Written Submission on Revisions to the Oil Production Greenhouse Gas Emissions Estimator (OPGEE) Model

Submitted by Enbridge

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About Enbridge

Enbridge is a leading North American energy infrastructure company. Enbridge has a strategic network of oil and gas pipelines, North America's third-largest gas distribution utility, and significant renewable power generation assets. We exist to fuel people's quality of life. We do so by safely delivering nearly two-thirds of Canada's crude oil exports to the U.S. and approximately 19 per cent of natural gas consumed in the United States. We also have nearly 2,075 megawatts (MW) of net renewable generation capacity, based on projects in operation or under construction. With assets in multiple jurisdictions, we make investment decisions to do business where it makes sense to do so.

Enbridge believes that climate change requires serious solutions, and that Enbridge can be part of those solutions. Across our business, we've committed to net-zero greenhouse (GHG) emissions by 2050 and to reduce our emissions intensity 35 per cent by 2030. To drive results and accountability, incentive compensation is tied to meeting these commitments.

To assist the California Air Resources Board (CARB) in the proposed revisions to the Oil Production Greenhouse Gas Emissions Estimator (OPGEE) Model, Enbridge is pleased to provide feedback.

Recommendations

In 2021 Enbridge included a supplemental Scope 3 greenhouse gas (GHG) emissions metric in its 2020 Sustainability Report which measures the emissions intensity of the energy we deliver. This metric was developed in response to a growing desire to differentiate energy products on the basis of their lifecycle emissions – measuring the upstream emissions intensity of the energy that we deliver on behalf of our customers. The metric is intended to reflect both emissions reductions achieved by our customers (i.e., upstream producers) and how further diversification of our business impacts our emissions profile.

To calculate the GHG emissions produced by the upstream extraction and production (E&P) of crude oil transported on our pipelines we disaggregated shipping volumes into over 20 different Crude Identifiers which were then assigned an emissions factor or carbon intensity (CI) sourced from either CARB OPGEE or the *Global Carbon Intensity of Crude Oil Production* article by Mohammed S. Masnadi et al, 2018 and adjusted to reflect Enbridge's position in the crude value chain. These two sources use a similar modelling approach for upstream emissions and were chosen due to the availability of publicly disclosed methodology and industry engagement in their development.

Enbridge provides shipping services for crude oil primarily produced in the Western Canadian Sedimentary Basin (WCSB) in Alberta and the Bakken region in Montana and South Dakota. The CI values provided by CARB in the *Table 9 CI Lookup Table for Crude Oil Production and Transport* for Canada are based on OPGEE modeling of Canadian crude oil pathways from a 2010 baseline assessment and may not reflect recent performance improvements made in the oil sands. Earlier this year IHS Markit[1] reported that since 2009 the GHG intensity of the Canadian oil sands has declined by an average of 1.5 kilograms of carbon dioxide equivalent per barrel ($kgCO_2e$/bbl) per year which equates to a total reduction of about 17 $kgCO_2e$/bbl, or 20% from 2009 to 2020.

IHS Markit attributes the decline in GHG intensity to changes in production volumes between different types of

[1] Canadian oil sands continue their GHG intensity decline | IHS Markit

extraction, namely a decline in the comparatively more GHG intensive legacy integrated mining operations which market synthetic crude oil relative to comparatively lower GHG intensive thermal in-situ operations.

We are encouraged that CARB has updated the OPGEE model to v3.0b which will reflect 2019 oil field values and enhanced emissions measurement methodology. Updated CI values will help ensure that our Scope 3 metric reflects improvements made in the Canadian oil sands and other jurisdictions from which we ship crude oil. In addition to our comments, we would also like to pose a number of questions in response to the Workshop presentation made on April 26, 2022.

- Can CARB confirm whether the updated CI values will also apply to Canadian crude oil E&P?
- Will the updated *Table 9 Lookup Table* in OPGEE v3.0b contain updated 2010 baseline CI values or updated 2019 CI value?
- We understand that the new CI's will be in effect in 2024, can CARB confirm whether the *Table 9 Lookup Table* will be released before then?

Conclusion

Thank you for this opportunity to provide input the Public Workshop on Revisions to the OPGEE Model. If you have any questions, please do not hesitate to contact edwin.makkinga@enbridge.com.