

Government of Canada specifies ISO 14034:2016 Environmental Technology Verification (ETV) for qualifying storage of carbon in concrete

Published in October 2021, *“Concrete Future”* is the Global Cement and Concrete Association (GCCA) 2050 Roadmap for Net Zero Concrete. The GCCA Roadmap embodies the collective commitment of the world’s leading cement and concrete companies to building the sustainable world of tomorrow.

Concrete refers to all cement-based products including mortar, render, cement-based plasters, and precast cement-based products such as masonry units and cladding products. The industry is committed to accelerating the introduction of net zero products on global markets and will continue to drive innovation. It recognizes that the long-term success of innovation is highly dependent on regulatory and standardization frameworks that will lead to a market transformation and establish market demand for low carbon products.

GCCA also recognizes the need to monitor progress and to clearly communicate performance to all stakeholders. The Association’s Sustainability Guidelines provide industry and stakeholders with a means to document and improve the sustainability performance of the global cement and concrete sector against the GCCA Sustainability Charter.

Concrete Future - The GCCA 2050 Cement and Concrete Industry Roadmap for Net Zero Concrete

<https://gccassociation.org/concretefuture/wp-content/uploads/2022/10/GCCA-Concrete-Future-Roadmap-Document-AW-2022.pdf>



The GCCA Roadmap has a clear focus on **CO2 performance** and the need for policies that:

- Enable integration of CO2 performance in public procurement, building standards and construction codes alongside technical performance criteria
- Provide harmonized tools to assess CO2 performance of buildings and infrastructure based on whole-life performance in a technology and material neutral manner, to ensure best results for climate and society
- Provide standards for energy performance of buildings that are demanding and sophisticated
- Tackle systemic barriers to selection of best performing materials from an emissions standpoint.

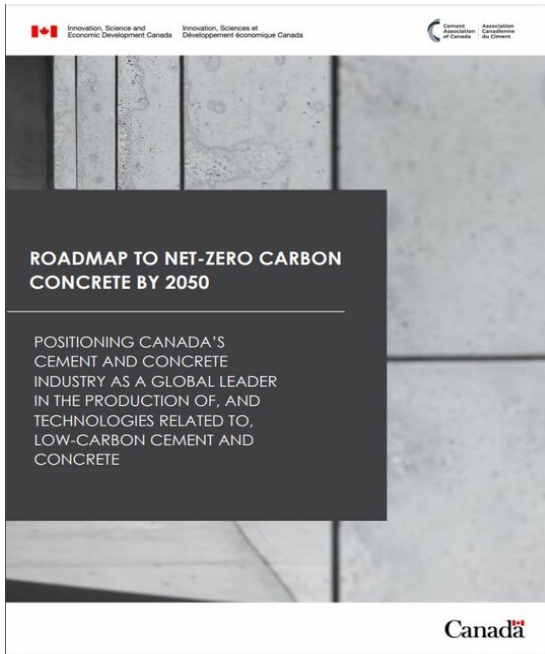
Cement Association of Canada Roadmap and Action Plan to Net-Zero Carbon Concrete by 2050

In the fall of 2022, the Cement Association of Canada (CAC) published its *“Roadmap to Net-Zero Carbon Concrete by 2050”*, in conjunction with Innovation, Science and Economic Development Canada. The roadmap commits the sector to achieving reductions of 15 million tonnes of greenhouse gas (GHG) emissions cumulatively by 2030, followed by ongoing reductions of over 4 million tonnes annually from the production of cement and concrete in Canada.

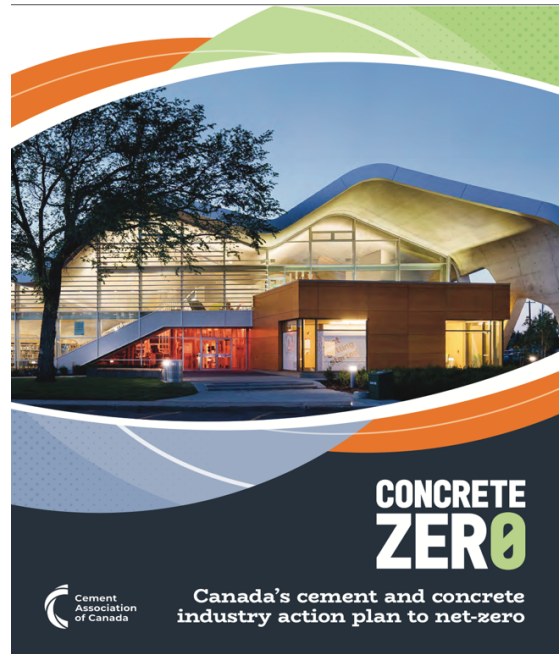
The Roadmap includes industry/government collaboration to develop effective policies and programs that will help the cement and concrete industry achieve greater emissions reductions.

Innovation, Science and Economic Development Canada, Roadmap to Net-Zero Carbon Concrete by 2050

https://ised-isde.canada.ca/site/clean-growth-hub/sites/default/files/documents/2022-11/roadmap-net-zero-carbon-concrete-2050_0.pdf



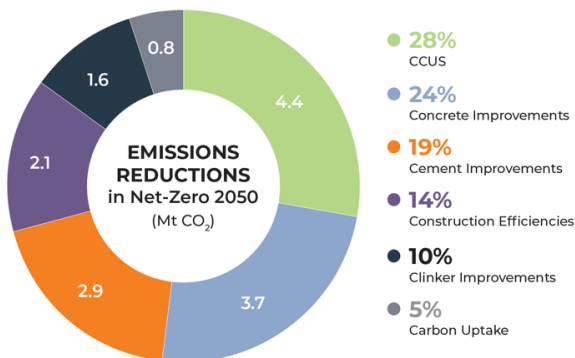
The Cement Association of Canada recognizes that its cement and concrete industry action plan to net-zero is ambitious and cannot be achieved by industry alone. Achieving meaningful carbon reduction goals requires change throughout the entire construction value-chain, working with governments at all levels and other industries. It requires research and demonstration of new technologies and effective government policies—from regulations to financial programs, to supporting the growth of markets for emerging low-to-zero emission products. Net zero also requires education and awareness—from transparency on achievable and timely reduction pathways to finding new and better ways to produce and build the things communities rely on.



The Cement Association of Canada sees “net-zero” as a shared commitment to reduce CO2 emissions to zero across the entire operations and products of the cement and concrete industry. While **carbon capture, use and storage (CCUS)** are included in the industry’s actions to reach net-zero, the purchase of offsets is not. Nor does the industry make claims for the avoided emissions that arise from the use of its products.

Buoyed by public support, CCUS projects are taking shape all over the world. Canada will begin to capture carbon in this decade. This will include North America’s first commercial deployment of a full-scale capture and storage project at a cement plant.

Our Road to Net-Zero



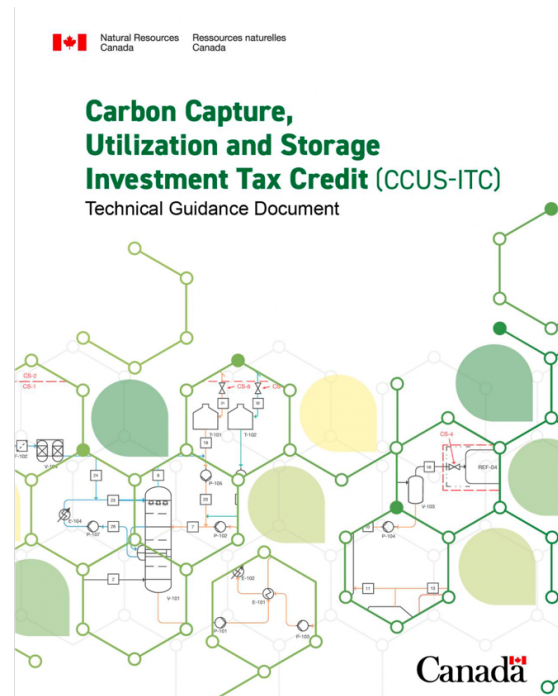
Canada recognizes the important role CCUS will play in helping industries such as cement decarbonize. With the right combination of investments and policies, it is estimated that an annual reduction of 1.5 Mt CO2 will be realized from CCUS projects in operation by 2030.

Cement Association of Canada, Concrete Zero - Canada's cement and concrete industry action plan to net-zero
https://ised-isde.canada.ca/site/clean-growth-hub/sites/default/files/documents/2022-11/roadmap-net-zero-carbon-concrete-2050_0.pdf

NEW Canadian Carbon Capture, Utilization and Storage Investment Tax Credit (CCUS-ITC) Technical Guidance Document (2024)

The NEW Canadian “*Carbon Capture, Utilization and Storage Investment Tax Credit (CCUS-ITC) Technical Guidance Document*” (2024) states that a “qualified concrete storage process” is a process evaluated against the ISO 14034:2016 standard Environmental management — Environmental technology verification for which a validation statement confirming that at least 60% of the captured carbon that is injected into concrete is expected to be mineralized and permanently stored in the concrete has been issued by a professional or organization that:

- a) Is accredited as a verification body, under ISO 14034:2016, Environmental management — Environmental technology verification and ISO/IEC 17020:2012, Conformity assessment — Requirements for the operation of various types of bodies performing inspection, by the Standards Council of Canada, the ANSI National Accreditation Board (U.S.) or any other accreditation organization that is a member of the International Accreditation Forum; and
- b) Meets the requirements of a third-party inspection body described in ISO/IEC 17020:2012, Conformity assessment — Requirements for the operation of various types of bodies performing inspection.



Additional information available at:

<https://www.canada.ca/en/revenue-agency/services/tax/businesses/topics/corporations/business-tax-credits/clean-economy-itc/carbon-capture-itc/contact-ccus-itc.html>

Technical Guidance: Requirements for monitoring, measurement, and verification (MMV)

Pertaining to Construction/Completion and Annual Operations (where specified)

Description of Process and Application:

- Overview of the CCUS project and process design, accompanied by a diagram/schematic of the CCUS process.
- Impact of the CCUS project on the industry to which it is applied.
- Technical details, such as source and industry of the captured CO₂, including method of transportation and destination, as well as the MMV system in place to ensure storage permanence.

Impacts and Monitoring:

- Description of the potential impacts of the CCUS project on the environment, specifying non-CO₂ emissions and substances released to the air, soil, and water.
- Summarize the MMV approach for the CCUS project, the potential risks, and the preventative measures taken to mitigate those risks.

Storage and Utilization:

- Monitoring techniques considered along with the screening and assessment process for the monitoring techniques and technologies, as well as justification for the ultimate selection based on cost-benefit analysis.
- Lessons learned from the assessment and selection process.
- Verification plan and reporting plan, highlighting areas of higher risk and specific monitoring targets and techniques for those areas.
- For Annual Operations, ongoing MMV efforts, modifications made to previous MMV plan, and lessons learned from the operation of the process.

For more information, contact VerifiGlobal

<https://www.verifiglobal.com>