THE

wa

**Positive Energy** 

# CANADA'S ENERGY FUTURE IN AN AGE OF CLIMATE CHANGE:

HOW PARTISANSHIP, POLARIZATION AND PAROCHIALISM ARE ERODING PUBLIC CONFIDENCE

...........

MICHAEL CLELAND AND MONICA GATTINGER

**MARCH 2019** 

•••••





The University of Ottawa's Positive Energy initiative uses the convening power of the university to bring together energy leaders and academic researchers to determine how to strengthen public confidence in energy decision-making.

#### THIS REPORT WAS PREPARED BY:

MICHAEL CLELAND (SENIOR FELLOW, UNIVERSITY OF OTTAWA)

### MONICA GATTINGER (CHAIR, POSITIVE ENERGY, UNIVERSITY OF OTTAWA)

The authors would like to thank the following members of the Positive Energy Research Team for their insightful comments on the text: Rafael Aguirre, Marisa Beck, Stephen Bird, Ève Bourgeois, Patricia Larkin, Bryson Robertson and Louis Simard.

A special thanks to Marisa Beck for her exceptional support and contributions to the document.

As is customary, any errors of fact or interpretation are the responsibility of the authors.

An earlier draft of this text was used as a discussion paper for a Positive Energy workshop in October 2018 attended by some forty energy leaders from across the country, representing business, government, Indigenous and ENGO perspectives. The authors would like to thank the attendees for their useful comments, input and discussion of the text. Numerous discussions with energy leaders in recent months have also informed the document.

# POSITIVE ENERGY'S FINANCIAL SUPPORTERS INCLUDE:

Alberta Energy

Alberta Energy Regulator

British Columbia Oil and Gas Commission

British Columbia Utilities Commission

Canadian Association of Petroleum Producers

Canadian Wind Energy Association (CanWEA)

Cenovus

Encana

Natural Resources Canada

Social Sciences and Humanities Research Council (SSHRC)

Nanos Research is our official pollster.

# POSITIVE ENERGY



## CONTENTS

### INTRODUCTION

4

Lots of Climate Talk but Limited Effective Action

CANADIAN ENERGY AND CLIMATE POLICY: HOW PARTISANSHIP, POLARIZATION AND PAROCHIALISM ARE STYMIEING PROGRESS ON BOTH ENERGY AND CLIMATE ACTION 7

> Charting the Future as if Energy Mattered The economic and political context shaping Canada's energy future and transition to a <u>lower emitting energy system</u>

CHARTING THE ENERGY FUTURE IN A FAST-CHANGING WORLD: FIVE DRIVERS DECISION-MAKERS NEED TO CONSIDER

#### Driver #1:

Increasing Polarization, Partisanship and Motivated Reasoning: the erosion of evidence-informed decision-making?

#### Driver #2:

The Decline of Trust and Deference: a further blow to evidence-informed decisionmaking?

#### Driver #3:

A New Global Economic Order: longstanding verities under threat?

Driver #4:

Rapid Technological Change: the myriad impacts of emerging and disruptive technologies

Driver #5:

Climate Change Impacts and Adaptation: the neglected side of the climate change coin?

### PUBLIC CONFIDENCE AND CANADA'S ENERGY HOW CAN THE COUNTRY MOVE FORWARD?

24

Working Through Polarization

Roles and Responsibilities among Decision-Making Authorities

Models of and Limits to Consensus-Building

CONCLUSION : THE ROAD AHEAD – FROM PARTISANSHIP, POLARIZATION AND PAROCHIALISM TO PUBLIC CONFIDENCE 28



31



### **INTRODUCTION**

The last few years have seen relative peace between federal and provincial governments on energy and climate policy: the Pan-Canadian Framework on Clean Growth and Climate Change laid the groundwork to establish a country-wide price on carbon emissions, the majority of provincial governments were pulling in the same direction as Ottawa on energy and climate, and most provinces collaborated in the Council of the Federation on shared energy and climate objectives.

Likewise, the federal government put in place mechanisms to work on strengthening public confidence in decision-making for energy and environmental assessment and spearheaded Generation Energy, a national consultation process on Canada's energy future.

Despite many challenges, there was reason to believe that the foundation was being laid to strengthen the confidence of Canadians, investors and communities of all sorts in energy decisionmaking and to make meaningful progress on lowering greenhouse gas emissions.

But that political peace and progress on public confidence, energy and climate are shattering: Ontario's Ford government cancelled the province's participation in cap-and-trade and joined Saskatchewan in a constitutional challenge of the federal price on carbon emissions, Manitoba has stated it will not go ahead with its planned carbon tax, Alberta has pulled out of the federal plan until controversy over the Trans Mountain Pipeline Expansion project is resolved, the fate of a carbon tax in New Brunswick is uncertain, and this fall's federal election seems set to further amplify interregional, federal-provincial and partisan conflict over energy and climate policy. Intergovernmental conflict over energy, climate and broader environmental issues related to energy has also heated up substantially, with Alberta and British Columbia at loggerheads over the Trans Mountain Pipeline Expansion Project to transport oil from Alberta to the BC coast for export to international markets. Time will tell whether the federal government's decision to purchase the pipeline will help restore or further weaken public and investor confidence in government authorities making energy decisions in Canada.

Controversy over energy with Indigenous groups and other communities seems also on the upswing, with vocal opponents to the Trans Mountain project in the news and, more recently, opposition of a number of hereditary chiefs to the Coastal GasLink pipeline in Northern BC garnering substantial attention. This, despite ongoing and committed support for both projects from the vast majority of First Nations communities along the two pipeline routes.

Likewise, Bill C-69, the federal government's proposed legislation on environmental assessment and energy regulation, has unleashed a firestorm in the energy sector and generated concern among other communities about the desirability and practicability of the new rules. In addition, unresolved issues related to the process of reconciliation with Indigenous peoples in Canada continue to be contentious.

More generally, growing levels of political and economic uncertainty, partisanship, parochialism and polarization both at home and abroad are creating an increasingly challenging environment for public authorities charting Canada's energy future.

At the same time as the country seems set for greater conflict, polarization and lower levels of public and investor confidence in energy decision-making, there are many examples of governments at all levels, Indigenous communities, industry players and others making great strides to put in place measures and collaborate on energy, including improving the economic and environmental performance of Canadian energy production, delivering the energy services Canadians demand and lowering greenhouse gas emissions. Hundreds of communities (municipalities, Indigenous communities) are developing community energy plans with the support of organizations like QUEST. And there is a growing list of success stories of energy companies working in meaningful partnership with Indigenous communities on projects. Organizations like the Indian Resource Council are also keen to expand Indigenous involvement in energy, including, potentially, by purchasing the Trans Mountain Pipeline Expansion project. Measures to increase efficiency and to develop renewable power and lower emitting energy projects are also being established across the country. And carbon emissions pricing has been implemented in three provinces, namely BC, Alberta and Québec.

But the country as a whole lacks a coherent narrative, an integrated, coordinated evidence-informed policy and a shared understanding of the way forward on energy in an age of climate change. This not only challenges the individual and collective effectiveness of disparate initiatives and policy measures, but it constrains the capacity for real change and concrete progress on simultaneously lowering emissions while realizing the full potential of Canada's vast energy resources and consistently meeting the energy service needs of Canadians.

This paper aims to unpack the core challenges and opportunities when it comes to building confidence in public authorities making decisions about Canada's energy future in an age of climate change. It provides an analysis of how Canada's political and economic context relative to other countries is fundamental to the course of its energy future, and why it is vital that energy and climate decisionmaking be undertaken with that full context in mind.

Importantly, the paper underscores that public confidence in those making decisions about Canada's energy future in an age of climate change – the focus of Positive Energy's next three years of research and engagement – will be shaped fundamentally by many factors specific to energy (e.g., the role of local and Indigenous governments, the future for oil and gas, social acceptance of energy technologies, and relationships between policymakers, regulators and the courts), but it will also be shaped by a number of political, economic and social trends well beyond energy, climate or environmental issues. Those charting Canada's energy future need to keep their eyes on these balls as well.

The paper proceeds as follows. The first section lays out the context in Canada for energy and climate policy, pointing to a history of ambitious commitments unmatched by corresponding actions on GHG emissions. This reflects in part the scope and scale of the challenges facing Canada as a large, federal, resource-intensive democracy attempting to design and implement policy this complex and fraught with uncertainties. It also reflects how partisanship, parochialism and polarization can stand in the way of meaningful progress on both energy development and climate action.

The paper's second section highlights that decisions about Canada's energy future are being made in the context of a number of major drivers in politics, economics and technology both at home and abroad:

- growing political uncertainty characterized by increasing polarization, partisanship and parochialism (polarization, partisanship and parochialism in energy are a manifestation of this broader trend);
- lower levels of public trust in government, industry, the media, expertise and evidence-based decisionmaking;
- growing economic uncertainty with regards to international trade, demographics and the investment climate;
- technological uncertainty propelled by emerging and disruptive technologies like artificial intelligence; and
- the increasingly visible effects of climate change itself.

Decision-makers charting Canada's energy future need to do so with a solid understanding of these drivers and their multiple potential impacts in mind. Collectively, these trends greatly increase the uncertainty, complexity and capacity for disruption and policy instability in every policy sector. Energy is no exception.

Based on the analysis in the first two sections of the paper, the third section lays out key questions that Canada must grapple with in order to successfully chart a course for the country's energy future. The overarching question decision-makers need to answer is the following:

How can Canada, an energy-intensive federal democracy with a large resource-base, build and maintain public confidence in public authorities (federal, provincial, and territorial governments and regulators, Indigenous governments, municipal governments, and the courts) making decisions about the country's energy future in an age of climate change?

Three core challenges must be addressed in order to successfully answer this question:

- How can Canada effectively overcome polarization on energy issues?
- What are the respective roles and responsibilities between policymakers, regulators and the courts when it comes to energy decision-making?
- What are the models of and limits to consensusbuilding on energy decisions?

These fundamental questions form the agenda for Positive Energy's next three-year phase of research and engagement.

### CANADIAN ENERGY AND CLIMATE POLICY: HOW PARTISANSHIP, POLARIZATION AND PAROCHIALISM ARE STYMIEING PROGRESS ON BOTH ENERGY AND CLIMATE ACTION

Those charting Canada's energy future would do well to begin with a sober look at the past and a meaningful analysis of the present. Start with climate.

#### Lots of Climate Talk but Limited Effective Action

It is much easier for governments to talk about transitioning Canada's economy to a low emissions configuration than it is to make it happen. Canada made commitments of one sort or another in Rio in 1992 (Conservative federal government), in Kyoto in 1997 (Liberal), Copenhagen in 2009 (Conservative), and Paris in 2016 (Liberal) in each case focusing intensely on a pledge to reduce greenhouse gas emissions. But given the track record since 1990 (see Figure 1), it is not surprising that the country faces a challenge with respect to public confidence and trust in the decision-making systems purporting to implement these sorts of commitments.

#### Why the Disconnect? Climate Policy as if Energy

**Mattered.** While aspirational goals are ubiquitous, even necessary, in the political discourse around complex, global issues such as climate change, governments risk losing people's trust if they fail to manage public expectations associated with these goals. In the case of Canada, one may argue that governments have failed to explain the close links between climate change policy and energy policy and the significant changes in the country's energy system—indeed, a transformation—that would be required to meet Canada's mid-century international emissions aspirations (see Box 1).

As detailed below, effective climate policy-making begins with a deep understanding of Canada's energy system, notably its environmental, economic and social costs and benefits.



#### FIGURE 1

Canadian Greenhouse Gas Emissions, 1990 to 2016 (MtCO2e) and Canada's International Commitments

Source: Figure produced by Positive Energy with data from Environment and Climate Change Canada (2018b).

#### **BOX 1 : CLIMATE COMMITMENTS/PROJECTIONS AND ENERGY**

#### DEMAND/PROJECTIONS: NEVER THE TWAIN(S) SHALL MEET?

The Paris Agreement defines an ambitious long-term goal of keeping global temperature increases above pre-industrial levels well below 2 degrees Celsius and as close to 1.5 degrees Celsius as possible. Modeling exercises suggest that the vast majority of global emissions pathways in line with a 2 degree or 1.5 degree temperature goal would require global emissions to peak around 2020 and turn negative in the second half of the century (Schleussner et al. 2016).

In stark contrast to these figures, analysis of the intended nationally determined contributions submitted by the Agreement's parties reveals that the aggregate impact of currently pledged mitigation actions, while reflecting a clear reduction of GHG emissions below the business-as-usual baseline, is far from setting global emissions on a 2-degree trajectory (Schleussner et al. 2016).

Moreover, the International Energy Agency's 2018 World Energy Outlook (WEO) projects that global energy demand will continue to grow, including demand for oil and gas (International Energy Agency 2018). The WEO's New Policies Scenario, which incorporates existing and planned policies, forecasts that global primary energy demand will grow by 27 percent between 2017 and 2040, driven mainly by demand growth in Asia. 45 percent of this growth is expected to be met by renewable energy, with natural gas not far behind at just over 35 percent. Demand for natural gas is projected to increase 43 percent between 2017 and 2040. Oil consumption is also expected to grow through to 2040 from 95 million barrels per day in 2017 to 106 million barrels per day in 2040. Coal use, while slated to flatline, remains robust over the same time period. All told, fossil fuels are projected to constitute 74 percent of global primary energy demand in 2040 in the New Policies Scenario, a mere 7 percent reduction from 2017, when they accounted for 81 percent of primary energy demand.

The WEO also includes a Sustainable Development Scenario that incorporates the mitigation targets set by the Paris Agreement. The Outlook emphasizes that the difficulties of realizing the Sustainable Development Scenario must not be underestimated as it would require significant restructuring of the global energy system. In particular, in this scenario, the fossil fuel share in primary energy demand would have to drop from 81 percent in 2017 to 60 percent in 2040, a figure far lower than the 74 percent projected fossil fuel share in the New Policies Scenarios. To put the scope of the challenge into further perspective, the proportion of primary energy demand accounted for by fossil fuels has remained virtually unchanged over the last four decades (roughly 80 percent of demand), despite global efforts to the contrary.

At the same time, the latest Special Report by the Intergovernmental Panel on Climate Change (IPCC) argues for the economic urgency of increasing global mitigation efforts. The report predicts that global economic costs and risks related to businessas-usual emissions scenarios are likely to be significant and higher than previously anticipated. In particular, the authors reference a recent study projecting that limiting global warming to 1.5 degrees Celsius above pre-industrial levels instead of 2 degrees could avoid global climate change damages by \$15 trillion USD in 2100 (\$54 trillion USD as compared to \$69 trillion USD) (Warren et al. 2018). Other studies identify avoided damages of a similar scale due to adopting a 1.5 degree instead of a 2 degree target (Burke et al. 2018; Petris et al. 2018). Notably, the report projects that without large-scale investments in a low-emissions transition of the energy system and emissions continuing to increase at the current rate, global warming above pre-industrial levels will likely approach 1.5 degrees Celsius between 2030 and 2052 (IPCC 2018).

#### Charting the Future as if Energy Mattered

Canadian policymaking and debates on energy and climate have not always been founded on a clear-headed analysis of the country's energy circumstances. A relatively small number of energy realities are likely to shape the next 30 years for Canada – but they have been given surprisingly limited attention in public discourse and, in some instances, in public policy:

- Energy, mainly in the form of oil and gas, is Canada's single largest earner of export revenues<sup>1</sup> and energyderived economic rents make significant contributions to the fiscal foundation of several provinces.<sup>2</sup>
- What happens in international energy markets will be determined predominantly by other governments, by technological advances made elsewhere and by global energy consumers. Canada's actions will likely have a modest effect at most.
- For the most part, Canada will be a technology taker: it is likely that most of the further evolution of renewable power systems, low or zero emissions transportation systems, energy storage technology, and the information technologies that will underpin all of this will occur predominantly outside our borders.
- In line with global consumption patterns (see Box 1), most domestic energy consumption is in the form of combustion of petroleum products and natural gas (Cesar 2013). Transitioning this to lower emitting energy sources will require major investments and extensive new infrastructure builds with all the difficult choices that these entail across the whole spectrum of energy production (see Box 2)

- The costs of solar and wind power have dropped substantially and their proportion of the electricity mix has grown to just over 5 percent in 2016 (NRCan 2018c), but they still remain a fraction of overall energy supply: about 1 percent in 2016 (calculated based on NRCan (2018a)).
- Previous Positive Energy research has shown that many Canadian citizens express themselves as supportive of action dealing with climate change, but renewable energy projects often face opposition from local communities similar to that experienced by oil and gas development, owing to the perceived or real local environmental, social and cultural impacts and limited perceived or real local benefits (see Box 3).
- All energy sources have environmental costs, including effects on the global climate, water and air quality, and local ecosystems. Energy production also always has social implications. Taking environmental and social costs into full account in energy decisionmaking and adapting energy infrastructure projects to mitigate these costs will typically change project economics. A carbon price would be the most explicit and straightforward means to internalize emissions costs, but in practice, this can be politically challenging, as recent months have underscored. For other environmental costs (land, water, air), the internalization may occur indirectly (e.g., altering the siting, size or scope of a project to address community concerns). Fairness requires careful and transparent consideration when it comes to who will bear these mitigation costs (e.g., by way of higher energy prices or other impacts).

<sup>1</sup> In the first quarter of 2018, Canada exported energy products worth close to \$106.5 billion Canadian dollars (in current prices). This corresponds to about 19 percent of total exports of goods. The second largest export sector was the automotive sector with \$88.5 billion (16 percent) in exports (Statistics Canada 2018).

<sup>2</sup> In fiscal year 2017/18, revenue from non-renewable resources accounted for about 10 percent of total provincial revenues in Alberta (Government of Alberta 2018) and Saskatchewan (Government of Saskatchewan 2018). This is down substantially from previous years: in Alberta, the figure stood at 24 percent in 2011/12 (Government of Alberta 2012) and 35 percent in 2006/07 (Government of Alberta 2007) and in Saskatchewan, at 26 percent in 2011/12 (Government of Saskatchewan 2012) and 20 percent in 2006/07 (Government of Saskatchewan 2007). Resource rents related to oil and gas in British Columbia, Newfoundland and Labrador and Nova Scotia are also sizable. The energy industry also contributes significantly to corporate tax revenues. At the federal level, it accounted for 8.4 percent of total corporate tax revenues between 2012 and 2016 (NRCan 2018c).

### BOX 2: THE PERILS OF DANGEROUS OPTIMISM: THE SOCIAL AND POLITICAL REALITIES OF LARGE-SCALE ENERGY SYSTEM CHANGE IN CANADA

The Government of Canada has committed to reducing GHGs by 30 percent from 2005 levels by 2030, with a planned further decrease of 80 percent from 2005 levels by 2050. As explained earlier in this report, energy and greenhouse gas emissions are tightly linked, as almost 80 percent of GHG emissions are tied in some way to energy consuming activities such as transportation, heating and cooling of buildings, production of goods, and of course, the production of energy including electricity (NRCan 2018b). Canada's oil and gas sector and electricity sectors account for 26 percent and 11 percent of GHG emissions, respectively (ECCC 2018a).

What changes would an 80 percent reduction in GHG emissions by 2050 require in Canada's energy system? Scenario 8R60a of the Trottier Energy Futures Report provides one answer. Table 1 below summarizes the scenario's key assumptions and modeled projections. Notably, the scenario projects that an emissions cut of that scale by mid-century would mean reducing Canada's oil and gas exports by half, and transforming the country's transportation fleet to almost entirely electric and hydrogen fueled vehicles.

Importantly, the scenario calls for large-scale electrification of Canada's energy system. The modeling suggests that Canada's electric power infrastructure would need to reach a capacity of approximately 320 GW by 2050 – as compared to about 147 GW of installed capacity in 2016 (NEB 2018). The scale of this change should not be underestimated: the proposed increase equates to building more than one hundred and fifty projects of the size of the Site C hydropower project in British Columbia in the next thirty years.

Could Canada build another 150 Site Cs in three decades when it can barely get one underway? The point here is not to suggest change is not needed, but rather, to underscore the perils of dangerous optimism when it comes to the scale of change at hand.

Projections like those in the Trottier report typically do not include the 'soft' factors shaping energy system change that are very difficult or impossible to model – community opposition to infrastructure projects (as seen in the case of Site C), legal challenges that quash approvals or delay construction, capital flight when investors grow impatient, consumer pushback on measures like carbon pricing, and the fundamental inertia of big systems. These factors inevitably lead to high uncertainty and great potential for delays in the feasible pace of system change of the magnitude needed in the coming years.

Decision-makers need to avoid dangerous optimism when it comes to the political, economic and social realities of such large-scale changes. Models and projections suggest what is feasible in the worlds of technology, but vastly underestimate — if not completely ignore — what is feasible in the real worlds of politics, citizen demands, consumer expectations and investor confidence. Decision-makers will need to define practicable, evidence-informed pathways for Canada's energy system, including sober consideration of the social and political dimensions of large-scale system change.

Assumptions	Scenario 8R60a
GHG target	80 percent reduction from 1990 levels by 2050
Electricity infrastructure	Reaches approximately 320 GW by 2050 (figure 151, page 255)
Oil and gas production	Oil and natural gas exports are ~5000 PJ by 2050 (figure 138, page 247), an approximately 50 percent decline from 2013 exports of 9470 PJ (CESAR 2013)
Degree of electrification of transportation fleet	Not directly reported for the scenario but similar scenarios feature virtually 100 percent EV for smaller passenger vehicles and 95 percent hydrogen fueled heavy freight vehicles by 2050 (page 176)
Other major assumptions	Reduced fossil fuel exports; 60 percent reduction targets for combustion GHGs; new high voltage interconnections; Carbon Capture and Storage (CCS); second generation biofuels; new nuclear power; new large scale hydro in BC (table 55, page 129)

 Table 1: Changes to Canada's Energy System as projected in Scenario 8R60a of the Trottier Energy Futures Report (Trottier 2016)

Source: this box produced in part by drawing on Fast and Gattinger 2018.

### BOX 3: 'YES' TO NATIONAL ACTION ON CLIMATE CHANGE, BUT 'NO' TO LOCAL WIND FARMS

Polling produced by Nanos Research for Positive Energy shows that over nine in ten Canadians are in favour of scaling-up energy production from renewable sources. Six in ten Canadians support a long-term transition of the country's energy sector away from fossil fuels, while over three in ten support an aggressive transition toward lower emitting energy sources (Nanos Research for Positive Energy 2018).

However, Positive Energy research examining a rejected wind development project in St Valentin, Québec, showed that the project ultimately failed due to a lack of social acceptance in the community. In particular, citizens had concerns about visual impacts, noise and the impact on wildlife, and felt that these concerns were insufficiently addressed by the project proponent (Simard 2016).

Another case study examined the Wuskwatim hydropower facility in Manitoba. While this project was ultimately approved, members of the Nisichawayasihk Cree Nation were divided. Some community members valued the economic opportunities associated with the development, while others had concerns about local environmental impacts on habitat, wildlife and water quality (Sajid 2016). Importantly, climate change mitigation was not a key driver of local communities' attitudes toward the proposed renewable energy project in either of these cases.

None of this is an argument for inaction on climate change mitigation – far from it. Rather, it underscores the need to take climate change mitigation seriously and to recognize that casually adopted targets are a poor substitute for cost-effective and politically realistic action.

It also calls for careful attention to the language used to discuss Canada's energy future. Terms like 'low carbon,' clean energy and clean growth risk polarizing an already politically charged decision-making context. They also risk diverting attention from the key target of public policy when it comes to climate change – GHG emissions – by suggesting that particular energy sources (notably upstream oil and gas) should be eliminated from the energy system, rather than ensuring they have an opportunity to compete on a level emissions performance playing field (see Box 4). As such, this report uses the term low emissions, rather than 'low carbon,' clean energy or the transition.

# The economic and political context shaping Canada's energy future and transition to a lower emitting energy system

Those charting Canada's energy future also need to begin with a meaningful analysis of the present that takes into consideration Canada's circumstances relative to its counterparts abroad. A number of key features of Canada's political and economic structure make the country different from most other western industrialized democracies.

First, Canada is energy-intensive and rich in various energy and non-energy resources. For starters, Canada has the largest oil reserves of any Western industrialized democracy. The economic importance of Canada's oil and gas sector has long created unique political and social dynamics and never more so than in the context of efforts to move to a low-emissions energy system. Another important characteristic is Canada's energy intensity owing to its large geography, scattered population, weather extremes and resource-intensive economy. While this by no means obviates the crucial importance of actions to improve efficiency – this should most often be the first option to consider and precede choice of energy supply – it is an important characteristic of the country that often gets lost when comparing Canada's energy intensity to other jurisdictions.

Second, Canada's energy resources are regionally concentrated rather than uniformly distributed, and there is a history of regional tensions over energy and resource policy. The challenges of developing a 'national strategy' for energy are often painfully apparent. This uneven geographic distribution of energy resources, interests and demands shapes the allocation of costs, benefits and risks across the country and is an important factor in explaining regional support for or opposition to measures aimed at constraining greenhouse gas emissions or measures to support fossil fuel production.

Third, Canada is a federation in which the provinces have jurisdiction over most energy and resource matters within their borders, making the country's energy decisionmaking system far more complex. Moreover, in addition to federal, provincial and territorial governments, numerous other public authorities make energy decisions in Canada, including regulators (who, although under the remit of provinces or the federal government, are able to act with substantial degrees of independence), Indigenous authorities, municipalities and courts.

Further, Canada is a well-established democracy, which puts a sharp focus on the importance of public confidence in energy decision-making processes and on models of consultation, engagement and consensus-building. Finally, Canada is an extremely open economy for trade and investment. Domestic energy decision-making is in most instances shaped by global markets and global technological change. As noted above, the direction and pace of a global transition to lower emitting energy will occur largely outside of Canada's control. And yet, Canada's public authorities will, in one way or another, respond to these developments that are likely to fundamentally affect the country's export economy, the fiscal structure of multiple provinces, and the whole of Canada's energy producing and using infrastructure.

These responses may either be evidence-informed and long-term, or focused on short-term political or partisan considerations.

In brief, when it comes to decision-making about Canada's energy future, the country's unique economic and political structure — its federalism, democratic constitution, large and diverse resource wealth — may prove to be stumbling blocks to effective, evidence-informed long-term action, or they may serve as catalyzers of such action with the right institutional innovations in place. But what those innovations need to be and how they can be brought about are very large and open questions. The final section of this paper sketches out the key issues that the country will need to address, and the role that Positive Energy will play in addressing them.

Before turning to this, though, the following section focuses on wider drivers in Canadian and global society, markets and politics that are likely to shape the course of the next three or four decades. Those charting Canada's energy future must do so with meaningful consideration of these trends.



#### **BOX 4: CANADA'S ENERGY FUTURE AND THE DANGERS OF VOCABULARY**

Over the decades the emergence of widespread public engagement in energy decisions has been accompanied by evolving vocabulary - not all of it constructive.

The term **'NIMBY' (short for not in my backyard)**, which probably marked the beginning, was almost always used as a pejorative, reflecting decision-maker and project proponent frustration with local opposition that often seemed unjustified. And yet, as often as not, local communities had at least some real, principled reasons for their objections, but the space for reasoned discourse was inevitably narrowed and vulnerable to polarization by the choice of pejorative vocabulary. The successor term **'social license'** reflected a more positive view, but it went too far, often contributing to unrealistic expectations on the part of local communities, and, arguably, contradicting and undercutting the fundamental principle that public policy decisions in the end must be made by properly constituted, democratically accountable public authorities.

Some of those democratically accountable authorities in modern day Canada are often Indigenous authorities, and yet the emergence of this cultural and legal reality has itself been accompanied by a choice of vocabulary which in some ways stands in the way of reasoned discourse and fosters polarized views. Notably, the term **'consent'** (flowing from the expression 'Free, Prior and Informed Consent') on its face implies the power of veto over decisions, and yet it is not clear at all how energy decision-making would function under these circumstances. Importantly, Canada's Supreme Court has confirmed that there is no legal basis for interpreting consent to mean veto. Nonetheless, many parties continue the discourse mired in ambiguity and lack of shared understanding, which can polarize already contentious debates.

When it comes to climate change policy, the goal is clearly **'low emissions'** (how low and by when is another matter). The competing term **'low carbon'** could mean the same thing, but has acquired an implication of fuel determinism – no to fossil fuels period – which can be conflict generating and quite possibly inconsistent with where processes of technological change might go over the next several decades.

Similarly, the **term 'clean energy'**, which is often used to refer to renewable sources of energy, tilts to fuel determinism by suggesting that energy sources can be categorized as "clean" or "dirty" and that some sources by their very nature are **'clean'**. While there are certainly forms of energy that emit fewer greenhouse gases, the term "clean" obscures from view that all sources of energy have environmental impacts (be they on climate, land, air or water), and many so-called **'clean'** energy sources may emit lower greenhouse gases but may also have undesirable environmental impacts beyond the climate (e.g., environmental impacts of mining the materials needed for batteries, ecosystem impacts of hydropower, land use impacts of wind or solar energy, or waste management in the nuclear sector).

And then there is the term ' **the transition**', which brings its own perils. For one, over time, it has acquired the meaning of transition away from oil and gas, rather than transition to a lower-emissions energy system. Again, this fosters fuel determinism and obscures from view technological changes that could substantially reduce the emissions footprint of oil and gas (e.g., carbon capture). For two, the increasingly frequent use of the word '**the**' in front of '**transition**' glosses over very real differences in what future energy systems could (or should) look like (see Box 1 above). It also connotes a sort of inalienable process that is marching forward of its own accord, a connotation that risks overstating the ease with which the real worlds of energy politics, economics and technology can be transformed. Finally, it is potentially misleading and at risk of understating the scale and scope of change; the issue for Canada is more accurately '**transformation**' of the entire energy system. And yet this choice of vocabulary risks trivializing the sorts of decisions that the public needs realistically to understand.

As such, this paper consciously utilizes the term '**low emissions**', which focuses on the objective of climate change policy, not the means.



### CHARTING THE ENERGY FUTURE IN A FAST-CHANGING WORLD: FIVE DRIVERS DECISION-MAKERS NEED TO CONSIDER

Those charting Canada's energy future and working to move the country's energy economy to lower emitting configurations will be doing so in the context of multiple major changes within and beyond the energy sector. Some of these trends may prove enabling, some may make it harder and riskier, but all are germane and need to be accounted for. Five big sources of change and uncertainty stand out.

#### Driver #1:

#### Increasing Polarization, Partisanship and Motivated Reasoning: the erosion of evidence-informed decision-making?

Recent years have seen growing political turbulence in which the globalist, liberal democratic world view that marked the 'end of history' has proved to be much less resilient than was thought even a few short years ago. Increasingly, the political environment is becoming more fractured and polarized both globally and within countries or regions (Nanos 2018).

The surge of interest in understanding the role of matters like group identity, tribalism, the 'politics of resentment,' and populism in supporting or undermining liberal democracy are emblematic of these tendencies (see, for example, Chua 2018, Fukuyama 2018).

There is no reason to believe that Canada is immune to tribalism, polarization and increasing political division – as current energy debates amply illustrate. If and when those who feel they are not the winners in this turbulent economic environment express themselves politically, the country is more likely to see division than the strong sense of collective purpose that is essential for major economic rethinks like transitioning to lower emitting energy systems. Over the past decade, there has appeared to be a widespread if not terribly deep consensus on climate and emissions reduction as expressed in public opinion polls and in (to a considerable degree) acceptance of carbon pricing, but that consensus looks very fragile in light of the political mood today in much of Canada, most notably in Ontario and the Prairies. And carbon pricing seems increasingly a partisan issue, where support/opposition splits along party lines, quite apart from the evidentiary basis on which it has been developed.

What's more, recent research in social psychology and political science underpins that people use 'motivated reasoning' when forming their opinions on controversial public issues, selecting evidence that aligns with their world views and values and dismissing that which doesn't (Kahan et al. 2012). Paradoxically, this tendency rises the greater the level of education, and efforts to 'educate' people about issues using 'the facts' can backfire, entrenching them more firmly in their positions and further polarizing debates (Ibid).

Further, research in this field reveals that one of the primary motivations driving this tendency is group affiliation and identity, including party affiliation (Ibid). In brief, people's attitudes on controversial issues may be informed more by partisanship (or membership in a particular social group) than by rigorous assessment of the best available evidence. The consequences of increasing polarization and partisanship for those making decisions about Canada's energy future are not at all clear. How to address polarization and partisanship on energy issues? How to make evidence-informed energy decisions in the face of heated debate that is increasingly driven by values, emotions, partisanship and identity? How to reconcile opposing viewpoints and establish a basis for constructive dialogue? How to build political support for government actions on energy and climate when there are many other priorities in the queue, most of them having nothing to do with energy?

#### Driver #2:

# The Decline of Trust and Deference: a further blow to evidence-informed decision-making?

Levels of public trust in government, industry and experts have declined across Western industrialized democracies in the postwar period. In an era of 'fake news' and social media echo chambers, the 2017 Edelman Trust Barometer declared "trust is in crisis around the world" (Edelman 2017).

In 2018, the media emerged as the least trusted institution globally (Edelman 2018). For more than half of respondents, the decline of trust in media has "led to an inability to identify the truth" (59 percent) and to trust "government leaders" (56 percent) (Ibid).

At the same time, citizens' deference to authority of various kinds (elite, government, industry, medical, etc.) has also declined over the decades (Nevitte 1996, 2011), and people are less likely to accept and believe what the 'experts' have to say on everything from their health, to the environment, governance and the economy. As a result, people may lack confidence in expert opinion and scientific evidence, giving more weight to evidence from sources they trust, regardless of their knowledge or expertise (close friends, social media campaigns, celebrities or NGOs) than to the so-called 'experts.' All evidence – from scientific to individual opinion and belief systems – may be perceived as equal and deserving of equal weighting in decisions. All told, citizen trust in the source of evidence may be more important than its rigour.

While the 2018 Edelman Trust Barometer showed a 'revival' of trust in experts, only time will tell whether this is the beginning of renewed faith in expertise. In contrast, the 2019 Barometer showed that "trust has changed profoundly in the past year". It revealed that people have "shifted their trust to the relationships within their control", especially to their employers (Edelman 2019). Moreover, the 2019 survey revealed a "trust gap" between the informed public and the mass population, with the former being more trusting than the latter, where nearly half believe "the system is failing them" (Ibid).

While the impact of all of this on evidence-informed decision-making is far from clear, it is certainly the case that trust – who or what people trust and why – is in flux.

This decision-making context raises vexing challenges for public decision-makers (policymakers and regulators alike). How to take decisions informed by evidence when short-term political imperatives may pull in the opposite direction? How to strengthen public confidence in decisions when confidence in decision-making processes may become just as crucial – or even rival – confidence in the substance of decisions? And how to do both of these things in an era of social media, fake news, and political fragmentation, and when the nature of trust itself – who or what people trust, why they trust and with what level of commitment – is in a state of flux?

#### Driver #3:

#### A New Global Economic Order: longstanding verities under threat?

Environmental issues have long struggled for attention among policymakers. When it comes to their relationship with economic issues, the challenge has often been not so much inherent contradictions (in many cases good economic and environmental policies can be complementary) as much as priorities competing for attention and resources. This challenge is likely to rise not decline in the coming years as a number of additional economic transitions are underway.

Canada's comfortable, lucrative and asymmetric trading relationship with the United States is not something the country can take for granted. Protectionist sentiment in the US is only one source of threat; Canadians are no shirkers when it comes to protecting favoured industries, and it would take little to generate political pressures to do more.

At the same time, tremendous demographic change is taking place both in Canada and abroad. Projections from the UN's 2015 report on World Population Prospects (United Nations, Department of Economic and Social Affairs 2015) suggest that the postwar world in which Canada flourished as a 'middle power' that punched far above its weight is over. In 2050, India and China are slated to be the world's population giants, but the fastest growing populations will be in Sub-Saharan Africa. Canada will likely see modest population growth, but in the world pool, the country will be a very small fish. It will also be a much older fish: the share of Canadians 65 and over will reach about 25 percent of the population in 2050 (Statistics Canada 2015). In contrast, the share of children up to 14 years of age is projected to slightly decline to only 15 percent over the same time period (Ibid.). This means that while there were three workers<sup>3</sup> for every retiree in 2017, it is projected<sup>4</sup> that in 2030, there will be fewer than two working people for every retiree (Statistics Canada 2017a). Currently, the Indigenous population in Canada is significantly younger: in 2016, only 6.4 percent of the Indigenous population was 65 years of age or older. However, projections indicate that the share of older people in the Indigenous population is expected to rise also and possibly double by 2036 (Statistics Canada 2017b).

These demographic and labour force changes will drive different energy needs, interests and imperatives. In these changing conditions, the balance between affordability, reliability and environmental performance of the Canadian energy system may need to be re-defined.

Economic uncertainty also seems on the rise at home. Canada has long prided itself on being a reliable destination for energy investors, but that reputation has recently been brought into question. Investors — who have many options around the globe — value returns on investment proportionate to risk, which includes predictability of decision-making processes and certainty of decision outcomes. Previous Positive Energy research shows that important changes in Canada's energy decisionmaking system such as those concerning new relationships with Indigenous communities and the empowerment of local communities more generally not only imply new obligations for regulators and project developers but can also compromise the certainty and predictability of decision-making processes and timelines.

<sup>3</sup> Here defined as people between 15 and 64 years old.

<sup>4</sup> Assuming a medium-growth scenario.

Given these sources of economic and demographic turbulence competing for attention, Canadian policymakers face a number of challenges. How to position Canada's efforts aimed at a low-emission energy economy within the larger context of changes in global politics and trade? How to advance these changes while being mindful of the behaviour and attitudes of energy consumers and investors, both in Canada and abroad? How to develop a narrative about Canada's energy future and define leadership in ways that build consensus in a context of growing uncertainty and fragmentation?

#### Driver #4:

# Rapid Technological Change: the myriad impacts of emerging and disruptive technologies

The growing deployment and impact of emerging and disruptive technologies in the information technology sector, especially artificial intelligence (AI), herald tremendous uncertainty for decision-making. The good news is that most of what happens across the spectrum of IT/AI will be facilitative with respect to Canada's energy future and driving down emissions. An energy production system, a transportation system, a built environment or an industrial economy characterized by 'smart' electronic managers will be more energy efficient and will naturally gravitate to lower emissions energy choices – subject to the very big proviso that the political system has the will to price emissions and to otherwise avoid blunting energy price signals.

The bad news is that in an era when much of the public distrusts virtually all decision-makers, it is not clear whether there will be greater trust in electronic decisionmakers. Systems dominated by IT/AI are also potentially subject to malevolent disruption and intrusions that put privacy, security and public confidence at risk.

Public authorities will have to ask: How will technological innovations in IT/AI influence, disrupt or facilitate Canada's energy future and low-emissions energy? How to ensure that public confidence in energy decision-making is built and maintained — even if larger components of these decisions will be taken on by 'smart' machines?

#### Driver #5:

## Climate Change Impacts and Adaptation: the neglected side of the climate change coin?

The last large trend that will more than likely dominate the coming decades is related to climate change itself. If the policy foundation for moving to low emissions is the essential climate change hypothesis as expressed and documented most recently by the IPCC, then it must be equally the case that a great deal of climate change is already locked in. The globe is experiencing the effects of a changing climate in the form of extreme heat and wild fires; high precipitation events causing floods and landslides; and severe storm events like monster hurricanes, blizzards or ice storms (IPCC 2018). Energy systems are by no means uniquely vulnerable to these sorts of events, but they are vulnerable.

More broadly, climate change also has impacts on Canadians' safety, health (both physical and mental), and culture (Expert Panel on Climate Change Adaptation and Resilience Results 2018). Hence, building climate resilience will be a large-scale effort, involving all sectors of society and requiring investments in health, vulnerable regions, disaster response and recovery, infrastructure, research and scientific knowledge translation (Ibid). Of course, the scale of required investments in adaptation is largely determined by the degree to which future climate change is avoided through timely and effective emissions mitigation, but this is something over which Canada has limited control.

This creates big challenges for energy system decisionmakers. How to make energy systems resilient and able to withstand the effects of weather events? Where it is impossible to protect energy systems entirely, how to enable them to recover quickly? How do other climate change impacts on Canadian society, including consequences for public health, safety, and Canadian culture, affect energy markets? How to balance resource demands for adaptation with those needed for mitigation? These questions will create investment choices that will force themselves to the front of the queue when priorities are being evaluated.





#### **BOX 5: THE UNIVERSITY OF OTTAWA'S POSITIVE ENERGY INITIATIVE**

The University of Ottawa's Positive Energy initiative was launched in 2015 with the aim of identifying how to strengthen public confidence in Canadian energy policy, regulation and decision-making through research and analysis, engagement and recommendations for action.

In the first three-year phase of Positive Energy, research into the role of public authorities in energy decisionmaking (policy, regulation and project decision-making) was conducted along three streams articulated in the report System Under Stress (Cleland and Gattinger 2017) and further detailed in the studies: Who Decides? (Fast 2017), How to Decide? (Simard 2018), and Policy-Regulatory Relations (Bird 2018).

Extensive case study research of local communities' levels of satisfaction with energy project decision-making processes was also undertaken in collaboration with the Canada West Foundation. Findings were reported on in the study A Matter of Trust (Cleland et al. 2016).

Durable Balance, the final report of the first three years of Positive Energy, rolled up all of the findings from the first phase of Positive Energy into a set of key recommendations for action (Cleland and Gattinger 2018).

The second three-year phase of Positive Energy, Canada's Energy Future in an Age of Climate Change, builds on this work to address the following question:

How can Canada, an energy-intensive federal democracy with a large resource base, build and maintain public confidence in public authorities (federal, provincial, and territorial policymakers and regulators, Indigenous governments, municipal governments and the courts) making energy decisions in an age of climate change?

To address this question, Positive Energy will undertake sustained research and engagement over the next three years in the three core areas this paper has identified as necessary to strengthen public confidence: Polarization, Roles and Responsibilities, and Models of and Limits to Consensus-Building. Each topic will constitute a research and engagement stream, for which there will be dedicated projects, events, reports and findings.

Positive Energy will utilize a consistent 'suite' of research and engagement methods:

- Engagement of emerging and established energy leaders. Through workshops, conferences and panels, Positive Energy will co-design research projects and strategies and 'stress test' recommendations for action. Positive Energy will employ innovative engagement methods where feasible (e.g., integration of the arts, new technological tools, etc.).
- International comparisons with countries in similar circumstances (geography, resource base, energy intensity, federal systems, growing Indigenous involvement in energy), notably the United States and Australia.
- Evaluation of 'What Works' through research partnerships with organizations working on similar issues.
- Further research diving into specific questions on Positive Energy's existing case studies (the Communities research undertaken in the first phase of Positive Energy).
- Survey research (public opinion polling and Positive Energy's Energy Leaders panel with Nanos Research) to better understand attitudes and opinions and to 'test-run' recommendations flowing from the research.
- Collaboration with other organizations whose knowledge and activities are complementary to Positive Energy's expertise on public confidence in energy decision-making where our respective efforts could enrich one another's work.
- Art. Inclusion of the arts into knowledge production and/or dissemination where feasible. This could include creative approaches to documenting processes of knowledge production at Positive Energy events in the form of mind maps, live drawings, etc.

### PUBLIC CONFIDENCE AND CANADA'S ENERGY FUTURE: HOW CAN THE COUNTRY MOVE FORWARD?

As sketched out in this paper, current debates – and in some instances decisions – on Canada's energy future have tended towards polarization, partisanship and parochialism, rather than long-term, cool-headed, evidence-informed analyses with a full appreciation of the country's economic, political, geological and technological context in mind.

There are many opportunities both at home and abroad for Canadian energy, but there are also many challenges ahead. When it comes to climate change, the relevant time horizon to completely remake the energy economy and all its associated infrastructure is a matter of several decades for the many reasons explored in this paper. This process, if it is successful, will entail, in the relatively brief span of 30 years, a transformation of a nature and scale approximating that last seen at the beginning of the twentieth century, when power grids and petroleumbased transportation came to dominate energy systems.

The scope and scale of the change is much more revolutionary on several dimensions than Canadians have yet come to grips with. Most visible and controversial is the potential effect on one of Canada's principal export industries, on the fundamental well-being of several regional economies and on the general state of Canada's economy in a global context. More diffuse but potentially just as revolutionary are the myriad implications for a domestic energy system whose critical requirements – safe, healthy, secure, reliable, resilient and affordable – will, on the evidence to date, almost always take precedence in the public mind over the goal of greenhouse gas emissions reduction. In the absence of focused efforts to build and maintain public confidence in the decision processes guiding Canada's energy future, the risk, put simply, is that the country sets up yet another fundamental public policy failure, extending an unbroken thirty year record which has led to where Canada stands today.

The road ahead is likely to be very uncertain and full of bumps – apart from the specific challenges that have dominated the debate around energy and climate change, many other social, economic and political transitions are underway, all with large implications for Canadian energy in the years ahead. Those with an interest in energy, in reducing emissions and in associated decision-making will need to broaden their horizons to encompass all of these changes and how they may prove to be either constraints or facilitators.

Public confidence in decision-making processes will be an essential underlying condition of a successful process of change. Based on the analysis in this paper, and the research and engagement undertaken to date by the University of Ottawa's Positive Energy initiative (see Box 5), there are three key sub-questions that need to be addressed in the rebuilding of public confidence.

#### 1. Working Through Polarization

#### How can public authorities address or work through polarization over energy to build and maintain public confidence in energy decision-making?

Energy projects, policies and the future of Canadian energy are passionately contested, with both supporters and opponents drawing on environmental, economic and security-related 'facts' in their arguments. While energy has always been subject to political fragmentation and contentiousness, as outlined earlier in this paper, it would appear that a new phenomenon is emerging in energy politics and decision-making (and in political contexts more broadly): polarization.

Policy issues like carbon pricing are becoming polarized along partisan lines. This is a troubling development as it can challenge evidence-informed decision-making and produce wild swings in policy from one government to the next. The political context for climate policy and energy projects likewise appears to be increasingly polarized, with 'voices' at either end of the spectrum dominating debate – even fuelling polarization for short-term political gain. This can challenge Canada's ability to arrive at a shared vision of its energy and climate future, the capacity for consultation processes to bring forward moderate points of view and identify potential compromises, and, more generally, can challenge trust in public authorities and their capacity to reach durable balance points among core energy imperatives (economic, environmental, security, etc.). In the context of political and economic uncertainty, the wider phenomenon of political polarization in Canada — with regards to energy but also more broadly — is a particularly important factor shaping how energy decisions are made in Canada. Investigating sources and consequences of polarization on energy issues as well as potential means of reconciling or navigating through polarized viewpoints is essential for Canada on a go forward basis.

Key topics include the following:

- understanding polarization as a general phenomenon: causes, severity and consequences;
- understanding polarization in the energy sector: causes, severity and consequences;
- addressing, working through and accounting for polarization, in energy decision-making.

#### 2. Roles and Responsibilities among Decision-Making Authorities

#### How can relationships among the various public authorities making energy decisions be strengthened to build and maintain public confidence?

Energy decision-making in the face of climate change adds complexity and urgency to better articulating and understanding the respective roles and responsibilities between and among the multitude and diversity of public authorities making energy decisions in Canada. This includes the role of the courts in decision-making, a role that is particularly apt in the wake of the Federal Court of Appeal's decision on the Trans Mountain Pipeline Expansion project and the Supreme Court of Canada's decision on whether the duty to consult and accommodate applies to decision-making processes leading to legislative frameworks.

Canada has seen local communities, Indigenous authorities and courts gain importance in the energy decisionmaking system, and changes in Canada's energy system in response to climate change may further reshuffle formal and/or effective decision-making powers among the different actors. A lack of collaboration, cooperation and shared understanding of roles and responsibilities among the various public authorities may considerably weaken the confidence of citizens, communities and investors in public authorities in addition to making decision processes inherently less efficient and fraught with uncertainties.

Key issues Canada has yet to adequately resolve include the following:

- the policy-regulatory-judicial nexus in Canadian energy decision-making;
- the interface with Indigenous regulatory agencies and processes;
- the involvement of municipal governments.

#### 3. Models of and Limits to Consensus-Building

#### What are the models of and limits to consensusbuilding in building and maintaining public confidence in energy decision-making?

In a democratic society, public involvement in energy decision-making is necessary and key to building public confidence. For example, changes in Canada's energy system in response to climate change will most likely involve large-scale deployment of emerging and disruptive technologies, numerous policy experiments, and innovations across a wide spectrum of policy instruments. The successful implementation of these various kinds of innovations will hinge on social acceptance.

Yet the more or less ad hoc evolution of the processes for securing social acceptance from the pejorative 'NIMBY' to the ill-defined 'social license' to the complex 'free, prior and informed consent' have created a widely differing set of expectations and a growing clash between the fundamental, formally constituted responsibilities of public authorities and the expectations of citizens (see Box 4). Despite several decades of experience, there remains a lack of understanding about how to build consensus on specific energy projects and policies (along with corresponding legislation); how to ensure citizens and communities have the necessary information and capacities to make their voices heard; under what circumstances project ownership and equity are necessary ingredients for consensusbuilding (especially for Indigenous communities); how to know when adequate effort has been invested in consensus-building; and how to resolve situations that involve trade-offs.

In short, Canada has yet to critically assess the strengths and limitations of various models of consensus building. This is particularly problematic in a polarized environment (see #1 above) with a large number of diverse actors (see #2 above).

As such, among the key topics are the following:

- public engagement as a means for consensus-building around energy projects, regulations, and policies;
- identifying and managing trade-offs as a means of consensus-building around energy projects, regulations, and policies;
- community and regional energy planning as a means of consensus-building around energy projects, regulations, and policies.

## CONCLUSION: THE ROAD AHEAD – FROM PARTISANSHIP, POLARIZATION AND PAROCHIALISM TO PUBLIC CONFIDENCE

Canada may or may not be at an inflection point for energy: starting to make meaningful progress on climate while respecting the multiple other demands on the energy system - or not. The challenges of reconciling the various pressures on the energy system, including how to respond to the demands of climate change have, if anything, grown over the past few years. Until the challenges of polarization, partisanship and parochialism are truly tackled, Canada could be at no inflection point at all, but rather, reverberating in a partisan polarized echo chamber with wild policy swings from one extreme to another. Canada could be increasingly stuck in the worst of both worlds -meeting neither emission reduction nor other energy goals. This is a world in which the confidence of citizens, investors and communities carries on a steady march downward.

Most governments and political parties readily employ the term 'transition' and claim that they embrace Canada's Paris commitments respecting greenhouse gas emission reductions by 2030. But widespread political commitments to Paris targets are rarely matched by proposed actions. In most cases, proposed actions are not even close to commensurate with the Paris targets and there is little to suggest that will change anytime soon. Moreover, even though Canadians poll consistently supportive of climate action, recent experience with community pushback on renewable energy projects and voter pushback on carbon pricing (in some jurisdictions) underscores that citizens and communities most likely place the so-called 'low carbon transition' somewhere in the queue behind numerous other energy priorities – from jobs to affordable and reliable energy supply to local community impacts.



A historically minded observer could be forgiven for thinking that the above scenario looks much like business as usual, continuing almost thirty years of policy at all levels of government that has failed to make meaningful progress on climate and has shown that many other demands of consumers, citizens, communities and voters have eventually trumped the aspirations of policymakers and diplomats. After so many false starts, Canada should by now have learned a great deal. What remains to be found after three decades is climate policy as if energy mattered and, to be fair, energy policy as if climate mattered.

It would be foolhardy for any group or individual to suggest they had the answer to this challenge; after all, many capable people have sought to put – and in many instances succeeded at putting – ideas into action. Based on three decades of outcomes, it seems clear that Canada has too often been overtaken by dangerous optimism. Now seems a good time to set that aside. Positive Energy research and engagement reveals that the challenges are not going to get easier: real substantive consensus that sustains meaningful action is becoming more elusive across regions and among individual Canadians preoccupied with the realities of their energy futures.

But it would be equally foolhardy to end with counsel of despair.

So what should decision-makers do? This report reveals there are a number of practical steps that can be taken immediately.

First, how Canada frames energy and climate debates matters. For too long, Canada has tended toward parochial domestically-focused debates that don't sufficiently take into consideration the global energy and climate context. The key question is: 'What is Canada's energy future in an age of climate change?' In developing an answer, it is crucial that Canadian energy and climate policy be placed in their global circumstances. This means a sober assessment of where Canada can be a constructive player, where there are global opportunities for Canadian energy and where and how the country can credibly exercise leadership.

A pivotal element of framing is language. Language matters – especially in polarized environments, where it can open up or shut down productive debate and meaningful progress. Terms like 'clean energy' and 'low carbon' risk tilting debates toward fuel determinism (not to mention dangerous optimism) and can needlessly shift the focus away from emissions reduction towards fuel sources. This report suggests using the term 'low emissions' to put the focus on the source of climate change.

 Second, try to avoid partisan polarization on energy issues. This is particularly difficult in an election year and in the current political environment both at home and abroad, but everyone loses with wild policy swings. The confidence of investors, communities, citizens and consumers erodes when partisan affiliation comes to define policy stances on energy and climate issues – not the best available evidence.

- Third, make climate change policy as if energy mattered (and vice-versa). For too long, climate and energy policy have been made in silos. Positioning energy at the heart of climate policy (and vice-versa) ensures that pivotal economic, political, technical/ technological, security and social imperatives aren't obscured from view – and helps to avoid the dangerous optimism that can lead to policy choices that are not politically, socially or technically feasible in the long term.
- Finally, when making energy and climate policy, decision-makers should consider the global trends and drivers that will affect and influence energy and climate:
  - growing political uncertainty characterized by increasing polarization, partisanship and motivated reasoning;
  - lower levels of public trust in and deference to government, industry, the media and expertise;
  - growing economic uncertainty with regards to international trade, demographics and the investment climate;
  - technological uncertainty propelled by emerging and disruptive technologies like artificial intelligence; and
  - the increasingly visible effects of climate change itself.

Looking forward, the core question is how to move from partisanship, polarization and parochialism to public confidence in decision systems charting Canada's energy future. This report highlights the importance of focusing on three broad issues (these will form the core of Positive Energy's research and engagement agenda over the next three years).

- Working through polarization. Canada needs to come to grips with the challenges of polarization. It is urgent to improve understanding of the causes consequences and severity of polarization, and, most importantly, it is crucial to identify solutions that help decision-makers navigate from polarization to public confidence.
- Roles and responsibilities of decision-making authorities. There is an urgent need to rebuild agreement on the respective roles and responsibilities of policy-makers, regulators and the courts when it comes to decision-making.
- Models of and limits to consensus building. It is
  essential to identify how to reinvent or reinvigorate
  methods of consensus-building in the Canadian
  populace and across Canadian regions. Recent
  experience underscores that consultation and
  engagement are a necessary but insufficient condition
  when it comes to public confidence in decisionmaking. Decision-makers need to know which models
  to use when, and what their alternatives and limits
  are.

Being straightforward with Canadians on these points and finding where they align with the country's interests, values and identity might be a good way of starting to make the next two to three years truly an inflection point on the road ahead for energy in Canada in an age of climate change.

## REFERENCES

- Bird, Stephen. 2018. The Policy-Regulatory Nexus in Canada's Energy Decision-Making. From Best Practices to Next Practices. Ottawa: University of Ottawa.
- Burke, Marshall, W. Matthew Davis and Noah S. Diffenbaugh. 2018. Large potential reduction in economic damages under UN mitigation targets. Nature 557: 549-553.
- CESAR. 2013. "Sankey diagrams associated with fuel and electricity production and use in Canada". Accessed February 22, 2019. http://www.cesarnet. ca/visualization/sankey-diagrams-canadas-energysystems
- Chua, Amy. 2018. Political Tribes: Group Instinct and the Fate of Nations. New York: Penguin Press.
- Cleland, Michael, Stephen Bird, Stewart Fast, Shafak Sajid, and Louis Simard. 2016. A Matter of Trust: The Role of Communities in Energy Decision-Making. Calgary and Ottawa: Canada West Foundation and University of Ottawa.
- Cleland, Michael and Monica Gattinger. 2017. System Under Stress: energy decision-making in Canada and the need for informed reform. Ottawa: University of Ottawa.
- Cleland, Micheal and Monica Gattinger. 2018. Durable Balance: Informed Reform of Energy Decision-Making in Canada. Ottawa: University of Ottawa.
- Edelman. 2017. "2017 Edelman Trust Barometer." Accessed February 22, 2019. https://www.edelman.com/ research/2017-edelman-trust-barometer

Edelman. 2018. "2018 Edelman Trust Barometer." Accessed February 22, 2019. https://www.edelman.com/ research/2018-edelman-trust-barometer

- Edelman. 2019. "2019 Edelman Trust Barometer." Accessed February 22, 2019. https://www.edelman.com/trustbarometer
- Environment and Climate Change Canada. 2018a. Canada's Mid-Century Long-Term Low-Greenhouse Gas Development Strategy. Ottawa: Environment and Climate Change Canada.
- Environment and Climate Change Canada. 2018b. National Inventory Report 1990-2016: Greenhouse Gas Sources and Sinks in Canada.
- Expert Panel on Climate Change Adaptation and Resilience Results. Measuring Progress on Adaptation and Climate Resilience: Recommendations to the Government of Canada. Ottawa: Environment and Climate Change Canada.
- Fast, Stewart. 2017. Who Decides? Balancing and Bridging Local, Indigenous and Broader Societal Interests in Canadian Energy Decision-making. Ottawa: University of Ottawa.
- Fast, Stewart and Monica Gattinger. 2018. Discussion Paper for Positive Energy's Trust in Transition Workshop, 23-24 January 2018, Ottawa: University of Ottawa.
- Fukuyama, Francis. 2018. Identity: The Demand for Dignity and the Politics of Resentment. New York: Farrar, Straus and Giroux.
- Government of Alberta. 2007. Highlights. Budget 2007. Edmonton: Government of Alberta.



Government of Alberta. 2012. Budget 2012. Fiscal Plan 2012-15. Edmonton: Government of Alberta.

- Government of Alberta. 2018. "Revenue". Accessed on October 4, 2018. https://www.alberta.ca/budgetrevenue.aspx
- Government of Saskatchewan. 2007. 2006-2007 Saskatchewan Provincial Budget. Regina: Government of Saskatchewan.
- Government of Saskatchewan. 2012. 2011-2012 Saskatchewan Provincial Budget. Regina: Government of Saskatchewan.
- Government of Saskatchewan. 2018. Public Accounts 2017-18. Volume 1. Summary Financial Statements. Regina: Government of Saskatchewan.
- International Energy Agency. 2018. World Energy Outlook. Paris: OECD/IEA.
- IPCC. 2018. Global Warming of 1.5°C. An IPCC special report on the impacts of global warming of 1.5°C above preindustrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. Geneva: IPCC Secretariat.
- Kahan, Dan M., Ellen Peters, Maggie Wittlin, Paul Slovic, Lisa Larrimore Ouellette, Donald Braman and Gregory Mandel. The polarizing impact of science literacy and numeracy on perceived climate change risks. Nature Climate Change 2: 732-735.
- Nanos, Nik. 2018. The Age of Voter Rage. London: Eyewear Publishing.

Nanos Research for Positive Energy. 2018. A majority of Canadians think it is possible or somewhat possible for Canada to develop its energy resources while protecting the environment but think Canada is doing a poor or very poor job at balancing concerns of communities and building public confidence in energy projects. Poll commissioned by Positive Energy (1000 respondents surveyed between March 31 and April 3, 2018). Accessed from: https://www.uottawa. ca/positive-energy/sites/www.uottawa.ca.positiveenergy/files/2018-1169\_positive\_energy\_march\_ omni\_-populated\_report\_with\_tabs.pdf

- NEB. 2018. "Canada's Renewable Power Landscape 2017

   Energy Market Analysis." Accessed on February 27, 2019. https://www.neb-one.gc.ca/nrg/sttstc/lctrct/rprt/2017cndrnwblpwr/cndnvrvw-eng.html
- Nevitte, Neil. 1996. The Decline of Deference: Canadian Value in Change in Cross National Perspective. Toronto: University of Toronto Press.
- -----. 2011. 'The Decline of Deference Revisited: Evidence after 25 Years.' Paper presented at Mapping and Tracking Global Value Change: A Festschrift Conference for Ronald Inglehart. March 11, University of California, Irvine.
- NRCan. 2018a. "Electricity facts." Accessed February 22, 2019. https://www.nrcan.gc.ca/energy/facts/ electricity/20068#L3
- NRCan. 2018b. "Energy and Greenhouse Gas Emissions." Accessed on February 27, 2019. https://www.nrcan. gc.ca/energy/facts/energy-ghgs/20063



- NRCan. 2018c. "Energy and the economy." Accessed February 22, 2019. https://www.nrcan.gc.ca/energy/ facts/energy-economy/20062#L2
- NRCan. 2018d. "Renewable energy facts." Accessed February 22, 2019. https://www.nrcan.gc.ca/energy/ facts/renewable-energy/20069
- Petris, Felix, Moritz Schwarz, Kevin Tang, Karsten Haustein and Myles R. Allen. 2018. Uncertain impacts on economic growth when stabilizing global temperatures at 1.5° or 2°C warming. Philosophical Transactions A 376(2119).
- Sajid, Shafak. 2016. A Matter of Trust. The Role of Communities in Energy Decision-Making. Case Study Wuskawatim Hydroelectric Facility, Nisichawayasihk Cree Nation. Calgary and Ottawa: Canada West Foundation and University of Ottawa.
- Schleussner, Carl-Friedrich, Joeri Rogelj, Michiel Schaeffer, Tabea Lissner, Rachel Licker, Erich M. Fischer, Reto Knutti, Anders Levermann, Katja Frieler, and William Hare. 2016. Science and Policy Characteristics of the Paris Agreement Temperature Goal. Nature Climate Change 6: 827-835.
- Simard, Louis. 2016. A Matter of Trust. The Role of Communities in Energy Decision-Making. Case Study St Valentin, Québec. Calgary and Ottawa: Canada West Foundation and University of Ottawa.
- Simard, Louis. 2018. How to Decide? Engagement: Information and Capacity. Ottawa: University of Ottawa.

- Statistics Canada. 2015. Population Projections for Canada (2013 to 2063), Provinces and Territories (2013 to 2038). Ottawa: Statistics Canada, Demography Division.
- Statistics Canada. 2017a. Annual Demographic Estimates: Canada, Provinces and Territories, 2017. Ottawa: Statistics Canada, Demography Division.
- Statistics Canada. 2017b. Aboriginal Peoples in Canada: Key Results from the 2016 Census. The Daily, 2017-10-25. Ottawa: Statistics Canada.
- Statistics Canada. 2018. Exports and Imports of Goods and Services, quarterly (x 1,000,000). Table 36-10-0110-01. Ottawa: Statistics Canada.
- Trottier. 2016. Canada's Challenge and Opportunity. Transformations for major reductions in GHG emissions. Trottier Energy Futures Project.
- United Nations, Department of Economic and Social Affairs. 2015. World Population Prospects: The 2015 Revision, Key Findings and Advance Tables. Working Paper No. ESA/P/WP.241
- Warren, Rachel, Oliver Andrews, Sally Brown, Nicole Forstenhaeusler, David Gernaat, Phil Goodwin, Ian Harris, Helen He, Chris Hope, Felipe Gonzalez-Colon, Robert Nicholls, Tim Osborn, Jeff Price, Detlef Van Vuuren, and Rebecca Wright. 2018. Risks Associated with Global Warming of 1.5°C or 2°C. Briefing Note May 2018. Norwich, UK: Tyndall Centre for Change Research.

### NOTES






