NEWS RELEASE

Canada needs a fresh approach, new tools to achieve climate and economic goals, report says

February 13, 2018 – Canada needs a fresh approach and new tools for climate policy that will dramatically reduce emissions while maintaining economic prosperity, says a joint report from Canadian Energy Systems Analysis Research (CESAR) and Polytechnique Montréal.

Current policy instruments like carbon pricing, fuel standards and clean energy incentives can achieve only incremental changes in the systems responsible for producing greenhouse gas (GHG) emissions. Such tools are not capable of driving the transformative changes in technologies, infrastructure and behaviour needed to meet the nation's GHG targets and international climate commitments, while still growing the economy, the report says.

The report, *Change Ahead: A Case for Independent Expert Analysis and Advice in Support of Climate Policy Making in Canada*, points out that we live in an era of disruptive systems change driven by technology, business model and social innovation. But the primary drivers for these disruptions are rarely focused on climate change mitigation. Rather, they are intended to lower costs, enhance convenience, provide comfort or build community.

"Policy thinking needs to shift from hindsight to foresight. By first understanding the potential socio-economic and environmental implications of disruptive innovations, it will be possible to design policies that encourage, discourage, nudge or direct the disruption to meet societal goals," says report co-author David Layzell, director and professor of the Canadian Energy Systems Analysis Research Initiative (CESAR) at the University of Calgary.

"These goals are not limited to climate change mitigation, but should also include economic prosperity, social cohesion and an improved quality of life for future generations." Layzell says.

The report recommends governments create a new, arm's length, cross-Canada organization to provide independent, evidence-based expert advice, new analytical tools and policy options to federal, provincial, territorial and municipal policy makers.

Given a working title of "Canadian Climate Change and Clean Growth Institute," or C4G, the new institute would build the analytical and modelling tools and the highly qualified personnel capable of providing independent, science and evidence-based insights and advice to policy makers and the general public.

"Twenty years of failed climate change strategies illustrate that the roadmap to success is not well defined, nor is it likely to be identical for all of Canada's diverse regions and economies," says report co-author Louis Beaumier, executive director of the Institut de l'énergie Trottier at Polytechnique Montréal..

"Canada's research community can develop the analysis and modeling tools, and use them to identify credible, compelling pathways capable of achieving the goals of low GHG emissions and economic prosperity," Beaumier says.

Those twinned goals are set out in the Pan-Canadian Framework on Clean Growth and Climate Change, developed by Ottawa and the provinces.

"It is time to open up the discussion, more fully engage other levels of government, tap into the 'systems change' expertise that exists across Canada, and expand the scope of strategies that can be used to achieve the systems transition needed to meet the objectives of the Framework," Layzell says.

Current modelling and analytical efforts by public and private entities are uncoordinated, inconsistent, often use incomplete or outdated data, and are not transparent or publicly accessible, the report says.

This 'modelling and data gap' leaves Canada behind other countries such as the US and UK, and ill-prepared to proactively plan for and respond to the kind of systemic changes that have disrupted major industries, including photography, music, video/film, books, media, telecommunications, retail and banking.

The report cites Canada's personal mobility system as an example of an economic sector that's poised for disruptive change, but not due to climate change concerns. There are other problems that disruptive innovation is working to address in the mobility sector.

For example, vehicle accidents kill or seriously injure over 12,000 Canadians each year and cost society tens of billions of dollars. Air pollution from vehicles shortens the lives of many in our cities. Congestion reduces productivity of the workforce and demands massive infrastructure investments. Cars are also costly, but we use them only about four per cent of the time; for the other 96 per cent, they are parked on the most expensive land in Canada. We could make better use of our personal mobility dollars, and that precious land, if we had an acceptable alternative.

Many of the world's largest companies recognize these opportunities and are developing technology, business model and social innovations expected to disrupt global mobility systems within the next decade. These innovations include autonomous vehicles, battery electric or hydrogen fuel cell electric vehicles, car sharing and transportation-as-a-service. How these technologies are deployed will determine which problems are addressed, which new problems arise and which problems are made worse.

For example, autonomous vehicle technologies could easily worsen the environmental footprint of personal mobility by enhancing demand, reducing vehicle occupancy loads, encouraging urban sprawl, stimulating fuel use and increasing congestion. However, policies to encourage the convergence of autonomous, shared and electric vehicles could lower the cost of personal mobility, improve vehicle efficiency, replace parking lots and garages with parks and walkable communities, shorten commuting distances and reduce both congestion and GHG emissions. While GHG emission reduction may not be the primary driver for systems change, creative policies can achieve that objective during disruptive change.

The report's co-authors argue that by understanding these forces and exploring alternative deployment strategies, policy makers can 'direct disruption' to achieve societal objectives, including, but not limited to climate change.

The collaborative report is based on numerous meetings and workshops – organized by the Ivey Foundation, Natural Resources Canada, the Trottier Family Foundation, Canadian Energy Research Institute, l'Institut de l'énergie Trottier and the Canadian Energy Systems Analysis Research Initiative – held with researchers, energy stakeholders and government over the past two years. These meetings resulted in a consensus that "an initiative was needed to support independent expert analysis and advice regarding policies needed to achieve the objectives of the Pan-Canadian Framework," the report says.

The report was initiated by the Ivey Foundation and produced by the Canadian Energy Systems Analysis Research Initiative (CESAR) and the Institut de l'énergie Trottier at Polytechnique Montréal. The report is freely available here on CESAR's website.

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The report's co-authors are available for media interviews in English (David Layzell) and in French or English (Louis Beaumier).

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