

Clean Energy Canada and Blue Green Canada

Submission: National Infrastructure Assessment

June 30, 2021

Summary

[Clean Energy Canada](#) is an independent think tank based at the Morris J. Wosk Centre for Dialogue at Simon Fraser University. We work to accelerate Canada's transition to a clean and renewable energy system.

[Blue Green Canada](#) is an alliance between Canadian labour unions, environmental and civil society organizations to advocate for working people and the environment by promoting solutions to environmental issues that have positive employment and economic impacts.

We welcome the opportunity to provide comments to inform and support the development of Canada's first National Infrastructure Assessment. This is a timely and important initiative that should support Canada's pathway to net-zero emissions by 2050 by outlining our infrastructure needs, priorities, and challenges.

Our comments focus on one key aspect of public infrastructure: how governments can use their public infrastructure dollars to prioritize environmentally sustainable, low-carbon construction materials. This approach is known as Buy Clean and is gathering momentum as a tool to reduce carbon emissions, support domestic jobs and manufacturing, and position Canadian industry to thrive in the low-carbon economy.

We recommend that the National Infrastructure Assessment supports the development and implementation of a Buy Clean approach to ensure all public infrastructure spending prioritizes the use of low-carbon materials. This approach should include three key components:

1. **Disclosure and transparency**—to measure and disclose the embodied carbon in construction materials used in public infrastructure projects
2. **Performance standards**—to set embodied carbon benchmarks for specific materials that gradually improve over time on a pathway to net-zero
3. **Investment and support**—financial and other incentives to support industry compliance, build capacity and expertise within government, and develop pilot projects

Introduction

Canada has set ambitious climate targets to reduce emissions 40-45% by 2030 from 2005 levels, and to reach net-zero emissions by 2050. These targets will require significant

investments in clean energy and transportation infrastructure, as well as upgrades to existing infrastructure.¹ **The National Infrastructure Assessment represents an opportunity to support Canada’s transition to net-zero** by providing independent advice and recommendations on how to decarbonize infrastructure, which the consultation paper makes clear “has to be an underlying principle in all future infrastructure investments.”²

We are pleased that the assessment will “look at opportunities to promote ... low and zero carbon building materials and industrial decarbonization.”³ **This approach, known as ‘Buy Clean’, is a critical but often overlooked component of infrastructure planning.** Research has found that nearly one-third of global construction emissions come from the extraction, production and transportation of building materials (e.g. cement, steel, wood, glass, aluminum). This is known as ‘embodied carbon’ and must be addressed if we are to meet the targets set by the Paris Agreement.⁴

Buy Clean: Building On Canada’s Low-Carbon Advantage

Blue Green Canada’s report ‘Buy Clean: How Public Construction Dollars Can Create Jobs and Cut Pollution’ makes the case for using low-carbon construction materials when building public buildings and infrastructure.⁵ Buy Clean has several benefits for Canada:

- Reduce carbon pollution by purchasing low-carbon materials from emissions intensive sectors such as cement and steel
- Support Canadian jobs by avoiding imports from high carbon jurisdictions while buying from domestic manufacturers that have made progress to clean up their production
- Position Canada’s industries for the future, as the US, EU and other trading partners begin to transition their economies toward net-zero and increase demand for products and materials with a low carbon footprint

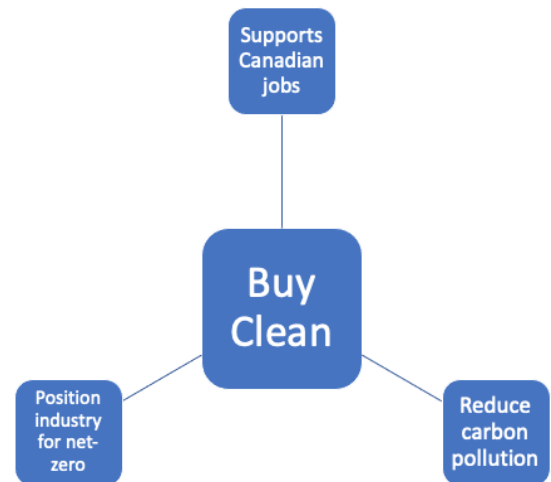


Figure 1. The benefits of a Buy Clean approach to infrastructure spending

¹ Transition Accelerator, 2021, [Pathways to Net Zero](#); Canadian Institute for Climate Choices, 2021, [CANADA'S NET ZERO FUTURE: Finding our way in the global transition](#)

² Infrastructure Canada, [Building The Canada We Want In 2050](#), at 9

³ Infrastructure Canada, [Building The Canada We Want In 2050](#), at 10

⁴ KGM & Associates and Global Efficiency Intelligence, 2016, [The Carbon Loophole in Climate Policy](#)

⁵ Blue Green Canada, 2021, [Buy Clean: Create Jobs & Cut Pollution](#)

Canadian industries have a low-carbon advantage thanks in part to our 83% emissions-free electricity grid.⁶ For example, Canadian steel is among the cleanest in the world, with a carbon footprint 33% lower than U.S. steel and 80% lower than steel from China.⁷ Aluminum produced in Canada has the lowest carbon footprint in the world, around 90% below Chinese aluminum.⁸ Canadian cement is about 20% less carbon-intensive than cement imported from the U.S.⁹ Canada is also home to several cleantech companies developing low-carbon innovations that will be needed to decarbonize heavy industries such as cement and concrete.¹⁰

Construction material industries also employ tens of thousands of Canadians from all parts of the country.¹¹ Research has found that shifting to a ‘green procurement’ approach can support many more jobs and increase industry revenue compared to traditional procurement practices.¹²

A Buy Clean approach to procurement can also expand markets for low-carbon products and support industry innovation.¹³

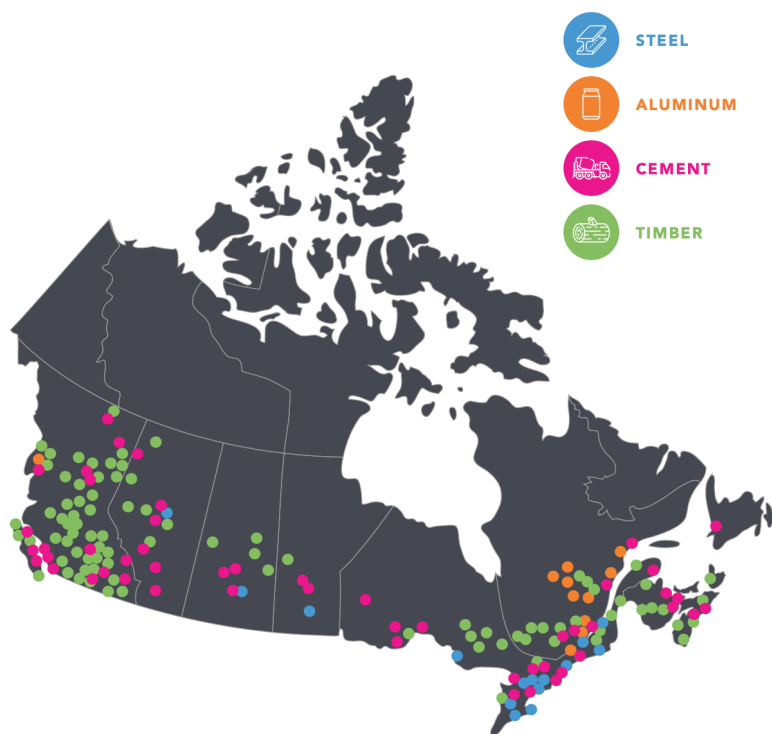


Figure 2. Canada’s construction materials are produced across the country. Source: Blue Green Canada.¹⁴

⁶ Clean Energy Canada, 2021, [The Next Frontier](#)

⁷ Global Efficiency Intelligence, 2019, [How Clean is the US Steel Industry?](#)

⁸ Blue Green Canada, 2021, [Buy Clean: Create Jobs & Cut Pollution](#)

⁹ Global Efficiency Intelligence, 2019, [California’s Cement Industry: Failing the Climate Challenge](#)

¹⁰ For examples see Clean Energy Canada, 2021, [The Next Frontier](#)

¹¹ Blue Green Canada, 2021, [Buy Clean: Create Jobs & Cut Pollution](#)

¹² International Institute for Sustainable Development, 2019, [Measuring the Benefits of Green Public Procurement in Canada](#)

¹³ OECD, [The Role of Public Procurement in Low-carbon Innovation](#), at 11 and 20

¹⁴ Blue Green Canada, 2021, [Buy Clean: Create Jobs & Cut Pollution](#)

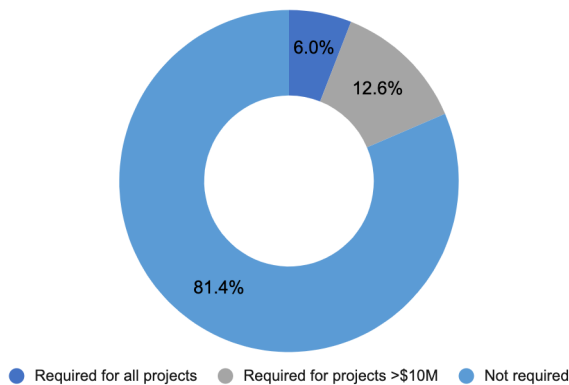
Infrastructure Planning and Delivery Needs to Change

Current infrastructure planning and investments do not take into account the embodied carbon (or other environmental impacts) of construction materials. This is a significant gap that the National Infrastructure Assessment must help to address.

Fortunately the government has built the foundations to address the infrastructure gap through the Greening Government Strategy. This requires federal departments to “reduc[e] the embodied carbon of the structural materials of major construction projects by 30%, starting in 2025” and “disclos[e] the amount of embodied carbon in the structural materials of major construction projects by 2022”.¹⁵ Another initiative, the ‘Low-carbon Assets through Life-cycle Assessment’ (LCA2) program led by the National Research Council, is developing the data and research to support embodied carbon disclosure for key sectors (e.g. cement and steel), which is a critical step to a fair and effective Buy Clean policy.¹⁶

Canada’s flagship ‘Investing in Canada Plan’ (IICP) is a \$188-billion dollar infrastructure plan over 12 years, funding a range of infrastructure projects including public transit, green infrastructure, water/wastewater plants, affordable housing and more. Under the IICP, the federal government has already approved 67,000 projects valued at more than \$80 billion dollars (43% of the total committed).¹⁷ This federal funding leverages additional investments from provinces, territories and municipalities, which are responsible for 98% of Canada’s stock of public infrastructure.¹⁸

‘Climate lens’ assessments are not required for most infrastructure spending



This welcome investment of federal dollars has unfortunately missed an opportunity to prioritize the use of low-carbon building materials in construction projects. Although Infrastructure Canada does require certain programs to undertake ‘climate lens assessments’ of the greenhouse gas mitigation and/or climate resilience benefits associated with infrastructure projects, this requirement does not apply to the majority of funding delivered through IICP. Furthermore, the climate lens does not include an assessment of embodied emissions.

Figure 3. Infrastructure Canada’s ‘climate lens’ applies to a fraction of total investments under the Investing in Canada Plan. Source: Infrastructure Canada¹⁹

¹⁵ Treasury Board Secretariat, 2020 [Greening Government Strategy: A Government of Canada Directive](#)

¹⁶ National Research Council, 2019, [Low-carbon assets through life cycle assessment initiative](#)

¹⁷ As of March 2021; see Infrastructure Canada, [Funding Delivered under the Investing in Canada Plan](#)

¹⁸ Parliamentary Budget Office, 2020 [Update on the Investing in Canada Plan](#)

¹⁹ Infrastructure Canada, [Climate Lens-General Guidance](#) and [Funding Delivered under the Investing in Canada Plan](#)

Developing a Buy Clean Policy for Canada

Canada needs to build on the work undertaken by the Greening Government Secretariat, National Research Council and other departments to develop Buy Clean standards for public infrastructure spending. These standards will include disclosure requirements and targets to gradually reduce embodied carbon in key building materials over time. Importantly, the standards must apply to all infrastructure projects using federal funds, which will require working with provinces, territories and municipalities to develop a pan-Canadian approach.

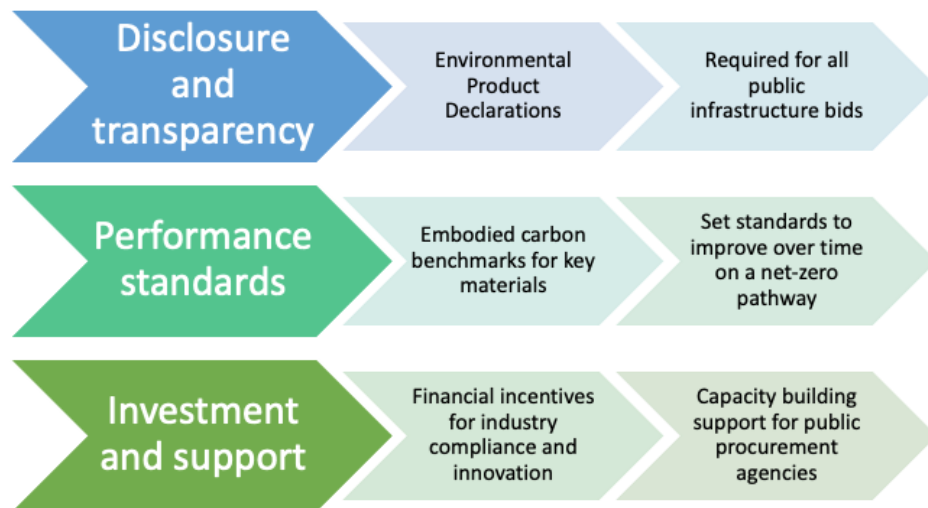


Figure 4. Key components of a Canadian Buy Clean approach to infrastructure investment

Based on experience from other jurisdictions (particularly the U.S. and EU)²⁰ we recommend that Canada's Buy Clean approach to infrastructure include three components:

1. Disclosure and transparency

Project bids for federal infrastructure dollars should measure and disclose the embodied carbon in construction materials through a life-cycle assessment (LCA). Environmental Product Declarations (EPDs) are the industry standard approach for disclosing and comparing LCA data between different products, and are the backbone of leading U.S. policies, such as Buy Clean California. EPDs have been compared to 'nutrition labels' for building materials, summarizing their life-cycle climate and environmental impacts from extraction to manufacturing, transport, and disposal.

²⁰ For example, see Carbon Leadership Forum, 2021, [Embodied Carbon Policy Toolkit](#); ClimateWorks Foundation, 2020 [Build Clean: Industrial Policy for Climate and Justice](#); United Nations Industrial Development Organization, 2021 [Fostering Industry Transition through Green Public Procurement: A How to Guide in the Cement & Steel Sectors](#)

The Government should commit to using EPDs as the disclosure tool to assess the embodied carbon of materials it procures. It should also bring together relevant departments and agencies (TBS, ISED, NRC, ECCC etc.) to develop and maintain a public database of EPDs collected via procurement and infrastructure bids, to improve transparency and support the development of industry performance standards.

Infrastructure Canada should also update the ‘climate lens’ tool to include an assessment of embodied carbon for major infrastructure projects. This can be phased in over two to three years, with a voluntary approach to give project applicants time to adapt, gather data and build capacity. After the voluntary period, disclosure requirements should be made mandatory for all projects receiving federal funding. Infrastructure Canada should work with provinces and territories to amend bilateral agreements to include new climate lens requirements in 2023, as part of the five-year program reviews under IICP.²¹

2. Performance standards

Disclosure requirements will provide the data needed to be able to set material-specific embodied carbon performance standards. Performance standards are a critical component of Buy Clean policy that set limits on the embodied carbon in materials used for public infrastructure, and incrementally lowers these limits over time to encourage improved performance.

The government should develop embodied carbon performance standards and apply them to federally-funded infrastructure projects. In developing standards, they should consider (a) which materials are eligible, and (b) which projects qualify. We recommend starting with a subset of emissions-intensive materials and aligning as far as possible with the U.S. federal approach (which has proposed an initial list comprising aluminum, iron, steel, cement, and concrete). The standards may apply to all projects, or only those over a certain financial value or area/footprint.

Infrastructure Canada should work with other federal departments and stakeholders to set performance standards that are achievable for Canadian producers, reflect current best practices and regional diversity, and screen out the worst polluters. **Future performance standards should be set that (a) become incrementally more stringent over time, and (b) align with Canada’s 2030 and 2050 climate targets,** with an ultimate goal of reaching net-zero emissions. These standards should be applied to future infrastructure agreements with provinces, territories and municipalities and extended to the Canada Infrastructure Bank’s mandate, through the CIB’s legislative review in 2023.

3. Investment and support

A final component of Buy Clean policy is financial and other support to build capacity, encourage compliance and innovation, and facilitate adoption across government. For

²¹ Infrastructure Canada, n.d., [Investing in Canada plan: Infrastructure Canada Bilateral Agreements](#)

industry, producing EPDs to disclose embodied carbon can be costly, and several jurisdictions have proposed direct funding or tax credits to support this upfront data collection.²² Incentives can also be applied at the bid stage, to reward projects using lower carbon or innovative materials with bid discounts. This can help cover the added premiums associated with using low carbon materials (which tend to be under 5% of project costs), while also incentivizing industry to scale up and commercialize new products that go beyond current industry best practices.²³

Procurement staff and agencies in other levels of government will also need support to build capacity around embodied carbon, as this represents a novel approach to infrastructure procurement. The federal government should ensure that the outputs from the LCA2 initiative include easy-to-use tools, guidelines and specifications to facilitate smooth adoption by other levels of government. An example of a central government providing capacity-building like this is the U.K. Commissioning Academy, which trains senior decision makers in central and local government to adopt performance based procurement practices.²⁴

Lastly, **Infrastructure Canada can support pilots and demonstration projects through a Clean Infrastructure Challenge Fund.** This fund would be open only to provinces, territories and municipalities, and provides funding to a small number of demonstration projects using low carbon materials. The Challenge Fund would support development of data, reporting standards, and new approaches to procurement, and the lessons learned would be instrumental in the design of a national Buy Clean program.

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²² For example, the proposed US federal Buy Clean program (under the [CLEAN Future Act](#)) includes \$25 million in technical assistance grants for manufacturers and small businesses to develop and verify EPDs

²³ For more details see ClimateWorks Foundation, 2020 [Build Clean: Industrial Policy for Climate and Justice](#), at 10

²⁴ U.K. Government, 2013, [The Commissioning Academy](#)