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WHITE PAPER  
**TOWARD CANADA'S CLIMATE GOALS:  
THE POLICY RESEARCH AGENDA FOR  
GETTING TO 2030 AND BEYOND**

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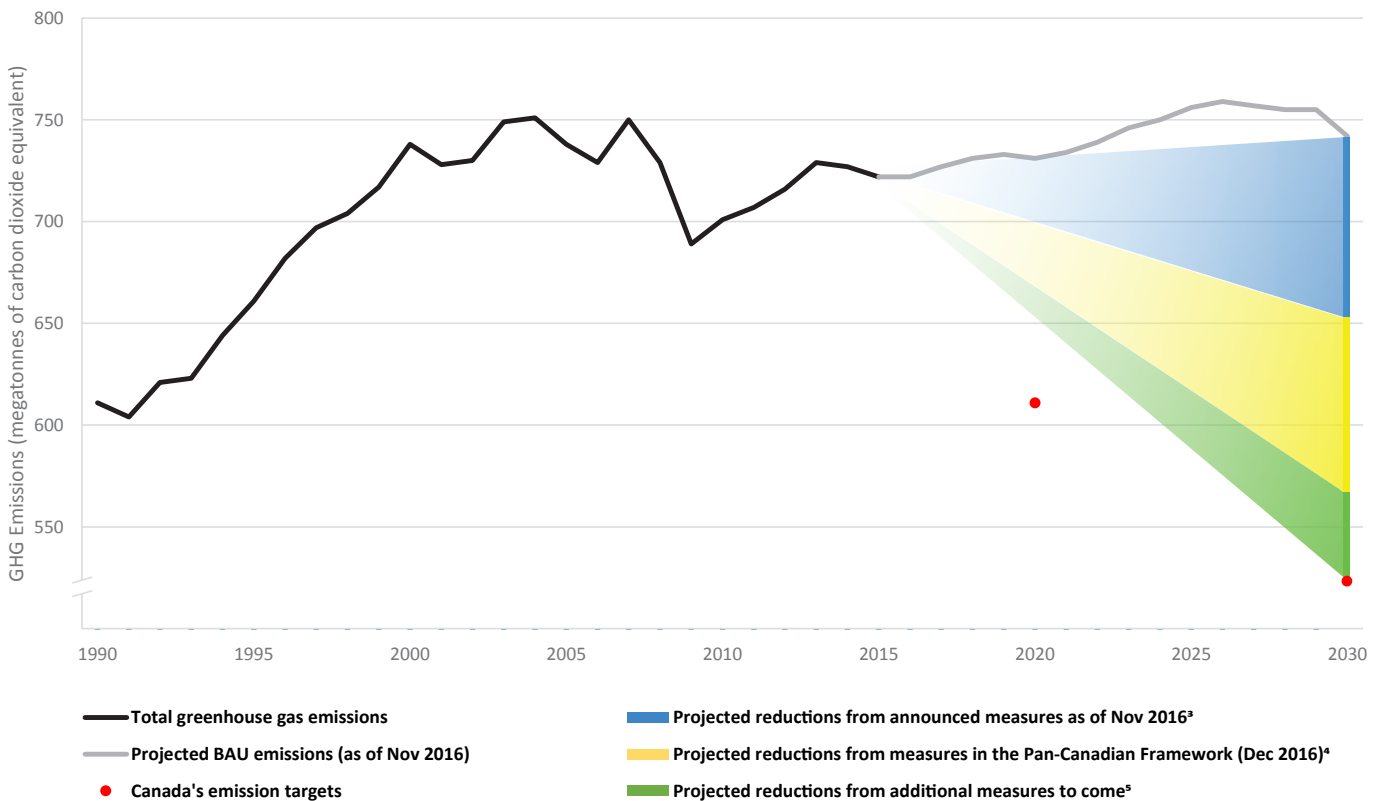
## RATIONALE

Canadian businesses, citizens, and governments of all levels are taking action to transition to a low-carbon economy (LCE) – one in which goods and services are produced, transported and used with dramatically lower carbon emissions, and in which the climate mitigating values of nature are protected and enhanced. These actions are a result of an increasing recognition that the transition to a low-carbon economy brings both environmental and economic benefits.

Recent government action, in the form of various provincial actions<sup>1</sup> and the First Ministers’ commitment to the Pan-Canadian Framework on Clean Growth and Climate Change, as well as the 2017 federal budget<sup>2</sup>, commit to a number of low-carbon initiatives, including nation-wide carbon pricing, boosting clean innovation and clean technology development and deployment, and a comprehensive list of complementary climate change mitigation measures.

While these initiatives map out the broad strokes of how Canadian jurisdictions will work, the challenge now is to turn these commitments into action, while continuing to flesh out other key parts of the transition to the low carbon economy. This will require a sustained commitment over many years, and close coordination between all governments, the private sector, and civil society. As Figure 1 shows, Canada is not yet on a path to deep decarbonization

**Figure 1: Canada’s Historical and Projected GHG Emissions**



Sources: Government of Canada (2017) *National Inventory Report 1990-2015: Greenhouse gas sources and sinks in Canada, Canada's Submission to the United Nations Framework Convention on Climate Change, Part 1*. First Ministers of Canada (2016) *Pan-Canadian Framework on Clean Growth and Climate Change*, December 9 2016.

<sup>1</sup> For a description of provincial and territorial efforts, see Annex I of the Pan-Canadian Framework on Clean Growth and Climate Change; for federal efforts refer to Annex II.  
<sup>2</sup> For a description of the climate and clean innovation measures in Budget 2017, see Smart Prosperity Institute's blog at <http://institute.smartprosperity.ca/content/2017Budget>.  
<sup>3</sup> Including HFC, methane, and heavy duty vehicle regulations as well as BC's climate leadership plan and SK's renewable energy target.  
<sup>4</sup> Including the coal phase-out, clean fuel standard, etc.  
<sup>5</sup> Including public transit, green infrastructure, technology and innovation, and stored carbon.

Based on the markers established in the policy commitments to date, this White Paper presents some areas where Smart Prosperity Institute sees a need for more analysis (and more-detailed analysis) to underpin the development of the policies that will support the twin goals of emissions reduction and clean economic growth, with the wellbeing of Canadians at heart. These areas are presented as four general “Lines of Inquiry” with examples of specific policy research questions.

The development of this policy research agenda was undertaken through a dozen conversations with policy makers in federal and provincial government departments, think tanks and NGOs, and has been informed by a number of excellent events and conferences and workshops related to low-carbon policy in Winter 2017.

At Smart Prosperity Institute, we want our work to support decision-makers to use the best available evidence in designing low-carbon policies. As one of many policy research institutes, we hope that this White Paper will also be used by others to take on questions that need answering. As a White Paper, this policy research agenda should be considered a work in progress that will require updating as the policy agenda evolves. As such, feedback and comments are welcome, directed to Michelle Brownlee at [michelle@smartprosperity.ca](mailto:michelle@smartprosperity.ca).

## **LINES OF INQUIRY**

While the following four lines of inquiry are linked and overlapping, they provide a useful framework for distinguishing four focus areas for Canadian low-carbon policy research.

- 1 THE POLICY PACKAGE**
- 2 SUSTAINABLE FINANCING**
- 3 INCLUSION OF OPPORTUNITY**
- 4 ENSURING SUCCESS**

## 1. THE POLICY PACKAGE

How can the various policies, programs, regulations and incentives to help transition Canada to a low-carbon economy be best designed to interact with one another in environmentally and economically effective combinations?

- What is the right suite of policies? And why might it differ across sectors or regions?
  - Given that policy approaches can vary from regulation to pricing to subsidies, under what conditions is one the optimal choice over the others and when should they be used in combination, taking into account environmental effectiveness and cost effectiveness?
  - What complementary policies and investments are needed in addition to carbon pricing and existing climate mitigation/adaptation measures? What cannot be done best by carbon pricing? How can we better explain/understand the role of the implicit pricing imposed by regulations and other non-price measures? Beyond broad carbon pricing, where is there a role for other pricing/market-based policies?
  - Can too many policies stacked together create a burden rather than support?
  - What is the role of government procurement in the policy suite?
- Within the suite of policies, what are the specific questions we need to answer regarding individual policy design, particularly for the largest and most impactful policies, such as carbon pricing regimes and low-carbon fuel standards?
- What types of policy design (for regulation, subsidies and all policies) lead to solution-neutral incentives and regulations? What types of policy design incent the most innovation? Can market-based instruments be used to help manage uncertainty?
- How best can carbon pricing and environmental regulations be balanced to work together in order to be as cost effective and environmentally effective as possible? What are the cumulative impacts of environmental regulation? Are there regulations (environmental or other) that should be reconsidered in light of low-carbon economy efforts?
- How do/can clean technology and clean innovation investments reduce the future cost of mitigation? More broadly, what are the clean innovation/clean tech and mitigation interactions? How can we better model the impacts of clean technology? What are the non-financial barriers to the take up of clean innovation and clean technology? What is the right policy package for clean innovation?
- What other policy tools may be underutilized – including behavioural economics, cutting-edge market-based instruments, and best practices for incentive programs? Are there places where market signals are not making it through to decision-makers (such as regulators or investors, perhaps)? What additional insight is needed regarding how people, companies and governments respond to implicit and explicit carbon pricing signals and are there policy design features that could make their response stronger.
- In addition to low-carbon benefits, what are the other environmental, social and economic benefits of the policy package? How can policy be designed so as to maximize them?
- How will Canadian policies (federal, provincial or territorial) interact with other countries' policies, including via formal channels (such as Article 6 of the Paris Agreement)?
- How can we design adaptation, mitigation and clean innovation policies to be mutually reinforcing?
- Are there economic inefficiencies in the current Canadian carbon pricing systems, and how could policy evolve over time to address these?

## 2. SUSTAINABLE FINANCING

How can the transition to a low-carbon economy be sustainably financed – including for green infrastructure, incentive programs, and boosting clean innovation, all of which require upfront investment? How can policy be designed to leverage and draw in private and international capital?

- How should policy frameworks (for clean infrastructure, mitigation, clean innovation and adaptation) be designed so that they create the conditions for investors to make major investments with confidence regarding the policy regime? How is the low-carbon economy transition policy 'risk' different than other risks that investors face?
- What are the policy changes that would have the most positive impact on financing the LCE transition?
- What policy signals drive financing decisions? What policy signals (beyond carbon pricing) will drive the right type of financing? What barriers stand in the way of private capital flowing to low carbon and resiliency efforts and infrastructure?
- How do we move "green financing" to become an integral part of mainstream financing? What is needed to show the investment and banking community that there are positive returns in sustainable investments? How can the financial community be engaged as stakeholders in and enablers of the transition to the LCE?
- Which financial instruments hold the greatest promise to accelerate the low carbon transition? For example, what is the Canadian potential for green bonds, yield cos, co-ops (and other community-scale financing) or others? What is the potential for the more innovation models and the ones that are proven elsewhere?
- How can the use of corporate reporting and governance rules/practices support low carbon goals? What should corporate regulators do to encourage more reporting of environmental risks? What is the role of other business transparency measures, such as supply chain transparency initiatives, and how can they be used more broadly?
- What tools may be needed to address any market barriers that prevent investors and consumers from directing their assets to support the transition to a low-carbon economy? How can we equip non-expert (but engaged) investors to direct their financial capital to low carbon priorities? And how can the pool of eligible investors be widened so that not only large/institutional investors can invest in – and profit from – clean funds and clean tech?
- What decision-framework could guide infrastructure investments so that these massive investments support the transition to the low-carbon economy, rather than locking in an alternate path?
- Could an updated cost of inaction assessment help show the business case for investing in resilience and climate adaptation? Can investment opportunities be designed to bring multiple benefits – adaptation, mitigation, innovation, and other co-benefits?

## 3. INCLUSION OF OPPORTUNITY

How can the transition to a low-carbon economy be implemented in a way that is inclusive, ensuring that benefits accrue to all Canadians, and that groups, regions, sectors and firms that could be adversely impacted during the transition are supported?

- What are the climate justice considerations, both the impacts of climate change and the impacts of carbon mitigation policies, as well as their co-benefits? What are the regional, sectoral, inter-temporal and socioeconomic impacts?
- What are the competitiveness impacts of the policies that support the transition to the low-carbon economy – where competitiveness is defined broadly to include economic opportunity, innovation benefits, jobs impacts, regional diversification, and other co-benefits? Can leakage be similarly broadly defined and considered?
- What tools are available to address these impacts where warranted? (For example, output-based allocations, border carbon adjustments, and others for industry/regions; re-skilling for workers; income support or subsidies/rebates for low-income residents; low carbon/energy retrofit support for low-income households, etc.)
- What data gaps need to be filled to ensure impacts are not unjust? (For example: concerns regarding food-energy tradeoffs under rising fuel/energy prices, issues with respect to resource dependent communities, rural communities, and the energy-poor, and differences in impact and opportunity on different socioeconomic groups)
- What are the traditional economic sectors' options for increased sustainability? How can policy facilitate any market barriers standing in their way?
- What are the impacts, positive and negative, on workers in the natural resource sectors? Where might transitional support be needed?
- What are the post-secondary needs for a low-carbon economy and what would be the elements of a low-carbon economy talent strategy?
- What are the best ways to ensure Canadians are involved in the transition – including Indigenous Peoples, academia, business and all Canadians?
- Are there timing dimensions to LCE transition – in terms of inclusivity and policy interactions? How can we show that the sooner we act, the lower the cost and the greater the opportunities?
- How can we stoke clean innovation entrepreneurship and encourage lower-carbon, more resilient economic growth? Where is Canada's emerging competitive advantage?
- How can we communicate the economic (e.g., jobs) and social (e.g., health) benefits of the LCE transition? How can those support LCE action and reach an audience beyond those already engaged? How can we unlock why this is relevant for everyone – at the individual level – by showing the potential for work, economic development and just transitions?
- What are the fiscal impacts of carbon pricing (and related policies) on local governments and public sector bodies (schools, universities, hospitals) that do not benefit as much from tax shifting? What are the options for maintaining the incentive effect but mitigating the fiscal impact?
- What decision-making framework or other tools could guide local governments through how best to respond, drawing in financing from beyond their tax base?
- How can policies be designed so that they incentivize emissions reductions at all stages of product lifecycles and all phases of private decision-making so that all opportunities for emissions reduction can be identified and all actors can be engaged in finding solutions?

## 4. ENSURING SUCCESS

How can decision-makers and stakeholders ensure that the transition remains on track to achieve the environmental and economic outcomes it should?

- Where is the current demand for low-carbon action originating and how is the business case for public and private action evolving?
- What accountability mechanisms are required for the LCE policies and programs, including those in the Pan-Canadian Framework and its 2022 review? Beyond emissions accounting, what institutional governance could be added to the Pan-Canadian Framework to ensure its success? Broadly, what could be the governance of the LCE transition as it relates to F/P/T relations, looking to midcentury?
- What are the implications for managing climate change (mitigation, adaptation and clean innovation) in both whole-of-government and intergovernmental ways? At the same time, how can policy interventions be designed so as to crowd in private action (and avoid the policy risk trap in which public policy crowds out private action)?
- How can the policy research community focus effort on ensuring success of policies to date while also balancing a need to think to 2030 and beyond?
- How might policy move towards harmonization of prices and fungibility (where desirable) of policies across F/P/T? How might pricing convergence happen? What are the pathways to it?
- What data are needed in order to track progress? What data should be collected now in order to facilitate retrospective analysis of program and policy performance? Do we have all the tools needed to measure costs and benefits appropriately?
- What are the political economy considerations related to mitigation, adaptation and clean innovation – for all levels of governments, in both the short and long runs?
- What are the feedback loops that are emerging that send information from decision-makers (municipalities, SMEs, large corporations, provincial and federal government, Indigenous communities and citizens) back to policy-makers?
- What tools are needed to help decision-makers (see list in the previous question) work through the impacts of carbon pricing and other policies? What tools are needed to help them react to the impacts of climate change?
- How can we design policy experiments within low-carbon economy programming and quickly incorporate learnings?
- What changes – if any – are warranted to Canadian LCE transition approaches in the absence of aggressive US federal government action? Or as other countries' policies change over time?
- What are the implications for other policy suites – such as trade policy, electricity policy, transportation policy and others? Given these, where does Canada's transition to the low-carbon economy offer advantages – such as through clean innovation export opportunities?

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Smart Prosperity Institute (formerly Sustainable Prosperity) is a national research network and policy think tank based at the University of Ottawa. We deliver world-class research and work with public and private partners – all to advance practical policies and market solutions for a stronger, cleaner economy.

