



Cement
Association
of Canada

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Canadienne
du Ciment

Cement Association of Canada Submission on
**Building the Canada
We Want in 2050**

*An Engagement Paper on
the National Infrastructure Assessment*



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Submission from the Cement Association of Canada on *Building the Canada We Want in 2050* – an Engagement Paper on the National Infrastructure Assessment

The Cement Association of Canada and its Members were very pleased with the announcement that the Government of Canada was looking to establish the country's first ever National Infrastructure Assessment ("NIA"). It could not come at a more important time for Canada's built environment. Canada's construction industry, which will be required to deliver lower-carbon infrastructure, is facing significant challenges which have only been exacerbated by the COVID-19 pandemic. All of Canada's building material manufacturers must also be ready to meet the challenge of contributing to a lower carbon built environment that meets the needs of all Canadians.

The cement sector is among the strongest supporters from an industry perspective of the federal Government's Healthy Environment/Healthy Economy plan and is fully aligned with the goal of net-zero by 2050.¹ Our industry remains committed to Canada's climate ambition and our members are keen to support Canada's capacity to demonstrate leadership in low-carbon cement and concrete. To solidify this commitment, the Cement Association of Canada recently announced a partnership with the Federal Government of Canada towards achieving Net Zero Concrete by 2050. Together with government partnership, enabling policy and modest investments, the industry will be able to achieve GHG reductions of 15 MTs or more by 2030.

The cement and concrete industry is prepared to do our part, ensuring that Canada is positioned to optimize the value of its significant infrastructure investments to, as noted in the Engagement Paper, perform "triple duty" to drive economic growth, secure climate friendly and climate resilient communities, and doing so in a manner that improves quality of life for all Canadians.

We have had the opportunity to review and comment on the submission from Concrete Canada and we encourage you to treat that submission as complementary to this one, and we support its recommendations.

About Us:

The Cement Association of Canada (CAC) is the voice of Canada's cement manufacturers. The industry provides a reliable, domestic supply of cement required to produce the concrete to help build Canada's communities and critical infrastructure. The CAC and its members are committed to the environmentally responsible manufacturing of cement and concrete products. The CAC's members include Ash Grove Cement, a CRH Company, Federal White Cement Ltd., Lafarge Canada Inc., Lehigh Hanson Canada and St Marys Cement – A Votorantim Cimentos Company, which now includes McInnis Cement. The cement and concrete industry contribute more than 158,000 jobs and direct, indirect and induced economic impact greater than \$76 billion annually and is located in every community across Canada.

PRIORITY1–ASSESSINGCANADA'SINFRASTRUCTURENEEDSANDESTABLISHINGALONG-TERMVISION

Data Needs to Inform the Assessment

The Engagement Paper appropriately notes that the National Infrastructure Assessment will allow for a comprehensive, evidence-based and expert-driven assessment of our country's infrastructure near and medium-term needs.

Recommendation #1 – Working with industry stakeholders, Infrastructure Canada and Statistics Canada, the NIA should conduct an assessment of Canada's current building stock, identify

building trends and forecasting of future building construction, in such detail that it will inform the needs and uses of various building materials manufacturers, as well as assist the government's data needs to meet the objective of achieving net zero by 2050.

COVID-19 has interrupted vital supply chains, driving up the costs of materials and forcing developers to build and sell more cautiously. There is a shortage of many of the inputs required to build both residential, industrial and commercial projects ranging from doors and windows to electrical panels. The pandemic has exposed Canada's vulnerability and dependence on foreign basic building inputs into our domestic infrastructure. Further, as the government has turned its attention to increasing Canadian manufacturing for green products like electric vehicle batteries, the NIA should also be considering the domestic manufacturing capacity for the materials required to reduce energy needs in homes and buildings. Minister of Infrastructure and Communities Catherine McKenna noted in a virtual meeting with the Canadian Construction Association earlier this year, *"We should be looking at local supply chains. We've seen challenges with the supply chain with COVID, that's a real problem, but also we have Canadian-made products that we can be using as building materials..."*ⁱⁱⁱ We couldn't agree more, as Canada's cement manufacturers have the capacity to supply all of Canada's domestic cement needs.

Recommendation #2 – The NIA should conduct a current and future risk assessment of domestic capacity for supplying building materials for the full range of infrastructure, as well as the domestic capacity for green building products required for the government's retrofit programs and new building construction. The NIA should then develop an industry strategy to support the further development of Canada's clean building material and product suppliers.

Established under the National Research Canada mandate and bringing together multiple ministries and external stakeholders and experts, the *Low-Carbon Assets Through Life Cycle Assessment Initiative* (LCA²) aims to help Canada achieve its GHG emissions reductions by developing important outputs that create a science-based approach to support the selection of materials and designs that offer the lowest carbon footprint while offering lower total cost of ownershipⁱⁱⁱ. The initiative's primary objective is to establish a centralized Canadian Life Cycle Inventory (LCI) database. This will help reach the full potential of low-carbon assets and allow for fair comparison of new projects, both for life cycle greenhouse gas emissions and the total cost of asset ownership. Thus established, whole-built, low-carbon asset guidelines, benchmarks and enhanced tools will be developed to help measure, evaluate and track the full life cycle of the carbon emissions of built assets. These guidelines and benchmarks will leverage the LCI database, stimulate innovation in low-carbon materials, technologies and design, and contribute to aligning capital investment decisions with sustainability policies across Canada. To date, the LCA² initiative is well underway identifying needed research to provide accurate and verifiable carbon accounting for various building materials, but the work is incomplete. Likewise, collection of cross industry data for the LCI database is also in progress but incomplete. It is imperative that LCA² research projects and LCI databases be completed in order to make informed decisions on low carbon buildings.

Recommendation #3 – That the government accelerate and adequately staff and fully fund the data collection, research and work plan of the LCA² initiative, which will inform work of the NIA.

PRIORITY 2 – IMPROVING COORDINATION AMONG INFRASTRUCTURE OWNERS AND FUNDERS:

Creating a Parliamentary Secretary for ‘Construction Transformation’

As noted in the Engagement Paper, the Government will consider next steps including establishing an independent advisory body which would seek expert advice and produce studies and reports. We strongly encourage establishing such a body to coordinate the multitude of issues that the NIA will be considering and the enormous range of stakeholders throughout the building materials and construction sectors. This new body could be informed on structure and mandate similar to the United Kingdom’s *Construction Leadership Council*^v.

We understand that oversight over construction is largely with the provinces, but the policy levers which are primarily influencing necessary ambition on emissions reductions in the built environment are being driven by the federal government, and the necessary coordination required to achieve and implement a national infrastructure strategy must be led by the federal government. In addition, responsibility for construction-related federal government policy and activity is housed in many departments including Infrastructure and Communities, Labour, Natural Resources Canada, the National Research Council and impacted by policy from Environment and Climate Change Canada, Transport Canada and the Treasury Board, to name a few.

As noted in the Concrete Council of Canada submission, the economic contribution alone of the construction and building materials sector to Canada’s GDP (over 7.5%) warrants more serious direct government oversight than it currently has both federally and provincially. Also, as currently measured, GHG emissions from construction, building materials and the building sector represent a significant portion of Canada’s emissions^v, perhaps as much as 20%. Considering the enormous efforts that will be required to achieve GHG emissions reductions targets from these sectors by 2030, the effort will require very active political oversight and cross-government policy implementation.

Recommendation #4: That the federal government appoint a Parliamentary Secretary for Construction Transformation, reporting to the Minister of Infrastructure and Communities with responsibility for the NIA advisory body. Further, that the Minister of Infrastructure appoint a Chief Construction Adviser to provide cross-departmental coordination and leadership on construction industry policy, including “Buy Clean” low-carbon policies.

We recommend provincial governments create similar positions in their respective cabinets and that a Federal-Provincial-Territorial Working Group on Construction be established.

Coordination between Government Policy and Industry

Canada’s infrastructure planning, particularly as it relates to climate change, must be coordinated with broader industrial climate policy to ensure that our infrastructure investments help enhance and grow low-carbon jobs and growth right here in Canada. We are very proud that the Cement Association of Canada recently announced a partnership with the federal government to be led by Innovation, Science and Economic Development Canada with the aim of achieving Net Zero Concrete by 2050.^{vi} The federal government will support our sector on the development and implementation of a *Roadmap to Net-Zero-Carbon Concrete*, to be published near the end of this year. This work will also help provide the Canadian cement and concrete industry with the technologies, tools and policy needed to achieve net-zero carbon concrete by 2050, and will include a series of intermediate carbon reduction targets leading up to this time.

Recommendation #5 – That the NIA promote and support existing sector-specific partnerships which will advance the objective of achieving net-zero emissions by 2050 from the built environment.

Government Procurement

Governments, which procure more than half of all building materials consumed in Canada, are beginning to recognize the importance of aligning public infrastructure procurement with the need to reduce GHGs and adapt to climate change. The federal government has taken an important step in launching its *Greening Government Strategy*^{vii}. The Strategy notes that it will aid the transition to a net-zero, circular economy through green procurement that includes life-cycle assessment principles and the adoption of clean technologies and green products. The Treasury Board Secretariat has collaborated with our industry and other stakeholders on a draft protocol for *Low Carbon Concrete Procurement*, currently in draft form but working to establish timelines for mandating lower-carbon intensive concrete in federal procurement and increasing the requirements for carbon intensity benchmarks over time. This type of procurement protocol must rapidly be extended to other levels of government and toward incentivizing private sector leadership, innovation, and investment. We are encouraging the adoption of performance – based specifications over a prescriptive approach. With respect to concrete, performance-based specifications involve the active review of specifications and working alongside local concrete suppliers to determine the properties of concrete (e.g. strength) that may be needed and then adjusting the concrete design to maximize carbon reductions while still providing the performance that’s necessary for a specific application. The result is a product that is better optimized for its use, that ultimately reduces costs and GHG emissions.

Recommendation #6 – That the NIA should include the promotion of performance-based specifications for lower carbon procurement standards for building materials at all levels of government and to assess how these programs can be used to promote and incent private sector adoption.

It is worth noting that there has been work being carried out to lower the GHG intensity of concrete. One of the easier ways to accomplish this is through the use of Portland-limestone Cement (PLC) in concrete. PLC uses a higher fraction of (unprocessed) limestone in cement, thereby reducing its GHG intensity by up to 10%.

Life Cycle Assessment

Perhaps one of the most important tools to inform of the carbon performance of our built environment is Life Cycle Assessment (LCA). LCA recognizes the complexity hidden behind sometimes deceptively simple questions about the sustainability of a product or service by examining all stages of its life, from “cradle-to-cradle” – i.e. raw material extraction through materials processing, manufacturing, distribution, use, repair and maintenance, and end of life (repurposing, reusing, recycling or disposal). LCAs are underpinning greater transparency in the marketplace through, for example, facilitating the development of Environmental and Health Product Declarations (EPDs and HPDs), now recognized in LEED v4. They add rigor and credibility to the claims of product manufacturers about the impacts of their products and services. At the same time, LCAs are not without limitations, particularly when attempting to assemble a picture of sustainability for complex systems like buildings. In the same way that the whole is not always the sum of its parts, LCAs for individual products cannot be aggregated to give you a simple measure of a building’s overall sustainability. Optimizing building performance is clearly a critical piece of solving the climate change challenge, which makes it all the more critical that we deploy LCAs at the systems level to give us

an integrated picture of how all the components of a building – design, materials, technologies etc. – work together to optimize performance. This is why the work of the LCA² initiative is so important and should be completed as quickly as possible.

As we think to the future of green infrastructure, a key indicator of progress will surely be the extent to which the transparency offered by LCAs and other predictive measurement tools are translated at the project level to leverage synergies between design, materials and technology and enhance the lifecycle sustainability performance of our buildings and communities.

Recommendation #7 – That the NIA recommend that the federal government, when making federal infrastructure procurement decisions, require full life cycle analyses for projects that address carbon emissions and storage resulting from the infrastructure’s materials, construction, operation, and de-commissioning.

Recommendation #8 – That the NIA recommend that the federal government, when making federal infrastructure contributions from the *Investing in Canada Plan*, require provincial and municipal project recipients to include full life cycle analyses that address carbon emissions and storage resulting from the infrastructure’s materials, construction, operation, and de-commissioning as a condition of the funding contribution agreements.

Building and Energy Codes

The Engagement Paper acknowledges that while the federal government owns and manages only a small proportion of Canada’s infrastructure, it plays a pivotal role in funding, regulating and establishing standards. This is where Canada, like most jurisdictions around the world, will need to adopt a more ambitious agenda. In particular, codes and standards relating to buildings and infrastructure are designed for the lowest common denominator, not for ambitious leadership. They are outdated, cumbersome, prescriptive and slow to adapt. Adhering to today’s buildings and infrastructure codes, standards and policies will be a major impediment to achieving the priorities outlined in the Engagement Paper.

We understand that the *Reconciliation Agreement on Construction Codes* was endorsed in 2020 by the Regulatory Reconciliation and Cooperation Table under the Canada Free Trade Agreement and that federal, provincial and territorial partners have begun work under the agreement to plan the transformation of the National Code Development System^{viii}. Still, the anticipated timelines for full transformation of the National Code Development System is some time away still and 2030 is coming closer by the day. While work is focused on the transformation of the code development system, our concern is this will cause delay in new net zero ready building and energy codes. The federal government must rapidly push toward bolder, more nimble and more innovative climate change focused codes and standards and insist that these be adopted by other levels of government.

Recommendation #9 – The federal government direct the National Research Council, working with the Canadian Commission on Building and Fire Codes, publish the national model energy codes for both new and existing buildings as soon as possible. That the National Research Council, working with the Canadian Commission on Building and Fire Codes, publish “net zero carbon” model building code for new buildings adopted by provinces and territories before 2030.

Recommendation #10: The Committee recommends that Natural Resources Canada, Finance Canada, Infrastructure Canada, and the Canada Mortgage and Housing Corporation identify and implement effective financial incentives to encourage early adoption of net-zero carbon building construction.

Material Neutral Approach

While the post COVID-19 economy will require timely and bold government intervention, demanding timber be considered or mandated over other construction materials, as advocated by the wood industry in many jurisdictions, is not sound infrastructure policy. While discussion around the merits of new building technologies is healthy, the actual uptake of new technologies must be based on sound evidence and a full carbon accounting of the materials or products. What is required now more than ever, are well thought through strategies which, from a construction perspective, look to expand the housing stock and address the infrastructure gap while respecting our carbon zero aspirations. Claims by any industry, including the cement and concrete industry, must not be accepted at face value but be supported by LCA research vetted by appropriate arms-length accredited bodies and working through research outcomes of the LCA² initiative and other bodies. Furthermore, government funding for marketing specific building materials in Canada in direct competition with cement, steel, aluminum or other building materials should be wound down immediately. The initiatives are not creating any new jobs, simply displacing them. Government financial assistance should be focused on supporting valid and commercial research and development of low carbon solutions from all building material sectors instead of being directed at marketing to displace competitors, particularly within Canada.

We need to take a material neutral approach, and focus on the appropriate role for all materials. A good example of this are hybrid buildings. Concrete will still be required for footings and foundations, as well as other key structural features of any hybrid building. It is important to understand that concrete provides key safety and resilience features that we often take for granted. At the Brock Commons hybrid “tall-wood” building at the University of British Columbia, concrete was used for the foundations and ground floor podium, as well as the elevator shafts, stairwells, and floors in order to provide for both sound attenuation and fire protection. In all, over 60% of the tower (by way of volume) is made up of concrete. By focusing on just one building material, we can be distracted by the goal of whole building emissions reductions, safety, durability and other necessary considerations.

Recommendation #11: The NIA adopt a “material-neutral” mandate, and government funding and programs for marketing specific building materials in Canada should be wound down immediately.

Adaptation, Durability and Resilience

Durability, longevity and resilience are central, but often overlooked, aspects of sustainability. Climate change has added a whole new dimension to the concept of resilience for buildings and, indeed, the entire network of infrastructure that underpins our quality of life. Investing in resilient infrastructures can increase the ability of cities and communities to bounce back and recover quickly from extreme events, protecting economic gains, public health and security. As climate change impacts emerge ever more forcefully around the globe, decision makers have begun to ask, with increasing urgency, how they can make their communities and businesses more resilient. One obvious place to start is infrastructure – those structures and systems, such as roads, bridges, and water treatment facilities, that are designed to last fifty years or more. If communities can make their investments in infrastructure resilient to the impacts of climate change, they can increase the likelihood of rapid recovery from

extreme events and better protect economic strength, public health, and security. Infrastructure is the backbone to building resilience.

Resilient infrastructure is a first line of defense – a crucial component of broader strategies to minimize the risk to our communities from the impacts of extreme weather. A key aspect of resilience is the ability of structures to withstand extreme events such as fire, earthquakes and violent weather. Codes and standards require that structures meet minimum safety requirements and are focused on the preservation of human life. Concrete structures, by their nature, meet and exceed these code requirements and offer a level of serviceability over other materials that ultimately reduces the cost and environmental impact of replacing (or bringing structures back into use) after a fire or other disruption.

A highly energy efficient concrete building with a long design service will ultimately deliver the most value from the embodied energy in the materials and construction process and reduce the need to extract new resources. Likewise, a building that can be repurposed at the end of its originally intended service life will avoid the economic, social and environmental costs associated with demolition and rebuilding. A concrete building is unique in its ability to deliver on these metrics, which can be further optimized with proper foresight in the design process.

One example is design that considers the ability of concrete’s thermal mass to not only deliver efficient and healthy buildings, but also maintain the livability of buildings during extreme temperatures or during the aftermath of power outages. Using concrete wastewater pipe to double as a source of thermal energy to heat buildings is another example of this type of thinking. Designers can include innovative materials such as ultra-high performance concretes (UHPC) – stronger, longer lasting and efficient concretes that were initially developed for the critical infrastructure sector. UHPC can bring even higher levels of durability, longevity and sustainability benefits to buildings and structures.

Investments in low-carbon and resilient infrastructure are critical for transitioning to a clean, prosperous, and resilient 2050. The long life of infrastructure makes it important to make investment decisions today that maximize future expected returns across climate, economic, societal, and environmental objectives. As stated in a recent article by the Canadian Commission for UNESCO and the UNESCO Chair on Food, Biodiversity, and Sustainability Studies at Wilfrid Laurier University, *“We have the chance to mitigate crisis-induced impacts, and to simultaneously prepare a strong network of green essential goods, services and infrastructure.”*^{8x}

Recommendation #12: The NIA, working with stakeholders, should provide an assessment of Canada’s gap of natural and resilient infrastructure and must ensure that consideration of durability and resilience are embedded in Canada’s infrastructure investments.

PRIORITY 3 – DETERMINING THE BEST WAYS TO FUND AND FINANCE INFRASTRUCTURE

Finally, while still implementing all health and safety precautions, it seems that the worst of the pandemic is behind us, and we can start to reflect on what lessons we can take away from the measures governments and industry have taken to keep the economy going. Of course, not all sectors fared as well as others due to lockdowns and the restrictions required to help keep Canadians safe. For the cement and concrete industry, most construction was deemed essential and construction shifted to infrastructure projects that were able to contribute to health infrastructure, as well as other sub-sectors. The surprising increase in demand in housing was certainly one of the

stories coming out of the pandemic, and it allowed the construction sector to be one of the industries to continue to help keep the economy going.

However, many distortions have been created which include the continued decline in non-residential building investment, and the construction workforce has been upended by the financial losses incurred on an industry dominated by small businesses and the loss of from the workforce. As of now, construction employment is down over 55,000 workers and the industry's output is still below pre-pandemic levels. Retraining has been severely impacted by the impositions required to train new workers in a safe way. Worker shortages, supply-chain issues including soaring input prices for many materials have further cut margins and the financial ability of many firms. With tender now slowing across the country and financial support programs ending this fall, the vast number of construction firms which took on debt are facing financial viability concerns. We may in fact be looking at a crisis of the construction industry to be able to deliver needed infrastructure. Federal and provincial governments have made capital investments a priority over the past year, now is not the time to apply the brakes to project streams.

Recommendation #13: The government of Canada should optimize existing infrastructure programs that already have a large inventory of projects and approved funding. All three levels of government have agreed to program parameters and protocols for a large number of infrastructure projects that are ready to go. The Federal Government should cover 100% of the municipal share of all approved projects that can be implemented in the 2021-22 construction season and completed by the end of the 2023 construction season.

Recommendation #14: The Government of Canada continue to prioritize medium to large-scale infrastructure projects to improve competitiveness and growth. New investments in urban infrastructure, schools, roads, bridges, railways, ports, wastewater facilities, renewable energy, climate mitigation and climate resilience will support economic growth by increasing private and public sector productivity and help future-proof Canada's economy.

Recommendation #15: The NIA, working with the Territories and Provinces, should develop a common set of priorities for infrastructure investments, including a strategy for them to be sustainably financed, which would inform each jurisdictions long-term infrastructure plans and provide a more predictable project baseline which will assist with lower-carbon construction requirements.

Funding Better Infrastructure Through the Development of Lower Carbon Building Materials Carbon Capture, Utilization and Storage (CCUS)

The cement industry is making significant worldwide investments in the development of carbon capture, utilization and storage (CCUS) technologies. In Canada, our members have been carrying out background work with the aim of establishing significant CCUS projects. It is our hope to make Canada a leader in both the development and implementation of these technologies. Cement manufacturing presents an opportunity for this technology as a result of a significant carbon-rich flue gas, and the potential to monetize savings from captured carbon. Three key steps to CCUS include flue gas conditioning or treatment; carbon capture; and use of the carbon in order to either sequester it permanently or use it in a beneficial manner. Currently two cement plants are at different stages in technology development and working with senior levels of government to develop potential cost-sharing

agreements. CCUS technologies will one day allow carbon negative cement, which will revolutionize how we think about concrete construction.

One significant change since the introduction of the federal carbon pricing system has been the creation of the *Net-Zero Accelerator Fund* (NZA). The cement industry strongly supports the NZA's mandate and applauds the government for the Budget 2021 commitment to increase funds available to \$8 billion. We believe NZA changes the low-carbon investment landscape in Canada and suggests a need to think about the unique role for OBPS revenues. In particular, while the NZA has the potential to accelerate the deployment of nascent transformational low-carbon projects (e.g., CCUS), there remain “off the shelf” low-carbon technologies that would benefit from federal support and filling this funding gap should be among the objectives of OBPS programming.

With significant funding on the table for transformative innovations through the NZA, we believe OBPS programming should fill the funding gap for “off-the shelf” technologies that remain important to heavy industry decarbonization, but nonetheless difficult to fully capitalize. For cement, this could include, for example, supporting the accelerated displacement of fossil fuels with lower carbon alternatives, or grinding and distribution infrastructure for supplementary cementing materials for lower carbon cements. OBPS programming could also consider incentivizing market uptake of low-carbon products produced by covered entities – for example, offering incentives for the use of Portland-limestone cements.

Recommendation #16: That the NIA adopt a work stream to identify and fund NZA projects which will advance carbon reduction in the build environment, and that over time, the NIA develop its own funding source to advance the NIA workplan.

Conclusion

If Canada is to move forward from this crisis, and to build an even stronger and better Canada than before, we must ensure that infrastructure projects benefit all Canadians – from marginalized groups to the local communities where the projects take place. We must also ensure that the construction industry is ready to transform to meet the changes in building design that we need to decarbonize buildings, and we need all building materials sectors to do their part to lower their carbon intensities.

The framework the NIA must establish to meet these goals is ambitious. Given the sheer importance of the cement and concrete sector, both as the provider of essential construction materials as well as a sector deeply integrated across construction value chains for all manner of above and below ground infrastructure, we offer deep and unique insights that we believe would bring value to the NIA. We recommend that a senior member of our industry participate on the Advisory Panel and we would welcome the opportunity to identify a suitable candidate/

As I hope our partnership with the federal government demonstrated, the cement and concrete industry is ahead of the pack and dedicated to our net-zero commitment.

We thank you this opportunity to comment on *Building the Canada We Want in 2050*.

Respectively submitted,

Cement Association of Canada

June 30, 2021

Endnotes

- i Refer to <https://www.ic.gc.ca/eic/site/icgc.nsf/eng/07730.html> for additional information.
- ii <https://canada.constructconnect.com/dcn/news/associations/2020/06/mckenna-talks-supply-chains-stimulus-at-cca-un-conference>
- iii [Low-carbon assets through life cycle assessment initiative \(canada.ca\)](#)
- iv [Work Streams » Construction Leadership Council](#)
- v [Greenhouse gas emissions \(canada.ca\)](#)
- vi Refer to <https://www.ic.gc.ca/eic/site/icgc.nsf/eng/07730.html> for additional information.
- vii [Greening Government Strategy: A Government of Canada Directive - Canada.ca](#)
- viii [Regulatory Reconciliation & Cooperation | Canadian Free Trade Agreement | Accord De Libre-Échange Canadien \(cfta-alec.ca\)](#)
- ix <https://ipolitics.ca/2020/06/22/infrastructure-investments-for-a-greener-more-resilient-and-sustainable-country-ideas-and-considerations-for-canadian-decision-makers/>