



Cement
Association
of Canada

May 11, 2023

SUBMISSION

ERO# 019-6752 Comments on proposed changes to the OGSRA to regulate projects to test or demonstrate new or innovative activities, such as geologic carbon storage, and to safeguard people and the environment

Jennifer Keyes
Director, Resources Planning and Development Policy Branch
Ministry of Natural Resources and Forestry
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Via email: resources.development@ontario.ca

Dear Ms. Jennifer Keyes,

On behalf of the Cement Association of Canada and our member companies in Ontario, I am pleased to submit comments on the proposed amendments to the *Oil, Gas and Salt Resources Act* to authorize and regulate projects that are to test, assess, pilot or demonstrate an activity, method or technology that is new or innovative to Ontario – such as carbon storage.

We support the Government of Ontario's actions to unlock the environmental and economic potential of CCUS in the province while at the same time ensuring safe and responsible development. We look forward to continuing our partnership with the government on this important issue.

Similar to our submission in January, our top priorities remain:

- 1) That the Government of Ontario **supports a predictable investment environment for CCUS projects by delivering a comprehensive roadmap for CCUS in Ontario** that is timely, as well as responsive to the opportunities and challenges of development.
- 2) A **clear connection is established between Ontario's ambitions around CCUS and the design and function of other regulations**, most notably, the Emissions Performance Standard.
- 3) **Ontario seizes the opportunity to attract investment**—recognizing the competition that policies from competing jurisdictions such as the U.S. and the Inflation Reduction Act pose.

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Ontario's cement industry is an ardent supporter of climate action. We have publicly declared our commitment to chart a path to net-zero cement and concrete by 2050, including a reduction of emissions by 15MT CO₂ cumulatively by 2030. We just released [Concrete Zero](#), our detailed Action Plan on how we will achieve this.

We also recognize the importance of regulatory approaches and remain in favour of carbon pricing systems, including Ontario's Emissions Performance System, that are sensitive to the competitiveness pressures faced by Emissions Insensitive Trade Exposed (EITE) sectors like cement.

Across Canada, the cement industry is pursuing a diverse portfolio of strategies to reduce emissions. While we can achieve reductions as high as 65% by 2050 with these strategies, **net-zero cement and concrete is currently not possible without CCUS technologies.**

The scale up of CCUS is vital to industrial decarbonization both within Ontario, in Canada, and globally. In their foundational report, *Net Zero By 2050: A Roadmap for the Global Energy Sector*, the International Energy Agency defines CCUS as an essential 'pathway' to reduce GHG emissions to avoid catastrophic climate change. The report calls for an unprecedented rate of CCUS development and deployment as part of a broader energy system transition to achieve the scale of GHG mitigation needed, including an expansion of global CCUS capacity from 40 Mt per year in 2020, to more than 7600 Mt per year by 2050. **Ontario has an important role to play in seizing this global opportunity.**

Worldwide, cement manufacturing is a major source of carbon emissions— accounting for approximately 7% of GHGs globally. In Canada the manufacturing of cement accounted for 1.5% of the country's emissions in 2019. These emissions primarily come from the calcination reaction of limestone, and from the fossil-fuel emissions generated through combustion to produce the high temperatures (approximately 1,450 degrees Celsius) required to achieve that process.¹ Ontario is home to 6 of Canada's 15 cement manufacturing facilities.

Despite these challenges, advances in CCUS are being made in other parts of Canada, thanks in large part to advanced infrastructure, supportive regulatory and legal frameworks, combined with capital support from the federal government in the form of the CCUS Investment Tax Credit and the Strategic Innovation Fund—Net Zero Accelerator, and other programs.² **With Ontario's largest trading partner, the United States, taking unprecedented action via the Inflation Reduction Act to drive investment in emissions-reducing technologies south of the border, government must act swiftly and deliberately to ensure that the economic benefits of jobs and manufacturing remain in the province.** This can largely be achieved through three main actions:

¹ 60% of GHG emissions come from the chemical industrial process, and 40% from the combustion to heat that process.

² At the time of writing, the final legislation for the design of the CCUS ITC has not been released. Effectiveness of the tax credit in terms of its ability to unlock investment and support projects is still to be determined.

1) Develop a Comprehensive Roadmap

These proposed amendments to the *Oil, Gas and Salt Resources Act*, a follow-up to the ones in January, are the first of several that Ontario must take to support CCUS in the province.

We applaud the recognition by the Ministry of Natural Resources and Forestry and the government that a multi-faceted approach must be applied to CCUS development in Ontario and we are appreciative of being able to participate in these discussions. A comprehensive roadmap that accounts for an “all of government” approach will not only provide clarity for businesses to plan and invest in but will ensure transparency, accountability, and support safe and responsible development. To maximize its effectiveness, the roadmap must include the following:

Urgency

As previously noted in our January submission, it is important the development of CCUS in Ontario happen quickly. Therefore, we welcome these additional measures and look forward to participating in next steps.

Businesses and companies operating in Ontario continue to be at a competitive disadvantage compared to those in other provinces such as Alberta and Saskatchewan where CCUS is operational and compared to the United States who has moved to aggressively attract investment in CCUS via the Inflation Reduction Act (IRA).

With millions of dollars available from federal government programs to support the deployment of CCUS, companies in Ontario must be immediately enabled to capitalize on these opportunities.

Study of best practices

In places such as Alberta and Saskatchewan, regulatory frameworks for CCUS took years to develop— Ontario must find ways to expedite this process. While its geology is unique, Ontario has the benefit of leveraging the experiences from other provinces when building its regulatory framework for carbon storage.

Industry and public engagement

We strongly encourage MNRF and the Government of Ontario to work in collaboration with industry to achieve operational success for CCUS. Likewise, Ontario must work in a proactive manner with local communities and stakeholders to build increased understanding, receptivity, and support for CCUS and the vital role it plays in the transition to net-zero.

Supporting access to storage

There is an urgent need for MNRF to update assessments of the potential for geological formations that are suitable for storage—the last publicly available assessment having been published in 2017. It is important that the Ministry build up its internal expertise and capabilities as quickly as possible to confirm the location and quantify the storage capacity to permanently

store carbon. In addition, MNRF must move swiftly to address challenges around access to storage, including but not limited to characterization of subsurface, and clarity on permitting and pore space ownership.

In addition, the roadmap will also need to outline how hubs and pipeline infrastructure fits together with continued progress on access to storage. This will be important for investment and project planning purposes.

The role of utilization

Carbon storage for heavy industries that are considered the “hardest to abate”— that is emissions in industries that produce goods that are needed in a net-zero future that are either prohibitively costly or impossible to reduce with existing technology and industrial processes— will be essential for achieving net-zero and remaining economically competitive. Simply put: CCUS will be necessary for industry in Ontario to achieve net-zero emissions.

At the same time, the volume of carbon that can be stored in Ontario remains uncertain. There are several factors that can limit storage potential in the province including geology, the injection strategy utilized³ and proximity of industrial users to storage. While preliminary assessments have identified areas located along the north shore of Lake Erie that have storage potential, there is a significant need to engage in further technical assessments of suitable areas to estimate the storage volumes available and how heavy emitters who are located outside of the immediate area might access this storage.

Therefore, we encourage the Government of Ontario to **consider the valuable role that utilization technology will play in the overall decarbonization of heavy industry and prioritize supporting it with necessary investment and policy frameworks to grow this potential**. Canada is home to several leading carbon capture and utilization cleantech companies, including Svante, Carbon Upcycling, CarbiCrete and Carbon Cure—all who are working to develop solutions to reduce the emissions in cement and concrete. A signal that Ontario is interested in developing utilization technology will encourage the development of made-in-Ontario technology that builds on the province’s robust cleantech ecosystem, unlocks valuable emissions reductions, and grows an important economic and export opportunity in CCUS.

2) Work In Conjunction with Existing Policies & Regulations

The ambition of Ontario’s cement industry to reduce emissions and achieve net-zero by 2050 includes maintaining competitiveness throughout the transition. However, **this is at risk in absence of significant evolution in Ontario’s industrial policy**. To support

³ These factors include gravity override, viscous fingering, heterogenous channelling and capillary blockage.

decarbonization and economic competitiveness in the cement industry, we require funding and regulatory support to accelerate the deployment of CCUS—with programs, policies, and regulations working in harmony.

Ontario recently amended the Emissions Performance Standard (EPS) ([ERO 019-5769](#)) to bring the program in line with the updated federal benchmark and continue the program to 2030. **While we are supportive of the amendment to include a deduction in the verification amount for CO₂ that is captured at a covered facility and stored permanently in long-term geological storage—this alone remains insufficient to address the challenges at hand.**

The amended EPS includes increased stringency rates of 2.4% in 2023, and the 1.5% per year from 2024-2030, which has increased urgency to develop CCUS in Ontario for the cement industry. Due to process emissions, which comprise about 60% of emissions produced, achieving net-zero cement and concrete is simply not possible without CCUS technologies—regardless of industry’s added efforts. **In absence of CCUS, industry will continue to face increased compliance costs, with no way to mitigate, threatening economic competitiveness for the industry and the province.**

It should also be noted that the amended EPS did not include an offsets program and remained silent on what would be done with the revenue gained from the regulation. **Given the prohibitively high costs of building a CCUS project—two new cement facilities could be built for the same cost—there must be an accompanying financial mechanism to mitigate these costs.** This could be achieved by monetizing the value of storing the carbon via an offset to help make CCUS projects more investable and provide a source of revenue generation. Revenue generated by the EPS program should also be utilized to help offset the capital costs of CCUS projects. Further detail is provided in section 3.

To further unlock the benefits of CCUS and the decarbonization of heavy industry, including cement, additional attention and actions must also include: **increased scope and ambition on low-carbon procurement; recognition that the codes and standards system must prioritize the uptake of lower carbon construction materials as a core metric; a policy and regulatory environment that allows for development and increased use of advanced lower carbon fuels,⁴ and consideration of enhanced measures to protect energy intensive, trade exposed industries (EITEs) from carbon leakage.⁵**

3) Attracting Investment to Ontario

While it is technologically feasible to produce lower carbon or even net-zero cement and concrete today (with existing CCUS technologies), the economics remain an insurmountable barrier: The cost of CCS (carbon capture and storage) alone is greater than the value of the

⁴ Considerable progress has been made in Ontario with the introduction of O. Reg. 79.15

⁵ Cement manufacturing is considered a “very high” EITE risk <https://www.gazette.gc.ca/rp-pr/p1/2022/2022-10-29/html/reg2-eng.html>

cement facility itself and **there are currently no markets willing to pay the higher production cost for low-carbon/net-zero basic materials.**

While it is a proven technology—we know that it works—CCUS in cement is still at the stage of first commercialization. It is a new entrant to the market. Because of this it **bears prohibitively high costs for both capital (to build the project) and operating (to run the CCUS process).** For example, a full-scale CCS project in Norway with 10-years of operating expenses factored in, was anticipated to cost \$2.58B (USD) in 2020.⁶ The private market alone cannot rationalise that cost, which is why Norway is underwriting approximately 80% of that project. Governments around the world, including Canada, are moving to support CCUS and unlock its potential.

The U.S. is aggressively leading the charge via the Inflation Reduction Act with significant impacts on the energy industry. The law includes approximately \$369 billion in incentives for clean energy and climate-related program spending, including funding to encourage CCUS projects. The act increases the country's existing 45Q carbon capture tax credit to \$85 per tonne for deep underground storage of carbon dioxide created by industrial activity and up to \$180 per tonne for removing CO₂ from the air. The U.S. legislation also extends the tax credit to projects that would previously have been too small to qualify.

There is now a significant risk that companies who want to invest in emissions-reducing technology in Canada are put at a competitive disadvantage vis-à-vis their US counterparts. Ontario's largest trading partner is the U.S., and the province is home to the majority of cement and other manufacturing facilities in Canada—making the problem more acute.

While the Government of Canada has acknowledged the challenges posed by the passing of the IRA and are actively considering a response—as outlined in the 2022 Fall Economic Statement—federal action can't exist in isolation. **If Ontario wants to remain competitive, it must partner with federal funding to attract the required investment so that projects get built in Ontario.** The provincial contribution could be funded in part from revenue generated from the EPS program.

Canada's cement companies and their locations in Ontario, like many industries in Canada, are part of large multi-nationals. **Canadian divisions must compete within their companies for projects, and therefore it is vital that government offer a competitive set of incentives** with our largest trading partner, to encourage investment into Ontario's economy.

We strongly encourage the Government of Ontario to assess the impacts of the IRA and work with the federal government to **ensure that the suite of CCUS supports are sufficiently bold and robust to remain competitive at this critical stage of deployment and at a scale**

⁶ <https://www.reuters.com/article/norway-ccs-idAFL8N2E23RL>

that meets or beats the ambition of competing jurisdictions seeking to attract the same pool of capital.

Thank you for the opportunity to provide input on the next phase of regulatory amendments. We look forward to working with the Government of Ontario to support the decarbonization of our industry and build a competitive economy with jobs and growth for all.

Sincerely,



Adam Auer
President & CEO
Cement Association of Canada

The Cement Association of Canada (CAC) is the voice of Canada’s cement industry. Five of our companies have operated in Ontario for many decades: Ash Grove (a CRH Company); Lafarge Canada Inc.; Lehigh Hanson Canada; St Marys Cement; and Federal White Cement Inc.

Cement, concrete and aggregates facilities are in every community across Ontario, large and small. Our industry generates over 54,000 direct and indirect jobs in Ontario, and our direct, indirect and induced economic contribution is over \$25 Billion.

We are the world’s most important building material. Virtually all construction projects – above and below ground – need concrete. Twice as much concrete is used than all other materials combined and concrete is the second highest consumed commodity in the world, second only to water.

Ontario’s cement producers are important participants in the national and global marketplace and provide a strategic and reliable supply of the cement required to build Ontario’s provincial and municipal transportation infrastructure, buildings and homes, waterworks and dams, and of course our hospitals and schools.