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Re: Consultation on Geologic Carbon Storage in Ontario – Suncor Comments

We appreciate the opportunity to provide comments regarding the *Geologic Carbon Storage in Ontario,* as well as the efforts from this government to consult with the stakeholders impacted by policies and regulations.

Suncor is an integrated energy company headquartered in Canada. Suncor's integrated operations include oil sands development and upgrading, onshore and offshore oil and gas production, petroleum refining, renewables, and product marketing under the Petro-Canada™ brand. As Canada's leading integrated energy company, we believe environmental and social progress and economic performance are intertwined and integral to our success. While we are proud of our past accomplishments, we are focused on expanding our leadership in the energy transition and achieving our objective of being a net-zero company by 2050. A significant aspect of this plan involves investing in new low carbon forms of energy such as renewable electricity, hydrogen, and biofuels. Our purpose *is to provide trusted energy that enhances people's lives, while caring for each other and the Earth*.

Further examples of our commitment to sustainability and climate action include:

- Renewable fuels - we own and operate the largest Canadian ethanol plant in St. Clair, Ontario.
- Next Generation Renewable Fuel Technology – we are direct equity investors in Enerkem and LanzaTech/LanzaJet technologies;
- Canada's Electric Highway – we were the first to build a coast-to-coast, high-speed EV charging network.
- Renewable & Low Carbon Electricity – since 2002, we have been involved in the development of over nine wind projects and are currently involved in four wind projects. We are in the process of building our 200 MW Forty Mile wind project in Alberta and are committed to investing in low GHG, highly reliable and efficient cogeneration electricity. We also operate Suncor Energy Adelaide Wind Power Project with Aamjiwnaang First Nation holding a 25% interest in the project[1].

[1] Suncor Adelaide Wind Power Project | Suncor

- Hydrogen Economy – we recently announced a world scale low-carbon hydrogen project with ATCO.
- Oil Sands Pathways to Net Zero Initiative – we recently announced a broad collaboration with other oil sands companies to accelerate the deployment of carbon capture projects and other decarbonization efforts.

In addition to the initiatives mentioned above, Suncor participates and invests in multiple initiatives linked to sustainable development, like Evok Innovations, Clean Resource Innovation Network, Canada's Oil Sands Innovation Alliance, Carbon XPrize and ArcTern Ventures.

Suncor is supportive of Carbon Capture, Utilization and Sequestration (CCUS) initiatives as an efficient tool to limit greenhouse gases (GHG) emissions, amongst the multiple solutions that will need to be realized to achieve net-zero by 2050[2]. As such, we support the Ontario government in its evaluation of the Geologic Carbon Storage opportunities, and its regulations review to allow CCUS projects. We also encourage the consideration of a potential future CCUS hub in the province, which would be particularly beneficial to lower the cost for each contributor in an overall project, therefore accelerating the potential implementation of such projects.

In our preliminary analysis, Ontario's geology indicated somewhat limited opportunities for carbon sequestration. The few available pore spaces are undermined by the presence of over 20,000 legacy oil and gas wells. Many of these wells have poorly documented location and abandonment data, which could affect the integrity of CCUS operations. Geological reservoirs should be evaluated for their pore space, seal of adequate thickness and lithology for reliable containment and sufficient burial depth for supercritical CO2 injection. Suncor's geological interpretation indicates that Cambrian sands with suitable properties for CCUS are most likely to be present beneath and along the northern shore of Lake Erie. Previously published studies also suggested that this interval may have potential beneath southern Lake Huron, but that area lacks geological and geophysical data due to a historical moratorium on exploration activities in the lake. This lack of information is concerning given that CCS will play an important role in the decarbonization of heavy industry and in the production of low CI hydrogen. We also note that studies have demonstrated that there are significant geological sequestration opportunities in the Northern United States, close to the Canadian border (e.g., Midwest Regional Carbon Sequestration Partnership (MRCSP) and EOR in Michigan carbonate reefs) which may be available for storage of carbon captured in Canada. These United States sequestration locations might represent an adequate opportunity for Canadian industries, if the Ontario sequestration evaluation does not identify sufficient sequestration options or if they cannot be developed economically, therefore enabling CCUS projects that would otherwise not be possible or economical.

We believe the Government of Ontario should develop a regulatory framework for carbon sequestration that would include international opportunities and be agnostic to whether a party in a foreign jurisdiction uses that sequestration process for Enhanced Oil Recovery. We understand that the soon to be finalized federal *Clean Fuel Regulation* (CFR), would allow CFR GHG credit generation for GHG emissions that are captured in Canada and yet ultimately sequestered outside of the country. CCS projects, no matter where the CO2 ends up being sequestered, would help improve the GHG emission targets of the province, as well as the competitiveness of its industrial sites. It is worth mentioning that the most significant barriers to CCUS projects are the high upfront costs of deploying capture technologies (or direct air capture) at the site. Therefore, if an industry decides to invest in carbon capture and identifies an appropriate sequestration site,

[2] Net Zero by 2050 – Analysis - IEA

the appropriate regulatory and monitoring requirements should be implemented, while streamlining the regulatory process and removing unnecessary restrictions to help facilitate the implementation of such projects.

If the Ontario government decides to exclude foreign sequestration sites that use sequestration for EOR projects from credit generation, we believe there is a risk that this will limit CCUS projects in the province. Both CCS and EOR provide the same sequestration integrity. Oil produced from EOR does not create new oil demand, rather it meets existing oil demand and usually at a lower environmental disturbance than a new oilfield development. For reference, of the twelve different operational sequestration projects in the US, only one is not involved in EOR activities[3]. As such, should EOR sequestration be excluded, heavy industry and companies interested in natural gas-based hydrogen projects will have limited site selection opportunities. This will slow the pace of the energy transition in the province and erode the competitiveness of industry.

Creating a CCUS value chain in Ontario will require credit market certainty, as credit generation is one of the few ways to make the CCUS process cost effective. As such, we advise that if a company invests in carbon capture and can verify that sequestration has taken place, the company should generate GHG Emission Performance Credits in Ontario's Emission Performance System (EPS), irrespective of where the final sequestration site is located. To ensure that Ontario's CCUS environment is competitive against other Canadian jurisdictions, credits generated by industrial sites should generate credits both under the EPS but also under the federal CFR. The GHG emissions from refineries and other fuel facilities (i.e., renewable fuel facilities) will be covered both under the Ontario EPS and federal CFR and will need to pay the equivalent compliance costs under both regimes. Therefore, if a GHG reduction project occurs to lower these emissions, it should also be able to generate credits under both regulations they are subject to.

Finally, we encourage the Ontario government to promote CO2 utilization in addition to sequestration. Both avenues will be needed as a part of the net-zero emissions by 2050 goal. For example, if future commercial projects use CO2 as a feedstock for products, like liquid fuel, they should be able to generate credits in line with the GHG emissions they displace, in a circular economy context.

In conclusion, here are Suncor's recommendations:

1. We support the Ontario government approach to remove the regulatory restrictions on CCUS projects and evaluate the province's geological carbon storage potential. CCUS is part of the solutions that will need to be implemented to achieve net zero emissions by 2050.

2. We encourage the Ontario government to ensure that CCUS projects can generate Emission Performance Credits (EPCs) associated with the industrial site under the Emission Performance Standard regulation (EPS) as well as credits under the federal Clean Fuel Regulation.

3. We encourage the Ontario government to accelerate its energy transition potential by considering all potential CCUS projects, including those with sequestration options outside of Canada and Enhanced Oil Recovery (EOR) projects. This would facilitate the implementation of CCUS projects needed to reduce the province's GHG emissions and improve its industry competitiveness.

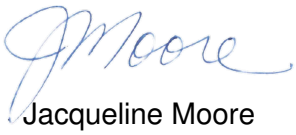
[3] Factbox: Biden administration sees carbon capture as key tool in climate fight | Reuters

4. We encourage the Ontario government to promote the implementation of a CCUS hub.

5. We encourage the Ontario government to promote CO2 transformation ("utilisation") through its regulatory framework.

We thank you for the opportunity to provide comments. Should you have any questions or comments on our submission, please feel free to contact Emmanuelle Plante (eplante@suncor.com) to get additional details.

Sincerely,



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