Enabling the Development of Commercial-Scale Geologic Carbon Storage in Ontario: The Geologic Carbon Storage Act

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About SLEP

The Sarnia-Lambton Economic Partnership (SLEP) fully supports Ontario's efforts to create a regulatory framework for commercial-scale geologic carbon storage projects in Ontario that would enable the development of technology-ready commercial-scale projects and the continued testing and demonstration of newer carbon storage technologies.

Branded as Ontario's Hydrogen Hub, the Sarnia-Lambton area boasts the province's largest cluster of hydrogen production and consumption (off-take), with related hydrogen innovation, a top 3 ranked college in Canada for applied research with focused hydrogen capabilities (Lambton College Hydrogen Lab), a specialized workforce with the technical capabilities required for hydrogen production, and the infrastructure and distribution capabilities essential to the development of the low-carbon hydrogen economy. Our work has supported the development of Ontario's Hydrogen Hub, which is focused on development and growth of the low-carbon hydrogen economy in Sarnia-Lambton. In 2022 the Ontario's Hydrogen Hub in Sarnia-Lambton Strategic Plan was released.

Additionally, with the local prevalence of petrochemical and energy facilities – representing Ontario's largest chemistry cluster – Sarnia-Lambton is home to eighteen (18) of the fifty (50) largest emitters in Ontario, collectively emitting more than 8.7-million tonnes of carbon dioxide annually. The companies operating these facilities are seeking decarbonization solutions as part of both a transformational shift to achieve net-zero by 2050 and to limit exposure to the carbon tax.

The ability to access geological carbon storage for the purposes of carbon reduction has the potential to support the realization of significant capital investment and job creation in new manufacturing and energy related facilities that may otherwise have considered other jurisdictions, as it provides a pathway for companies to avoid exposure to the carbon emissions tax.

As identified by the Ministry of Natural Resources and Forestry, the Sarnia-Lambton area and surrounding region has the potential geology to support carbon storage. This potential equates to a regional capacity of 290 million tonnes of geologic storage.

Recognizing the regional geological storage potential, Ontarians in this part of the province are used to geologic storage being utilized to support industrial and energy uses. Sarnia-Lambton is located on Canada's largest salt deposit. Presently, 71 active salt caverns in Lambton County are used by local chemical and energy industries to store up to3.5 million cubic meters of hydrocarbons. Lambton County is also home to Enbridge's Dawn Hub which is the second largest natural gas hub in North America.

Hydrogen in the region is produced via steam methane reformation (SMR) of natural gas, resulting in grey hydrogen. SMR is the most widely used technology for hydrogen production and is expected to continue to be one of the primary pathways going forward. However, with the Sarnia-Lambton area's strong starting position, opportunities exist to achieve lower carbon intensities, and emissions reduction can be achieved from a transformative scenario capitalizing on the efficiency of scale presented by the region. Stakeholders

believe that investment and growth in the low-carbon economy can be achieved by creating opportunities for local industry to do better with what they do well today based on an incremental and well-defined shift (ex. Grey → Blue, Grey → Green). The addition of carbon capture and storage at existing hydrogen facilities may be a low cost way to decarbonize existing hydrogen production that supports the move from grey to blue hydrogen production.Many local industrial stakeholders have made commitments through global corporate strategies to pursue a global low-carbon hydrogen and clean fuel economy.

As the regional economic development agency for Lambton County, SLEP's mandate includes fostering economic stability, growth, and diversification across the Sarnia-Lambton area, to enhance quality of life and create a vibrant place to live and work.

Introduction

Bill 228, the *Resource Management and Safety Act, 2024*, introduces the *Geologic Carbon Storage Act* (GCSA), a legislative framework aimed at enabling safe, responsible, and permanent storage of carbon dioxide (CO2) in geological formations. This report evaluates the implications of the proposed Act, particularly regarding the pore space rights model, compensation mechanisms, and alignment with best practices across Canada, while providing actionable recommendations.

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1. Strategic Importance of the Geologic Carbon Storage Act

The GCSA is a crucial policy to achieve Ontario's climate goals and support industrial decarbonization while fostering economic opportunities. However, ensuring the competitiveness of Ontario's framework in comparison to jurisdictions like Alberta is essential to attract and retain investments. Misalignment with established best practices, particularly in managing pore space rights and compensation, could deter industry participation and limit the Act's potential impact.

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2. Evaluating Ontario's Pore Space Rights Model

2.1. Incongruence with Other Jurisdictions

Ontario's proposed model, where pore space rights form part of surface rights unless otherwise granted, diverges from Alberta's approach, where pore space is vested in the Crown. Alberta's model ensures streamlined management and regulatory certainty, which is critical for attracting investment. Ontario's reliance on individual agreements or unitization orders introduces complexities, particularly in fragmented ownership scenarios and potential barriers to projects moving forward.

2.2. Existing Ontario Regulations

Under the Oil, Gas and Salt Resources Act (OGSRA), no compensation is currently provided for pore space use in brine disposal, a discrepancy that could create friction when transitioning to a framework where compensation for CO2 storage in the same pore space use is mandated. The lack of precedent complicates stakeholder negotiations.

2.3. Risk of Reversibility in Public/Private Pore Space Vesting

Ontario's proposal allows the Lieutenant Governor in Council to vest pore space rights in the Crown under certain conditions. However, this pathway via regulation could be easily undone by future regulatory changes, introducing further uncertainty. A potential mitigation strategy would be adopting long-term leases that provide stability while balancing public and private interests.

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3. Compensation for Pore Space Use

3.1. Costs and Equity

Compensating for pore space rights adds costs to projects and thereby to the large emitters using them, especially if payments are ongoing. Industry stakeholders, including Enbridge, emphasize the importance of fair compensation for surface rights disturbances such as wells and pipelines. However, ongoing payments for pore space usage would significantly increase project costs, potentially discouraging investments.

3.2. Competitive and Sustainable Valuation

Since pore space can only be used once for permanent CO2 storage, compensation should be a one-time payment. This approach aligns with industry expectations and reduces long-term administrative burdens. Furthermore, compensation rates must remain competitive with other jurisdictions, particularly Alberta, to avoid disincentivizing investments or driving industries to regions with more favorable frameworks.

3.3. Efficient Administration

Administering compensation payments poses challenges, particularly in fragmented ownership contexts. A practical alternative could involve payments made to municipalities, reducing property taxes for affected landowners or the crown instead. This approach centralizes administration, ensures transparency, and fairly distributes benefits across communities.

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4. Recommendations

4.1. Alignment with Best Practices

- Align Ontario's pore space rights model with Alberta's framework, vesting pore space in the Crown to simplify management and provide regulatory certainty.
- Integrate lessons from existing OGSRA regulations on brine disposal to inform equitable compensation structures.
- Ensure the framework is designed to optimize the pore space resource for CO2 storage and it integrates with other users of the same pore space.
- Implement a Request for Proposal approach to award evaluation leases to proponents based on merit, using the Alberta process as a model.

4.2. Transparent and Fair Compensation

- Establish a one-time compensation model for pore space use, reflecting the finite nature of storage.
- Determine compensation rates through a transparent process that considers market conditions and competitive benchmarks.

4.3. Robust Legal and Regulatory Framework

- Reinforce the permanence of public/private pore space vesting by incorporating lease agreements with long-term durations.
- Ensure legislative provisions safeguard against potential reversals, fostering confidence among stakeholders.

4.4. Administrative Efficiency

- Develop a compensation administration mechanism that minimizes costs. Payment to municipalities, with reductions in property taxes for landowners, could streamline processes while benefiting local communities.

4.5. Industry and Public Engagement

- Conduct targeted consultations with industries, Indigenous communities, municipalities, and landowners to address concerns and refine compensation and regulatory mechanisms.
- Launch public awareness campaigns highlighting the environmental and economic benefits of geologic carbon storage to build trust and support.

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5. Conclusion

The *Geologic Carbon Storage Act* under Bill 228 represents a transformative step for Ontario's climate and industrial policy. However, achieving its potential requires addressing gaps in pore space rights and compensation mechanisms to align with best practices and ensure competitiveness. By adopting a fair, transparent, and administratively efficient framework, Ontario can position itself as a leader in geologic carbon storage, attract significant investment, and contribute meaningfully to Canada's decarbonization efforts.

Respectfully submitted by Sarnia-Lambton Economic Partnership