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Public Input Coordinator
MNDMNRF - RPDPB - Resources Development Section
300 Water Street
2nd Floor, South Tower
Peterborough, ON
K9J 3C7
Canada
https://ero.ontario.ca/notice/019-4770

Submitted via email

RE: DISCUSSION PAPER GEOLOGIC CARBON STORAGE IN ONTARIO (ERO number 019-4770)

Greenfield Global Inc. ("Greenfield" or the "Company") is an Ontario-based producer of fuel ethanol and high purity alcohols. We operate three distilleries in Ontario, one in Quebec and one in Minnesota. We generate significant quantities of biogenic CO2 from the fermentation of corn. As well, we are a significant consumer of natural gas used to generate steam for ethanol distillation as well to fuel our distillers' grain drying systems. Greenfield is a leader in the production of low-carbon ethanol, and is presently developing a highly ambitious net zero emissions plan for all our operations. We are excited about decarbonizing our manufacturing processes, and lowering the carbon intensity of our renewable fuels production. We believe that carbon sequestration will be an important element that plan. To that end, we are pleased to provide the following comments in response to the Discussion Paper: Geologic Carbon Storage in Ontario (January 2022).

Greenfield supports the permitting, construction, and operation of CO2 sequestration facilities in safe and stable geological formations within Ontario. We certainly agree that public safety and sequestration reliability is paramount with any application. CO2 sequestration is an essential tool to meet the climate goals of Ontario, Canada, and the world. As the IPCC 2018 call for action states, "The science and arithmetic required to hit these targets is straightforward: carbon emissions must drop swiftly worldwide, led by CO2 reductions, and ultimately coupled to large-scale CO2 removal (IPCC, 2018)"

We understand that there may be a number of suitable sequestration geological formations in Ontario for large scale CO2 sequestration. Multiple sites should be investigated and developed over time to help reduce transportation costs (and associated emissions) for CO2 sequestration. It is important to have a made-in-Ontario solution. Without local sequestration options, industrial emitters in Ontario will seek other locations such as Michigan, Ohio, or Illinois – all of which have abundant suitable formations.

For the ethanol industry, CO2 capture and sequestration will be a viable pathway to net zero or even net negative zero ethanol production. Ethanol plants capture CO2 from fermentation, called biogenic CO2 and once captured we can sequester it. The corn plant captures CO2 from the atmosphere through

photosynthesis and the carbon in the corn kernel is captured at the distillery. It is one of the lowest cost ways of capturing CO2 from the atmosphere. In addition to biogenic CO2 capture Greenfield would investigate the economics of capturing CO2 from our natural gas fired boilers and sequestering along with our biogenic CO2. We understand that technology advances are reducing the investment and operating cost of stack capture. It is worth noting that with sequestration, we have the opportunity to produce a liquid transportation fuel that has lower carbon emissions than wind or solar electricity.

In addition to geological sequestration Greenfield is working with our corn suppliers, Ontario farmers, to incentivize soil carbon capture practices, another tool to get to net zero ethanol. Ontario will need many initiatives to lower our greenhouse gases.

It is important for all Ontario ethanol plants to have access to safe and stable CO2 sequestration to remain competitive with our US ethanol counterparts. The US Federal Government provides a significant subsidy for CO2 capture and sequestration. There is some financial support for sequestration via the federal Output-Based Pricing System (OBPS). It is our hope and expectation that the Ontario EPS program would provide emission credits for CO2 sequestration in order to level the playing field with competition, in particular from the United States.

Our final comment is that time matters. We agree sequestration must be done safely and in geological formations that can assure permanent storage of CO2. However, at the same time, the United Nations Environmental Program states, “The gap between the current trajectory and the Paris stabilization goals is enormous (and the world is likely to exceed the carbon budget required to reach stabilization at 1.5° or 2° C stabilization (IEA, 2019).” Therefore, the process to approve the new legislation must keep a high priority.

Andrea Kent
VP Government and Industry Relations
Greenfield Global
andrea.kent@greenfield.com
613-698-0116