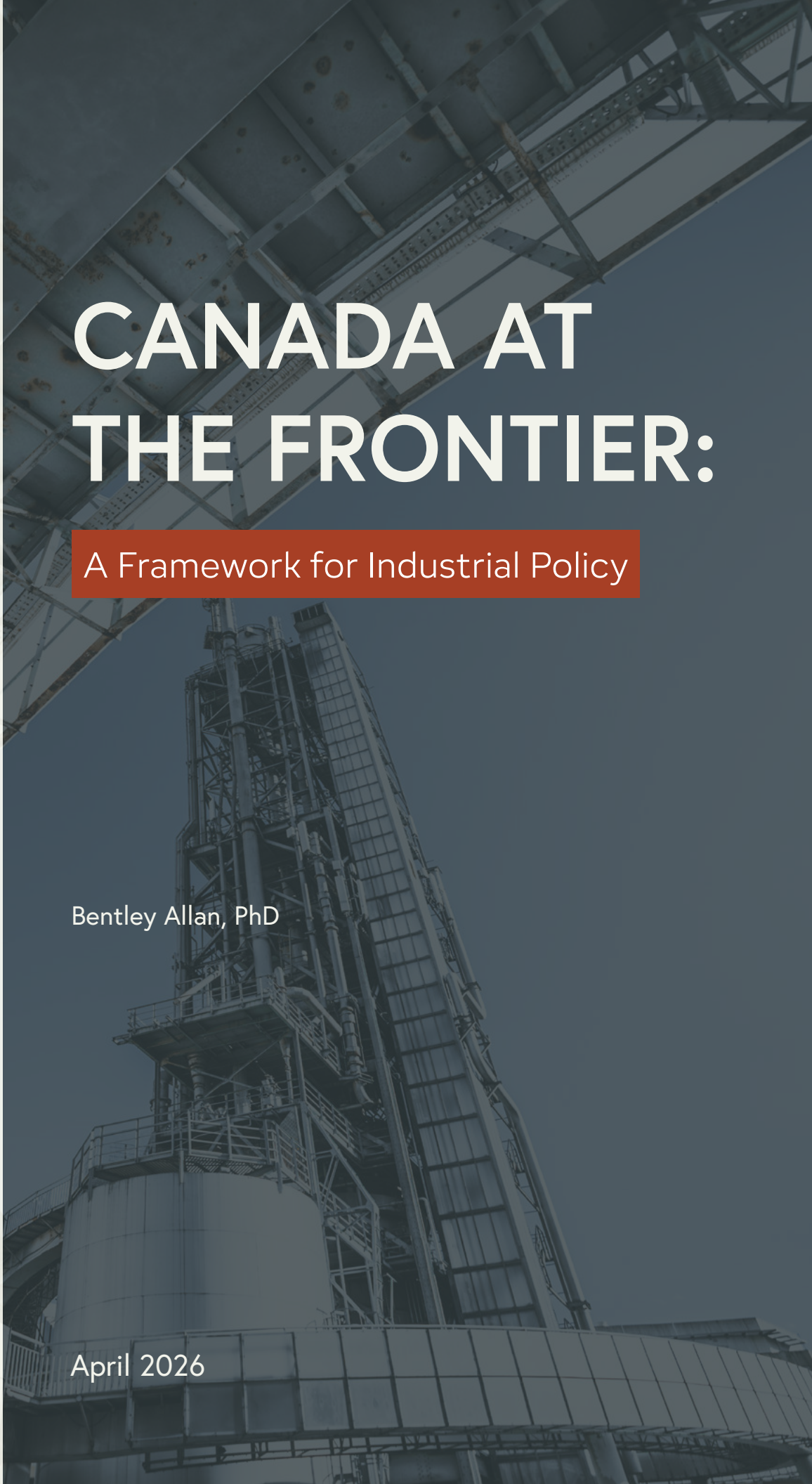
CENTRE FOR INDUSTRIAL POLICY



CANADA AT THE FRONTIER:

A Framework for Industrial Policy

Bentley Allan, PhD

An initiative of The Transition Accelerator

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About the CIP

Canada's nation-building mission hinges on ambitious industrial strategies for defence, housing, automotive, and critical minerals. Building competitive industries is difficult enough, but these strategies also must achieve multiple goals at once, diversifying trade, securing geopolitical autonomy, achieving climate competitiveness, and producing tangible economic benefits for Canadians.

To deliver, Canada needs integrated analysis informed by high-quality information. The Centre for Industrial Policy will work with the country's best analytical talent to understand what's working and what's missing in Canada's economic strategy. It will connect systems-level strategy to innovative indicators that track progress towards tractable goals.

The CIP exists to bring the bigger picture into focus, helping create a more ambitious vision for Canada's economic future, and supporting implementation by translating that vision into smart policy design.

An initiative of the Transition Accelerator, the CIP will be built on collaborations with industry, civil society, government, Indigenous communities and organizations, and other experts.

About the Transition Accelerator

The energy transition is disrupting global power. The Transition Accelerator is here to help Canada win — economically and geopolitically.

Working with 300+ partners in industry, government, civil society, and beyond, we help build out pathways to a prosperous low-carbon economy and avoid costly dead-ends along the way. By connecting systems-level thinking with real-world analysis, we're enabling a more affordable, competitive, and resilient future for all Canadians.

For more information or interview opportunities please contact
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EXECUTIVE SUMMARY

Industrial policy is back. The Government of Canada is now pursuing ambitious industrial strategies in multiple sectors in order to address national and geopolitical challenges with incredibly high stakes. The time for a renewed effort to understand, track, and inform Canadian industrial policy has never been better.

This report introduces a framework designed to bring analytical discipline to Canadian industrial policy. The framework distinguishes three facets of industrial policy: what governments do (activities), what they realize (measurable outcomes), and what they seek to achieve (long-term societal goals). It proposes that we use these three dimensions to analyze, develop, and systematically track industrial policy with the rigor that democratic structures demand.

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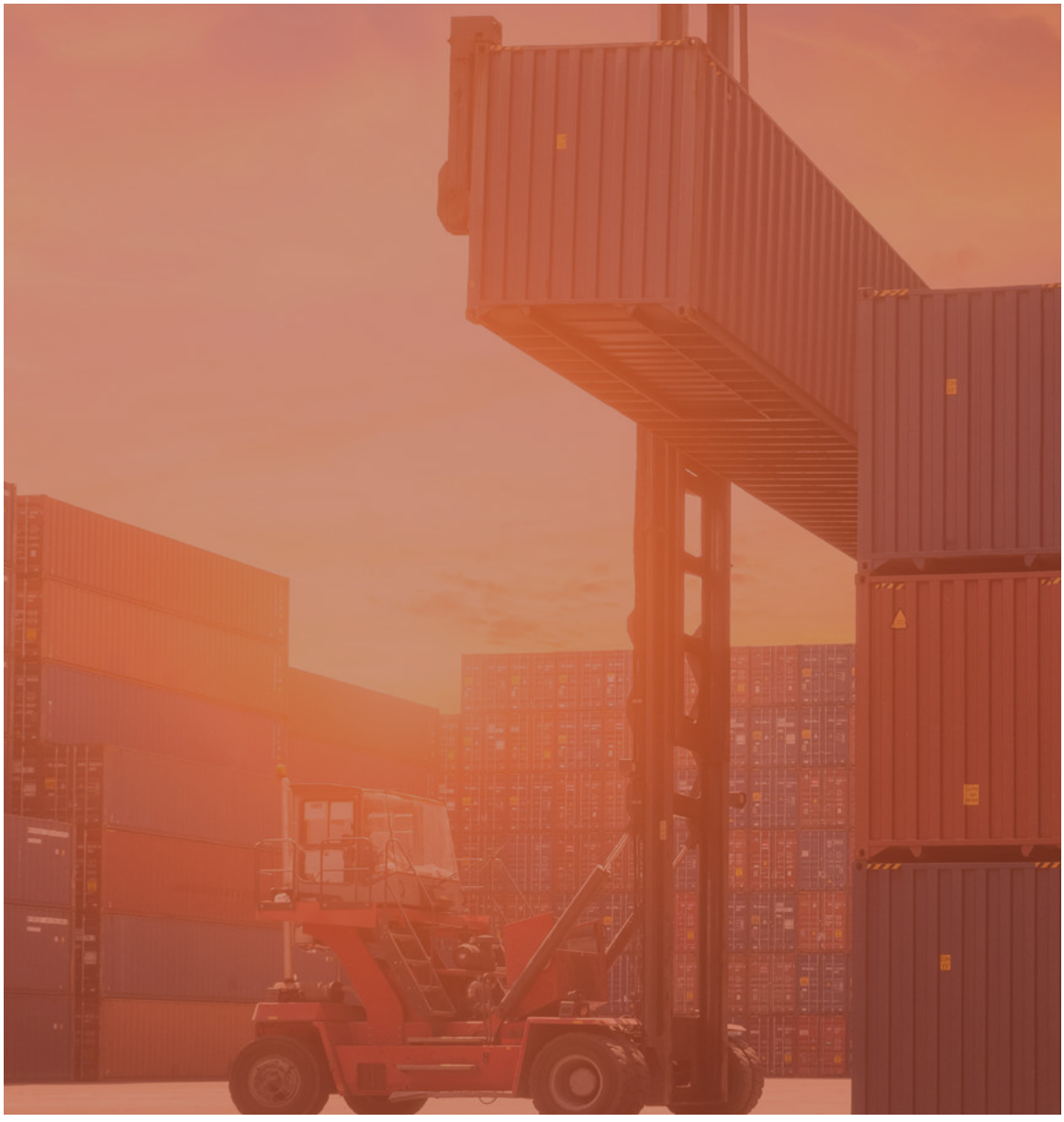


1. INTRODUCTION

The Government of Canada is currently advancing an ambitious program of nation-building designed to secure strategic autonomy and long-term sustainable prosperity. This agenda is anchored by publicly stated industrial strategies for the automotive, housing, and defence sectors.[1] While these policies are essential to meeting contemporary challenges, their implementation will place significant strain on the existing capacity of both the federal government and the broader policy community.

A primary obstacle to this ambition is the erosion of Canada's intellectual infrastructure. The once-robust academic and policy community that historically supported and critiqued industrial strategy in Canada has largely disappeared.[2] Furthermore, the government's internal expertise regarding industrial policy, supply chain dynamics, and strategic economic intervention has atrophied after decades dominated by market liberal ideas.[3]

This national challenge is compounded by the fragmented nature of modern economic governance. Canada's core industrial problems are situated at the intersection of traditional ministerial mandates, meaning that responsibility is split across Finance, Natural Resources Canada (NRCan), Innovation, Science and Economic Development (ISED), Environment and Climate Change Canada (ECCC), Transport, Housing, Global Affairs Canada (GAC), and a growing number of crown agencies.

Under these conditions, current efforts risk becoming a series of reactive, subsidy-driven interventions rather than a synchronized national strategy. To move beyond this fragmented approach, there is an urgent need for institutional spaces capable of integrating the various parts of the industrial policy conversation.

In previous work, the Transition Accelerator and its partners have sought to motivate, track, and shape Canadian industrial policy through the Centre for Net-Zero Industrial Policy, the Commission on Carbon Competitiveness, the Institute for Research on Public Policy's *Next Economic Transformation* project, and other initiatives.

However, there has as yet been no rigorous attempt to measure success or track policy and investment outcomes in real time. Now, with the stakes raised higher than ever before and the government articulating sophisticated strategies in multiple sectors, it is time for a renewed effort to understand how policy mixes are affecting firms in real-time and whether or not Canada is achieving its goals.

In what follows, I define industrial policy, industrial strategy and the imperative to get them right. But then, I present a framework that is meant to ground the observation and evaluation of Canadian industrial policy. To effectively respond to generational challenges like climate change, enduring problems like the productivity gap, and geopolitical disruptions that continuously shift the rules of the game, Canada needs a more robust conversation backed by the best analytics.

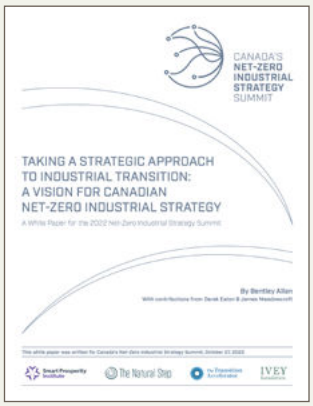
2. INDUSTRIAL POLICY: DEFINITION, STRATEGY, AND THE CANADIAN IMPERATIVE

Industrial policy is a term that is frequently invoked and just as frequently misunderstood. Few economic policy concepts generate as much debate and confusion. When politicians, officials, and commentators employ the term, they may refer to a specific instrument (a tax credit, a procurement policy, or local content requirement), a broad aspiration (a green economy, a sovereign supply chain), or the government's general orientation toward markets. The confusion produces discussion that often collapses into arguments about whether government should intervene at all, rather than how, at what scale, with what instruments, and to what measurable end.

At its core, *industrial policy refers to deliberate government action to shape the structure of economic activity*—to steer which industries exist, which capabilities are built, and which technologies are deployed. It is not defined by its policy instruments but by the intention of the government to achieve a societal goal. It could include subsidies, tax credits, contracts for difference, procurement requirements, trade measures, and public investment in R&D and infrastructure. By this definition, governments are always doing industrial policy, whether or not they articulate it as such and submit it to public scrutiny.

Industrial strategy is often used interchangeably with industrial policy, but they are distinct concepts. Policy is the instrument; strategy is the architecture that gives

instruments coherent direction. Industrial policy without strategy is a collection of disconnected interventions that may individually make sense but fail to add up to anything more than the sum of their parts. Industrial *strategy* sets the overarching objectives, identifies priority sectors and value chain positions, sequences interventions, and establishes mechanisms for government and industry to learn together as conditions change.



Industrial policy ain't what it used to be

"Modern, strategic industrial policy is not the old nationalist and protectionist policy of the past. The idea of industrial policy as picking winners and supporting them with illiberal policy is outdated and irrelevant. Countries today employ smart, innovation-focused strategies that seek to position their firms in global value chains in an ongoing process of action, learning, and adaptation. This modern industrial policy, far from being protectionist, is often focused on positioning firms in global value chains... Modern industrial policy begins from the premise that any strategy must be smart and flexible in the sense that it is designed to be changed and updated over time. This 'requires shifting the focus from *one-time* choice of winners to the *process* of error detection and error correction of the choices.' Mistake-proof industrial policy is not possible, but designing a good process informed by best practices is."

Taking a Strategic Approach to Industrial Transition [4]

Canada has long had industrial policies of one kind or another, but it has lacked the strategic coherence to ensure they compound into durable competitive advantage. A modern industrial strategy requires not just choosing instruments but building the institutional capacity that allows policy to be executed well. Good industrial strategy requires analytical infrastructure in society, public-private collaboration mechanisms to generate the robust flow of information between government and industry, and the willingness to evaluate and adapt in real-time.

Why does this matter for Canada right now? First, the global environment has changed in ways that make strategic inaction increasingly costly. Trump's tariffs and unpredictability have injected deep uncertainty into a rapidly changing global environment. Canada's new nation-building mission is necessary to reposition the country at the global technology and resource frontier while securing autonomy, building geopolitical leverage, and addressing long-term structural problems in Canada's economy.

Second, Canada faces a long-standing productivity crisis that the current moment both intensifies and offers a chance to address. Decades of declining investment in high-value manufacturing and technology have eroded Canada's post-war productivity gains relative to the United States. The net-zero transition, rather than being simply a cost, represents Canada's clearest opportunity to reverse this trajectory. Firms scaling next-generation battery technologies, sustainable aviation fuels, mass timber, and green steel are exactly the kind of high-value, innovation-intensive industries that drive productivity growth.

Third, Canada's resource endowments—clean energy, critical minerals, land, and human capital—give it genuine comparative advantages in the industries that will define the 21st-century energy economy. But advantages are not destiny. As *Electrons, Rocks, and Brains* argues, Canada has long taken its position in the global order for granted.[5] The global value chains of a net-zero economy are forming now, and the question of where Canada lands in them—as a raw material exporter or as a sophisticated manufacturer and technology developer—will be determined by the strategic choices made in this decade. Deeper analysis of industrial policy is not an academic exercise; it is a precondition for making those choices well.

Fourth, Canada has an opportunity to articulate a distinct tradition of industrial policy that integrates Indigenous economic reconciliation through a robust commitment to its legal obligations and the principles of the UN Declaration of the Rights of Indigenous Peoples. An industrial policy framework that takes this commitment seriously will look different from those of peer countries: it will build co-ownership and co-governance into strategy from the outset and will channel resources and returns from resource and energy development to Indigenous communities. This integration is also, in a practical sense, good industrial policy. The principle of two-eyed seeing—holding Indigenous and Western knowledge systems together, allowing each to strengthen the other—maps onto the best practices of public-private collaboration that industrial policy scholars have long identified as central to successful state-economy coordination.[6]

Achieving any of these alone requires the kind of sustained strategic action that today's quick news cycles and short-term partisan incentives undermine. Achieving them together in the current environment urgently requires the creation of new analytical and collaborative capacities to ground public-private action in a more stable base of evidence and argumentation.

But before these capacities can be built, we need clarity about what these broader challenges and goals mean practically. Without a concrete understanding about what industrial policy is supposed to do, governments cannot be held accountable for whether it is working, let alone marshal the forces of society toward its collective achievement. As policy instruments and government agencies multiply, the foundational question of whether these activities are actually building productive capabilities and advancing national goals remains largely unanswered.

3. A FRAMEWORK: ACT, REALIZE, ACHIEVE

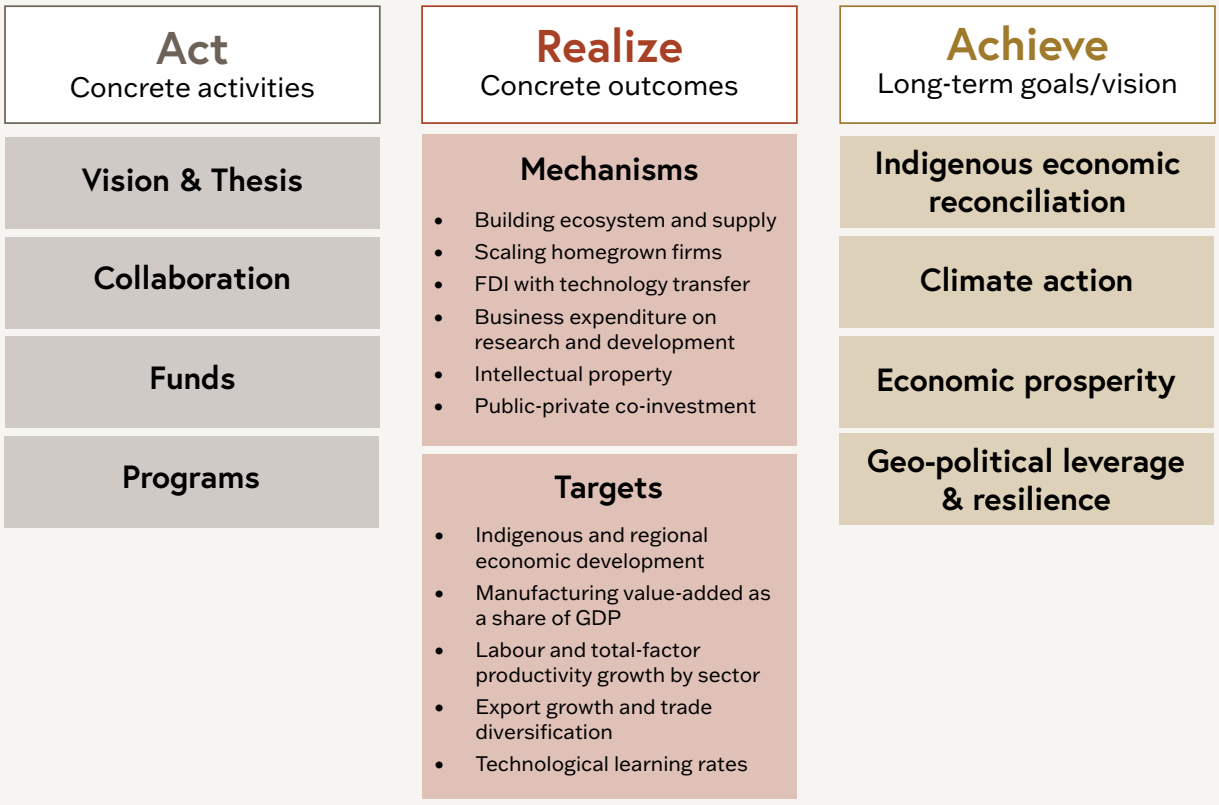
The framework introduced here distinguishes three analytically distinct facets of industrial policy. The underlying argument is that good industrial policy requires clarity about the **specific activities** governments undertake, the concrete and **measurable outcomes** those activities should produce, and the ambitious **long-term goals** to which those outcomes contribute. Conflating these three dimensions makes any practical understanding of industrial policy impossible.

Act: the activities of government

The Act dimension encompasses the concrete activities that governments undertake in the name of industrial policy. These are the instruments through which states seek to shape the structure of the economy.

Vision and Thesis: a proposition about how a country's firms will integrate into value chains at the global technological frontier, and a causal claim about how that will be achieved. Government-penned strategies often lack a precise vision and claim.

Collaboration: the structures through which government and non-state actors coordinate around industrial priorities. These include sectoral tables, industry-government councils, Indigenous economic development partnerships, inter-governmental mechanisms, and the co-design processes through which programs are shaped. The quality of these collaborative structures is crucial: as experts have emphasized, the iterative information exchange between state and business is as important as any specific instrument.[7]



Funds: dedicated financial pools from which industrial policy is financed. Canada now has a substantial number: the Canada Growth Fund, the Strategic Innovation Fund, the Canadian Infrastructure Bank, the Major Projects Office, and provincial counterparts. The existence of a fund is not itself a policy outcome, although attention can usually end at the announcement. What matters is the thesis governing disbursement, the conditions attached, and the feedback mechanisms through which deployment is adjusted over time.

Programs and instruments: specific policy mechanisms through which funds are disbursed or incentives structured: investment tax credits, loan guarantees, contracts for difference, procurement preferences, technology challenges, and export financing.

Realize: concrete measurable outcomes

The Realize dimension encompasses the concrete, quantifiable outcomes that industrial policy should produce if its activities are well-designed and well-executed. This is the heart of the framework, but it relies on a further distinction between mechanisms (intermediate objectives that help realize the long-term goals) and targets (aggregate measures of overall success).

Mechanisms

Mechanisms are the intermediate outcomes through which industrial policy is thought to generate its broader effects. Unlike standard economic indicators that are tracked in public, these measures give tangible evidence that real capabilities are being created in the economy.

Building ecosystems and supply chains: the co-location of producers, suppliers, research institutions, and skilled workers in mutually reinforcing ecosystems that create the capability for expanding manufacturing and processing prowess.

Scaling of homegrown firms: the scaling of firms from early-stage to global competitive scale to build autonomy, productivity, and innovation capacity.

FDI with technology transfer: foreign direct investments that produce not just financial capital, but tacit knowledge, process capabilities, and supply chain linkages.

Business expenditure on research and development (BERD): captures the degree to which firms are generating, not merely adopting, productive knowledge.

Intellectual property: the generation and retention of intellectual property in strategic technology areas.

Public-private co-investment: project-level outcomes illustrate the degree to which government commitments mobilize private capital.

The "invented here, scaled elsewhere" problem

"While Canadians played important roles in inventing and advancing research breakthroughs in clean technologies such as batteries and electrolyzers, barriers to scaling up prevent Canadian firms from growing into leading technology suppliers in most clean technology supply chains. The result is repeated stories of clean technologies developed in Canada with public support, such as breakthrough innovation on lithium-ion batteries developed in Quebec in the 2000s, that are scaled into global businesses elsewhere—in this case by Contemporary Amperex Technology Limited (CATL), now the world's leading electric vehicle battery manufacturer, with strategic industrial policy support from the Chinese government. The end of the story is Canada having to offer generous investment incentives to coax back such firms to locate here for final assembly and deployment."

The Right Move at the Right Time[8]

Targets

Targets are economic indicators that provide the broadest view of structural change. They are necessary conditions for evaluating industrial policy success, though they are insufficient on their own. Four targets deserve priority tracking:

Indigenous and regional economic development: tracking local outcomes like employment, ownership, and productive capacity give a direct indicator of who benefits from industrial policy.

Manufacturing value-added as a share of GDP: reveals whether the economy is becoming more or less capable of producing complex goods.

Labour and total factor productivity growth by sector: measures whether firms are becoming more efficient.

Export growth and trade diversification: export growth directly assesses global competitiveness. Diversification measures track the degree to which Canadian exports are reaching new markets.

Technology learning rates: tracks how rapidly costs decline as production scales. They indicate whether or not underlying investments in R&D and innovation are paying off and helping Canadian firms reach the global technology frontier.

Achieve: ambitious long-term goals for society

The Achieve dimension articulates the long-run societal goals that industrial policy is meant to advance. These goals provide the normative foundation for the framework: they are the reason we care about value-added and ecosystem building in the first place.

Indigenous economic reconciliation: advance the economic self-determination of Indigenous communities through ownership stakes in resource and energy projects, the development of Indigenous-led enterprises in priority sectors, and the integration of Indigenous knowledge and stewardship into industrial decision-making.

Climate action: deploy clean technology and build the manufacturing base for clean energy to lower the costs of low-carbon options and build the political coalitions for robust climate policy in the long-run.

Economic prosperity: broad-based improvements in living standards, productive employment, and regional economic vitality, is the foundational goal of industrial policy. Industrial policy can achieve this if it is designed to build capabilities, not merely to increase GDP.

Geopolitical leverage and resilience: create the material basis of strategic autonomy by building critical supply chains for critical minerals, semiconductors, pharmaceuticals, and clean energy components.

Putting the pieces together

The Act-Realize-Achieve framework is intended to be generative rather than exhaustive. It does not specify which sectors Canada should prioritize, which instruments are most appropriate for which market failures, or how trade-offs between the four long-run goals should be resolved. Those questions require empirical investigation, deliberation, and political judgement.

What the framework does insist upon is that these questions be asked rigorously and answered publicly. Industrial policy, properly understood, is not a claim that government can pick winners. It is a claim that government can create the conditions under which firms are more likely to develop the capabilities that make winning possible and that the public can evaluate whether it is doing so.

Public finance for experimentation, not picking winners

"Smart industrial strategy is not about picking winners; it is about building a sector's capacity for innovation and action over time. A publicly funded strategy for research, development, deployment, and demand-pull allows public and private actors to learn collectively. Public finance is needed to ensure that the entire solution space is explored, and that potentially viable technologies and industries are not left behind because the market did not incentivize them properly."

Canada's Future in a Net-Zero World[9]

4. CONCLUSION

The framework rests on a proposition that is straightforward to state but politically demanding to implement: the public articulation of clear, quantitative goals is a necessary condition for good industrial policy in a democratic society.

Industrial policy operates under deep uncertainty: governments do not know in advance which sectors will become competitive, which technologies will achieve commercial viability, or which firms will develop genuine capabilities. The appropriate response to this uncertainty is not the avoidance of commitment but the design of feedback mechanisms through which commitments can be revised in light of the evidence.

A democratic vision of industrial policy begins with a framework that clarifies the goals and the measures of success. Only then can public debate and public-private interaction create the basis for the collective learning that good industrial policy requires.

Three common elements of successful industrial policy

"A survey of these successful case studies shows that all of them involve three common elements: (1) They target specific technologies/sectors and stay for the long haul, i.e., as long as the effort is yielding results. (2) They establish tailored coordination mechanisms that can continuously align industry and government efforts as the needs of innovators evolve. (3) They augment an R&D-focused strategy with a wide variety of other supporting policy instruments. As well, the case studies demonstrate that successful industrial policy has the following elements: ways to inject high-quality expertise into strategy and learning at multiple points; central authority and buy-in from the centre of government to signal priorities and achieve cross-government coordination; decentralized problem solving so that the firms and experts on the front lines are directly connected to policy-making and implementation; a way to enforce policy discipline to ensure that the industrial policy is not captured by industry interests, meaning it uses conditional support to push businesses to achieve ambitious, yet realistic targets."

The Right Move at the Right Time[10]

ENDNOTES

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9 *Ibid.*

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