



Canadian
Electricity
Association

Association
canadienne
de l'électricité

CANADIAN CLIMATE ACTION

CLEAN POWER AND CONSENSUS BUILDING



AN ELECTRICITY SECTOR DISCUSSION PAPER | JUNE 28, 2017

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INTRODUCTION

Following the landmark Paris Agreement reached in 2015, more countries than ever before have committed to limiting global average temperature increases to less than two degrees Celsius. Reaching this goal will require a great effort from all signatories, including Canada. The [Pan-Canadian Framework on Clean Growth and Climate Change](#) (“Pan-Canadian Framework”), to which the federal government as well as most provinces and territories have signed on, lays out how Canada plans to achieve its climate and clean energy objectives, including meeting Canada’s greenhouse gas (“GHG”) emissions target of 30% below 2005 levels by 2030.

As Canada implements the Pan-Canadian Framework, it is important for governments to consider regional diversity, including differences in market conditions, electricity system design, physical infrastructure constraints, and locally available natural resources. These factors will greatly influence how consumer prices will be impacted by actions taken to reduce Canada’s carbon footprint. Some regions will inevitably be affected more than others.

While actions and impacts require due consideration of the regional and local realities, all economic sectors and individual Canadians must also participate in and contribute to this national endeavor. No sector should be excluded as Canada pursues GHG emission reductions, and respective regulators should facilitate this transition. Individual Canadians must also play a role in their willingness to support major clean energy projects, as well as adjust their own energy consuming behaviors. A successful strategy will require a pragmatic partnership between governments, industry, energy regulators and the public.

Indeed, a winning policy will really take a “village”.

For its part, the electricity sector has already reduced GHG emissions by over 30% since 2005 and will likely reduce emissions by at least another 30% by 2030, as existing traditional coal-fired plants are retired. This positions the sector as a key enabler of Canada’s transition to a clean energy economy, including greater electrification of transportation, space heating and industrial processes. Canadian electricity generation is already over 80 percent non-GHG emitting, making it among the cleanest in the world.

Furthermore, the sector has been investing heavily, averaging over \$20 billion annually¹, in the renewed infrastructure and advanced technologies needed to ensure the system’s sustained reliability, and providing the capacity to power Canada’s shift to a clean growth economy.

¹Source: Statistics Canada, CANSIM Table 031-0002, Retrieved June 21, 2015

While the electricity sector is leading the way, the volume and magnitude of proposed regulations such as the accelerated coal phase-out, natural gas performance standards, and carbon tax, combined with the speed of their development and implementation, could pose challenges to electricity companies with fossil fuel-based generating assets. Cost increases will necessarily be passed along to industrial, commercial and residential customers in the form of higher rates. As Canada looks ahead, it is imperative that governments, stakeholders, and the public work closely to build and sustain a national consensus on clean growth and climate change that openly acknowledges the possibility of cost impacts.

As an early supporter of a North American-wide price on carbon, the Canadian Electricity Association (“CEA”) and its members support climate change action. We are already working with governments towards this end, which must also include close collaboration in mitigating any unintended competitiveness impacts on the economy, our businesses and Canadian families.

1. OPERATIONALIZING THE PARIS AGREEMENT THROUGH THE PAN-CANADIAN FRAMEWORK ON CLEAN GROWTH AND CLIMATE CHANGE: CHALLENGES AND IMPACTS

a. Coal phase-out, natural gas regulations, carbon tax (federal/provincial)

The electricity sector is responsible for [11 percent](#) of Canada’s total emissions². The Pan-Canadian Framework proposes several policies to reduce remaining GHG emissions from the electricity sector, including revised emission standards on new natural gas and coal fired electricity generation. While the sector is supportive of these emission reduction measures and the related flexibility mechanisms, it is calling upon governments to further help mitigate any short-medium term impacts of this transition to a lower carbon future.

As companies transition to lower-emitting forms of generation, in some cases with an early shut down of GHG emitting facilities, consumers could be directly impacted by higher electricity bills as costs are passed through. In a recent [report](#) by the Senate Standing Committee on Energy, the Environment and Natural Resources, it was noted that “many Canadians could soon be paying higher electricity bills as the country tries to meet reduction targets for its GHG emissions -especially those in provinces that rely on fossil fuel generation”³. It is anticipated that a carbon tax (starting at \$10/tonne of CO₂ and increasing each year to \$50/tonne in 2022), when added to other GHG reduction measures, will further increase costs to companies, and ultimately Canadian families.

² Source: Environment and Climate Change Canada, “Canadian Environmental Sustainability Indicators: Greenhouse Gas Emissions”

³ Source: Senate Standing Committee on Energy, the Environment and Natural Resources, “Positioning Canada’s Electricity Sector in a Carbon Constrained Future”

The potential cost impact is of concern to the sector as it is also in the midst of investing in the renewal and modernization of existing infrastructure while continuing to provide safe, reliable power to Canadians. In fact, in 2012, a Conference Board of Canada (“CBOC”) study projected that the sector would need to invest \$350 billion⁴ from 2012-2030 to renew its existing infrastructure. In an upcoming report, which has been shared with CEA in draft form, the CBOC further predicts that the sector will need to invest \$1.6 trillion by 2050 to meet Canada’s climate and clean growth objectives.

As Canada pursues intensive energy system transition, it is crucial that governments consider measures to ensure costs to ratepayers, especially low-income Canadians, are minimized to the extent possible. Measures to be considered may include direct funding for innovative technologies, loan guarantees to help access capital, tax credits and accelerated capital cost allowances, and the potential recycling of carbon tax revenues.

b. Moving Canada’s electricity mix from 80 to 90 percent clean energy

The federal government has set an ambitious and aspirational goal of achieving 90 percent clean electricity by 2030. As figure 1 illustrates, Canada already has a significant clean energy advantage with many provinces and territories powered by hydropower, nuclear and other forms of non-emitting generation. However, coal and natural gas continues to be used in many provinces and territories, including Alberta, Saskatchewan, Ontario, New Brunswick, Nova Scotia, Newfoundland and Labrador, the Northwest Territories and Nunavut. For these jurisdictions, the faster the pace of change the more expensive it will be. If the aim is to move the sector to 90 percent clean energy by 2030, then governments must also facilitate greater regulatory support and investments in current and new technologies, including hydropower, energy storage, micro grids, modular nuclear technology and other forms of alternative clean energy sources.

⁴ Source: Conference Board of Canada, “Shedding Light on the Economic Impact of Investing in Electricity Infrastructure”.

MAKING HISTORY WITH SASKPOWER’S CARBON CAPTURE AND STORAGE PROJECT

The carbon capture and storage (CCS) project at SaskPower’s Boundary Dam Power Station is the world’s first commercial-scale CCS process installed in a coal-fired plant. By taking an old facility nearing its end of life and rebuilding it with CCS technology, SaskPower can produce electricity that is 10 times cleaner than traditional coal plants. As the CCS process ramps up to full operation, it will capture up to 90 per cent of carbon dioxide and 100 per cent of sulphur dioxide, which can then be re-used for industrial and research purposes.



Photo courtesy of SaskPower

NOVA SCOTIA POWER BIOMASS CO-GENERATION FACILITY

In July 2013, Nova Scotia Power Inc. commissioned a 60 MW biomass co-generation facility adjacent to a pulp and paper mill in Port Hawkesbury. The project is another aspect of Nova Scotia Power’s strategy to diversify its generation portfolio and meet renewable energy requirements. The facility will supply roughly three per cent of Nova Scotia’s electricity needs and act as a source of firm renewable energy that will also help back up the province’s extensive network of new, intermittent wind generation.



Photo courtesy of Nova Scotia Power

Electricity Generation in Canada by Province & Territories and Fuel Type, 2015

Total Electricity Generation in Canada, 2015 = 631.68 TWh

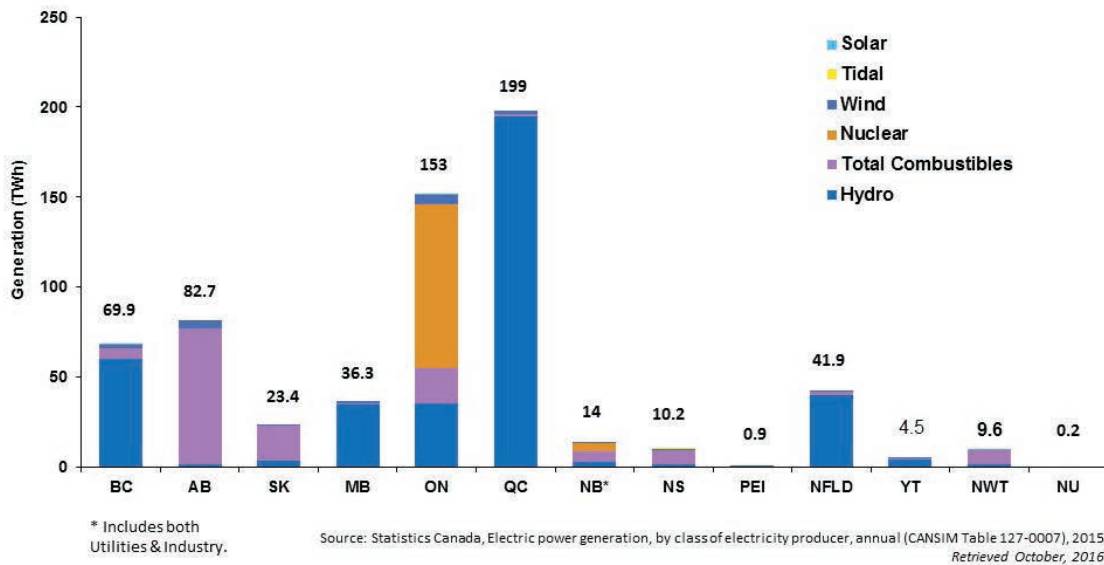


Figure 1: Electricity Generation in Canada by Province and Territory and Fuel Type, 2015. | Source: Statistics Canada

New investments in clean energy technologies will be important for lowering emissions, promoting economic growth, increasing competitiveness and ensuring Canada is at the leading-edge of a green, knowledge-based economy. They will also help Canada’s electricity system expand to accommodate new electricity uses, increase responsiveness and storage capacities, and build a two-way grid that all Canadians can benefit from. Thus, it is crucial that governments work to reduce regulatory barriers to these innovative clean energy projects and explore ways to support the transition through the tax base rather than relying singularly on customer rate base.

c. United States Climate Inaction and Canadian Competitiveness

With protectionism on the rise south of the border, coupled with the pending renegotiation of the North American Free Trade Agreement and climate change policy reversals, Canada must consider the potential competitiveness impacts of U.S. domestic policies. If the American federal government continues to express a protectionist, “America-first” approach and remains unsupportive of climate mitigation efforts, this could pose a risk to the competitiveness of Canadian businesses. This ‘competitiveness’ gap between Canada and the U.S. could widen further if planned broad-based tax reforms, including a potential Border Adjustment Tax and corporate tax cuts, are enacted by the U.S government.

Thus, as the federal, provincial and territorial governments maintain their climate action trajectory, they must be cognizant of this dynamic and work collaboratively with industry in an effort to bridge a competitiveness gap between the two countries. Failure to do so could result in economic disadvantages for our businesses and consumers.

Canadian electricity exports are a major revenue generator. Canada sold \$3.1 billion worth of electricity in 2015 and \$2.9 billion in 2016.⁵ As Canadian electricity exports are predominantly hydropower, with some nuclear, there is a significant opportunity to help reduce American GHG emissions. This makes it important for Canada to continue to articulate the benefits of cross-border cooperation on energy and environmental issues. During CEA’s annual [Board of Directors Washington Policy Forum in April 2017](#), American counterparts readily accepted that Canadian energy supply, including imports of clean electricity, have contributed mightily to U.S. national energy security, and expressed a strong interest in continuing that into the future.

⁵ Source: Statistics Canada, Canadian International Merchandise Trade Database, Table 908-0027



NEW BIOGAS FACILITY ADDS GENERATION TO SASKATOON LIGHT & POWER’S MIX

Saskatoon Light & Power, a municipal distribution utility, has built its first new generation facility in more than 100 years. Completed in March 2014, the Landfill Gas Collection System captures methane-rich gas from Saskatoon’s landfill and uses it to fuel two generators that produce 13 GWh each year, which is enough energy to power 1,300 homes. The facility will also become a new revenue source for the municipality once its initial investment is repaid.

OPG’S PETER SUTHERLAND GENERATION STATION’S CLEAN, RENEWABLE ENERGY POWERS THOUSANDS

Ontario Power Generation Inc. (OPG), in partnership with Taykwa Tagamou Nation (TTN) completed Peter Sutherland Sr. GS in 2017, on budget and ahead of schedule. The hydroelectric station, named after a respected TTN community elder, is operated remotely out of OPG’s control room in Timmins and produces enough electricity to power about 28,000 homes each year. This station generates clean, renewable electricity 24 hours a day, 365 days a year and is part of OPG’s clean energy portfolio which is more than 99 per cent free of greenhouse gas and smog emissions.

U.S. officials spoke to the mandate of change that President Trump won last November. But in the same breath, they felt an “obligation” to inform their President about the matters that are working well and do not require change. And in that context, they indicated that bilateral energy cooperation between our two countries is a prime example of something that is “not broken”.

Indeed, the electricity sector has many opportunities upon which the U.S. federal government is keen to capitalize on. This includes low cost energy integration, especially as it supports energy security and job creation, as well as policy improvements to safety and security. This is essential as the U.S. has placed a high priority on protection against cyber and physical attacks. Currently, there is considerable and constructive collaboration on security matters between our two governments and private sectors, but there is scope for raising the level of cooperation even further.

It is also reassuring that many sub-national American governments and industry leaders have committed to taking action on climate change and clean growth despite policy reversals by the Trump Administration. A recent [study](#) conducted by the New York Times found that 69% of American adults support CO₂ limits on coal fired power plants, indicating that the narrative and belief around climate change and its impacts is entrenched⁶. The two large states of California and New York, for instance, have indicated a desire to stay the course on climate change action.

This trajectory towards a clean energy future in the U.S. will offer some respite for Canadian competitiveness concerns, but federal and provincial/territorial governments must consider using different and innovative tools from their fiscal and regulatory toolboxes to ensure Canadian industry is not disadvantaged by the U.S. federal government’s lack of action on climate change. For example, what are some of their options at our disposal?

- Should Canada follow suit if the Trump Administration lowers U.S. corporate tax rates?
- Should the Canadian governments take steps to mitigate President Trump’s executive orders on streamlining their regulatory regimes and reducing red tape on natural resource exploration and development?
- Should Canadian governments accelerate funding for innovation and infrastructure projects?
- Should governments extend production incentives for new emerging generation technologies similar to past initiatives such as the Wind Power Production Incentive (WPPI)?
- Should governments re-examine accelerated capital cost allowances for clean generation technologies?
- Should the federal government do more to help Canadian firms market their clean energy expertise internationally?

⁶Source: The New York Times, “How Americans Think About Climate Change, in Six Maps”

There is an array of options available to governments, and the electricity sector encourages Canada's political leaders to carefully consider all the policy instruments at their disposal. The electricity sector also stands ready to work constructively with governments to ensure that Canadian businesses remain on a healthy and robust footing.

d. Dichotomy between reducing GHG emissions and speedy environmental approvals for clean energy projects

There are many policies in place to balance environmental protection and economic necessity. For instance, well-functioning and consistent environmental assessments are critical to ensuring companies consider and mitigate projects' environmental impacts. However, procedural delays and duplicative provincial and federal requirements often delay investment. These delays can have a real impact on Canada's climate goals as long approval processes can hinder green projects and increase the cost of Canada's switch to cleaner generating sources.

The environmental assessment processes for large-scale hydro or nuclear projects are intensive, requiring substantial planning, environmental studies, analysis of cumulative effects, and more. As a result, projects can extend over a decade from planning to construction. The original intent of the Canadian Environmental Assessment Act (CEAA) was to ensure that the environmental implications of all federal decisions were considered and managed. Today, overlapping regulatory regimes to protect environmental resources including fisheries, migratory bird and species at risk, have rendered the system cumbersome and difficult for companies and communities alike.

Building a low-carbon electricity generation system needed to achieve our carbon abatement goals will require large projects, such as hydroelectric dams, all of which will be subject to these assessments. As described in Canada's Mid-Century Long Term Strategy [report](#), the various scenarios for deep decarbonization by 2050 would require between 36,000 MW and 130,000 MW of hydroelectricity to be built. The report also states that "the construction of future large hydro projects will require careful consultation processes", due to potential negative impacts from large hydro developments⁷. Consultation and assessment processes for developments of that scale will be challenging given the relatively short timelines Canada has set for accelerating clean energy.

In many cases, the same environmental resources are protected by both federal and provincial legislation causing duplication and inconsistencies. The current system limits the industry's attempts to rejuvenate aging infrastructure and make better use of renewable generation. It also makes building a nationwide consensus more difficult as populations closest to and most reliant on these projects experience firsthand the frustration of procedural delays, which can disrupt employment and the daily life of their communities.

⁷Source: Canada's Mid-Century Long-Term Low Greenhouse Gas Development Strategy

e. Building long-term public trust and confidence

It is imperative that governments and industry work together to build public trust and confidence in our climate action strategies. While electricity costs vary across the country, compared to most developed nations, Canada on average has lower electricity costs. A recent [report](#) published by the National Energy Board states that Canada’s prices are relatively low compared to many other countries such as Germany or Denmark who pay more than twice as much as Canadians for each kilowatt hour of electricity (See figure 2)⁸. However, the relative cost of Canadian electricity, as well as the formula that is used to set rates, are not widely understood by the public or governments.

Notwithstanding this comparative reality, Canadians perceive their electricity costs as being too high. In fact, in most jurisdictions across Canada, rates have become a top of mind issue for residents, although consumers are well protected by a process whereby all electricity rates are provincially regulated in thorough, transparent, public rate hearings. In addition, CEA’s members are mindful of the need to keep costs as low as possible.

At the same time, if we are to continue to provide reliable electricity and achieve a national consensus on climate action, then ratepayers will also need to incorporate the value proposition of electricity; namely, that electricity has become an indispensable commodity for a high standard of living and for a robust national economy. And together with any transition to a low-carbon future, the public must be made aware of the balanced interplay between benefits and costs. In this regard, industry, governments, and regulators all have an obligation to inform Canadians of the facts and issues behind the policy pronouncements.

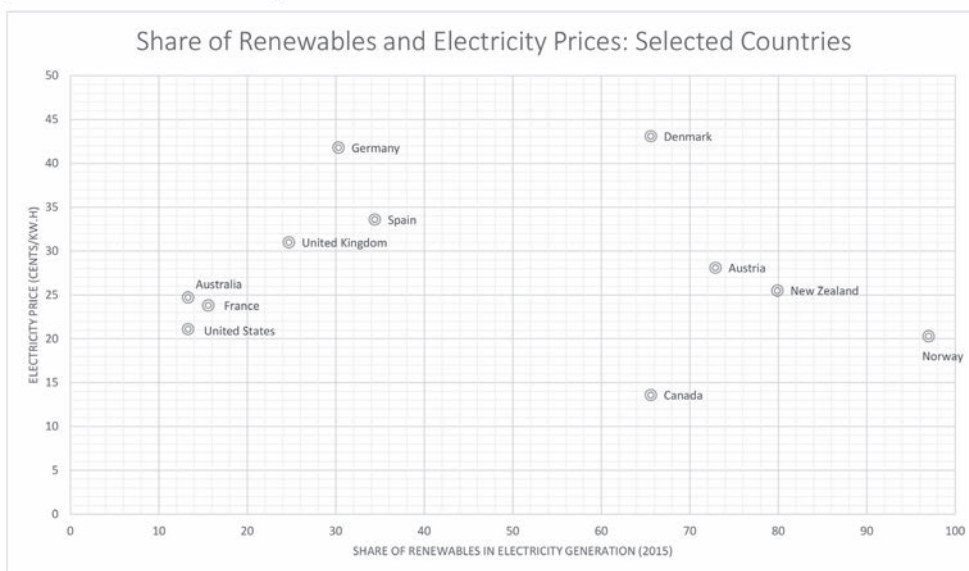


Figure 2: Share of Renewables and Electricity prices in various countries. | Source: National Energy Board (NEB)

⁸Source: National Energy Board, ‘Canada’s Adoption of Renewable Power Sources’

Ultimately, it is the government's duty to set the level of ambition, define the public policy framework and support key projects and initiatives. Industry's role is to invest, innovate and implement these decisions. And it is the public's responsibility to actively engage in the process and understand the implications. There is no way around it. Consumers will need to take on higher electricity prices than they have been accustomed to for long-term clean energy solutions to become a reality. Canadians will also need to weigh the costs of not pursuing a clean energy trajectory. This must be discussed openly and candidly at the front-end of our climate change strategies. Industry has already made significant strides to engage the public and will continue to do so. But clearly, they cannot act alone to achieve public support.

We need effective communication tools and processes to address all aspects of the climate policies, including their costs. In this way, we can help bridge the gap in public understanding and strengthen the national consensus that is required for our strategies to succeed.

Sustainable Canada Dialogues (SCD), an academic consortium, states that "an informed and continuing public debate about socially acceptable energy pathways that aims to build understanding and consensus [is needed] to achieve this transition"⁹. This is not simply a public relations exercise; Canadian's cost perceptions pose a serious risk to broad support for the required clean energy infrastructure investment and ultimately may jeopardize any long-term climate strategy. Canada must ensure that stakeholders feel included in the process of building a fair and inclusive nationwide consensus.

A useful example to this consensus-building obligation is 'Generation Energy: A Dialogue About Canada's Energy Future', which was recently launched by the Minister of Natural Resources. This initiative is aimed at starting a national dialogue on Canada's path to a low carbon future and invites Canadians to share their ideas and participate in helping define our country's energy future. Such efforts must continue and be replicated if we are to improve national understanding of, and approval for, clean energy policies.

⁹ Re-energizing Canada: Pathways to a Low-Carbon Economy, https://crcresearch.org/sites/default/files/u11276/reenergizing_short_final.pdf

2. BUILDING A NATIONAL CONSENSUS THROUGH OPPORTUNITIES

a. How do we encourage a shift to clean energy?

Without a doubt, there are significant financial costs associated with climate action. As previously mentioned, the Conference Board will soon publish a report that estimates that at least \$1.6 trillion must be invested in our electricity system alone to meet the challenge of the Paris agreement and the Pan-Canadian Framework by 2050. It is important to note that this is on top of the day-to-day regular system updates and repairs. The electricity sector accepts that inaction on climate is not an option, and that we must transition to a clean energy future. That is why we are encouraged by the federal government's commitment to funding green innovative infrastructure. Budget 2017 recently outlined many new and improved funding options that will be crucial to reducing the financial burden of the clean energy transition.

However, investment alone is not enough. Flexibility in the regulatory system will be required if electricity companies are to leverage these programs to build a system upon which Canadians can rely on well into the future. We must overcome the disconnect between government policies that prioritize innovation and energy regulatory decisions that curtail the capital required to deliver it. This "innovation gap", stemming from a single-minded focus on cost, has led to the rejection of innovative pilot programs to develop and deploy new technologies, reduce emissions or help provide power to remote communities. This gap between what regulators permit electricity companies to do and the government's strategic aspirations reaffirms the need for a governance and nationwide consensus on our transition to a clean energy economy.

Consumers also need to know the costs of inaction. In other words, when it comes to the electricity sector, what are the implications of not making the required investments in infrastructure and innovation?

The consequences would be quite significant; there would be less-than-reliable electricity, a corresponding loss in the standard of living, squandered economic opportunities, and a less competitive economy. All because of the potential for more disruptions caused by increased brownouts and/or blackouts. While it is tempting to simply build the cheapest system possible, we must try to resist this short-term temptation. Instead, we should take the long-term view, and invest in and build the strongest system possible.

Of course, we need to keep costs as low as we can. But, we need to complement this with the value that electricity plays in the everyday lives of Canadians, and in the economic life of the country, and invest accordingly. The guiding vision is to pass on to future generations a system that is at least as good as the one we were fortunate to inherit, but that is greener and better able to support clean energy innovations.

If the electricity sector is to provide the services that will support the fleets of electric vehicles, micro grids, energy storage, and other technologies of the future, companies must be allowed to innovate, experiment, and seek new opportunities to grow the use of clean electricity. Public funds are one way to address and fund the innovation gap and Budget 2017 recognizes this. The electricity sector is supportive of federal government's efforts around clean energy funding, particularly with respect to the Canada Infrastructure Bank which, if well designed and implemented, holds significant promise for accessing private capital to renew Canada's clean energy infrastructure.

b. Effective flexibility mechanism design

I. CARBON REVENUE RECYCLING

Pricing carbon is one of the main pillars of the Pan-Canadian Framework. A crucial element in the success of this initiative is how the money is recycled back to the economy. The federal government has been clear in stating that provincial governments will ultimately decide how their carbon tax revenues will be spent or invested. As one option, provincial and territorial governments have an opportunity to reinvest the funds generated by the carbon price back into technologies and infrastructure that align with Canada's climate commitments.

The electricity sector is at the heart of these investments, with opportunities ranging from renewable energy, electricity storage, micro-grids, energy efficiency programs, and the electrification of transportation, buildings and industrial processes all lead to better climate outcomes. As well, electricity infrastructure investment supports economic development and job creation.

Over the last decade, the electricity sector has consistently ranked at the top of infrastructure investments in Canada. In fact, ReNew Magazine's [compilation](#) of Canada's top 100 infrastructure projects by value in 2017, again noted that seven of the top ten, including the top three, come from the electricity sector, representing about \$61.5 billion worth of investment¹⁰.

¹⁰Renew Magazine, "Top 100 Projects for 2017"

The seven projects are as follows:

- Bruce Power Refurbishment, \$13 billion
- Darlington Nuclear Refurbishment, \$12.8 billion
- Muskrat Falls Project, \$9.1 billion
- Site C Clean Energy Project, \$8.8 billion
- Romaine Complex, \$6.5 billion
- Keeyask Hydroelectric Project, \$6.5 billion
- Bipole III Transmission Line, \$4.9 billion

Federal, provincial and territorial governments should continue to support these investments as they create high-paying jobs for Canadians, and where possible, consider options for recycling some of the carbon revenues back to local clean energy projects within their jurisdictions. These funds and investments could also work to provide rebates and incentives for customers and companies to continually innovate and develop environmentally friendly alternatives. This will better facilitate the national consensus that we seek, as we transition to an era of cleaner energy. Ultimately, carbon pricing will only be sustainable and effective if it promotes further GHG reductions and stimulates economic growth by creating a positive feedback loop through investments in technologies, infrastructure, and decarbonization programs.

II. CANADA INFRASTRUCTURE BANK

The Canada Infrastructure Bank (CIB) is another funding opportunity that should be used strategically to support climate action. We must build the infrastructure for tomorrow, today. Canada has a generational opportunity to build urban environments, energy networks, transportation systems and ‘anchor projects’ that will spur inclusive growth in an increasingly clean, knowledge based world. The CIB will be responsible for investing at least \$35 billion from the federal government into large infrastructure projects that contribute to economic growth and leverage additional private capital. CEA supports the creation of the CIB and believes that, if designed and implement well, it could be a critical enabler of electricity sector investments.

CEA recently appeared as a witness before the House Standing Committee for Transportation, Infrastructure and Communities, for their study on the CIB and submitted [ten recommendations](#). These include, but aren’t limited to: prioritizing projects that align with Canada’s clean energy future; actively seeking projects from all regions of Canada with special consideration for Northern Canada; and ensuring early and ongoing consultation with stakeholders, including relevant industry players. Incorporating these and other suggestions will increase the effectiveness of the CIB and improve overall understanding on the importance of a nationwide funding option in achieving our climate change agenda.

c. Advancement of clean energy in remote/northern communities

The implementation of the Pan-Canadian Framework must fully address diesel-reliant northern and remote communities. According to the Remote Communities [Energy Database](#), there are 288 remote and off-grid communities in Canada, 190 of which rely on diesel fuel, either completely or partially, for their electricity needs.¹¹ This is an environmental and economic challenge as the cost of electricity in many of these regions is approximately ten times higher than the Canadian average, limiting local economic opportunities and stifling growth. To address this, Budget 2017 has proposed several funding strategies.

Indigenous and Northern Affairs Canada, for example, is set to invest \$24.1 million over four years to support renewable energy projects in off-grid, diesel reliant Indigenous and northern communities. Infrastructure Canada is also set to invest \$220 million over five years to reduce reliance on diesel fuel and support the use of more sustainable renewable power solutions in rural and remote communities south of the 60th parallel. Furthermore, \$400 million is to be invested through Natural Resources Canada over 10 years to encourage infrastructure improvements such as the renewal and replacement of energy systems to reduce reliance on diesel in northern communities.

Despite efforts on the part of these communities and governments, there is still much work to be done to support a northern clean energy transition and billions of dollars will ultimately be required. The narrow focus on costs and rates prohibits electricity companies from extending grid coverage due to a lack of critical mass. Canada needs to better serve these communities by facilitating collaborative funding solutions by all levels of government.

Our northern communities are also ideal candidates for the deployment of hydro, wind, solar, biomass, energy storage and other distributed generation options and sustained support from government is critical to making these investments possible. There are already success stories, such as the community of Old Crow in the Yukon and the Taku River Tlingit First Nations in Atlin, BC. In the former, residents recently installed an effective solar power system despite the many challenges due to the community's remoteness. And in the latter, people transformed their First Nations community, wholly dependent on diesel, to one that is now powered by clean hydropower. This community is now making plans to expand their facility, and export excess power to the Yukon or other parts of B.C.

¹¹ Natural Resources Canada, Remote Communities Database

Knowing that better is possible, our northern communities deserve better options for power generation, and the electricity sector has the ability and the desire to partner with these communities to improve their access to clean electricity.

While there are considerable energy differences between the three territories, including sources of generation, infrastructure development, reliance on diesel, and the remoteness of their communities, they also share some challenges that are unique to Northern Canada compared to the rest of the country. The North has a small population and rate base; an underdeveloped economy; is isolated from the grid; and is confronted by harsh climatic conditions. It is therefore critical for the North to speak with one united voice about energy system transitions and climate change.

Historically, the role of the federal government in the life of our North has been crucial. The national government has served as a compensating force in addressing these unique challenges faced by our fellow citizens who live and work there. The critical importance of that role remains unchanged today.

It is with this understanding that CEA has recommended, and reaffirms it again in this discussion paper, that the Minister of Natural Resources organize an Energy Forum in Canada's North that would: i) coordinate the different elements of the federal government's climate and energy strategies; ii) identify areas of cooperation with territorial governments; iii) draw together relevant stakeholders from northern communities; iv) provide northern residents an opportunity for their regional energy concerns to be heard; and finally, v) build agreement around a focused energy plan for the North.

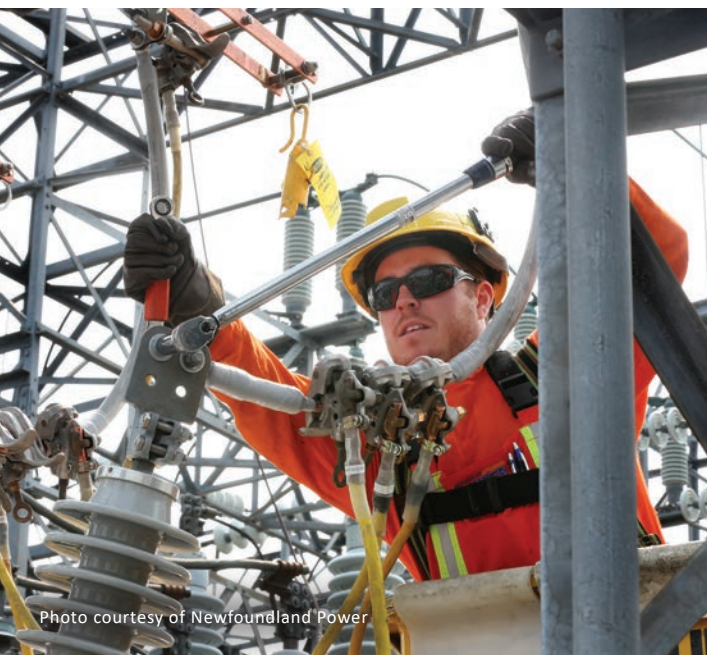


Photo courtesy of Newfoundland Power

NEWFOUNDLAND AND LABRADOR HYDRO'S WIND-HYDROGEN-DIESEL ENERGY PROJECT

Many coastal isolated communities in Canada's easternmost province rely on diesel-fueled generation systems for electricity. To reduce diesel generation and emissions, Newfoundland and Labrador Hydro commissioned an innovative wind, hydrogen and diesel integrated project in the community of Ramea. During 2012, commissioning work was completed on the energy-management system and the project moved into the operational phase. Operational data will play an important role in determining how this technology can be effectively used in other isolated communities.

NTPC DELIVERS NORTHERN CANADA'S FIRST-EVER LNG FACILITY

In 2013, Northwest Territories Power Corporation began construction of Northern Canada's first liquefied natural gas (LNG) plant which will provide customers throughout the region with a cleaner, more affordable power source. By using natural gas instead of diesel to generate power for the town of Inuvik and its surrounding communities, this facility is expected to eliminate almost 6,000 tonnes of CO₂eq emissions from the atmosphere each year.



Photo courtesy of Northwest Territories Power Corporation

3. CONCLUSION AND KEY AREAS OF DISCUSSION

Canada's future prosperity will be built upon a foundation of clean, sustainable growth. However, we should not underestimate the complexity of this transition. It will be formidable.

Canadian governments must strike a delicate balance between climate action and keeping costs affordable for businesses and consumers. And because the battle against climate change will be a long 'game', any policy must be long term if it is to be met with success. That strategy must also offer policy stability, predictability and flexibility. Additionally, governments must mitigate any unintended impacts on the economy, our businesses and our homeowners.

In short, political leaders must forge a national consensus which will stand the test of time and scrutiny.

CEA and its members are supportive of the Pan-Canadian Framework, as we have long called for a price on carbon. Moreover, the electricity sector has done more than any other industrial sector across the country when it comes to reducing its GHG emissions. If our climate action strategy is to succeed in the long term, then, as part of harnessing that national consensus, governments and industry must form a close partnership.

In this spirit and as part of its ongoing contribution to the public discourse, CEA proposes that the governments focus on five critical areas;

RECOMMENDATION 1

Canadian governments must help mitigate short-medium term competitiveness impacts through investment support:

If the U.S. federal government stays on its current trajectory of being unsupportive of climate mitigation efforts, while lowering tax rates, streamlining regulatory regimes, and potentially introducing other policies such as the Border Adjustment Tax, these actions will collectively pose a significant risk to Canadian competitiveness. To help alleviate any short-to-medium term competitive challenges from transitioning to a clean energy future, Canadian governments may want to use new and innovative fiscal and regulatory tools. Some of these tools may include:

- lowering corporate tax rates accordingly;
- extending clean energy production incentives for new emerging technologies;
- providing accelerated capital cost allowances (CCA) rates;
- reducing barriers to clean energy project approvals;
- accelerating funding for innovation and infrastructure projects;
- helping Canadian firms market their clean energy expertise internationally;
- providing funding and/or loan guarantees for clean energy;
- recycling carbon tax revenues, and;
- capitalizing on priority areas of the U.S., such as low cost energy integration and policy improvements to safety and security.

RECOMMENDATION 2

Governments must reduce regulatory barriers to clean energy projects:

As part of meeting Canada's climate change and clean energy objectives, governments should work to reduce regulatory barriers to clean energy projects that are of local and national interest, and build a national consensus on the need for electricity sector infrastructure renewal and modernization. Redundant approval processes for clean energy projects, such as environmental assessments, increase costs and delay projects, even for those clean energy projects that could provide GHG reductions today.

RECOMMENDATION 3

Governments must break down barriers to electricity sector "innovation" at the provincial and territorial level:

There is often a gap between government policy aspirations on innovation and provincial regulatory approval (eg. Energy Boards) of such projects. This "innovation gap" must be effectively addressed if

we are to meet Canada's climate and clean energy agenda. Provincial regulators can be single-minded in their focus on keeping rates low, even as utilities are exhorted by federal and provincial governments to innovate and invest. This gap must be addressed to make the bold investments needed to meet the goals of the Pan-Canadian Framework. There is also a federal government role here, through the funding of transformative innovation and infrastructure projects via the tax base.

RECOMMENDATION 4

Governments must support and sustain a northern and remote clean energy transition:

Diesel-reliant remote and northern communities require unique support in their efforts to reduce transition to cleaner, less expensive energy. Governments should support Indigenous entrepreneurs and organizations in their efforts to access the capital for the equipment, training and tools needed to get projects off the ground. Accordingly, CEA calls upon the Minister of Natural Resources to host an energy forum in Canada's North to discuss the "unique" challenges this region faces in relation to a clean energy transition. The forum should i) coordinate the different elements of the federal government's climate and energy strategies; ii) identify areas of cooperation with territorial governments; iii) draw together relevant stakeholders from northern communities; iv) provide northern residents an opportunity for their regional energy concerns to be heard; and, v) build agreement around a focused energy plan for the North.

RECOMMENDATION 5

Governments must develop and sustain a public education and outreach campaign in order to build a national consensus on clean energy and climate change:

As Canada transitions to a clean energy future, it is imperative that Canadians are fully informed of both the challenges and opportunities associated with a greener and cleaner future. As such, citizens need to understand the importance of investing in the next generation of infrastructure and innovation, and the related costs. This includes the costs and implications of inaction. For example, it is essential that the federal and provincial/territorial governments build on programs like the NRCan's Generation Energy initiative. A long term climate policy strategy and a clean energy future will run the risk of being compromised without adequate, transparent and ongoing public engagement.