

Engineers Canada's Comments on the Government of Canada's Discussion Paper on Environmental and Regulatory Reviews

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Overview

The Government of Canada is seeking the views of Canadians in order to strengthen and improve Canada's existing environmental assessment and regulatory processes. The government's objectives are to rebuild the public's trust in these processes in a way that advances reconciliation with Indigenous peoples and encourages resources to get to market while simultaneously protecting the economy and the natural environment.

Engineers Canada welcomes the discussion paper and appreciates the opportunity to provide input to this important public policy area. Engineers Canada is pleased with the changes that have been proposed in the Environmental and Regulatory Review from previous versions. We believe that the proposed actions outlined in the paper are positive steps in gaining public trust in environmental assessment and regulatory processes.

The changes proposed in the paper are based on five guiding principles, to which we suggest adding a sixth principle: that every project keep Canada on track to meet its climate change commitments and define and reduce the risks and vulnerabilities from extreme weather events now and in the future.

In this submission, Engineers Canada expresses its views on many of the proposed cross-cutting areas of changes that have been outlined in the government's discussion paper. This document includes recommendations to the federal government on the need for increased regional engagement in decision-making, the importance of climate vulnerability assessment protocols during environmental assessments, and the need for engineers and other practitioners to be directly involved during the development and planning of environmental assessment and regulatory processes as a means to strengthen public trust.

Recommendations on areas of change to the federal government

Early engagement and planning

Public participation is a mechanism to support transparency and accountability for elected officials. It is more than giving information and receiving feedback—it is a deliberate commitment that government makes to its public and stakeholder groups to listen and to be influenced within expressed limits.

As noted in the discussion paper, the federal government's current public engagement process, specifically in relation to environmental assessments and regulatory processes, lacks transparency and is often limited in both time and scope. The current environmental assessment process has been described as "fragmented, overlapping and uncoordinated."¹ Currently, the formal engagement process with Canadians begins well after a project has been planned and designed, making it extremely difficult for the public and stakeholders such as Indigenous peoples to influence the direction of projects within

¹ The Globe and Mail. (2017). "Ottawa plans overhaul of assessment process for resource projects." Retrieved July 26, 2017, from: <https://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/liberals-to-hand-indigenous-canadians-more-power-on-environmental-assessments/article34600274/>.

their communities. Without substantial public engagement and consultation, timed well before project design elements are finalized, the public is unaware and cannot influence project activities within their communities.

Meaningful public participation must be early, ongoing, accessible, and dynamic. It occurs at all levels of assessment and has the ability to influence outcomes.² It should also be conducted in a manner respectful of Indigenous peoples' right to free, prior, and informed consent.

Recommendation #1: Professional engineers and other practitioners should be involved in early engagement and project planning processes

Public safety is threatened and environmental, social, and economic impacts are not adequately addressed when professional engineers are not directly involved in the design, review, implementation and maintenance of projects that require the application of engineering principles. Where engineering work is being performed, it is in the public interest that a professional engineer be involved. Legislation that speaks to engineering work, regardless of whether it is a federal or provincial statute, should require the involvement of a professional engineer.

Professional engineers bring innovative and diverse ideas to solve complex problems. This benefits the federal government during project assessment at the planning stage, as well as during the full life cycle of a project. The federal government should support the inclusion of professional engineers and other practitioners in order to strengthen the design process, provide greater certainty to proponents, and maximize successful outcomes.

Moreover, the federal government should engage professional engineers early in the planning and preliminary design phase of projects in order to uncover technical feasibility, environmental, or safety issues that have been overlooked or misunderstood and need to be addressed at an early stage before a project advances to a point where changes become costly and interrupt project timelines. With the early engagement of professional engineers during project planning activities, the federal government can proactively address issues identified in the project's early stages. Public trust and confidence in the assessment process is strengthened when technical issues and potential environmental impacts and cumulative effects are identified early and appropriately addressed by qualified professionals prior to implementation.

Addressing cumulative effects

Recommendation #2: Federal funding for national climate data framework

To meet national environmental information and community needs, the federal government should effectively measure and evaluate the short- and long-term environmental effects of natural resource activities, projects, and assessments. Having consistent and reliable climate data will enable us to more fully understand the effects of climate change, and will ensure that issues arising from Canada's changing climate can be better mitigated. The federal government should have better data to fully understand the effects of climate change in order to effectively understand its impacts, which will help plan for future investments.

² West Coast Environmental Law (2016). "Federal Environmental Assessment Reform Summit." Retrieved August 14, 2017, from: https://www.wcel.org/sites/default/files/publications/WCEL_FedEnviroAssess_proceedings_fnl.pdf

The federal government should increase funding to support the development and maintenance of an up-to-date, consistent, and accurate national climate data in order to increase public confidence in federal environmental assessments and regulatory processes while simultaneously providing evidence-based information to guide project planning activities. Consistent national climate data will ensure accurate climate projections are made, which will enable effective planning for present and future environmental project and maximize the impacts of federal government investments.

Recommendation #3: Regional environmental assessments in northern and remote communities

Climate change events and natural disasters are increasing in number and severity across Canada; however, northern and remote communities are being disproportionately affected by Canada's changing climate.³ The extreme change in Canada's climate has threatened public infrastructure and public safety in northern and remote communities and has negatively affected the development of projects in these regions. For example, the community of Jean Marie River in the Northwest Territories has been negatively impacted by melting permafrost. Melting permafrost has caused unstable ground for building foundations, unreliable pathways for both hunters and animals, and incidents of massive flooding that have impacted local transportation. Melting permafrost continues to threaten food security, public safety, natural environments and future infrastructure developments within this region.⁴ Similarly, in Inuvik, many homes are built on permafrost that has begun to thaw, causing both public and civil infrastructure to become unstable. Buildings in Inuvik are "gradually sinking into the ground as it softens... and are sliding off their foundations"⁵; causing construction techniques to change and for early development plans to become more innovative.

Regional climate assessments would provide data that would be used to construct baseline measurements for northern and remote communities to understand future climate projections. These measurements would then allow engineers and other practitioners to factor in future climate projections into their design, building, and maintenance of infrastructure in these northern and remote communities that are most susceptible to the effects of climate change.

Science, evidence and Indigenous ways of knowing

Engineers Canada supports the notion of stronger peer review of science and integration of Indigenous ways of knowing through an accessible platform to inform project planning, assessment, and decision-making. The process should be open, accessible, and transparent throughout.

The science peer review process should not only include other scientists, but also professional engineers and planning practitioners who have knowledge and experience of interpreting and applying science information in a technically feasible and cost effective manner. The principal of "scientifically defensible

³ Ogden, Aynslie (2002). "Climate Change Impacts and Adaptation in Northern Canada." Retrieved July 31st, 2017, from: <https://sencanada.ca/content/sen/committee/372/agri/power/north-e.htm>.

⁴ CBC News (2015). "Thawing permafrost threatens food security in Jean Marie River, N.W.T." Retrieved August 1st, 2017, from: <http://www.cbc.ca/news/canada/north/thawing-permafrost-threatens-food-security-in-jean-marie-river-n-w-t-1.3234198>.

⁵ CBC News (2017). "'It scares me': Permafrost thaw in Canadian Arctic sign on global trend." Retrieved August 1st, 2017, from: <http://www.cbc.ca/news/canada/north/it-scares-me-permafrost-thaw-in-canadian-arctic-sign-of-global-trend-1.4069173>.

evidence” to inform assessment and decision-making needs guiding principles to manage the scope and level of effort needed for an appropriate level of scrutiny. There should be flexibility built into the guiding principles to account for differing nature, scope, and size of projects and the uncertainty that may remain with the known science.

Recommendation #4: Climate risk and vulnerability assessments should become part of the process

Resilient infrastructure throughout Canada is the driving force behind productive societies, stable sectors, and increased public confidence in civil infrastructure. The [Canadian Infrastructure Report Card](#) delineates that much of Canada’s current infrastructure is vulnerable to the effects of extreme weather, which is becoming increasingly frequent and severe. This presents a risk not only to public safety, but also to Canada’s economy, as individual and business productivity depends heavily on resilient infrastructure. Extreme weather events on vulnerable infrastructure can have devastating and immediate effects on communities, and can also have consequential impacts on crucial sectors of the global supply chain, such as energy, water, food and transportation.⁶ In order to promote public confidence, the federal government should ensure that climate vulnerability and risk assessments are consistently applied throughout a projects life-cycle.

Climate change risk and vulnerability assessments are an essential tool to provide key information to decision-makers and planners around adaptation, mitigation, and resiliency measures to manage the impact of climate on the project and the impact of the project on Canada’s climate objectives. While not all costs of an extreme weather event can be avoided, the direct and indirect costs could be lessened by building climate-resilient infrastructure. Climate vulnerability assessments provide early awareness to planners regarding potential project impacts and issues that could affect communities or the natural environment.

Professional engineers in Canada are leaders in adaptation and are ready to work collaboratively with the federal government on environmental assessments and regulatory processes in order to provide unbiased and transparent advice regarding climate change and its impact on infrastructure. Engineers Canada, in conjunction with Natural Resources Canada, has developed a climate risk assessment tool that would greatly enhance the resilience of infrastructure, increased public confidence, and decreased the severity of impact on individual and business productivity following an extreme weather event. [The Public Infrastructure Engineering Vulnerability Committee](#) (PIEVC) Protocol gives engineers, geoscientists, as well as infrastructure owners and managers, a tool to design and construct infrastructure that will withstand today’s climate, while also taking into account expected future climate changes. The Protocol has been applied to a wide range of infrastructure systems more than 45 times in Canada and internationally.

Risk and vulnerability assessment tools, such as PIEVC, should become an integral part of the environmental impact assessment process, and be required as a project is in the early planning and conceptual design phases. The assessment of greenhouse gas contributions from a project should become an additional criterion for evaluating cumulative impacts. Knowing risks and vulnerabilities in

⁶ European Commission (2014). “Climate Vulnerability of the Supply-Chain: Literature and Methodological review.” Retrieved July 5th, 2017, from: <http://publications.jrc.ec.europa.eu/repository/bitstream/JRC93420/lb-na-26994-en-n%20.pdf>.

addition to estimated GHG emissions will enable the project to take account of climate while the project planning is underway.

Who we are:

Engineers Canada is the national organization of the 12 provincial and territorial associations that regulate the practice of engineering in Canada and license the country's 290,000 professional engineers. Together, we work to advance the profession in the public interest.

Engineers drive much of Canada's economy. Natural resources, manufacturing, transportation infrastructure, technology and other sectors rely on the capability of engineers. As one of the top five exporters of engineering services in the world, the expertise of Canada's engineers contributes to both the Canadian and international economy.

Acknowledgement

The following individuals were consulted in the drafting of this submission;

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