



ASSOCIATION OF CONSULTING
ENGINEERING COMPANIES | CANADA

ASSOCIATION DES FIRMES
DE GÉNIE-CONSEIL | CANADA

Consulting Engineering Contributions to Creating a Fair and Equitable Canadian Energy Transformation

**Submitted to the House of Commons Standing Committee
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Submitted By: The Association of Consulting Engineering Companies – Canada

Who We Are

ACEC-Canada is the national voice of over 400 companies that provide engineering and other professional services to both public and private sector clients across Canada and the world. Our members are small, medium, and large businesses that collectively employ over 60,000 Canadians. These businesses provide scientific, engineering and management expertise to identify opportunities and deliver innovative solutions. Consulting engineers are Canada's trusted advisors that are at the forefront in designing and building a more prosperous, sustainable Canada.

Consulting engineers will play an outsized role in creating a fair and equitable Canadian energy transformation. ACEC-Canada's member companies make decisions and take on risk at the earliest stages of construction where the direction of projects is set out. Determinations of what to build, on what sites, and with what systems and materials depend on the direction given by consulting engineering firms. Long before projects are built or under construction, the role of consulting engineering firms largely determines project emissions, construction costs, lifespan, life-cycle maintenance, and operating costs for Canadian infrastructure.

Introduction

Canada is transitioning to a low-carbon future. The Committee is seeking advice from stakeholder organizations to ensure that transition leads to greater prosperity, equity, and growth, rather than less. Major infrastructure projects are fundamental to ensuring progress in the short-term as the economy transitions and will play an important role over the long-term as new technologies enable even greater lower-carbon investments. That is true for both public institutions, and the private sector organizations that work with them on major projects.

ACEC-Canada believes that infrastructure is an effective investment in our social, environmental, and economic quality of life, which is more important than ever as we work to recover from the COVID-19 crisis. This means leveraging infrastructure investments to stimulate the economy, create immediate jobs and long-term opportunities, and improve communities from coast to coast to coast.

Canada should develop and implement targets to achieve an integrated vision for the environment and the economy, with infrastructure playing a key role. Therefore, the National Infrastructure Assessment proposed by the government needs to consider not only community-focused public infrastructure but also infrastructure that grows the economy, supports supply chains and commerce, and makes Canada attractive to private sector proponents in industries and sectors critical to a sustainable and prosperous future. Environmental and economic visions can and must be mutually supportive.

The Committee has outlined the importance of a plan that centres on workers and communities. Critically, Canada must have in place systems that will enable long-term consistency and predictability in the delivery of new infrastructure, and the adaptation of existing infrastructure. Doing so will ensure the timely and cost-effective delivery of projects that communities will depend on to fuel low and lower-carbon initiatives.

ACEC-Canada recommends a suite of policy decisions from the federal government that will:

- Provide greater clarity to municipal, provincial, and federal governments choosing to build infrastructure that enables the low-carbon transition
- Outline clear expectations for businesses that submit proposals and bids for major projects
- Enhance the delivery of major projects, including new renewable fuel sources and capacity enhancements to the national and local electricity grids; and
- Allow independent assessment and definition of the current state of Canada's infrastructure to provide a roadmap forward, along with recommendations for continuous improvement

To support growth and prosperity throughout this transition, ACEC-Canada recommends that the federal government:

- 1. Accelerate the implementation of the National Infrastructure Assessment**
- 2. Re-commit federal funding to support municipal infrastructure planning** resources by reinvesting in the *National Guide to Sustainable Municipal Infrastructure (InfraGuide)*
- 3. Adopt best practices for sustainability, innovation, and life-cycle savings from infrastructure investments** by implementing Qualifications-Based Selection (QBS) for the procurement of engineering and professional services on federal projects.

National Infrastructure Assessment

A community's infrastructure assets are an interdependent system that enhance safety and quality of life, that enable commerce and interaction of its citizens, and that supports the core functions of the community. A truly fair and equitable energy transformation requires a thought out and holistic plan. ACEC-Canada agrees that outcomes for communities and workers should be central to the Committee's consideration, but in the case of infrastructure, a national approach with the consistency of vision is essential. That does not mean that the federal government should override the will or interests of the provinces or local municipalities, but rather that they should share data and best practices and encourage common objectives to ensure Canada achieves its climate goals on aggregate.

By their nature, infrastructure investments create jobs and provide opportunities for local communities. However, major clean energy projects like hydroelectric dams, solar arrays, wind farms, and electricity grid transmission projects can serve communities far beyond the municipal level, in some cases supporting multiple provinces. All Canadians should have the opportunity to benefit from the transition to cleaner sources of energy. To do so, governments have to work in a coordinated way, developing an integrated vision for the environment and the economy.

Well-considered investments in public infrastructure can incentivize the extractive resource industries to make investments in their Canadian operations, allowing Canada to be a global supplier to the world's high-tech and renewable energy sectors. This approach would also address resource and capacity issues to ensure Canada's future is built on world-class, state-of-the-art infrastructure.

Since the 1960s, Canada has seen a consistent decline of infrastructure investments, when 2-3% of GDP was formerly invested every year. At the upper end of that range, Canada still lags behind other nations where infrastructure investments can be as high as 6-7% of GDP. We need to return to an adequate annual infrastructure budget to keep pace with our global counterparts. These new investments can be spurred by the transition to a low-carbon economy. Ideally, they will help to enable an energy transformation, especially for workers whose skills may transfer well from energy-intensive sectors to delivering more clean-energy-enabling infrastructure.

The federal government should quickly move to implement the National Infrastructure Assessment (NIA).

ACEC-Canada believes that the NIA should include a vision for the next 30 years of infrastructure. It should also include a review of the current state of Canada's infrastructure, with a clear roadmap for the next 10 years. A consistent cycle of evaluation and improvement will ensure that the NIA continues to support Canada's infrastructure goals for 2050, especially as they align with the transition to a low-carbon economy.

While the government should continue to be responsible and accountable for the design and funding of infrastructure programs, an NIA should be overseen by a permanent, arms-length, independent agency. This would allow the NIA to serve as a repository of reliable data, best practices and industry experience that would inform and support policy and decision making. Thematic working groups that provide expert insight into key areas of development would be especially helpful in this regard; and one such working group should be focused on delivering new clean energy projects and reducing the carbon footprint of existing infrastructure.

Stakeholder engagement will be essential to this process. The agency should actively engage industry, municipalities, Indigenous communities, and civil society in developing its modelling, reports, and recommendations. Stakeholders should be encouraged to make contributions by being part of thematic working groups and by taking part in ad hoc consultations with industry partners.

Establishing a process for consistent and predictable infrastructure goals for Canada will help stakeholders and all levels of government promote growth over the course of the low-carbon transition.

Capacity Building for Municipal Infrastructure Planning

In 2008, the federal government discontinued funding the *National Guide to Sustainable Municipal Infrastructure (InfraGuide)*. Over the seven years prior, the partnership between Infrastructure Canada, the National Research Council and the Federation of Canadian Municipalities brought together a national network of public and private sector experts to produce a collection of case studies, best practice reports and e-learning tools for sustainable municipal infrastructure. By having access to the best Canadian experience and knowledge, all in one place, municipalities benefited from an important resource to plan and implement new infrastructure investments.

ACEC recommends reinstating this program or creating a comparable one, to provide resources, tools and capacity-building opportunities to municipalities, public agencies, and stakeholders.

The most recent federal budget committed to invest \$4 billion in the Housing Accelerator Fund. That fund was aimed to increase housing supply in cities and contains resources for speeding up development, increasing supply, and supporting municipal housing planning. For a small fraction of the cost, the federal government could make a meaningful investment in non-housing infrastructure that helps communities adapt to the low-carbon economy.

The pillars of *InfraGuide* are still useful. Updating the guide will help municipalities and stakeholders deliver infrastructure that achieves local needs and objectives. More resources will help communities adapt, make their own investments go further, and leverage other sources of funding for infrastructure.

The National Research Council was the first steward of this information, and that role should be revived. ACEC-Canada estimates that starting the program again, updating key documents, and facilitating stakeholder engagement will cost \$2 million per year over the next five years. As a result, the federal government would realize the more efficient delivery of federal infrastructure investments and communities and workers would benefit from many new community assets.

Implementing Qualifications-Based Selection to improve the service life and life-cycle savings of public infrastructure

Issues that arise during the procurement process often translate into project delays and cost increases on public infrastructure. When projects get more expensive and take more time, there is less opportunity for communities to continuously improve their local infrastructure, governments suffer from negative perceptions surrounding important projects, and trust is eroded between government owners and private sector businesses who complete the work. Canada cannot afford to suffer from the same problems that have reduced our ability to attract investments and generate growth over recent decades during the transition period that lies ahead.

Qualifications-Based Selection (QBS) offers an important solution to major challenges in public procurement. Put simply, taking this approach to procure engineering and design services reduces the likelihood of cost overruns and project delays by eliminating the focus on which firm provides the lowest bid in its proposal. QBS ensures the best team, providing the most relevant experience and qualifications, with the best proposal and project fit, is selected to deliver project designs. Project owners report significantly higher rates of satisfaction for QBS-procured projects vs. non-QBS projects in Ontario. (89% vs. 75%)

Satisfaction scores reflect that the project typically required fewer change orders during construction, less requests for information to provide clarity during the design phase, and more complete design documents being provided to general contractors and subcontractors.

In Ontario, a recent study found that 43% of projects surveyed suffered a bid cancellation or extension in the procurement phase. The same study found that 59-72% of projects suffered some degree of construction

schedule delay averaging 36% of planned project delay, or 5.43 months.¹ Between 79-92% of projects suffered cost overruns, averaging 22% of the contract value.²

QBS results in a project scope, schedule, and budget that are realistic and commercially fair and responsible. This results in high quality projects with increased service life and significant life-cycle savings over the entire design life.

Governments and construction sector partners will be required to build, retrofit, refurbish, or adapt tens of thousands of pieces of infrastructure over the decades ahead. Canada cannot truly support a fair and equitable energy transformation with that same level of inefficiency. As we seek to do more procurement of low and lower-carbon infrastructure, we must also improve procurement to get better results for taxpayers and the communities they inhabit.

Delivering more projects on time and on budget as we navigate the low-carbon transition will pay dividends for workers, businesses, communities, and other investors. QBS has the potential to transform the way projects are procured, designed, and delivered in Canada while best meeting the needs set out by local municipalities for public projects.

Conclusion

ACEC-Canada is pleased to have the opportunity to submit these recommendations as the Committee concludes its work on creating a fair and equitable energy transformation for Canada. It would be our pleasure to meet with the Committee members to further discuss our brief and recommendations. ACEC-Canada looks forward to collaborating with the Committee and is available to convene industry leaders to provide expertise and feedback on government initiatives and working to support a successful transition to a low-carbon economy.

¹ Construction & Design Alliance of Ontario (CDAO). *Impacts of Pre-Project Investment & Quality of Documents on Project Delivery Efficiencies*. Toronto. 2021.

² Ibid.