September 19, 2023

Ms. Nancy Marconi
Registrar
Ontario Energy Board
P.O. Box 2319
2300 Yonge Street, 27th Floor
Toronto ON M4P 1E4
Submitted electronically to Registrar@oeb.ca

RE: RNG Coalition Submission For Phase 1 of Proceeding EB-2022-0200 Enbridge Gas 2024 Rebasing Application

Dear Ms. Nancy Marconi,

The Coalition for Renewable Natural Gas[1] (RNG Coalition) is a non- profit organization representing and providing public policy advocacy and education for the renewable gas industries. We advocate for the sustainable development, deployment, and utilization of all renewable gases, so that present and future generations have access to domestic, renewable, clean fuel and energy. We respectfully submit the following comments to the Ontario Energy Board (OEB) as part of Phase 1 in proceeding EB-2022-0200 on Enbridge Gas Inc. – 2024-2028 Natural Gas Distribution Rates.[2] While Phase 1 covers a wide range of issues, this submission aims at clearing the record for the role of renewable natural gas (RNG) in the energy transition in Ontario.

RNG is a Proven Source of Low Carbon Energy

Since the RNG Coalition's founding in 2011, policies focused on greenhouse gas (GHG) emissions reduction have driven extraordinary growth within the RNG industry. There are now over 300 operational RNG production facilities in North America with over 480 under construction or in substantial development[3] compared to only 30 developed between 1982 and 2011. That trend is illustrated in Figure 1 below. Figure 2 provides a provincial-level and state-level account of RNG facilities that are currently operational, under construction, and planned.

[1] https://www.rngcoalition.com/
[2] https://www.oeb.ca/applications/applications-oeb/current-major-applications/eb-2022-0200
[3] RNG Coalition, RNG Facilities Database (as of September 1, 2023. Data summarized in map accessible from www.rngcoalition.com): https://docs.google.com/spreadsheets/d/1CpLTd1Yya4qQzUpWYtKMUGW1BlMmn-Jrj3uErd8lJ7A/edit#gid=0

Figure 1. Cumulative Number and Annual Addition of Operational RNG Facilities in North America[4]

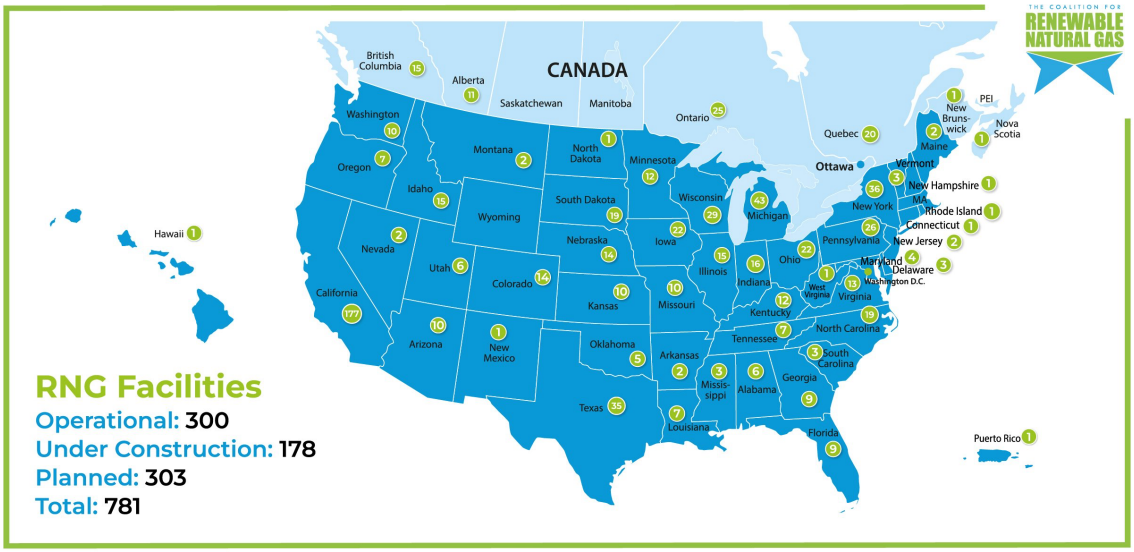

Figure 2. Map of RNG facilities in North America as of July 18, 2023[5]

[4] The most recent version of this chart is accessible online at https://www.rngcoalition.com/infographic
[5] Ibid

This recent development has been incentivized largely by transportation decarbonization programs, including the United States Environmental Protection Agency's Renewable Fuel Standard[6] and provincial- and state-level clean fuel standards (CFS) such as the California Low Carbon Fuel Standard.[7] In 2022, the U.S. transportation sector used 54 petajoules of RNG, resulting in lifecycle GHG emissions reduction of 5.6 megatonnes of carbon dioxide equivalent.[8]

However, numerous projects that are currently under construction are now being driven — at least in part — by gas utility decarbonization policies that specify a percentage of a renewable gas allowed (or mandated) in a utility's gas procurement. Several provinces and states are early adopters of RNG through mandated renewable gas blend targets or regulations enabling gas distribution utilities to create robust voluntary RNG programs. Those include British Columbia, [9] Québec, [10, 11] California,[12] Colorado,[13] Minnesota,[14] New Hampshire,[15] and Oregon.[16] While several North American utilities are still in the early stages of implementing their renewable gas procurement processes, the results of this OEB proceeding could allow Enbridge Gas to join the league of "first movers."

While the RNG supply chain and ecosystem are still growing in North America,[17] RNG is more mature in other parts of the world. Europe has decades of experience using RNG from all organic feedstocks and counts over 1,000 facilities supplying RNG, which supplied over 130 petajoules in 2021.[18]

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[6] https://www.epa.gov/renewable-fuel-standard-program

[7] https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard

[8] Natural Gas Vehicles for America and Coalition for Renewable Natural Gas, "Renewable Natural Gas Breaking Motor Fuel Usage Records," press release, April 13, 2023. https://static1.squarespace.com/static/53a09c47e4b050b5ad5bf4f5/t/64380e657f0e0c3d592b34dd/1681395302370/2022+PR_RNG+Breaking+Motor+Fuel+Usage+Records+%282%29.pdf

[9] https://news.gov.bc.ca/releases/2021EMLI0046-001286

[10] https://www.legisquebec.gouv.qc.ca/en/pdf/cr/R-6.01,%20R.%204.3.pdf

[11] http://www2.publicationsduquebec.gouv.qc.ca/dynamicSearch/telecharge.php?type=1&file=105974.pdf

[12] https://www.cpuc.ca.gov/news-and-updates/all-news/cpuc-sets-biomethane-targets-for-utilities

[13] https://leg.colorado.gov/sites/default/files/2021a_264_signed.pdf

[14] https://www.revisor.mn.gov/bills/text.php?number=SF0421&session=ls92&version=latest&session_number=0&session_year=2021

[15] https://legiscan.com/NH/text/SB424/id/2528713#:~:text=New%20Hampshire%20Senate%20Bill%20424&text=Bill%20Title%3A%20Relative%20to%20renewable%20energy%20and%20natural%20gas.&text=AN%20ACT%20relative%20to%20renewable%20energy%20and%20natural%20gas.&text=This%20bill%20authorizes%20the%20recovery,of%20the%20public%20utilities%20commission.

[16] https://olis.oregonlegislature.gov/liz/2019R1/Measures/Overview/SB98

[17] The RNG industry contributed over 22,000 jobs and US$2.6 billion to the U.S. economy in 2021. See RNG Coalition report: https://static1.squarespace.com/static/53a09c47e4b050b5ad5bf4f5/t/623c9f122ca5021fe5c8930c/1648140051803/RNG+Jobs+Study.pdf

[18] European Biogas Association, "New record for biomethane production in Europe shows EBA/GIE Biomethane Map 2022-2023." https://www.europeanbiogas.eu/strongnew-record-for-biomethane-production-in-europebrshows-eba-gie-biomethane-map-2022-2023-strong/

The International Energy Agency's (IEA) original net-zero scenario models that global RNG supply will grow seven-fold by 2030 and twenty-seven-fold by 2050 relative to 2020 levels.[19] In the IEA scenario, RNG is used across a variety of sectors including in buildings (20% of RNG use in 2050). The IEA also notes that in certain regions, RNG makes up over 80% of the gas grid's content in 2050.[20] So far in 2023, over 35% of Denmark's gas consumption is already met by RNG.[21] The Danish Government is now aiming to grow that share to 100% by 2030.[22]

RNG Will Be Available, if Appropriately Incentivized

Despite the strong RNG supply growth described above, the OEB staff highlighted in their submission "likely constraints on the supply of RNG."[23] RNG Coalition respectfully responds that renewable gas can play a meaningful role to the energy transition in Ontario — provided sufficient compensation for such RNG development is maintained in a stable fashion by the OEB and other regulators.

Enbridge Gas could benefit from a "first mover" advantage over late adopters of RNG. Enbridge Gas has been actively working on procuring RNG in its first iteration of the Voluntary RNG program since its approval from the OEB and its subsequent implementation in April 2021[24] — and have the institutional frameworks in place to proceed with more procurement today.

As mentioned above on the supply side, the RNG industry is growing quickly across North America to meet the new RNG demand generated by various policies and sectors including gas utilities.[25] Various discussions in the hearing[26] focused on data used in the *Pathways to Net Zero* report referring to RNG feedstocks located in Ontario as a basis to decarbonization potential of RNG in Ontario. While this approach is sensible for modelling purposes, in the near-term, RNG will be procured in practice by the first movers, regardless of their relative gas demand in North America. As a jurisdiction that can become an early adopter of supportive RNG policies, Ontario is close to be in an advantageous position with the ability to access widely untapped RNG feedstocks, starting with the most cost-effective sources within and outside the province.

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[19] International Energy Agency, *Net Zero by 2050: A Roadmap for the Global Energy Sector* (2021), Table 2.8, page 79. https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroby2050-ARoadmapfortheGlobalEnergySector_CORR.pdf

[20] Ibid, page 78.

[21] Energinet, "Biomethane" (see "Share of Biomethane" dashboard). https://en.energinet.dk/gas/biomethane/

[22] Energinet, "Danish Biomethane Experience." https://en.energinet.dk/gas/biomethane/danish-biomethane-experience/

[23] OEB Staff Submission, EB-2022-0200 Phase 1, September 12, 2023, page 17. https://www.rds.oeb.ca/CMWebDrawer/Record/814564/File/document

[24] EB-2020-0066, OEB Decision and Order, September 24, 2020

[25] Over 480 projects are under construction and are planned across North America

[26] OEB Hearing Transcript, EB-2022-0200 Phase 1, Volume 2, July 14, 2023 (sections starting page 59 and page 91). https://www.rds.oeb.ca/CMWebDrawer/Record/802549/File/document

RNG Both Displaces Fossil Fuels and Captures Methane from Organic Wastes

The climate benefits of RNG are well known and are already being observed in various sectors and jurisdictions. RNG use reduces GHG emissions both by reducing the amount of fossil fuels combusted and by capturing methane from organic waste streams. Several discussions held during the hearing seemed to suggest a lack of familiarity from various stakeholders with the unique cross-sectoral climate benefits of RNG. This section aims at bringing more clarity on the carbon intensity (CI) of RNG.

There are two distinct GHG emission accounting approaches commonly used in regulatory programs for bioenergy today: the "point-source biogenic CO_2 emissions are carbon neutral" approach and the "lifecycle" approach.

When using a point-source approach, GHG emissions from bioenergy are assessed only at the point of use—such as in a home, business, vehicle, power plant, or industrial facility. When determining these point-source GHG emissions, the biogenic carbon dioxide produced from the combustion of a biomass-derived input is often assumed to be counteracted by the carbon dioxide that was recently removed from the atmosphere when the biogenic material was grown, and thus netted out of any final compliance obligation.[27] The use of such a point-source framework is appropriate if it is expected that the upstream emissions (e.g., pipeline leakage) and upstream GHG sinks and avoided emissions (e.g., methane emissions from organic waste) will be accounted for by other jurisdictions under analogous programs.

A lifecycle approach[28] (LCA) accounts for GHG emissions generated from a fuel's production through its end-use—the full life of the fuel.[29] The lifecycle approach for GHG emission accounting for biofuels can also be referred to as a "well-to-wheels" or "full fuel cycle" approach. This approach accounts for all of the GHG emissions produced or avoided from the production, collection and processing, transmission and delivery, and ultimate use of a fuel (including upstream sinks and final point-source emissions).

When determining the lifecycle GHG emissions factor or CI, the GHG emissions are summed across each stage, and the end user of the fuel is responsible for all emissions. A full lifecycle approach is appropriate if other jurisdictions do not have programs to account for these upstream sources and sinks, or simply if the jurisdiction's goal is to create the proper incentives to reduce global emissions across an entity's entire biofuel or bioenergy supply chain.

As part of cross-sector considerations, it will be crucially important to demonstrate the intersection between RNG's benefits in the waste, agricultural, and energy sectors. Organic waste is a serious and growing issue, and climate and other environmental impacts from these wastes require an immediate and ongoing solution. Globally, municipal solid waste is expected to grow 69% from 2.01 billion tonnes

[27] For example, the Regional Greenhouse Gas Initiative uses this approach: https://www.rggi.org/allowance-tracking/emissions

[28] Lifecycle analysis is well established as the leading way to holistically compare greenhouse gas abatement options. It is frequently used for bioenergy (inclusive of biofuels), but also has a role in comparing many other types of GHG abatement. The term "life cycle" appears 240 times in the IPCC's *Climate Change 2022, Working Group III contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.* https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_FullReport.pdf

[29] https://www.epa.gov/renewable-fuel-standard-program/lifecycle-analysis-greenhouse-gas-emissions-under-renewable-fuel

(Gt) in 2018 to 3.4 Gt in 2050 (around 50% of which is organic waste).[30] Moreover, these trends are underpinned by an expected 25% population increase of 2 billion people between now and 2050.[31] Governments and regulators need to help pioneer the development and deployment of commercially viable technologies to address this waste challenge, and this primary benefit of RNG deployment should not be ignored in economy-wide decarbonization discussions.

The CI of RNG is not a number set in stone because of the ongoing decarbonization of the electricity grid. Energy inputs in the biogas upgrading process are one of the main factors impacting the final CI of the resulting RNG. RNG facilities located in jurisdictions that have an electricity grid relying primarily on fossil fuel generators may currently see a higher CI attributed to their RNG. As Canada and the U.S. advance their joint goal to achieve a net zero electricity grid by 2035, RNG from all feedstocks will benefit from clean power and a resulting lower CI. An RNG facility in operation today will see its CI decrease over its lifetime as its local grid decarbonizes.

All commercially available methods of producing RNG from organic waste feedstocks already have excellent lifecycle greenhouse gas performance, exemplified by CI modeling employed by Washington, Oregon, and California's[32] clean fuel programs. Moreover, some renewable gas projects capture and destroy a greater amount of GHG (as measured on a tonnes of carbon dioxide equivalency basis) than are emitted during the fuel's production and use.

Furthermore, carbon-negative emissions technologies, and in particular those which operate based on the sequestration of biogenic carbon (e.g, bioenergy with geologic carbon capture and sequestration, biochar with soil carbon sequestration), present an opportunity to accelerate GHG reductions in the energy sector and/or provide useful, non-fossil CO_2 as an additional platform molecule. Employing such technologies will ultimately allow our economy to not only reach, but potentially move beyond carbon neutrality to a point where atmospheric carbon levels can be drawn down to stabilize Earth's climate, if needed. To this end, our industry is working toward the implementation of carbon capture and sequestration at RNG and biogas production facilities, and to create carbon-negative renewable hydrogen or bioliquids as outlined in work conducted by Lawrence Livermore National Laboratory for California.[33]

[30] https://datatopics.worldbank.org/what-a-waste/trends_in_solid_waste_management.html
[31] https://www.un.org/development/desa/en/news/population/world-population-prospects-2019.html
[32] For example, see the lifecycle analyses conducted by California's Air Resources Board: https://ww3.arb.ca.gov/fuels/lcfs/fuelpathways/pathwaytable.htm
[33] LLNL, *Getting to Neutral: Options for Negative Carbon Emissions in California*, Baker et al., January, 2020, Lawrence Livermore National Laboratory (LLNL) https://gs.llnl.gov/sites/gs/files/2021-08/getting_to_neutral.pdf

Conclusion

The RNG industry is already active in Ontario with over 20 RNG projects that are either under construction or planned in the province. Ample supply of North American RNG can be tapped into for Ontario's needs if properly incentivized. From a lifecycle perspective, it should be acknowledged that RNG will help decarbonize the waste and agricultural sectors as well as the end-use applications using that clean fuel. This Rebasing Application has the potential to serve as another important driver to incentivize the growth of the renewable gas industry to help Ontario decrease its GHG emissions.

RNG Coalition thanks the OEB for the opportunity to participate in this proceeding as an intervenor. We look forward to participating in Phase 2 of this proceeding in the context of the proposal for a new Voluntary RNG Program.

Sincerely,

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Vincent Morales
Manager of Legislative and Regulatory Affairs
Coalition for Renewable Natural Gas
Phone: +1 916. 588. 3033
Vincent@RNGCoalition.com