Cross-country Carbon Capture And Sequestration Check-in

Last year, we distributed a bulletin that provided an overview of recent developments related to carbon capture and sequestration (CCS) in Ontario, Alberta, and federally. A year on, major investments in CCS projects have continued to increase, while several significant legislative developments in Ontario, Manitoba and federally have given renewed momentum to advance these projects in their respective jurisdictions.

In late June 2024, the federal Parliament passed legislation establishing the Carbon Capture, Utilization, and Storage Investment Tax Credit (CCUS ITC). Manitoba also enacted *The Captured Carbon Storage Act*, which will establish the framework for CCS projects in the province. In July 2024, Ontario released a discussion paper entitled *Regulating Commercial-Scale Geologic Carbon Storage Projects in Ontario* and issued a call for input on the design of the regulatory framework that will enable the development of CCS projects in the province. Comments on the discussion paper are due by August 23, 2024.

The CCUS ITC provides much-anticipated investment certainty for stakeholders in CCS projects, while the legislative developments in Manitoba and Ontario help pave the way for future investments that may be central to reducing industrial emissions in those provinces.

Federal CCUS investment tax credit

The two major federal tax bills that establish the entitlement to the CCUS ITC (as well as other clean economy tax credits) received royal asset on June 20 and 21, 2024, respectively[1]. While many of the practical details, procedures and issues involving the CCUS ITC continue to develop, the passing of this legislation should give interested stakeholders some much-needed certainty regarding their ability to claim and receive this refundable tax credit.

The CCUS ITC is generally calculated based on the amount of qualified expenditures incurred on certain property used to capture carbon directly from the ambient air or that would otherwise be emitted into the atmosphere (i.e., from fuel combustion and industrial processes), as well as on certain property used to transport and sequester captured carbon in the subsurface or use it in the production of concrete[2]. The calculation of the CCUS ITC based on qualifying expenditures differs from the U.S., where the 45Q tax credit is generally calculated on the amount of carbon dioxide (CO_2) that is sequestered.

The CCUS ITC is available to taxable Canadian corporations (and certain taxable Canadian corporations that are partners of a partnership that makes qualifying expenditures) that incur qualified expenditures between January 1, 2022 and December 31, 2040 related to the development of a "qualified CCUS project". While the rules are complex and care needs to be taken to ensure that expenditures qualify, the CCUS ITC can be a significant driver in evaluating the economics of a CCUS project. In Budget 2022, the federal government estimated that approximately $8.6 billion will be committed to the CCUS ITC through 2030[3].

CCUS ITC will not be available for pilot or demonstration-scale projects. There are a number of specific requirements

for a project to be considered a "qualified CCUS project", including: (a) the period in which the project is intended to support the capture of carbon dioxide in Canada; (b) the Minister of Natural Resources issuing an initial project evaluation; (c) the projected eligible use equaling or exceeding 10% in a certain period; and (d) the timing of its commissioning date and whether it was undertaken to comply with certain emissions standards under the *Reduction of Carbon Dioxide Emissions from Coal-fired Generation of Electricity Regulations*[4].

Rules regarding "eligible uses" and "ineligible uses" that also need to be considered. Generally, an "eligible use" of captured carbon means the storage of captured carbon in dedicated geological storage or its use in the production of concrete in Canada or the United States using a qualified concrete storage process. "Ineligible uses" generally include the emission of captured carbon into the atmosphere (subject to certain exceptions) and the storage or use of captured carbon for enhanced oil recovery.

Eligible expenditures for subsurface sequestration projects generally include, among other things:

- equipment that:
  - is solely used for capturing carbon from ambient air or that would otherwise be emitted into the atmosphere (excluding equipment used for hydrogen production, natural gas processing, and acid gas injection);
  - prepares or compresses captured carbon for transport;
  - generates and transmits power solely to support an eligible project (with some "dual-use" exceptions, this excludes power generated from fossil fuels for which the emissions are not captured);
  - delivers, collects, recovers, treats, or

recirculates water used solely to support the eligible project (subject to some dual-use exceptions);
    - is used to transport or store captured carbon in the subsurface;
    - is used for system safety, integrity, monitoring, and control of eligible equipment; and
    - is ancillary to the foregoing equipment and is used solely to support the eligible project;
- buildings or structures, substantially all of which are used for the installation or operation of eligible equipment; and
- property that is used solely to convert another property into any of the foregoing or to refurbish any of the foregoing.

Applicants for the CCUS ITC must complete a front-end engineering and design study and eligibility questionnaire, and submit a project plan to Natural Resources Canada (NRCan) detailing the CCUS processes and property involved. NRCan will then determine whether the submission involves a single project or multiple projects and review the applicant's project plan prior to issuing a project evaluation. Project evaluations must be obtained for each qualified project prior to claiming the CCUS ITC.

The CCUS ITC rates for qualified expenditures are as follows:

- **expenditures incurred to capture carbon directly from ambient air:** 60% for expenses incurred from 2022–2030 and 30% for expenses incurred from 2031–2040;
- **expenditures incurred to capture carbon from fuel combustion and industrial processes:** 50% for expenses incurred from 2022–2030 and 25% for expenses incurred from 2031–2040; and
- **transportation, sequestration, or use expenditures:** 37.5% for expenses incurred from 2022–2030 and 18.75% for expenses incurred from

2031–2040.

Applicants must comply with certain labour requirements to claim the full amount of the CCUS ITC, otherwise the credit rate will be reduced by 10%. The labour requirements include: (1) a prevailing wage condition, which stipulates the taxpayer must pay covered workers (generally, those engaged in the preparation or installation of the eligible property at a designated work site) the prevailing wage (including benefits) for the occupation and region in which the work is performed (based generally on comparable wages and benefits that would be paid in a collective bargaining environment); and (2) an apprenticeship condition, which requires the taxpayer to make reasonable efforts to ensure Red Seal trade work apprentices account for at least 10% of the hours required to prepare and install the eligible property.

Additionally, qualified projects that utilize the CCUS ITC and are expected to incur eligible expenditures of $250 million or more over the life of the project are required to submit knowledge sharing reports that will be made publicly available and are ostensibly intended to stimulate further innovation and engender accountability within the CCS industry.

For further information on eligibility requirements and the mechanics of the CCUS ITC, see the CCUS ITC Technical Guidance Document published by NRCan.

Manitoba: *The Captured Carbon Storage Act*

On June 4, 2024, *The Captured Carbon Storage Act* (the Act) received royal assent in Manitoba, laying the groundwork for the development of CCS projects in the province[5]. The Act will not become effective, however, until it is proclaimed into force on a future date upon the direction of the provincial Cabinet.

Whereas the equivalent frameworks for CCS in Alberta and

British Columbia were developed through a patchwork of amendments to existing statutes, Manitoba's Act and the regulations that have yet to be enacted thereunder will largely form a standalone framework that addresses many of the same topics and issues as in Alberta and British Columbia.

Pore-space ownership vests in the Manitoba government

First and foremost, the Actfollows the Alberta example by declaring that the pore space below all land in the province is vested in and is the property of the Manitoba government[6]. "Pore space" refers to the voids within and between the different constituent particles of a rock which, prior to the injection of carbon dioxide (CO_2) during CCS operations, may be occupied by water, petroleum, or various gases.

The ownership of pore space in the context of CCS can be contentious because common law property principles typically dictate that the owner of the surface estate also owns the subsurface, subject to any express grants or reservations. In southwest Manitoba—where the bulk of the province's oil and gas is found and where the geology is prospective for CCS—most land grants to private individuals include mineral rights. As a result, although approximately 80% of the mineral rights in southwest Manitoba are held by private entities, the pore space coincident with those mineral rights will be owned by the Manitoba government when the Act comes into force.

In addition to oil and gas, pore space may be occupied by other valuable substances or used for the temporary storage of commodities like natural gas or hydrogen. Statutory declarations vesting the ownership of pore space in governments may thus be seen as a constructive taking or expropriation. Consequently, as is the case in Alberta, the Act declares that the vesting of pore-space ownership in Manitoba's government is not a taking or expropriation and

prohibits the commencement of lawsuits against the government for compensation relating to pore-space ownership[7].

Pore-space rights granted to CCS proponents

The Act prescribes two types of pore-space rights that may be granted to CCS project proponents: (1) an "exploration reservation", which has a four-year term and entails the exclusive right to explore the designated area[8]; and (2) a "carbon storage licence", which does not have a prescribed term under the Act and entails the exclusive right to access, develop, and use pore space at a depth greater than 800 metres below the surface within the licence area to permanently store captured carbon[9].

Well licences must be obtained separately from both exploration reservations and carbon storage licences, and the proponent must obtain the surface rights necessary to drill and operate a well prior to obtaining a licence[10]. Applications for carbon storage licences will require a risk assessment, risk management plan, monitoring, measurement and verification (MMV) plan and a closure plan[11].

Subsurface rights compensation

Prior to obtaining a carbon storage licence, proponents must notify all persons whose interests intersect with the proposed licence area and obtain either a compensation hearing waiver from an interested party or a compensation order fixing the amount payable to an affected person[12].

Compensation orders are to be issued following a hearing of the proponent, affected persons, and the director under the Act before a "subsurface rights compensation board" appointed

by the responsible minister[13]. Compensation will only be payable in circumstances where the board is satisfied that the storage of captured CO_2 will have a "material adverse impact on the affected person's interest"[14].

This represents a significant divergence from the process in Alberta, where parties whose subsurface interests stand to be impacted by a CCS project may not be given standing to raise their affected interests until after pore-space rights for CCS have been granted. In such cases, parties have limited recourse for compensation: they may request payment from the proponent in exchange for their cooperation or bring a court claim once an adverse impact materializes.

The compensation process in Manitoba accompanies provisions of the Act that prohibit other drilling and well completions, mineral extraction, and injection operations within the carbon storage licence area[15]. While those prohibitions may be subject to discretionary exceptions, the presumptive sterilization of other freehold subsurface rights differs from Alberta where, subject to regulatory intervention, common law entitles subsurface rightsholders to work through third-party interests to access the full extent of their rights[16].

Post-closure liability for sequestered carbon

The other significant point of divergence between Manitoba's Act and the Alberta regime is that post-closure, long-term liability for sequestered CO_2 would remain with the licensee in Manitoba. While the Act provides for the issuance of a closure certificate upon the execution of an approved closure plan[17], liability for the costs of any future actions required to prevent the escape of CO_2 or to mitigate impacts on other lands or groundwater affected by CCS operations will remain with the

licensee in Manitoba[18]. By contrast, upon the issuance of a closure certificate in Alberta, the ownership of sequestered CO_2 and all associated liabilities transfer from the proponent to the Alberta Crown[19]. This transfer of liability is enabled, in part, by the post-closure stewardship fund, into which lessees are required to pay during the term of a carbon sequestration lease[20]. Manitoba's Act does not contemplate an equivalent fund.

Ontario seeks input on design of CCS regulatory framework

On July 9, 2024, the Government of Ontario released a discussion paper entitled *Regulating Commercial-Scale Geologic Carbon Storage Projects in Ontario* (the Discussion Paper) and issued a call for input on the design of the regulatory framework that will enable the development of CCS projects in the province.

This latest development is the third phase of Ontario's roadmap for enabling geologic carbon storage, which will support the government of Ontario's commitment to reducing greenhouse gas emissions up to 30% below 2005 levels by 2030. The first phase resulted in 2022 amendments to the *Oil, Gas and Salt Resources Act*, which removed the prohibition on CCS activities. The second phase saw further amendments to the *Oil, Gas and Salt Resources Act* in 2023 that enabled the advancement of "special projects" designed to test, assess, pilot, or demonstrate new CCS technologies on both Crown and private land, which we discussed in a previous article.

The Discussion Paper advances a tentative framework for several different aspects of a future CCS regulatory framework in Ontario and requests input on certain parameters discussed below. Comments are due by August 23, 2024.

Types of commercial-scale CCS projects

The Discussion Paper identifies standalone projects and carbon storage hubs as the two potential means of advancing commercial-scale CCS in Ontario. Standalone projects would entail the capture, transportation, and sequestration of CO_2 from a single emitter, similar to Alberta's evolving framework for CO_2 and acid gas sequestration. The hub approach involves tying in multiple sources of industrial emissions to a central sequestration hub that would likely be operated by a single entity, similar to the hub model that is developing in Alberta.

The Discussion Paper focuses on the hub model given the concentration of large industrial point-source emissions in southwestern Ontario—which hosts the greatest geological potential for CCS—and the economies of scale that would be achieved by developing one or more hubs. Similar to the competitive process for the selection of potential hub projects that unfolded in Alberta in 2022 and 2023, the Discussion Paper envisions a Request for Project Proposals (RFPP) that would select proponents to evaluate Crown-owned land in southwestern Ontario for commercial-scale CCS hub projects based on the following:

- the proponent's safety, operational, regulatory, and financial records;
- the ability to ensure robust public and Indigenous consultation during the advancement of the project;
- proposed socio-economic benefits, including employment and community impacts;
- impacts on the agricultural system in southwest Ontario;
- total emissions reduction potential;
- the provision of open-access or partnerships with other industry participants;
- benefits to Indigenous communities; and
- overall project economics.

Access to pore space

The Discussion Paper compares approaches to pore-space access in other Canadian provinces—where the respective governments either own the pore space (Alberta and, in future, Manitoba) or are statutorily empowered to grant pore space rights to CCS proponents (British Columbia)—to that of certain U.S. states, where pore space rights reside with the owner of the surface rights. In the latter approach, CCS proponents may purchase land or negotiate leases directly with private landowners to access pore space. This can lead to issues where multiple tracts of ownership cover the same reservoir and there are one or more non-consenting landowners.

If pore space rights remain with surface landowners in Ontario, the Discussion Paper contemplates the application of pore-space unitization orders similar to the processes currently in place in Ontario for the unitization of oil and gas reservoirs and the designation of natural gas storage areas. In both instances, private landowners and oil and gas rightsholders are entitled to compensation where their rights are unitized or designated as natural gas storage areas.

The Discussion Paper is agnostic with respect to whether the rights to all pore space should be vested in the Ontario government or remain with surface landowners and requests input on the benefits and challenges associated with each approach. Given the Discussion Paper's suggestion that an RFPP would proceed pertaining to Crown-owned land in southwestern Ontario, a direction regarding pore-space ownership may not be immediately necessary, though there remains the potential for CCS hub projects to intersect with oil and gas rights and natural gas storage areas.

The licensing regime

The licensing regime envisioned in the Discussion Paper closely mirrors the staged approach in Alberta, where hub

proponents obtain a CCS evaluation permit—a short-term tenure instrument that entails the rights to evaluate the suitability of the subsurface for commercial-scale, permanent CO_2 storage—followed by a CCS lease (described as a "storage permit" in the Discussion Paper), which is a longer-term instrument that entails the rights to inject and permanently store CO_2 in the subsurface.

The Discussion Paper contemplates similar application requirements to those in Alberta for CCS evaluation permits and leases, including:

- the ability to meet regulatory eligibility requirements to operate a CCS project;
- demonstrated financial and operational capability, qualifications, and experience to undertake CCS activities;
- detailed plans and other documentation to support the proposed project, including risk assessments, reservoir characterizations, MMV plans and closure plans;
- assessments of other existing and potential subsurface resources and rightsholders that coincide with the proposed project; and
- notification and consultation at various stages of the proposed project with affected third parties.

Unlike Alberta, where well licences and regulatory scheme approvals are obtained separately from CCS evaluation permits and leases, the Discussion Paper also considers an all-encompassing project-based approach whereby the issuance of an evaluation or storage permit would include the necessary approvals for drilling and operating wells. As with the pore space approach, the Discussion Paper remains agnostic and requests input on whether well licensing should proceed separate from or be granted with evaluation and storage permits.

Post-closure liability

Similar to other regimes in Canada, the Discussion Paper indicates that operators will be required to adhere to closure plans for the decommissioning of CCS projects at the end of their life but grapples with whether post-closure liability for sequestered CO_2 should remain with the licensee (as is contemplated in Manitoba) or transfer to the Crown once a closure certificate is issued (similar to Alberta).

Given that the physiochemical processes for the permanent sequestration of CO_2 can take hundreds to thousands of years post-injection, the Discussion Paper acknowledges that the timeframes for ongoing subsurface monitoring and maintenance of CCS sites may eclipse the existence of individual corporations. Accordingly, the focus of the Discussion Paper is on the parameters that would be necessary for the transfer of post-closure liability to the Crown, such as:

- application requirements for closure certificates, including MMV reports, post-closure MMV plans and residual risk assessments;
- a prescribed closure period during which proponents would have to demonstrate the stability of sequestered CO_2 before transferring liability to the Crown;
- the related responsibilities that would transfer to the Crown, including ongoing inspection and monitoring of CCS sites, management of decommissioned and monitoring well infrastructure, and emergency response and remediation management; and
- the establishment of a post-closure stewardship fund to cover the costs associated with the responsibilities to be transferred to the Crown.

Other parameters

In addition to the foregoing parameters, the Discussion Paper

also raises the following considerations:

- how proponents are to obtain the necessary surface rights for CCS projects, including potential mechanisms that would enable access where agreements with landowners cannot be reached;
- the processes and requirements for notification and engagement with Indigenous communities and other potentially affected third parties;
- the operational controls necessary to ensure the safe and responsible development, operation, and decommissioning of CCS projects;
- the level of financial assurance required of proponents to ensure their ability to address the liabilities associated with CCS projects; and
- the fees necessary to cover the costs of administering a commercial-scale CCS regulatory and licensing regime.

Other CCS developments: Alberta, British Columbia and Newfoundland & Labrador

Alberta

On July 8, 2024, the Government of Alberta entered into a carbon sequestration lease agreement with Shell Canada and ATCO EnPower for the Atlas Carbon Storage Hub in Alberta's industrial heartland, which grants the right to inject captured CO_2 into the subsurface for permanent sequestration. The Atlas Carbon Storage Hub is the first CCS hub project in Alberta to have advanced to the sequestration lease phase since the initial round of CCS evaluation permits were granted to hub proponents in 2022. Prior to commencing sequestration operations, the project will require regulatory approvals from the Alberta Energy Regulator (AER), including the critical sequestration scheme approval under AER Directive 065: *Resource Applications for Oil and Gas Reservoirs*.

British Columbia

Key legislative amendments that laid the framework for CCS in British Columbia were enacted in 2022. In February 2024, the B.C. Energy Regulator issued an updated Carbon Dioxide Storage Application Guide, which sets out the requirements for CCS project applications in the province. The update reflects the expansion of the regulator's responsibility for CCS under the *Energy Resource Activities Act* to include all sources of CO_2 beyond emissions related to just oil and gas activities.

Newfoundland & Labrador

On May 9, 2024, Newfoundland & Labrador's (NFL's) Department of Industry, Energy and Technology (IET) issued the Carbon Capture, Utilization and Storage Innovation Challenge, which requests proposals for the acceleration of offshore CCS projects to be partially funded by the NFL IET. Submissions are due by August 9, 2024. NFL's offshore oil and gas industry—which comprises several producing fields and ongoing exploration and development activities—accounts for approximately 17% of the region's emissions. Offshore CCS is likely to focus on the post-combustion capture of Scope 1 emissions related to oil and gas production. The advancement of offshore CCS projects would necessitate a regulatory framework that has yet to be enacted.

Conclusion

While the legal and regulatory landscape is still uncertain, it is clear that regulation is increasing in multiple jurisdictions. Organizations developing or licensing AI systems now should look to these sources to forecast their likely compliance obligations, rather than launching products that may need to be altered once these laws come into force. Such organizations should consider proactively implementing written policies and procedures that address their expected

obligations under the developing legal and regulatory framework.

Footnotes

1. Bill C-69 (the *Budget Implementation Act, 2024, No. 1*) and Bill C-59 (the *Fall Economic Statement Implementation Act, 2023*).

2. Note that the amount of CCUS ITC claimable can depend on the amount of captured carbon that is expected to be stored or used in an eligible use.

3. In February 2024, the Parliamentary Budget Office estimated that the cost of the CCUS ITC from 2022–2023 to 2027–2028 will be $5.7 billion.

4. SOR/2012-167.

5. RSA 2000, c M-17 [*CCSA*].

6. With the exception of lands within a reserve; see section 5 of the *CCSA*. For Alberta, see section 15.1 of the *Mines and Minerals Act* [the Alberta *MMA*].

7. CCSA, section 6. For Alberta, see subsections 15.1(4) and 15.1(5) of the Alberta *MMA*.

8. CCSA, sections 7–10.

9. Ibid, section 16.

10. *Ibid*, subsections 14(1) and 28(2).

11. *Ibid*, subsection 17(2).

12. *Ibid*, subsection 18(1)(b).

13. *Ibid*, see sections 54–56.

14. *Ibid*, subsection 57(2).

15. *Ibid*, subsection 59(1).

16. See, for example, 2012 ABERCB 008 (PDF), in which the regulator noted that the potential for drilling activity by freehold mineral owners or their lessees within the Shell Quest carbon sequestration lease "exists indefinitely".

17. *CCSA*, sections 22–23.

18. *Ibid*, section 24.

19. See section 121 of the Alberta *MMA*.

20. See subsection 116(3)(g) and section 122 of the Alberta *MMA*.

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