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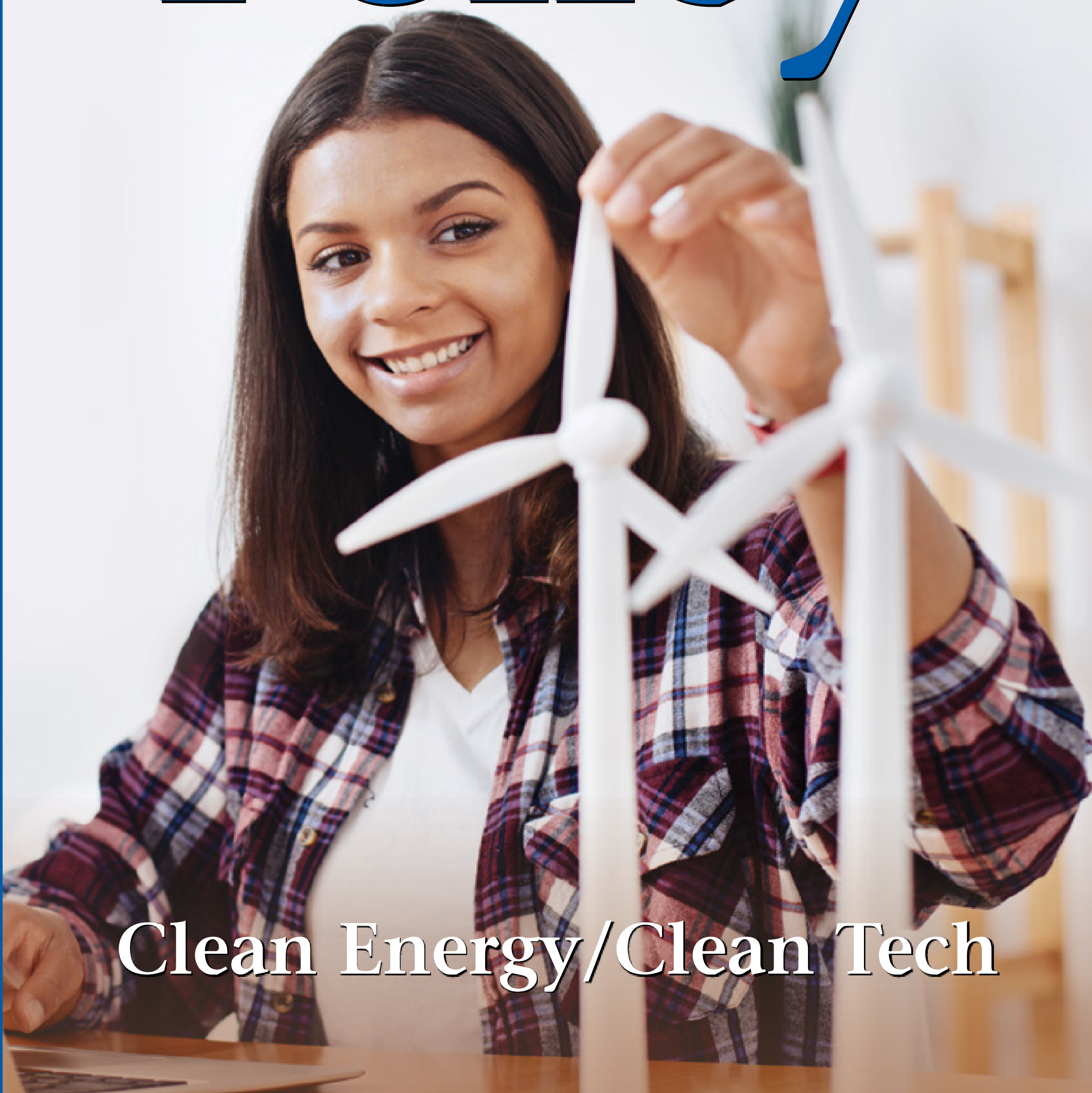
Canadian Politics and Public Policy

Policy



Clean Energy/Clean Tech

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Policy

Canadian Politics and Public Policy

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Policy

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From the Editor / L. Ian MacDonald

Clean Energy/Clean Tech

Welcome to our special issue on Clean Energy/Clean Tech, one of the defining economic and environmental issues of the day.

David McLaughlin, former president of the National Round Table on the Environment and the Economy, sets the table with a survey piece on climate change and how the conversation has changed, notably on carbon pricing: "Canada has swung from a seeming inevitability on climate action with carbon pricing to a pitched battle between Liberals and Conservatives, some provinces and Ottawa, challenging the very notion of carbon and climate action at all."

Dan Woynillowicz and Merran Smith of Clean Energy Canada write that clean growth is more than a goal, it's a reality. For example, they point out "a record-setting 1.1 million electric cars were sold in 2017." Canada saw a 68 per cent increase in EV sales over 2016.

Dan Gagnier, ex-chair of the International Institute on Sustainable Development, looks at clean tech and writes that consumers will drive the pace of change, in an environment where disruption is the new normal.

Janet Drysdale, vice president responsible for CN's sustainability strategy, makes the case for rail as a choice for clean energy. Transportation accounts for 28 per cent of Canada's GHGs, but rail only 1 per cent.

ABB Canada President Nathalie Pilon writes that "never has there been a better time for leaders to adopt sustainable business practices by taking ownership of the digital space…" in the Fourth Industrial Revolution.

Karen Hamberg of Westport Fuel Systems in Vancouver writes of the opportunity to "deploy made-in-Canada clean technology in a material way to diversify our economy." Derek Nighbor of the Forest Products Association of Canada writes of the Canadian forestry industry as a success story in clean tech. In a guest column, James Scongack of Bruce Power writes of nuclear power as a clean energy alternative, notably to coal. And Tim McMillan, president of the Canadian Association of Petroleum Producers, sees a world that will need "more energy in every form, including more Canadian oil and more Canadian natural gas."

Finally, Green Party Leader Elizabeth May sees the development of renewable energy as a path to reconciliation with Canada's Indigenous Peoples.

In *Canada and the World*, we take a look at the Ontario election, and the changes upcoming under Premier Doug Ford. Geoff Norquay writes that "by any measure, the PC victory on June 7 was both decisive and strong." He also notes that Ford wasted no time in holding a summer sitting of the Legislature, moving quickly to "cancel Ontario's cap-and-trade program on carbon emissions." Veteran Liberal strategist and media consultant Patrick Gossage writes that both pundits and pols were wrong about the June election. "How could the media have got it so wrong?" he asks. The obvious answer—a state of denial.

With an October 1 Quebec election on the horizon, veteran journalist and author Graham Fraser offers a primer on the campaign. By all the leading economic indicators and fiscal frameworks, the re-election of Philippe Couillard's Liberals should be a slam-dunk. But it's not. Going into the campaign, François Legault's Coalition avenir Québec easily led the Liberals outside Montreal, with the Parti Québécois a distant third. How to explain it? "For the first time since 1970," Fraser writes, "Quebec independence is not on the ballot."

Government procurement can be unwieldy at the best of times, with unknown challenges ahead in the digital age, particularly for small business. Procurement consulting executive Chand Sooran offers his thoughts on SMEs doing business with large corporations and government.

Ten years after the financial crisis of 2008-09, Kevin Lynch looks back at those dark days and asks if the repair job is finished. As clerk of the Privy Council during the crisis and now as a vice-chair at BMO, Lynch considers some of the challenges facing both government and the private sector.

Our foreign affairs writer Jeremy Kinsman, a former senior Canadian diplomat, looks at the chaotic world of Donald Trump, who is shaking the multilateral institutions of western democracies created and led by the U.S. From the G7 in Quebec to the NATO summit in Brussels, it's been a summer of discontent.

In a book review, Historica Canada President Anthony Wilson-Smith looks at J.D.M Stewart's *Being Prime Minister*, and finds the author captures what makes Canadian PMs tick, in their private as well their public lives.

Finally, columnist Don Newman considers the conundrum of Justin Trudeau as he heads into an election trying to balance his environmental promises with the energy file, particularly the Trans Mountain pipeline project, of which the government has taken ownership. Newman writes that the Liberals have also taken political ownership. P

The Tuktoyaktuk Winter Road, an ice road in the Northwest Territories, whose operations could be effected by winter warming. *Wikipedia photo*

Climate at the Crossroads

Canada's climate change efforts have reached a crossroads. Mounting opposition from some provinces to the Trudeau government's carbon pricing policy has seriously dented any guarantees that the Pan-Canadian Framework on Clean Growth and Climate Change will endure. The federal government is facing an uncomfortable but unavoidable choice. Does it impose carbon pricing on recalcitrant provinces in an election year or not? Acting risks a carbon tax backlash by voters. Not acting risks alienating the federal Liberals' own voting base on a key policy issue.

David McLaughlin

It began and ended with two new cabinets and two new words: climate change.

They were added to the title of Prime Minister Justin Trudeau's first Minister of the Environment and Climate Change in 2015; and taken away from the new title for Ontario Premier Doug Ford's first Minister of the Environment, Conservation and Parks in 2018.

Those two cabinet changes mark the high- and low-water marks of climate change progress in Canada. With the first, the Trudeau government set about creating the Pan-Canadian Framework on Clean Growth and Climate Change (PCF) in December, 2016. With the second, the Ford Progressive Conservative government repealed its cap-and-trade system and commenced a legal challenge to Ottawa's plan to require provinces to implement carbon pricing regimes by 2019.

In just over two years, Canada has swung from a seeming inevitability on climate action with carbon pricing to a pitched political battle between Liberals and Conservatives, some provinces and Ottawa, challenging the very notion of carbon and climate action at all. Climate policy has reached a crossroads in Canada. Next year's federal election looks now as the deciding event.

Despite the federal Liberal government's avowed commitment to global and Canadian climate action under the slogan "Canada is Back", the terrain for what became the PCF was tilled by "the two Stephens": Harper and Dion. The 2008 federal election put paid to the notion of a carbon tax to reduce emissions. Then Liberal leader Stéphane Dion promoted his Green Shift carbon tax. Prime Minister Stephen Harper castigated it as a "tax on everything", winning an increased minority government.

> ***"If Harper effectively poisoned the political well on using a carbon tax, he bequeathed a poisoned chalice to both his own party and the Trudeau government: his Paris 2030 targets."***

From that moment on, federal Conservatives became unalterably opposed to formal carbon pricing as a tool to reduce emissions, despite their own, soon-to-be-discarded cap-and-trade plan known as Turning the Corner. A slow, sector-by-sector regulatory approach was adopted instead. But the high-emitting oil and gas sector was consistently left out and Canada's emissions rose until the 2008-09 recession caused them to drop, before rising again.

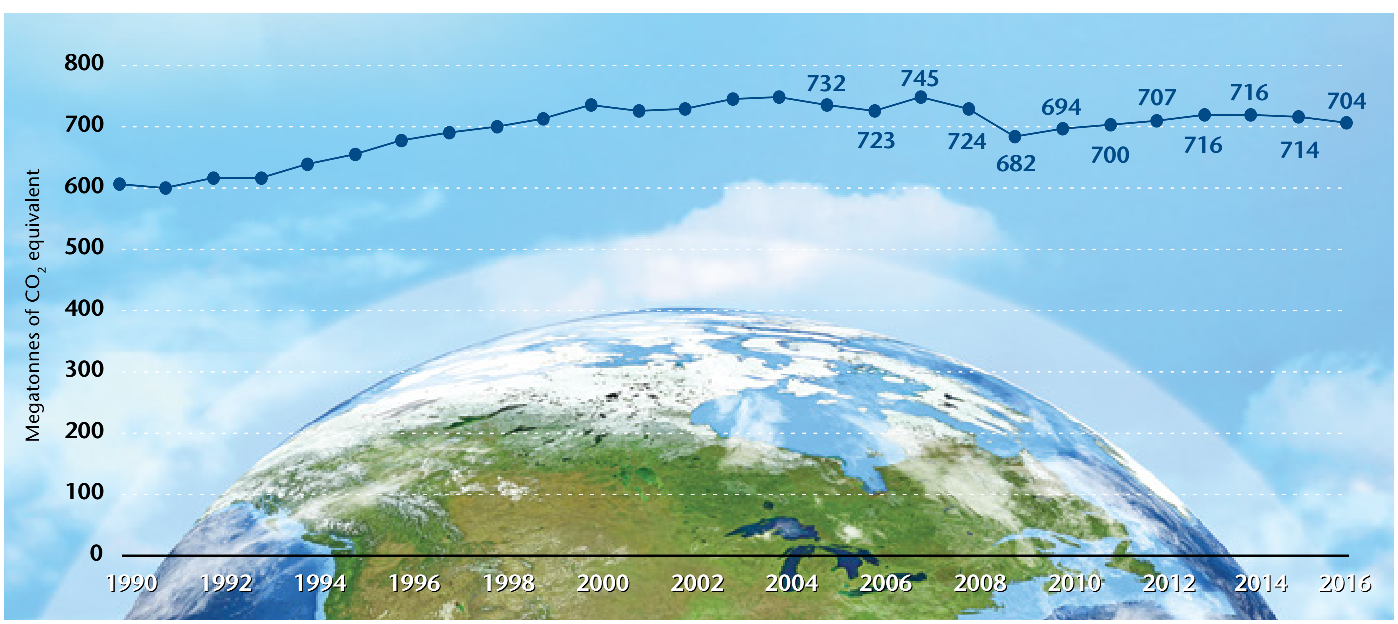
But if Harper effectively poisoned the political well on using a carbon tax, he bequeathed a poisoned chalice to both his own party and the Trudeau government: his Paris 2030 targets. By setting yet another ambitious GHG reduction target of 30 per cent below 2005 levels by 2030, he just as effectively boxed-in future government action. Thinking this target would be politically bullet-proof from their Conservative opponents, the Liberals adopted it with alacrity in 2015. Andrew Scheer, the new Conservative party leader, then drank from it earlier this year with a public commitment to reach the Paris target but without a carbon tax.

Yet, this target is proving just as resistant to actual achievement as every other Canadian climate target from Kyoto onwards. Now owning it, the Liberals are criticized for instituting a modest carbon tax to help achieve it (it is either too much or not enough, say the same critics). Meanwhile, the Conservative position will be extremely difficult, if not outright impossible, to accomplish with a regulatory approach alone.

The basis, then, for sound climate public policy in this pre-election year is increasingly looking like a re-run of the 2008 campaign.

The Trudeau government's initiative to knit together a pan-Canadian climate approach was based on the realism of federalism and the state of climate play when he took office. Under the

Canada's GHG Emissions 1990–2016



Harper government, provinces had been the leaders in climate action, from British Columbia legislating the country's first-ever carbon tax to Ontario closing down its coal-fired electricity plants to Quebec bringing in cap-and-trade. Any national policy had to realistically account .1Here's a thought experiment: if the Liberals took office today determined to bring in a national climate policy, would they bring in their current PCF plan? The answer is very likely "no". With dimming provincial support for climate action, it would be up to the federal government to impose a uniform carbon price and the elements of a pan-Canadian climate plan. In less than two years, Canada has moved from a provincially-led, federally-backstopped climate policy to one that looks more and more 'federally-led, provincially-backstopped'.

“The Ford government's withdrawal from the climate sphere can be seen as either a brake or an accelerator to a truly pan-Canadian climate policy for the country.”

In that vein, the Ford government's withdrawal from the climate sphere can be seen as either a brake or an accelerator to a truly pan-Canadian climate policy for the country. Carbon pricing opponents are framing it as unstoppable momentum to ending the "Trudeau carbon tax"—the brake. Seen another way, it actually creates an opportunity for the federal government to re-cast its pan-Canadian climate policy and bring about the carbon price uniformity and certainty sought in the PCF—an accelerator. The tool to do so: revenue recycling to people.

There is today a window to implement a truly national PCF that fits more directly into a federally-mandated carbon and climate policy. One that does not focus on price stringency to achieve environmental outcomes. Here are the elements that could make it up:

First, leave Quebec alone to implement its cap-and-trade system with California under the Western Climate Initiative. There is no movement currently in Quebec to withdraw from carbon pricing or climate action. As this is an international agreement, Ottawa should not sunder it.

Second, bring in a national carbon tax floor of $25 or $30 per tonne (or 5-7 cents per litre of gasoline) for all other provinces at once. Instead of just doing this for two provinces now and presumably Alberta later, apply it to all of them. Provinces could have a higher price if they so desired, but they could not have a lower price. This is higher than the current $20 per tonne price set for 2019 but not unduly so. A higher price would also incent more emissions reductions at the outset.

(A $30 per tonne "carbon price collar" was in fact recommended by the now-defunct National Round Table on the Environment and the Economy in 2010 as a competitiveness measure to allow Canada to move on climate action without getting too far ahead of the U.S.)

Third, keep that price flat until the 2022 review. Business is worried about escalating carbon prices and a "layering" of regulations on top of it, and this would give a pause to businesses' benefit while NAFTA is settled with the United States.

Fourth, recycle all of the carbon tax revenue directly back to residents in each jurisdiction in the form of dividend or rebate cheques. Better still, do it for individuals, not households, to maximize the size and visibility of the dividend. For those provinces with revenue recycling systems already in place, they could have the choice of retaining their current system or withdrawing in favour of the federal government's dividend cheques, which would actually be worth $200-$300 for each person. A four-person household could wind up receiving rebates totalling more than a thousand dollars.

Fifth, bring in output-based carbon pricing for large emitters as currently being implemented in Alberta, and planned for Saskatchewan and Manitoba. This system of industrial performance standards reduces the cost of carbon pricing for emitters by returning a portion of their payments in the form of a subsidy. This prevents carbon leakage and reduced production for trade-exposed sectors. The recent adjustments by the federal government to its proposed output-based system actually eased the cost burden even further on industry; smart recognition that industry needs more transition support to implement carbon pricing, even if the politics of doing so has left the Trudeau government open to largely specious charges of back-tracking on its carbon policy.

At one bold stroke, the federal government would take the policy responsibility to go with the political responsibility it has for all practical purposes already assumed for its carbon and climate approach. The effect of hundreds of dollars in rebate cheques going into peoples' pockets is the best, and frankly, only way at this juncture to ease carbon pricing into place for all Canadians.

The federal government's legal authority to tax and distribute is widely agreed. By having an equal carbon floor price across the country, all jurisdictions are being treated the same. A uniform carbon price for the country takes root. Since the effect of the legal challenge from Saskatchewan and Ontario is to curtail fed-

Province/Territory	Carbon Pricing Regime	Compliance with Federal Benchmark
British Columbia	Carbon tax. $35/tonne. Rising by $5/tonne annually.	Yes
Alberta	Carbon tax. $30 per tonne. Future increases beginning in 2020 paused pending outcome of Trans-Mountain pipeline dispute with B.C. Output-based carbon pricing for large industrial emitters.	Yes to 2020. No in 2019 if United Conservative Party wins Spring election and repeals carbon tax.
Saskatchewan	No. Legal challenge via Saskatchewan Court of Appeal reference. Published *Prairie Resilience* climate plan with form of output- based carbon pricing.	No. Eligible for federal backstop in 2019.
Ontario	No. Cap-and-trade regime being repealed. No alternative plan at present. Legal challenge via Ontario Court of Appeal reference.	No. Eligible for federal backstop in 2019.
Quebec	Cap-and-trade regime.	Yes
New Brunswick	Plan not finalized. Stated intent not to introduce new carbon pricing but convert existing fossil fuel taxes to climate change fund.	No. Unless deemed equivalent.
Nova Scotia	Internal cap-and-trade regime for electricity. No formal carbon tax or output based pricing system.	Yes, due to deemed equivalency in outcomes.
PEI	Plan being developed.	Uncertain
Newfoundland & Labrador	Plan being developed.	Uncertain

eral action period on climate, it can be seen as a necessary but limited assertion of federal authority in this important field.

The effect of this would be to impose a carbon price on the following provinces: Alberta (if there is a change in government), Saskatchewan, Ontario, New Brunswick, PEI, and Newfoundland and Labrador. The floor carbon price is modest enough not to create significant economic differentials between provinces. The flat rate ensures the political impact is equally modest as consumers and businesses are not hit with rising fuel bills each year. And, it requires governments to look at more politically-acceptable non-pricing measures to close the Paris gap.

Ottawa has lost control of the climate narrative in the country. 2018 is not 2015 or 2016 in terms of its political authority and willingness of provinces to collaborate on climate. Only a bold move will suffice to salvage it. But to bite the bullet on climate, it must water its wine too. A revised national carbon floor price with full revenue recycling cheques back to individuals does just that.

“Ottawa has lost control of the climate narrative in the country. 2018 is not 2015 or 2016 in terms of its political authority and willingness of provinces to collaborate on climate. Only a bold move will suffice to salvage it. But to bite the bullet on climate, it must water its wine too.”

It still features key elements of the current PCF: carbon pricing, output-based industrial pricing, revenues kept in each jurisdiction, a 2022 review, and provincial flexibility to do more.

Next year—an election year—is likely to determine whether Canada will act as one on climate or reanimate the fragmented approach of the recent past. If elections matter, this next one promises to be consequential. P

David McLaughlin is Director of Climate Change, Canada at the International Institute for Sustainable Development. He is the former President and CEO of the National Round Table on the Environment and the Economy. He has been a deputy minister in the New Brunswick government and is a former Conservative chief of staff to the prime minister of Canada, premier of New Brunswick, and federal finance minister.

Clean Growth is More Than a Goal—It's a Reality

Just as social media upended communications, the transition to clean energy is rapidly undoing century-old expectations around electricity, transportation and oil—and it's happening faster than most Canadians realize.

Dan Woynillowicz and Merran Smith

Protests. Politics. Polarization.

Whether you're reading a newspaper, tuning into the news, or scrolling through Twitter, you'll notice a common theme: coverage of energy and climate change is dominated by pipelines.

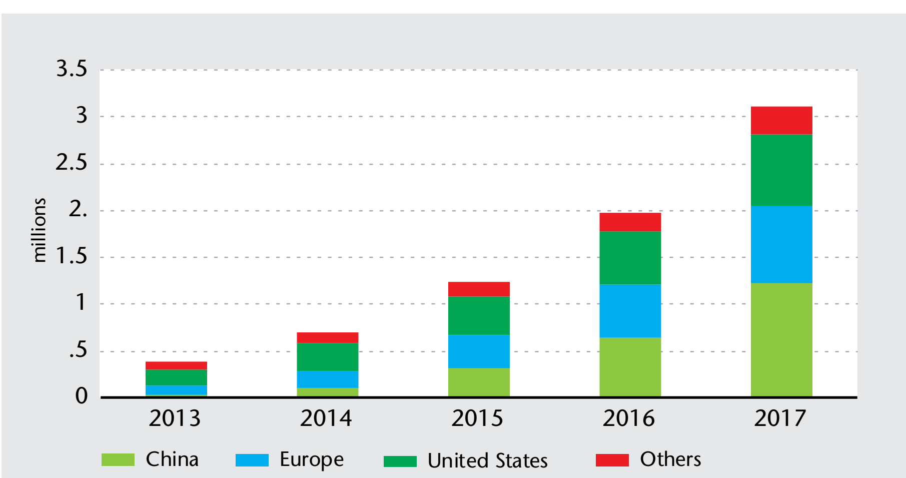
Are pipelines a serious matter? Certainly. And yet the time and attention they consume risks distracting Canada's business and political leaders from the much broader and deeper shifts occurring in the world's energy system.

The costs of renewable electricity—such as wind and solar power—are falling year after year, while more and more projects are seeing massive investments. But electricity isn't the only chapter in this transition's story. The tale unfolding in transportation promises to be just as disruptive.

Consider this: A record-setting 1.1 million electric cars were sold in 2017, and roughly half of those were sold in China, which saw a 73 per cent increase in EV sales over 2016. There are now more than three million electric cars cruising roads around the world, and over a million of those are in a single country.

China is now also the world's biggest manufacturer of electric cars and is home to an incredible 487 EV makers.

Number of Electric Cars in Circulation



Source: International Energy Agency, Global Electric Vehicle Outlook 2018

So, why is China all-in on EVs?

As Amy Myers Jaffe of the Council on Foreign Relations wrote recently, "China is banking on clean energy technologies as major industrial exports that will compete with U.S. and Russian oil and gas and make China the renewable energy and electric vehicle superpower of a future energy world."

Anthony Milewski of Pala Investments put it even more simply: "China, unabashedly, wants to be the Detroit of electric vehicles."

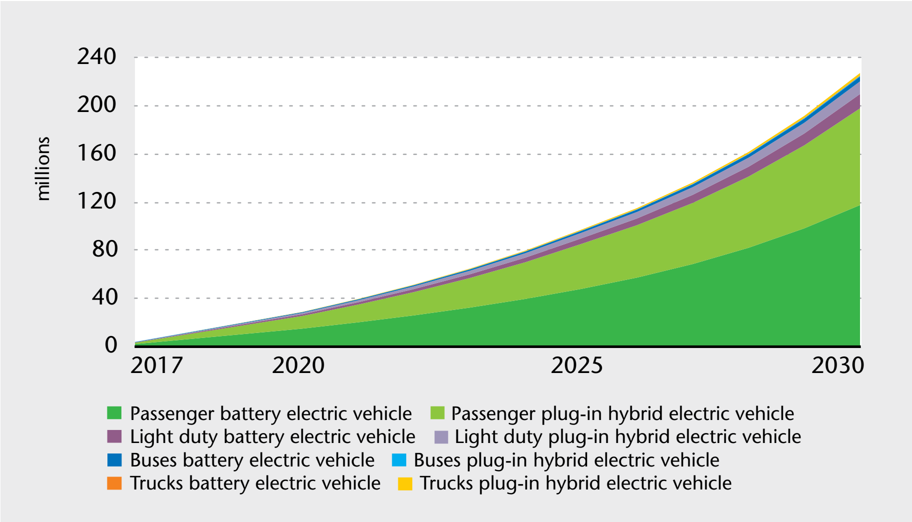
And this push to electrify isn't limited to passenger vehicles. There are a growing number of electric buses, bicycles, garbage and transport trucks, even ferries.

Last year, China put 90,000 fully electric buses on its roads, and in December the city of Shenzhen announced that all 16,359 vehicles in its fleet were electric. To put that in perspective, New York City has one-third as many buses, period.

And by no means is this transition confined to China. Britain, France, Germany, Norway, the Netherlands, Scotland—and yes, China—have all announced they will eventually prohibit the sale of gas- and diesel-fuelled vehicles.

The transportation transition is happening here in Canada, too, albeit more slowly. While we're trailing leading jurisdictions, Canada saw a 68 per cent increase in electric car sales in 2017 over the previous year. The Toronto Transit Commission, meanwhile, recently placed an order for ten electric buses from New Flyer's Canadian subsidiary in Winnipeg, with an option for another 30. This was followed by an order for 40 more from

Electric Vehicles 30@30 Scenario



Source: International Energy Agency, Global Electric Vehicle Outlook 2018

BYD, China's leading EV maker. (BYD will also supply Seattle with electric garbage trucks early next year.)

As momentum builds, so too do projections for the rapid uptake of EVs around the world. In its most recent outlook, the International Energy Agency projected there could be as many as 228 million EVs on the road by 2030, including passenger vehicles, commercial vehicles, buses and trucks. Counting electric two- and three-wheelers—which are incredibly popular in developing countries—that would add another 585 million vehicles. The sum total? Closing in on a billion EVs on the road in a little over a decade.

It's little wonder these projections are sending shockwaves through the auto and oil sectors—driving an accelerating evolution of their business models and product offerings.

General Motors will introduce 20 new EVs over the next six years.

As of 2019, all new Volvo cars will be fully electric or hybrids.

Volkswagen has pledged 20 electric models by 2020 and 300 by 2030.

By Bloomberg New Energy Finance's count, at the end of 2017 there were 156 electric car models to choose from, up from just 97 at the start of 2016. By 2020, the number of available models will grow to 217. And that number will keep ticking up as more and more vehicle companies set new targets for model offerings and electric car sales.

Evolution is also underway among the world's largest publicly traded oil and gas companies. Total, a top player in solar and battery power, aims for low-carbon business to account for 20 per cent of its portfolio by 2035. Statoil has made big investments in offshore wind power, drawing on its experience with offshore oil drilling; the company plans to invest roughly C$16 billion in renewables by 2030. And BP is once again investing heavily in solar, wind and biofuels.

Perhaps most significant are the moves by Shell, whose CEO, Ben van Beurden, put it bluntly last year: "Societal acceptance of the energy system as we have it is just disappearing." His next car, he said, will be electric, but that's just the tip of the melting iceberg. Shell announced last year that it will be investing up to $2 billion annually in clean energy by 2020—while also divesting all of its Canadian oilsands assets. These investments and acquisitions span EV charging networks in the U.K., hydrogen refuelling stations—including here in Canada—and wind, solar and other renewable energy technologies around the world.

It's a smart move, according to a recent report from Wood Mackenzie, which says oil and gas companies that adopt renewables early will be at a competitive advantage, while slow adopters could find themselves at a structural disadvantage. Their analysts—among the financial community's most respected—have projected that oil demand could peak by 2036, the result of a "tectonic" shift in transportation toward electric and autonomous vehicles.

While Canada's oil and gas sector remains focused on doing what they've always done, other businesses are moving aggressively to seize part of the growing global market for low-carbon goods and services—now worth $5.8 trillion and growing by 3 per cent a year.

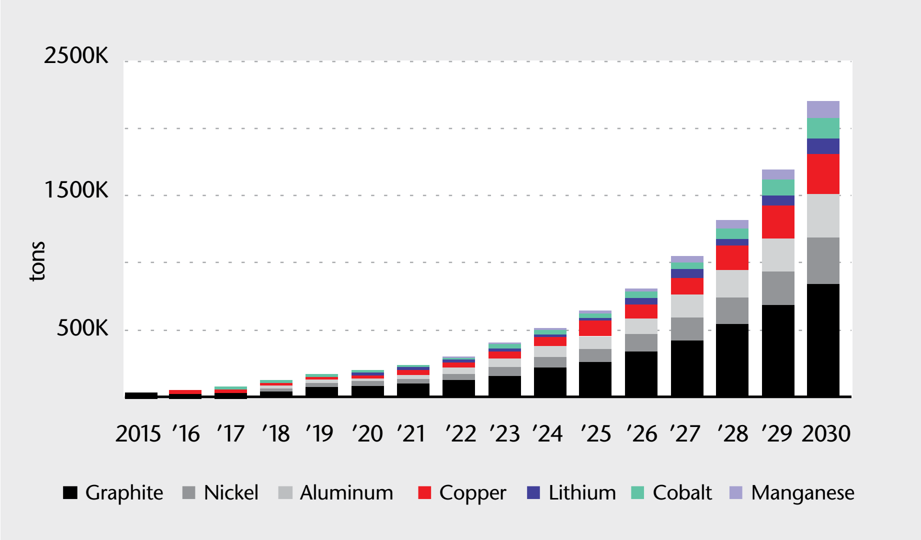
Toronto-based Hydrogenics and Vancouver-based Ballard Power, for example, produce fuel cells that convert hydrogen into clean electricity. Growing Chinese and European demand have been a boon for them, in applications ranging from forklifts to trains and buses.

Also based in Vancouver, all-electric bus company GreenPower has joined traditional Canadian bus companies including Lion and New Flyer in offering electric buses to the growing number of transit agencies around the world that are looking to clean up their fleets.

And Canada's two largest auto parts makers—Magna and Linamar—have both diversified into EVs. Just this past June, Magna signed a deal with China's BAIC Group—the parent company of Beijing Electric Vehicle Co.—to build electric cars in China.

While this accelerating transition poses challenges to oil companies, it offers new opportunities for the mining industry due to growing demand for a range of metals needed for EVs and their batteries. As the CEO of the Mining Association of Canada recently noted, "For the mining sector, a shift to a low-carbon economy has a lot of potential upsides because the kinds of materials that are going to

Global Metals and Materials Demand from EV Lithium-Ion Batteries



Source: Bloomberg New Energy Finance

be needed will grow exponentially."

Canadians understand the need to transition. When asked about the best way forward for Canada's economy in an Abacus Data public opinion survey last year, just one third suggested Canada should prioritize promoting the use of Canada's oil and gas. Two-thirds said Canada should prioritize other ways of growing our economy.

In a follow-up survey, 74 per cent agreed that the pace of innovation in new forms of energy is quick, and Canada must be part of this new energy revolution—and not fall behind because of a reliance on oil.

What does all this boil down to for Canada?

The very real risk of falling behind. Not fully seizing a world-shifting opportunity.

Clean growth is more than an goal—it's a reality. As the world combats climate change, growth is shifting away from century-old fuels and technologies toward clean energy solutions. We would be wise to prioritize present trends over past ones—with an eye to the future.

Whether or not more pipelines should be pursued, the global energy transition is happening with or without us. And Canadians don't want to be left behind. **P**

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In Clean Tech, Consumers Will Set the Pace of Change

The last decade has seen myriad political and regulatory responses attempting to address population anxiety provoked by increasingly dire scientific assessments of environmental realities. At the same time, global demand for fossil fuels has in-creased as people in developing countries accede to middle class consumption habits. As our energy landscape adjusts to these competing forces, choices made by consumers will decide which new technologies thrive and which do not.

Dan Gagnier

With the political and trade realms in disarray, disruption is the new normal. Add to this the impacts of climate change and the dizzying pace of technological innovation and it's little wonder that people are increasingly exercising their ability to choose what they can; the way they want to connect, the manner in which they consume their news and watch everything from movies to each other.

Clean tech falls into that burgeoning array of choice. It is a term generally used to define a set of technologies that either reduce or optimize the use of natural re-sources, while at the same time reducing the negative effect that technology has on the planet and its ecosystems.

A 2007 Study by McKinsey & Company looked at a number of potentially disruptive technologies and assessed their prospects. It is worth noting just how accurate these forecasts were by the end of 2017. Many jurisdictions without the resources or infrastructure enjoyed by countries such as Canada encourage and incentivize the installation of solar panels with the grid buying surplus to supply and increase generation capacity.

"Photovoltaic (PV) installations [solar panels] have taken off much faster than we expected," according to McKinsey. In fact, the compression of costs happened throughout the solar-energy system, from sourcing raw materials to manufacturing to installation and service. McKinsey expected costs to fall to $2.40 per watt by 2030 but weren't bullish enough; "in fact, they are on course to hit $1.60 per watt by 2020."

On wind-generated power and turbines, the projected global base of 94 gigawatts installed in 2007 would expand to 800 gigawatts by 2030. As with solar, growth has been faster than expected—another proof point demonstrating the ability of consumers, with or without state incentives, to move to new technology. By 2014, McKinsey estimated a 22 per cent increase or—370 gigawatts—of installed capacity compared to its prediction for 2014. The same consumption/cost trajectory has applied to batteries, electric and hybrid cars. Lower costs, improved manfacturers' maintenance protocols and turbine efficiency have combined to push adoption rates for clean tech.

With both traditional and unconventional oil and gas production encountering ground level as well as policy protests, demand for oil and gas is still rising but delivering new delivery systems is proving more difficult. The reality, when we look at type of extraction, is that it is here to stay (U.S. unconventional-oil production—fracking, oil sands and other non-drilled product—rose from almost nothing in 2007 to 3.7 million barrels a day in 2014) but it is vehemently opposed in many jurisdictions for fear of ground water and aquifer contamination.

The great hope 10 years ago was for energy efficiency as the greater mitigator. Innovation has come faster than McKinsey predicted and the determining factor underlying this faster pace is consumer behaviour; cheap mobile communications, for example, are enabling the connected home. In addition, hardware costs have fallen. For example, LED bulbs now cost about $12 each, down by 80 per cent from 2010.

In fact, people are already making clean-tech choices as they build/renovate and rent accommodations and professional space. And why not? These systems are re-liable, user friendly and in line with peoples' increasing expectations for an inter-connected world.

What about the future?

In the International Energy Agency's latest outlook for renewable energy, it projects renewables growing by about 1,000 gigawatts—or 43 per cent—by 2022. The report points out that this equals about half of the current global capacity in coal power, which took 80 years to build.

Part of the IEA's analysis leads us to consider the probability that renewable energy could replace 25 per cent of the world's coal power within half a decade—a growth rate that should worry coal investors. (See *Next Gen-*

eration. Renewable Energy Comes at You Fast, by Liam Denning, 2017.)

Similarly, IEA projects the share of renewable energy in the world's electricity mix to rise from about 24 per cent in 2016 to 29 per cent by 2022. This is still bigger than the entire electricity consumption of China, India and Germany combined.

> ***"IEA projects the share of renewable energy in the world's electricity mix to rise from about 24 per cent in 2016 to 29 per cent by 2022. This is still bigger than the entire electricity consumption of China, India and Germany combined."***

In studies such as the Word Wildlife Fund's Clean Tech Survey, certain trends jump out in terms of both applicability, economic/investment choices and sustain-ability options. There is still a considerable space open to large public transit projects such as sustainable and energy-independent office complexes. Developers are erecting buildings that serve as urban agricultural producers and CO2 mitigators.

The natural advantage in terms of infrastructure enjoyed by renewable energy projects employing clean tech lies in the ability to expand through modular applications. These projects, wind, solar, tidal, biomass etc. are capable of starting on one scale and moving to expansion by adding modules.

It would have seemed like science fiction a decade ago but the technology exists today to deliver these options and will only improve as innovators and entrepreneurs continue innovating. The role of municipal, provincial/state and national governments is to facilitate change and encourage the right choices. Incentivizing research, demonstration projects and commercialization of new technology increases our competitiveness and improves our living standard.

So, how does Canada stack up? It will surprise few to learn that Denmark, Finland and Sweden take the gold, silver and bronze medals on clean tech in the WWF 2017 Index. Canada and the U.S. complete the top five. Canada and Nor-way do get favorable mention as coming from 18th and 25th respectively to amongst the top four for improvements in driving their national clean tech ecosystems forward.

As an ex-board member of Sustainable Development Technology Canada (SDTC) I was fortunate to see over a decade the evolution in how we organized ourselves and came to grips with the challenges around innovation, research and commercialization of promising energy technologies. SDTC clean tech companies now employ more than 180,000 Canadians and generate some $26 billion in goods and services. When combined with other agencies and providers, it is a welcome reality that at fourth in overall scoring, Canada has strong results for clean tech.

We need to continue to create clean tech funds, provide public funding to supplement private sources from all levels, and encourage and facilitate early entrepreneurship. Our weakness is our limited number of clean tech organizations and clusters. My take-away from looking at many success stories in this sector is that we have the ability, the brains and the entrepreneurs. We need to increase our efforts and increase our ability to commercialize the offerings of our innovators and entrepreneurs.

The 2018 SDTC Clean tech Leadership Summit Report says it eloquently: "A record 13 Canadian clean tech companies made the 2017 Global Clean tech Innovation Index, earning the country a top-four ranking. Those achievements in a highly competitive global marketplace are testament to the innovation power of clean tech firms and to the government's assertion that there is no choice to be made be-tween a healthy environment and a healthy economy—both of which depend on well-defended and managed IP."

While policies and regulations can set the stage for new or better choices regarding how we use energy, transport and house ourselves, in the final analysis, consumers have to exercise their prerogatives. Technology and applications that turn our home appliances, lighting at a distance and intelligent security systems are an easy jump for a population on tablets, smart phones and computers. Businesses and institutions push us into internet banking and using our tablets/phones to pay for goods, services and even for processing our cheques and receivables. As a majority of people sign on, disruption will impact the poor, elderly and other minorities who exist off these systems. There are already two types of people left behind by disruption: Those who have problems grasping and adapting to technology, and the economically disadvantaged who cannot afford today's technology, never mind facing fast-paced introduction of new applications. With inequality already a growing problem, the issue of technological disenfranchisement will likely only exacerbate it.

As we move through the next decade the introduction of more and more impressive clean technology harnessed by entrepreneurs and venture capitalists will pro-vide new, better and more numerous choices at different price segments. How Canadians exercise choice will create business opportunities and drive investments. In our regulatory world legislators will have a challenge keeping up. Consumer consumption and purchasing decisions will determine the pace of that direction as well as its economic underpinnings. P

Dan Gagnier was a deputy minister as well as a chief of staff to Liberal premiers in Ontario and Quebec. He was also Senior VP of Alcan for Environment, Health and Safety, a board member of SDTC (Sustainable Development Technology Canada) and ex-chair of the IISD (International Institute for Sustainable Development).

Ship to rail at Halifax Harbour. Intermodal transport significantly reduces GHG emissions. *CN photo*

Rail—Pulling Toward a Cleaner Future

Transportation accounts for 28 per cent of Canada's GHG emissions, but railways generate only 5 per cent of that, or just 1 per cent of the country's emissions. CN, North America's largest railway, leads the industry with fuel consumption 15 per cent below the industry average. In 2017 alone, renewable fuels resulted in the railway producing 79,000 tonnes less carbon. Rail is clearly a sustainable choice in transportation.

Janet Drysdale

As one of the most efficient and environmentally friendly ways to move goods, rail has tremendous potential to reduce the environmental impact of freight transportation by offering sustainable transportation solutions today and into the future. On average, freight trains are approximately four times more fuel efficient than trucks. Rail can move a tonne of freight more than 200 kilometers on a single litre of fuel and a single train can remove more than 300 trucks from our congested road and highway network.

Canada's transportation sector generates approximately 28 per cent of the country's GHG emissions, however railways produce just 5 per cent of that total, and one per cent of the country's overall GHG emissions. Intermodal freight shipping combines the resources of different transportation modes, such as trucking and rail, to move products from the manufacturing site to their final destination. Intermodal helps lower transportation costs by allowing each mode to be used for the portion of the trip to which it is best suited. But it goes beyond cost savings. Effective intermodal service also helps reduce emissions by up to 75 per cent by shifting long haul truck traffic to rail. According to the Railway Association of Canada, "A 10 per cent shift in truck traffic to rail would translate to a 3.7-megatonne reduction in carbon emissions in Canada, while 15 per cent would result in a 5.6-megatonne reduction."

We recognize our responsibility to provide a more sustainable transportation service to our customers while minimizing the impacts of our operations. With approximately 84 per cent of our carbon emissions generated from rail operations, our focus is to continuously improve locomotive fuel efficiency. Operating efficiently has been the hallmark of our success and CN continues to lead the North American rail industry, consuming approximately 15 per cent less fuel per gross tonne mile than the industry average.

Our unique operating model allows us to move more freight in a tight, reliable and efficient operation for our customers. We continue to purchase new locomotives that meet stricter regulatory emissions standards, producing less air contaminants while being more fuel efficient. In 2018, we announced the purchase of 200 new high-horsepower locomotives, and our train crews and rail traffic controllers are continuously being trained on best practices for fuel conservation, including locomotive shutdowns in our yards, streamlined railcar handling, train pacing, coasting and braking strategies. For example, in 2016, we decreased train idling by 14 per cent.

"Intermodal helps lower transportation costs by allowing each mode to be used for the portion of the trip to which it is best suited. But it goes beyond cost savings. Effective intermodal service also helps reduce emissions by up to 75 per cent by shifting long haul truck traffic to rail."

"With approximately 84 per cent of our carbon emissions generated from rail operations, our focus is to continuously improve locomotive fuel efficiency. Operating efficiently has been the hallmark of our success and CN continues to lead the North American rail industry, consuming approximately 15 per cent less fuel per gross tonne mile than the industry average."

Furthermore, the installation of fuel-efficient technologies and big data management analytics capabilities are helping us reduce our carbon footprint. Our Fuel Productivity team uses a variety of technologies to improve locomotive fuel efficiency and a key focus of this strategy is putting just the right amount of locomotive power on each train using what we call our Horsepower Tonnage Analyzer (HPTA). Leveraging data from locomotive telemetry systems, the HPTA tool was built in-house and gives crews instructions and real-time monitoring allowing them to use only the locomotive power needed during that trip, by optimizing a locomotive's horsepower-to-tonnage ratio. In addition, we use Trip Optimizer, which regulates the speed of a train by controlling the locomotive throttle and braking system, and computes the most efficient manner to handle the train. The Locomotive Telemetry System collects data to drive improved locomotive and train performance, including fuel conservation. The use of distributed power, where a locomotive is placed further back in the train, is another technology used to improve train handling and fuel efficiency.

Our rail fuel efficiency innovative mindset extends to all aspects of our business. For example, routing protocols facilitate the movement of customer shipments in the most efficient way. We also collaborate with ports and terminal operators to minimize dwell times and further drive efficiency. Together with other technologies and initiatives, we have achieved fuel efficiency improvements between 2008 and 2017 that have avoided 5 million tonnes of carbon emissions.

The growth of the renewable fuel market has presented an important opportunity for CN to further reduce our emissions by using biodiesel blends in our locomotive fleet. In 2017, the use of renewable fuels saved over 79,000 tonnes of carbon. In the coming years, we look forward to working with our suppliers to explore the use of renewable fuels.

As we prepare for the future, our connections with our customers, supply chain partners and governments are enabling us to deliver sustainable and profitable business that drives economic prosperity in a low carbon environment. As a true backbone of the economy, CN is committed to playing a key role in the transition to a lower carbon economy. Over the past 25 years, we have reduced our locomotive emission intensity by 40 per cent, resulting in the avoidance of over 30 million tonnes of carbon, while achieving record growth in the volume of freight we move. Our approach is to reduce the carbon intensity of our business progressively over time and at a pace that's consistent with the objective of stabilizing global temperature.

We are also working with many of our customers to measure and help them reduce their transportation supply chain GHG emissions by leveraging rail for the long haul and trucking over shorter distances. The greater use of combined transport helps lower transportation costs by allowing each mode to be used for the portion of the trip to which it is best suited and also helps reduce emissions, traffic congestion, accidents and the burden on overstressed transportation infrastructure.

Launched in partnership with Tree Canada in 2014, CN's EcoConnexions partnership program aims to both partner with and recognize customers who are committed to building an efficient and more sustainable future. Each year, customers are invited to partake in the program and submissions are evaluated based on sustainable policies, energy efficiency, reporting to the CDP, and modal shift. Since 2015, we have planted 310,000 trees to recognize 32 of our customers for their sustainable business practices.

One example is Kruger Products, Canada's largest producer of consumer tissue brands. John O'Hara, Kruger's Vice President of Business Planning and Logistics has said: "Our ecological footprint is linked with our corporate strategy. CN's leadership in sustainable practices, like the Eco-Connexions program, allows us to partner with them to reduce our carbon footprint and eliminate waste in our supply chains. As a result, our partnership has grown dramatically over the last five years."

> ***"Routing protocols facilitate the movement of customer shipments in the most efficient way. We also collaborate with ports and terminal operators to minimize dwell times and further drive efficiency. Together with other technologies and initiatives, we have achieved fuel efficiency improvements between 2008 and 2017 that have avoided 5 million tonnes of carbon emissions."***

These efforts reach much further as great strides have been made over the years engaging our employees, customers and communities through our EcoConnexions program to conserve energy, reduce waste and improve biodiversity through reforestation. In recent years, we have been responsible for planting 1.8 million trees and shrubs in Canada and the U.S., making us the leading private non-forestry company tree planter in Canada.

Furthermore, every year, we handle over 300 million tonnes of cargo from the food we eat, the wood to build our homes, the cars we drive, the appliances that make our lives easier, the products that improve our quality of life, and the energy to power our activities. Many of these goods are being transformed into more sustainable products, enabling us to play a key role as the backbone of the clean economy. We also continue to engage with our customers to strengthen our position within cleaner energy markets and thanks to innovation by our customers, we are now moving cleaner energy products like wood pellets, wood chips, wind turbine components, solar panels, as well as biofuel.

Through the use of greener and cleaner technologies and more efficient operating practices, railroads are constantly improving and committed to even greater environmental excellence in the years to come. By moving sustainable products, including cleaner energy sources, we are playing an important role as a backbone of the clean economy and the lifeblood of healthier communities. P

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Digitalization: The Path to Sustainability

As Canada adapts to the Fourth Industrial Revolution, the necessities of clean growth, sustainability and global competitiveness demand the innovation and implementation of connected solutions. ABB is a technology leader in power grids, electrification products, industrial automation and robotics, serving customers in utilities, industry and transport and infrastructure.

Nathalie Pilon

We are living through a socioeconomic revolution amid competing pressures of sustainability, energy concerns, and the fourth industrial revolution—the meshing of people and machines as internet meets production. Never has there been a better time for leaders to adopt sustainable business practices by taking ownership of the digital space and becoming connectors, and for the federal government to support our digital economy and its players.

Canada has what it takes to become a digital champion, and our industrial sectors are flowing with untapped potential. Energy is a foundational pillar of our economy. Ten per cent of Canada's gross domestic product is due to hydroelectric clean power, while the balance of the energy needs of our economic players in industrial and infrastructure relies increasingly on power sustainability. The clean electricity that hydropower supplies to Canadians supports the growth of industry, commerce, infrastructure and communities.

In May 2018, ABB commissioned a historic power interconnector in Canada. The Maritime Link project, a 500 megawatt (MW) high-voltage direct current (HVDC) connection, enables clean, renewable energy, generated in Newfoundland and Labrador to be transmitted to the North American grid in Nova Scotia reducing dependence on fossil fuels. The link made history on December 8, 2017, by conducting the first exchange of electricity between the islands of Newfoundland and Cape Breton, Nova Scotia. The stabilizing features of ABB's solution allow Nova Scotia to integrate additional renewables such as wind power and contribute to Canada's emission-reduction efforts.

Technology innovation has been the core mission of ABB for more than 130 years and year after year, ABB generates digital solutions for its partners worldwide, all in the name of clean energy. The rationale behind this is simple. ABB supports clean economy and sustainability with a unified, cross-platform digital offering. Our technology solutions envision ways to take our customers and stakeholders in public infrastructure to the next level.

As society adjusts to the Fourth Industrial Revolution, which merges the physical and digital worlds, it's our collective responsibility to build on the accomplishments of previous industrial revolutions, which over the last century improved life drastically across the globe. We should focus on using all the digital tools at our command to expand the benefits of earlier industrial revolutions to even more people while reversing any negative consequences. That means greening the grid, electrifying transportation and combating climate change with smarter infrastructure. As the digital wave progresses, we should all embrace it as it becomes the new normal.

> ***"We should focus on using all the digital tools at our command to expand the benefits of earlier industrial revolutions to even more people while reversing any negative consequences. That means greening the grid, electrifying transportation and combating climate change with smarter infrastructure."***

Digital systems that run industrial plants and installations to maximize uptime, speed, production and quality, industrial automation products are specifically designed to deliver collaborative operations, cyber security solutions and digital systems to manage entire plants and factories.

Canada is one of the largest mining nations in the world. As such, it is only normal that the Canadian mining industry turns to digitalization to increase its productivity and join our country's commitment to reduce carbon emissions. ABB is helping to build the first electric and digital

From electric vehicles in public transit to clean renewable electricity, Canada can secure its position as a global leader. *ABB photo*

mine in Quebec, a Canadian first, and has also delivered North America's most powerful mine hoist to Mosaic potash mine in Saskatchewan.

Digital mines develop economy and build community by reducing environmental impact and increasing safety. The landscape of resource extraction is being transformed with digital mines, which increase productivity and efficiency, optimize remote working, reduce waste and secure access control. Digitalization has the potential to unlock value for mining companies and can save billions of dollars for a future of sustainable mining.

Transportation electrification is well underway. From its origins with light rail and subway systems, electrification is expanding to incorporate more transit types and applications. The transition to electric vehicles (EVs) is just beginning and with automakers and other countries making significant commitments to phase out conventional internal combustion engine vehicles, the future for EVs is bright. But electrification of transportation goes well beyond passenger vehicles to include fleet vehicles (cars and trucks), mass transit buses, light rail, ships and even non-road vehicles like forklifts. Despite its high visibility and growing deployments, e-mobility remains an emerging technology. Additional work is needed to bring utilities, manufacturers and energy market participants together in order to remove technical barriers to commercialization. With the right level of government leadership, Canada can secure its position as a global leader in electric transportation technology and expertise.

> ***"The Toronto LRT will decrease greenhouse emissions by about 29 per cent per person, and cut 40 per cent of the current footprint. This groundbreaking technology is virtually a maintenance-free solution that will deliver long-term sustainable transportation for the Greater Toronto Area."***

Rail is one of the more prominent forms of electrified transport, as local rail and subway systems have used electric power for 100 years. Now electric rail is poised to become more economical, thanks to the development of supporting technologies. In efforts to cut emissions to zero in Canada, Toronto has begun construction on a new light rail transit line (LRT) to be up and running by 2021. For this $8.4 billion project, ABB is on board to contribute key power distribution components that will allow the transit line to run on nearly zero emissions. The Toronto LRT will decrease greenhouse emissions by about 29 per cent per person, and cut 40 per cent of the current footprint. This groundbreaking technology is virtually a maintenance-free solution that will deliver long-term sustainable transportation for the Greater Toronto Area.

Approximately 12 per cent of Canadians use public transit, with the majority of that percentage using the bus as their main source of transportation. Cleaner technology is now common in Canadian cities, but many transit vehicles continue to run on carbon-based fuels. Electric buses are on the rise and the next step is the launch of the national Pan-Canadian Electric Bus Demonstration & Integration Trial, led by the Canadian Urban Transit Research and Innovation Consortium (CUTRIC). This project is funded by federal and provincial governments, and will span cities across Canada. This trial is the kickoff to bring electric, zero-emission buses across Canada providing standardized and interoperable e-buses and charging systems. ABB will be contributing their 450 KW overhead electric charging systems with inverted pantograph to make public transportation greener and more cost effective for Canadians. This project will unfold over the span of many years and phases with the start of Phase 1 valued at $40 million.

Equipping the marine industry with electric, digital and connected solutions is key to the industry's future. *ABB photo*

While EVs are currently in the "early adopter" phase of the product lifecycle, they hold tremendous potential. As of 2017, EV sales in Canada have increased by 68 per cent and there are approximately 50,000 plug-in vehicles currently on Canadian roads. New sales records are consistently being broken each year as the idea of green transportation gains national momentum. In conjunction with EV sales, there is a rising demand for reliant chargers that have the ability to quickly and efficiently recharge batteries. ABB's new Canadian headquarters campus in Montreal is home to a $90 million investment, the Center of Excellence in E-mobility, with the installation of two 50kW Terra 53 DC electric vehicle charging stations. Under normal road and weather conditions, the chargers are capable of enabling a driving range of 60 km (37.3 miles) with 15-30 minutes of charging. ABB has also recently unveiled its installations of the 350kW DC charging stations that are currently in operation. These fast chargers are designed for highway and en-route charging to provide the highest possible uptime. The electrification of vehicles is a crucial component to combat climate change for a more sustainable future.

Part of ABB's role as a frontrunner in sustainable transportation is to equip the marine industry with electric, digital and connected solutions that maximize the full potential of vessels and ultimately enable a safe, efficient and sustainable maritime industry. Diesel-electric hybrid ships have been operating on the high seas since the 1990s, and the technology has now become the industry standard for cruise ships, LNG tankers, polar icebreakers and more. In 2017, ABB was awarded a contract by the Vancouver Fraser Port Authority to provide a technology solution that will enable a shore to ship power supply for Canada's largest container port located in Delta, British Columbia. This will allow for ships at the Global Container Terminal to connect to the electrical grid of BC Hydro, instead of using diesel generators. The ability to plug into the grid when berthed and shut down engines will curtail polluting substances such as nitrogen and sulphur oxides and will also mitigate noise and vibration levels, to support the terminal's sustainability goals. A large cruise vessel running its auxiliary engines on diesel, to power its loads while in port, emits the equivalent amount of nitrous oxides as 10,000 cars driving from Toronto to Quebec City. ABB's solution enables ships to shut down their engines and plug into an onshore power source, without disrupting on-board services.

In addition to on-land efforts, ABB extended the operational life of Canadian Coast Guard (CCG) ships by another 20 years by successfully modernizing its first CCG icebreaker, installing the latest hardware and software onboard the 38-year-old *CCGS Pierre Radisson* as part of the complete upgrade to the ship's propulsion power distribution system. Ultimately the project kicked off a fleet life extension program that will see the upgrading of 10 of the CCG High Endurance Multi-Tasked Vessels as well as Heavy and Medium Icebreakers, which conduct major search and rescue operations and play a vital role in keeping shipping lanes of northern Canada ice free.

Air quality is a national but also highly localized concern. The majority of Canadian cities are well above national standards, ranking Canada as one of the countries with the highest quality of air. Problems arise in specific locations such as urban agglomerations where transportation emissions are the primary cause of air pollution.

The transportation sector accounts for over 23 per cent of Canadian greenhouse gas emissions. Canada's GHG emissions represent about 1.6 per cent of the global total and puts the country amongst the top 10 global emitters. In an effort to reduce and ultimately eliminate emissions through use of electric vehicles, the federal government has committed to reduce annual GHG emissions from the current level of 726 megatons (Mt) to 622 Mt in 2020 and 525 Mt in 2030. Electrification is the key tool for decarbonizing transportation.

Engaging with the sustainable resources we have across Canada is only half the battle. We must look further towards the trend of digitalization and modernization with collaboration across the country and invest in sustainable technology to ensure our future generations' ability to be competitive players and profitable in global markets. P

Nathalie Pilon is President of ABB Canada and member of the executive board of ABB, the Americas Region.

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Ottawa ⟷ Toronto	Jusqu'à 20	450 km	**4 h 23 min**	4 h 34 min	467 $	**44 $**	423 $
Ottawa ⟷ Montréal	Jusqu'à 12	198 km	**1 h 55 min**	2 h 27 min	227 $	**33 $**	194 $
Ottawa ⟷ Québec	Jusqu'à 8	482 km	**5 h 23 min**	4 h 39 min	488 $	**44 $**	444 $
Toronto ⟷ Montréal	Jusqu'à 13	541 km	**5 h 25 min**	5 h 30 min	562 $	**44 $**	518 $

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* 30 minutes ont été ajoutées à la durée totale du voyage en voiture afin d'inclure les retards dus au trafic et au mauvais temps.

** Le coût du voyage en voiture est calculé selon la formule suivante : coût en $ du voyage en voiture (taux de 0,55 $/km établi par le Conseil du trésor pour l'Ontario pour une voiture conduite par un employé du gouvernement X distance parcourue) + frais en $ d'employé gouvernemental (taux horaire moyen d'un employé gouvernemental de 48 $/h selon un salaire de 100 000 $ par année, y compris les avantages sociaux X durée du voyage) = coût total en $ pour le contribuable.

*** L'économie pour le contribuable associée aux voyages en train est calculée selon la formule suivante : coût en $ du voyage en voiture – coût en $ du voyage en train = économies en $ pour le contribuable.

A Clean Tech Case Study

Canada's clean technology sector is nearing a tipping point that will tilt it toward transformative, sector-wide critical mass, but we need more made-in-Canada clean technology success stories to grow and scale-up. How do we get there? As many leaders in government and the private sector can attest, money is only part of the formula for a breakthrough.

Karen Hamberg

In a recent letter to Canada's first ministers signed by more than 100 business and civil society leaders that comprise the Smart Prosperity Initiative, the gauntlet was thrown down for nothing short of a homegrown clean technology revolution. "Targeted public funds are needed to spur breakthrough clean technology research, development and deployment across all sectors, leveraging private capital," the letter declared. It's a call to action these ministers would ignore at their peril, given that its signatories included the Business Council of Canada's John Manley, NRStor's Annette Verschuren and McKinsey's Dominic Barton—the latter the chair of the Prime Minister's Advisory Council on Economic Growth.

Indeed, the Government of Canada has responded in kind. The Pan-Canadian Framework on Clean Growth and Climate Change included recommendations for new action to support the clean technology sector and advance the commercialization of clean technologies. The Trudeau government stepped up, turning words into action by setting aside $2.3 billion for investments in clean technology with matching tools and new mandates for established funding partners including the Business Development Bank ($950 million), Export Development Canada ($450 million), and Sustainable Development Technology Canada ($400 million).

> **We are still very much at the starting gate to fulfill our promise, achieve critical policy objectives, and deploy made-in-Canada clean technology in a material way to diversify our economy.**

With political will and capital firmly in place, it would appear that Canada is well positioned for a breakthrough to transition to a low carbon economy via the creation of high-skill, high-wage, knowledge-based jobs in a rapidly growing clean technology sector. But we are still very much at the starting gate to fulfill our promise, achieve critical policy objectives, and deploy made-in-Canada clean technology in a material way to diversify our economy.

Canada's innovation strategy has slowly shifted from ideas and start-ups to market creation and scale-up. We have funded many promising clean technologies to varying degrees of success, resulting in a diverse ecosystem of companies at different stages of their development cycle. Canada features a handful of market leaders who have commercialized product globally and managed to scale-up. We also have a larger number in the pre-commercialization stage with promising technologies, and many more start-ups pursuing disruptive technologies that we need to keep a close watch on.

To the credit of the current government, there is widespread recognition that we have an opportunity to continue to not only invest in but actively support companies in the clean technology sector. We need a lot more of our made-in-Canada clean technology success stories to grow and scale-up. This will in turn lead to a much more mature sector, reflected in commercialized product, established sales, revenue, profitability, market share, and a compelling size of the prize. But how do we get there? As many leaders in government and the private sector can attest, money is only part of the formula to drive change and growth.

There is a complex relationship between regulation and innovation, and the challenge of technology advancements outpacing current regulatory frameworks is well documented. There are many examples of the ways inefficient regulations can block innovation, strangle the flow of capital, and reinforce a status quo that doesn't allow companies with new technology solutions to emerge as markets demand.

Stakeholders from the Government of Canada's six Economic Strategy

The light bulb has always symbolized ideas, which are driving clean tech. *iStock photo*

Tables have spent the summer finalizing their chapters and refining the signature recommendations specific to their sectors. I had the privilege of serving on the Clean Technology Economic Strategy Table for the past nine months. This table, along with those focused on resources for the future, advanced manufacturing, agrifood, health/biosciences, and digital industries were wisely chosen for a key reason; their ability to transform our economy. However, it is not surprising that there is an emerging consensus among them that regulatory challenges represent the most significant roadblock to accomplishing that very transformation.

For many Canadian businesses, the repercussions of these regulatory roadblocks only come into focus when they impede real-world market opportunities. At Westport Fuel Systems, we have learned just how difficult it can be to navigate a regulatory environment that wasn't designed to accommodate new technologies in existing frameworks.

Our flagship and proprietary high-pressure direct injection technology, Westport HPDI 2.0™, enables heavy-duty trucks to operate on natural gas with reduced fuel costs, reduced CO_2 emissions, and diesel-like performance. It has been successfully commercialized and launched in Europe with our engine manufacturing partner. Two 13L engines (rated at 420 and 460 horsepower), certified to stringent Euro VI regulations and suitable for demanding Class 8 long-haul applications are currently being deployed in key European markets to leading fleets seeking comparable diesel performance and deep greenhouse gas emission reductions. One of our greatest challenges, however, is deploying products in the domestic market.

Given the long lead time associated with heavy-duty engine development programs, the lack of cost-competitive, market-ready solutions for the long-haul commercial freight sector in North America with engines 13L and greater—and the urgency of greenhouse gas emission reduction targets from heavy-duty transport—we see a market opportunity to deploy these engines in Canada. But given the distinction between the Euro VI standard and the North American EPA standard and different engine testing cycles, our current options are to seek a never-before-granted exemption under the Canadian Environmental Protection Act (CEPA) to import a number of Westport HPDI 2.0™ trucks or to explore a separate regulatory harmonization pathway.

The success of our endeavour will depend on our ability to navigate a complex and lengthy regulatory process that appears opaque, with an investment of time and resources that balances our appetite for risk. As a made-in-Canada clean technology success story headquartered in Vancouver, it is difficult to fathom that we would face so many challenges in bringing to Canada a technology that was invented in the University of British Columbia's Department of Mechanical Engineering in the 1980s.

Ultimately, we will need as much innovation in our public policy tools as there is in technology to ensure progress on critical economic and environmental objectives. How do you create the right regulatory environment to allow for the rapid adoption of clean technology? A new approach focused on regulatory agility that enables and allows newcomers and solutions providers to challenge incumbents should incorporate the following elements:

1 An enhanced working relationship between regulators and industry that encourages early and frequent dialogue and guidance on new and evolving clean technologies,

2 A framework that can adapt to the pace of change of new technologies,

3 A timeline and degree of certainty that provides companies and investors with the confidence needed to continue investing in projects at

various stages of development and risk,

4 An initiative to educate solution providers on the real hard boundaries of the regulatory environment,

5 A system that is designed to scale solutions, not just specific technologies or companies,

6 The provision of safe harbours to allow for the demonstration and testing of clean technologies that includes mutually agreed upon milestones leading to an exemption,

7 A stage-gated process that identifies what could be accomplished quickly to deploy clean technology versus longer-term requirements, while ensuring that critical health, safety, and environmental objectives are met,

8 A process or methodology for determining best available clean technology and an expectation that solutions providers "show their work,"

9 A mechanism to build and nurture stronger relationships between regulators and the vast technical expertise in the clean technology sector, and

10 A commitment to accountability to ensure best-in-class regulatory performance and leadership.

Like so many in our sector, we are writing the next chapter in our corporate story with an eye to those jurisdictions enacting stringent regulations specific to urban air quality and public health, improved fuel economy, and reduced greenhouse gas emissions. The opportunity to further develop our technologies and expand our footprint in Canada has never been better, and the political will is readily apparent—and greatly appreciated. And yet we know that without a concerted effort by government and key stakeholders to address regulatory roadblocks, this promise could readily evaporate.

The Government of Canada has already conducted the heavy lifting of setting aside valuable capital. What is needed now is a comprehensive, coordinated, and collaborative approach to regulatory agility. This can be the kind of strategy that will truly spur innovation through the deployment of clean technology and support the ability of companies to scale up. We can see the way forward and are ready to work together, with government and our key partners, to make it happen.

Karen Hamberg is Vice President of Industry and Government Relations at Westport Fuel Systems in Vancouver.

Forestry: A Success Story in Clean Tech

The Canadian forestry sector has become a leader in clean energy and clean tech, both in industry and communities it serves. The industry has already met the 2016 Paris Agreement target of reducing GHG emissions to 30 per cent below 2005 levels by 2030. Derek Nighbor, head of the Canadian Forest Products Association, tells a Canadian success story.

Derek Nighbor

For more than three decades, the Canadian forest products sector has been a leader in the innovation, development, and utilization of clean technologies—and in doing so, has positioned itself at the forefront of energy change that benefits the environment and the economy.

The pulp and paper sector began showing signs of success in reducing greenhouse gases (GHGs) in the 1990s. Throughout the 2000s, some 30 facilities across the country were upgrading their energy systems to produce green electricity from biomass.

> **Enough electricity is produced across the Canadian forest products sector to power the city of Vancouver for an entire year. Over the course of this transformation, the sector has cut its GHGs by approximately 67 per cent.**

Today, enough electricity is produced across the Canadian forest products sector to power the city of Vancouver for an entire year. Over the course of this transformation, the sector has cut its GHGs by approximately 67 per cent.

The industry has continued to gain momentum by advancing its clean energy agenda with a total investment of more than $2 billion in innovation development.

Between 2010 to 2015, for example, Canfor Corporation invested a total of $400 million in capital upgrades to its Prince George, British Columbia facility which included $58 million to increase the facility's power generation and energy efficiency.

The investment paved the way for a strategic partnership with Licella Fibre Fuels and Canfor Pulp through which the two companies researched opportunities to integrate Licella's unique and patented Catalytic Hydrothermal Reactor (Cat-HTR) upgrading platform into Canfor Pulp's kraft and mechanical pulp mills.

Through the conversion of biomass, which included wood residue from Canfor Pulp's kraft pulping processes, the Cat-HTR was recognized as a technology that could reportedly take between 20 to 30 minutes to produce a renewable biocrude oil that would lead to the production of next-generation biofuels and biochemicals.

In recent years, other Canadian industry leaders have been equally proactive in implementing clean technology developments.

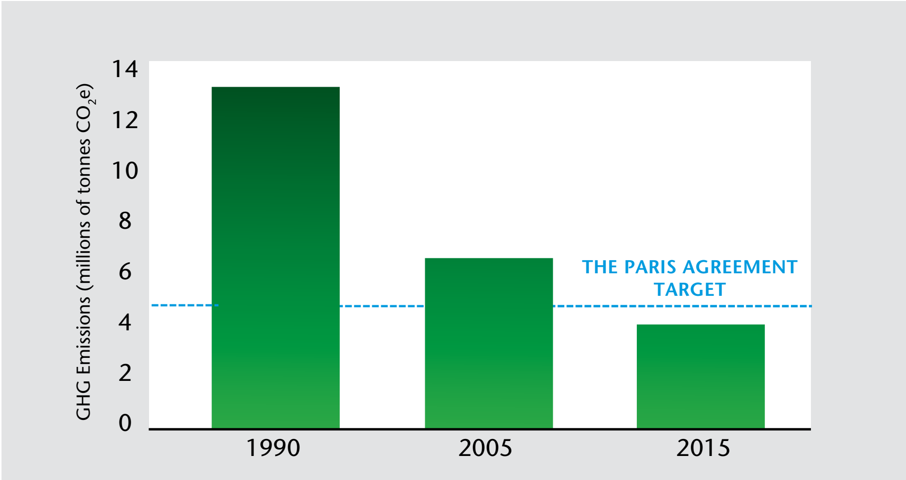
Amidst a number of clean energy developments came the world's first cellulose filament plant, in Quebec. In 2013, FPInnovations launched a revolutionary three-year research project on cellulose filaments (CF). Working with the newly formed Kruger Biomaterials Inc, the world's first cellulose filament demonstration plant was opened in Trois-Rivières. The plant has a five-tonne a day production line and operates on a simple and efficient chemical-free process that only uses mechanical energy and wood fibres.

A Canadian innovation, CF is an engineered biomaterial extracted from wood pulp fibre through mechanical peeling. The process does not require the use of chemicals or enzymes and does not produce effluents, making them environmentally friendly and well-suited for the Canadian forest industry. CF is considered a highly innovative wood-fibre-based biomaterial that will continue to have a transforming impact on Canada's forest products sector due to its capacity to be integrated into other materials and enhance their strength, lightweight, and flexibility characteristics.

There are a number of examples of biomass being used outside of the sector, including the Bioenergy Research and Demonstration Facility (BRDF) that opened in British Columbia in 2012. In partnership with the federal government and forestry partners such as FPInnovations, Canada's wood products research institute, and the Canadian Wood Council, the University of British Columbia (UBC) launched the facility—a $34 million clean energy structure that produces clean heat and electricity from renewable bioenergy.

The BRDF daily operation requires two to three truckloads of tree trimmings and wood chips diverted from local

GHG Trends in the Canadian Pulp and Paper Sector



municipalities, sawmills, and land-cleaning operations—and generates the same amount of clean electricity as what it would to take to power 1,500 homes. At the same time, it has also reduced UBC's natural gas consumption by 12 per cent, not to mention the campus' greenhouse gas emissions by 9 per cent which is the equivalent of taking 1,000 cars off the road.

At the time it was built, the BRDF facility, 1,900 square metres in total, represented the first North American commercial application of Cross-Laminated Timber (CLT). So, not only did the facility produce green energy, it was built using CLT, which is now much more widely used in North America, with one such manufacturing facility operating in B.C.

CLT is a multi-layered wooden panel where layers are stacked in a perpendicular fashion and glued together using hydraulic or vacuum presses. From a builder's perspective, the end result is a material that is faster and less costly to use, stronger, able to be turned into panels off-site and ahead of time (no matter the weather), and sustainable.

In addition to the numerous clean innovation advancements, Canada also has a framework in place that specifically supports those initiatives. Launched last year by the Canadian Council of Forest Ministers (CCFM), Canada's Forest Bioeconomy Framework lays the groundwork for a forest bio-economy of the future that identifies sustainable bio-based materials from healthy forests available for high value-added manufacturing.

The framework highlights innovation, collaboration, and investment, and opens the door to further enhancing the sustainability of Canadian forestry on a public policy framework.

> ***“Wood is the one truly sustainable building material as it is sourced from Canada's forests that are among the most strictly regulated in the world, and it sequesters carbon both in the forest and after trees become wood products in building construction.”***

Wood is the one truly sustainable building material as it is sourced from Canada's forests that are among the most strictly regulated in the world, and it sequesters carbon both in the forest and after trees become wood products in building construction. This includes high-rise commercial buildings, otherwise referred to as tall wood structures.

Since the introduction of CLT in North America, tall wood buildings such as Brock Commons, an 18-storey mass timber student residence located at UBC, are becoming more evident. In Quebec City, the Origine Eco-Condos development will, when completed, be the tallest tall-wood condominium structure. The building consists of 12 storeys of mass timber sitting above a one-storey concrete podium and underground parking garage. The building's elevator and stairwell shafts are constructed with Canadian CLT and the building's design has been modelled after *Construction of Tall Wood Buildings in Canada* which was published by FPInnovations.

Two years ago, Canada's Forest Products Association of Canada (FPAC) challenged industry members across the country to exceed greenhouse gas emission targets with their 30 X 30 Climate Change Challenge.

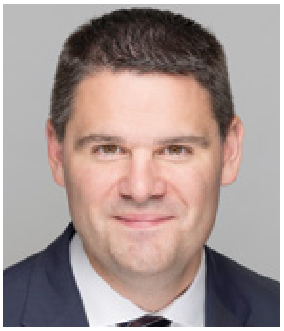
In support of Canada's commitments to the Paris Agreement, Canada's forest sector pledged to the annual removal of 30 megatonnes (MT) of CO_2 per year by 2030—more than 13 per cent of the Canadian government's emissions target. It also made the forest sector the first to voluntarily contribute to the federal government's climate goals.

The sector calculated the 30MT reduction could be reached by further improvements to forest management activities to maximize carbon storage, increasing the use of innovative forest products and clean tech to displace materials made from fossil fuels, and finding further energy efficiencies at mill sites.

The Canadian forest products sector continues to stay ahead of the curve in how it is developing and advancing clean technology innovation for a clean energy, zero-waste bio-economy future.

The industry remains committed to doing its part to transform Canada into a bio-energy and bio-materials powerhouse and is proof that advancing clean technology works for the environment and the economy, creating opportunities for Canadians to be part of a workforce that is increasingly among the greenest in the nation. P

Derek Nighbor is CEO of the Forest Products Association of Canada.



Guest Column / James Scongack

Clean Nuclear Power and Lower GHG Emissions

Electricity is so intricately woven into the everyday life of advanced economies that it takes a full power outage for people to even think about it.

The constant availability and reliability of power has allowed it to become a convenience—when it is dark, electricity is there at the flick of a switch; with the click of a button on your smartphone you're connected to family on the other side of the world; and if you or a loved one is sick, you can seek medical attention in a fully-equipped hospital, all thanks to electricity.

As the world's population continues to grow—and developing economies seek to improve their quality of life—so will the demand for energy. In most cases, as energy demand increases, so does the level of greenhouse gas (GHGs) emissions into the atmosphere. This increase in GHGs is mainly from the burning of fossil fuels during the production of energy.

These emissions are the major reason for the extreme changes we are seeing in the climate, as well as impacts on human health because of poor air quality. It is our duty, as global citizens, to meet the world's growing energy needs without sacrificing the climate or human health. Growing energy demand must be met with clean and affordable electricity options that drive down emissions and improve air quality.

The world is truly at a pivotal decision-making point. If we do not start decreasing our global GHG emissions, the earth will continue to warm and the quality of air will continue to deteriorate.

Meeting energy demands in a clean and affordable way is possible, and Ontario is a perfect example of how. In the early-2000s, the provincial government committed to phasing out coal from its energy mix portfolio—a goal met in April 2014. The phase-out of coal saw a significant reduction in the level of harmful GHG emissions, and the number of smog days plummeted from 53 in 2005 to zero in 2014.

The people of Ontario now have cleaner air from cleaner energy.

A major part of this commitment was made possible through the refurbishment of previously laid-up nuclear reactor units, including four of the units at the Bruce Power site. Bringing Bruce Power's four units back online replaced 70 per cent of the electricity that was lost by the closure of coal plants, while the other 30 per cent was mainly found through conservation and the expansion of renewables.

Global energy demands can be met with a combination of nuclear and renewables, which would sharply decrease GHG emissions, improve air quality, boost quality of life, and benefit economies—just as Ontario has shown.

Another area where nuclear power is making an enormous difference in people's lives is in the growing production of medical isotopes. Ontario's nuclear fleet plays a critical role in supplying isotopes globally, and, by leveraging our experience, nuclear assets and innovative technologies, we believe there is more we can do to ensure Canada remains one of the world's key suppliers. Ontario's nuclear fleet provides 60 per cent of the province's electricity while continuing to be a low-cost and reliable power source. This fleet also produces isotopes globally to keep hospitals clean and safe, to fight the Zika Virus and assist the fight against cancer.

In April, a coalition of Canadian science, health care and nuclear sector organizations launched the Canadian Nuclear Isotope Council to ensure Canada remains a world leader in the production of life-saving isotopes by raising awareness and supporting long-term policies at the domestic and international levels.

Since 1940, Canada has been producing isotopes used to save lives through medical imaging, cancer therapy, sterilization and diagnostic development. The demand for a reliable supply of these critical isotopes continues to grow as advancements in health care continue and jurisdictions seek to secure fair access to diagnostics and treatments for patients as sterilization is recognized as critical to clean hospitals and infection control.

Our Council of Leaders in health care, energy and academia have come together because we believe this is a critical role people in Canada and around the world are counting on us to play in the years to come. Medical isotopes are an important part of Canada's innovation agenda, and beyond medicine, the nuclear sector contributes to a wide range of other scientific and economic activities, including energy, human health and safety, material testing, food safety, and even space exploration. P

James Scongack is Executive Vice-President, Corporate Affairs & Operational Services at Bruce Power.

Keeping Canada Competitive: A Petroleum Industry Perspective

The world is currently facing a significant challenge in meeting growing demand for safe, reliable and affordable energy while responding to the need for lower carbon emissions over the next several decades. Canada can and should seize this opportunity and continue to play an important role in meeting this demand and reducing energy poverty in emerging economies.

Tim McMillan

Renewable energy is not on track to displace traditional forms of energy in the next two decades. Instead, an evolution of ever-cleaner forms of oil and natural gas will meet global demand, estimated by the International Energy Agency to be the dominant form of fuel to at least 2040. Canada can become the world's energy supplier of choice—responsibly producing oil and natural gas, reducing GHG emissions at home and around the world, while continuing to generate economic benefits across the country.

Yet, much needs to be done to make this a reality. There is an immediate need for industry and governments to address significant competitiveness gaps relative to other oil and natural gas producing regions, particularly the United States.

While the U.S. remains Canada's biggest customer, we can't be complacent in this relationship or forfeit the spirit of competitiveness and productivity that drives our economic growth. The U.S. is aggressive in its drive to be a net energy exporter by 2022, shipping a significant amount of oil and natural gas to the same emerging markets Canada is seeking to serve. Increasing shale gas production in the U.S. has resulted in less reliance on Canadian natural gas exports and the more favourable regulatory and tax system in the U.S. has reduced the amount of investment directed toward Canada's energy sector.

> ***"Duplicative and inefficient policies in Canada are one of several factors driving global energy capital to places where it can get a better financial return. Yet adjustments to the emerging policy environment can still be made to improve Canadian competitiveness."***

While capital investments in oil and natural gas increased globally in 2017, investment in Canada was lagging. The Canadian Association of Petroleum Producers (CAPP) estimates total capital spending in 2017 was $45 billion—a 44 per cent decline compared to $81 billion in 2014. Meanwhile, capital spending in the U.S. rose about 38 per cent to $120 billion in 2017.

Rectifying this imbalance through regulatory reform will encourage long-term investment in energy infrastructure and in the type of research and technology development that is key to the sustainable growth of the industry.

This vital link between sustainability, innovation and investment is outlined in the Competitive Climate Policy report released earlier this year by CAPP.

The lens through which all policies are viewed in the report sees the economy and the environment as global ecosystems that need to function effectively together to meet sustainability goals.

In CAPP's vision, Canada is—now and in the future—a global environmental leader positioned to reduce GHGs on an international scale if the right policies are put in place to maintain competitiveness, spur innovation and attract investment.

Central to this vision is the prevention of carbon leakage, the circumstances that see high costs in one region drive investment, jobs and GHG emissions from one highly-regulated country to one with weaker rules.

Current policies in Canada have already kick-started this phenomenon, with energy investment redirected from Canada to places with lower environmental standards and costs—Saudi Arabia, Russia and big oil- and natural gas-producing districts such Texas, Oklahoma and North Dakota in the U.S.

For example, Alberta's implementation of the Carbon Competitiveness Incentive has not been efficient and is already impacting investment decisions, challenging the economic viability of existing projects and limiting investment in new developments. In addition, multi-national firms with opportunities outside of Canada are choosing to grow their production in other parts of the world. In 2017, several companies divested holdings in Canada and made capital allocations elsewhere, although this is not attributable solely to climate policies.

Duplicative and inefficient policies in Canada are one of several factors driving global energy capital to places where it can get a better financial return. Yet adjustments to the emerging policy environment can still be made to improve Canadian competitiveness.

CAPP presents four key recommendations in its competitiveness report to enable the oil and natural gas industry's commitment to innovation and technology before other suppliers—with weaker environmental standards—capture global markets without addressing environmental concerns.

The first involves bolstering Canada's oil and natural gas sector as an emissions-intense, trade-exposed (EITE) industry to balance effective environmental policy and competitiveness.

Protection mechanisms for EITE sectors are key to minimizing carbon leakage—without them EITE industries such as the upstream oil and natural gas sector may choose to leave Canada or decrease investment.

Currently, many different GHG management regimes around the world, in California and the European Union, for example, use an EITE methodology to protect industries' competitiveness.

A CAPP analysis estimates that Canada's upstream oil and natural gas sector will pay $25 billion over the next decade to the combined current provincial and federal policies designed to mitigate the impacts of climate change.

The federal government is itself raising the alarm about environmental policy impacts to the economy overall. In April, the Parliamentary Budget Office (PBO) released its *Economic and Fiscal Outlook*, which says the federal carbon tax will generate a headwind for the country's economy over the medium term as the levy rises to $50 per tonne in 2022. Based on analysis conducted by Canada's Ecofiscal Commission, the PBO projects that real GDP will be $10 billion lower in 2022.

Improvements to the EITE mechanism, along with a recognition of the cumulative burden of other policies, regulations and taxes, will help reduce emissions while still allowing for continued growth of the sector.

CAPP's second recommendation applies to the proposed Clean Fuel Standard (CFS). This new policy seeks to establish life cycle carbon reduction requirements to all fuels combusted for the purpose of creating energy, including vehicles, home heat and major industrial processes.

In our view, the CFS policy is highly duplicative, overlapping with existing policies created to drive emissions reduction. In its current form, it offers no protection for EITE sectors such as the upstream petroleum industry.

Limiting the scope of the CFS to exclude upstream oil and natural gas, including offshore production avoids this duplication and improves industry competitiveness.

A third pillar of the CAPP competitiveness report recommends the creation of domestic and international offset programs. Such programs would allow industry to invest in alternative compliance options that enable low-cost emissions reductions.

A well-designed offset system provides high-quality compliance options to regulated sectors and incents non-regulated sectors to participate in project-based emissions reductions. Vital to the success of any offset program is to have an open, flexible system with robust, credible markets and flexible compliance mechanisms.

Norway is an example of a country that uses United Nations-approved international offsets to create credits that can then be used to meet domestic GHG reduction goals. Another example of international offsets is the potential for using Canadian-produced liquefied natural gas (LNG) instead of higher carbon intensity fuels in China, India and other markets —essentially a carbon offset.

Finally, CAPP advocates for turning a substantial portion of carbon pricing revenues from oil and natural gas toward enabling innovation within industry. This could significantly boost the overall impact of carbon pricing on long-term emissions reduction while mitigating the effects of carbon leakage and reduced competitiveness.

Further, a revenue-recycling approach is an excellent basis for establishing a carbon pricing re-investment strategy that eliminates the effects of short-term political priorities. Ultimately, ensuring carbon pricing revenues from the upstream sector are paid into a government fund that returns revenue to enable GHG abatement specifically in the sector is key to creating effective, long-term benefits from carbon pricing.

Investment is a critical component of the research and innovation needed to reduce the carbon footprint of every barrel of oil produced. This work is already in overdrive in the sector. Through Canada's Oil Sands Innovation Alliance (COSIA), companies have invested more than $1.4 billion to develop and launch nearly 1,000 new innovations and technologies in the last five years. These companies are creating and harnessing new technologies to help ensure the Canadian industry can compete in a carbon constrained world.

We live in a growing, urbanizing world that will need more energy in every form, including more Canadian oil and more Canadian natural gas. In this global future, investment to improve environmental performance makes sense. Other regions have recognized this and are putting policies in place to ensure their economic and environmental policies work hand-in-hand.

Canada needs policies that enable the industry's commitment to innovation and technology before other countries—with weaker environmental standards—capture global energy markets without meaningful action to achieve our environmental goals. P

Tim McMillan is President and CEO of the Canadian Association of Petroleum Producers.

Guest Column / Elizabeth May

Renewable Energy as Reconciliation

Canada faces major challenges that, while appearing separate, may share a common solution. I would rate climate change and reconciliation between Indigenous peoples and non-indigenous as top and pressing priorities. The potential to find solutions to both through renewable energy and indigenous partnerships is real. Across Canada, with little fanfare, significant investments are being made in renewable energy and clean tech by indigenous communities.

According to a 2017 survey conducted by Chris Henderson for Lumos Energy, nearly one-fifth of the country's renewable energy projects are being led by or partially owned by Indigenous communities. Where in 2008, there were approximately 20 such projects, in 2017 there were 152 medium to large renewable energy projects with Indigenous involvement. A medium to large project provides the electricity for 400-500 homes. In addition, there were 1,200 renewable projects with indigenous involvement that generated less. In the 2017 survey, 63 per cent of the projects involved hydroelectric power, 24 per cent were wind power and only 13 per cent solar and biomass.

Back in 2013 Chris Henderson documented the enormous potential for indigenous involvement in renewable energy in his book, *Aboriginal Power: Clean Energy and the Future of Canada's First Peoples*. Since then, many new and larger projects have been launched.

While solar was a small component even a year ago, the plunging price for photo-voltaic panels has contributed to a lot of newly installed Indigenous solar capacity. The two largest solar projects in British Columbia are both owned and operated by First Nations. The largest was installed in 2016 by the Nicola band, near Merritt, and the second is the T'Sou-ke solar project on southern Vancouver Island.

Solar is also being installed by First Nations in Alberta. The Lubicon and now the four nations south of Edmonton collectively known as Maskwacis are benefiting from direct electricity harnessed from the sun's energy. The Maskwacis, with financial support from the Alberta government, have installed 750 solar panels on public buildings.

Meanwhile, the federal government has committed up to $220 million over six years to assist remote indigenous communities get off diesel and move to renewable energy.

Here on Vancouver Island, the tiny community of Hupacasath First Nation has achieved a strong measure of experience others can build on. Back in 2005, the Hupacasath First Nation took a 72 per cent ownership position in building a run-of-the-river hydroelectric dam on China Creek. It provides more than enough electricity for the community, as well as for 6,000 homes in Port Alberni which has a 5 per cent share in the dam.

This experience turned the Hupacasath chief at the time, Judith Sayers, into a powerful voice for indigenous self-determination in harnessing renewable energy. It also led her to be a persistent critic of BC Hydro and its mega-project at Site C. Both megaprojects—Muskrat Falls in Newfoundland and Labrador and Site C in BC—have in common violation of indigenous rights, destruction of critical wildlife habitat to produce unnecessary power at a price no one can afford.

So much more could have been accomplished for renewable energy and respect for indigenous rights if Site C had been turned down. In my riding, a wind energy company, Aeolis Wind, had already developed agreements with the Treaty 8 nations in the Peace River area for a massive wind farm project. It would have taken advantage of the steady and strong winds, not interfered with traditional indigenous sites nor flooded out thousands of hectares of prime agricultural land. It would have connected to the strong grid already in existence for the Bennet dam. The BC Public Utilities Commission found renewables to be cost effective compared with the mega-dam at Site C. Meanwhile, Aeolis had built in to the wind energy plan a massive battery for storage of wind power to be kept on hand when the wind isn't blowing.

Across Canada, there is tremendous potential to engage indigenous communities living near abandoned mine or gravel pits to be used as reservoirs. Essentially abandoned mine sites at elevation can become storage batteries for renewables.

Fully engaging indigenous communities—coupled with modernizing and enhancing the east-west electricity grid to deliver green energy to provinces dependent on fossil fuels, could massively accelerate the decarbonization of our electricity sector, while delivering on meaningful reconciliation. It is time to take this potential seriously. P

Elizabeth May, Leader of the Green Party of Canada, is the MP for Saanich-Gulf Islands.

Doug Ford swept to a majority PC government on June 7, confounding the Liberals and pundits alike, while the pollsters got it right. *Flickr photo*

The Ontario Campaign that Went from Time for a Change to Throw the Bums Out

The negative trajectory of Ontario's once-formidable Progressive Conservative party only contributed to the Liberal Party's 15-year run in government, first under Dalton McGuinty, then Kathleen Wynne, that ended with Doug Ford's election on June 7. The combination of displeasure with Wynne's leadership and Ford's ultimate success in convincing voters he was a safer version of change than the NDP's Andrea Horwath delivered Queen's Park back to the party that was once a dynasty.

Geoff Norquay

Any party seeking re-election after 15 years in office will face challenges, but it's not impossible in Canadian politics. Provincial party dynasties with successive leaders are rare, but they do exist: the Ontario Progressive Conservatives, 1943-85, and the PCs in Alberta from 1971-2015. In each of those cases, the party shuffled out the old leaders every 8-10 years, and replaced them with new leaders who rejuvenated the government and in turn left after another two or three terms.

While four official parties contested this year's June 7 Ontario election, there was a fifth political movement that was pervasively and decisively in play; the "party of change." In fact, long before the election began, that movement had morphed into a seething desire to "throw the bums out", with public support ranging between 65 and 70 per cent—the bums in this case being Kathleen Wynne and the Liberal party.

All of this came about at least partly through a comedy of errors put on by successive leaders of the PCs over the previous decade. Going into the 2007 election, the Liberals under Dalton McGuinty had provided four years of decent but unimpressive government. The PCs enjoyed an even-up chance of winning until leader John Tory promised to extend education funding to faith-based schools, and the Liberals were re-elected. Kathleen Wynne personally defeated Tory in the riding of Don Valley West.

By 2014, McGuinty had retired, having bequeathed the premiership to Kathleen Wynne the previous year, but with a large pile of political baggage. These included a broken promise not to raise taxes, wasteful spending scandals at crown agencies e-Health Ontario and Ornge Air Ambulance, plus the cancellation of two locally-opposed gas-powered electricity plants in west-Toronto Liberal ridings just prior to the 2011 election.

By the time Wynne sought her own majority in 2014, the provincial auditor had pegged the cost of the gas plant cancellation at up to $1.1 billion, and electoral success looked doubtful for the Liberals. Into the breach stepped PC leader Tim Hudak, who started the campaign with a promise to create a million jobs, but also to begin that task by killing 100,000 public service jobs through layoffs. Wynne and the Liberals waltzed to victory, regaining the majority they had lost in the previous election.

“Policy played an interesting role in the campaign, with the three parties blithely ignoring the reality of Ontario's fiscal situation, promising billions of dollars in new spending while laughably vowing to be responsible and prudent.”

As this year's election approached, Wynne had accomplished much in her time as premier, but she was never able to put the McGuinty record behind her. While an effective and engaging communicator, her time in office had also added her own mistakes to McGuinty's. They included the plan to lower soaring hydro rates by kicking costs down the road, and hugely expensive renewable energy subsidies that paid producers to generate power that was not needed, while consumers were paid not to consume that same power.

No account of the 2018 election would be complete without describing the bizarre odysseys of Patrick Brown and Doug Ford in the first few months of this year. In the early hours of January 25, Brown resigned as PC leader following serious allegations of sexual misconduct. Just 133 days later, Doug Ford led the PCs to a smashing electoral victory, winning 76 of the 124 seats in the Legislature. In between were:

- A lightning-fast leadership campaign for the PCs which Brown entered briefly after being expelled from the PC caucus before withdrawing;
- Ford's chaotic leadership victory over Christine Elliott, Caroline Mulroney and Tanya Allen Granic, as Elliott won the popular vote but ended up 150 electoral votes short of Ford out of the more than 12,000 counted in the party's complex voting system; and
- An election in which Ford appeared to have blown a huge lead, then recovered to sprint to a strong majority victory.

As a provincial political neophyte whose experience was all at the municipal level, Ford took a while to reach cruising speed. His first task was to clean up the mess left by Brown. Several nomination contests had been controversial with documented voting irregularities, and a strong suspicion that Brown or his party officials had had their thumb on the scales to favour preferred candidates, one of whom was the mother of one of Brown's former girlfriends. Ford cleaned out the party, ditched several contested candidates and called for new nominations, all of which went off without a hitch.

As the election campaign began in earnest, Ford's inexperience showed and was painful to behold. Brown had left him with a comprehensive and well-thought-out platform, but in the early weeks of the campaign, Ford struggled to move beyond bland platitudes: "You know me, I'm for the little guy." In the first leaders' debate on May 6, he appeared stiff and scripted. While he managed to hold off Wynne and NDP leader Andrea Horwath, he made a strange and patronizing remark about the premier's smile. Horwath took advantage of the Ford-Wynne counter-punching to begin casting herself as the winning alternative.

As voters sized up the alternatives to the Liberals, Horwath and the NDP slowly whittled away at the PCs' lead, and by May 23rd, IPSOS Reid had the NDP at 37 per cent and the Tories at 36 per cent, a virtual tie. The final leaders' debate on May 27 did not go well for Horwath. Her party had had to admit the previous week that they had made an embarrassing $1.4 billion costing error in their platform. The Tories and Liberals argued this error added $7 billion to the NDP's projected deficits. And in the debate, Horwath came out swinging against Ford, repeatedly interrupting both Ford and Wynne, and at times coming close to appearing rude and overbearing.

Policy played an interesting role in the campaign, with the three parties blithely ignoring the reality of Ontario's fiscal situation, promising billions of dollars in new spending while laughably vowing to be responsible and prudent. An apt title for all three parties' platforms would have been, "We will make water flow uphill."

- The Liberals unveiled most of their platform in their March budget, and after struggling to manage down the deficit to zero, blew out spending to a deficit of $6.7 billion for the current fiscal year. In May, Ontario's Financial Accountability Office reported that the real deficit for 2018-19 would be almost $12 billion, a significant blow to Liberal Finance Minister Charles Sousa's credibility.

- The NDP's platform promised $9.1 billion in new spending, focused on affordable child care, raising welfare rates, increased hospital funding, public dental and pharmacare, and a new workplace benefits program, largely offset by new and higher taxes.

- The PCs ran up a total of $9.1 billion in new spending commitments, featuring a 20 per cent middle income tax cut, ending cap-and-trade, reducing business taxes, lowering gas taxes by 10 cents per litre and building 15,000 new long-term beds. While the Tories never released a full costing of their platform, they said their new spending would be offset by finding $5.6 billion in "efficiencies" and scrapping the Jobs and Prosperity fund, which was created in 2015 to provide $2.7 billion over 10 years to bolster Ontario's productivity and innovation.

“By any measure, the PC victory on June 7 was both strong and decisive. The PCs achieved a net gain of 49 seats and the NDP more than doubled the size of its caucus, moving from 21 seats at dissolution to 43 on election night. The Liberals suffered a huge loss, losing 51 of their 58 seats, and ending with seven, one short of official party status.”

The weekend before the election, facing decimation in the polls and the loss of official party status, Kathleen Wynne did something unheard of in electoral politics: she acknowledged that she would not be premier after June 7 and called on voters to vote Liberal to stop the PCs or NDP from securing a majority. It was a strange ploy, and speculation on its meaning was furious, the most prevalent being that Wynne had recognized her continued presence as leader was detrimental to the Liberal brand, and wished to remove that deterrent against voting Liberal.

By any measure, the PC victory on June 7 was both strong and decisive. The PCs achieved a net gain of 49 seats and the NDP more than doubled the size of its caucus, moving from 21 seats at dissolution to 43 on election night. The Liberals suffered a huge loss, losing 51 of their 58 seats, and ending with seven, one short of official party status.

So far, the Ford government is off to a solid start. His cabinet appointments favoured experience over diversity, and his two fellow contestants for the leadership, Christine Elliott and Caroline Mulroney were rewarded with key portfolios, Health and Attorney General. The calm and deeply experienced Vic Fideli is Finance Minister. Former federal minister Greg Rickford is Minister of Energy, Mines, Northern Development and Indigenous Affairs. Collectively, the cabinet is ideologically centrist and moderate.

The summer session of the Legislature may have brief, but it was eventful and even tumultuous.

Not only did the Ford government immediately cancel Ontario's cap and trade program on carbon emissions, it issued a legal challenge against Ottawa's intention to impose a carbon tax. In suing the feds, Ontario joined Saskatchewan's legal challenge to the federal carbon tax, with Attorney-General Mulroney calling it "unconstitutional."

Ford also unleashed chaos when he announced a downsizing of Toronto City Council from 47 to 25 members, at the very outset of the municipal election campaign. Under the 1867 Constitution Act, cities are creatures of the provinces, with provincial powers over "Municipal Institutions in the Province." Public opinion seemed to align the rest of Ontario vs. Metro Toronto, and Ford appeared comfortable with that.

For the rest, the hard work of turning all these promises into reality begins this fall. **P**

Contributing writer Geoff Norquay, a principal of Earnscliffe Strategy Group, is a former senior adviser on social policy to Prime Minister Brian Mulroney

Ontario's Ford Fiesta: Liberals and Media Didn't Get It

One of the features of democracy's systemic disruption in the past half-decade has been election-night whiplash, a trend registered in stunning upsets in North America and across the world. Veteran Liberal strategist Patrick Gossage argues that, in the case of Doug Ford's decisive victory in Ontario, the outcome wasn't stunning at all.

Doug Ford and PCs got it right in the Ontario campaign, while the Liberals got it wrong—all wrong. *Wikimedia photo*

Patrick Gossage

The "other" Ontario—beyond the smug dominion of Toronto—enthusiastically gave the province a populist government under Doug Ford on June 7th that contrasts greatly with the practical middle-of-the-road governments the province is used to.

What happened? How did the Liberals under Kathleen Wynne so misread the mood of the province? And how could rational people vote for a man who made grandiose promises but never costed them? How could the media have got it so wrong and still be so critical of Ford when the pollsters for once consistently predicted his majority?

> ***"How could rational people vote for a man who made grandiose promises but never costed them? How could the media have got it so wrong and still be so critical of Ford when the pollsters for once consistently predicted his majority?"***

The Toronto "elites", as regular a target in Ford's ascension as their American equivalents were in Donald Trump's, ended up almost voiceless in the new government. Liberals were reduced to seven seats, only three in a generally orange NDP Toronto south of the 401. And that includes the Toronto-centric media who Ford treated with disdain at no cost to his popularity.

The media, the *Toronto Star* particularly, didn't know what to make of what bureau chief Robert Benzie called Ford's "improbable" rise to power, calling Ford an "accidental premier". Ford liked telling his adoring crowds that the media didn't want him to win. And he did everything to annoy them—not running the usual media bus, taking only a handful of questions daily with an aide handling a microphone to ensure no follow-ups.

When we decided during Pierre Trudeau's 1980 campaign to vastly limit media availability, as press secretary I learned that voters did not care a bit that the fourth estate was inconvenienced. The Ford election proved that the opinions of traditional media don't count for much when voters make up their minds.

So, who is the "other" Ontario that rallied to Ford and his promises to make Ontario great again? It took an old Conservative political pro, Jaime Watt, to nail it in his *Star* column: "There exists a divide in the Ontario of today. On one side, an elite class built of media types, professionals and business-people, and academics who control many of the levers of communication. This class exists largely in urban centres like Ottawa and Toronto and agrees on a governing ideology that is fundamentally liberal in character. But the rest of Ontario looks dramatically different. It is a group that is far more blue-collar than the elite class imagines. Their appetite for liberal politics is spotty and their tolerance of political correctness barely exists. And those Ontarians simply do not see themselves reflected in the media landscape."

This is the Ontario that Kathleen Wynne and her band of basically downtown Toronto aides didn't get either. John Ibbitson of the *Globe and Mail* was one of the few commentators who did: "Liberal Premier Kathleen Wynne forgot that most voters work in the private, not public, sector. They live in suburbs and they drive to work in cars. Many of them have diplomas rather than degrees. If you disrespect these voters—if you tax them and lecture them and make them feel they are being looked down upon—they wreak their revenge. They made Rob Ford mayor of Toronto. Now they've made his brother premier."

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The suburban belt around Toronto of self-made immigrants and striving younger families as well as the farmers, the people who've lost manufacturing jobs, even northerners, who feel overlooked by Queen's Park, found the voice they wanted to hear in the bombastic but savvy Doug Ford who was "for the people." Wynne, as a friend observed, "sounded like she was addressing Cabinet" in the debates. No, it was the direct, simple, always-on-message Ford whose voice they found sympathetic. He understood their anger and frustrations with Wynne's Queen's Park and what she had done to their wallets with Hydro rates particularly. His "Help is on the way" mantra that worked so well for so many voters, of course turned into "Help is here" on election night.

> ***"Ford deserves respect for finding a way to appeal to a vast swath of Ontario that felt ignored by the provincial government. Obviously, it's time for more politicians and media to get out of downtown Ottawa and Toronto."***

Ford's promises did not add up and he was harassed by the media and his opponents for poorly thought-out promises, including tax reductions of 20 per cent, Hydro bill reductions of 12 per cent, 10 cents per litre off gasoline, and no serious attention paid to reducing the deficit and provincial debt that Ford loved talking about as the largest of any sub-national government in the world.

Ford's victory, like Trump's shows that there are real divisions between different segments of society. Politicians who ignore these divisions do so at their peril. Ford deserves respect for finding a way to appeal to a vast swath of Ontario that felt ignored by the provincial government. Obviously, it's time for more politicians and media to get out of downtown Ottawa and Toronto. P

Contributing writer Patrick Gossage was press secretary to Prime Minister Pierre Trudeau from 1976-82, and later head of the public affairs division of the Canadian Embassy in Washington. He is the author of Close to the Charisma: My Years between the Media and Pierre Elliott Trudeau*, and founding chairman of Media Profile, a Toronto media consulting and PR firm.*

Quebec Premier Philippe Couillard has a strong record on the economy battling a mood for change among Quebec voters.
iPolitics, Matthew Usherwood photo

The Quebec Election: A Primer

Anyone who has ever covered Quebec politics knows that its byzantine loyalties, grudges, affiliations and hidden agendas can take years to decode. Luckily for our readers, veteran journalist and author of several books on Quebec politics Graham Fraser, having recently retired as federal Official Languages Commissioner, is free to provide his insight and expertise.

Graham Fraser

Every election tells a story. And every political party strives to control the narrative of that story. The Quebec election, scheduled for October 1, is no exception.

Fifteen years in power—with the exception of an 18-month interlude from September 2012 to April 2014 when the Parti Québécois was in office—makes the Liberals vulnerable to one of the most effective and time-honoured election messages: Time for a change. On the other hand, the economic threats from the Trump administration suggest an equally proven counter-strategy: Safe hands in troubled times.

The remarkable thing about this election, however, is that for the first time since 1970, Quebec independence will not be on the ballot. Premier Philippe Couillard has been presiding over a successful economy, with record low unemployment—5.4 per cent in June, lower than Ontario at 5.9 per cent, below the national average at 6 per cent, and just above British Columbia at 5.2 per cent. This year, 80 per cent of Quebecers have access to a family physician, compared to 70 per cent four years ago. After years of deficit, the government balanced the books for the fourth consecutive year in 2018 and presented plans to reduce the province's debt by $2 billion a year, while lowering taxes for small businesses and home buyers.

The Quebec economy grew by 3 per cent in 2017, the strongest growth in nearly 20 years, while adding some 225,000 jobs since the Liberals regained office in 2014. In terms of economic growth and managing the fiscal framework, the Liberals under Couillard have a very positive narrative going into the election.

Nevertheless, voters are notoriously ungrateful creatures, and tend not to vote on the basis of past achievements but rather choose visions for the future. Moreover, embarrassments accumulate over the years, and while everyone remembers the scandals identified in the Charbonneau commission inquiry into corruption in the construction industry, people forget it was named in 2011, three years before Couillard was elected.

> **"While his government's policies have created the healthiest government balance sheets in decades, Couillard's handling of the ever-sensitive subjects of language, immigration and identity have been either half-hearted or ham-handed."**

Couillard has had his own embarrassments: awkward legislation banning those from giving or receiving government services from wearing religious garb (patently designed to outflank the opposition), support for a unanimous National Assembly resolution opposing the use of "Bonjour/Hi" by staff in stores greeting customers, the bullying bluster of Health Minister Gaetan Barrette, the stunningly generous settlement with medical specialists and the dead-on-arrival reception by Justin Trudeau of Couillard's "let's talk" constitutional proposal.

While his government's policies have created the healthiest government balance sheets in decades, Couillard's handling of the ever-sensitive subjects of language, immigration and identity have been either half-hearted or ham-handed.

As a result, there was a *fin-de-régime* sense at the end of the spring session of the National Assembly, as some 19 Liberal MNAs—including eight cabinet ministers—announced they would not be running again.

The election seems to be François Legault's to lose. A series of polls showed his Coalition Avenir Québec in the lead—in early June, Léger found the CAQ at 37 per cent, the Liberals at 28 per cent, the Parti Québécois at 19 per cent and Québec Solidaire at nine per cent; and in mid-June, CROP showed the CAQ with 39 per cent support, the PLQ with 33 per cent, the PQ trailing with 14 per cent, and QS close behind with 11 per cent. Legault spent the spring announcing a number of candidates—some of whom, like former Liberal minister Marguerite Blais, were designed to minimize the fear that he would be a right-wing populist.

The Liberals were not giving up hope; Couillard proudly announced that the president of the campaign will be the high-profile entrepreneur Alexandre Taillefer, and he succeeded in attracting Marwah Rizqy, an impressive tax expert that the federal Liberals had hoped to recruit, to be a candidate in the safe Montreal seat of Saint-Laurent.

The fruits of austerity also enabled the government to make a series of pre-election funding announcements, ranging from $158 million for sports and recreation—that breaks into a bundle of 231 small announcements, like $800,000 for the construction of an athletic running track in Magog—to $825 million for research and innovation, life sciences and artificial intelligence.

The left-wing Québec Solidaire also made a spring announcement. Buoyed by the victory of one of the leaders of the *Printemps érable* 2012 student protests, Gabriel Nadeau-Dubois, in a by-election in 2017, it proudly presented another star candidate, former *La Presse* columnist Vincent Marissal. Marissal will be running against PQ leader Jean-François Lisée in the East End Montreal riding of Rosemont. However, the launch was marred by reports that Marissal had met with members of Justin Trudeau's PMO to discuss a possible job. He was taken aback by the news, lied about it, and had to apologize: hardly an ideal way to enter politics.

The context is very different from recent elections. The fact that Quebec sovereignty will not be a ballot question is not unrelated to the fact that a turning point in the 2014 campaign was when media magnate and star PQ candidate Pierre Karl Péladeau pumped his fist as he called "to make Quebec a country", as leader Pauline Marois stood behind him smiling and leading the applause. From that defining moment, support for the PQ immediately began to drop.

Marois was defeated, and Péladeau's leadership did not survive the break-up of his marriage to Quebec entertainment star Julie Snyder. Lisée, the Machiavellian long-time PQ strategist now leading the party into his first election, has promised that, if elected, there will not be a referendum in the subsequent mandate.

This, of course, was the promise that split the party in 1984 when René Lévesque made the same commitment—resulting in one-third of his cabinet slamming the door. This time, the departing dean of the National Assembly, François Gendron, a member of the National Assembly since 1976, vented his frustration at the party's decision not to promote its *raison d'être* and emphasizing instead the nationalist discontent over immigration and identity. According to the polls, this has not helped move the PQ up from third place.

Nor has Lisée's attempt to overcome his lack of personal popularity by naming Véronique Hivon as his deputy leader, and touring the province with her over the summer in a minibus with the slogan "Un État fort au service des gens" (a strong state serving the people)—and Hivon's image alongside his on the side of the bus, as if they were running for president and vice-president.

And so, who is François Legault, and why is his party leading in the polls?

Legault emphasizes that he is a businessman, and makes this a central part of his appeal. Indeed, after training and working as an accountant, he founded Air Transat, leaving the company in 1997 after a quarrel with one of his partners. But he is no newcomer to Quebec politics. First elected for the Parti Québécois in 1998, he served as minister of Industry and Commerce, Education and Health, as well as opposition critic for the economy and finance.

He left the PQ in 2009, and created the CAQ as a conservative, pro-business vehicle that acknowledged, however awkwardly, that Quebec independence was not about to happen. In 2012, he said he would vote No if there were another referendum, but Liberals have always challenged his attachment to the country, with Couillard saying acidly that Legault "tolerates" Canada.

When asked about his commitment to Canada in May, Legault stumbled, saying "I am very proud to be Québécois, and Canada, well, I have reconciled myself with Canada, I am comfortable with Canada, and I hope that Quebec does more business with Canada."

> ***"Despite his business background, there has always been a harsh nationalist streak to Legault's politics. At his very first political speech, when he was nominated as a star PQ candidate in 1998, he told his riding association members that he had been raised in Montreal's West Island among the English, 'and I hate them as much as you do.'"***

Despite his business background, there has always been a harsh nationalist streak to Legault's politics. At his very first political speech, when he was nominated as a star PQ candidate in 1998, he told his riding association members that he had been raised in Montreal's West Island among the English, "and I hate them as much as you do."

It was an ugly revelation that I have never forgotten.

It is a nasty streak that has emerged in his party's immigration policies. Legault has claimed that immigrants will have to pass a test in order to be able to stay in Quebec—a promise that would be difficult to implement and even less likely to survive a Charter challenge. As the election draws closer, he has been softening his more aggressive positions, adopting what *Le Devoir* columnist Michel David called "un délicat recentrage", softening the party's position on Quebec's public child care system, reaching out to teachers, and pulling back from his challenge to the unions.

At the same time, the party has issued strict orders to candidates who are not already Members of the National Assembly to keep silent on policy issues. Legault remembers all too clearly the gaffes that can grab headlines and doom populist parties. It is all an effort to move to the centre, to reassure voters who are tired of the Liberals but not angry, and convince them, as one of his mantras puts it, that "Québec peut faire mieux," Quebec can do better. The elements for a contest over the election narrative are in place: a strong economy threatened by uncertainty, the fear of immigrants and refugees, the need for a strong state, and a left-wing alternative.

It remains to be seen whose story will prevail. P

Graham Fraser is the author of two national political bestsellers, René Lévesque and the Parti Québécois in Power, *and* Playing for Keeps: The Making of the Prime Minister, 1988, *as well as* Sorry, I Don't Speak French. *He served as Canada's Commissioner of Official Languages from 2006-2016, and is now affiliated with the McGill Institute for the Study of Canada.*

Getting procurement wrong is something governments do systemically. How to do it right? *iStock photo*

The Future of Government Procurement is Virtual

Government procurement can be an unwieldy, distinctly nonlinear process. Procurement executive Chand Sooran has a proposal for how to iron out the kinks.

Chand Sooran

Government procurement is a mess. It is an endless thicket of red tape for vendors and an inflexible, rules-ridden process for buyers. As federal Procurement Ombudsman Lorenzo Ieraci said in his 2016-17 report, "One of the concerns I routinely hear from Canadian suppliers, in particular small and medium-sized companies, is that federal procurement is complex. Many point to federal solicitations that number dozens—sometimes hundreds—of pages as examples."

On the other hand, there is the government's perspective. Ieraci notes that documents are very detailed because "federal organizations must fully and accurately disclose the details of the procurement process and the resulting contract. Federal officials have told me informally they don't want to make solicitation and contract documents overly detailed, but that they have no choice in order to respect this principle and protect their organization from procurement-related challenges."

Put those two realities together and what you have is an unwieldy, inflexible, inscrutable, expensive, lengthy process that services neither the buyer nor the seller well. It alienates, frustrates, and angers potential vendors who quickly realize the process is not worth the time, effort, and expense for a bid they might not win. For government, it ties up program managers and scarce procurement officers from carrying out their day-to-day jobs and overseeing contracts once they are in place. Moreover, things are likely to get worse with the looming retirement of already overworked and skilled procurement officers.

What does this mean in economic and fiscal terms, as well as lost opportunities for Canadian business and government?

Many, if not most, of the alienated vendors are small- and medium-sized enterprises (SMEs). Some of these SMEs are owned and led by women, Indigenous people or members of other disadvantaged cohorts—the very groups identified by the current federal government as ones who need to become more fully engaged in the Canadian economy. These are vendors who might have brought better solutions for the problems faced by the purchasing agency; suppliers who might be competitive on price and other aspects of the contract; and businesses led by people who want nothing more than a level playing field.

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These same SMEs face their own unique set of challenges with public procurement. They include overcoming "category management" that groups purchases together in larger lots or wider geographies; perceptions of inconsistent treatment of sub-contractors; and distrust in the overall fairness of the process when bids seem to be "wired" for specific vendors, often the incumbent supplier or larger vendors. Indeed, this lack of trust due to the perception that the process is tilted to favor existing or larger vendors is a critical dimension of the procurement challenge.

It is no wonder that, according to a study by the University of Ottawa, the "majority of Canadian SMEs (81.5 per cent) do not view the federal government as a potential client." According to the Business Development Bank of Canada, 99.8 per cent of businesses in Canada are SMEs (defined as firms with fewer than 500 employees). Yet these same SMEs win only 35 per cent of the contract value awarded by Public Services and Procurement Canada (PSPC). To put it another way, 0.2 per cent of businesses in Canada received 65 per cent of federal government procurement.

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None of this is to deny the reasons why the system is the way it is. There are valid concerns about vendors, including capacity, reputation, and minimization of hazard. In the political and risk-averse environment of government procurement, that is totally understandable. The current system is a kind of fail-safe, belt-and-suspenders way to protect buyers from making mistakes that lead to waste, fraud, and abuse. But all too often this overcompensation for legitimate concerns results in unintended consequences—not having enough vendors bid on business, not seeing the full range of potential solutions, not getting enough competition on price, and not getting things done on a timely basis.

It leads inevitably to some uncomfortable questions. How much SME innovation has government missed because of its approach? How much money could have been saved by working with more flexible SMEs?

The truth is it doesn't have to be this way. Procurement doesn't have to be complicated, messy, and exclusionary. There is a better way to match large buyers with sellers of goods and services. An easy model permitting buyers and sellers to engage under a framework of stringent and complex regulations already exists, and it's staring us in the face: stock markets. No doubt you are wondering, how can the often frenetic, unpredictable, and chaotic instantaneous trading of stocks possibly apply to the current web of rules surrounding the ponderous process government procurement?

Every day, hundreds of billions of dollars of equities change hands in a global marketplace where information abounds, overseen by regulators enforcing an intricate web of rules and laws. The most inexperienced retail investor can execute a trade easily and inexpensively without training, confident in the protection of the law. Anyone with a web browser can tell you at what price a listed security trades. Many stocks trade in the millions of shares daily. And the costs of executing a trade is a fraction of what it was 25 years ago, with technology continuing to push expenses lower.

> *“It is not only possible, but realistic to imagine a world in which public procurement works similarly to equity markets. This would not only make the process more usable for buyers and suppliers alike, but also bring more SMEs into the process.”*

It is not only possible, but realistic to imagine a world in which public procurement works similarly to equity markets. This would not only make the process more usable for buyers and suppliers alike, but also bring more SMEs into the process. To reach this better world requires the Government of Canada to use a new platform that supports its existing procurement tools. For starters, this platform would require a drastically simplified 21st-century user experience, opening accessibility to the process beyond the shrinking cadre of expert procurement officers. It means harnessing the information and digital technology of 2018 to create a procurement process that is inclusive, transparent and rigorous. In addition to the Government of Canada, the new platform would host buyers from other levels of government, governments in other countries, corporations, universities, and other large organizations.

In practical terms that means:

- **Simplicity and Consolidation:** With an easy user experience to increase access for a broader set of vendors and to encourage deeper engagement, the platform would span multiple agencies and jurisdictions, acting as a clearinghouse for common supplier management activities, such as registration, converting a one-to-one framework to a one-to-many framework;
- **Efficiency:** Vendors would receive all request-for-proposal information in real-time, filtered intelligently for relevance, meaning there would be no more hunting across tens of websites weekly, searching for opportunities;
- **Transparency:** A unified database would help everyone see RFP activity from all participants, including pricing in the form of posted purchase orders so that buyers could use information from recent and related RFPs to generate their own documents, faster and without the risk of being swayed by an individual vendor; and
- **Social Networking:** The new marketplace would come with messaging capabilities that create a social network of buyers who can collaborate on developing RFPs; share information about what works and what does not; and, potentially, purchase jointly, with vendors banding together on the social network to sell collaboratively so that they can compete for larger contracts or across larger geographic areas. Think of it as “peer-to-peer procurement” for the first time. Buyers could access crowd-sourced ratings of vendors, so that all suppliers feel that reputation was a real factor in a fair purchasing decision.

The platform would be a secure, Canada-based, cloud-delivered service, independent from any individual organization’s information technology infrastructure. For buyers and sellers, the costs are low and principally variable (tied to individual transactions), as opposed to high and fixed. The operating costs for the platform would be spread across all users, as would the political risk of failure. The beauty of this new marketplace is it would address all the belts-and-suspenders concerns, while reducing the unintended consequences of the current system. Ad it would work alongside current systems with minimal disruption. It would be easy to buy and easy to implement.

Do these things and more vendors will come to the table, bringing a greater diversity of solutions, and more competition on price. It will be key to engaging the companies that generate the bulk of Canada’s future growth, helping them develop capacity that they can use to sell into export markets.

All it takes is the will to act. P

Chand Sooran is the founder and CEO of EdgeworthBox, which seeks to make it easier for SMEs to do business with large corporations and government. His experience spans public service, market-making in foreign exchange options, investing globally as a hedge fund special situations analyst, and leading positions in technology startups. He is a graduate of RMC, Queen’s, and the Massachusetts Institute of Technology.

Ten years after the financial crisis of 2008-09, the aftershocks continue. *PINGNews Flickr photo*

The Financial Crisis Ten Years On: Is the Repair Job Finished?

The global financial cataclysm of 2008 hit at a confluence of political and geopolitical transformation; a new American president was elected less than two months after the crisis hit and ten days later, the G20 leaders met for the first time in Washington to address the catastrophe. Ten years later, there are few economic thinkers as qualified as former Privy Council clerk, former deputy minister of Finance and current BMO Vice-Chair Kevin Lynch to report on where the global economy stands.

Kevin Lynch

As anniversaries go, it is hardly one to cherish—a decade ago, September 15, 2008 to be precise, Lehman Brothers filed for bankruptcy. In so doing, it triggered the worst financial crisis of our lifetimes.

Much has been written about how a bunch of lousy U.S. mortgages—collateralized, packaged and leveraged beyond comprehension—brought the global economy to the brink of another great depression. There were lots of villains and blame to go around, with regulatory failures in the United States, Great Britain and the E.U. clearly recognized as enablers of the crisis. And, while it started as a crisis in financial markets, it ended up causing incredible destruction to economies, societies, and individuals, not to mention trust in the capitalist system itself. American estimates of the costs are staggering: an unimaginable $13-$22 trillion of lost output, lost incomes, lost jobs, lost wealth, lost homes and government debt.

So, we are now 10 years on. The global economy is experiencing synchronized and strong growth for the first time since the financial crisis. After extraordinary conventional and unconventional policy easing by the Organisation for Economic Cooperation and Development (OECD) area central banks, monetary normalization has begun, slowly, in the U.S. and Canada, with the U.K., E.U. and Japan yet to take this step. Governments, central banks, international institutions and regulators have expended enormous efforts to reform financial systems, to rebuild systemic trust and to reboot economies devastated by the crisis and the ensuing global recession. So, is it "mission accomplished", to appropriate a favourite phrase of American presidents? It all depends on how you define the mission.

Decrying the dangers of policy complacency at Davos this year, International Monetary Fund Managing Director Christine Lagarde used a metaphor attributed to President Kennedy: "The time to repair the roof is when the sun is shining." The IMF chief warned that we are enjoying a cyclical economic burst, not a new higher-growth normal, and we still face a longish list of structural growth inhibitors, economic and social vulnerabilities and geopolitical risks. These include: poor productivity; excessive inequalities; rising protectionism; declining international coordination; growing trust deficits between the governing and the governed and financial fragilities. The broader repair job, then, is certainly not complete, and financial sector stability does not exist in isolation.

"American estimates of the costs are staggering: an unimaginable $13-$22 trillion of lost output, lost incomes, lost jobs, lost wealth, lost homes and government debt."

So, notwithstanding the challenges in the broader economic context, are we done yet with the financial sector repair job? Again, it depends.

We learned a lot from the post-mortems of what happened, both within and across national financial systems. We understand much better which regulations were ineffective and why, and what were the crisis amplifiers and shock absorbers. To a certain extent, it was relearning the basic principles of finance: adequate buffers for solvency, sufficient firm and system liquidity, the need for transparency to properly evaluate risks, the dangers of excessive leverage, and clear accountability for balance sheets and risks within financial institutions and by regulators. Perhaps most importantly, we learned the hard way how incredibly interconnected and globalized the financial system had become while regulation and oversight remained predominantly national.

By 2007, many financial systems—particularly in the U.S., the U.K. and the Eurozone—had badly lost sight of these basics and their regulatory systems were not imposing suitable anchors. Canada and its financial system largely avoided the worst of these excesses, but still felt the punch of the global recession.

The size and complexity of the repair job necessitated the creation of new and revitalized remedial mechanisms. In 2009, the G20 at the leaders' level proved its worth at its second post-crisis gathering in London. The Financial Stability Board came into being, the IMF found new purpose, new national regulatory agencies were established, the Basel Committee was given a new mandate and central bankers became the new guardians of the universe. Together, they have re-established and modernized the core finance principles but through a hugely complex set of prescriptive regulations, with growing differences across countries in their specifics as time goes on.

The regulatory policy challenge for governments is to learn from the past while not attempting to navigate the future using the rearview mirror. The business challenge for financial institutions is to adapt efficiently to the new regulatory regime while not taking on too many new risks to raise returns.

"The regulatory policy challenge for governments is to learn from the past while not attempting to navigate the future using the rearview mirror."

What was lost in the great global financial crisis was the public trust in the financial system in many Western countries and the perception of the supremacy of the western market capitalism model in the eyes of many Asian countries. The former may be more possible to regain than the latter.

One lesson, shaped by my experiences as deputy minister of Finance in the run-up to the global financial crisis and as clerk of the Privy Council in its aftermath, is the value of regulatory principles over excessive reliance on prescription, particularly in any period of substantial change, and accountability for holding true to those principles.

In the design of regulatory systems,

simplicity usually wins out over complexity if the objective is to clearly convey the desired *ex ante* behaviours to a dispersed and heterogenous group of market participants. Beyond this, the value of skilled regulators and supervisors, who are open to regular interaction between the regulators and the regulated and inclined to coordinate across borders, is too often under-estimated relative to the addition of more rules. Finally, it is important to build resiliency into systems from a forward-looking perspective not one of hindsight. This, in turn, highlights the value of sophisticated technology and market foresight mechanisms for financial sector policy makers in a world of profound change moving at a frantic pace.

What would such a foresight lens capture today that might reshape regulatory policy thinking? The structure of our economies is very different than it was at the time of the financial crisis, transformed by technological change on steroids and the demographics of aging societies. Inconceivable even a decade ago, we are in the midst of a geopolitical tsunami with the rise of protectionism, populism, and nationalism, combined with a sharp decline in trust in institutions. Pervasive globalization and sustained rapid growth in Asia mean that we are now in a multipolar world where China, the second largest economy, is asserting its place to be a global regulatory rule-maker.

Within the direct ambit of financial services, fintech is disintermediating financial functions, E-commerce is doing the same for retail and logistics, and distributed ledgers and cryptocurrencies are challenging clearing systems. Massive data vaults combined with data analytics enhanced by artificial intelligence will likely blur the line among financial institutions, fintechs and infotechs, while the recent controversies involving Facebook serve to highlight the potential risks inherent in the infotech business model of data intermediation. Data privacy, data security (cyberattacks), data rights and data usage are rapidly emerging issues that may require new regulatory measures, new models of financial sector cooperation and possibly new public-private partnerships on security. The World Economic Forum's Balancing Financial Sector Stability, Innovation and Growth Initiative is exploring new approaches by the financial services sector to respond to cybersecurity and data usage risks and concerns.

“Financial fragilities include global debt levels at over 230 per cent of global GDP—well above pre-crisis levels—and rising debt interest costs for firms, households and governments as monetary normalization picks up pace.”

At the macroeconomic level, while solid and synchronized global growth has finally been achieved, it has been propelled by massive fiscal (most recently U.S. tax reform) and monetary stimulus. With declining potential growth in many Western countries, including Canada and the U.S. (estimates suggest Canadian potential growth post-2020 around 1.75 per cent, and U.S. potential growth below 2 per cent), much of this stimulus will translate into higher inflation and exacerbate latent financial fragilities. These financial fragilities include global debt levels at over 230 per cent of global GDP—well above pre-crisis levels—and rising debt interest costs for firms, households and governments as monetary normalization picks up pace.

Indeed, there is some risk of “irrational exuberance” in looking at today's conjuncture. Ian Bremmer certainly thinks so. At Davos this year, the CEO of the Eurasia Group characterized today's context as: “Let's be honest: 2018 doesn't feel very good. Yes, markets are soaring and the economy isn't bad, but citizens are divided, governments aren't doing much governing, and the global order is unravelling.”

Further, as Larry Summers has stressed, we have an aging expansion but a threadbare policy toolkit—average monetary easing in past U.S. recessions was 500 basis points whereas U.S. interest rates today are less than half of that, and U.S. government debt ratios are heading above 100 per cent of GDP despite an economy at full employment. Simply put, it will take sustained monetary normalization and fiscal consolidation to restock the toolkit as well as structural policy reforms to de-age the expansion.

The underlying problem for governments is the declining stock of public “trust capital” and the increasing pace of economic and societal dislocations. Governments still operate in a Gov 2.0 context in a world being reshaped by Tech 4.0 and public confidence can be a casualty of that gap. How do policy and regulation keep pace with the speed and scale of change?

Global financial order requires establishing and enforcing clear and effective rules of the game for how the financial system will work in a highly interconnected, multipolar world that is in the midst of a technological revolution.

The Washington Consensus, which provided that framework for many years in a very different global context, is no more. The initial G20 meetings of leaders in late 2008 and early 2009 provided a road map out of a crisis that has largely taken us to this point but its hallmarks of cooperation and coordination are fraying. If a new consensus is to be found, will it be driven by reinvigorated Western leadership (a G6 consensus?) by the new worldview of China (a Beijing consensus?) or from elsewhere? P

Contributing writer Kevin Lynch is Vice Chair, BMO Financial Group and former Clerk of the Privy Council and Head of the Public Service during the financial crisis of 2008-09.

Donald Trump and Justin Trudeau at the G7 Summit in June, the beginning of a summer of discontent in the West. *Adam Scotti photo*

Moving On: The West Adjusts to a Rogue U.S. President

The daily exclamations and all-caps exhortations of Donald Trump often obscure the systematic damage he is doing to the multilateral institutions of which America was principal post-war architect and moral choreographer. Veteran Canadian senior diplomat Jeremy Kinsman, our foreign affairs writer, examines the toll Trump has taken and how America's alienated allies are responding.

Jeremy Kinsman

The summer of 2018 has shaken the rules-based world order that emerged from the devastation of the Second World War. A rogue president of the United States has apparently chosen unilateralism and nationalist competition over the multilateral norms and cooperative principles that America itself did so much to shape.

Donald Trump's style in domestic politics is to disrupt, and to take a wrecking ball to the achievements of his predecessors in the White House, especially Barack Obama's. But in recent months he took his uniquely destabilizing act on the global road. In June and July, at the G7 Summit, the NATO Summit, in Britain, and finally Helsinki for a bilateral summit with

Russian President Vladimir Putin, he seemed to challenge the value and purpose of America's basic alliances, undermining American friends in the G-7 and NATO with open hostility, while very controversially deferring to the worldview of President Putin. Will this storm blow over, as other storms have in the past? Or is it the beginning of a dislocation of the trans-Atlantic ties at the core of our diplomatic world since WWII?

It is clear key European leaders are now hedging their reliance on the United States, while distancing themselves personally from Trump, whom they view as belligerent and unreliable. For Canada, the situation is more problematic because of geography and the extent of Canadian exposure, especially on trade. But the view of events is the same, prompting the Trudeau government to strengthen solidarity bonds with key European and other partners to reinforce the resilience and effectiveness of international cooperation. The summer of 2018 marked a turning point in the free world's engagement with Donald Trump as the face of a suddenly miscreant America. It is important to understand what is at risk in this dynamic as long as Trump remains in office: the legacy of a cooperative, internationalist world order forged from the chaos and destruction of WWII.

Fifty years ago, former U.S. Secretary of State Dean Acheson wrote his seminal narrative of the construction of the cooperative post-war world order, "Present at the Creation." He recalled historian C. V. Wedgwood's comment about history—that usually, "We know the end before we consider the beginning…We can never wholly recapture what it was to know the beginning only." Acheson's is a "tale of large conceptions, great achievements, and some failures, the product of enormous will and effort," led by the U.S. It focused on the world's "free half," where shared democratic values would overpower the forces of competitive economic and militaristic nationalism that had spurred the rise of fascism and the genocidal war it produced.

It is worth recalling that when he wrote the book in 1968, America was in acute disruption. Acheson found the U.S., "and particularly its young people," in a "mood of depression, disillusion, and withdrawal from the effort to affect the world around us." America was then in turmoil over Vietnam, a sexual and cultural revolution, and unresolved injustices that exploded when Martin Luther King was assassinated, igniting inner cities. Shortly after, hope was further dashed when Bobby Kennedy was murdered. The social unrest spread: The student protests of the *soixante-huitards* shut down France. NATO sat helpless as Soviet troops smothered the Prague Spring. In China, Mao's manic Cultural Revolution turned the country inside out. But the multilateral institutions founded by creative internationalists after WWII survived the whirlwind. U.S. confidence did recover. The European Union grew increasingly cohesive and prospered. China began to rise and transform itself.

"In 1989, the end of the Cold War rendered obsolete the world's division into two halves, free and unfree. Multilateral institutions became increasingly universal, absorbing nations that were beneficiaries of both the end of the Cold War and the end of colonialism."

In 1989, the end of the Cold War rendered obsolete the world's division into two halves, free and unfree. Multilateral institutions became increasingly universal, absorbing nations that were beneficiaries of both the end of the Cold War and the end of colonialism. Global inter-dependence lifted hundreds of millions out of poverty. We assumed that humanity's great challenges—from climate change to pandemics to international crime—must be solved collectively. History, of course, doesn't move forward in a straight line; it circles back, moves sideways, and then proceeds again. Since 1989, harsh counter-developments and events have bent the arc of progress. International terrorism, notably the catastrophe of September 11, 2001, altered the world.

After the 2008 financial crisis, Western economic leadership and globalization's merits began to be doubted. Developed societies resented the relocation of jobs to lower-cost locales. Millions living in poor countries untouched by globalization's economic benefits formed a flood of migrants who joined refugees from the wars of Syria, Iraq, and the Horn of Africa to pour into Europe, testing the tolerance of residents whose own earnings had stagnated amid widening income disparities. Populist, identity-driven politicians like Poland's Kaczinski, Hungary's Orban, La Liga in Italy, Le Pen in France, Wilders in Holland, and the new German alt-right blamed political elites and multilateral institutions, and implicitly questioned whether liberal democracy itself was up to coping with the challenges.

Prominent authoritarian regimes pressed forward with increased confidence. Russia interfered with democratic elections, in the US and in Europe, ostensibly in favour of nationalist populist candidates, in the hope of dividing Western allies. China expanded its influence globally, in Africa, South America and throughout the decreasingly democratic countries along its Belt-and-Road initiative, where China spent billions in infrastructure investment.

The divisive, populist right-wing opposition to the European political establishment also attracted favourable comments from the U.S. president and active encouragement from members of his political circle. Trump's flagrant sabotage in Charlevoix, Brussels, and the UK was a further destabilization. As European Commission President Juncker quipped, "With friends like that, who needs enemies?"

Though Trump's electoral victory had been a shock, allies hoped it was hyperbole when

Trump declared in his inaugural address in January, 2017, that he placed the interests of America first, "always America first." But that doctrine was confirmed when his original national security and economic advisers (H.R. McMaster and Gary Cohn) touted, in a *Wall Street Journal* op-ed, Trump's view that "the world is not a global community" but "an arena where nations, nongovernmental actors, and businesses engage and compete for advantage." They issued the every-nation-for-itself statement of principle that "Rather than deny this elemental nature of international affairs, we embrace it." It marked a radical departure from America's half-century postwar legacy of destiny-defining foreign policy.

Trump removed America from the Trans-Pacific Partnership. He opposed NAFTA ("a terrible deal for us. We have been treated very, very badly......."), trashing Ronald Reagan's vision of a North American community of peoples with shared economic interests. He launched a trade war with China. He disseminated his displeasure with the World Trade Organization, impeding its dispute settlement capacities.

He wanted only bilateral trade deals. Weaponizing uncertainty, he unilaterally imposed tariffs on aluminum and steel imports from trading partners, including Canada, on the spurious and insulting grounds of "national security." He upped the protectionist, unilateralist ante by threatening crippling tariffs of 25 per cent on U.S. imports of automobiles and parts. That the partners were America's principal allies was of no apparent consequence; indeed, he indicated he believed NATO was "obsolete," later designating the E.U. as America's "foe."

Trump seemed to be evacuating the international system far beyond trade. He yanked the U.S. from the Paris Accord on climate change and then the vital Iran nuclear accord. He withdrew the U.S. from UNESCO and the Human Rights Council, eliminated U.S. contributions to the UN Population Fund, and cut contributions to the UN's budget for peacekeeping. Meanwhile, Trump seemed to bond personally with authoritarian leaders, apparently abandoning America's national commitment to support human rights defence. America's own reputation as a democracy wavered as Trump attacked U.S. institutions, media, law enforcement agencies, and the courts, the essential checks and balances to executive authority.

Initially, U.S. partners had persisted in believing Trump would "normalize." Then, some banked on appeasing him into exempting them from his vindictive assaults. "Flatter him," was the U.S. insider advice to the still-new Canadian government, and for over a year, they did. The erratic president showed increasingly over his first 18 months that there was no cajoling, placating or reasoning with him. Angela Merkel warned that "Europe can no longer count on the US and must take matters into its own hands." But his performance at the G7 and NATO Summits and then the Helsinki bilateral with Putin sealed the perception he was beyond intractable. He was destructive.

America's traditional allies transited to another phase in their assessment of how to deal with Donald Trump. Having come to dislike him and now distrust him, leaders decided they would have to revisit their assumptions about his motives and diffuse their dependence. Their preoccupation now is how to protect global institutions, stability and predictability from his manic wrecking ball.

Germany became a hub in an effort to reach out to like-minded allies. It's not just the Atlantic nations: China and Japan are hustling to shore up the international trading system Trump has been trashing. The *New York Times* put it succinctly: "The only thing you could say in Trump's favour is, he's brought the world together on trade…It's Trump versus the world," a point illustrated on the hard economic issue of unilateral U.S. tariffs on imported cars, when Canada joined other auto producers from the EU, Japan, South Korea, and Mexico in preliminary meetings to discuss a coordinated response.

More broadly, Germany is talking to other multilateralist stalwarts, especially Canada, about creating an informal alliance to reinforce, and where necessary reform, key UN and other agencies and common causes, from climate change to migration, which could otherwise be debilitated by the withdrawal of U.S. positive leadership or even participation. They are contemplating a defensive intensification of ties and cooperation among fellow inclusive democracies to reinforce the positive example of effective liberal democracy to others.

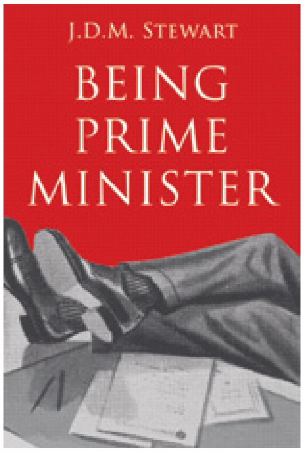
So, the summer of 2018 has been a critical moment, possibly the beginning of a tectonic shift in close relationships. Canada is in a uniquely challenged position, along with Mexico, for obvious reasons of adjacency to the U.S. and economic exposure. But Canada has a lot of friends in America. The links and chains are strong. We have to keep shoring them up. Our alignment is not to an anti-U.S. defensive coalition, but to the values and cooperative purposes that Acheson's generation of Americans gave to the post-war world and on which we have come to rely for security and progress in confronting trans-national issues. Of course, as in 1968, perhaps the immediate storm will pass, leaving estrangement in its wake, but not a destructive catastrophe.

We can always hope America will so tire of the psychodrama and animosities Trump foments, that he will not have a second term. Soothing alternatives like Mitt Romney eye the Republican stage Trump has hijacked. Democrats are holding challenger tryouts. But Trump's cultish loyalists seem unyielding. The world can't count on an internal American solution. It is up to like-minded Europeans, Canadians and other internationalists to save ourselves as necessary. A counter-strategy to preserve the multilateral and cooperative rules-based order foreseen at the post-war moment of creation has become imperative.

Then, as Trump says, "we'll see what happens." P

Contributing writer Jeremy Kinsman is a former Canadian ambassador to Russia, Italy, the UK and the EU. He is affiliated with the University of California, Berkeley.

Book Review



Capturing What Makes PMs Tick

J.D.M. Stewart

***Being Prime Minister*. Toronto, Dundurn Press, 2018.**

Review by Anthony Wilson-Smith

The job of being prime minister, Jean Chrétien once observed, is "never easy." Some frustrations include the need to "hurt the feelings of a lot of people on a regular basis" and to "operate in the public eye with MPs who fret and bureaucrats who gossip and colleagues who disagree." Not to mention, of course, making decisions that affect millions of lives—and sometimes sending soldiers off to wars from which some do not return.

In those ways, the tribulations of being a Canadian prime minister have not changed greatly in the 151 years since Confederation. In that time, only 23 people have held the job; seven are alive. All have shared the relentless workload while, at the same time, approaching the position's evolving, ever-growing pressures in sometimes unique ways. Those challenges, and the ways in which respective prime ministers greeted them, are the subject of *Being Prime Minister*, the breezily-written, impeccably-researched book by Toronto history teacher *extraordinaire* and writer J.D.M (James) Stewart.

Stewart's first book stands out for several reasons. One is its rigour; he interviewed six of the seven living prime Ministers (only Stephen Harper refused) along with dozens of other sources, and spent countless hours poking through old books, correspondence and files dating back to Confederation. (Disclosure: I read the early manuscript of this book and made suggestions on anecdotes and potential interviewees. I did so very happily—and for no money.)

Being Prime Minister is apolitical in approach. Stewart is interested in what makes the occupants of 24 Sussex tick rather than their policy initiatives. He is also an anomaly in a cynical time; he approached this project with a favourable prejudice toward all his subjects. To that end, there are chapters on everything from family pets to favourite sports to travel habits and the wish for privacy in a very public position. He is clear-eyed about the flaws of some subjects. He notes, for example, John Diefenbaker's disorganization in approaching key files and his willingness to absorb opinions from the people physically closest to him over those of acknowledged experts.

Some of the most compelling anecdotes are small ones. Lester Pearson, Stewart writes, often told a story about "a phone call he took from his wife, Maryon after he became Liberal party leader. She congratulated him and told him not to forget to pick up a pound of hamburger on the way home." (Maryon Pearson, renowned for her sharp humour, was also the creator of the famous line that "behind every successful man is a surprised woman.") Chrétien, who cultivated his "little guy" populist persona, was a sophisticated art lover who liked to watch football on Sunday afternoons—with the sound off and classical music in the background. "One third of the players are named Smith, anyway, so I could still follow it," he joked to Stewart.

One of the most important personal challenges for many recent prime ministers has been finding a balance between their workload and family: Pierre Trudeau, Brian Mulroney, Stephen Harper and now Justin Trudeau have all had young families while in office. All have noted that the time spent with family gave them, alongside joy, perspective and motivation in their jobs. For related reasons, as Stewart observes, the greatest perquisite is the official prime ministerial summer residence at Harrington Lake (Lac Mousseau in French) where they and their families can unwind. (Even that is not trouble-free: Mulroney recalls how, on the family's first weekend there, their standard poodle, Oscar, lost a fight with a porcupine, so the family spent the evening removing quills from the startled dog.)

With books, as with all else, one of the keys to success is making hard things seem easy. Stewart's seemingly effortless recitation of coordinated, well-told anecdotes is the result of his formidable research. The stories flesh out our understanding of the ways that personality shapes destiny. Stewart's micro approach to his subjects reflects what the historian Barbara Tuchman once described as "history by the ounce"; through learning about small details and human interactions, we gain a more complete image of how larger events come to pass. Through understanding the people who served as prime minister, we also better understand the position. As Pierre Trudeau once said in his trademark flip manner, "It's not a perfect job, but it sure beats working." Only 22 other Canadians have known how true that is firsthand. But thanks to Stewart, the rest of us now have a far better understanding of what it takes to be PM—and how to survive the job. P

Anthony Wilson-Smith, President and CEO of Historica Canada, is a former Editor-in-Chief of Maclean's.

Column / Don Newman

Trudeau's Energy/ Environment Pre-election Peril

When Parliament returns this fall, not much will have changed for the Liberal government in the House of Commons. But beyond the confines of Parliament Hill, Prime Minister Justin Trudeau and his ministers are facing an increasingly unfriendly political landscape that is likely to become even more unfriendly.

At stake are Liberals hopes for re-election next October, the future of an environment and energy strategy that on one hand appears to be contradictory but on the other appeared to be working, and the possible return of the kind of federal-provincial disputes not seen since the 1980s.

The landscape began to change just over a year ago when the relatively cozy compact on federal-provincial relations that greeted Justin Trudeau when he became prime minister in 2015 started to crack in the summer of 2017.

The first crack came not from Conservatives on the right, but from New Democrats on the Liberals' left flank.

That happened when a new NDP government supported by three Green Party members of the legislature narrowly replaced the Liberals in British Columbia. Claiming the potential damage to the environment as its reason, the new government immediately reversed the province's support for the twining of the Trans Mountain pipeline across B.C., carrying Alberta Oil Sands Bitumen.

That set off an interprovincial trade war with the neighbouring NDP government in Alberta, and forced the federal government to buy the pipeline and the proposed expansion from its owner, Kinder Morgan in the United States. If Ottawa had not in effect "nationalized" Trans Mountain, Kinder Morgan planned to stop funding the project, in effect killing both it and hopes to get Alberta bitumen to an ocean port.

However, the Trudeau Liberals are determined to get the Trans Mountain expansion built. A pipeline to get Alberta bitumen from the oil sands to tidewater is part of the government's two-pronged environment-energy strategy. The other is a provincial agreement to impose a tax on carbon beginning at $20 a tonne and rising to $50 by 2022. If provinces did not want to directly tax carbon emissions they can instead adopt a "cap and trade" system to restrict the growth of greenhouse gasses, which Ontario and Quebec already had.

Until the B.C. election there was widespread buy-in from provincial governments to both aspects of the Liberal environment/energy strategy. Only the Saskatchewan Party conservative government in that province refused to sign onto the carbon plan. Instead it has taken the federal government to court to oppose Ottawa's plan to put a federal tax on carbon emissions in any province that does not act on its own, even though the revenue from the federal tax will go to the province.

With Trudeau's energy/environment strategy under attack from both an environmentalist government in B.C. on the left and an anti-tax government in Saskatchewan on the right, the anti-carbon taxers received reinforcements, with still more likely to come.

When Doug Ford became the Conservative premier of Ontario in June, one of the first things he did was scrap the province's cap-and- trade regime. And he is now spending $30 million to launch a court challenge to the federal government similar to Saskatchewan's.

What's more, the provincial opposition to a carbon tax is almost certain to increase next May, when Albertans go to the polls. The public opinion polls show that the United Conservative Party under former federal Conservative cabinet minister Jason Kenney is almost certain to replace NDP Premier Rachel Notley, a carbon tax supporter. Kenney will lead a traditional right wing Alberta government, and join the anti-carbon tax emissions-control fight with Ontario and Saskatchewan.

By the time of the next federal election on October 21, 2019, the battle lines will be clearly drawn around the Trans Mountain pipeline and carbon taxes. The unknown question at the moment is whether there will be more public resistance to a tax designed to improve the environment or a pipeline with the potential to harm it.

If it is the tax, will Conservative leader Andrew Scheer be able to benefit? If it is the pipeline, could that help Jagmeet Singh and the NDP?

Liberals like to say that when they are attacked by the parties to both the right and the left of them they must be doing something right. Often, there is some truth in that. But there is also the possibility of being squeezed in the middle, something that won't be lost on Liberal strategists.

In 2019 there will certainly be other issues in the federal election. But how the environment-energy one plays out will be one of the keys to determining the winner. P

Don Newman is Senior Counsel at Navigator Limited and Ensight Canada, a lifetime member of the Canadian Parliamentary Press Gallery.

SIXTH ESTATE Before the Bell

THE REVIEW

SEPT-OCT 2018 VOL 1 ISSUE 4

Improving indigenous health outcomes

Can we expect privacy in the digital age

Is true health transformation merely a pipedream

Resetting for the fall session

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FROM THE EDITOR

Spring may represent a new beginning but autumn is closely associated with turning over a new leaf. With summer's end and school resuming, students (and parents) are looking to get a fresh start on a great year. And with a new session of Parliament, you can add politicians to that mix too.

Having shuffled the cabinet and added new posts in July, the Liberal government is hoping to finish its term on a high note. But with many issues still unresolved, the question is: how much more can the government accomplish this year? And will voters be satisfied with what they have seen?

Helping you make sense of it all is Before the Bell. Starting September 20th, Before the Bell will look at key issues that remain outstanding on the government's agenda. Among the topics we aim to cover include trade, the environment, health, transportation, the economy, and innovation. Be sure to check out the event and streaming schedule at SixthEstate.ca.

In this issue of The Review we look at some of these pressing files on the government's agenda. Starting with privacy and data security, our Dale Smith begins with "Greater Transparency Required to Protect Privacy in the Digital Age," reporting on a Before the Bell event that examined how policies must adapt to reflect the new realities of the digital era.

Next, David McGown, Senior Vice-President, Strategic Initiatives with the Insurance Bureau of Canada, reminds us that companies and individuals are most susceptible to data loss and privacy breaches, and explains how insurance industries are leading the development of technological initiatives to protect consumers in "Data, Electronic Documentation and Innovation in the Insurance Industry."

A matter of ongoing concern is improving health outcomes for indigenous Canadians. In "Medicine Wheel not Medical Approach Required for Indigenous Health," the Hon. Carolyn Bennett, Minister of Crown-Indigenous Relations, joins a panel on Before the Bell to talk about combining new solutions with traditional and holistic approaches to indigenous health care.

Sticking with the health file, Susan Delacourt led a Sixth Estate Spotlight session to look at the need for a health systems transformation that will better improve health outcomes. While the concept has been tested in various regions across the country, we try and understand why it hasn't taken hold. Dale Smith takes a closer look in "Renewing Emphasis on Health Systems Integration."

Finally, Mike Villeneuve, CEO with the Canadian Nurses Association, adds his thoughts to both the issues affecting indigenous health, and improvements needed in the health system.

Just as students and the government are preparing for the year ahead, we at the Sixth Estate are delivering regular assessments so that next year you – the voters – can deliver the final grade. Report cards come out in October 2019. We love a new year.

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Greater transparency required to protect privacy in the digital age

BY DALE SMITH
Sixth Estate

In the age of covert privacy degradation, commoditized data and profile harvesting, what should governments be doing to protect citizens and democracy? While corporations and governments are collecting, analyzing and sharing the personal data of Canadians on an unprecedented scale, tens of millions of us have fallen victim to privacy breaches, often due to outdated regulation or lack of enforcement. Before the Bell asked experts and stakeholders to address how policy needs to evolve to keep pace with privacy and security in the digital age.

Andrew Burtch, the Canadian War Museum's post-1945 historian, helped to situate the context of the discussion, recalling episodes during which privacy and civil liberties were subordinated to national security, such as the purge of gays and lesbians from the civil service because they were viewed as being vulnerable to blackmail.

Rachel Curran, principal with Harper and Associates, noted that the previous Conservative government was surprised by the cross-partisan backlash to its proposal to give law enforcement basic subscriber data.

"For us, it started the conversation about privacy rights, what do Canadians really know about what's being collected, what input they should have into what's being collected and how it's used," said Curran.

Michael Curran, publisher of Great River Media and the Ottawa Business Journal, said that most people don't understand how much their data is being collected with things like loyalty cards, even when they find advertising that tracks them around the Internet to be "creepy." He also proposed that harmonizing privacy rules with the European Union's new online privacy regulations makes sense for businesses.

"The more that governments can do to harmonize those regulations, the more it would allow those corporations to focus on the spirit of the law and not get caught in the slightly different variations of regulations," he said.

Chantal Bernier, former interim privacy commissioner of Canada and currently counsel and head of Dentons' Canadian privacy and cybersecurity practice, noted what's different about privacy in the digital age: Firstly, the abstraction of the internet; that we think we're alone when using it when we're really not; second, that it's more complex than even MIT PhDs realize; and third, the opacity of its business culture and practices leaves consumers more vulnerable than we know.

"All those algorithms that detect us liking this or that are trade secrets," said Bernier. "It's the secret sauce that companies don't want to sell. There's an opacity there that keeps us from knowing what's going on."

Bernier also noted that much of her practice nowadays is helping Canadians come into compliance with the new European privacy standards, which is a regime that more properly restores the balance between the users and the transparency of the collection of data.

Erin Kelly, president and CEO of Advanced Symbolics, said that because her company has always had a policy against micro-targeting, and in many ways exceeded the new European privacy standards, the recent Facebook/Cambridge Analytica situation has actually been beneficial to her business. She also noted that the collection of personal data doesn't actually work.

"That's why we do things at the population level," said Kelly. "If I made my money as a fortune teller does, trying to figure out what you're going to do on any given day, my margin of error is going to be huge — it wouldn't be accurate. But looking at the trends of 200,000 people, I can pretty much say that this is the party that's ahead [in an election forecast]."

Corinne Pohlmann, senior VP of national affairs and partnerships with the Canadian Federation of Independent Business, said that from a small business perspective, the new European privacy regulations have given rise to a lot of questions from business owners.

"For small businesses, all they want to be told is what they need to do," said Pohlmann. "For us, that's finding ways to build templates in terms of what a privacy policy looks like and how it works for a company of your size and the type of information that you have."

Sylvia Kingsmill, partner in the risk consulting practice of KPMG, was involved in creating the Privacy by Design certification program at Ryerson University. It enables Canadian organizations to demonstrate that they're responsible, accountable and ethical with the information they're entrusted with.

"We did it as a best practice because there was no legal requirement to do that," said Kingsmill. "There was a real market appetite to address this and to have a diagnostic tool to demonstrate to Canadian citizens that they can be trusted."

The goal of Privacy by Design is to build privacy into the architecture of a new system, on the following principles: being proactive; having strong privacy default settings; embedding privacy and security into any product or culture of an organization; avoiding zero-sum thinking; ensuring that there is transparency and openness; providing security throughout the entire data lifecycle; and respecting the end-user.

> *What do Canadians really know about what's being collected, what input they should have into what's being collected and how it's used."*
>
> — Rachel Curran
> *Harper and Associates*

Nathaniel Erskine-Smith, Liberal MP for Beaches East-York and vice-chair of the Standing Committee on Access to Information, Privacy and Ethics, said that Canada has stronger privacy laws than many countries, but our Privacy Commissioner needs more tools to enforce those laws and to audit companies more proactively.

"A lot of what we've heard has focused on transparency," said Erskine-Smith. "More information is required from companies to say 'Here's how we use the information, here's why we collect the information, and here's what we do with it'. Privacy policies need to be simplified by a significant degree."

Before the Bell left to right co-host Susan Delacourt, Chantal Bernier, Michael Curran and Rachel Curran. Photograph by Cynthia Münster

David McGown
SENIOR VICE-PRESIDENT, STRATEGIC INITIATIVES, INSURANCE BUREAU OF CANADA

Data, Electronic Documentation and Innovation in the Insurance Industry

The era of disruption is not only dominated by rapid changes driven by technological innovation, but also by companies that can effectively harness the power of consumer data to transform their industries. These companies use information to offer consumers convenient and efficient service, nimbly innovating while established competitors struggle to keep pace.

Technology evolves more quickly than regulation, and this is usually for the best. Rapid change can be unpredictable, and consumers can benefit from reasonable regulatory oversight. There comes a point, however, when regulation can adversely affect an industry's ability to innovate.

To meet this challenge, Canadian insurers need to keep pace with customer attitudes while working with policymakers to modernize regulation that prevents the implementation of logical advancements. And those wants? More choice and customization.

Telematics devices and usage-based insurance

One example of customization are telematics devices that gather data on driver behaviour and provide information that can benefit both insurers and consumers. This information allows insurers to create personalized, usage-based insurance (UBI) products that can provide drivers with access to information regarding their driving behaviour, which in turn can give them more control over their premiums. Usage patterns, mileage and driving behaviour directly influence premiums and incentivize safer driving habits.

Most Canadian jurisdictions that allow UBI products place heavy restrictions on their use. Insurers using UBI can only offer discounts on existing premiums – they cannot use telematics data to determine premiums. However, some progress has been made in this area. In Ontario, one insurer was recently granted permission to use a product based on a pay-per-mile model, a first in Canada. This product allows motorists to monitor how much they drive and pay for their insurance based on their mileage.

In comparison, UBI is widely available in the U.S., with at least 10 companies providing UBI products in 49 states.

Canadian consumers want personalized products. A recent Insurance Bureau of Canada (IBC) survey (The Future of Insurance) found that 66% of respondents with auto insurance agreed that determining premiums based on driving behaviour is a fair way to price insurance. Only 10% disagreed.

Electronic efficiency

Canadian laws require insurers to mail copies of key information to their customers, and documents such as proof of auto insurance are valid only in paper format. Nova Scotia is the only province that allows insurers to send customers electronic pink slips as acceptable proof of auto insurance.

Electronic communication is commonplace in other industries, such as banking, and customers have come to expect the same experience from their insurers. IBC's survey found that 58% of Canadians would choose to receive their insurance documents electronically, while 69% believe that receiving insurance documents electronically would be convenient.

In the U.S., 46 states and the District of Columbia allow insurers to provide insurance documents electronically and customers to display proof of insurance on their smartphones. Privacy concerns related to law enforcement viewing documents on smartphones have been cited as a reason to avoid using electronic pink slips, but in U.S. jurisdictions, legislation has addressed this issue. U.S. laws could provide a framework for Canadian regulators to follow.

Technological innovation continues to transform industries worldwide. If Canadian insurers are not allowed to adapt to the changing world, they risk losing the ability to compete. If their ability to compete is compromised, Canadian insurers run the risk of being left behind. And when it's too late, it's too late.

> *"Canadian insurers need to keep pace with customer attitudes while working with policymakers to modernize regulation that prevents the implementation of logical advancements."*
>
> — David McGown
> *Insurance Bureau of Canada*

Before the Bell co-host Catherine Clark with the Hon. Carolyn Bennett, Minister of Crown-Indigenous Relations.
Photograph by Cynthia Münster

Medicine wheel not medical approach for indigenous health: Minister

BY DALE SMITH
Sixth Estate

Of all the issues that fill the Trudeau government's file on national reconciliation with Indigenous people, health care is among the most complicated. It combines questions of governance, accessibility and cultural traditions, among others, before you even get to the crucial conundrum of money. At the Before the Bell Indigenous Health show, the focus was on prioritization.

The discussion of Indigenous health, for which $1.5 billion was earmarked in the 2018 budget, was led off by Todd Lamirande, host and producer of APTN's Nation to Nation. Lamirande recounted that he started looking at Indigenous health in 1998 while covering a suicide crisis in a northern Cree community. As the local chief was speaking to reporters, the news conference was interrupted when a boy who was high on solvents shot and killed another boy, in a horrible reminder of the complexity of the social determinants of health in the community.

Senator Mary Jane McCallum has talked about how she's been observing the same recurring Indigenous health issues for 40 years.

"Money won't solve it," said Lamirande. "You have to [focus on] things like governance and First Nations control over their own health care. They're tired of these decisions being made from the top down. They want control. They know better what their communities need – not a bunch of experts who have never stepped on a reserve."

Peter Cleary, senior consultant with Santis Health, said that half of Indigenous communities have no access to safe, affordable food, there is an ongoing housing crisis, and some communities don't have access to water – all conditions that need to change.

"Money isn't the answer, but in any health care system, there is still more money going into it," said Cleary. "How is it being spent, who is making those decisions, how are they going about making those decisions? It's a challenge."

Cleary echoed that the federal government needs to empower those who know their culture best so that the social determinants of health are properly recognized and managed.

"At one point, you need to make some critical investments, and this government has over the past two years," Cleary noted, before adding that they need to ensure that the money is getting out the door fast enough and going where it needs to.

Doug Anderson, principal at Earnscliffe Strategy Group, said that his firm has begun publishing an Indigenous insights document because of the increased attention and energy devoted to Indigenous issues as a result of the Truth and Reconciliation Commission. In order to better gauge opinion among Indigenous people, Anderson explained how Earnscliffe has partnered with Aboriginal Link to get a 500-person focus group every month to help their research.

"When we get to the Indigenous community, although health care is among the top answers, even more frequently mentioned is the specif-

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ic topic of mental health and addiction," said Anderson. "In the general public, they don't get so granular so fast. In this population, what we're finding, they get very granular and focused on this one problem that they want to solve right now."

Specific health-related issues such as boil-water advisories also show up in the findings.

"It's a whole lot of very specific issues – housing, for example — that are linked to health, and it's very specifically linked to health in communities that have unhealthy housing," said Anderson. "It shows up as well in dealing with crime – more than just dealing with crime generally, it shows up as dealing with violence against Indigenous women and girls."

Carol Hopkins, executive director of the Thunderbird Partnership Foundation, said that while we haven't seen much change over the years, progress is being made.

"We have come a long way in terms of creating a framework for the conversation that helps us to be more directed in how we're thinking about the approaches to address substance misuse issues amongst Indigenous people in Canada, and specifically in First Nations communities," said Hopkins.

Hopkins noted that Indigenous-led national conversations have led to the development of national frameworks around dealing with substance misuse in First Nations, and the First Nations Mental Wellness Continuum Framework.

"They both say that Indigenous knowledge and culture have to be central and foundational to our approach in addressing substance misuse issues," said Hopkins, who noted that they are seeing results from taking this approach.

Hopkins said that when cultural practices are used to tend to the minds, bodies and spirits of Indigenous people, the outcomes are hope, belonging, meaning, and purpose, and that they have been developing different indicators to measure those results.

Carolyn Bennett, minister of Crown-Indigenous relations and northern affairs, said that the government's top priorities are to address Indigenous health needs from a "medicine wheel" approach that differs from non-Indigenous health care, treating communities rather than individuals.

"What we know is that when kids grow up with that secure personal cultural identity that has them proud Indigenous people, they do really well," said Bennett. "Our job is about restoring the authorities that were there in communities, where the community had a different world view."

Bennett said that Ottawa is developing a rights recognition framework that will allow the government to get out of the way and let communities lead, especially in how to prevent poor health outcomes rather than treating acute problems.

"The medical model didn't work," said Bennett. "We learned that during SARS – we'd rather avoid getting the infection than trying to discover a new drug to treat it." Bennett added that this is particularly relevant to mental health and suicide prevention, where the answer is not more health care workers but developing a strength-based approach that gets communities back in touch with the land, their language, and culture.

Bennett also added that moving the First Nations and Inuit Health Branch from Health Canada to Indigenous Services allows them to better address the social determinants of health along with public health.

Reconciliation: A path forward for better indigenous health

Indigenous peoples are highly diverse populations whose health is affected by all the same kinds of determinants as other people in Canada. But in addition, a complex history of colonialism and racism has had a substantial and ongoing impact on the types and rates of injuries and illnesses in these communities as well as access to and experiences with health care. Complicating physical health issues, for too long, we have watched a crisis of mental health issues and suicide rates rise among Indigenous youth. While we have seen some progress recently, much more must be done to address inequities in health, social and services provided to Canada's Indigenous peoples.

Nurses have a responsibility to respect and value each person's individual culture, and consider how cultures may impact an individual's experience of health care. The Canadian Nurses Association (CNA) has had a longstanding partnership with the Canadian Indigenous Nurses Association (CINA) intended to promote cultural safety as a core value of nursing in Canada. In our 2017 update to the Code of Ethics for Registered Nurses, we've included multiple references to the significant impact of history and cultural differences on health outcomes.

Unfortunately, we do not hear enough about the important contributions from Indigenous nurses in Canada. Every day, Indigenous nurses bring an extraordinary understanding of health-care issues, concerns, needs and cultural safety to the care of people across First Nations, Métis and Inuit communities. As a first point of contact in many communities, they have a privileged and trusted capacity within Indigenous populations and are extremely resourceful when providing the health care required for their patients. In some cases, they are able to incorporate traditional lessons and healing methods to improve health outcomes.

CINA members have much to offer to health decision makers across the country. Recently, the association recommended one interesting learning solution to the Ontario government – proposing the creation of a mobile health-care simulation laboratory to allow Indigenous nurses from First Nations and rural communities across the province to directly access key educational services. In this model, Indigenous nurses could more readily gain the practical skills that are requirements for accreditation. This recommendation fits really well with CNA's core values of bringing care closer to home and communities.

CNA is on its own journey to understand the truth of our history, both in our advocacy work and as a corporate citizen. We are engaging a series of activities with our board of directors and staff to improve our ability to engage in meaningful and authentic reconciliation. We encourage everyone – individuals and organizations – to truly engage in understanding our shared history and reflect on ways we can work together to put strategies in place to close gaps and improve Indigenous health outcomes.

Renewing emphasis on health systems integrations

BY DALE SMITH
Sixth Estate

Across Canada, health care systems are testing innovations to improve care and more importantly, find improvements in both cost savings and health outcomes. Before the Bell spoke with a panel of experts and stakeholders to discuss what it will take for some of these innovations to get widespread adoption, and what is holding us back from our successes.

Mike Villeneuve, CEO of the Canadian Nurses Association, said that his association has some specific concerns about health care system transformation and how health human resources are used as part of that transformation.

"We are encouraged by all of the health accords of the last few years, but also a little bit frustrated by the constant agreement in what's in them without a move to a lot of action," said Villeneuve. "There seems to be a bit of a bit of a mismatch between the system we have, and our population health at large."

Villeneuve said that the world is clamouring for more than just acute care, but also long-term care, chronic disease management, end-of-life care, palliative care, and hospice care. As an association, the CNA has concerns about how people can be deployed to meet those needs, while they are aware that there are problems around turf within the nursing community.

For Dr. Hugo Viens, president of the Quebec Medical Association, the debate over the competency between doctors and nurses is starting

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to fall aside as younger doctors enter the system. With as much as 50 percent of the provincial budget in Quebec being devoted to healthcare, Viens said that there needs to be a greater focus on population health and prevention.

"We feel there needs to be a shift in the timeline of disease, and work together in going toward preventing disease and advocating for a better health system that would reach people, educating them, to prevent disease," said Viens. "This is something we need to focus on if we want to be able to afford our health system for many years to come.

Viens said that over-diagnosis is an issue for doctors, given that as much as 30 percent of what doctors do is probably unnecessary, including tests and hospitalization, which could be avoided.

"We are in a model that thinks that doing more is better, but often less is better," said Viens. "There is new science that is becoming more acknowledged that value care is not necessarily volume care, and fee-for-service is probably something that needs to be addressed."

Viens said that while technology is helping to some address problems, it can exacerbate the problem of unnecessary testing especially when it comes to early detections of some cancers, given that it may not change the outcomes.

Maria Judd, vice president of programs at Canadian Foundation for Healthcare Improvement, said that governments and stakeholders need to come together to address problems. She said that CFHI's mandate is to look for innovations with the system and trying to make them more widespread.

"We identified an INSPIRED program, which is a supportive COPD [chronic obstructive pulmonary disease] program, developed by Dr. Graham Rocker and team in Halifax," said Judd. "We're helping to spread that and its scaling, increasing and expanding in every province in this country."

INSPIRED stands for "Implementing a Novel and Supportive Program of Individualized Care for patients and families living with REspiratory Disease," where the first six months of implementation saw patients' emergency room visits fall by 60 percent, hospitalizations fall by 63 percent, and days in hospital fall by 62 percent by comparison with their previous experience. CFHI's website notes that the reduction in hospitalizations translates into an estimated $977,000 in savings, which is more than three times the annual operating costs of the program.

With innovations like this, why aren't they getting greater adoption?

"Our health systems are overloaded," said Judd. "We don't have the capacity to respond to new ways of doing things, and that's where building capacity for improvement comes in."

Dr. Damien Contandriopoulos, professor at the school of nursing at the University of Victoria, said that healthcare spending has doubled over the past thirty years, but there has not been any sense of improvement in the system.

"There never have been as many physicians in Canada [as there are now] – same for nurses," said Contandriopoulos. "And still the system is crumbling."

Contandriopoulos said that nobody is leading the change within the healthcare system, and that nobody has the capacity to steer the system. What there is, however, are interest groups who resist change when it means that money gets moved around.

"Powerful interest groups have the capacity to slow down change," said Contandriopoulos.

Judd said that small changes can have dividends when they are proven effective at the local level and start bumping up against levels above, which can spread those changes more broadly.

Viens said that while everyone agrees on problems and solutions, they need to work on building teams rather than siloing the kinds of care that doctors, nurses and other professionals can provide. He added that the current system is responding to the kinds of rewards that are built into it, such as the assumption that an emergency room visit will treat them faster than a clinic visit.

Contandriopoulos said that another problem is that the training system of learning-by-doing helps to entrench current practices. "You learn to behave as a doctor by seeing [how] other, more experienced doctors behave, and this reproduces the system, so it's not easy to disrupt.

Sixth Estate Host Susan Delacourt with Mike Villeneuve. Photograph courtesy of Twitter.

Mike Villeneuve
CEO OF THE CANADIAN NURSES ASSOCIATION

WHAT WILL IT TAKE TO LEAP FORWARD AND RE-DESIGN HEALTH SYSTEMS IN CANADA?

Years of the health systems transformation conversation have led to one resounding conclusion: pretty much everyone agrees things need to change. And we even agree on some changes we need to improve patient experience, population health and work life of health-care providers while containing costs. So why don't we to make the significant leaps forward needed to deliver more effectively on this quadruple aim?

New RCMP Commissioner Brenda Lucki recently shared an observation about two things humans can't stand: a) change, and b) the way things are. We may not love change, but we certainly don't love status quo in most health care settings. Orchestrating complex changes to transform health systems has proven to be well-nigh impossible. After two decades of different types of health accords, we are still talking about putting patients first, pharmacare, the need to focus on determinants of health and health promotion, to meet rapidly-evolving population health needs.

Colin Goodfellow, former CEO of Kemptville District Hospital, argued that we are "culturally affixed to a delivery system that is overbuilt and under-imagined for the age." We are not standing on the cusp of difficult change in health care; it's already burying and overwhelming us. In 2003, American nurse leader Dr. Tim Porter-O'Grady used nursing to illustrate the dramatic scope of the changes in hospitals, saying they signal "the end of nursing practice as we know it." He observed that nurses are "now managing mobility rather than residency" and their job essentially is managing patient turnover. These truths do not mean the end of the nursing profession nor of great health care, but mean the end of

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practice as we know it.

You wouldn't know about that sort of thinking if you looked at how we educate nurses and doctors—or how we regulate, deploy and reward them. Much of that is proving to be a stale mis-match for real system needs, and digital-era demands come into constant conflict with our industrial-era delivery models. But there are solutions; and one is to arm providers with the skills and authority to safely deliver the kinds of care needed in this century. Despite the relentless talk about inter-professional care teams, we continue to operate largely in rigidly siloed health professions. We are ruled by the understanding that the physician is the leader and owner of patients and care.

Unless and until we abandon our inter- and intra-professional turf protection, unlock the notion that no one owns competencies, and agree that only patients own themselves, we'll be circling around for another decade. A strong federal hand would make a difference. And what we desperately need are courageous health leaders from all sectors who confront reality and help us make leap forward into the 2020s to deliver the care Canadians need and deserve. That leap means overhauling funding and payment models, optimizing scopes of practice and then using them, modernizing collective agreements, being much smarter about how we manage episodes and transitions of care, and creating the structures, services and funding to truly support people staying out of emergency rooms and hospital beds as much as possible.

Mike Villeneuve is the CEO of the Canadian Nurses Association.

Contributed to the Sixth Estate – The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the Sixth Estate.

> *After two decades of different types of health accords, we are still talking about putting patients first, pharmacare, the need to focus on determinants of health and health promotion, to meet rapidly-evolving population health needs."*
>
> — Mike Villeneuve - *Canadian Nurses Association*

An Open Letter to the Prime Minister and the Minister of Finance

The Right Honourable Justin Trudeau,
P.C., M.P.
Prime Minister of Canada

The Honourable William Morneau,
P.C., M.P.
Minister of Finance

Dear Prime Minister and Finance Minister:

In my role as a volunteer board member of four major volunteer organizations in healthcare, education, social services and arts and culture, I am well aware of the increasing needs of the benefactors of these organizations and how the charitable sector plays a vital role in the well-being of society generally. The needs of the benefactors are growing and governments cannot keep up with the increasing demands. To provide much needed relief with the private sector as a helping partner, I recommend that your government remove the capital gains tax on charitable donations of private company shares and real estate in the 2019 budget, the same policy and legislation that presently exists for listed securities. There are 84,000 registered charities in Canada which employ over 2.1 million people and serve a large proportion of the Canadian population from all walks of life.


Centraide

United Way Flickr photo


Heart and Stroke Foundation

Queens University Flickr photo

Vancouver Food Bank Flickr photo

The case for this proposal is compelling:

- It is not a "Tax Break for the Rich". The real beneficiaries of this proposal are the millions of middle class Canadians who are served by our registered charitable organizations. For example there are now 87 United Ways and Centraides in Canada and collectively, they provide crucial funding to over 3,000 community based agencies that deliver more than 6,200 services and programs to support those in need.
- The fiscal cost of the measure is shared by our tax payers and the donor, whereas the cost of direct government spending is borne 100 per cent by our tax payers.
- The measure removes a barrier to charitable giving and enables successful entrepreneurs to give back to the communities that have played an important role in their success. These entrepreneurs live in all parts of Canada, small towns and villages in rural areas as well as our cities.
- The exemption would put the Canadian charitable sector on an equal footing with their United States counterparts with whom we compete for the best talent to help raise funds and address the challenges of managing the operations of charitable organizations.
- Extending the capital gains exemption would generate an estimated $200 million in new charitable donations every year going forward.

As the previous Conservative government included this measure in its 2015 budget, it is reasonable to assume that the Conservatives will include this measure in their 2019 Election Platform. There is a very high level of awareness and support among all stakeholders in the charitable sector including the 2.1 Canadians whom the sector employs.

I urge you to include this measure in your 2019 budget. It will be a great legacy for your government to leave for all Canadians for generations to come.

Thank you!

Yours truly,

Donald K. Johnson, O.C., LL.D.


No country
for old trucks.
By 2020, our Zaldívar joint venture will become the first mine in Chile to run on 100% renewable energy.
That means reducing greenhouse gas emissions by 350,000 equivalent tonnes every year—about the same as taking 87,000 vehicles off the road.
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Advancing. Together.