Shepherd Rubenstein

BY EMAIL and RESS

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Ontario Energy Board
2300 Yonge Street
27th Floor
Toronto, Ontario
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February 3, 2023
Our File: EB20220200

Attn: Nancy Marconi, Registrar

Dear Ms. Marconi:

Re: EB-2022-0200 – Enbridge Gas Inc. 2024-28 Phase 1 – Initial SEC Interrogatories

We are counsel to the School Energy Coalition ("SEC").

In recognition of the the size of the application and complexity of issues in this proceeding, to assist Enbridge in preparing interrogatory responses, SEC is filing an initial batch of interrogatories primarily related to energy transition evidence.

SEC will file the remainder of its interrogatories, on the bulk of the evidence related to Phase 1 issues, on or before the deadline as set out in Procedural Order No. 1.

Yours very truly,
Shepherd Rubenstein P.C.

Mark Rubenstein 2023.02.03 13:35:31-05'00'

Mark Rubenstein

cc: Brian McKay, SEC (by email)
Applicant and intervenors (by email)

EB-2022-0200

ONTARIO ENERGY BOARD

IN THE MATTER OF the *Ontario Energy Board Act, 1998*, S.O. 1998, c.15 (Schedule. B);

AND IN THE MATTER OF an Application by Enbridge Gas Inc., pursuant to section 36(1) of the *Ontario Energy Board Act, 1998,* for an order or orders approving or fixing just and reasonable rates and other charges for the sale, distribution, transmission and storage of gas as of January 1, 2024.

INTERROGATORIES TO

ENBRIDGE GAS INC. ("ENBRIDGE")

ON BEHALF OF THE

SCHOOL ENERGY COALITION

1.2-SEC-1
[1-2-1, p.9, 21] Enbridge states: "[R]egardless of the direction of Ontario's energy transition, the natural gas system will be critical to providing Ontarians with resilient, reliable, cost-effective energy solutions, including by working in a more integrated way with the electricity system." Please confirm that the Application is premised on the Enbridge's statement being true, and on the assumption that no significant reduction in the total demand for natural gas in Ontario is likely during the next ten years. If this is not confirmed, please explain.

1.2-SEC-2
[1-2-1, p.10] Please provide Enbridge's best estimate of the amount, by which 2022 natural gas throughput was lower, as a result of the cumulative impact of the Enbridge's DSM programs over time.

1.2-SEC-3
[1-2-1, p.12] Please confirm that at no time during the stakeholdering of this Application did Enbridge, or its consultants, tell customers that they would be responsible for paying the cost of any new or existing assets stranded due to the energy transition.

1.2-SEC-4
[1-2-1, p.15] Please provide any studies, documents, presentations or other evidence showing that hybrid heating systems will continue to be cost-effective for customers throughout the expected life of the assets.

1.2-SEC-5
[1-2-1, p.15] Please confirm that the $200 million advantage between now and 2050, of the Applicant's preferred transition, can only be achieved if the natural gas distribution infrastructure currently in service, or brought into service during the current planning period, remains used and useful throughout its expected life.

1.2-SEC-6
[1-2-1, p.16] Enbridge states: "Energy transition planning is not only reflected in the Company's "safe bet" actions, but also in the way Enbridge Gas is forecasting growth, managing risk and allocating capital." Please provide an estimate of Enbridge's total rate base each year until 2033, and provide details explaining how this estimate has been altered from what it would have been, absent the claim made in the above quote.

1.3-SEC-7
[1-3-1, Attach 3] Please explain in detail how Enbridge plans to change its board of directors and governance practices over the rebasing term to reflect the changing public expectations arising out of the energy transition. Please provide all studies, memoranda, presentations and other documents related to governance and the energy transition.

1.5-SEC-8
[1-5-1, p.11] Please provide all studies, memoranda, presentations and other documents related to the relationship between the proposed straight fixed variable with demand rate design and the availability and economics of demand response programs.

1.10-SEC-9
[1-10-1, p. 2] Please file the load forecast filed by Enbridge in EB-2021-0002, and explain any differences between that load forecast and the current load forecast in this Application.

1.10-SEC-10
[1-10-2, p.1] Please confirm that Enbridge has not prepared any contingency plans for a situation in which Enbridge is, by law or otherwise, prohibited from expanding their system, or is required to reduce the throughput on its system at some predetermined rate or levels. If any such contingency plans have been prepared, please provide them.

1.10-SEC-11
[1-10-2, p.2] Please provide the same comparison of gas and electricity peak demand as is provided for January 9, 2022, but using the summer electricity peak day in 2022.

1.10-SEC-12
[1-10-2, p.5, 23] Please provide Enbridge's assumptions for gas-fired electrical generation in Ontario for each year from 2021 to 2030.

1.10-SEC-13
[1-10-2, p.5] Please provide all studies, memoranda, presentations and other documents in the possession of Enbridge comparing the probability of a resilience-related energy crisis in Ontario to the probability of a GHG-related crisis in Ontario.

1.10-SEC-14
[1-10-2, p.13] Please estimate at what price of carbon is the unit cost of gas at current market prices equal to the unit cost of electricity at current market prices.

1.10-SEC-15
[Bridge to a Cleaner Energy Future 2021 Sustainability Report; 1-10-3, p.4, fn 5] With respect to Enbridge Inc.'s *Bridge to a Cleaner Energy Future, 2021 Sustainability Report*:

a. [p.5] Enbridge Inc. states that "our planning process places significant emphasis on understanding changes in energy systems and evaluating trends to help inform our approach." Other than the

implementation of the IRP Framework, please explain how Enbridge implemented this "significant emphasis" in the preparation of the load forecast and the Asset Management Plan.

b. [p.5] Enbridge Inc. states that "*"…*we test the resilience of our businesses with a 1.5 C scenario analysis." Please provide all studies, reports, presentations, memoranda and other documents, not already on the record, that carried out or reported on that resilience with respect to the Enbridge (EGI) business.

1.10-SEC-16
[1-10-3, p.7] Please file the draft regulations referred to when they are available.

1.10-SEC-17
[1-10-3, p.8] Please confirm that the impact on the price of gas from the carbon charge is expected to increase by 2.94 cents per cubic meter annually starting in 2023, and reach an aggregate of 33.29 cents per cubic meter by 2030.

1.10-SEC-18
[1-10-3, p.10] Please provide all studies, memoranda, presentations and other documents in the possession of Enbridge relating to the potential generation, sale, or other use by Enbridge of CFR credits.

1.10-SEC-19
[1-10-3, p.10; 1-10-6, p.12] Please provide all studies, memoranda, presentations and other documents in the possession of Enbridge relating to the risk of new targets, plans, strategies and policies impacting Enbridge, and/or strategies for Enbridge to minimize or mitigate those impacts. Please provide a detailed explanation of how Enbridge proposes that the ratepayers should be protected in the OEB's decision in this proceeding if the changing targets, plans, strategies and policies of governments result in Enbridge's forecast operating and capital plans being inconsistent therewith.

1.10-SEC-20
[1-10-4, p.1] Please provide the load, average use, design day, design hour, and distribution contract customer demand forecasts before the review referred to was undertaken, and explain any changes made to each of those forecasts to reflect climate policies and energy transition.

1.10-SEC-21
[1-10-4, p.4] Please confirm that the average use forecast does not include any assumptions about future changes to energy efficiency codes and standards. Please provide all studies, memoranda, presentations and other documents in the possession of Enbridge dealing with future changes in energy efficiency codes and standards.

1.10-SEC-22
[1-10-4, p.6] Please confirm Enbridge has assumed in its customer forecast that:

a. Conversions to natural gas from other energy sources for home heating will continue at its current pace until 2029, and;
b. After 2029, such conversions will continue into the foreseeable future at a rate of 90% of the current pace.

1.10-SEC-23
[1-10-4, p.11] Please provide the numerical data behind Figure 3 in Excel format.

1.10-SEC-24
[1-10-4, p.12] Please confirm that the design day demand forecast relied on in this Application includes zero impact of the energy transition.

1.10-SEC-25
[1-10-4, p.13] Please provide Enbridge's forecast, by rate class, of the number of customers annually converting from natural gas to other energy sources for the period 2024-2030. Please provide all studies, memoranda, presentations and other documents in the possession of Enbridge dealing with future conversions away from natural gas.

1.10-SEC-26
[1-10-5, p.9,12, 15-16] Please provide the numerical data behind each of Figures 2 through 5 in Excel format.

1.10-SEC-27
[1-10-5, p.15; 1-10-6, p.32] Please provide all studies, memoranda, presentations and other documents in the possession of Enbridge dealing with the feasibility and/or cost of repurposing the Enbridge pipeline network and associated equipment to distribute hydrogen. Please describe in detail why a pipeline network, as opposed to an alternate delivery system, is the best way to deliver hydrogen to end users.

1.10-SEC-28
[1-10-5, p.23] Please provide a detailed analysis of the risk responsibilities of customers, shareholders, and any others for the costs associated with the natural gas system if the transition does not move from natural gas to hydrogen/RNG, as Enbridge proposes.

1.10-SEC-29
[1-10-5, Attach 1, p.5] Please provide a copy of the referenced Posterity Group's "end-use model".

1.10-SEC-30
[1-10-5, Attach 1, p.5] Please describe in detail the assumptions (including numerical assumptions) in each of the scenarios with respect to:

a) Changes to building codes and appliance standards.
b) Innovation in electrical storage, hydrogen equipment, CCS and low-carbon fuels.

1.10-SEC-31
[1-10-5, Attach 1] Please provide the numerical data behind each of Exhibits 1-4, 1-25, 50-7,1 in Excel format.

1.10-SEC-32
[1-10-5, Attach 1, p.15] Please provide:

a. The 10-year customer account forecast.
b. The 10-year consumption forecast.
c. The Residential end-use survey.
d. The workbook referred to containing "upper and lower possible volumes of RNG and hydrogen in their system".

1.10-SEC-33
[1-10-5, Attach 1, p.18] Please confirm that the study assumes no end of use equipment is replaced prior to the end of its expected useful life.

1.10-SEC-34
[1-10-5, Attach 1, p.19] Please explain how fuel switching was modelled while assuming zero cross price elasticity.

1.10-SEC-35
[1-10-5, Attach 1, p.22] Please provide a table that shows:

a. All critical drivers that were proposed by Enbridge but not ultimately accepted by Posterity Group;
b. All critical drivers that were proposed by Enbridge and ultimately tested in the model;
c. All critical drivers that were proposed by Posterity Group but not ultimately accepted by Enbridge; and
d. All critical drivers that were proposed by Posterity Group and ultimately tested in the model.

1.10-SEC-36
[1-10-5, Attach 1, p.22] Please provide, for each critical driver, the input assumptions proposed by each of Enbridge and the Posterity Group, and the ultimate input assumption used.

1.10-SEC-37
[1-10-5, Attach 1, p.23] Please provide the full email thread that contains the email "OBPS & EPS Stringency Factors" dated November 10, 2020.

1.10-SEC-38
[1-10-5, Attach 1, p.26, 86] Please advise the basis of the 11% of reference case RNG assumption and the 14% of reference case hydrogen assumption.

1.10-SEC-39
[1-10-5, Attach 1, p.42] Please explain why the reference case assumptions with respect to customer accounts were used in all scenarios. Please confirm that, in an electrification scenario, it is reasonable to assume that the number of customer accounts will go down over time.

1.10-SEC-40
[1-10-5, Attach 1, p.44] Please describe the hydrogen equipment barriers referred to in detail.

1.10-SEC-41
[1-10-5, Attach 1, p.63] Please confirm that, in the Diversified Scenario in 2038:

a) It is assumed that the 40% natural gas, 39% hydrogen, 10% RNG and 12% natural gas with CCS all use a common distribution infrastructure for delivery to customers. If not confirmed, please provide details of the incremental costs assumed for different distribution infrastructure.
b) It is assumed that end of use equipment does not have to be replaced to deal with the new fuel mix.

1.10-SEC-42
[1-10-5, Attach 1, p.81] Please explain in more detail the difference between the Enbridge forecasting system and the base year data, and the adjustment used in the Posterity Group model to fix it.

1.10-SEC-43
[1-10-5, Attach 1, p.89, 93] Please explain the basis for the assumption that the contract classes of customers will have "relatively constant consumption 2021-2030", and will continue that constant consumption until 2038.

1.10-SEC-44
[1-10-5, Attach 1, p.94] Please confirm that the gas volume forecast in Exhibit 83 is the same as the forecast filed in the Application. If not confirmed, please identify and explain all differences.

1.10-SEC-45
[1-10-5, Attach 2, p.1] Please confirm that this study assumes no future technology innovations that will affect the pathways studied. If not confirmed, please provide details of which innovations were assumed, and how they were taken into account.

1.10-SEC-46
[1-10-5, Attach 2, p.1] Please provide details of how, if at all, the cost of stranded assets was taken into account in this study.

1.10-SEC-47
[1-10-5, Attach 2, p.5] Please confirm that the total energy system cost in Figure ES-2 assumes that gas customers continue to bear the full cost of the natural gas distribution system in the electrification scenario. Please provide a full breakdown of the figures of $765 and $945 in that figure.

1.10-SEC-48
[1-10-5, Attach 2, p.21] Please provide a copy of the Low Carbon Pathways model and all explanatory guides or materials related to its use.

1.10-SEC-49
[1-10-5, Attach 2, p.30, 56] Please provide a comparison of the lifecycle cost of a geothermal heat pump system vs. a cold climate electric air source heat pump system plus the assumed deep energy efficiency retrofit. Please explain the assumptions used, and the reason that they were used in this study.

1.10-SEC-50
[1-10-5, Attach 2, p.41-58] Please confirm that this study assumes that green hydrogen is used by the electricity system in the electrification scenario as a method of storage. Please provide details of how that use of hydrogen is modelled, including the calculations driven by that modelling.

1.10-SEC-51
[1-10-5, Attach 2, p.42] The Report states that: *"*CCS is fundamental in reducing GHG emissions from natural gas…The scale-up of CCS for blue hydrogen and natural gas use is required to reach net zero emissions in both scenarios." Does Guidehouse agree that, without sufficient CCS capability, the Diversification Scenario that is not in this study demonstrated to be a preferred option?

1.10-SEC-52
[1-10-5, Attach 2, p.45-47] Please explain how customer costs to convert end of use equipment of all types from natural gas to new energy sources (e.g. hydrogen or electricity) are factored into these forecasts. Please provide the detailed calculations and underlying assumptions for this cost category.

1.10-SEC-53
[1-10-5, Attach 2, p.58] Please confirm that the study assumes the Diversified Scenario does not require heating equipment upgrades. Please reconcile that assumption with the increased use of hydrogen instead of natural gas in heating.

1.10-SEC-54
[1-10-5, Attach 2, p.59, 73] Please provide a detailed forecast of the total cost to convert natural gas transmission and distribution infrastructure to hydrogen delivery.

1.10-SEC-55
[1-10-5, Attach 2, p.66] Please recalculate the cost of each scenario on the basis that the carbon price is the same in both scenarios.

1.10-SEC-56
[1-10-6, p.3] Please confirm that Enbridge has assumed all new assets acquired or built in the Asset Management Plan will continue to be used and useful after 2030 and for their remaining physical lives, and the Application does not assume that any assets will have to be retired prior to the end of their physical lives because of the energy transition.

1.10-SEC-57
[1-10-6, p.5, fn 11] Please advise whether Enbridge agrees with the characterization of Geologic Carbon Storage, and its prospects in Ontario, as set out in the January 2022 Discussion Paper cited in footnote 11. If Enbridge does not agree, please identify and describe the areas of disagreement.

1.10-SEC-58
[1-10-6, p.5, fn 12; Ontario's Low-Carbon Hydrogen Strategy, p.6, 29] Ontario's *Low-Carbon Hydrogen Strategy*, referred to be Enbridge, states that "Ontario has existing and planned pipeline and storage infrastructure that can be used to store hydrogen and deliver it to homes and businesses. This included geological storage opportunities and an extensive natural gas distribution network." Please describe in detail the extent to which Enbridge believes this statement to be true and, if it should be qualified in any material way, how it should be qualified.

1.10-SEC-59
[1-10-6, p.56, fn 12; p.20] Please provide a detailed list of the places in the world where, to Enbridge's knowledge, hydrogen is being blended into natural gas-fired electricity generation facilities.

1.10-SEC-60
[1-10-6, p.7, fn 21; The Canada Green Building Strategy] Please describe in detail the extent, if any, to which each of the following statements in the *Canada Green Buildings Strategy* is true and, if it should be qualified in any material way, how it should be qualified:

a) [p.4] "Electrification of space and water heating will be an essential component of decarbonizing the buildings sector".
b) [p.6] "All new buildings need to be net-zero ready as early as 2027 and no later than 2032 and confirm to the latest applicable codes, standards and guidelines for climate resilience as early as 2025 and no later than 2030".
c) [p.6]: "The deep retrofit rate would need to reach 3% to 5% of buildings annually by 2025", with the definition of "deep retrofit" being described in the footnote as "A deep retrofit usually includes reducing energy demand and switching from fossil fuels to electricity to space and water heating".
d) [p.13] "In most buildings across Canada, electric heat pumps are the right solution. Not only is electricity cleaner than fossil fuels in most jurisdictions (and will continue to get cleaner via the Clean Electricity Standard), the technology to use them more efficiently than fossil fuels to heat our buildings is available."
e) [p.14]: "The federal government will work with partners to, for example, set phased timelines for ending the installation of new oil or natural gas heating systems…"

For each of the above statements in the federal strategy, please describe how the current Application is consistent with it.

1.10-SEC-61
[1-10-6, p.14, 21] Please provide all studies, memoranda, presentations and other documents in the possession of Enbridge dealing with the amount and timing of increases in the amount of RNG in the gas supply.

1.10-SEC-62
[1-10-6, p.14, 21] Please explain why Enbridge has no proposal for the integration of gas and electricity planning.

1.10-SEC-63
[1-10-6, p.19] Please recalculate the figure of 57.8 million tCO2e using the current version of the e-Tools model, and making the adjustments recommended by the Evaluation Contractor in their report on that model.

1.10-SEC-64
[1-10-6, p.27] Please file all studies evaluating subsurface CO2 storage, when those studies are available.

1.10-SEC-65
[1-10-6, p.33] Please provide the full business case, in its current form and whether or not finally approved by Enbridge, for Phase 2 of LCEP.

1.10-SEC-66
[1-10-6, p.38] Please provide the numerical data behind Figure 1 in Excel format.

1.10-SEC-67
[1-10-6, Attach 1, p.12] Please provide the memo "Enbridge ETI Scenario – extending trends to 2050 – Guidehouse input".

1.10-SEC-68
[1-10-7, p.1-2, 4] Please provide a detailed description of Enbridge's expertise in evaluating, financing, and/or commercializing innovative technologies. Please provide examples of successful technology development initiatives the Applicant has managed, if available. Please also provide details of all low carbon technologies the gas company has developed in the past.

1.10-SEC-69
[1-10-7, p.8] Please provide details of the use of hydrogen in space heating applications in other jurisdictions.

2.6-SEC-70
[2-6-2, p.256] Please confirm that the Applicant did not consider any non-pipe alternatives prior to or during the optimization of the 10-year plan, and only implemented IRP screening and analysis after the plan had been developed. Please provide all reports, memoranda, presentations or other documents in the possession of Enbridge relating to its decision to optimize the plan without IRP.

2.6-SEC-71
[2-6-2, p.256; Appendix B] Please confirm that Phases 3 and 4 of the St. Laurent project, for which leave to construct was denied by the OEB in EB-2020-0293, has now been rescheduled at a cost of $118 million for 2024 and 2025. Please provide evidence that the conditions established by the OEB in its Decision with Reasons dated May 3, 2022 have been met by Enbridge.

2.6-SEC-72
[2-6-2, p.281, 282, 288, Appendix B] SEC is seeking to better understand how Enbridge is applying the OEB's decision in EB-2020-0091.

a. Please confirm that, of the 3087 projects in the optimized AMP:
    i. 809 (26.2%) were deemed not subject to any IRP process because they related to non-gas carrying investments;

ii. 1392 (45.1%) were screened out using binary screening
iii. 262 (8.5%) had as of the time of filing undergone a completed technical evaluation, and none had passed the evaluation;
iv. 624 (20.2%) remained to undergo technical evaluation or had the evaluation currently in progress at that time;
v. None have proceeded to the stage where an economic evaluation was required.

b. Please update the above figures if further work has been done, and provide an updated Appendix B.

2.6-SEC-73

[2-6-2, p.286] The AMP states that: "EGI is cognizant that there may be impacts to customer growth forecasts based on climate/carbon policies". Please confirm that those impacts have not been taken into account in the development and optimization of the 10-year plan.

Respectfully, submitted on behalf of the School Energy Coalition this February 3, 2023.

Mark Rubenstein
Jay Shepherd
Counsel for the School Energy Coalition