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CLIMATETIVENESS: What it Takes For Canada to Thrive in a Net Zero Exporting World

Synchronizing Canadian Competitiveness and Climate Policy in a Low Carbon Export Strategy

SEAN SPEER,
KIM HENDERSON
& KATHERINE FEENAN

PUBLIC POLICY FORUM
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ABOUT PPF

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- Conducting research on critical issues
- Convening candid dialogues on research subjects
- Recognizing exceptional leaders

Our approach—called **Inclusion to Conclusion**—brings emerging and established voices to policy conversations, which informs conclusions that identify obstacles to success and pathways forward. PPF is an independent, non-partisan charity whose members are a diverse group of private, public and non-profit organizations.

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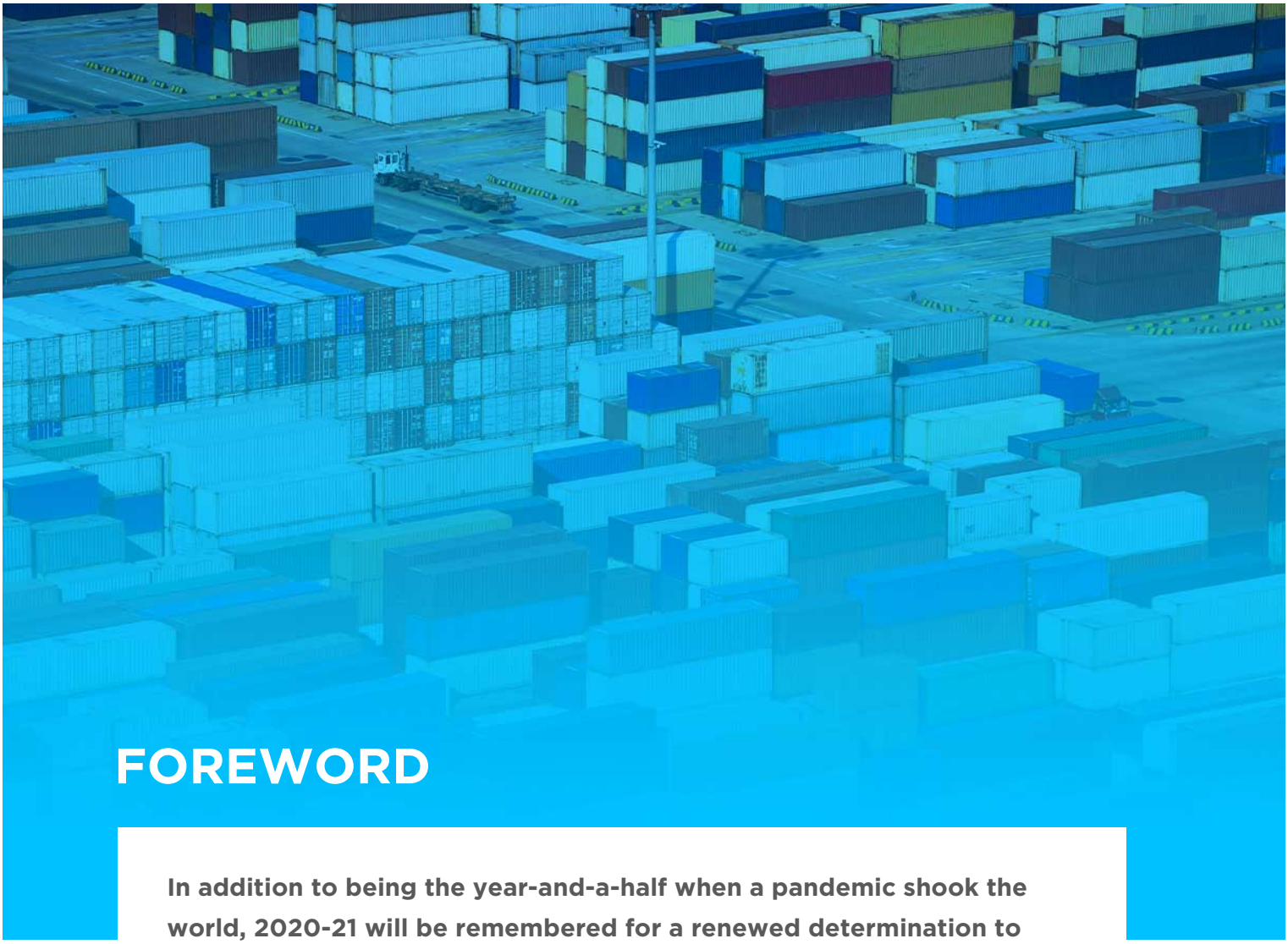
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FOREWORD

In addition to being the year-and-a-half when a pandemic shook the world, 2020-21 will be remembered for a renewed determination to address long-neglected areas of policy. The COVID-19 crisis not only threw brand new challenges on the public agenda, but also reminded us of the need to get moving on pre-existing and evolving ones.

As the Public Policy Forum rolled up its sleeves in the Spring of 2020 on a project we called ReBuild Canada, we kept encountering vulnerabilities in long-standing trade policies — from export infrastructure to our heavy reliance on a less dependable United States and an increasingly bellicose China. Moreover, the juxtaposition of trade and climate change was producing an entirely new set of challenges. Carbon was emerging as a new factor of competitiveness, with serious ramifications for a nation like Canada that is both highly reliant on exports and serves as a resource storehouse for our trading partners.

Over the summer of 2020, the Business Council of British Columbia published a detailed paper about how the province's exports generally contain lower carbon intensities than products they are competing against or displacing. We and the council felt more work was needed on a pan-Canadian basis to understand how Canada could take advantage of its low carbon exports (for our own good and the global good) and transition industries to become low carbon producers. If Canada was going to continue to be among the



great exporting nations in a world in which carbon had joined cost in the competitiveness equation, a new approach to policy was required. Some of this had obviously been contemplated within Article 6 of the Paris Agreement. But Article 6 remained an orphaned section. We felt Canada should adopt it or something akin, into our family of policy interests.

And so, in the way of the Public Policy Forum, we gathered a variety of interested parties together to examine the issues at play. The timing seemed right to ensure that Article 6 would be on the agenda for Paris Agreement signatories at the so-called COP26 meeting scheduled for November 2021 in Glasgow, Scotland, along with other multilateral and bilateral measures to ensure that the national accounting systems for carbon did not inadvertently sideswipe trade of benefit to all. This report is the manifestation of that concern. It calls for Canada to be more purposeful in asserting our national interest and ensuring that interest is aligned with the greater global good.

I want to thank all the participants in this process, with a special shoutout for the authors of the report, PPF Fellow and former British Columbia cabinet secretary Kim Henderson, PPF Scotiabank Fellow in Strategic Competitiveness Sean Speer and PPF Senior Policy Lead Katie Feenan. They have organized and attended sessions with our partners and others in coming to the ahead-of-the-curve conclusions you will discover in this paper.

Edward Greenspon
President & CEO
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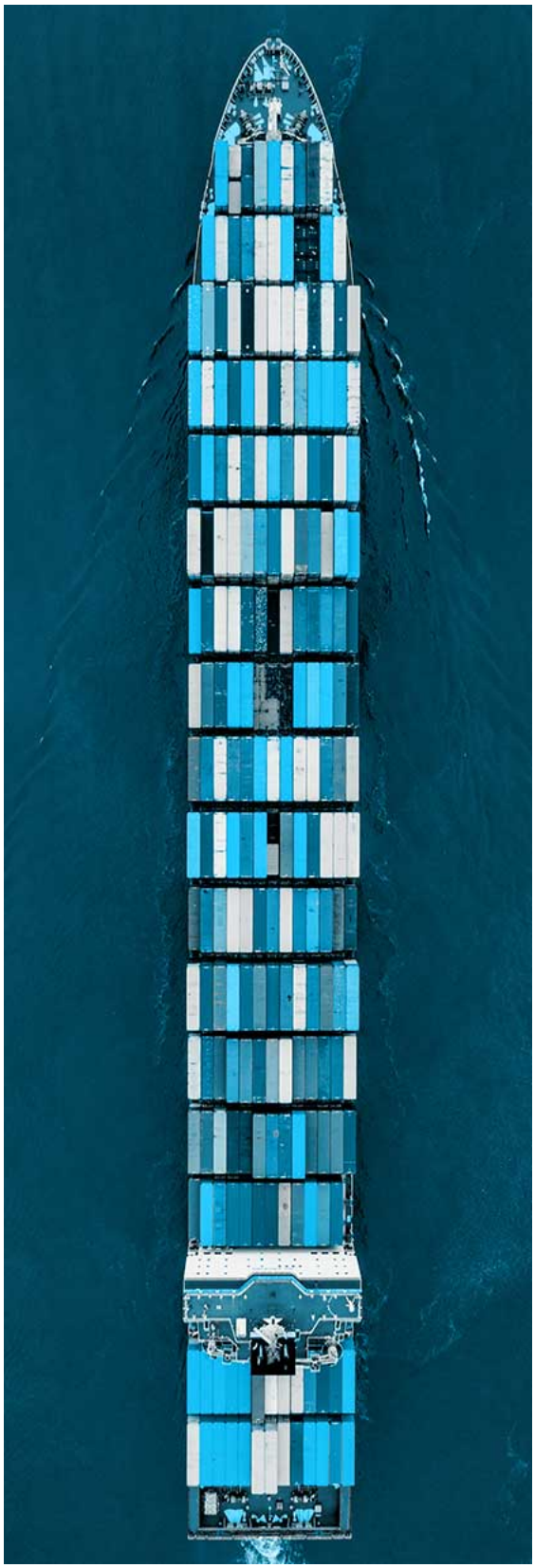
Net zero is not an exercise in degrowth but is instead about cultivating and exporting low-emissions technologies.

CLIMATETIVENESS: SYNCHRONIZING CANADIAN COMPETITIVENESS AND CLIMATE POLICIES FOR A NET ZERO WORLD

As countries get set to convene for COP26 in Glasgow, Scotland in fall 2021, the question of how best to achieve the goal of net zero emissions by mid-century is generating increasing attention among business leaders, policy-makers and environmental activists. The net zero target is significant precisely because it differs from previous environmental goals. It is not just about reducing industrial carbon emissions on the margins, but instead will necessarily involve the invention and adoption of breakthrough technologies to transform industrial processes and outputs.

Net zero, in short, is not an exercise in degrowth but is instead about cultivating and exporting technologies to produce low-emissions goods and knowledge services. It is fundamentally a technology, intellectual property and trade agenda.

The parameters and processes around the collective goal of net zero emissions are, of course, relevant for virtually every country in the world. But Canadian business leaders, policymakers and members of the general public must recognize that Canada arguably has more at stake than most other jurisdictions. Due to the combination of our industrial composition and export orientation, it is fair to say that the race to net zero emissions holds out the greatest opportunity (and risk) for Canada. This is based on how the international regime or bilateral arrangements ultimately address the distribution of carbon emissions between producing and consuming nations and how we adjust to new competitive conditions.



Canadian companies are investing billions of dollars to transform their operations. This includes cultivating new, low-emitting forms of energy, producing low carbon means of transporting resources and other consumer goods, and adopting industrial technologies that reduce their own carbon footprints. These investments are a necessary step towards the goal of net zero at home, while maintaining Canadian competitiveness abroad.

Public policy has the crucial role to push the frontiers of innovation and technology in the name of winning the global race to net zero. The interplay between these issues — competitiveness on one hand and climate action on the other hand — ought to be reflected in a new low carbon export strategy that marries domestic and international agendas.

This policy paper, supported by a blue-ribbon advisory panel and technical working group, makes the case that Canadian policymakers should get aggressive in pursuing such a strategy. The federal government, in particular, should embrace a two-pronged policy agenda to:

1. Strengthen the domestic conditions for emissions-reducing innovation and technological adoption; and
2. Shape the international framework for how carbon emissions between importing and exporting countries are reflected in climate change treaties, trade agreements and various other globalized policies. Canada needs, in our judgment, a low carbon export strategy that views competitiveness and climate change as fundamentally in sync.

WHAT DO WE MEAN BY A LOW CARBON EXPORT STRATEGY?

As public policy observers, we have witnessed the following tendency in certain Canadian policy circles: domestic measures to bolster economic competitiveness and international measures to address climate change are seen as separate and unrelated matters. The ways that governments are organized can also obscure the interrelationship between competitiveness and climate policy. As a result, policymakers may fail to see or execute on the inextricable link between the two.

The world, however, is moving in this direction. Carbon has joined cost as a key factor of global competitiveness. This is as profound a development as it is under-appreciated. Debates about the basic case for net zero or the right pacing to achieve it have been replaced by technocratic arguments about how to account for differing national climate policies, different industrial compositions, and the treatment of carbon emissions between producing and consuming nations. The European Union and U.S. — two of the world's largest markets — are talking about such virgin policy territories as border carbon adjustments. Nobody can possibly think these will not be designed to create competitive advantage.

As an export-based economy with pre-existing low carbon advantages in some sectors and emerging or potential advantages in other sectors, Canada is well positioned (in theory) in a net zero world to help the signatories of the Paris Agreement make progress on climate change, while at the same time deriving tremendous value for domestic firms and workers.

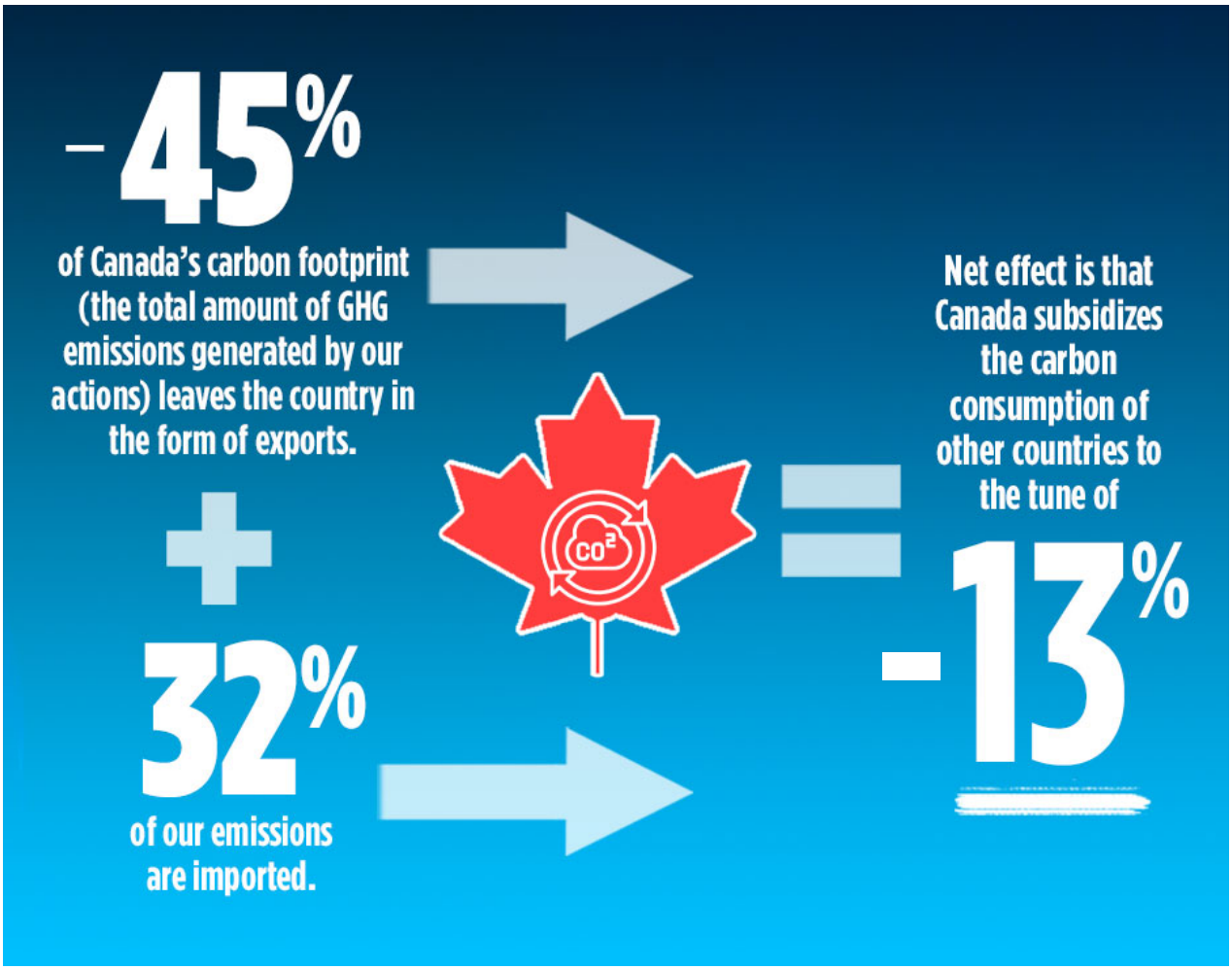
In particular, Canada has an extraordinary leadership opportunity in the global drive to reduce greenhouse gas (GHG) emissions by strengthening our domestic investment and innovation capacity to lower emission intensities across the economy, and shaping the international regime for accounting for carbon emissions. This includes Canada's treatment of the displacement of higher-emitting goods by superior alternatives from elsewhere.

If we can strengthen Canada's domestic competitiveness (namely, by improving the conditions for massive private sector investments in environmental innovation and technologies) and help shape global climate regime (namely, by securing a broad recognition of Canada's contribution to displacing higher-emitting exports from elsewhere), we can position Canada to win the race to net zero emissions.

The beauty of unlocking these extraordinary opportunities lies in how Canada's national interests can be aligned with broader international ones to reduce overall global emissions. This is a reflection of what former Canadian Prime Minister Stephen Harper once called "enlightened sovereignty" or what current Prime Minister Justin Trudeau has described as the basis for a "cleaner and more prosperous future for all." It is attainable, with a coherent and synchronized policy approach.

Fulfilling a low carbon export strategy, however, requires more than just cultivating low carbon advantages in various domestic sectors. It also means a low-carbon trading system that recognizes these advantages. Carbon moves between countries every day, not in the atmosphere alone, but in shipments of steel, oilseeds, minerals and hydrocarbons. In the process of two-way trade, emissions tend to be tallied for carbon accounting purposes entirely against the producing nation. Consumers essentially get a free ride.

This type of global arrangement can have profound effects for a country like Canada based on its industrial composition and export orientation. In Canada's case, 45 percent of our carbon footprint leaves the country in the form of exports, according to work undertaken for the federal government's Industry Strategy Council. At the same time, 32 percent of our total emissions are imported into Canada. The net effect is that Canada's subsidizes the nations that import and consuming our goods to the tune of 13 percent of our total emissions (about 90 megatonnes worth), which is enough to bridge the difference between our previous 30 percent emissions reduction target under the Paris Agreement and the government's new target of 40 to 45 percent. In classic trade terms, Canada benefits economically from every export it makes. In carbon terms, though, it loses — and this is so even if the Canadian goods are less carbon intensive than the global alternatives.



This point is worth underscoring: the interplay between Canada's industrial composition and export orientation results in an emissions deficit of 13 percent, according to a conventional current accounts model. Yet even that probably understates our global contribution to emissions reductions. In many cases, if our products had to be acquired from sources with higher emissions intensity, this would result in higher overall emissions globally. The key, then, is to reach some combination of bilateral and multilateral arrangements that recognize Canada's net contribution to global emissions reductions in the form of climate change treaties, trade agreements and various other globalized policies.

Herein lies the concept of a low carbon export strategy. The basic idea is to:

1. Seize on the parts of the Canadian economy where we currently outperform competitors on cost, quality and carbon emissions to benefit from the growing market and policy preferences for low carbon supplies; and
2. Invest in boosting other sectors where we must make further progress on our carbon competitiveness and, ultimately, global climate outcomes.

This will not happen on its own. A successful low carbon export strategy requires Canadian policymakers to integrate the twin goals of reducing the carbon content of our goods and increasing exports that drive down GHGs, regardless of where they are produced. One might think of such a strategy as the interplay of multiple policy goals, including:



1. **Lowering domestic emissions intensity for the production and transportation of our largest, fastest growing and most promising export sectors;**



2. **Reducing global emissions by displacing higher-intensity goods from elsewhere;**



3. **Better leveraging Canada's early mover advantage in carbon removal and storage from industrial sites or from the emerging field of direct air capture; and**



4. **Cultivating the underlying ecosystem to enable such progress — including scientific research, financial services, technical know-how, and a comparative advantage in "climatetiveness" policymaking.**

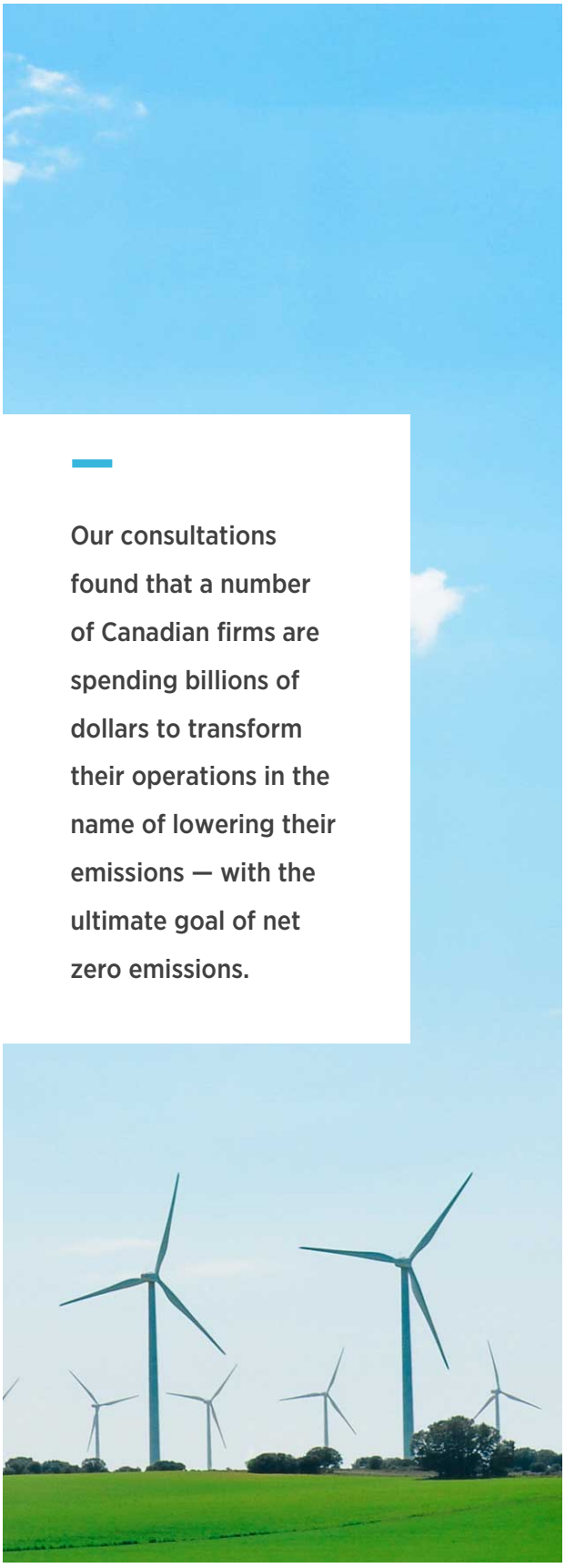
To express these elements of a low carbon export strategy, the federal government must adjust its siloed approach to competitiveness and climate issues. A good (or bad) example of our siloed approach is Canada's emphasis on ongoing participation in international climate change negotiations, including the forthcoming COP26 talks. These government processes have neglected the competitiveness and export-related dynamics of emissions reduction, despite the recognition of their importance in Article 6 of the Paris Agreement.

We do not underestimate that these are challenging questions with various domestic, global, economic and environmental considerations. But, as we outline in the paper, we believe that this mix of domestic economic competitiveness and global environmental policy is the best means of delivering on the federal government's net zero legislation. One might think of our analysis and recommendations as a blueprint for a low carbon export strategy to help Canada win the race to net zero, and then leverage its progress on behalf of global environmental outcomes.

As mentioned earlier, we think it is wrong to view the pursuit of net zero as merely an environmental goal. If we were narrowly focused on reducing emissions as an end in and of itself, we could regulate an end to industrial production, drive down living standards and achieve our climate goals, as the end of the Soviet Union caused Russia to reach its targets under the Kyoto Protocol. Instead, though, we are not going to reorient our economy with taxes, treaties and top-down edicts; it is ultimately going to come from ideas, invention and innovation. Net zero, in other words, is not about slowing progress for the betterment of the planet; it is about accelerating progress on behalf of the planet.

A major development in recent years is that the investors and global companies are increasingly prioritizing emission intensities as a factor for investment or supply chain decisions. There is a growing shift towards environmental, social and governance (ESG) metrics and how companies are demonstrably working to reduce their emission intensities. It was specifically evidenced by the September 2021 climate policy announcement of the Caisse de dépôt et placement du Québec. The organization grabbed headlines with its decision to sell off the one percent of its portfolio invested in oil companies. More to the point, it said it would continue to support high-emitting industries with a genuine plan for getting to net zero, including steel, cement and natural gas. This is, indeed, the road to economic growth and carbon competitiveness.

We heard through our consultations, for instance, of many such plans and how market pressures are now part of supply chain considerations, as global consumers become increasingly concerned about where their products come from and how clean they are. These trends are driving businesses towards greater investment and innovation, including low-emitting technologies and processes. Markets and politics are pushing in the same direction. But policymakers need to ensure they are representing the national interest in so doing, particularly when it comes to Canada's well-developed skills at diplomacy. We must match domestic investment and innovation with accompanying efforts to shape the global policy environment.



Our consultations found that a number of Canadian firms are spending billions of dollars to transform their operations in the name of lowering their emissions — with the ultimate goal of net zero emissions.

Our consultations found that a number of Canadian firms are spending billions of dollars to transform their operations in the name of lowering their emissions — with the ultimate goal of net zero emissions. The good news is that they are building off some pre-existing advantages — notably Canada's unparalleled access to low-cost, low-emitting electricity, which is the basis for a low carbon advantage across the economy.

But there is still tremendous work to be done to leverage these advantages and develop new ones in other parts of the economy. Progress at home is not enough. Canadian public policy must also be even more attentive to levelling the playing field for our exports squaring off against competitors with a lower or zero price on carbon emissions.

Canadian companies doing the right thing should not be penalized — nor should their workers — as a result of our ambitious climate policies. There would be something perverse to Canadian firms undertaking investments and innovation to be disadvantaged by cheaper foreign competitors with few or no emissions constraints. Our companies moving toward net zero need policy support to ensure their transitions do not put them in peril.

We need to pursue a cohesive policy environment that tilts in favour of investment and innovation in general and, more specifically, towards emissions-reducing technologies and processes. It is important to emphasize that the magnitude of investment needed to achieve net zero across Canada's economy is unprecedented and will not be

sustained by market forces alone. Private capital must be fully engaged in the solutions but will only get us so far. We are undertaking here a massive restructuring of the economy. It is all hands-on deck, including public sector hands that have unique abilities to negotiate the rules of the game and reduce the early risks inherent in technological transformations — particularly ones driven by social and environmental goals.

Catalyzing the so-called "wild card" solutions anticipated by the Canadian Institute for Climate Choices will be required to achieve net zero by 2050 and will, therefore, necessarily involve a role for government. Subsequent pages will outline some concrete policy steps that the Canadian government can pursue to support the development and scale of such breakthrough technologies.

As discussed above, though, a low carbon export strategy requires both a renewed commitment to domestic competitiveness and a more strategic orientation to international climate policy. In the international sphere, we need to lead on policy rather than react. While the Canadian government's position at COP26 and in other climate policy forums must be collaborative and constructive, our overriding goal must be to ensure that international agreements reflect Canada's unique national interests.

Canada, as a major exporting nation, is mostly responsible for taking account of the carbon emissions produced here, for the products that the world needs. The main problem is that Canadian companies are not merely being asked to report on emissions associated with their energies and the energy used in their industrial facilities. There is a growing expectation that they also account for the downstream emissions involved in the transport, refining, and eventual use of fuel, automobiles, home heating, or any other number of uses of Canadian exports.

As one of our advisory members put it, the world gets to effectively outsource its carbon emissions by importing our products without internalizing any of the GHGs from production or even its end usage. It is imperative that Canadian climate negotiators address this issue as well as others to assert the country's economic interests and ultimately enable Canada's exports to be part of a global solution to climate change.

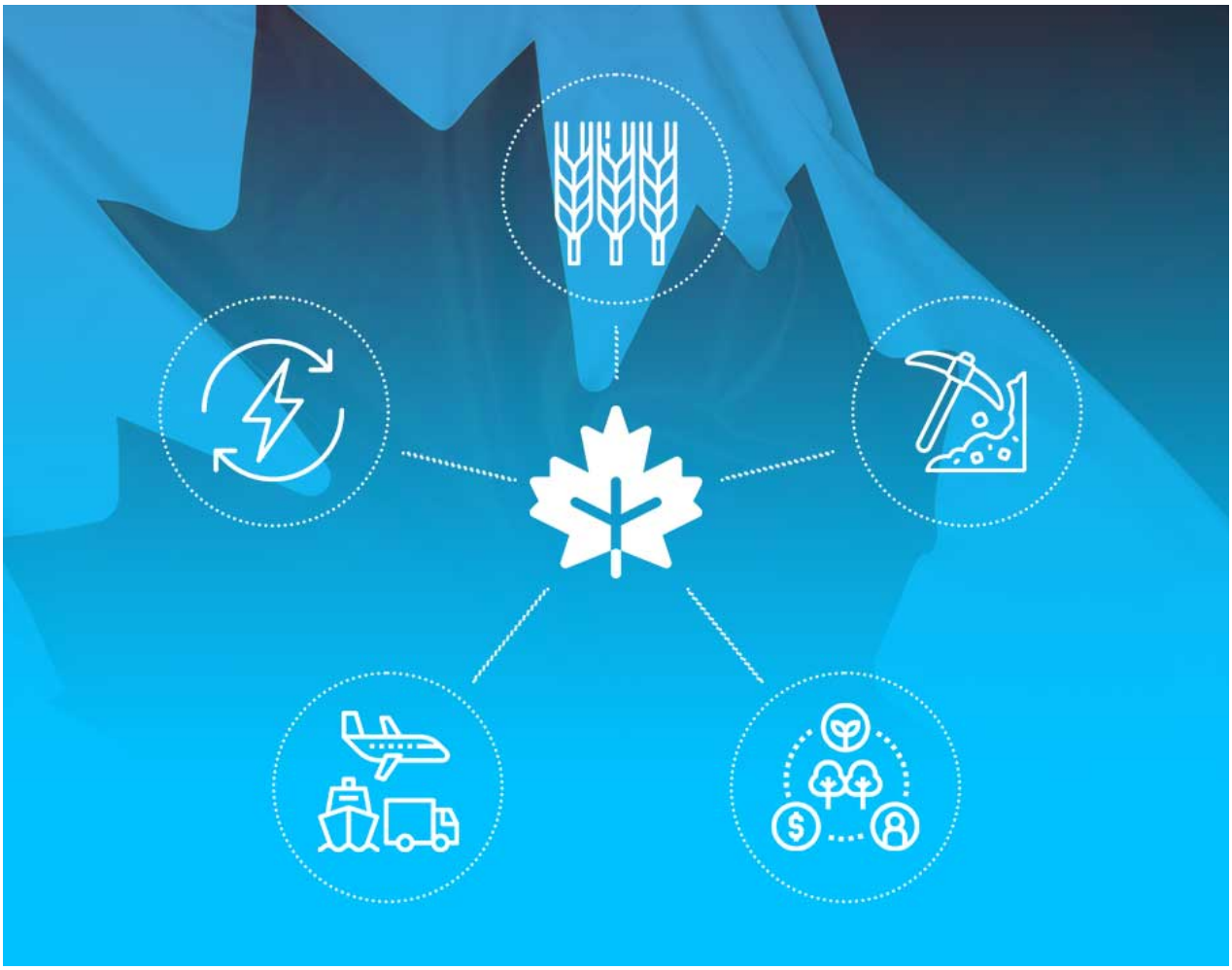
The country's primary and manufacturing export sectors — including agri-food, energy, forestry, mining and transportation — are critical to Canada's long-term prosperity. A new, low carbon export strategy can help these sectors leverage their existing economic and environmental advantages, and create new ones in order to reach and expand into old and new markets.

This is a moment for Canada to lead the world on a cleaner, more prosperous path — to seize and build our low carbon advantage in the interests of our workers, our companies, our country and the planet. It requires a disciplined, two-pronged approach to synchronicity of domestic and international policy, the education of the public that Canada's interests are consistent with the global environmental interest (as it was when Canada asserted its authority to protect fishery stocks), and the cultivation of allies to the cause.

We have described this synchronicity of domestic and global as well as economic and environmental as "climatetiveness." The following pages outline a concrete plan for Canadian policymakers.

The first section outlines the magnitude of Canada's domestic decarbonization goals. It also outlines the role of public policy in enabling the massive capital investments in innovation and technologies that will be needed to lower emission intensities and improve our sectoral advantages in anticipation of a global environment in which carbon content is a major factor of competitiveness.

The second section encourages federal policymakers to adopt and advance a clear vision of the country's national interests such that Canada can influence and shape international climate change agreements. As the world heads into the COP26 meetings, Canada needs to assert itself as the champion of a low carbon trading system.





SECTION 1:
STRENGTHENING THE CONDITIONS FOR NET ZERO IN CANADA

The federal government has set the goal of decarbonizing the economy in the coming decades. Its signature legislation, The Canadian Net Zero Emissions Accountability Act, which was passed in June 2021, formalizes the target to achieve net zero emissions by 2050 and establishes a series of interim emissions reduction targets at five-year intervals towards this goal.

These targets reflect scientific estimates of what is required to reach the Paris Agreement's goal of limiting a rise of global temperatures this century to below 2°C above pre-industrial levels. By meeting these targets, the world can lessen the severity and frequency of the most catastrophic impacts of climate change.

Canada is not alone. More than 120 countries have set similar net zero targets. These are bold commitments that, if ultimately realized, would represent a massive industrial undertaking, including the total transformation of the energy sources that underpin modern economies.

Legislating such a goal represents a highly ambitious policy positioning the government. The next step, though, must be to bring the market fundamentals broadly into alignment with these long-term political goals. The level of investment and innovation required to achieve net zero emissions is massive. The market alone cannot be expected to deliver such ambitious goals. There is an inherent role for government and public policy to achieve goals so far removed from market-based returns.



Canadian plant-based protein: Turning opportunity into achievement

The global plant-based protein industry is projected to reach $40.6 billion by 2025. The interest and demand are driven by many factors, including increased attention to environmental stewardship and animal welfare. Canada's domestic innovation opportunity for processing plant-based proteins coupled with the global export growth potential, positions Canada to punch above its weight and corner about 10 percent of the overall global market share for plant-based protein — far beyond the 3.3 percent of the global agri-food market Canada holds today.

Turning opportunity into achievement will require concrete and focused actions on the part of both federal and provincial governments, working in lockstep to:

1. Help create the domestic capacity and environment Canadian companies need in order to leverage the moment and

2. Ensure that Canada is at the global rule-making table to create a level playing field in entering export markets. Policymakers clearly understand the ambition, evidenced by the creation of Protein Industries Canada, a business supercluster that is charged to clarify the value proposition and drive investment around innovation and competitiveness.

However, Protein Industries Canada is just one player in an emerging ecosystem. Success will no doubt be derailed if outdated regulatory frameworks with immense cumulative burden aren't addressed, along with labour training and infrastructure challenges. Very significant regulatory modernization has already taken place in Canada in the agri-food space. As policymakers press forward, we must evaluate the affects that regulatory action has on competitiveness of the regulated parties, in terms of cost of business (capital and operating), labour productivity, innovation capacity, etc. One way to operationalize this would be to require that a distinct competitiveness assessment be included in any regulatory impact analysis and be done by an economic department.

A major factor here is the necessary level of investment. Former Bank of Canada governor Mark Carney has estimated that the transition to net zero will require global investment of $100 trillion over the next three decades. An RBC economics report places the cost for Canada at $2 trillion alone between now and 2050.

This level of investment will necessarily require a combination of public and private capital. For example, The International Energy Agency, estimates that, on average, about 30 percent of investment in the energy sector is expected to come from public sources and the remaining 70 percent will need to be private capital. In some areas of higher risk, including the bigger and less certain technological bets, these proportions could vary significantly. Europe, the United Kingdom and the United States are covering the lion's share of the next stage of carbon capture, storage and utilization projects, in some cases by justifying them as public infrastructure investments.

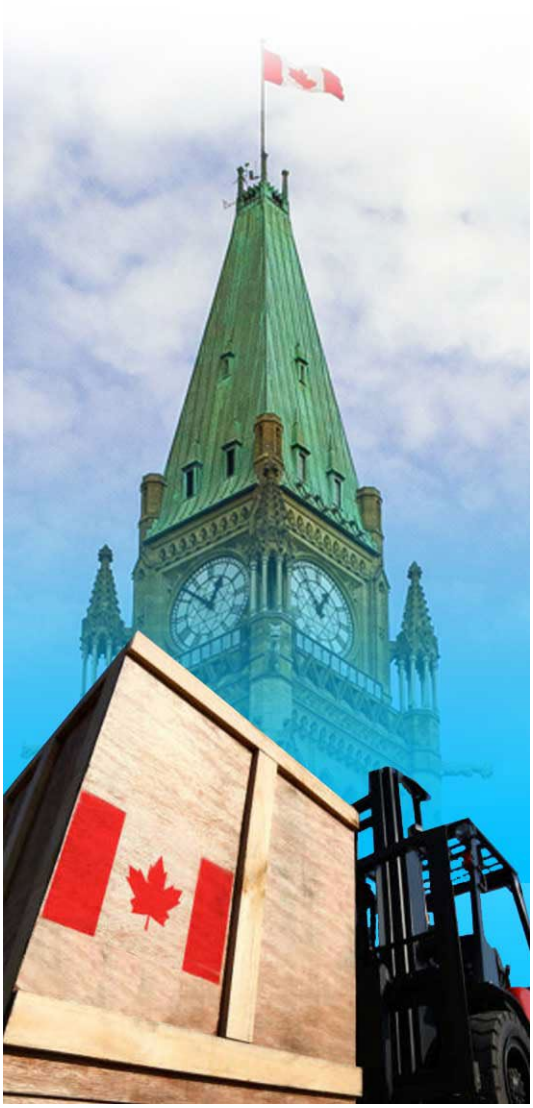
Due to its ambition and scale, the net zero target amounts to a modern equivalent of the first industrial revolution. It will require systemic changes to our energy sources as well as the operations, processes and transportation of firms across the entire economy. Carney has described it as a "whole economy transition… [in which] virtually every company in every sector needs to transform its business model."

But as government policy and market pressure point to major investments in technologies and processes that can lower GHG emissions, Canadian companies must still account for basic economic considerations such as return-on-investment, profitability and competitiveness. Notwithstanding the necessary fervour in favour of decarbonization, its proponents have not suspended the laws of economics. Governments that want to achieve industrial change for real-time, non-market reasons will therefore need to bring a mix of policy tools to the table, including tax credits, direct subsidies, equity investments and regulation in order to move the economic system far and fast enough.

This is neither a critique of the net zero target nor markets themselves. There is general acceptance for a role for government to solve for "market failures" whereby the market's production of a particular good or service fails to meet demand for various reasons, including information asymmetries, non-competitive markets, or externalities. Markets reward investment and innovation with significant market-based returns. They are not, however, currently well placed to assess the value of non-market innovations and technologies that address long-term environmental goals.

Government will, therefore, play an indispensable role in facilitating the private investment required to reach the target of net zero emissions. In particular, government policy will need to close the gap between private investment that is justified based on conventional return-on-investment and investments that are primarily motivated by broader public considerations or what economists sometimes call "positive externalities."

It will cost Canada $2 trillion between now and 2050 to achieve its net zero goals. This level of investment requires public and private capital.



The primary role for government will be to provide financial support in different forms — ranging from R&D subsidies to large-scale financing for major decarbonization projects — to close the gap between private costs and public returns. This will be crucial to induce the scale of private capital required to achieve the net zero target in Canada and elsewhere.

It may be beyond this paper to assess the relative utility of every so-called "green" investment policy and program across different orders of government, but it is worth organizing the different policy responses into some broad categories. These categories are useful for assessing types of government intervention that can contribute to greater investment and innovation and what merely distorts the markets.

A key distinction here is between ongoing operational subsidies (such as feed in tariffs) and short-term public spending to catalyse private sector research and development. As a rule, the government should prioritize the latter. Government programs should try making upfront private investments more economical as opposed to providing sustained operating subsidies over time. Ongoing operational subsidies maintain the inherent market discipline of the pricing system and minimize distortions in the marketplace, including overbuilding, inflated prices and general rent-seeking.

The role of public spending should be mostly about boosting the case for private investment on the margins. The level and terms of public support will necessarily differ based on a project's proximity to the market and the potential for market returns. As discussed later in the section, there will be uncertain, highly experimental projects for which public subsidies will need to be provided on more generous and possibly sustained terms.

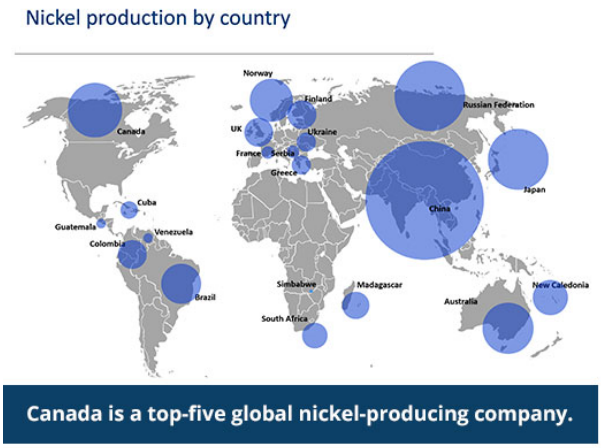
The key point is that the government's net zero legislation sets out a highly ambitious goal that will require significant technological progress and that the market case for investing in such technologies will not always be sufficient to rely on market forces alone. The design and implementation of government programs ought to be the subject of careful analysis, significant scrutiny and meaningful debate. But the idea that government policy — including direct and indirect financial support — will need to be part of the mix should not be.

CANADA'S NICKEL CHALLENGE AND OPPORTUNITY

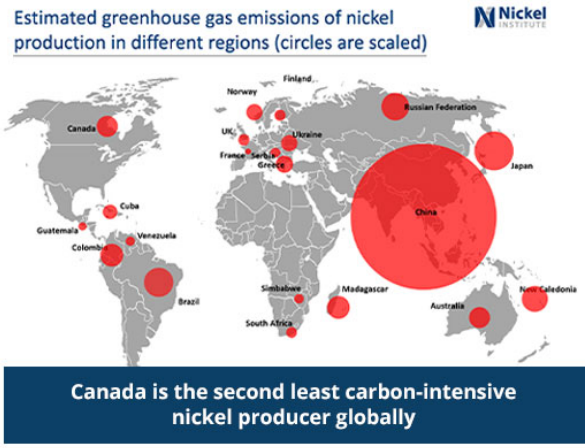
Demand for nickel is up. Headed for a 10-year high, it will only continue to rise. The World Bank forecasts a doubling of global nickel production from 2018 levels to develop clean technologies without which it will be impossible to achieve the Paris Accord's two-degree temperature limitation. Batteries for electric vehicles (EV) are a key piece of nickel-driven clean technology that will accelerate increased demand. Nickel is currently a vital ingredient in EV batteries as it ensures the delivery of a "higher energy density and greater storage capacity at a lower cost" compared to other proven chemistries, and enabling a greater driving range per charge.

With demand for EVs set to explode in the next few years, as governments and auto-manufacturers the world over announce commitments and policies for augmented EV output and uptake, the challenge is not only to bring new nickel supply online to meet battery demand, but also for this supply to meet society's growing ESG expectations, perhaps most especially when it comes to abating GHG emissions. In addition to nickel, many other critical minerals that Canada produces, such as copper, also have a core role in global decarbonization.





Canada is a top-five global nickel-producing company.



Canada is the second least carbon-intensive nickel producer globally

CANADIAN NICKEL TODAY

Canada is a leading global nickel producer, with domiciled up and downstream extraction and value-added smelting and refining supply chains in the country. Canada is also a producer of the higher-grade Class 1 nickel, required for use in EV batteries. Most significantly, Canada produces the second lowest carbon-intensity nickel on earth, making our country a more carbon-competitive source for this key energy storage material.

Despite this low carbon advantage, Canadian nickel's global market share has shrunk in recent years. In 2019, Canada produced 6.8 percent of the world's nickel — an 18 percent reduction from the country's 2006 production levels. This is significantly lower than Indonesia (29.8%) and the Philippines (15.7%), which have captured most newly created market share in recent years and have ambitious plans to expand into battery grade nickel production, but at a significantly higher carbon footprint than Canada.

Canada has a huge opportunity to expand as a major player, and even become a global centre for EV battery materials production. Supporting this objective, the country has many strengths, including:

- A comprehensive climate plan (inclusive of a net zero commitment);
- Global mining leadership in ESG practice, including the Mining Association of Canada's Toward Sustainable Mining;
- Increased supply chain security vis-à-vis Asia on a proximity basis to U.S. and E.U. markets;
- High labour standards and meaningful partnerships with Indigenous peoples; and
- Political stability.



For Canada to retain its current share of global production in line with World Bank projections, several new-world nickel mines and expanded downstream metal manufacturing capacity must come online. For Canada to grow its global market share in line with these projections, and incrementally displace higher-emitting international global nickel sources, even greater ambition is required.

Canada needs to highlight our competitive advantage as a secure and reliable source for Class 1 nickel and take actions that recognize low carbon Canadian critical mineral expansion is in both Canada and the world's best interests. For Canadian producers to succeed in a market set for growth, policymakers must:

- Create supports that will attract exploration investment and drive the discovery of new nickel and other critical mineral deposits;
- Refine and sharpen the focus of pre-existing government funding programs to more meaningfully target the expansion of battery grade material extraction and manufacturing projects; and
- Prioritize the advancement of critical mineral extraction and manufacturing projects through the federal regulatory process.

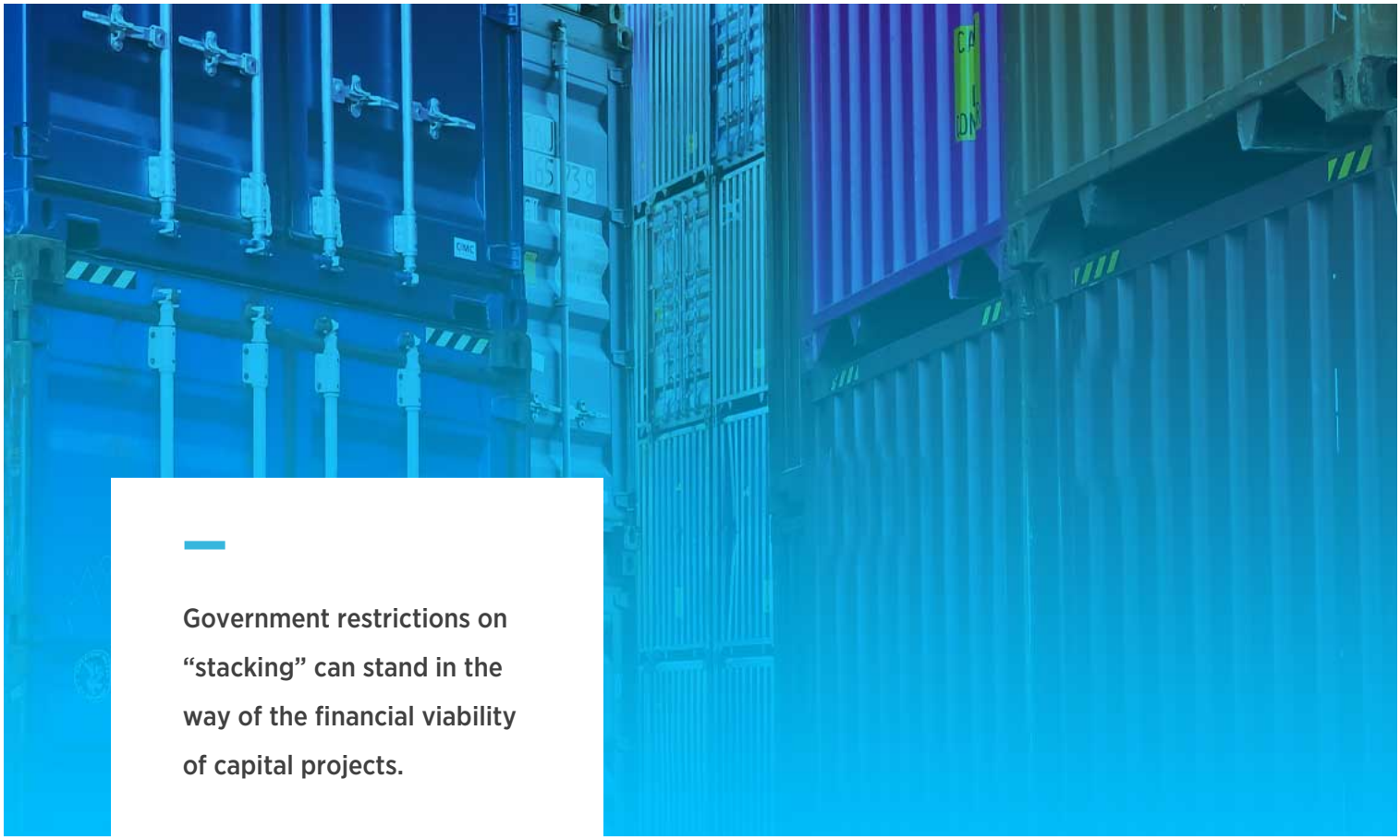
The federal government has started to roll out a green investment strategy that recognizes its role in catalysing private investment. Its flagship program, the Net Zero Accelerator Initiative, which was boosted to $8 billion in last year's federal budget, is designed to help large emitters defray the costs of decarbonization projects, such as carbon capture, utilisation and storage projects, energy efficiency retrofits and the electrification of equipment and processes. Although the program design details are not fully released, the accelerator initiative (and other government programs) are generally positive and a sign that policymakers recognize a role for public support for net zero projects — particularly ones that have uncertain market returns.

These new programs interact with various other federal and provincial programs and policies in the name of trying to strengthen the business case for private investment towards emission reduction projects. We frequently heard in our consultations about the complexity of these overlapping programs. Government restrictions on so-called "stacking" (a single project proponent drawing on multiple programs and policies for one project) are perceived as an obstacle to tipping prospective capital projects into financial viability.

One of our working group members, for instance, had been invested in a compressed air energy storage project that was eligible for a Canadian Renewable Conservation Expenses deduction but, as a result, the investor was then ineligible for the Scientific Research and Experimental Design Tax Credit even though the former is to attract investors and the latter is to defray R&D costs.

These kinds of program constraints add complexity to the system and limit the ability of organizations to fully leverage the range of public supports. But, if different government programs have similar yet separate programmatic designs and underlying goals, it seems odd and counterproductive to preclude organizations from leveraging them. If, on the other hand, the programs have the same designs and goals, then ostensibly it is the government's responsibility to rationalize them rather than act as an arbitrary gatekeeper to eligible organizations. The point is, if we are to meet the ambitious net zero targets, one wants to be careful not to come up short. Over-investment beats under-investment, as has often been the case, with the transcontinental railway and seaway being two historic examples.

The government should, therefore, essentially adopt the opposite position. We frequently heard in our consultations that companies regularly get bogged down in a slow and multiple application processes which can disrupt investment decision-making, delay and even scupper projects. The government should develop a green project management office that would help streamline the regulatory process (discussed later in this section), and enable successful projects to be reviewed and considered for a menu of related programs and policies on an expeditious basis.



Government restrictions on "stacking" can stand in the way of the financial viability of capital projects.

Such a green project management office (which would draw its mandate in part from the Major Projects Management Office) would have horizontal responsibility for helping emissions-reducing projects from across the economy interface with various aspects of federal policy and programs relevant to their regulatory approval and project financing. The Department of Innovation, Science and Economic Development's Clean Growth Hub was conceived with some of these goals in mind. We heard from various companies though that while the hub has been a useful addition to the federal policy landscape since its creation in 2018, its mandate, resources and awareness ought to be significantly expanded in light of the net zero commitment.

There is also scope for the federal and provincial governments to review their tax systems with the goal of providing more efficient and effective tax-based policies for private investment on major capital projects that reduce emissions. The federal government has already announced that it will reduce the general corporate and small business income tax rates for manufacturers of zero-emission technologies. It is also carrying out consultations on a new investment tax credit for carbon capture, utilization and storage. Although these various measures are good in and of themselves, they are relatively narrow considering the size and scope of the capital needed to achieve decarbonization. There can also be a tendency for a program's eligibility criteria to prioritize certain technologies or innovation approaches over others. The default should generally be to support any projects that reduce current emissions intensity on a neutral basis. There is a growing case, therefore, for a larger, more generous and broad-based tax preference for the development, manufacturing or purchase of green technologies.

There is also a need for greater policy experimentation and broader reforms on sustainable finance, which involves shifting of investment and capital flows to meet climate change goals and a more sustainable economy. Although there is no universal definition for sustainable finance, the Expert Panel on Sustainable Finance, established by the Department of Finance in 2018 and chaired by current Bank of Canada governor, Tiff Macklem, observed in its final report that:

> **"Finance is not going to solve climate change, but it has a critical role to play in supporting the real economy through the transition. The emerging field of 'sustainable finance' is focused squarely on channeling financial sector expertise, ingenuity and influence towards the challenges and opportunities posed by climate change."**

As the Chartered Professional Accountants of Canada had previously said, there are various elements that modern sustainable finance structure ought to include, such as:

- Improving the availability of climate data and the transparent corporate reporting of climate-related financial risks and opportunities, in order to make fully informed decisions;
- Mobilizing capital to enable necessary transitions to businesses, key industry sectors and the built environment (such as physical buildings), so they can become more sustainable;
- Supporting investment in clean technology, green infrastructure and green financial products;
- Ensuring climate-related risk is factored into the regulation and oversight of Canada's financial system and supported by a knowledgeable financial support ecosystem; and
- Facilitating the transition to ESG reporting which reflects a growing priority for investors and stakeholders.

Adopting sustainable finance is important for Canada's competitiveness. A growing regulatory imperative in many jurisdictions is to reorient capital flows towards sustainable investments. Canada cannot afford to be behind its competitors in this trend. As an exporting nation with a significant natural resources sector, it is important that Canada develop a domestic market and capacity for sustainable finance that can help key industries transition to more sustainable products and operations.

THE CASE FOR SUSTAINABLE FINANCE

Increasingly, stakeholders, including investors and lenders, are expecting companies to improve ESG metrics and establish targets to reduce emissions. Financial markets can both provide a source of capital to carry out these goals and offer robust incentives for the public and private sectors to mobilize.

Canada has been seen as trailing global developments on sustainable finance. However, with increasing corporate ambition to get to net zero by 2050, and pressure from competitors and customers, the conversation has accelerated over the past year. The companies are now eagerly considering how sustainable finance can spur investments in sustainable economic activities and projects that would reduce emissions, or can be aimed at improving ESG and related key performance indicators.

Sustainability-linked financing, predominantly seen in the loan and bond markets, has been around since 2017. However, it has emerged in a meaningful way in Canada over the past year, embraced by companies like Enbridge. Sustainability-linked financing aligns with existing corporate plans to improve ESG performance and/or transition to net zero. It can provide companies in more carbon-intensive sectors access to the sustainable finance market and potentially improve the cost of their funds and diversify their investor base. Sustainability-linked financing links the cost of debt to meeting, or not meeting, pre-established ESG goals, the most common of which is emissions reduction. Companies that fail to achieve their ESG goals may see an increase in their cost of funds, typically ~5 basis points (bps) in the loan market and anywhere from 25 to 100 bps in the bond market.





Over the past few years, sustainability-linked investments have risen exponentially; despite volatility in the market, they rose 80 percent to $3.2 trillion from 2019 to 2020. In July 2021, Scotiabank launched its Sustainable Bond Framework and in August announced the closing of its U.S. $1 billion three-year Sustainability Bond offering, the largest of any Canadian bank.

In 2018, the Government of Canada launched the Expert Panel on Sustainable Finance, supported by PPF roundtable consultations throughout Canada and followed by a second PPF expert panel report, Sustainable Finance II. Midway through 2021, the government put in place a Sustainable Finance Action Council. However, the election delayed the convening of this expert group.

Despite increased attention, sustainable finance has progressed in Canada without much government intervention, led by financial institutions and investors, companies and ENGOs. As the market continues to advance in other jurisdictions, such as in Europe and Asia, Canada will need to align itself with international best practices. For example, Canada currently has no incentives or policies for the sustainable finance market to develop, and companies are engaging in sustainably linked financing only to improve cost of funds and access to capital. Meanwhile, in the Asian market, financial incentives are in place, and tax benefits are available to investors to spur the sustainable finance market to grow.



Although these various federal programs and policies — such as the Net Zero Accelerator Initiative — may be useful for large-scale projects that are close to market readiness, they do not fully respond to the need for so-called "wild card" technologies, which are widely viewed as necessary to achieve net zero emissions by 2050.

The Canadian Institute for Climate Choices estimates that "safe bets" – such as EVs, energy-efficiency equipment and electric heat pump and baseboard heaters — will get Canada roughly one-third of its way to net zero emissions by 2050. So-called "wild card" technologies — what one might describe as scientific and technological breakthroughs — will need to be responsible for the remaining two-thirds.

"Safe bets" such as EVs and electric heat pumps will get Canada one-third of the way to net zero emissions by 2050. "Wild card" technologies will make up the remaining two-thirds.



These are, by definition, projects for which market-based financing is either costly or unavailable. The projects' returns on investment are highly speculative. They are more likely to produce failures than successes. This kind of high-risk, high-reward project requires dedicated government support.

As part of its 2021 election platform, the government committed to the new Canadian Advanced Research Projects Agency (CARPA). The agency, which would be modelled on the Defense Advanced Research Projects Agency in

the United States, would have a mandate to carry out public-private partnerships on research related to scientific and technological breakthroughs. CARPA will be focused on high-risk, high-reward projects, and the government's net zero target is a perfect overarching goal to inform and guide its activities. CARPA has the advantage of applying public money — but within a governance system that makes it more prone to long-term objectives and less to the flavour of the year.

This is a positive development. Too much of Canada's current scientific, technology and innovation policy framework prioritize incremental innovation over transformational innovation and "safe bets" over "wild cards." The key will be to establish the design, governance and operational dynamics of CARPA to increase its probability for success. A forthcoming paper published by the Public Policy Forum and the Brookfield Institute will outline a blueprint to establish and operationalize the CARPA commitment based on best international practices. As its first set of projects, the government should prioritize the new agency's resources and efforts on catalysing breakthrough technologies to help reach the net zero target.

CARPA's activities on decarbonization can be informed by the real-life experience of the Alberta Oil Sands Regulatory and Technology Authority (AOSTRA) in the 1970s. AOSTRA was established by the Alberta government to catalyze new technologies that would unlock the potential in the province's oil sands. It prioritized high-risk, high-reward projects that were far from market readiness — such as investments to create an underground test facility and test the steam-assisted gravity drainage approach as a method for in-situ oilsands production — that ultimately played a huge role in developing Alberta's resources.

University of Calgary scholar Sara Hastings-Simon has called for a modern AOSTRA with the "disruptive goal" of catalyzing new, green forms of energy, and industrial technologies and processes. The federal government's CARPA proposal can, therefore, draw on the experiences with DARPA and AOSTRA to support scientific and technological breakthroughs in Canada in pursuit of the goal of net zero emissions.

But as important as these various forms of governmental support may be to tip different projects into financial viability, it would be wrong to assume that the only role for public policy is to provide project financing or R&D subsidies. We frequently heard in our consultations that the biggest policy challenge is policy uncertainty and incoherence. One example: The government has legislated a net zero target. Meanwhile, the regulatory process is slow for mining projects that will be a key input to electric vehicle production.

If one accepts the premise that climate change is fundamentally a technology problem — and new technologies are our only realistic means of significantly netting out carbon emissions — then the federal government's overarching policy agenda should be tilted in favour of building green projects, including redesigning current industrial processes. As American technologist Eli Dourado recently said in a testimony to a U.S. congressional committee on net zero emissions:

> **"We must make it easier to build. If we are going to do so much building — new peak-load power plants, undergrounding of wires, new long-distance transmission lines, and new wind and solar farms — it is worth first addressing the excessive cost of building new infrastructure in this country. Among the chief culprits are laws that give project opponents a way to slow or stop the permitting and siting process."**

Although there may be some jurisdictional and policy differences between Canada and the U.S., Dourado's basic point applies here as well: the race to net-zero emissions will not be won by a policy of sclerosis and stagnation; it will only be achieved by accelerating innovation, technology and progress. That starts by renewing a regulatory policy culture in favour of building things.

The proposed green projects management office could play an important role in cultivating such a culture. Specifically, it can be responsible for project coordination, management and accountability for green investments within the context of the existing federal regulatory review process, and in collaboration with provinces, territories and municipalities. As part of this process, projects should be evaluated on a global net carbon basis — not solely on a Canadian domestic emissions abatement objective — and that upstream and downstream domestic supply chain emissions are considered.

The final issue is to strengthen domestic competitiveness more generally, including regulatory reform (such as expediting project approvals), human capital (such as training and immigration) and infrastructure spending (particularly export-oriented infrastructure, such as bridges, roads, rail infrastructure and ports). Canada's overall competitiveness has declined in recent years according to various domestic and international rankings. A renewed governmental focus on these basic pillars of domestic competitiveness would help strengthen Canada's ability to compete and win in the highly competitive marketplace.

INDIGENOUS INCLUSION IN ENVIRONMENTAL, SOCIAL AND CORPORATE GOVERNANCE

Realizing Canada's low carbon export potential means working in partnership with First Nations, Inuit and Metis peoples. In December 2020, the federal government legislated the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), providing a framework and guidance for reconciliation. Economic reconciliation is core not only to implementing UNDRIP, but also to Canada's energy transition and long-term economic growth potential.

A recent piece by Moody's Investor Services encouraged companies to incorporate self-determination and self-sufficiency into project planning, with a warning that those who fail to negotiate Indigenous inclusion could see a negative effect on credit ratings. Businesses are responding, putting in place standards like Teck's Indigenous Peoples Policy and working to transition to a low carbon economy through cooperative partnerships like the Edmonton Region Hydrogen HUB.

More than simply inclusion, Indigenous peoples are seeking early engagement on projects, as well as equity partnership and co-design and the examples of full project partnerships are accelerating in number, from coast to coast. The First Nations Major Project Coalition (FNMPC) is a collective of approximately 75 Indigenous nations seeking ownership of major projects, primarily in the natural resource economy. For Indigenous communities and businesses, accessing capital for projects can be the greatest challenge. According to Chief Sharleen Gale, FNMPC Chair, "[FNMPC] services are helping to fill a critical capacity gap faced by many First Nations, and this funding will ensure that we can continue to meet the needs of our members."

Indigenous leaders are calling for ESG to become ESGI in Canada. As First Nations Financial Management Board (FMB) leadership Harold Calla and C.T. Jules recently stated in a piece for the Hill Times, "Reconciliation means "Nothing about us, without us"— that Indigenous peoples are consulted in the development of legislation that affects them. Economic legislation is no different."

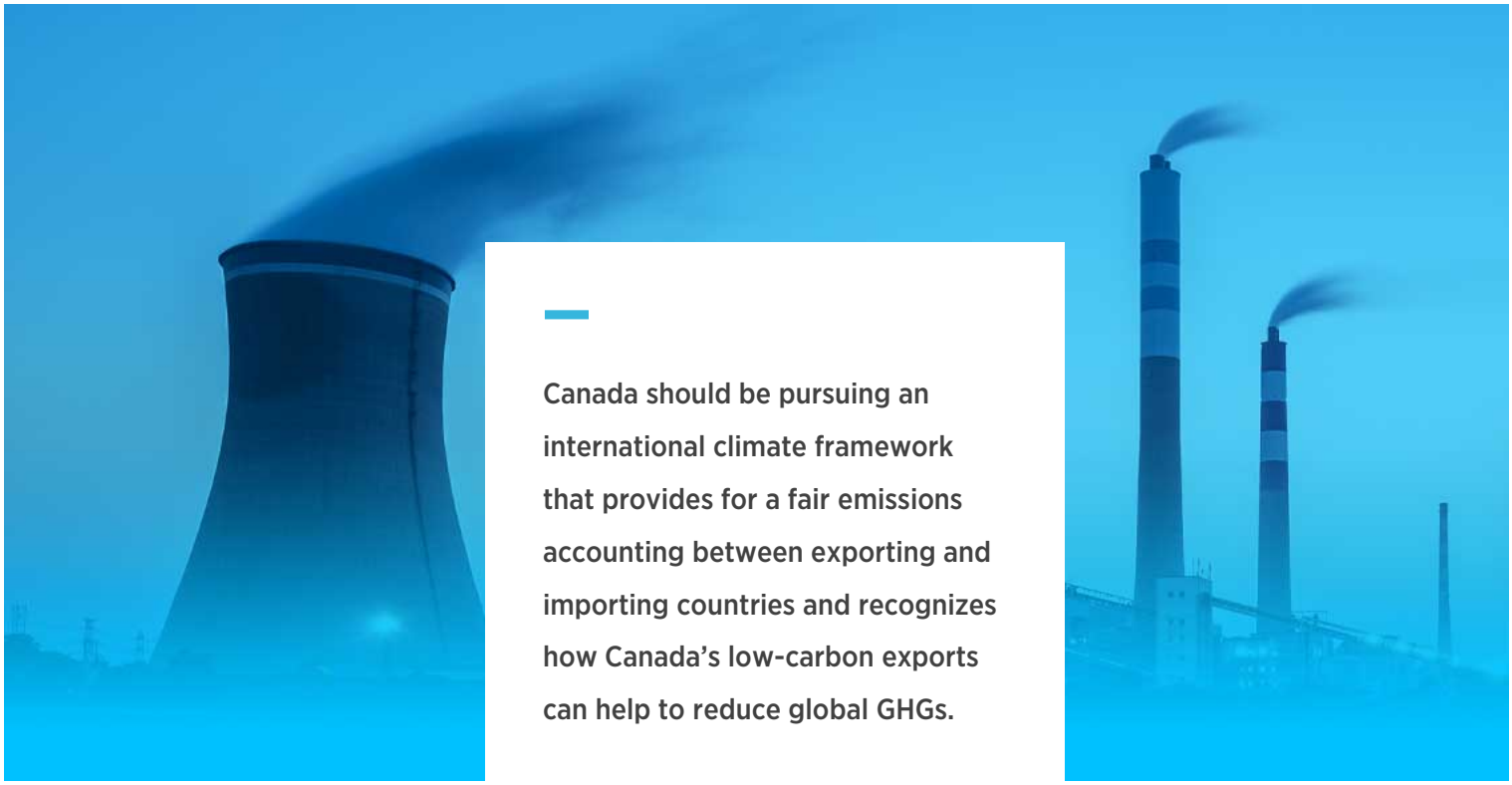
SECTION 2: **SHAPING INTERNATIONAL CLIMATE CHANGE POLICY IN CANADA'S INTERESTS**

As important as efforts to strengthen domestic competitiveness are, they should be seen as a necessary yet insufficient ingredient for a low carbon export strategy. They must also be matched with greater intentionality around the advancement and promotion of Canada's national interests in international climate negotiations.

Our national interests, which are rooted in our emissions-export profile, ought to be clear for Canadian policymakers. As a basic principle, Canada should be pursuing an international climate framework that provides for a fair emissions accounting between exporting and importing countries and recognizes how Canada's low-carbon exports can help to reduce global GHGs.

Under the current UN Framework Convention on Climate Change, GHGs are measured on a country-by-country basis, which means that exporters are fully responsible for the emissions incurred in the production of goods. While this approach allows for an uncomplicated tracking of emissions within countries' borders, export-reliant countries like Canada may be penalized when their goods are consumed by importing nations. There are also growing expectations that Canadian exporters report on the downstream emissions from their products. The net effect is to create so-called "winners" and "losers" and in so doing, this approach fails to recognize that low carbon products in countries like Canada can help to decrease global GHG emissions through their exports. In effect, Canadian sectors with a low-carbon advantage are presently disadvantaged in the Paris Agreement's emissions accounting outline.

One example: A domestically consumed litre of gasoline in Canada is subject to a domestic carbon tax, whether sourced from Canada or elsewhere. If, however, a litre of gasoline is exported to a country without a carbon tax such as the U.S., the emissions from the vehicle must be accounted for in Canada, but the litre/gallon consumed in the U.S. is not subject to a carbon tax. This approach, which essentially requires domestic firms to account for the transport, refining and even consumption occurring elsewhere, disadvantages Canadian exports and is counterproductive to progress on reducing global emissions.



Canada should be pursuing an international climate framework that provides for a fair emissions accounting between exporting and importing countries and recognizes how Canada's low-carbon exports can help to reduce global GHGs.

Canada's interests, therefore, would be advanced by an international arrangement for GHG accounting that adjusts for the effects of its exports on global carbon emissions. Under such a scenario, Canada would, as Canadian climate policy expert Jason Dion rightly observes, be credited for its low carbon exports and debited for its high carbon ones. That would not only recognize the globalized nature of the climate challenge, but it would also create stronger domestic incentives to improve emissions intensities in parts of the economy where we may underperform our competitors.

It's important to remember that achieving net zero targets involves a combination of technology and trade. Section 1 of this report outlined a domestic agenda to catalyze and scale new technologies within our domestic economy. Section 2 sets out how to ensure that the international climate framework enables Canada to benefit from pre-existing and growing low carbon advantages across the economy.

As a starting point, we must recognize how important trade is to Canada's economy. While Canada's population is relatively small, we are imbued with large economic ambitions. Our comparatively high standard of living depends on the success of our exports. In fact, about one-third of our GDP comes from exports, as compared with 12 percent for the U.S. and 20 percent for China, both with much larger internal markets.

Despite our self-identity as traders, we run in the middle of the OECD pack, far from our status 20 years ago, when exports accounted for 44 percent of our GDP. The COVID-19 crisis has put a new spotlight on the state of our export sector. As David Dodge pointed out in Public Policy Forum paper released last year, Canada has run 12 consecutive years of current account deficits — the broadest measure of our economic relations with the rest of the world.

This trend of declining exports is happening against a backdrop: In which Canada's largest market, the U.S., and its fastest-growing market, China, have proven to be less reliable trading partners. Few countries in the world are as dependent on a single export destination as Canada. According to the Canada's State of Trade 2019 report, Canada's exports are the fourth most concentrated by destination out of 113 countries for which such data is collected.

This brings us back to a core thesis of this paper: in a world in which carbon competitiveness and the international accounting treatment of carbon emissions are major factors of global trade and commerce, Canada has a profound interest in ensuring that the international framework is fair and broadly aligned with the country's national interests.

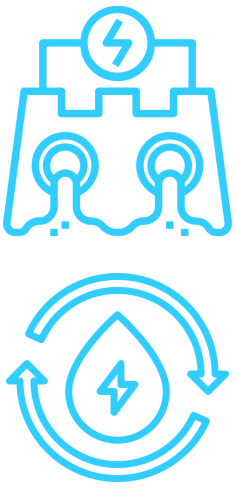
It is our view that they certainly can be. But it will not happen on its own. There is an onus on Canadian policymakers to advance and promote Canada's interests at the upcoming COP26 meetings and beyond.

Readers might wonder how Canadian officials can make progress along these lines. Canada is a middle power and there are 191 parties to the Paris Agreement. It is far from obvious that the Canadian government can dictate the terms of international climate policy in a world of competing interests.

Although there are obvious limits to Canada's ability to influence these international climate negotiations, it would be wrong to assume that we cannot have a role in shaping these outcomes. Having a role requires a purposeful strategy and accompanying tactics to contribute to better, fairer ands ultimately greener international climate policies.

BRITISH COLUMBIA'S VERIFIED LOW CARBON ADVANTAGE

Recent research completed by the Province of B.C. and the Business Council of B.C. — and validated by leading Canadian accounting firm Meyers Norris Penny — verified that, on average, B.C.'s major commodity exports have about half the GHG intensity of identical goods produced by the province's competitors. In fact, B.C.'s global advantage accounts for a difference equal to a third of B.C.'s total emissions. Low emitting electricity was the biggest factor in the B.C. advantage. In B.C.'s natural resource products alone, Canada has the potential to take millions of additional metric tonnes of GHGs out of the world's atmosphere, simply through goods that include export products from B.C.



Canadian leadership in strategic coalition building

Although Canada's export-emissions profile is unique, it is not without peers. Countries such as Australia, Norway and the U.K. have a broadly similar mix of domestic production and export orientation. They ostensibly share our interests in steering an international emissions accounting framework in a direction that balances the interests of producing and consuming nations.

The Canadian government should, therefore, be working with these countries on a formal or informal basis to build a strategic coalition of countries that will advance and promote a common position on carbon accounting.

This type of institution building is hardly new for Canada. The Canadian government contributed to the G20 in the late 1990s, the Cairns Group to support trade liberalization in the mid-1980s and various other international forums before then. As a middle power with a solid international reputation, we may in fact be uniquely positioned to build such coalitions.

The most recent example was leadership by former International Trade Minister Jim Carr to advance reforms to the World Trade Organization via the Ottawa Group, which comprised 12 countries with broadly similar views and interests, including Australia, New Zealand, Norway, Switzerland and certain EU member states. These efforts have continued under current Minister Mary Ng and may ultimately have relevance for the growing intersection between conventional trade issues and climate change.

Canada should be aiming to build similar formal and informal arrangements with countries that share our perspective on the international accounting of carbon emissions. Australia, Japan, Norway and the U.K. are four examples. We are bound to have a greater chance at shaping the international regime if we partner with these countries and others to advance a common message and agenda.

Canada should be building formal and informal arrangements with countries that share our perspective on the international accounting of carbon emissions.



Article 6 and other international accounting tools

The ostensible mechanism for addressing how international carbon markets may be used by countries to reduce emissions is Article 6 of the Paris Agreement, which is the last remaining piece of the agreement to be finalized.

Within Article 6 is an outline for how emission reductions may be traded among governments, every five years each of which must submit national targets for GHG reductions, or what are commonly characterized as nationally determined contributions (NDCs). Article 6 would also make it possible for governments to use what are referred to as internationally transferred mitigation outcomes (ITMOs), which Isabelle Turcotte, director of federal policy at the Pembina Institute, has described as a global carbon credit system. In basic terms, ITMOs permit the distribution of GHG reductions from one country to another, with an aim to help the latter meet its emissions targets.

Under Article 6, in particular, ITMOs can be used by countries and companies as credits to facilitate trade and support greater emissions reduction ambitions by expanding the available options available to parties to fulfill or exceed current NDCs expeditiously and cost-effectively. In theory, these bilateral or multilateral arrangements could permit more cost-effective GHG mitigation scenarios than those that might be if countries were focusing only on their own domestic emissions.

Earlier this year, the Government of Canada circulated a draft framework for ITMOs but has yet to release a final version. The basis of which is to ensure Canadian companies can participate in such arrangements. This framework and its underlying principles must preserve a domestic market for companies operating in Canada.

Allowing Canadian companies to participate in ITMO markets will effectively help to strengthen Canada's commitment to reducing national and international GHG emissions, while ensuring these companies remain competitive on the international stage. Turcotte identifies the Quebec-California cap-and-trade system as one key example of why Canada has an interest in seeing Article 6 finalized. It would ensure companies are able to access the other jurisdiction's carbon market to buy and sell credits.

Similar ITMO opportunities should be explored for other in-demand Canadian low carbon exports. An example is the chemical and fertilizer industry, where Canada is a top 10 producer globally at a significant GHG advantage. Canada's chemical and fertilizer industries together employ nearly 100,000 Canadians, according to StatCan, provide $21.157 billion in GDP and emit 21 Mt C02e. Ninety-five percent of Canada's fertilizer production is exported, and 12 percent of the world's fertilizer comes from Canada.

Canada has unique advantages in scaling up the production of low-cost clean hydrogen to replace traditional natural-gas derived hydrogen used in fertilizer production. Canada's chemical production is up to 80 percent less GHG intensive than those produced in some European countries and Asia.

Advances in carbon capture and storage, production and utilization of clean hydrogen, energy efficiency, bio-based chemistries and creation of a circular economy for plastics will further accelerate Canada's low carbon advantage in chemical exports.

It is important to understand that such carbon credit frameworks are not a dodge from meeting our emissions-reduction obligations. Rather, they represent a means of doing so, as the Paris Agreement architects envisioned. Such frameworks are legitimate mechanisms that recognize that lowering global carbon emissions involves a combination of individual and collective action, and should enable a fair and transparent process for reconciling the distribution of emissions between countries.

Yet, while Article 6 and the use of ITMOs could be highly useful in theory, there have been significant challenges in reaching a common agreement in practice. Notwithstanding a shared interest in finalizing Article 6, there are competing views on how it ought to be done based mostly on countries' different industrial and carbon compositions. Major exporters like Canada want to see efficient, market-based trading that would recognize the fair distribution of GHG emissions between importing and exporting jurisdictions. Yet there are not a lot of incentives for importing countries, such as much of the European Union, to agree to a new global standard that gives up their preferable emissions profile.

Although these are challenging issues, it is imperative that Canadian officials protect and advance Canada's interests. Our negotiating position must reflect a basic fact: we produce what the world needs, and the lower carbon content of our products helps buyers on their NDCs — and buyers value the stability and security of Canada as a supplier. Canada needs its skilled negotiators to translate these high value Canadian products and brand into cooperative international agreements. This will ensure supply for buyers and, at the same time, growth in our low carbon industries and continued innovation on the path to net zero.

The Government of Canada should pursue an outcome on Article 6 as a key part of an overall competitiveness and climate policy strategy. International rules that facilitate exporting countries to receive credit for reducing GHGs from global buyers will support continued domestic production. They will do so without undermining Canada's ambitious goals to contribute to global emissions reductions. In practice, this ought to mean an international framework that adjusts a country's domestic emissions based on the effect of its exports on global GHG emissions.

Therefore, it is critical that the Canadian delegation headed to COP26 and any future conferences presses for an international arrangement along these lines. It will not be easy. With U.S. attention focused primarily on China, and the European Commission working to advance their own green ambitions, Canada will need to work with countries with a similar export-emissions profile to promote our interests.

Addressing a border carbon adjustment

Canada needs to strengthen its negotiation position and weight for Article 6, as these negotiations continue. At the same time, as an export dependant nation, Canada needs to take interim steps to sustain and promote its exports. This includes ensuring that the enactment of border carbon adjustment (BCA) mechanisms in Europe and elsewhere recognizes Canada's domestic pricing strategy, so our exports are not double taxed.

The Government of Canada has begun consultations on a BCA, which would in theory add a price on carbon to international trade. BCAs apply import charges to goods from countries without carbon pricing (or with a comparatively lower price on carbon) and provide for export rebates, so that domestic companies can compete on fair terms. There are differing views on the efficacy of a BCA model in Canada. Our consultations found different perspectives based on one's sector and export markets. But there was no disagreement that the Canadian government needs to pursue discussions with countries that are considering BCAs to protect the competitiveness of our exports.

No countries have implemented BCAs to date; however, this summer the European Commission announced a framework for a new BCA mechanism — or Carbon Boarder Adjustment Mechanism (CBAM) — to be implemented in 2023. The U.S. and the U.K. have announced intentions to adopt similar systems.

Development economist Aaron Cosbey's recent report for the International Institute for Sustainable Development, titled Principles and Best Practice in Border Carbon Adjustment: A Market Proposal, advocates for Canada to start coordinating approaches with our key trading partners on the design and implementation of BCAs in general and to consult broadly on a domestic BCA, given the potential uneven impacts on different Canadian sectors and the economy as a whole.

Enacting trade agreements and piloting bi-lateral agreements

Canada has sought to expand market access through the signing of new trade agreements — such as the Comprehensive Economic Trade Agreement and the Trans-Pacific Partnership — or renewed trade agreements — such as the United States-Mexico-Canada Agreement. Notwithstanding our extensive trade network (which is regularly described as the widest and most comprehensive in the world), we have made minimal progress in significantly diversifying Canadian trade flows. Consider, for instance, that trade with China, which is our second largest trading partner, is still only about one-twentieth of trade with the United States.

Now that progress on free trade agreements has nearly reached its peak, it is important for federal trade officials and the government to shift the focus from trade negotiations to trade promotion, with a particular focus on leveraging Canada's low carbon advantage.

With much of the heavy lifting on trade negotiations complete, skilled resources should be dedicated to seeking out opportunities in international agreements, for Canada's low carbon exporters. The government's recent election platform promised to establish a new trade-support hub. This would assist Canadian businesses and help them take advantage of the multitude of trade agreements Canada has signed in recent years. It would be a strategic move to broaden this export service to include climate issues that impact trade.

The government should aim to establish a critical mass of highly specialized trade experts with knowledge and capacity in advising firms on Article 6, ITMOs, BCAs and the international accounting treatment of carbon emissions. If a low carbon export strategy is going to be pursued through a combination of technology and trade, Canada should aim to cultivate the most sophisticated and technically proficient policy capacity on these issues.

As part of this goal, the Canadian government should step up efforts to become home to the global headquarters for the new International Sustainability Standards Board (ISSB). The ISSB will be responsible for developing a much-needed set of global standards for reporting on environmental, social and governance matter. A decision on the location of its headquarters is expected at COP26. A group of public and private institutions in Canada has made the case to the IFRS Foundation to locate it here in Canada. This would be a positive development that strengthens our domestic ecosystem and potentially boosts our influence on these increasingly important questions.



Bilateral agreements offer another way for Canada to work with like-minded countries, such as Japan (see LNG case study below), which is prioritizing low carbon products and is prepared to pay a premium. Piloting agreements like this are a way for parties to facilitate trade in allowances or credit — essentially a form of ITMO. Canada should show leadership and take steps to define future agreements by testing how cooperation could work in practice, especially where there are material stakes for the Canadian economy and material benefits to global GHGs.

Testing these types of agreements is not new. Over the past few years, there has been a proliferation of Article 6 piloting activities, which are experimenting at how cooperation between nations could work in practice, thus helping to provide insight into negotiations, while offering testers access to carbon credits. Canada should commit to acting as a testing ground for these pilots. It is a useful opportunity to shape policy innovation in this new, emerging and increasingly important policy realm. The Canadian government, to its credit, has engaged in a bilateral agreement on environment cooperation with Chile, in line with the Canada-Chile Free Trade Agreement. Under Article 6, Canada supported Chilean environmental innovation initiatives to decrease methane sector waste emissions. This is a positive development that should be pursued with other countries and in other sectors.

More generally, though, it is worth ending this section where we started it. Canada's economic and climate change interests are inextricably linked, and both are at risk if the international carbon accounting regime fails to account for our export-emissions profile. If Canada does not contribute to the creation of a fair international arrangement, there will be inherent limits on our ability to offset negative effects through domestic policies. Every unit of demand we choose not to fulfill will risk condemning the world to higher emissions. It is a bitter paradox that in making Canada greener, we leave the world worse off.

Mostly, though, Canada needs to speak in a confident, informed and persistent voice about the rules of the game that meet the goals of a synchronistic approach. There is nothing even remotely antithetical to our undertakings as a good global citizen alarmed about the trendlines of climate change, while we make a robust assertion about our national interests within that goal. This is the essence of government and diplomacy: to create the conditions to achieve net zero as seamlessly as possible, and work with our international partners in a manner that is supportive of that goal. This is how Canadian governments have always acted — through world wars, international peacekeeping, mass refugee arrivals, protection of the oceans, agricultural, trade and myriad other matters. It is time again to forge an unapologetic two-track strategy that marries together Canada's national interest and the greater global good.

A CANADA-JAPAN BILATERAL AGREEMENT

The continued investment and production of Canadian products is threatened as companies face competitiveness, in part because of the high cost of emissions abatement in Canada and aggressive national and provincial emissions reduction targets.

Canada can show leadership internationally by testing how cooperation could work in practice to advance our low carbon advantage and reduce GHGs.

One partner might be Japan. Both Canada and Japan have active Article 6 pilots and have shown a willingness to enter this space.

What's in it for Canada?

Canada produces the products and inputs the world needs at a lower carbon content than its competitors. The continued competitiveness of Canadian products ensures economic growth and jobs here at home. A key example is LNG, the largest private investment in Canadian history. LNG Canada is a $40B investment in Canada and produced 10,000 jobs at its peak. It will be some of the cleanest LNG in the world. When LNG displaces a product like coal, the GHG savings to the "buying" country are even greater and make a material contribution to their NDCs to the Paris Agreement.

What's in it for Japan?

Tokyo Gas and Toho-Gas will be buying Canadian LNG from Mitsubishi Corp., which owns a 15 percent stake in the LNG Canada project. Mitsubishi Corporation is Japan's largest trading company with more than a 50 percent share of LNG imported into Japan. Importing clean Canadian LNG will be material to Japan meeting its emissions targets.

However, domestic emissions reduction targets in Canada threaten future development.

It is in Canada's and Japan's interest to develop a bi-lateral agreement that can ensure the development of LNG in Canada — and to be leaders in setting the rules on how this kind of cooperation can work for global ambitions and here at home.

RECOMMENDATIONS

As discussed throughout this paper, a low carbon export strategy must be rooted in a synchronicity, including between competitiveness and climate policy, both domestic and international, as well as national and global collaboration.

Such a strategy will require ongoing policy changes to:

1. strengthen the conditions for net zero in Canada; and
2. shape international climate policy in Canada's interests.

To strengthen the conditions for net zero in Canada, the federal government should do the following:

- Enable the stacking of different federal programs and policies to support net zero projects.
- Establish a green project management office with a mandate to help successful projects get reviewed and considered for related programs and policies on an expeditious basis. This will also help project proponents navigate the funding process across various federal programs and policies. The office may be a new federal entity or could involve expanding the mandate and resources for ISED's Clean Growth Hub.
- Make the green project management office responsible for project coordination, management and accountability for green investments within the context of the existing federal regulatory review process, and in collaboration with provinces, territories and municipalities. As part of its role, projects under federal regulatory review should be evaluated on a global net carbon basis — not solely on a Canadian domestic emissions abatement objective — and take into account upstream and downstream domestic supply chain emissions.
- Conduct a review of tax-based policies that are to support emission-reducing projects. The goal would be to develop a larger, more generous and broad-based tax preference for the development, manufacturing or purchase of green technologies.
- Ensure that sustainable finance supports the resource sector's transition to net zero through meaningful reductions in emissions, rather than by removing the sector's access to capital. As part of this overall goal, the government should push for the adoption of globally consistent ESG metrics and push against the proliferation of new and different metrics. It should also advocate for net zero implementation plans that include "wild card" technologies.
- Launch a new Canadian Advanced Research Projects Agency (CARPA) with the immediate mandate to catalyze high-risk, high-reward technologies to reduce industrial emissions.

To shape international climate policy in Canada's interests, the federal government should do the following:

- Pursue an international framework for accounting for GHG emissions that considers the effects of the country's exports on global carbon emissions in calculating its Nationally Determined Contributions.
- Develop formal and informal international arrangements with countries that have similar export-emission profiles as Canada and, therefore, share our priorities in establishing a fair international carbon emissions accounting framework.
- Advance and promote a position on Article 6 in the Paris Agreement that balances the interests of producing and consuming nations and does not penalize Canada for its low carbon advantage.
- Pursue ITMOs and other bilateral arrangements (including pilot agreements under Article 6) to experiment with different means of distributing carbon emissions among countries through a fair and transparent process.
- Step up efforts to ensure that adoption of CBAM in Europe and elsewhere recognizes Canada's carbon pricing system.
- Develop world-leading policy and technical capacity within the Government of Canada to advise Canadian companies on carbon-related trade issues, including continuing the efforts to have Canada become home to the headquarters of the International Sustainability Standards Board.

APPENDIX

The authors assembled a working group including representatives from several sectors, ENGOs, business associations and academia to meet four times between June and October 2021. The group first met in June 2021 to outline the overall approach of the research. Based on the first discussion, subject matter experts from government, ENGOs and think tanks were invited to attend the second (July 2021) and third (August 2021) sessions of the working group — some to present and others to take part in the roundtable conversation. The authors also met informally through the process with several members of the working group. The final working group session took place in October 2021 to review and provide feedback on the draft report. Working group participants represented the following organizations:

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- AFARA
- Arcelor Mittal Dofasco
- Canola Council of Canada
- Clean Energy Canada
- Canadian Mining Association
- CN
- Enbridge
- Magna International
- Maple Leaf Foods
- Mosaic Forest Management
- Scotiabank
- Teck Resources
- University of British Columbia

APPENDIX

An inclusive expert advisory panel was also assembled to provide advice, offer feedback on the research direction and approach, and inform the project's impact. The group met formally on one occasion. Some advisory panel members also attended sessions of the working group. The advisory panel members include:

- The Hon. Cathy Bennett, Founder and Managing Partner, Sandpiper Ventures
- The Hon. Jean Charest, Partner, McCarthy Tétrault LLP
- Greg D'Avignon, President & CEO, Business Council of British Columbia
- J.P. Glady, Founder & President, Mokwateh
- Diane Gray, Founding President & CEO, CentrePort Canada
- Jake Lawrence, CEO and Group Head, Global Banking and Markets, Scotiabank
- Byron Neiles, Executive Vice President, Corporate Services, Enbridge
- Marcia Smith, Senior Vice President, Sustainability and External Affairs, Teck

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