carbon removal canada

August 23, 2024

RE: Regulating Commercial-Scale Geologic Carbon Storage Projects in Ontario

Carbon Removal Canada would like to thank the Government of Ontario for the opportunity to comment on the issue of regulating geologic carbon storage projects in the province. While there are a variety of carbon removal methodologies, technologies such as direct air capture will be materially impacted by forthcoming carbon storage regulations. The government must be careful in ensuring that these discussions are broad enough to incorporate carbon removal in addition to carbon capture, utilization, and storage.

Carbon Removal Canada is an independent policy initiative focused on the rapid and responsible scale-up of carbon removal solutions needed to meet Canada's climate goals. We are not an industry association, rather we are a technology agnostic organization seeking carbon removal solutions that work for Canada. Carbon removal is an essential tool in the clean transition and must be used in addition to – and not in place of – reducing emissions. Even if society reaches net zero by 2050, there will still be a need to pull billions of tonnes of CO2 out of the atmosphere to keep the world aligned with global temperature targets. Carbon removal is our only tool to remove this planet-warming greenhouse gas.

As per the Intergovernmental Panel on Climate Change, carbon removal is essential to meeting the world's net-zero commitments. Carbon removal technologies (see Figure 1) mimic the natural processes of trees and plants by removing CO2 from the atmosphere that was already emitted and storing it away for multiple centuries or longer. Imagine that our atmosphere is a bathtub and CO2 is water flowing into it. While ongoing emission reduction efforts are trying to reduce the water flowing into the tub, something must be done to address the water already spilling out. Carbon removal can act as a drain for the bathtub, removing CO2 from the atmosphere and turning back the clock on some of the damages from climate change.

Our analysis demonstrates that an at-scale carbon removal sector, in 2050 capable of removing 300 megatonnes of CO2, could create 89K jobs, add $143B to Canada's GDP, and provide $27B in demand for other manufacturers like construction and steel. If Ontario can take a decisive role, it can bring the environmental and economic benefits of the sector to the province.

General Recommendations

The Government of Ontario should:

1. Standardize regulations for carbon storage in the subsurface across Crown and private lands, ensuring that the same level of scientific integrity and rigour is applied to ensure quality and safety.

2. Learn lessons and align structures with other jurisdictions where regulatory frameworks are operating and have reached maturity and acceptance from both industry and the

public, such as Alberta. This could include pore space ownership, monitoring timelines, and closure ability.

3. Begin to determine regulatory frameworks on the transportation of carbon dioxide to storage sites, whether through pipelines or trucks, as this will be an important consideration in how infrastructure is built.

Discussion Questions

1. **Would initially scoping the framework to only allow commercial-scale projects to store CO2 within saline aquifers and depleted oil and gas wells in southwestern Ontario at depths of at least 800m or more meet industry's current needs and maintain public comfort in the development of these projects?**

   Carbon Removal Canada believes that there may be issues with this approach. First, it would be important to determine what the government considers commercial-scale, in addition to how a project may approach that. Some facilities may store low-volumes of carbon at the beginning of a project but may increase as a facility reaches maturity or new technologies become available. This approach may disincentivize these early infrastructure projects as industry waits for the technology to become more standardized. In addition, this would preclude Ontario from any sort of new innovation or demonstration projects, for example, the recently announced project in Alberta from Deep Sky, which includes a $50M investment.

   Regardless of the size of the project, whether pilot, demonstration, or commercial scale, all projects should have to meet the same safety and scientific standards.

2. **Would you support using a competitive process to select projects looking to store carbon dioxide on Crown land? Why or why not?**

   Yes, at this time, available pore space in Ontario is limited and only those projects that are deemed to be of the highest quality and value to climate should be given preferential access to pore space. However, this should not prevent new technologies from competing - rather the government must have a nuanced view about their climate needs today and tomorrow. As such, it may be necessary to set aside some pore space for smaller demonstration projects. In addition, making industry compete for pore space could help induce a race to the top in terms of project quality.

3. **How should proponents obtain rights to pore space? What are the benefits and challenges associated with adopting the models currently being used in western Canada and US States discussed above?**

   While there are a variety of models used to obtain rights to pore space, Carbon Removal Canada believes that the Albertan model is 'gold standard' and should be replicated wherever possible. However, this must be done in consultation with government agencies, consumer groups, and municipalities, to ensure that a workable solution is found and long-lasting. Certainty and continuity will be of the utmost importance to a project that must safely store carbon for hundreds of years.

4. **Would a staged approach to authorizing carbon storage projects be desirable? If so, how should authorizations be staged?**

   Yes, a staged approach is desirable to ensure that proper planning can ensue. Stages should include authorization for exploration and site prospecting, feasibility studies, and final approval by ensuring that all proper regulatory and safety requirements have been met for commercial operations. However, there must be a streamlined regulatory process that minimizes that number of different agencies involved in the approval process to the extent possible.

5. **When and how should potential impacts to the agricultural land base and the agri-food network (e.g., operations, infrastructure, agribusinesses, etc.) be considered?**

   Food production systems and the health thereof are a national security imperative. Therefore, potential impacts to the agricultural land base and agri-food network should be considered in perpetuity (or at least as long as the defined close period).

6. **How should proponents of commercial-scale geologic carbon storage projects notify and engage with Indigenous communities and other parties who may be affected by their proposed projects?**

   Carbon Removal Canada believes that Indigenous Nations should be consulted in-depth as this process moves forward. Given that geologic sequestration can occur on traditional territories of Indigenous communities, they must be engaged early and often across the full project life cycle. This engagement must be robust in nature and significantly more than notifying communities of impending projects. Wherever possible, we believe that Indigenous communities should be brought in at the ground floor for projects and have options of shared project ownership and management.

7. **What operational controls should be put in place to help ensure commercial-scale carbon storage projects would be developed, operated, and decommissioned in a safe and responsible manner?**

   Carbon Removal Canada recommends following the guidelines in Alberta, British Columbia, and Saskatchewan that already have federally recognized CO2 storage regulations.

8. **Would allowing proponents to transfer responsibility for the long-term monitoring and stewardship of carbon storage projects to the Crown help ensure carbon storage projects, including the wells, geologic storage areas and carbon stored in geological formations, would be adequately cared for over the long-term?**

   Given the necessary long-lifespan and stewardship requirements of carbon storage projects, there must be consideration of how these projects can transition responsibility from private companies to the Crown, given the lifespan of private companies. While responsibility must be eventually vested in the most durable governing body, a structure must be in place that ensures private companies are not able to shirk their responsibilities or leave ‘orphan’ sites.

9. **Would you support components of this framework being delivered by an external entity and if so, what components?**

   As with any form of measurement, monitoring, reporting, and verification, third-party providers and auditors are a minimum requirement. However, the government must be involved throughout to ensure that the public has faith in the process.