as wear and tear and changes in technology of the assets will continue, it is reasonable to anticipate that the utilization of large groups of assets may change due to the implementation of climate change legislation. Consistent with the reduction in the utilization of the assets, it could be assumed that large scale retirement of assets may be required in the periods between now and 2050.

Common depreciation practice is to deal with the anticipated large scale retirements through the introduction of an economic planning horizon within the depreciation rate calculations. However, at this time the future impacts of the relevant climate change legislation have not been sufficiently studied, nor have specific programs been put into place that would provide indications of the changes in the utilization levels. Concentric views that additional study of the changes is required before the introduction of a Life Span date for the EGI system into the depreciation rate calculations. While such an introduction will cause a significant increase in the depreciation rate, Concentric notes that future depreciation studies of the EGI system may require the introduction of an EPH into the depreciation rate calculations. Concentric has attached Appendix 1 that shows the depreciation rate calculations using the same recommended depreciation parameters as the current study, with the introduction of a 2050 EPH. While Concentric is not recommending this move at this time, the calculations are provided as an example of what would be expected if a 2050 EPH were approved.

3.3 Estimation of Survivor Curves and Net Salvage

3.3.1 Survivor Curves

The use of an average service life for a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve plotting the number of units which survive at successive ages using the retirement rate method of analysis.

The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as Iowa type curves. The Iowa curves *"...were sorted into three groups according to whether the mode was to the left, approximately coincident with, or to the right of the average-life ordinate. The curves in each of these three groups*

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that's a very good reason to not put a number on the record that doesn't have any credibility.

MR. POCH: Mr. O'Leary, your witness has not said it cannot be done. He said very clearly it could be done. He said he wouldn't want to rely on that number, excuse me, but he has clearly said they made a judgment call. They made a judgment call not to mitigate to that extent.

They're making a judgment call as between what the numbers for the last five years show, and what they think is a reasonable place to go for now, while waiting for more information in the future.

The point of this hearing is -- and having your witnesses here and in the hearing will be to say does that judgment seem reasonable?

We want to just have a quantification so we can have a basis for discussion. I don't think that's an unreasonable request.

MR. O'LEARY: I think we've been down this path now for the last ten minutes and our position is that we will not respond.

MR. POCH: Thank you. Moving on. I'd like to -- all the rest of my questions are concerned with exhibit I.1.10-GEC-66.

And this will be (inaudible) Concentric witnesses. And just for the benefit of people watching, you were asked about, in question -- part (b), for example, if assets are not expected to be retired but expected to serve significantly fewer customers, we asked, isn't there an

intergenerational concern with depreciation.

And you were -- I you responded in part (b), if we could scroll down to the response that you -- if I can paraphrase, you agree that there can be a -- such a concern and you go on to say:

> "Where demand on gas distribution system decline", in that circumstance, "generational fairness would indicate that the remaining net book value of the system to be recovered from the latter customers would be consistent with the system that had largely consumed by earlier users when the system was operating."

I had a little trouble with the grammar there. I wanted to make sure I understand. Am I interpreting it correctly by that you are saying that ideally, latter customers shouldn't be disproportionately paying for a system largely benefitting the earlier customers? Disproportionately?

MR. KENNEDY: Correct. Mr. Kennedy. If I could --

MR. POCH: Go ahead.

MR. KENNEDY: No, I'm just -- putting my green flag up so the court reporter knew who was responding.

MR. POCH: Okay, and you are agreeing, I take it.

Now, the question posited that perhaps the EPH as opposed to the average approach would -- as opposed to the equal life group or average life group, for that matter, the EPH approach of where there would be truncation, you were asked to describe why it fails to deal with this

concern, or you explain why it fails to deal with this concern. And if I understand it correctly that's because there would still be assets in service, some of the assets in service, and customers at that time would still be enjoying that benefit. So that would create, in fairness, in effect, in the other direction; correct?

MR. KENNEDY: Correct.

MR. POCH: All right. And you then gave an example how explaining how the ELG approach helps somewhat, compared to the average life approach because it recognizes some of the -- some subset of assets is going to retire earlier. And we saw that example discussed earlier with the thousand dollars in five years and a thousand that lasts 15 years. And in that circumstance, obviously, it eases the situation.

But Enbridge's projections, which you may or may not be aware of in this case, are that while the assets will actually all remain in service, although they will be used a lot less in terms of the BTUs that get transported through them. Are you aware of that?

MR. KENNEDY: I understand that to be the case, yes.

MR. POCH: All right. And so I you mention in passing, then, in part (d) that there's -- I think it was in part (d) -- you go on to mention that this other approach, the unit of production-based depreciation and you are aware of that being reconsidered in some circles, and you've not recommended it, but it might be something you'd look at in future hearings.

So I want to just bring this to an understanding, if we can.

First of all, the equal life group approach isn't going to address this issue of all the assets remaining in service but being used less, correct?

MR. KENNEDY: Actually, it does, sir, to some extent. It would -- it structures -- the structure of the equal life group is it would depreciate more investment earlier in the life of an account, because it recognizes there will be some retirements of those accounts that have a shorter life.

So largely my view is the use of the equal life group as a good first step towards this trying to reconcile the question around stranded costs, without being as aggressive as, for example, an ECHOP (ph), a planning horizon.

MR. POCH: No, I understand --

MR. KENNEDY: I was trying to put that in context a little bit, sir. So it does have some mitigation impact on stranded costs because it assumes that the assets aren't -- more the service value of the asset is consumed, not necessarily the whole asset. So I want to be clear with that.

MR. POCH: I understand what you're saying about stranded assets. That's when some subgroup is actually stops being used.

MR. KENNEDY: Or used to a lesser extent. It also deals that.

MR. POCH: All right, so if there is simply less BTUs

going throughout pipes the ELG approach will, in fact, depreciate those factors into rates?

MR. KENNEDY: Yes.

MR. POCH: Now, sir, can you perhaps explain what's the distinction between that and the unit of production methodology?

MR. KENNEDY: Actually they both do surprisingly a very similar structure.

Unit of production says, for example, if a storage field can hold X number of decajoules of gas at any point in time, and over its life, if it's a 60-year life, it has X amount of terajoules of gas capacity, you would appreciate the investment in that field through the annual throughput through that field.

So in other words, you have an ultimate capacity and you take the annual usage of that total capacity and that becomes your depreciation expense.

So in that manner, if in fact this theory [audio dropout] throughput through, we would include that in the enumerator of that equation, in other words, those fewer numbers of potential, and then we would then take the average throughput -- or the annual throughput, I'm sorry, over that reduced numerator, and so it is a bit of a refinement as we have traditionally known the unit of production.

And frankly, I have been in conversations with the number of other depreciation consultants, and we're investigating amongst our own group of, does it make sense,

and it was presented at the Society of Depreciation Professionals conference last year. It was something that is maybe emerging as a solution to this in a softer manner than, perhaps, some economic planning horizon.

As for a number of times we've seen the Equal Life Group being presented. So, sir, I think I want to be really clear about my evidence, and I think it is important.

I view the energy transition is still unknown, because the degree and the magnitude, when it's going to occur and how much it's going to occur.

I'm writing testimony right now before the Federal Energy Regulatory Commission about, you know, are we -- is this 2040 realistic dates, is it all the natural gas, how much is hydrogen going to impact that? There are a lot of questions that are being answered.

So at this point in time, my view is the Equal Life Group is a very nice transition mechanism into trying to deal with those questions. It is right irregardless of energy transition. I do believe the Equal Life Group is an appropriate approach, but it is especially right at this point in time among unknown, not to say that when, as I sit here in five years from now, and when we talk again, that we may not be talking more strongly about an EPH if it is known that certain aspects -- for example, it's -- major lines in their entirety are known to go out of service, and we see it on federally-regulated large-diameter transmission pipes. We put EPHs on those facilities. So

they had both -- there's a number of tools that are available for use.

The Equal Life Group, the perhaps unit of production, the use of an economic planning horizon. They are all tools that we can use as a matter of the appropriateness of timing of introducing those tools.

MR. POCH: So let me just ask. You've said a moment ago that you can use the Equal Life Group and to accommodate a situation where part of the distribution infrastructure is being relied on to a lesser extent.

It is still all being used, because gases are going through all those pipes and compressors and what-have-you, but some are putting through less.

And has -- in your study in this hearing, has that -- has that kind of adjustment been made in any case, going forward?

MR. KENNEDY: Not directly, sir, no. I mean, it's in the back of our minds, but not directly in terms of being quantified, absolutely not.

MR. POCH: So the adjustments in this case are simply where some group of those assets, you know it's going to be -- they are going to be retired sooner than -- and then some defined group, than the larger group, and you can quantify that?

MR. KENNEDY: Yes, we can hope to try to quantify that, yes.

MR. POCH: Now, if we went for the unit of production methodology, it just sounds to me, correct me if I'm wrong,

different. That's all I want to clarify.

If Mr. Kennedy says he is going to decline to provide the answer, I'll move on, because we have spent a lot of time on this.

MR. O'LEARY: We are declining. Thanks, Mr. Elson.

MR. ELSON: Mr. Mondrow, I see you are on the screen there.

MR. MONDROW: Thanks, Kent. I'm going to take from you two minutes, maybe less.

MR. NEME: Nori, could you not do the calculation based on the data to get a goalpost, and then provide additional information about which outliers to exclude in order get a more reasonable number? And give an order of magnitude since, that way?

MS. NORI: This is Ms. Nori. That theoretically is possible, but there are 60 accounts here. If we come up with running it from every band or go through the data and look at every possible worst-case scenario, best-case scenario, I'm going to be doing this for days.

So I guess if we're going to take an undertaking, it has to be very, very precise on what you're looking for, and I don't think I can give that to you.

MR. MONDROW: Okay, Kent. I've used your time. I'm not going to debate it any further. Thank you, Ms. Nori.

MR. ELSON: Nor I, Mr. Mondrow. I'll turn on to economic planning horizon, and these are questions again for you, Mr. Kennedy.

Maybe just stepping a bit of a step back, looking at

the bigger picture, my understanding of an economic horizon is focusing on the economic life of an asset versus the physical life of an asset.

MR. KENNEDY: Yes, definitely an economic life is kind of the key -- I can't speak -- key consideration there.

MR. ELSON: And just again to set the scene, my understanding is that mains that are installed over 2024 to 2028 would not be fully depreciated until 2084 to 2088 because they have a 60-year depreciation period.

MR. KENNEDY: And in fact they are, to be totally transparent, that 60 years is an average.

If you look at the maximum life of the curves that we looked for that, it is longer than that, but [audio dropout] goes out further than that 60 years.

MR. ELSON: Yeah, and I'm not asking how long they will last for; I'm saying how long they will be depreciated for, and you picked 60, which is a point on your curve, right?

MR. KENNEDY: Right.

MR. ELSON: Got it. And so an economic planning horizon can be structured in a number of ways, and one of the ways you can do that is with a truncate date; is that right?

MR. KENNEDY: Yes. And probably that's what the economic planning horizon does.

MR. ELSON: And does an economic planning horizon always have to be a truncate date, or can it be something different from a single date, for example, just shortening

the period from 60 to 50 or from 60 to 40?

MR. KENNEDY: It's applied as a truncate date in the models. In other words, it says you take that curve and you stop at a point in time.

The key point is, this is a term I actually developed with the National Energy Board. I call it an economic planning horizon rather than a truncation date, because we are setting that date at a point in time, and it is going to get reviewed in each and every study.

So we have done many studies where we pick a 30-year economic planning horizon and five years we pick another 30-year, which effectively moves that date out, and it's another 30 years.

I often refer to it as driving the car down the highway at night. You only see a certain horizon in front of you with your headlights, but as you move down that road you see more road, and that's the concept behind an economic planning horizon, is that they are reviewed periodically.

MR. ELSON: And because five years in the future, ten years in the future, you'll have more information on those economic risks?

MR. KENNEDY: Exactly. You may see an object in that road that you hadn't seen before that requires to you stop faster, or there may be nothing there and you can continue down that horizon.

MR. ELSON: So in your evidence -- and I'm referring to answer (a) to 4.5-ED-139. You can pull it up or not.

You noted in your evidence at page 19:

> "Consistent with the reduction in the utilization of the assets, it could be assumed that large-scale retirement of assets may be required in the period between now and 2050."

So that's what you said in your evidence, and then you looked at one risk mitigation measure, being a 2050 economic planning horizon, and we had asked you: Well, can you comment on some alternatives? And in your response commenting on some alternatives, you mentioned the Equal Life Group procedure, which is one of the things that Enbridge is proposing, and we're actually looking for your comment on something beyond what's being proposed, something in between what's being proposed.

What's being proposed would be, for example, a 60-year life for pipelines, where they will not be depreciated until the late 2080s and an economic planning horizon which would have them depreciated in the 2050s.

What could you do in the middle there?

MR. KENNEDY: Well, sir, the off-the-top-of-my-head answer is we could pick an economic planning horizon in even 2060 or 2070.

The key is for me, the theory point of view, you need to pin those horizons on something. The Federal Energy Regulatory Commission for decades told us you should pin these horizons on supply forecasts.

They've recently known in a couple of cases, said, no, no, it's based on a demand forecast, so when you start

looking at a demand forecast, you start bringing economics into it.

So while we could run scenarios -- and to be fair, they're not five-minute jobs to run a scenario, but you could run scenarios where, you know, you could say 2060 or 2070.

The problem is they become very subjective unless you pin that to something, so we chose 2050 in this case because that ties to the Paris agreement that our federal government is signed into. It also ties into, as we've looked at clean air legislation throughout North America, that seems to be a pretty common date, and again, it is usually tied back to the Paris agreement, quite frankly, so that we became a date that we could actually put a hat on that that's a reasonable scenario, but the date the calculations could be based on, pick a date kind of thing, just a matter of how do you justify it and how do you ensure that that is a reasonable date to pick.

MR. ELSON: And really, any adjustment that would accelerate depreciation would have an impact that involves mitigating that risk relating to decarbonization, even if it isn't an economic planning horizon pinned to 2050, it could still have that impact or would still have that impact?

MR. KENNEDY: It would, sir. The challenge is, it impacts the longer-life assets much more significantly than shorter-life assets, so for example, we've been doing the economic planning horizon dates for Enbridge as parent,

we've done them for T.C. Energy, Trans (inaudible) Pipeline. Pick a pipeline.

And what we find is once you get beyond about 30 years you start losing the impact of it, because it's applied really only to one account, being your mains. So you lose the impact from your compression accounts and other accounts.

So much beyond 30 to 40 years you start losing the influence of the EPH, but to your point, you know, you could -- they can be round at any point and it applies to all the assets.

It is just that they have a smaller impact the further out you go.

MR. ELSON: So would another middle ground be to apply an EPH or a truncate date, whatever you want to use as the term, just for new pipes going into the ground, as opposed to also the existing pipes?

MR. KENNEDY: That becomes really difficult, just in the modelling, but we would -- what I would suggest is -- yeah, when you start looking at applying it to various vintages, if anything, I would say you go the other way, quite possibly.

If you put yourself in the -- in a scenario where we are sitting here in 2050 talking, and God knows I won't be, but there will be -- you are probably going to say more newer pipes are the ones that have a chance of becoming better service, they are constructed to newer standards, et cetera.

So sometimes you'd think about maybe truncating those older vintages first, although history has shown that those 1950s pipes that went in are really good.

So if anything, what we have done -- and we have put studies together where we've actually truncated some accounts but not others.

For example, we have different truncation dates on compression equipment, on the theory that maybe compressing equipment comes out of service prior to the pipes, or if you could segregate lines, for example, on the TC energy system, we have different truncation dates on different lines.

Now, that all works in great theory for large-diameter transition systems. I'm not sure it works so good for distribution systems, where you can actually start marginalizing and looking through zones if you could apply deferring rates to.

So I think, to answer your question maybe directly, would be there is ways you can use EPHs and apply them. But it becomes very subjective, in terms of (inaudible) you picked and where you picked, so that's why when we thought about putting a scenario in, that 2050 scenario is one that we would view as being a viable and realistic scenario that we can pin to something.

MR. ELSON: And I guess, you know, you can call it subjective or you can call it professional judgment. If someone looks at a 2050 EPH and says, well, that increases the depreciation expense by $290 million, it is a little

bit much, so we'll pick something different and instead have our mains depreciate at 50 or 40 years instead of having that this EPH -- I mean, could you not describe that as being just a different kind of professional judgment?

MR. KENNEDY: Yes. In fact, I know another consulting firm that that's kind of in their approach, and dealt with this question, is, it just shorten lives up.

My view of that is, well, then call it an EPH, call it what it is. But in effect, it's the same thing. So we have seen some scenarios where some pipes -- and I guess maybe more in pipes we see it on coal-fired generation, for example, where you just shorten the life up to next ten years.

Well, effectively that's an EPH, but to your point, yes, you can manage that in terms of picking an end date, whether it's an average service life estimate or an EPH.

MR. ELSON: Mr. Kennedy, you have provided two examples. One was truncating some accounts versus others, liked compressors, versus, pipes, and shortening lives. Are both of those examples from the context of addressing depreciation in the context of decarbonization.

MR. KENNEDY: I think you could structure it that way, sir. Let me be -- I mean, you are shorting the life and whether it's because of -- at that point, whether it is decarbonization or pipe replacement programs or whatever, but you could structure a set of runs like that in the guise of decarbonization.

And again, as I think about this, and I've thought

about decarbonization and energy transmission, I really think we're a few years fast on some of these -- these types of very harsh reactions.

Again, I testified this morning, I think the equal life group is a good transition tool.

As we sit here again in a few years we will probably be or may be looking at something more harsh, but we will know more facts and where hydrogen is, for example, and where renewable fuels are, the effect of renewable fuels inside the pipes, is it more corrosive or not.

So that is all kind of emerging discussions right now. So I think we are maybe one study early on some of that, but I do appreciate the point you can keep saying that and then all of a sudden you are one study light as well.

MR. ELSON: And I think one of the concerns, Mr. Kennedy, that you agreed to in to in your interrogatory responses, if I understood you correctly, is that the impact on the depreciation expense would be even higher if we waited until, say, 2030 to implement an EPH in 2050, right?

MR. KENNEDY: Yes. And then that's to my last point. It is a matter of managing the timing of that once, you know, facts and the circumstances are going to changed from now to 2050. We can be sure of one thing: It's going to be new things come to light. But I do think this is such a new area that we are one study soon. We are really trying to implement something harsh.

MR. ELSON: I'm going to ask you for an undertaking,

further to 4.5-ED-140, and that interrogatory is looking at the impact on the depreciation expense being -- I think now it's $290 billion if you were to implement the economic planning horizon of 2050 now.

I would like you to provide the dollar impact on depreciation expense if you implemented a 2050 truncated date on 2030, 2035, or 2040.

You did provide a response in terms of percent, but have trouble interpreting, that, to be honest with you. And so I am trying to have a comparison to the 290-million-dollar depreciation increase figure for future years, if you were to wait and not -- and not implement a truncate date until 2030, 2035 or 2040.

[Witness panel confers.]

MR. KENNEDY: Mr. Elson, I think we've provided that information in our IR response to that question.

There are a number of tables where the actual wording response I think is percentages, but we did attach tables that that provided the detail, I think that you're asking for.

And inside that detail we did have to make some assumptions around what would your capital adds be over these next five years, ten years, 15 years. So we did outline a series of assumptions and some detailed tables.

MR. ELSON: You are talking about attachments to ED-140? I don't have any attachments to ED-140.

You know, for the interest of time, maybe you could undertake to point me to where it's already in the evidence

or to provide the response if you don't already have that.

MS. DREVENY: It's a composite depreciation rate set to -- table 1.

MR. KENNEDY: We didn't put the tables on it. So I think, yes, we can undertake. We really did do most of the mechanical work to do that, so we can actually provide the detailed tables.

MR. MILLAR: It is JT4.17. And it is to provide the detailed tables for what?

UNDERTAKING NO. JT4.17: TO PROVIDE THE DETAILED TABLES FOR THE DOLLAR IMPACT ON DEPRECIATION EXPENSE IF A 2050 TRUNCATE DATE WAS IMPLEMENTED FOR 2028, 2030 AND 2035.

MR. ELSON: For the dollar impact on depreciation expense if a 2050 truncate date was implemented, and we can just use the same dates as you provided for the interrogatory response which will be easier for you which is 2028, 2030 and 2035.

MS. NORI: I'm sorry, this is Ms. Nori. It is just coming back to me why we didn't submit the tables in the response. It was because the general plant accounts led to the rates getting really, really weird because those are such short-lived assets. Would it be sufficient if we provided the tables excluding anything in general plant accounts? Those are all the --

MR. ELSON: I don't see why not. I don't think that would have a big impact on the results anyway, so that's fine.

MS. NORI: And I believe that's what the tables we provided in response to the (inaudible) had. But we just didn't put the full tables in, for that reason.

MR. ELSON: That's fine.

MS. NORI: Thank you.

MR. ELSON: I think we had the number for that already. Now, I'm looking at 4.5-ED-142, attachment 1, page 27. Maybe if that could get pulled up on the screen, that was again 4.5 ED-142, attachment 1, page 27.

And this is, Mr. Kennedy, some of your evidence in a different proceeding. In the third paragraph down you say:

> "Considering all the factors I find that the use of a 30-year EPA to expiring October 31st, 2050 to be a proper and adequate for MGT. This 30-year EPH is consistent with the anticipated decline in demand as forecast by the 2019 International Energy Agency report, by more importantly aligns to the targets suggested in President Biden's 2050 Net Zero Decarbonization Plan, executive orders, Paris agreement, the State of New York's climate change legislation, and the stated objective of a number of utilities and local governments. To recommend an EPH beyond October 31st, 2050 for the MGT system would assume these targets will not be met."

My question for you, Mr. Kennedy, is whether this recommended is adopted, was adopted.

MR. KENNEDY: It was -- this proceeding was as a lot

of Federal Energy Regulatory Commission proceedings are, was settled through a stipulation. The depreciation rates changed very little from our report, but they did change some. And so I'm not sure -- it is hard to pinpoint the changes on a black-box settlement in a stipulation in terms of was it the EPH that changed, was it the lifes that changed, was it...

We weren't a part of or party to the stipulation of discussions.

I would say that nobody drastically disputed this EPH, other than FERC suggested that the right EPH was a 72-year EPH based on supply forecasts.

We disagreed with that in rebuttal evidence, and ultimately the rates that were settled to were very close to our rates so. But I can't for the record say these were either adopted or not adopted as part of the stipulation agreement.

MR. ELSON: But a day would have been -- where you ended up with is was close to this; is that what you would say?

MR. KENNEDY: It seems to be. We don't know how much -- play off was played between this and our salvage estimates, et cetera, as well.

MR. ELSON: Thank you. Go ahead, Mr. Kennedy.

MR. KENNEDY: I was just going to say that this report was, if memory serves me right, I think dated in 2020 or 2021. 2021, I think. And even since that time, as I'm doing the very much similar evidence again now, although

we're finding that some of the newer technologies around hydrogen, this assumed no hydrogen blending, et cetera, as well.

There are changes in technology, although I still basically agree that if you are going to have a truncation date or an EPH date, 2050 is still kind of the goalpost that most -- we usually aim towards.

MR. ELSON: But I think also what you're saying is you can have an EPH of 2050, and then in your next regulatory proceeding, if there is new technology or it seems like you can use the pipeline for hydrogen, you can extend that out.

MR. KENNEDY: Correct, sir. And that's, as I suggested, that's the concept of the horizon portion of the title.

MR. ELSON: Thank you. If we could turn in the same interrogatory -- and I'm just coming to the end of my questions shortly -- to attachment 5, page 20, and third paragraph down.

Yeah, I can start reading from my notes as it gets pulled up. You say:

> "While it is currently anticipated that the system will be contracted for service through contract renewals and will be competitive with other natural gas pipelines, sourcing supply from the Western Canadian sedimentary basin for the next 20-year period, however, the contracting circumstances beyond 2034 are not known. Therefore, an economic planning horizon extending

beyond 2034 is not reasonable."

And my question isn't really related to these specifics, but to the principle that the economic planning horizon should be based on a risk, not a certainty that the asset will not be used and useful beyond that date; is that fair to say?

MR. KENNEDY: Yeah, I think it's fair to say that the EPH recognizes the risk that include things such as supply, demand, government legislation, et cetera.

This Alliance report I think was dated, if memory serves me right, about 2015 -- 2016 -- Ms. Nori is correcting me -- so it was in a different era, and interestingly enough, this one -- report, it was settled through stipulation, and I -- to this day I haven't heard the results of the stipulation, and I couldn't find the record and the FERC records in terms of how it was -- what the final rates were, so -- again, that's one of the problems with black-box stipulations, but this was the recommendation, and we fully believed it at the time.

We were in a era there where 25- and 30-year EPHs for FERC and CER-regulated pipelines was basically the norm, and for good reason, because I've been in -- I've being doing large-diameter pipelines, I used to work for Enbridge Pipelines from 1980 to 1995, and we had 30-year EPHs on our depreciation rates over that whole year as well.

MR. ELSON: My questions are more [audio dropout] as opposed to the specific items in relation to this pipeline.

How likely does it need to be that an asset's economic

life will end after a certain threshold date to use that threshold as a truncate date? You might not be able to provide a specific likelihood, but can you comment on that? I'm trying to understand how you would assess that?

MR. KENNEDY: In essence, for these large-diameter long-haul transmission pipelines, we look at it in the terms of, yeah, is it likely that economic forces will impact those pipelines? If the answer to that is yes, then we start looking at what those economic forces might be.

Whether it's in the case of Alliance, it was contractual demand. They weren't assured that when current date producer contracts expired that they would be renewed, so that presents a risk.

It has nothing to do with energy transition, it is more in the pricing on and full contracts will demand on pipelines.

MR. ELSON: And --

MR. KENNEDY: There's many risks. But to your question, it is a question of risk and what the risks are for that specific circumstance.

MR. ELSON: And in this case, you know, like you say, it is really just a contracting uncertainty, so would you say that you want to use a truncate date when there is more or less than a 50 or a 60 or a 40 percent chance that you might not have a pipeline that is -- has an economic life beyond that date?

MR. KENNEDY: Yeah. And the challenge, sir, is you are highlighting a lot of the debate that we have when we

go through this question, is if your half your contracts go away, is that pipeline economic if half the contracts go? And that becomes a question of the economics of that particular pipeline.

You know, as we start talking energy mitigation, same question. All four -- you can't -- you are not going to run a pipeline economically if a small trickle of gigajoules of gas flying through it. But what's that magic date, and what's that -- not date, what's that magic number?

So there's a number of factors that influence them.

To your point, it's -- sorry, at some point in time you look at it and the pipeline will be uneconomic for a number of reasons, but this is a question of trying to quantify those.

There is some -- some published guidelines that would say once you estimate that half of your system of 50 -- it is kind of a 50 percent rule. Once you get beyond or below 50 percent utilization, that you may want to consider that as being your economic planning horizon.

We get into a lot of debate when we start looking at those kind of criteria, was it 50, or what if it's 48 or what if it's 55?

But there is literature around, once your system is really utilized at half or less, you're getting into that timing of economic end of life.

MR. ELSON: Those published guidelines, could you file a copy?