Canada's major new economic engine fuelled by low carbon energy resources

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National network of scientists, engineers, social scientists examines how Canada could act to limit global warming while remaining economically competitive

According to a new report co-authored by Desautels Faculty of Management (https://www.mcgill.ca/desautels/desautels-faculty-management), McGill University and 70 university researchers from all 10 provinces, decreased demand for fossil fuels over the coming decades could significantly reduce inward investment in the oil and gas sector, making the industry a less attractive and riskier business. The scholars recommend that Canada makes the shift from being an oil producing country to becoming a low carbon energy leader.

“With its uniquely vast endowment of renewable energy resources, Canada can seize the global low-carbon energy transition as an opportunity to build a major new economic engine for the country,” according to the volunteer network of scientists, engineers and social scientists who compiled the 60-page paper.

The independent paper, written at the invitation of Natural Resources Canada, was developed to examine how Canada could transition to low-carbon energy systems while remaining globally competitive. Re-Energizing Canada: Pathways to a Low-Carbon Future, provides independent academic input to Generation Energy, a national dialogue on Canada’s path to a low-carbon future launched by Natural Resources Canada on April 21, 2017. The work of the academic experts in the context of Generation Energy highlights the importance that science and research must play in informing the public policy debate on Canada’s transition to a low-carbon economy. It is an important contribution to the range of views and opinions on how Canada can create the affordable energy and innovative jobs Canadians want.

According to the scholars, Canada should accelerate its shift to a low-carbon economy by reducing overall energy demand through energy efficiency and conservation, increasing electrification and switching to low-carbon-emitting sources of electricity and progressively replacing high-carbon petroleum-based fuels with low-carbon ones.

Governance issues central to a successful transition

At the outset, the authors identify governance issues as central to a successful low-carbon energy transition, emphasizing that technologies needed to begin the low-carbon energy transition are readily available. “We believe that the key barriers to accelerating the low-carbon energy transition are social, political and organizational” says Professor Catherine Potvin of McGill University who coordinated the report.

The scholars conclude that “the current ambition of low-carbon policies and measures will not allow us to reach our destination—a world that will have avoided a global temperature increment greater than 2oC.” A successful low carbon energy transition will demand that governments at all levels increase their capacity to deliver guidance, support and mobilize initiatives. In the past, Canada has successfully undertaken other journeys of great magnitude – including adopting universal healthcare and

launching social security. The decarbonisation journey is of equal importance.

Competitiveness of companies linked to low-carbon transition

The future competitiveness and success of Canadian companies will be influenced by their readiness to engage in the low-carbon energy transition, according to the report. Financial investment will help seed the ground for low-carbon energy innovation in the private sector, but parallel public investment and a clear sense of direction is needed.

According to one of the lead authors, Dr. David Layzell from the University of Calgary, “To stimulate the energy transition, it is important to develop measures focusing not only on energy supply but also on energy demand”. Offering citizens and companies a range of attractive low-carbon options that improve quality of life can accelerate the energy transition. Such options range from facilitating self-production of electricity, for example allowing feed-in tariffs and facilitating access to rooftop solar panels, to rapid, safe and comfortable public transportation.

Laying out pathways

The scholars conceive the low-carbon energy journey in three stages: Preparation (2017–2020), Early implementation (2020–2030) and Deep decarbonisation (2030–2050).
Developing a common vision for the future and designing novel institutions to implement the low carbon energy transition are the key elements of the preparation phase.

With these in place early implementation should allow Canadians to make decisions about the best future energy mixes in different regions of the country. To accelerate the low-carbon energy transition, the scholars recommend integrating energy policy into a broader ‘low-carbon development strategy’ that can use Canada’s unique endowment in renewable energy and growing market for low-carbon technology as a major new economic engine for the country.

The pathways to deep decarbonisation -- allowing Canada to be coherent with its international commitment and reduce its emissions by at least 80% of 2005 levels in 2050 -- start today. Advancing towards decarbonisation demands continuously identifying where and how emissions could be rapidly reduced, shaping policy approaches accordingly and continuously adjusting the policy framework to accelerate decarbonization.

Though the scale of the global challenge may seem enormous, more and more individuals, communities, industries and governments are stepping up to the task of meeting that goal. In the long-term, global demand for low-carbon energy is expected to climb while global demand for fossil fuels peters out. Planning and support measures put in place well in advance could ensure that the transition will be smooth and beneficial for workers and communities.

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