A COMPETITIVE TRANSITION:

How smarter climate policy can help Canada lead the way to a low carbon economy

Canadian Chamber of Commerce
Chambre de Commerce du Canada

The Voice of Canadian Business™
Le porte-parole des entreprises canadiennes^MD

This report was made possible by the generous support of our sponsors

Gold

ENBRIDGE
Life Takes Energy™

TransCanada

Bronze

DOW

This report has been prepared by Katrina Marsh and Aaron Henry, Director, Natural Resources and Environmental Policy. For more information, contact ahenry@chamber.ca or visit Chamber.ca.

Table of contents

CLIMATE COMPETITIVENESS:
GETTING CANADA'S CLIMATE POLICIES RIGHT

FOREWORD

In the face of social, economic, and political change, some reports quickly decline in their relevance. This is not one of them. As the reader will discover, this report underscores the importance of meaningful climate change action guided by public policy committed to reducing greenhouse gas emissions in Canada at the lowest cost to our economy and way of life.

The report advocates for a climate change policy where emission intensive and trade-exposed industries are not punished by one-size fits all carbon pricing. A policy where innovation is guided by effective policy, and businesses and consumers benefit from a holistic approach to carbon pricing that is not blind to cost-benefit analyses for specific regions and economic segments. Though policy makers have made efforts on these fronts, it is clear they have yet to answer the report's clarion call about the loss of competitiveness from the pancaking of carbon pricing regulations. The impacts of climate change regulations are becoming clear. Our economy continues to suffer from capital flight, significant increases in retail energy bills, and our regulatory system is cumbersome and lacks predictability due to the layering of regulations.

Indeed, these regulations and the challenges decision-makers have faced in managing the transition to a low carbon economy may have jeopardized the longevity of the Pan-Canadian Framework of Climate Change. In July of 2018, Ontario's Government announced it would end cap and trade and effectively exit Canada's national climate change action plan. In many respects, the move comes after Ontario experienced a spike in electricity costs of 71% from 2008 to 2016, a spike the Fraser Institute attributes to new surcharges and a public policy, rather than market-led expansion of renewable energy production. In the late summer of 2018, Alberta, under different circumstances, also decided to leave the Pan Canadian Climate Framework. Alberta had made a conscious decision to pursue carbon pricing with the knowledge that a pipeline to tide water would help its economy ensure its climate policies remained affordable. With the Trans Mountain Pipeline still incomplete and its future uncertain, the Government of Alberta has found that it could not maintain the increased costs of climate change regulation while sustaining economic growth. Though the impetuses were different, both provinces decided to reduce their commitment to climate change action because public policy had not adhered to the principle of reducing greenhouse gas emissions at the lowest cost to our economy and Canadians' way of life.

Our need to transition to a low carbon economy is clear, but it is equally clear that businesses must have assurances that the regulatory regime guiding this transition will be stable, predictable, and straightforward. This report should not only be instructive in guiding future decisions but it should also serve as a reminder of the long-reaching impacts of miscalculation and the outcomes that can occur when decision makers second guess the market as a key force in shaping the utility of carbon pricing mechanisms.

INTRODUCTION

The real debate over climate change in Canada? It is not what you think

If we could turn down the volume on the extreme voices – climate change deniers on one end and anti-development groups on the other – it would be soon apparent that a consensus exists amongst Canadians that we must take meaningful climate change action.

60% cent of Canadians identified climate change as a leading threat to national security. A similar percentage stated that they are growing ever more concerned about the issue. The consensus that climate change is a significant threat includes a broad range of leaders from business, environment groups, and politicians, who understand that climate change is a serious issue, which is why Canada needs a coherent plan to change the way we make and consume goods and services.

The need to act has been outlined in several reports, including the work of the Intergovernmental Panel on Climate Change, National Climate Assessment in the United States, and Government of Canada reports, such as Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation. This body of research speaks to impacts of rising temperatures on our environment more generally, but there are several important implications for businesses.

The rate and intensity of floods, fires, and storms has been increasing, with the potential to destroy facilities and disrupt operations or supply chains. Catastrophic losses due to events like floods, fire, and storms has steadily risen in Canada since the 1980s, reaching a record $5 billion in 2016. In 2011, the National Round Table on the Environment and the Economy (NRTEE) estimated them to be as much as $5 billion per year by 2020 and increasing thereafter. The Organisation for Economic Co-operation and Development (OECD) estimates that for "every $1 USD of clean energy investment not made in the electricity sector before 2020, expenditures of $4.3 would be required between 2021 and 2035 to make up for increased emissions".

The body of evidence is conclusive, and the private sector and governments across Canada are responding. The real debate happening over climate change in Canada is not whether we need to transition to a lower carbon economy, but how to manage the process.

Getting the transition right means minimizing risks and maximizing the benefits

For the past few years, the federal and many provincial governments have made climate change a key government priority and have chosen market-based measures as the centerpiece of their plans.

Between 2007 and 2015, Alberta, British Columbia, Ontario, and Quebec – provinces that represent 85% of Canada's population – announced plans and implemented carbon pricing (Ontario has now withdrawn from carbon pricing). In 2015, the United Nations' Paris Agreement provided a new framework to coordinate global action on greenhouse gas emissions. As part of its commitments under the international treaty, the federal government worked with all provinces and territories on a national plan, the Pan-Canadian Framework for Clean Growth and Climate Change. Federal government legislation to ensure consistent national carbon pricing is expected to come into effect in 2019.

These actions by global, provincial, and federal governments have pushed the question of what policies, regulations, and investments will help to lower Canada's greenhouse gas emissions into the forefront of the national policy debate. Canada's

leadership on climate issues presents a number of challenges and opportunities for the nation's economy.

The Risks

While Canada is one of the largest per capita emitters of greenhouse gas emissions, overall the country contributes only 1.6% of global emissions. Even if Canadians drastically reduce domestic emissions without coordinated global action, we will still face the impacts of climate change. As with so many other aspects of our economy, Canada cannot afford to be inward looking and must consider how international partnerships, especially trading Canadian commodities and technologies, can contribute to emissions reductions elsewhere.

Climate regulation and carbon pricing will increase energy costs that will be passed down to businesses and ultimately consumers. This will negatively affect business investment, household consumption, and trade volumes. Small and medium sized businesses in particular, which represent 98% of Canadian enterprises, may lack the knowledge or capital to react quickly to rising prices, making them particularly vulnerable to cost increases. Policies and programs to minimize these economic impacts must go hand in hand with emission reductions.

Impacts on Canada's ability to attract investment are of particular concern. Businesses like oil and gas production and steel, cement, and chemical manufacturing that produce a high volume of emissions and are highly exposed to trade are particularly vulnerable to climate policies. Carbon leakage, the term for when climate policies drive trade exposed emission intensive industries to other jurisdictions, represents a loss for Canada economy without being a win for the global climate, as emissions simply move elsewhere. These concerns are particularly acute as the United States, Canada's largest competitor for investment in many sectors, works to dismantle many of their federal government's environmental policies and regulations and actively promote investment in their energy sector.

Carbon leakage, the term for when climate policies drive trade exposed emission intensive industries to other jurisdictions, represents a loss for Canada's economy without being a win for the global climate, as emissions simply move elsewhere.

The Benefits

The transition to a low carbon economy does not just represent risk, but also tremendous opportunity. A focus on reducing emissions can lead to productivity improvements and costs savings. According to an estimate by McKinsey, improving energy and resource efficiency could represents a $3.8 trillion economic opportunity by 2030. Achieving these savings means making information widely available and reducing barriers to the uptake of new technologies and processes

The market for clean technology is large – currently it is about two-thirds the size of the auto sector – and growing. However, while much of the demand for these technologies are in emerging economies, Canadians have tended to trade with the United States and

Europe. Other countries, such as China, are also pursuing this opportunity. Canadian businesses will not automatically succeed in this competitive global market, which is why they need support and a strategy that will help our domestic firms succeed.

Beyond clean technology, Canada has an opportunity to combine its resource wealth. Its strength in scientific research and technology, and strong environmental regulation, allows for exporting clean energy to emerging markets and successfully abating emissions released through the industrialization processes of today's emerging economies.

A successful transition to a low-carbon economy will mean minimizing these risks and maximizing the benefits through the right policy choices.

This report lays out the Canadian Chamber of Commerce's views on how to get Canada's transition right

Climate change is a complex and multifaceted issue. This report focuses on a single question: what are the general principles that should guide public policy in order to reduce greenhouse gas emissions in Canada at the lowest cost to our economy and way of life? To form the insights and recommendations in this paper we drew from a number of sources.

We considered the recommendations of our policy resolutions, which were submitted by our network of 450 chambers representing 200,000 businesses. After a screening process, these proposals were passed by at least two- thirds of the delegates at our Annual General Meeting (AGM). Due to this democratic process, we believe our policy resolutions represent a broad consensus on issues from businesses of all sizes, regions and industries in Canada.

Prior to the Canadian Chamber AGM this year, senior representatives of the provincial, regional, and territorial chambers of commerce convened a special meeting to discuss key questions around the energy and climate debate in Canada. Their insights and comments helped to shape this report.

Additionally, we drew on the expertise of our corporate and association members through the Canadian Chamber's Thought Leadership Roundtables series, particularly a March 2017 roundtable in Calgary on climate policy and an October 2017 roundtable on Clean Technology in Vancouver. Corinne Boone, President and CEO of Climate and Sustainable Innovation, conducted one-on-one interviews with a number of key corporations, associations, and research organizations to gain additional detail on the main themes of the report.

We drew on the substantial body of research and analysis that haves been conducted by governments, academics, and think tanks over the past few years.

We have grouped the insights from these chamber, association, and company representatives into five main themes.

1. **Getting the investment climate right**
2. **Getting fossil fuels right**
3. **Getting innovation right**
4. **Getting trade right**
5. **Getting governance right**

1. GETTING THE INVESTMENT CLIMATE RIGHT

Investment is at the heart of the global transition to a lower-carbon economy. New electricity generation, transmission or distribution infrastructure; carbon capture and storage technologies; retrofitting buildings to be more energy efficient and buying new fleets of electric vehicles; and installing charging stations. All of these measures to lower emissions are fundamentally about securing and allocating investment capital.

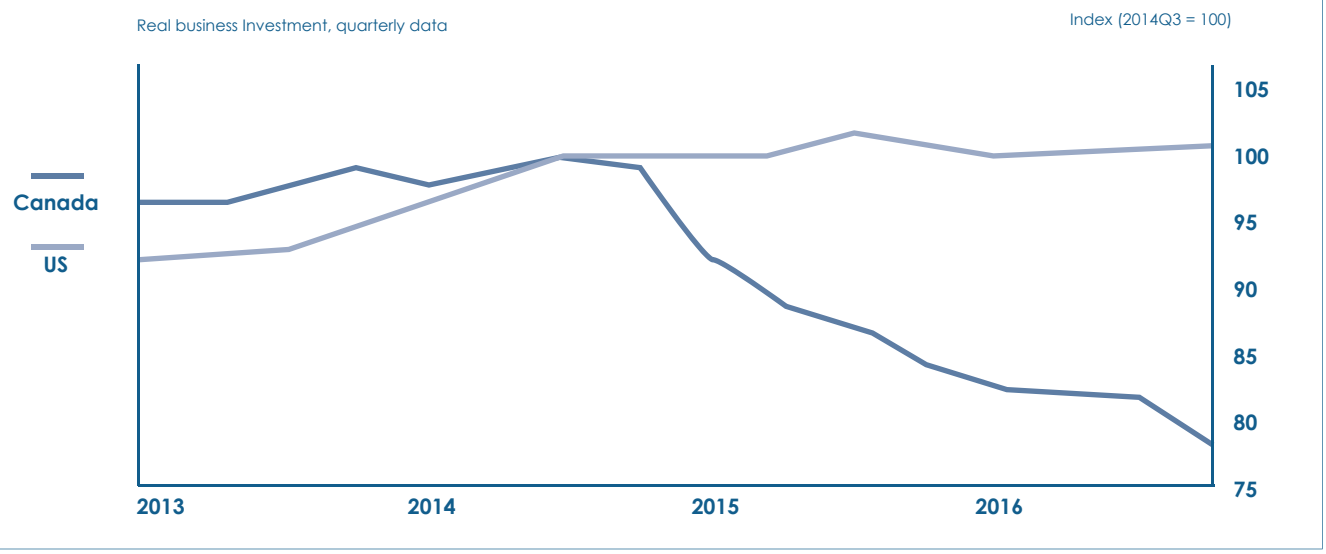
The Conference Board of Canada estimates that moving to a lower-carbon economy will require between $44 and $100 billion a year in additional investment, depending on what assumptions are made about technologies, policies, behaviors, and extent of emissions reductions. To put this in perspective, $100 billion is equal to almost half of Canada's current annual non-residential business investment.

Much of this massive spending will come directly from the private sector. Yet, since the end of the Great Recession, business investment has been a weak point in Canada's economy. Particularly concerning is the fact that growth in Canadian business investment has fallen behind the United States (see Chart 4 below).

Through tax revenues and royalties, business will also indirectly provide the funds that will support government investment in a lower carbon economy. This includes emissions intensive industries, such as oil and gas production. In a 2017 study, the Canadian Energy Research Institute estimated that Canada's oil and gas sector would contribute over $37 billion a year on average, in federal and provincial taxes from now until 2027. The importance of oil and gas to Canada's economy creates a paradox: while the oil and gas sector is undoubtedly a considerable source of Canada's emissions, if it fails to prosper, Canada will be hard pressed to find the funds needed to transform our economy.

Many of the factors that drive business investment are beyond government control. For example, a study by the Bank of Canada suggests that structural factors – an aging population, poor productivity growth and persistently lower oil prices – may be driving

Business Investment in Canada has been much weaker than in the United States Since mid-2014



persistent sluggishness in Canadian business investment. Governments do have one powerful lever to promote investment: the design of the policies, regulations, funds, and other programs meant to lower greenhouse gas emission and reduce energy use. The goal for these policies and programs should be to create a policy environment that facilitates investment in the infrastructure and equipment that will lower national emissions, while preserving Canada's competitiveness in attracting investment in the industries that will fund our transition. This will be a tricky balance to achieve.

Promoting business investment is not just key to job creation and economic growth, but is also crucial to achieve sustained and deep reductions in greenhouse gas emissions.

Our recommendations on how governments can create the right investment environment include:

Use carbon pricing, but recognize its limits

Carbon pricing is generally the best way to reduce greenhouse gas emissions at lowest costs.

The Canadian Chamber's network of chambers of commerce and boards of trade first voted to support a market-based approach to reducing emissions in 2011. Today, carbon pricing is the preferred approach to reducing emissions from a large range of industries and is supported by the Canadian Association of Petroleum Producers, the Mining Association of Canada, the Canadian Electricity Association, Canadian Manufacturers and Exporters, and the Business Council of Canada, among others. Businesses prefer carbon pricing over regulation as a means to reduce emissions because it provides a strong incentive to take action, while allowing each firm the flexibility to pursue innovative, low cost ways to achieve this goal. Using carbon pricing rather than regulation to cut emissions will lead to an estimated 2.5% boost to GDP.

The federal and provincial governments have been taking the right path by embracing carbon pricing as their primary approach to reducing emissions. However, there are limits to what carbon pricing can achieve. Carbon pricing works by creating an incentive to invest in energy efficiency or energy sources that produce fewer emissions. When there is already a strong business case to reduce emissions or alternative technologies are not readily available, pricing raises costs without incentivizing change.

1. RECOMMENDATION: Continue negotiations with the provincial governments to implement carbon pricing as the main measure to reduce greenhouse gas emissions across Canada.

Although ensuring pricing can address some of the unique economic and geographical constraints that shape the energy demand of some Canadians, a carbon price is ill suited to Northern Canada, where the problem is a lack of alternatives, not a lack of incentives, and the potential impact on climate mitigation is small.

In Northern Canada, the high costs of energy from diesel-run generators already provides a strong incentive for communities to look towards alternatives. Electricity prices in the Northwest Territories and Nunavut are 30% higher per kilowatt-hour the rest of Canada, while prices in the Yukon are also above average.

Increasing already high costs will damage the economy. Capital costs to develop a precious or base metal mine, important economic development opportunities for northern communities, are already 2 to 2.5 times more expensive than in southern communities with cheaper energy supply. In addition, operational costs are between 30% to 60% higher. Since Northern Canada only represents

0.3% of Canada's emissions, the payoff in terms of preventing climate change are small, while the costs are significant.

Providing funds to help communities invest in lower-carbon electricity and other forms of infrastructure would help to lower emissions while helping reduce the cost disadvantage faced by northern businesses. The federal government is pursuing this approach and has dedicated $10.7 million over two years to help northern and indigenous off the grid communities reliant on diesel power to build renewable energy projects. This is in addition to a $2.24 billion, five-year green infrastructure fund for First Nations communities. This represents the right way forward to reduce emissions in remote and northern communities.

2. RECOMMENDATION: Given the high costs faced by northern economies, as well as the fact that they make a marginal contribution to Canada's emissions, consider allowing for alternatives to carbon pricing in northern Canada.

Carbon pricing must be designed with emission intensive, trade-exposed industries in mind, or else Canadian business in these sectors will face a significant competitive disadvantage compared to the United States.

Another limit of carbon pricing is emissions intensive, trade-exposed (EITE) industries. Because they are emissions intensive, they will be significantly impacted by a carbon price, while being trade exposed, meaning they cannot easily pass prices increases on to their consumers. As a result, there is a risk that carbon pricing will cause these types of industries to either move their operation or invest elsewhere. This is a lose-lose for the global climate and Canada's economy, as Canada will lose out on investment and job creation without realizing any reduction in global emissions.

Designing policies specifically to help EITE industries can help mitigate this problem. For example, the United Kingdom has an ambitious greenhouse gas reduction target of 57% from 1990 levels by 2030, compared to Canada's target of reducing emissions by 13% from 1990 levels over that same period. The country has managed to avoid the potential competitiveness impacts of their climate policy by monitoring the impacts on vulnerable sectors and providing targeted assistance in the form of free emissions trading permits, sector discounts or exemptions from national policies.

Protecting EITEs is a primary concern for Canada, especially in Alberta and Saskatchewan, where between 18% and 28% of GDP is vulnerable to carbon leakage, depending on the size of the carbon price assumed. One reason why the impact of the UK's climate policy on competitiveness has

been relatively small is that its largest trading partner, the European Union, was also implementing ambitious climate policies. Canada does not have this advantage and increasingly finds itself at odds with the United States. This divergence in policies with our largest trading partner puts Canadian firms at a greater risk of being disadvantaged by climate policies.

Below are three approaches to protect ETIEs

- Output-based pricing system – This is the approach being adopted by the federal government for EITEs. Instead of applying a carbon tax on every tonne of gas emitted, a company only pays a carbon tax when it emits more a baseline based on an industry average. This approach protects vulnerable sectors from the full impact of a carbon price, while still preserving the incentive to reduce them further.

- Sectoral agreements – This would entail reaching out to major trading partners to arrange similar actions, either on regulation, carbon pricing or other various options, to reduce emissions. Because jurisdictions are taking similar actions, the potential for carbon leakage is minimized.

- Exemptions or free permits – This would include exempting EITE industries from the broader GHG policy, completely or in part. Sweden, a pioneer on carbon taxes, has always applied a lower carbon pricing rate to industry than other sectors. Alberta and BC both provide an exemption on carbon taxes for farmers. Under a cap and trade system, providing certain EITE industries free permits, as is done in the United Kingdom, can also help adverse impacts.

The Early Action Program overseen by the federal government provided emission credits to companies that had reduced emissions between 1990 and 2006. The federal government may consider establishing a similar program to reward firms or sectors that have made good progress in recent years through emission offsets, which they later can use to achieve their compliance obligations.

Under the Pan Canadian Framework for Clean Growth and Climate Change, Canada's national plan to reduce emissions, the federal government and provinces have committed to assessing the competitiveness impact of the national program in 2020. Conducting sound economic analysis, as well as consultations with industry on the competitive impacts of climate policy, will be essential to informing this discussion.

3. RECOMMENDATION: The federal and provincial governments should continue to pursue separate policies for EITEs. Work on assessing carbon leakage and the competitive impacts of climate policies should begin now in preparation for a federal, provincial, and territorial discussion of the competitive impacts of climate policy.

Do not layer regulation on top of climate policy

Governments should trust the market and only apply regulation to reduce GHG emissions after conducting a thorough cost/benefit analysis.

Harnessing the power of the markets through carbon pricing allows businesses the flexibility to respond in a way that makes sense for their business and maximizes opportunities for innovation. Layering regulation on top of carbon pricing systems destroys this advantage by raising costs while reducing the freedom of businesses to respond to a carbon tax or undermining demand for emission credits in a cap and trade system.

A recent analysis by the Laurier Center for Economic Research and Policy Analysis looked at the cost-effectiveness of various policies. It found that carbon pricing was the lowest cost option. To reduce Canada's GHG emissions by 10% with a carbon price would cost $175 per tonne. That same emissions reduction would cost between $200 and $1,000 per tonne using a fuel economy standard, clean fuel standard or zero emission mandate.

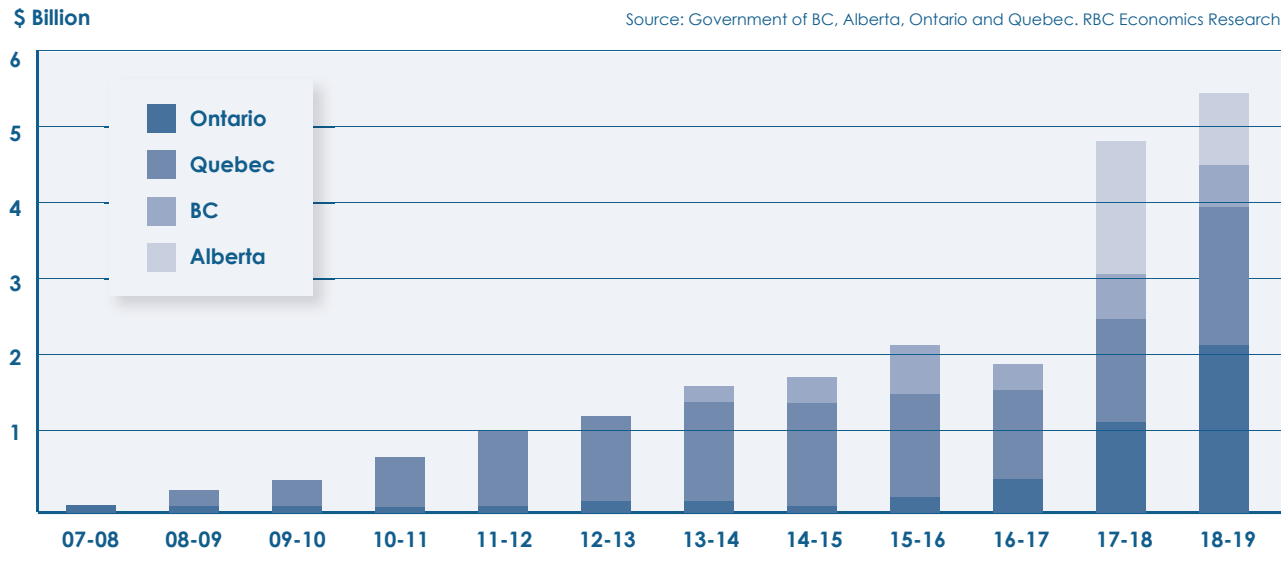
In addition to national carbon pricing, the federal government is also proposing:

- A national Clean Fuel Standard, which would reduce the overall life-cycle carbon intensity of fuels by approximately 10-15% by 2030. Unlike similar policies in place in Canadian provinces or the United States, the proposed federal standard will apply beyond the transportation sector to fuels used by industry and buildings
- Regulations to end the use of coal in electricity generation by 2030
- Regulations to reduce emissions natural gas-fired electricity generation
- Proposed regulations to address methane and volatile organic compounds
- Lowering the threshold for businesses to report the greenhouse gas emissions

Layering regulations on top of carbon pricing has trade-offs, both for the economy and the environment.

In some cases, regulation can remove one of the greatest benefits of carbon pricing: the flexibility it offers businesses to find the lowest-cost way to reduce emissions. Consider the example of a large industrial consumer of natural gas in Ontario, they would subject to the Ontario's Cap and Trade system. Under a proposed federal Clean Fuel Standard, they would also be required to reduce the carbon intensity of any natural gas they use by adding renewable natural gas or another alternative to their mix. Rather assessing what emissions reduction opportunities their facility could pursue at lowest cost, possibly earning them credits to trade on the cap and trade market, this facility would have to put all their attention into meeting the low carbon fuel standard.

Carbon Levy Revenues



Meeting a renewable fuel standard will mean securing a source of biofuels. Meeting this demand through domestic production would have implications for the forestry and agriculture sectors. Meeting this demand through trade would have implications for energy security.

Meeting regulations may have unintended consequences and trade offs. For example, in the chemical manufacturing industry, the technology to reduce sulphur dioxide emissions – a pollutant that causes acid rain – increases energy use and consequently increases greenhouse gas emissions.

Minimizing unintended consequences and understanding the trade offs of policy approaches requires that Governments trust the market, and only apply additional regulation in those cases where such measures would clearly complement carbon pricing. This would mean conducting a transparent cost/benefit analysis when proposing new climate regulation that considers not only the impact of the policy, but also the cumulative impact of the policy and how the proposal would align with provincial or territorial government measures.

4. RECOMMENDATION: Governments should avoid layering regulation on top of carbon pricing without extensive analysis of how this will influence the cost of the measure and trade-offs with other social and economic goals.

Put the money towards the mission

Carbon pricing revenues should be applied to reducing the economic impacts of climate policy or else further reducing emissions; otherwise, it is simply an excuse to raise taxes.

Carbon pricing is set to become a significant contributor to government coffers. The combined revenue from carbon pricing regimes in Ontario, Quebec, BC, and Alberta are set to reach $4.8 billion in 2017/2018. If all goes according to the federal government's plan, by 2022 the carbon pricing floor across Canada will rise to $50 per tonne, resulting in a substantial boost to provincial revenues. In Alberta and Saskatchewan, provinces with a high concentration of emission-intensive industries, revenues from carbon taxes could rival royalties from the oil and gas sector.

Canadian Chamber members accept this new form of taxation because they understand the need to reduce emissions. However, carbon pricing cannot be used as an excuse by governments to simply raise revenue. Acceptance of carbon pricing depends in part on how the funds are spent. For many of our members, the funds must be applied to either achieving further greenhouse gas reductions or mitigating the economic downsides of climate policies.

Over the short term, the best way to use the carbon price is to mitigate the impact of higher costs on Canada's investment environment and preserve GDP growth is through lowering corporate or personal income taxes. Using revenues to support the

development of technologies and processes that can help businesses make deeper cuts to emissions at lower costs would help boost Canada's competitiveness, despite these benefits taking longer to materialize. Both these uses of carbon revenues have support among Canadian Chamber members. In fact, they are in favour of this, with tax cuts providing relief in the short term and investment in innovation reducing emissions, and costs over longer term.

While larger Canadian enterprises and multinationals have been preparing for a carbon tax for years, many small and medium-sized businesses are struggling to understand how these new policies will affect their bottom line. Small and medium-sized businesses often lack the expertise, time or resource to take effective action on reducing the greenhouse gas emissions in a cost competitive manner. Given that 98% of Canadian businesses have less than 100 people, effective action on climate change will mean targeting policies to the particular needs of this sector.

5. RECOMMENDATION: Carbon pricing systems cannot be a tax grab. Provincial and federal governments should use revenues to reduce the costs of climate policies to businesses and households through tax rebates or programs aimed at incentivising investments in energy efficiency and other climate technologies. Programs to help small and medium sized businesses understand their greenhouse gas emission and invest in new programs, processes or technologies should be a priority.

Consider the bigger picture

Consider the broader context in which climate policies are being introduced and as climate costs rise work with other levels of government to reduce costs to business in other areas.

Companies consider a broad range of factors when making investment decisions. Multinational firms in particular have a unique insight on how different jurisdictions compare, since national branches are directly competing against operations in countries for investment dollars from headquarters. These firms consider several factors when making investment decisions:

- The availability of people with needed skills and the cost of hiring them
- Overall market conditions, such as sales growth or prices
- The cost of inputs such as energy, materials or feedstock
- The share of profits that are taken up through municipal, provincial/state or federal taxes or royalties
- The clarity, certainty, and timeliness of regulatory and permitting processes
- The proximity of customers and the cost of transporting final products or inputs
- Political risk and strength of the rule of law

Small businesses or service sector industries that must be located near customers face a similar range of factors when deciding to invest in new equipment or expand their operations. Even if they do not have the option of moving to another jurisdiction, if faced with rising costs or other barriers they may choose to delay or cancel investments.

Canada's strengths and weaknesses on the factors that support investment vary by region and industry. Considered in isolation, a policy like a carbon price will not determine an investment decision. The impact of a carbon price or regulation may be relatively minor and a disadvantage in one area, such as a higher tax burden, can be offset by having a clear edge in another.

But climate policies are not being imposed in isolation, how they affect investment decisions from the largest multinational business to the local 'mom and pop' stores will depend on how well Canada is performing on the other factors that go into making an investment decision. A climate policy introduced in a context where many other factors support investment will have a very different impact than if that same policy adds to a growing list of disadvantages.

In July of 2017, the presidents of the national, provincial, territorial, and regional Chambers of Commerce across Canada sent a letter to the Prime Minster raising concerns over the rising cost of business. The letter expressed strong support for action on climate change, but underscored a list of piling up concerns about Canada's ability to attract investment: high labour costs, low productivity growth, and rising costs from a variety of businesses.

"Resonating throughout the Canadian Chamber Network is a consistent message: the cost of doing business in Canada is rising. This concern is not limited to the costs generated by the fight against climate change, but reflects the serious cumulative impact of the growing burden posed by fees, taxes and regulations the private sector is being asked to bear. Our members are deeply worried about their ability to both grow their businesses within Canada or compete for investment and customers from abroad."

The solution proposed by the Chamber presidents was not to delay action on climate change, but to pay attention to the bigger picture. This will mean examining the range of government imposed costs on businesses and assessing whether there are ways to reduce this burden as a way to offset cost increases from climate policies. One approach to consider is Ontario's proposed Cutting Unnecessary Red Tape Act, which would mandate that for every $1 of new government costs, ministries would have to establish an offset by cutting other costs by $1.25.

Increasing costs to businesses is an issue that spans across all level of governments. When listing the policies and regulations that are adding cost and weighing down investment decisions, Canadian Chamber members inevitably list some issues that are federal and others that are provincial, territorial or even municipal. A Pan-Canadian approach to assessing government imposed costs on businesses could identify areas where greater coordination between jurisdictions is needed and could have a significant impact on costs.

6. RECOMMENDATION: The federal government should collaborate with provincial and territorial governments on identifying areas to reduce government-imposed cost to business, including through streamlining regulatory processes and harmonizing requirements.

For the resource sector, regulatory certainty is a crucial part of the bigger picture.

Canadian Chamber members are particularly concerned about the overall competitiveness of a key group of industries: natural resource developers and related sectors, such as mining, oil and gas production and transport, and certain classes of manufacturing, such as the production of chemicals. These sectors represent a significant share of Canadian GDP and exports, and provide thousands of jobs across Canada. In 2016 the mining industry

directly and indirectly employed 596,000 people, while in 2017 the oil and gas sector supported 624,000 jobs both directly and indirectly, with the chemical sector supporting 525,000 jobs in Canada.

The oil and gas sector in particular has seen a substantial exit of foreign capital beginning in 2016. Other sectors, such as chemical manufacturing and forest products, could be poised to make additional investment in Canada. A range of factors, not least of all commodity prices, determines all investment decisions. Interviewees from mining, energy, and related industries, stressed the importance of clarity around the policies and regulations as a crucial factor in supporting investment. The current uncertain environment is posing a major deterrent to investment. If the regulations or policies guiding project development are unclear or changing, companies will lack a foundation of information they need to assess these other forms of risk, and may choose to spend investment dollars elsewhere.

During the course of our interviews and roundtables with members, the following regulations and policies were mentioned as a source of uncertainty for Canadian business.

- An evolving understanding of the Crown's Duty to Consult with Indigenous Peoples and how to accommodate indigenous rights in the regulatory process
- Reform of the Canadian Environmental Assessment Act, the main federal government's legislation guiding environmental assessment processes
- Reform of the National Energy Board Act, the federal legislation guiding the regulation of interprovincial and international oil and gas pipeline and electricity transmission lines as well as liquefied national gas exports
- The precedent set by the National Energy Board's review of the Energy East pipeline project, where the scope of the issues to be assess were changed over the course review process
- The review of the Fisheries Act
- The recently proposed changes to taxation on private corporations
- Policy development in the North
- Ongoing development of range plans for caribou at the Provincial level
- Ongoing development of climate change policy in Manitoba, Saskatchewan, the territories, and the Atlantic

Governments, legislators, and court decisions are working to provide greater clarity on the proposed direction of these issues and policies. It will take time for businesses to understand how these policy reforms will take shape and how they will relate to one another. In the meantime, the uncertainty of the regulatory system in a number of areas will influence how increased costs from climate pricing are perceived.

7. RECOMMENDATION: Work with the provinces and territories to provide clarity on key government policy and reforms that are increasingly impacting the resource sector.

2. GETTING FOSSIL FUELS RIGHT

The heart of this country's debate over climate policies is the question of what role Canada will play in global coal, oil, and natural gas markets. Burning fossil fuels is responsible for two thirds of global greenhouse gas emissions. Consequently, some Canadians believe that the solution to climate change is to end the production and use of fossil fuels in a short time frame, years rather decades.

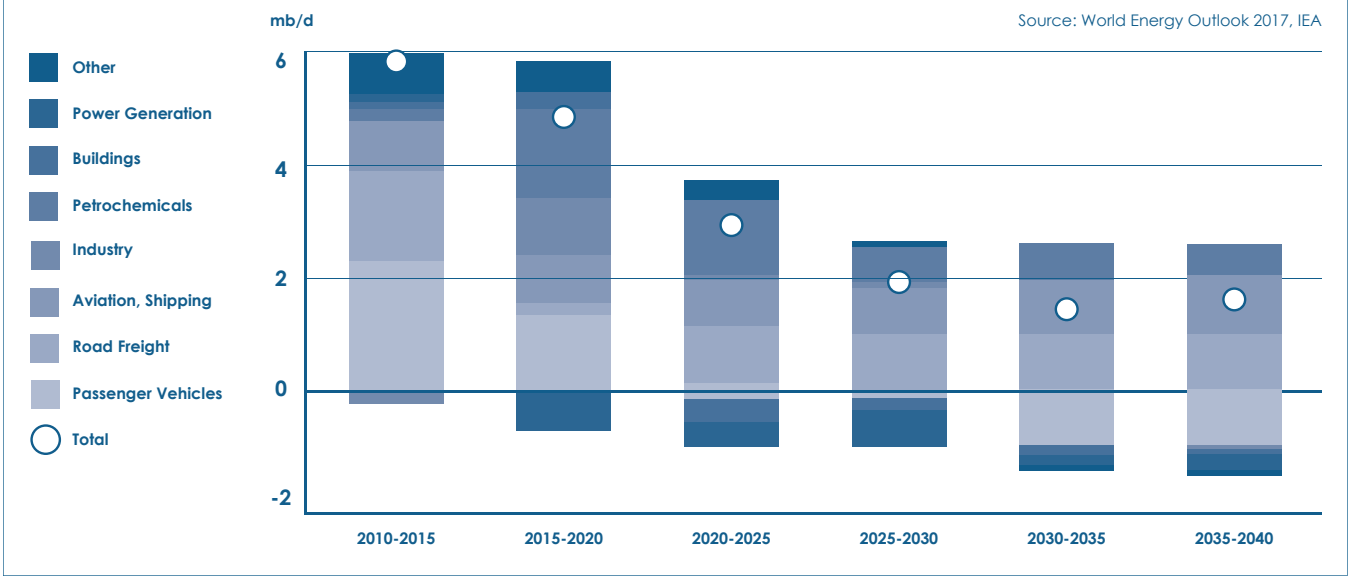
The Canadian Chamber has a different position. In our member's view, Canada's climate policy should focus on reducing global greenhouse gas emissions at the lowest cost to Canadians and our way of life. In some cases, where alternatives to fossil fuels are readily available and cost competitive, this will mean moving away from the use of coal, oil, and natural gas. But there are many sectors where cost effective alternatives to fossil fuels are decades away from being viable or may not be possible at all.

In those instances, Canada can play a role in reducing global greenhouse gas emissions by producing energy commodities to the highest environmental standards and trading them with the rest of the world. Canada's energy sector combines abundant fossil fuel resources with excellent expertise in environmental technologies and some of the strongest environmental regulations in the world. If anyone can lead on finding a way to produce fossil fuels while taking strong action to reduce greenhouse gases, it is Canada.

Markets for coal, oil and natural gas are changing, but the era of fossil fuels are not over

When people think about renewable or low carbon energy, they often mean technologies used for electricity generation, such as solar panels or wind turbines. Coal is the dominant fuel for power generation around the world, representing 40% of the total electricity production. As cost competitive alternatives for coal power generation become more widely available, the use of coal for power generation is set to decline. For example, Bloomberg New Energy Finance argues that solar power is at least as cheap as coal in Germany, Australia, and the United States, with the cost expected to fall a further 66%

Change in global oil demand by sector (2010-2040, New Policies Scenario)



by 2040. Over the next twenty years, almost three quarters of new investment in electricity generation from now until 2040 will be invested in solar and wind.

For natural gas, the other fossil fuel widely used for electricity generation, the transition to a lower carbon economy could very well drive demand instead of depressing it. In North America, cheap natural gas has emerged as the largest competitor for coal power, which has helped the United States reduce their greenhouse gas emissions by 7% since 2005. Between 2002 and 2016 the United States alone closed 531 coal plants, representing total generation capacity greater then that of BC, Alberta, and Saskatchewan combined, largely due to competition from cheap natural gas and renewables.

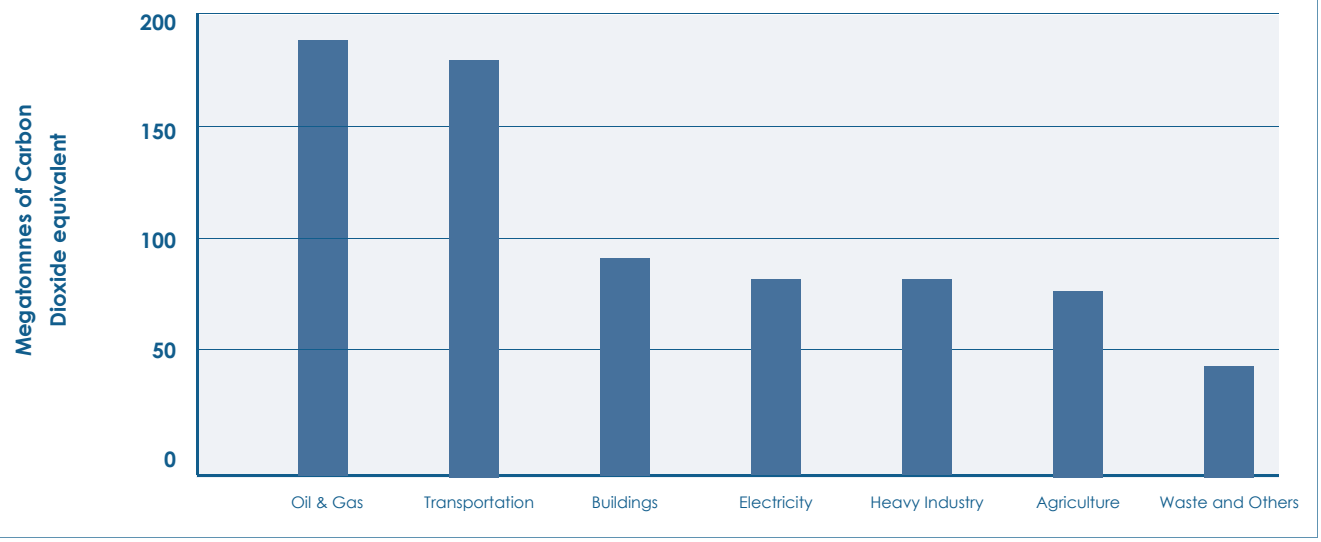
Natural gas electricity generation is often an important support for solar and wind power. Natural gas plants, which can ramp up and down relatively quickly, can help the electricity grid deal with the unpredictable nature of wind and sunshine. Overall use of natural gas for electricity production is expected to increase around 16% over the next 20 years even as the cost of wind and solar power continues to fall.

Fossil fuels are not just used to generate electricity. 74% of steel is made with coking or steelmaking coal, including steel used for many green products like electric vehicles or wind turbines, the creation of which uses approximately 100 tonnes of steelmaking coal on average. Increased demand for renewable energy and electric vehicles may decrease demand for coal to fuel power plants, and increase it for coal used to make steel.

Very little crude oil is destined to produce electricity, with only 4% of global electricity fueled by petroleum. Instead, petroleum products are most often used as a transportation fuel and feedstock for chemicals manufacturing. Alternatives to oil-fueled internal combustion engines are making headway in some parts of the transportation sector. Light duty electric vehicles accounted for only 1% of car sales in 2015, but Bloomberg New Energy predicts that by 2040 they could represent over half of new cars sold. However, given that the average cars stay on the road for over 11 years, it will take many years for growing sales of electric cars to translate to electric vehicles on the road. Electric vehicles tend to grab all the attention, but simple energy efficiency will have a powerful impact on oil demand.

Canada's GHG Emissions by Sector, 2015

Source: Government of BC, Alberta, Ontario and Quebec. RBC Economics Research



Passenger vehicles account for about a quarter of total oil demand. Even as oil demand from cars is projected to fall, the International Energy Agency predicts that the world will still consume more oil in 2040 than it does today. This is due to increased demand from petrochemical manufacturing, road freight, aviation, and shipping (see chart below). Trucking alone accounts for one fifth of oil demand and has been the key driver of growth in oil demand since 2000. While companies like Tesla are working on developing electric heavy duty trucks, energy efficiency and bio-fuels could play a role in reducing demand, as oil will continue to be the main fuel for the trucking sector for the foreseeable future.

Canada can push the envelope on developing lower carbon fossil fuels

Markets for coal, natural gas, and oil are changing, but they are not going away. Consequently, acting effectively on climate change will mean figuring out how to lower the greenhouse gas (GHG) emissions from using these fuels where alternatives are not available. Fortunately, Canada is already leading on this front.

Carbon capture and storage will be a crucial technology to limit the impacts of climate change. According to the International Energy Agency, some of the world's most carbon-intensive sectors "may have no alternatives to carbon capture and storage for deep emissions reductions." This is because industries like steel, cement, chemical manufacturing and refining release emissions due to the chemistry of the production processes. In these cases, substituting coal, petroleum or natural gas for renewables is simply not an option.

Canada has nearly a fifth of the 22 large-scale CCS plants operating or under construction around the world. The Pembina Institute, an environmental advocacy group, in recognition of the opportunity to create a carbon capture, utilization, and storage hub in Alberta, has argued that CCS are key to the transition to a decarbonisation society. If CCS are not fully utilized as a key mitigation strategy, the costs of climate change mitigation are estimated to increase 138%. Similarly, the IEA has argued that CCS could account for as much as 13% of the global GHG reduction to achieve a two-degree scenario. Currently, Canada is a leader in CCS technology. This not only means that our industries are well positioned to continue to reduce GHGs from the energy sector but that Canada could become an exporter of CCS technology to emerging economies, which will increasingly rely on the technology to offset the GHG emissions associated with industrialization.

8. RECOMMENDATION: Provincial and federal governments should continue to support new technologies that will help our resource sector create clean technologies that will reduce the GHG emissions of essential energy inputs and develop an export strategy of Canadian CCS technology as it matures.

Think locally, measure our impact on the climate globally

Canada is in a unique position because most of the fossil fuels we produce are not consumed by Canadians, but are traded elsewhere in the world. In 2016, over four fifths of Canada's crude oil, and around half of our natural gas and coal was exported.

This presents a unique challenge for Canada as we work to reduce our greenhouse gas emissions. The oil and gas sector is the largest emitter in Canada, producing almost 190 megatonnes (Mt) of carbon dioxide equivalent in 2015. However, because so much of Canada's oil and gas is traded, limiting our view to what is happening within Canada puts

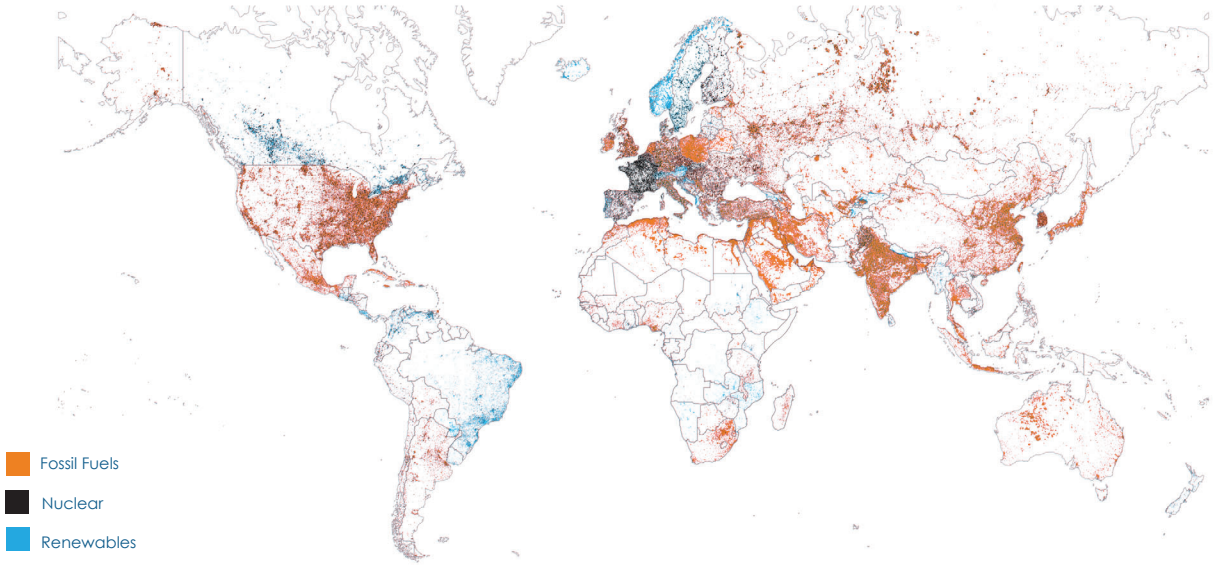
us at risk of overlooking why reducing GHG emissions in the oil and gas sector is of global importance. To this end, the Paris Climate Change Agreement committed 175 parties to working together to lower GHG emissions nationally and globally. As a major exporter of environmentally competitive oil and gas products the federal government should measure GHG emissions that are not only reduced within our borders, but GHG that are eliminated as a result of exported Canadian oil and gas that are used in other nations to replace GHG heavy energy systems like coal and diesel power.

9. RECOMMENDATION: The federal government should consider all real reductions regardless of whether they are domestic or international. All GHG reductions lead to solutions and often at lower costs, therefore should be considered.

Recognize that hindering the transportation of oil and natural gas is not a viable climate strategy

Transition is clearly underway. What is less clear is how long this transition will take and how Canada, a major exporter of fossil fuels, should position itself amidst this transition. Bloomberg New Energy Finance estimates that by 2050 fossil fuels will provide nearly 30% of the world's electricity. It is clear that in the coming decades oil and gas will continue to have an important role in our energy system. Furthermore, there are some sectors, such as aviation, that may never be able to move completely off petroleum. Despite being landlocked and trading at a discount of $15 billion a year, the energy sector in Canada contributes 11% to Canada's Gross Domestic product. Investments in clean energy technologies and innovation necessary to decarbonize the economy depends heavily on the health of the oil and gas sector.

What Powers the World?



https://www.gocompare.com/gas-and-electricity/what-powers-the-world/

Increasingly, the economic prosperity of the energy sector and the capacity of Canadians to combat global emissions depends on our ability to transport our oil and gas products to tidewater. At present, the United States receives 100% of our gas imports and nearly 100% of oil, because we cannot ship it anywhere else effectively. However, according to BP, the United States are on path to be energy-self-sufficient by 2023 and oil self-sufficient by 2030. They are achieving this through a combination of renewable energy and using technologies to frack oil and gas. At the same time, the market itself is shrinking. Energy-efficiency and changing patterns of industrial production will see that by 2035, the United States' economy will be nearly 150% larger than today, but only require the energy it needed in 1985. Consequently, major infrastructure investments in the transportation of our oil and natural gas products will be necessary to create the economic prosperity needed to support the transition to a lower carbon economy. In this sense, the development of pipelines and related infrastructure should be considered as part of Canada's strategy to get 'innovation right'.

According to the International Energy Agency, energy efficiency allowed the world to avoid burning 205 million tons of coal and 870 million barrels of oil in 2015

3. GETTING INNOVATION RIGHT

The economic reality is that Canada is fast approaching its economic capacity, meaning that capital and labour are fully employed, and there is no large pool of labour or capital funds waiting idly to be directed toward these required investments. The simple fact is that Canada is unable to leverage the funds, capital, and labour resources required to generate these investments without drawing funds and productive capacity away from other economic activity.

Innovation will be a key ingredient in improving the productivity of Canada's economy, and ensuring dynamism for both capital and labour. Without improvements in innovation, massive investments in emission reductions could lead to increased interest rates, a higher dollar, and upward pressure on labour and input prices. In other words, without increasing the capital generated from our profitable sectors of the economy, like oil and gas, and creating innovation, GHG reduction technology and investment will crowd out investment in other areas of the economy.In developing a strategy towards innovation, we must ensure a balance between utilizing disruptive R & D technologies and encouraging the wide scale adoption of technologies that are already here.

Autonomous vehicles, block chain, and artificial intelligence are headline grabbers, and are poised to radically change our world. However, policy-makers and businesses should not lose sight of the progress that has been made through incremental innovation and promoting the mass adoption of existing technologies. For example, between 2002 and 2016 the United States has closed 531 coal plants. To put this in perspective, this is more the combined electricity capacity of BC, Alberta, and Saskatchewan Disruptive energy technologies like solar panels and wind turbines played a role, but the main driver was low natural gas prices and low growth in

electricity demand. Both these trends were driven largely by incremental innovations, rather than disruptive technologies. For example, low natural gas prices were caused by the combination of hydraulic fracturing and horizontal drilling, both of which have actually been around since the 1970s, which unlocked new low cost natural gas resources.

The slow but steady progress the world has made in energy efficiency is often underrated. According to the International Energy Agency, energy efficiency allowed the world to avoid burning 205 million tons of coal and 870 million barrels of oil in 2015. Despite the fact that the population has grown, economies are larger and people are driving more vehicles over the last 15 years, energy consumption in IEA member countries has basically been flat. Energy efficiency is a key component of this reduction in energy consumption. In particular, Canada's Office of Energy Efficiency noted that since 1990 energy efficiency in heating and cooling, appliances, and transportation has offset 85.4 Mt of emissions and added 37.6 billion to the economy in 2013. As many of our natural resource, industries, such as mining, are energy intensive; energy efficiency is perhaps one of the more promising measures of GHG reduction at our disposal.

Without incremental increases in energy efficiency, energy consumption would have risen 12% over this time-period. Going forward, it will be important that innovation be used to achieve:

- Lower carbon natural resources, including fossil fuels, which will help Canada contribute to the fight against climate change
- Low carbon Canadian technology firms that will drive the economy
- Focused on a balance between new technologies and more incremental technologies, in addition to practices, such as conservation and energy efficiency

4. GETTING TRADE RIGHT

Canada cannot afford to be inward looking when it comes to reducing greenhouse gas emissions.

When it comes to greenhouse gas emissions, Canada faces a paradox. We are one of the world's largest emitters of greenhouse gases on a per capita basis, yet contribute only 1.6% to global GHG emissions. Even if Canada meets its GHG reduction targets, without a coordinated international response to reducing emissions Canadians will still face the impacts of climate change. We simultaneous have a responsibility to act, yet little power to stop climate change by focusing on domestic action alone.

Canada faces a second challenge, in that we have relatively few opportunities for low cost GHG abatement compared to many other nations, particularly developing countries. The composition of our economy, our climate, the structure of our cities, and the size of our country will make it relatively expensive to reduce emissions in Canada. To meet Canada's emission reduction targets, the economy will have to reduce emissions by 219 Mt by 2030. To give a sense of the magnitude of these reductions, completely decarbonizing Canada's buildings and heavy industry would reduce emissions by only 160 Mt based on current level. It will be difficult for Canada to achieve these deep emissions cuts without causing serious disruption to Canada's economy, including job losses in many sectors.

These challenges lead to a familiar conclusion for Canada; we cannot rely on our domestic market alone. Canadian government and businesses must look to strategic partnerships beyond our borders, through trade and other means, in order to achieve our greenhouse gas reduction goals.

What forms could international partnerships on emissions take?

Article 6 of the Paris Agreement refers to Internationally Traded Mitigation Outcomes. While the definition of an ITMO has yet to be established, there are a number of forms this type of partnership could take.

The Western Climate Initiative – which coordinates trade in carbon permits between California, Quebec, and Ontario – is widely held up as an example of how Article 6 of the Paris Agreement could be applied. Each government issues a certain number of permits to businesses that participate in their provincial or state's cap and trade market. Businesses that do not have enough permits to cover their emissions are allowed to trade with businesses with excess credits in any of the three jurisdictions. Expanding the supply of permits through linking bring down their cost.

Another way Article 6 of the Paris Agreement could come into play is through the use of offsets: emissions reductions made by one entity that are traded to another. The Paris Agreement is proposing the Sustainable Development Mechanism, a program that will allow a national government to invest in a project that would reduce greenhouse gas emissions happening in another jurisdiction in exchange for the credit for the emissions reductions. Businesses can also use offsets to fulfill a regulatory mandate or on a voluntary basis.

A third form of international partnership involves climate finance. These are funds given by industrialized countries to emerging economies. While industrialized economies have been the source of the majority of emissions, it is rapidly emerging economies like China and India will drive emissions growth in the future. Climate finance helps to create the energy systems that will counter potential future emissions from emerging economies and expands the clean technology market.

Businesses and governments need to make the case for free trade in emissions reductions and offsets.

The Paris Agreement is an international treaty negotiated by the United Nations that seeks to coordinate global action on reducing greenhouse gas emission. One of the most important aspects of the treaty was Article 6, which allows countries to cooperate on emissions reductions. The exact form of this cooperation is currently being defined by negotiators under the Paris Agreement process but is generally understood to allow for the exchange of carbon credits or offsets over national borders to meet emission reduction targets.

The federal government has stated in the Pan Canadian Framework on Clean Growth and Climate Change that it intends to use international emissions reductions as part of its national strategy. The advantage to Canada would be access to emission reductions opportunities at a lower cost than what can be achieved at home. For example, one study concluded that the average price of permits in Ontario $18 per tonne in 2020 if companies had access to permits from Quebec and California, compared to an average prices of $74 per tonne if they do not.

Many checks and balances need to be in place in order for international exchanges to be a credible way to reduce global greenhouse gas emissions. A system needs

to be in place to ensure that the carbon credit represents a real incremental reduction in greenhouse gas emissions, and is not rewarding a project that would have occurred in any case. Accounting systems must be developed to avoid fraud in the form of selling the same emission reduction multiple times. A large part of the implementation of the Paris Agreement will mean developing the rules and systems that will support these types of international exchanges.

While the advantage of international exchanges in emission permits is clear, the public acceptance of this approach should not be taken for granted. Trade, immigration, and international exchanges of all sorts have become contentious issues. Climate Change Action is not without cost, despite having the lowest electricity prices in the world, decisions on adding renewable power supplies to the grid and displacing other forms have knock on impacts for rate payers. Moreover, the withdrawal of the United States from the Paris Agreement also puts pressure on the Government to maintain climate policy action when many Canadians may feel doing so puts Canadian industry at a disadvantage against the United States. Creating and nurturing public support for these policies will require the following:

- Clear communication of how energy decisions will affect ratepayers, and provisions to shield ratepayers from any sudden shock to retail energy prices

- Due consideration of where Canada can have the greatest impact on its emission reduction without harming the competitiveness of our economy, with particular focus on educating the public on the role Canada can play in reducing GHGs in other nations, not only our own

- Alleviating the pressure on Canadians and locating the best abatement options by entering into agreements, projects, and trade relations with other nations

On trade, policy decision-makers should recognize that Canada produces the most electricity from renewable sources than any G7 country. In fact, 80% of Canada's electricity comes from non-emitting sources. This is a huge asset and it means that Canada can manufacture low carbon commodities that can be exported to ensure that the significant growth being experienced in non-OECD countries does not create unsustainable consumption. For instance, right now India's GDP is 25% of China's, but within two decades it is forecasted to be as big as China is today. Canada can play an important role in using our non-emitting electricity to offset the increased carbon footprints as new nation's pursue middle class habits of consumption. Trading low-carbon commodities would not only be good for Canadian producers and create jobs, but if measured as part of our emission reduction strategy, could play a big role in ensuring Canada meets its Nationally Determined Contributions for the Paris Agreement.

However, to ensure that our contribution to the decarbonisation of global consumption is recognized Canada must take a leadership role in the Paris Agreement. At present, international GHG accounting is palpably biased against energy exporting nations because it fails to differentiate between production- and consumption-driven emissions. This disadvantages Canada – a large net energy exporter – and absolves others around the world from the implications of their consumer choices. Further, as more and more metals are utilized in the transition to renewable energy sources, it will be all the more important to ensure our impact on reducing GHG produced through consumption is recognized, and all the more important that we continue to leverage our non-emitting energy sources.

In particular, the transition to a low carbon economy will be a boon to the global mining industry. Many low carbon technologies and renewable energy systems require specific metals and minerals to function. An electric car requires four times as much copper as a

conventional vehicle. For an equivalent installed capacity, solar and wind facilities require up to 15 times more concrete, 90 times more aluminum and 50 times more iron, copper, and glass. Demands for these materials will only grow in years to come and as a world leader in the mining industry, Canada is well positioned to ensure these materials are excavated and produced with a lower carbon footprint compared to mineral production elsewhere.

For many other G7 nations, "much of the pollution associated with mining is outsourced to regions where the environmental impact is uncontrolled". However, many of Canada's mines are not only located within our borders, but we are leaders in developing engineering and environmental practices to lower the footprint of the industry. As the world starts using more metals and minerals in their quest to lower emissions, Canada will provide both these materials and the know-how on how to extract them in the best way possible.

10. RECOMMENDATION: The federal government should help Canadian producers develop a clear export strategy to ensure our low carbon commodities can reach global markets as part of GHG reductions strategy.

11. RECOMMENDATION: Trade policy should be developed that allows Canada to maximize its abatement opportunities through the exchange of low carbon commodities and minerals, prudent investments in other jurisdictions that will lower GHGs, and climate financing.

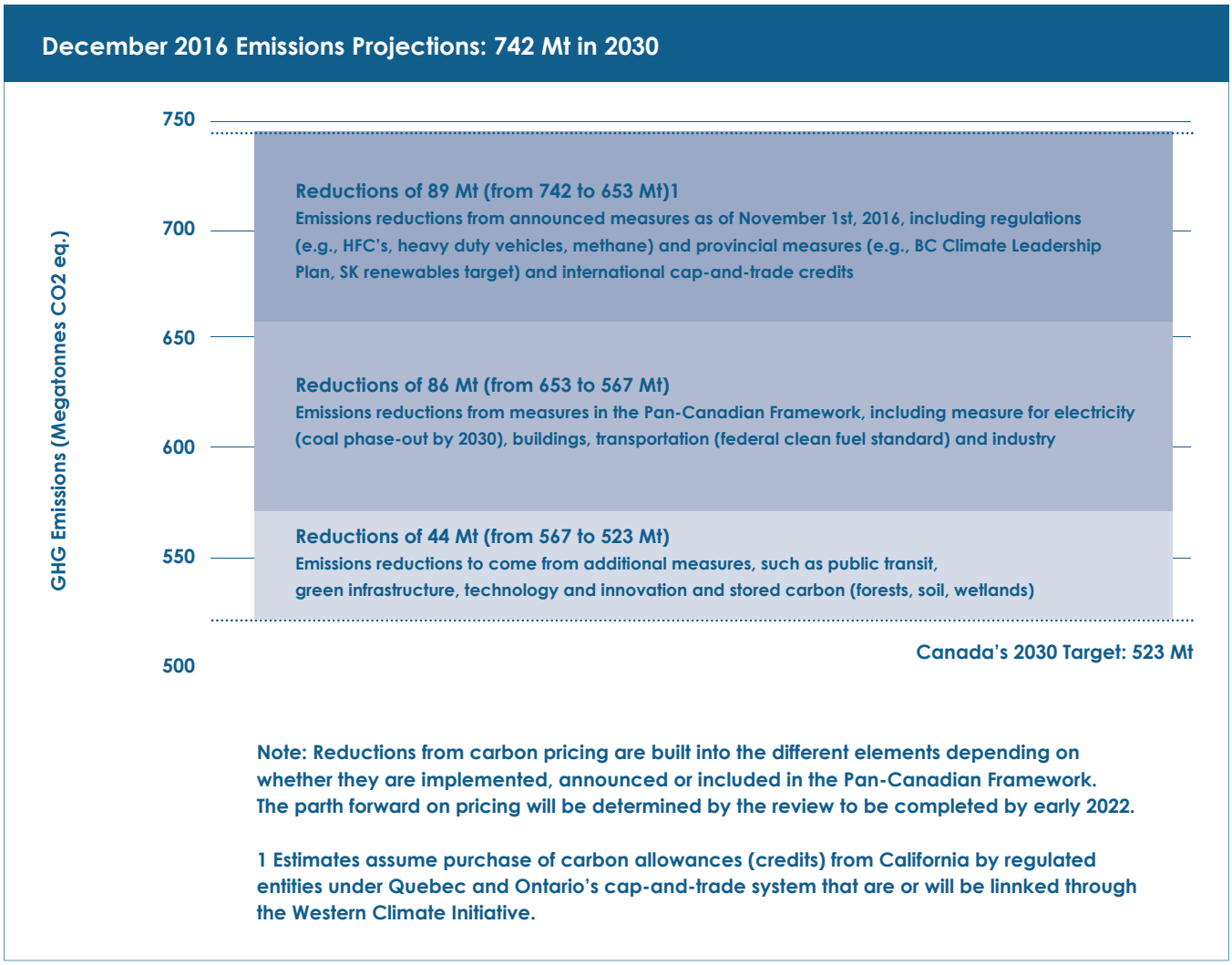
12. RECOMMENDATION: Canada must exert leadership on ensuring that consumption, not only energy production is considered in accounting for GHG emissions.

5. GETTING GOVERNANCE RIGHT

Under the Paris Agreement, Canada will need to update its contribution to the global fight against climate change every five years. The process should be predictable, transparent, and based on sound economic analysis.

The United Nations Framework Convention on Climate Change (UNFCCC) is an international body that coordinates global state action on this crucial issue. Negotiated under the aegis of the UNFCCC, the Paris Agreement is an international treaty that seeks to coordinate global action on reducing greenhouse gas emission and adapting to climate change in the post 2020 world. The agreement is truly global. Every nation on earth, with one exception, has indicated it will join. That exception, however, is an important one: the United States, the source of 15% of global emissions. The United States is currently party to the treaty but has indicated its intention to withdraw in 2019, the earliest date permissible under the terms of the agreement.

The heart of the Paris Agreement is the idea of Nationally Determined Contributions (NDC), a document that outlines how each nation plans to help the world limit global temperature increase. Through the NDC, each country must contribute something – a certain tonnage of emissions reductions, a certain percentage of renewable energy or even a particular project – towards achieving the Paris Agreement's ultimate goal: maintaining global temperature increases below 2 degree Celsius above pre-industrial levels.



Through the NDCs, the Paris Agreement links each nation's domestic climate actions to international law. The agreement envisions a cycle of reviewing global progress towards the two degree goal and updating the NDCs. Every five years, countries will be expected to make its contribution more ambitious, either by increasing emissions reduction target or contributing more in other ways.

Canada set its first NDC in 2015; targeting a 30% reduction in GHG emissions from 2005 levels by 2030. This translates to reducing emissions by approximately 219 tonnes of CO2e from projected levels, more the current combined emissions from Canada's buildings, electricity generation, and waste sector.

As the chart above demonstrates, the federal government is relying on provincial measures to achieve 40% of the emissions reductions promised in the NDC. Another 40% will come from the actions set out in the Pan Canadian Framework on Clean Growth and Climate Change, a national plan to act on climate change and help to achieve Canada's NDC, with the rest of the reduction coming from unspecified array of measures, such as public transit or green infrastructure.

Canada is currently not on track to meet the ambitious GHG reduction target listed in its NDC. In 2020, it will be expected to submit a new or updated plan to the United Nations under the Paris Agreement. Submitting a new NDC that is supported with credible domestic

policies will require coordination with provincial and territorial governments, who control many of the key policy areas. Submitting a credible national plan to increase the ambition of Canada's NDC without sacrificing our economic competitiveness will require extensive cost benefit analysis and consultation with businesses across Canada.

How this process is governed will be crucial to its success. In 2016, when 11 of the 13 provinces and territories signed the Pan Canadian Framework, the new Liberal federal government benefited from sympathetic governments in the largest provinces, particularly Premier Notley and the NDP, that had promised an ambitious climate agenda for Canada's largest emitter. By 2020, Canada's political landscape could change, with elections expected in Quebec, Ontario, Alberta, and the federal government. A climate policy that shifts with the political winds would introduce even more uncertainty for business and undermine investment. More importantly, it would fail in the goal of mitigating climate change.

To create an environment that will support the massive amounts of investment needed to transition Canada to a low carbon economy, climate policy will have to be certain, with proposed changes based on evidence and extensive consultation with the private sector, Indigenous peoples, environmental groups, and other stakeholders. The formation of the policy will also need to bring together the federal government with the provinces and territories, who control many of the essential policy levers. There is even the need to coordinate action within the federal government, as various departments have different jurisdictions and areas of expertise in driving innovation.

The United Kingdom, shares Canada's political tradition, and has implemented ambitious climate targets, has established the Committee on Climate Change (CCC). The CCC provides independent advice on the development of national emission reduction targets, as well as recommending decarbonisation pathways. Part of the CCC's mandate is to provide independent analysis into the economics of climate change, in addition to engaging with a wide range of organizations to share evidence and analysis.

In the Canadian context, such an organization could provide a forum for ongoing engagement with stakeholders on climate change mitigation and adaptation. It could provide future governments with a foundation of decarbonisation pathways that had been rigorously assessed and subject to wide consultation with stakeholders. Since the provinces will be tailoring climate policy to the

needs of their regional economy, an advisory committee comprised of representatives from the different provinces, industry leaders, would prove an effective instrument in ensuring that the pathways of decarbonisation are reflective of the unique economic and ecological conditions of each province.

Conclusions on Climate Competitiveness

There is a consensus amongst Canadians on what we need to achieve to combat climate change, but there is also significant disagreement on how we will get there. Some argue that meaningful climate change action means nothing less than eliminating the production and consumption of fossil fuels. Others, the Canadian Chamber included, feel that we must take a principled approach that seeks to reduce GHG emissions at the lowest cost to Canadians, Canadian businesses, and our way of life.

Public policy will need to take a holistic view of the interaction of policies with the economy, society, and technological innovation. Our oil and gas sector holds invaluable assets, these assets will be crucial in ensuring we are able to meet the costs of an aging population, climate adaptation, and the changing patterns of work unleashed by a digital economy. As "every Canadian dollar increase in WTI price" would see a "gain of almost $1.7 billion CAD in our GDP", it is clear that oil and gas infrastructure, as well as competitiveness, must be a priority so we may realize the revenues needed to cover present and future costs. At the same time, meaningful climate action will require the development of technologies to reduce emissions and policies to ensure that the emission cuts we do make are cost effective.

There are also many other trade-offs that span economic, social, and ecological considerations. Transitioning to new energy models will displace workers in high emission industries and divert labour or capital from other economic sectors. Some projects that no doubt generate clean power also come with significant ecological impacts for local communities, from impacts on wildlife due to wind farms, to displacement of fish stock from hydroelectric dams. There are no easy or clear answers to these questions but this report has pointed to some directions that we would urge senior decision makers to pursue.

At its core, the transition to a lower carbon society will hinge on investment. Investment will be needed to not only fund low carbon technologies and new renewable energy systems, but it will be important to ensure there are enough funds to support the dynamism of labour and capital to sustain growth throughout the economy. Encouraging investment will require a clear regulatory system, limiting duplication of regulations at the provincial and federal level and ensuring that Canada's competitive advantage in non-emitting electricity is recognized globally.

Alternatives to fossil fuels are in some cases available and cost competitive, and can be used to move away from the use of coal, oil, and natural gas. Making the transition to these energy systems when they are cost competitive will strengthen our economy and help us realize our contribution to the Paris Climate Change Agreement. However, there are many sectors where alternatives to fossil fuels are decades away from being viable or may never be possible. As such, we must pursue a strategy that allows us to realize the economic value of our fossil fuels industry and ensures that our oil and gas sector utilizes leading technology to reduce the emissions from this sector, such as carbon capture and storage.

Decision makers must acknowledge that compared to other nations, particularly developing countries, Canada has fewer opportunities for low cost greenhouse gas abatement. The composition of our economy, our climate, the structure of our cities, and the size of our country will make it relatively expensive to reduce emissions in Canada. Addressing this limitation will require global trade strategies that allow us to invest and count emission reductions in other jurisdictions, ensure recognition that we can contribute to reducing global GHGs through low carbon commodity production, and engage in climate financing.

Innovation will be a key ingredient in improving the productivity of Canada's economy and ensuring dynamism for both capital and labour. Without improvements in innovation, massive investments in emission reductions could lead to increased interest rates, a higher dollar, and upward pressure on labour and input prices. In pursuing innovation, we must ensure our focus does not just include disruptive technologies, but also the more incremental technologies that are tried and tested, such as energy efficiency.

The transition will also require a renewed focus on governance. Creating the social and political environment that will support the massive amounts of investment needed to transition Canada to a low carbon economy is not an easy task. Moving forward, decision makers should ensure that climate policy is clear and predictable, and that future proposed changes are based on evidence and extensive consultation with the private sector, Indigenous peoples, environmental groups, and other stakeholders.

In this report, we have advocated that the transition must be guided by the principle of reducing GHG emissions in Canada at the lowest cost to our economy and way of life. The recommendations below are intended to transform this principle into concrete policy action.

SUMMARY OF RECOMMENDATIONS

1. Continue negotiations with the provincial governments to implement carbon pricing as the main measure to reduce greenhouse gas emissions across Canada.

2. Given the high costs faced by northern economies, as well as the fact that they make a marginal contribution to Canada's emissions, consider allowing for alternatives to carbon pricing in northern Canada.

3. The federal and provincial governments should continue to pursue separate policies for emission intensive, trade exposed industries. Work on assessing carbon leakage and the competitiveness impacts of climate policies should begin now in preparation for a federal/provincial/territorial discussion of the competitive impacts of climate policy.

4. Governments should avoid layering regulation on top of carbon pricing without extensive analysis of how this will affect the cost of the measure and trade-offs with other social and economic goals.

5. Carbon pricing systems cannot be a tax grab. Provincial and federal governments should use revenues to reduce the costs of climate policies to businesses and households through tax rebates or programs aimed at incentivising investments in energy efficiency and other climate technologies. Programs to help small and medium sized businesses understand their greenhouse gas emission (GHG) and invest in new programs, processes or technologies should be a priority.

6. The federal government should collaborate with provincial and territorial governments on identifying areas to reduce government-imposed cost to business, including through streamlining regulatory processes and harmonizing requirements.

7. Work with the provinces and territories to provide clarity on key government policy and reforms that are increasingly affecting the resource sector.

8. Provincial and federal governments should continue to support new technologies that will help our resource sector create clean technologies that will reduce the GHG emissions of essential energy inputs and develop an export strategy of Canadian CCS technology as it matures.

9. The federal government should consider all real reductions regardless of whether are domestic or international. All GHG reductions lead to solutions and often at lower costs, therefore it should be considered.

10. The federal government should help Canadian producers develop a clear export strategy to ensure our low carbon commodities can reach global markets as part of GHG reductions strategy.

11. Trade policy should be developed that allows Canada to maximize its abatement opportunities through the exchange of low carbon commodities and minerals, prudent investments in other jurisdictions that will lower GHGs, and climate financing.

12. Canada must exert leadership on ensuring that consumption, not only energy production, is considered in accounting for GHG emissions.

13. The federal government should consider establishing an advisory body to provide economic analysis of proposals and ongoing consultations with stakeholders on how to update Canada's NDC and coordinate national action on climate change mitigation.

SOURCES

[1] "Understanding the Changes in Ontario's Electricity Markets and Their Effects" ed. Elmira Aliakbari, Kenneth Green, Ross McKitrick and Ashley Stedman, Fraser Institute Report, April 12th, 2018

[2] Jacob Poushter and Dorothy Manegich. "Globally, People Point to ISIS and Climate Change as Leading Security Threats". Global Attitudes Survey. Pew Research Center. August 1, 2017. http://www.pewglobal.org/2017/08/01/globally-people-point-to-isis-and-climate-change-as-leading-security-threats/ Accessed September 27, 2017.

[3] Bruce Anderson & David Coletto. "Public Attitudes on Oil, Pipelines, Climate, and Change." Abacus Data. September 9, 2017. http://abacusdata.ca/public-attitudes-on-oil-pipelines-climate-and-change/. Accessed September 27, 2017.

[4] See:https://www.nrcan.gc.ca/environment/resources/publications/impactsadaptation/reports/assessments/2014/16309

[5] Insurance Bureau of Canada. FACTS of the Property and Casualty Insurance Industry in Canada 2017. 39th edition, 2017 Spring. http://assets.ibc.ca/Documents/Facts%20Book/Facts_Book/2017/Fact-Book-2017.pdf

[6] Cited in Philip Bagnoli, 2016,"Canada's Greenhouse Gas Emissions: Developments, Prospects and Reductions" Office of the Parliamentary Budget Officer.

[7] "OECD Green Growth Studies Energy: Preliminary Report" OECD publication 2011.

[8] Paul Boothe and Felix Boudreault, "By The Numbers: Canadian GHG Emissions" in IVEY Lawrence National Centre for Policy and Management, 2016. https://www.ivey.uwo.ca/cmsmedia/2112500/4462-ghg-emissions-report-v03f.pdf

[9] Len Coad et al. The Cost of a Cleaner Future. Conference Board

[10] Germain Belzile, "Canada's Oil and Gas Sector At Risk" How Excessive Taxes and Regulations Undermine our Competitiveness" Montreal Economic Institute, Research paper, October 2017. Pp. 33

[11] McKinsey Global Institute. Resource Revolution: Meeting the World's Energy, Materials, Food and Water Needs. November 2011. https://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/resource-revolution

[12] Bruce Cheadle. "Canada's clean tech industry stalls after years of growth". Canadian Press. April 19, 2016. https://globalnews.ca/news/2647580/watch-live-environment-minister-catherine-mckenna-releases-clean-tech-report/

[13] Len Coad et al. The Cost of a Cleaner Future. Conference Board

[14] Lawrence Schembri. "Getting Down to Business: Investment and the Economic Outlook". Remarks to the Greater Vancouver Board of Trade. Vancouver, British Columbia. 21 March 2017. http://www.bankofcanada.ca/wp-content/uploads/2017/03/remarks-210317.pdf#chart3

[15] Canadian Energy Research Institute. "Economic Impacts of Canadian Oil and Gas Supply in Canada and the United States (2017-2027)." Study No. 166. August 2017. http://resources.ceri.ca/PDF/Pubs/Studies/Study_166_Full_Report.pdf

[16] Russell Barnett and Rhys Mendes. "A Structural Interpretation of the Recent Weakness in Business Investment". Staff Analytical Note 2017-7. Bank of Canada. July 2017. https://www.bankofcanada.ca/wp-content/uploads/2017/07/san2017-7.pdf

[17] Chris Ragan. The Way Forward. EcoFiscal Commission. April 2015. https://ecofiscal.ca/wp-content/uploads/2015/04/Ecofiscal-Commission-Report-The-Way-Forward-April-2015.pdf

[18] National Energy Board. Market Snapshot: Explaining the high cost of power in northern Canada. February 2017. https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2017/02-03hghcstpwr-eng.html?=undefined&wbdisable=true Accessed November 3, 2017.

[19] Mining Association of Canada. Leveling the Playing Field: Supporting Mineral Exploration and Mining in Remote and Northern Canada. April 2015. http://mining.ca/sites/default/files/documents/Levelling_the_Playing_Field.pdf

[20] Samuela Bassi and Chris Duffy. "UK climate change policy: how does it affect competitiveness?" Policy Brief. Grantham Research Institute on Climate Change and the Environment. May 2016. http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2016/05/Bassi-and-Duffy-policy-brief-May-2016.pdf

[21] Elizabeth Beal, Dale Beugin, Bev Dahlby, Don Drummond, Nancy Olewiler, and Chris Ragan. Provincial Carbon Pricing and Competitiveness Pressures. Canada's Ecofiscal Commission. November 2015. http://www.ecofiscal.ca/wp-content/uploads/2015/11/Ecofiscal-Commission-Carbon-Pricing-Competitiveness-Report-November-2015.pdf

[22] "EU Climate Policy Explained" ed. Jos Delbeke and Peter Vis, European Union publications 2016. See https://ec.europa.eu/clima/sites/clima/files/eu_climate_policy_explained_en.pdf

[23] Chris Ragan, Elizabeth Beale, Paul Boothe, Mel Cappe, Bev Dahlby, Don Drummond, Stewart Elgie, Glen Hodgson, Paul Lanoie, Richard Lipsey, Nancy Olewiler, France St-Hilaire. Choose Wisely: Options and Trade-offs in Recycling Carbon Pricing Revenues. Canada's EcoFiscal Commission. April 2016. April 2016 http://ecofiscal.ca/wp-content/uploads/2016/04/Ecofiscal-Commission-Choose-Wisely-Carbon-Pricing-Revenue-Recycling-Report-April-2016.pdf

[24] Susanne Åkerfeldt and Henrik Hammarh. CO2 Taxation in Sweden: Experiences of the Past and Future Challenges. October 2015. http://www.un.org/esa/ffd/wp-content/uploads/2016/12/13STM_Article_CO2-tax_AkerfeldtHammar.pdf

[25] Nicholas Rivers and Randall Wigle. An evaluation of policy options for reducing greenhouse gas emissions in the transport sector: The cost-effectiveness of regulations versus emissions. LCERPA Working Paper No.2018-1. 2018. http://www.lcerpa.org/public/papers/LCERPA_2018_1.pdf

[26] RBC Economics Research. Carbon levies poised to become big money for provinces. RBC Economic Research. October 2017. http://www.rbc.com/economics/economic-reports/pdf/other-reports/Carbon_October2017.pdf

[27] RBC Economics Research. Carbon levies poised to become big money for provinces.

[28] Canada's EcoFiscal Commission. Choose Wisely: Options and Tradeoffs in Recycling Carbon Pricing Revenues.

[29] Letter to the Right Honorable Justin Trudeau from Canadian Chamber of Commerce Presidents, dated July 25th, 2017.

[30] Natural Resources Canada, "Minerals Sector Employment," https://www.nrcan.gc.ca/mining-materials/publications/16739

[31] Natural Resources Canada, "Energy and the economy," https://www.nrcan.gc.ca/energy/facts/energy-economy/20062

[32] Chemistry Industry Economic Profile 2017, http://canadianchemistry.ca/wp-content/uploads/2018/06/Stats_Review_2017-FINAL.pdf

[33] "Big players exit Canada's Oil sands" Canada Energy, Economist Intelligence Unit, April 25th, 2017; Josh Groberman, "The Alberta oil-patch's mass exodus of multinational oil companies" in BOE Report, June 21st, 2016.

[34] International Energy Agency. CO2 emissions from fuel combustion: Highlights. 2016. https://www.iea.org/publications/freepublications/publication/CO2EmissionsfromFuelCombustion_Highlights_2016.pdf

[35] World Energy Resources, 2016, World Energy Council https://www.worldenergy.org/wp-content/uploads/2016/10/World-Energy-Resources-Full-report-2016.10.03.pdf

[36] Bloomberg New Energy Finance. New Energy Outlook 2017. 2017. https://about.bnef.com/new-energy-outlook/

[37] Bloomberg New Energy Finance. New Energy Outlook 2017. 2017. https://about.bnef.com/new-energy-outlook/

[38] https://www.epa.gov/climate-indicators/climate-change-indicators-us-greenhouse-gas-emissions

[39] United States Department of Energy. Staff Report to the Secretary on Electricity Markets and Reliability. 2017. 22. https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability_0.pdf

[40] Bloomberg New Energy Finance. New Energy Outlook 2017. 2017.

[41] http://mining.ca/sites/default/files/documents/Facts-and-Figures-2016.pdf

[42] Bloomberg New Energy Finance. Electric Vehicle Outlook 2017: Executive Summary. 2017.

[43] http://news.ihsmarkit.com/press-release/automotive/average-age-vehicles-road-remains-steady-114-years-according-ihs-automotive

[44] https://www.iea.org/weo2017/#section-2

[45] International Energy Agency. The Future of Trucks: Implications for Energy and the Environment. 2017. https://www.iea.org/publications/freepublications/publication/TheFutureofTrucksImplicationsforEnergyandtheEnvironment.pdf

[46] https://www.iea.org/topics/ccs/industrialapplicationsofccs/

[47] https://www.shell.ca/en_ca/about-us/projects-and-sites/quest-carbon-capture-and-storage-project.html

[48] https://www.iea.org/publications/freepublications/publication/CarbonCaptureandStorageThesolutionfordeepemissionsreductions.pdf

[49] https://www.capp.ca/publications-and-statistics/statistics/basic-statistics

[50] http://www.nrcan.gc.ca/energy/facts/coal/20071

[51] https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions/canadian-economic-sector.html

[52] Bloomberg New Energy Finance: New Energy Outlook 2018.

[53] Jack Anderson, BP Economists: US Will Be "Energy Self-Sufficient by 2023"EnergyinDepth, February 2017

[54] Len Coad et al. The Cost of a Cleaner Future. Conference Board.

[55] Len Coad et al. The Cost of a Cleaner Future. Conference Board.

[56] United States Department of Energy. Staff Report to the Secretary on Electricity Markets and Reliability. 2017. 22. https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability_0.pdf

[57] https://www.iea.org/eemr16/

[58] Energy Efficiency Trends in Canada 1990-2013, Office of Energy Efficiency and Natural Resources Canada.

[59] International Energy Agency. Energy Efficiency Market Report 2016. http://www.iea.org/eemr16/files/medium-term-energy-efficiency-2016_WEB.PDF

[60] https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions/canadian-economic-sector.html

[61] IFC Consulting Canada. Long Term Carbon Price Forecasting Report. Submitted to the Ontario Energy Board. March 31, 2017. https://www.oeb.ca/sites/default/files/uploads/OEB-LTCPF-Report-20170531.pdf

[62] Natural Resources Canada. Energy Fact Book 2017-2017. Government of Canada. 2016 https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/EnergyFactBook_2016_17_En.pdf

[63] Natural Resources Canada. Electricity facts. October 2017. http://www.nrcan.gc.ca/energy/facts/electricity/20068

[64] Huw McKay, "Electric Cars will Influence Demand for Metals more than Oils" Financial Times, October 31st, 2016.

[65] Olivier Vidal, Bruno Goffé & Nicholas Arndt. Metals for a Low-Carbon Society. Nature Geoscience 6, 894–896 (2013). http://www.nature.com/ngeo/journal/v6/n11/full/ngeo1993.html

[66] Vidal et al. Metals for a Low-Carbon Society. 896

[67] Environment and Climate Change Canada. National Inventory Report 1990-2015: Greenhouse Gas Sources and Sinks in Canada. 2017. https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions/canadian-economic-sector.html.

[68] Greenhouse gas emissions by economic sector, 2016. https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html

[69] Sustainable Prosperity. "The United Kingdom (UK) Climate Policy: Lessons for Canada." Policy Brief. May 2012. http://institute.smartprosperity.ca/sites/default/files/publications/files/The%20United%20Kingdom%20Climate%20Policy%20Lessons%20for%20Canada.pdf

Canadian Chamber of Commerce
Chambre de Commerce du Canada

Chamber.ca | @CdnChamberofCom | CanadianChamberofCommerce