CENTRE FOR
NET-ZERO
INDUSTRIAL
POLICY

The "Made-in-Canada Plan":

Thinking Through Canadian Industrial Policy

May 2023

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THE "MADE-IN-CANADA PLAN"

With the "Made-in-Canada Plan," the Government of Canada has laid out its net-zero industrial policy. While Canada has had a variety of industrial policy supports for the clean economy on the books since 2016, the latest round of supports represents a step change toward a true industrial strategy. The plan is a clear step towards a more strategic and intentional approach to coordinating government programs and instruments.

THE "MADE-IN-CANADA PLAN" SEEKS TO BOLSTER MANUFACTURING AT HOME AND SECURE A PLACE FOR CANADIAN FIRMS IN GLOBAL SUPPLY CHAINS.

The "Made-in-Canada Plan" seeks to bolster manufacturing at home and secure a place for Canadian firms and products in global supply chains. This is exactly the right approach, and one we advocated for in our 2022 report, Canada's Future in a Net-Zero World.

The plan is a response to the Inflation Reduction Act and the EU Green Industrial Plan. Canada's message: "We will not be left behind."

The plan has four tiers of tools:

1. The carbon pricing and regulatory framework.
2. A broad slate of clear and predictable investment tax credits.
3. Public (concessionary) financing, including de-risking private contributions from the Growth Fund and the Infrastructure Bank.
4. Targeted investments for priority sectors and projects of national economic significance.

The 2023 Federal budget focused on building the second tier. The statement that Canada would not be left behind was strongly backed with a major investment in a new slate of tax credits: $54.4 billion over 10 years for three new sets of credits.

The biggest budget outlay is earmarked for the 15% clean electricity tax credit ($6.3 billion to 2028; $19.4 billion more to 2034). This is critical as clean electricity is the backbone of any Canadian industrial strategy: it provides an affordable input to all industries that want to deliver low-carbon products to domestic and international markets. Further, the credit will be structured so it can be received by crown corporations and public utilities.

Next is the hydrogen tax credit, which ranges from 15% to 40% depending on the carbon intensity of the fuel ($5.5 billion to 2028; $12.1 billion additional to 2034).

Third, the budget announced a clean technology manufacturing credit covering critical minerals, battery active materials, zero-emissions vehicles, grid storage, and the nuclear supply chain ($4.5 billion to 2028; an additional $6.6 billion to 2035). These credits indicate that mining, the EV supply chain, and the nuclear industry are considered key priorities for Canada's net-zero industrial policy play.

The budget also recapitalizes the Smart Renewables and Electrification Pathways Program ($3 billion), extends a tax rate reduction for zero-emissions technology manufacturers ($1.32 billion), adds a small amount to the Strategic Innovation Fund ($500 million), enhances the CCUS credit ($520 million), adds geothermal to the clean technology tax credit ($185 million), and allows flow-through shares for lithium from brines ($14 million).

The budget also promised that it accounted for payments to VW for the recently announced battery factory in St. Thomas. While the outlay was hidden in the budget, it came out that the government will pay $13 billion for the facility (in line with what our analysis said would be necessary to match the IRA).

All told, that is about $73 billion for the new economy. If the CCUS credit from Budget 2022 is factored in, that is $83 billion in support. Ahead of the budget, the government had signaled that it would meet the scale of the IRA at the usual 10% rule, on the basis that Canada is roughly 10% the size of the US in population and GDP. While the Congressional Budget Office initially scored the IRA at a public cost of $370 billion, private estimates suggest that the outlay will be much higher, from $800 billion to $1.2 trillion. The ambition was clearly to match the scale of the IRA and the government has acted boldly here.

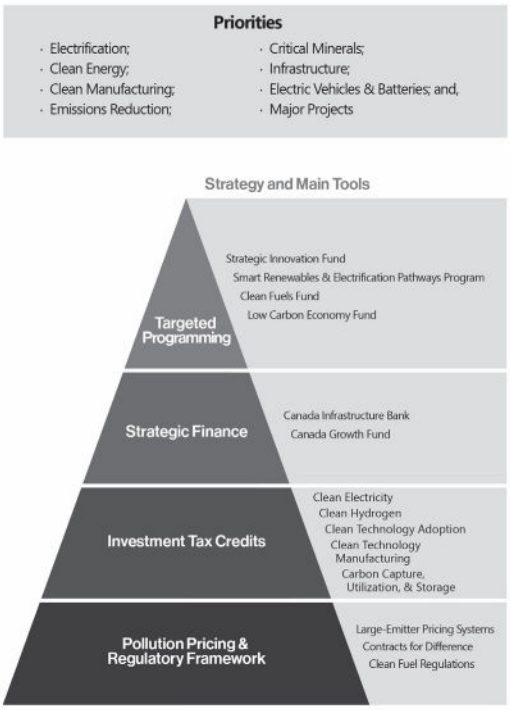
While there has been a lot of focus on tax credits, these measures, as well as accompanying subsidies, do not constitute an industrial policy. A *modern* industrial policy must involve a dynamic process of sectoral collaboration that integrates the tools into a clear strategy.

For example, the tax credits receiving much attention in the IRA are supported by excellent work in the Department of Energy to set clear targets, organize supply chains, and work with industries directly to identify and solve challenges in a dynamic way. The U.S. approach benefits from decades of work to develop the institutional mechanisms for coordinating commercialization strategies between the government and industry.

Canada needs to develop this apparatus next: targets and sector tables to develop clear strategies that organize and focus work in the sectors. Without intentional development of such coordination mechanisms, Budget 2023's commendable initiatives will risk falling into the Canadian pattern of spreading innovation supports (ex: research funding and R&D and investment tax credits) too thin to achieve meaningful scale in any one strategic technology.

On this, the budget is highly suggestive, but short on details. It arrays the four tiers above into a now famous (at least in wonk circles) pyramid. How do these elements fit together? The text of the budget states that "these instruments set a framework for boosting overall investment, while leveraging the expertise of the private sector to determine how to invest based on how the global clean economy evolves." But beyond that, there is no sense of how these elements will work together to create a strategic response to the IRA and the EU Industrial Plan.

Canada's Plan for a Clean Economy



There are big questions about how we make all this work, but we applaud the ambition of this government, as well as their hard work to grapple with the tectonic geopolitical and economic shifts of our time in an intentional, thoughtful way.

HOW MIGHT CANADA'S INDUSTRIAL POLICY TOOLS WORK TOGETHER?

The pollution pricing and regulatory framework—that is, the carbon pricing system—cannot serve as a direct incentive for new investment in most provinces. Alberta is the exception. There, industrial facilities such as hydrogen or clean electricity producers can opt in to the system. This means they can generate credits (think: revenue) if their production is below the benchmark. If credit prices are high (that is, close to the federal benchmark), then this provides a real incentive for new investment. But in Québec, and most other provinces, such facilities cannot opt in—the pricing system applies only to existing hydrogen producers. There is no incentive from the pricing system to generate new investment. Therefore, in its current configuration, the pricing and regulatory system can create broad-based demand for clean technologies, but it cannot be relied upon as a supply-side support.

This is where the investment tax credits come in: they provide direct revenues to companies, which can claim a credit against capital expenditures on various technologies. These credits are bankable—they can be relied on and modelled in cash flow analyses that are critical to securing financing. But it is worth noting that Canada's investment tax credits are mostly not competitive with the IRA's production tax credits. That is because production tax credits serve as "bottomless mimosas" that companies can order up as much as they want.

Moving up the pyramid, strategic financing from the Canada Infrastructure Bank (CIB) and the Canada Growth Fund (CFB) are next. The CIB and CGF target different projects and entities. CIB's purpose is to invest $35 billion in revenue-

generating infrastructure which benefits Canadians. The CIB is just getting its big green investments underway, but it is a promising source of low-cost financing (concessional loans). This is an important but limited tool for driving deployment of clean technologies.

On the other hand, the CGF's aim is to utilize $15 billion and support scale-up projects, companies, and technologies beyond the technology demonstration stage/pre-commercialization stages of development. The CGF is not operational yet, but it has a critical role in driving deployment. To do so, it must operate as an agile, active investor in the clean energy and technology supply chain, using all the tools in the financial toolbox to advance commercialization and deployment.

Budget 2023 also announced that the CGF will be managed by the Public Sector Pension Investment Board (PSP Investments). PSP Investments has the expertise and learning-by-doing capacity to rapidly build out appraisal systems and develop investment structures to blend in financing to different projects and entities. But PSP would also need to draw net-zero expertise from across the country to get ahead of the curve on green financing.

The challenge will be to ensure that both the CGF and the CIB, as nominally arms-length institutions, actually contribute to the strategic development of supply chains in a coherent way. Clear targets and strategies coming out of national and regional processes would help (more on this below). Both investment vehicles need to: i) streamline identification and appraisal of new deals; ii) develop financing models across different priority sectors; iii) take investment positions to effectively blend capital from other financial institutions; and iv) formulate a monitoring and evaluation mechanism for performance measurement and adjust lending/investing criteria over time.

To support these four areas of financing cycle, smart lessons can also be learnt from institutional arrangements and frameworks from other jurisdictions which mobilize finance in support of industrial policies through third-party intermediaries and strong public-private partnerships. Good examples would be the European Investment Bank's role in supporting the European Battery Alliance and EU Innovation Fund's role and process in supporting demonstration projects across Europe. Similar practices and institutional arrangements can be adopted in Canada to rapidly fund projects and entities at the scale required. There is notable progress on developing project financing models across priority sectors from CIB e.g., for building retrofits and zero-emission bus fleets.

Finally, there are directed investments. This budget declined to recapitalize the Strategic Innovation Fund, which has been providing grants to firms since 2017. It adds only $500 million to the SIF, which has a mature project pipeline that likely covers all its existing allocations. The $3bn recapitalization of the Smart Renewables and Electrification Pathways Program is much bigger, more focused, and a clear statement about the direction of the industrial policy.

But to really think about how these elements work together, we would have to examine how existing tools come together in the sectors. Sector strategies and collaborations are needed to test out how the existing tools are operating on markets and firms. Targets and processes at the sectoral level are then essential to integrating the tools laid out in the pyramid in a successful way. An industrial strategy for each economic sector, with a vision of what the sector will look like by 2050, seems important to guide public and private investment in clean technologies and build long-term competitive industries in the net-zero economy. The objectives and priority areas of investment of the strategic financing vehicles, particularly the CGF and CIB, would then align with sector targets and plans.

FROM A PLAN TO A MACROECONOMIC STRATEGY GROUNDED IN REGIONAL REALITIES

An important feature of the Made-in-Canada Plan is that the pyramid points clearly towards specific priority areas: electrification, clean energy, clean manufacturing, critical minerals, infrastructure, and electric vehicles and batteries, as well as overall emissions reduction and major projects. A number of these—in particular, clean energy, clean manufacturing, critical minerals, and electric vehicles and batteries—represent potential clean growth opportunities for Canada in a global economy transitioning to net-zero emissions.

These clean growth opportunities should be anchored in an overall vision for Canada's net-zero economy, taking account of diverse regional perspectives. A macroeconomic perspective suggests that the net-zero transition will bring a changing scale and composition of exports, such as declining oil and gas exports, among broad changes in the structure of the real economy in Canada. This implies a need to assess and articulate the best economic growth opportunities for Canada in emerging net-zero supply chains. The current list of priorities in Budget 2023 presents a number of areas of potential competitive advantage for Canada. But will these offer sufficient opportunities for Canada's highly regionalized economy? How will the current account balance shift in coming years and decades?

Current shifts in geopolitics towards friend-shoring and regional-based resilience in supply chains mean that Canada's investment and growth strategies likely require updating. How will lagging business investment and productivity be reversed? And how much of the new investment in clean growth opportunities should be expected from foreign direct investment relative to domestic sources of capital? Industrial strategy is about choosing and shaping the direction of growth,

and hence investment. Mechanisms are needed to articulate this overall strategy, in concert with provincial and territorial economic strategies.

How does the 2023 budget support the scaling of domestic-owned business and innovation?

If we want to compete over the transition, we need homegrown innovation capacity. While the budget highlights the importance of supply chain resilience and friendshoring in response to the rise of authoritarian regimes, it is somewhat elusive as to how the Canadian strategy will promote the development of domestic firms and manage the risk that public funding will be captured primarily by foreign firms who control the intellectual property of technology and have the option to outsource their production.

The government should explore policy options to target the development and deployment of Canadian innovations and companies and place greater restrictions on the delocalization or sale of publicly funded firms into foreign markets or companies. The CGF could be critical here, but only if it does not fund mostly mature technologies, like the SIF ended-up doing. Perhaps this is where the Canadian Innovation Corp fits in, but that piece has yet to be integrated into the industrial policy framework.

THE NEED FOR SECTORAL CALIBRATION OVER TIME

It is difficult to assess whether the proposed cleantech tax credits address the needs of Canadian businesses, target activities in which Canada can be globally competitive, and trigger private investment at the speed and scale required to transform Canada's economy and achieve net zero by 2050. Given the Federal government's reliance on the private sector to set the direction of clean investments, greater transparency on the thinking (rationales, technical analyses) behind the design of policy instruments seems crucial to effective climate policies.

It is worth looking back at the US approach here. Combining in-house DOE laboratory expertise with real-time industry and academic knowledge enables the U.S. government to strategically design targeted innovation investments (ex: Bipartisan Infrastructure Bill's $8b DOE Hydrogen Hubs) and across the board production tax credits (Inflation Reduction Act's up to $3/kg Clean Hydrogen Production Tax Credit (45V)) in a manner that can meaningfully alleviate supply cost and demand bottlenecks. These technology specific roadmaps are essential

prerequisites underpinning the US' ability to arrive at the precise calibration of per-unit production tax credit levels, as well as targeted grant and loan supports, that tip the scale of project-level economics in favour of clean technology solutions.

A custom industrial policy approach is needed for each sector/technology, reflecting the unique supply-chain challenges and supply/demand barriers to adoption for each cleantech solution. This is fulfilled by the DOE's institutionalized knowledge exchange mechanisms.

CONCLUSION

The "Made-in-Canada Plan" is a clear statement that the government aims to make its industrial policy more strategic and focused. This is demonstrated by the pyramid comprising the four tiers of tools along with identified priority areas and sectors. However, as we have tried to show in this brief, there is a lot of thought and analysis needed to maximize the likelihood of Canada's industrial policy being successful. That is why The Transition Accelerator is launching the Centre for Net-Zero Industrial Policy to bring together experts and practitioners to forge the insights and action Canada needs to compete in the new economy. By convening, catalyzing and mobilizing research and action on industrial policy, the Centre will support government, business and other stakeholders in formulating and implementing a modern, made-in-Canada approach to industrial policy to drive the net-zero transition.

ABOUT THE CENTRE FOR NET-ZERO INDUSTRIAL POLICY

The Centre for Net-Zero Industrial Policy acts as a virtual hub for researchers and practitioners in industrial policy. This community consists of affiliated researchers in academia and research institutes, as well as partner organizations who are actively analyzing and formulating policy recommendations on industrial policy. In addition, industry partners provide a connection with the perspective of business on net-zero industrial policy.

The Centre has been established thanks to the generous support of the Ivey Foundation. For more information about becoming an affiliated researcher or partner, please contact us at info@netzeroindustrialpolicy.ca.

See more: www.netzeroindustrialpolicy.ca

ABOUT THE TRANSITION ACCELERATOR

The Transition Accelerator (The Accelerator) exists to support Canada's transition to a net zero future while solving societal challenges. Using our four-step methodology, The Accelerator works with innovative groups to create visions of what a socially and economically desirable net zero future will look like and build out transition pathways that will enable Canada to get there. The Accelerator's role is that of an enabler, facilitator, and force multiplier that forms coalitions to take steps down these pathways and get change moving on the ground.

Our four-step approach is to understand, codevelop, analyze and advance credible and compelling transition pathways capable of achieving societal and economic objectives, including driving the country towards net zero greenhouse gas emissions by 2050.

See more: www.transitionaccelerator.ca