



CANADA'S OPPORTUNITY PLAYBOOK:

Pathways to Strategic
Decarbonization

Executive Summary



The Transition
Accelerator



L'Accélérateur
de transition

Canada's Opportunity Playbook:

Pathways to Strategic Decarbonization

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About The Transition Accelerator

Our Objective

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

Our Work

The Transition Accelerator develops projects, partnerships, and strategies to ensure Canada is competitive in a carbon-neutral world. We're harnessing the global shift towards clean growth to secure permanent jobs, abundant energy, and strong regional economies across the country.

We work with 300+ partner organizations to 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.

Our Unique Approach

- We understand the current system in practice, not just in theory, identifying barriers to innovation and opportunities for change.
- We bring together industry, labour, government, Indigenous and other leaders to define shared visions of success for their sectors, regions, or communities.
- We mobilize partners to develop pathways to get there, understanding and refining them to ensure they are credible, capable, and compelling.
- We turn ideas into action and take steps down those pathways by launching projects and partnerships to build a more competitive future.

For more information or interview opportunities please contact communications@transitionaccelerator.ca

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Executive Summary

Decarbonizing Canada's energy system is no longer just an environmental imperative. It represents one of the main economic growth opportunities in coming years. However, successfully achieving these two objectives requires a more strategic approach to decarbonization: one that focuses on systems change rather than the incremental progress that has defined the last decade.

Instead of viewing climate change as a pollution control problem, this approach focuses on building the new systems that can contribute to the country's prosperity. And rather than treating the economy as an undifferentiated whole, which makes problems seem insurmountable, it focuses on sectoral and regional pathways that break the transformation into manageable steps.

Given the growing array of greenhouse gas reduction approaches, it can be challenging to know where to direct our efforts. Which approaches represent genuinely viable pathways to carbon neutrality that are ready for widescale deployment? Which can realistically strengthen Canada's position in global markets and promote meaningful economic development? And which are dead-end pathways that may deliver incremental, short-term emissions reductions but cannot scale to net zero and/or risk locking in carbon-intensive infrastructure?

This report addresses these questions across 14 sectors, articulating a strategic framework that identifies the pathways most capable of delivering system-level change while also capturing economic benefits for Canada along the way.

The report starts from a transition and energy systems perspective. Reaching net zero requires replacing the large-scale systems that generate emissions: the way Canadians produce and distribute electricity, move

people and goods, heat buildings, and make the materials the economy requires. These systems were built around fossil fuels. The future systems will be built around non-emitting electricity.

Working backwards from this electrified energy system, we can define the pathways that have the most potential. While it is not possible to anticipate every technological and economic development the coming years will bring, many system considerations and market signals are already clear. These indicate:

- **Electricity** will play the lead role in a decarbonized energy system. End-use electrification should be viewed as the top priority for most sectors that today rely on fossil fuels.
- **Net-zero fuels** can complement electricity in sectors where full electrification is not feasible.
- **Enhanced energy efficiency** can reduce the demand on new decarbonized energy.
- **Non-energy emissions** (waste, industrial processes, and agriculture) will require dedicated attention.
- **Residual emissions** should be driven as low as possible, with the remainder offset by carbon removal.

Adopting a strategic approach to decarbonization

Societal decarbonization is a process that will extend across multiple decades. Over this time, political priorities, economic conditions, national concerns, and the geopolitical context will continuously evolve. In acting today, we should prioritize pathways where alternative technologies are ready for wide deployment, and the potential gains for

households and industry are clear. Taking a strategic approach means we should:

1. Ensure decarbonization is integrated with the pursuit of other societal objectives, including enhanced prosperity, economic competitiveness, security, social welfare, and Indigenous reconciliation.
2. Seize electrification as the central link by building out supply and electrifying end-uses in transport, buildings, and industry.
3. Focus on creating the new rather than tearing down the old.
4. Embrace asymmetrical decarbonization. Provinces and sectors will proceed down varied pathways towards net zero at rates appropriate to their circumstances.
5. Prioritize practical steps needed to achieve decarbonization, and physical measures of progress.
6. Pay attention to costs and prices which are critical to both households and industrial competitiveness.

Taken together, these priorities point toward a clear strategic logic: move fast where the economics are compelling, build the foundations that unlock broader transformation, and avoid diverting scarce political and investment capital into battles that cannot yet be won.

Looking across 14 sectors, the assessment asks three questions of each: which pathways can deliver real system-level decarbonization, what decision-makers should do about them today, and how those actions should be sequenced. The answers determine where each sector sits across three tiers of strategic priority shown below.

Strategic Decarbonization Priorities for Canada

Immediate Priorities



Personal Mobility
(Light-duty vehicles
and mass transit)



Buildings



Electricity

Medium-term Opportunities



**Alternative
Fuels**



Aluminium



**Cement
& Concrete**



Hydrogen



**Medium and
Heavy-Duty
Vehicles**



Mining



Steel & Iron

Longer-term Plays



**Agricultural
& Agri-food**



Oil & Gas



**Chemicals &
Plastics**

This sequencing does not mean that longer-term sectors are not relevant today. Rather, it provides a clearer sense of where first to direct finite capital and policy efforts: the sectors with the most leverage to advance a competitive low-carbon economy.

At a sector level, each chapter reviews the current state of the sector, the key barriers to reaching net zero, and the technologies,

practices, and system changes most relevant to decarbonization. Various pathway elements are then evaluated against criteria covering the potential to reduce emissions, technical maturity and fit, economics, and social acceptability. Finally, the assessment assigns each pathway one of four core roles in the net-zero system.



Decarbonization Pathway

Can decarbonize the system and has several other benefits.



Enabling Pathway

Does not directly eliminate emissions but is essential to the successful deployment and performance of other pathways.



Niche Pathway

Can decarbonize a targeted sectoral or regional system.



Bridge Pathway

Serves to reduce emissions while full decarbonization options are developing and does not create an infrastructure lock-in.



Dead-End Pathway

Incompatible with a decarbonized system.

From Vision to Action

In addition to identifying where Canada should focus and in what sequence, the combination of sectoral assessments reveals a set of implementation challenges that extend beyond any single sector: the pathways are deeply interdependent, the global competition to lock in low-carbon value chains is well advanced, and the institutional capacity to coordinate across sectors at the required pace has to be built deliberately.

The urgency of getting this right comes into sharper focus in the global context. Canada's trading partners are deploying ambitious industrial policies to lock in positions in the clean energy economy. China now accounts for more than half of global solar capacity additions and 60% of global EV sales. The European Union, Japan, Korea, and India have all launched directed industrial packages. The window for Canada to establish defensible positions in sectors like battery materials, low-carbon aluminum, critical mineral processing, and EV manufacturing is open now but will not remain so indefinitely. A focused approach could secure approximately \$600 billion in annual clean energy export opportunities by 2035.¹

This report argues that **Canada has the resources to compete in the clean energy economy but has yet to deploy them with the strategic coherence the moment requires.** Converting those foundations into a defensible economic position means treating the interconnected sectors in this report as a single industrial system to be built, not a set of parallel portfolios to be managed.

Reading this Report

Chapters 1 through 5 develop the transitions, energy systems and economic development perspective in greater depth. Chapter 5 presents the detailed sectoral pathway assessments that underpin the summary table on the previous page. Chapter 6 develops the implementation conditions and the choices that flow from them.

Together they offer a strategic foundation for the policy and investment decisions that will determine whether Canada builds the energy system of the future while growing its economy or arrives late to a new economy built somewhere else.

¹ Allan B, Sawyer D. Exporting the Future Economy: A Canadian Trade Diversification Strategy. The Transition Accelerator [Internet]. 2025 Dec [cited 2026 May 4]. Available from: <https://transitionaccelerator.ca/reports/exporting-the-future-economy/>