Special

CLIMATE CHANGE

Critics say Canada's performance on climate change leaves much to be desired

In select efforts, some experts see encouraging steps

A recent report by the Climate Action Network Europe (CANE) and Germanwatch ranked Canada 55th out of 58 countries in terms of tackling greenhouse gas (GHG) emissions, ahead of only Iran, Kazakhstan and Saudi Arabia.

Matt Horne, director of the Pembina Institute's climate change program, believes Canada's poor performance reflects a lack of federal oversight and regulations.

Noting the CANE-Germanwatch study looked at emissions reduction policies and their impact on a country's GHG pledges, he says, "Environment Canada's most recent report released this October also forecasts that emissions are still going to rise toward 2020, instead of dropping," He says this trend is moving Canada's target, a 17 per cent reduction of the 2005 emission levels, further out of reach.

"The best policy we have federally relates to tailpipe standards for cars and trucks. That is doing quite a bit to improve [vehicles'] energy efficiency."

Another policy, regulating coal-fired electricity generating units, isn't nearly as effective, he says. "After that, there is nothing else in terms of a regulatory approach from the federal government," says Mr. Horne, adding that not even a draft statement of intent on long-promised oil and gas regulations is yet available.

James Hoggan, author of *Climate Cover-up*, warns that Canada's failure to reduce GHG emissions goes beyond environmental damage. "Getting failing grades from a lot of different sources affects our economy," he says, adding that Canada's reputation has suffered from backing out of the Kyoto Protocol and "snubbing the scientific community that has been drawing attention to climate change."

Mr. Hoggan sees the federal government's lack of regulations for monitoring and addressing the impact of oil sands not only as harmful to the environment, but also as "mismanaging the resource." He believes this has undermined the international regard for Canadian companies working in the field.

LOOKING BACK

Fossil fuel production and consumption account for 82% of Canada's greenhouse gas (GHG) emissions, and those emissions are among the world's highest per capita.

2013
Canada ranks 55th out of 58 countries for GHG emissions according to a Climate Action Network Europe and Germanwatch report

2011
Canada withdraws from the Kyoto Protocol

2009
Canada signs the Copenhagen Accord, agreeing to reduce its GHG emissions by 17 per cent from its 2005 levels by 2020

2008
Between 1990 and 2008, Canada's GHG emissions increase by around 24 per cent

2007
Canadian federal government introduces the Clean Air Act. Plan includes a reduction of the 2003 emissions of greenhouse gases by about 45 to 65 per cent for the year 2050

2002
Canada officially ratifies the Kyoto Accord

1997
Canada signs the Kyoto Accord with a target of 6 per cent total reduction in GHG emissions by 2012 compared to 1990 levels

While such arguments support the notion of Canada's failing grade, certain efforts offer a guide to a more positive path forward.

Implementing change is not just a question of political courage, says Bob Oliver, CEO of Pollution Probe. "Even if you have all the regulations in place at the federal level, you need to build solutions, alternatives. For example, to phase out coal, we need to have other cleaner forms of energy to turn to, like wind and nuclear [power]."

Ontario's coal phase-out is one of the examples Mr. Oliver refers to when he speaks about positive initiatives helping address Canada's GHG emissions. B.C.'s carbon tax is another. He considers B.C.'s approach "a model by which the rest of the world can develop its own carbon taxation."

While reducing the country's carbon footprint is important, Mr. Oliver also sees advancing globally applicable solutions as an even higher priority.

He points to federal support for Sustainable Development Technology Canada (SDTC), which works with Canadian companies and international partners to develop clean energy alternatives, as a positive force that is helping Canada "migrate from carbon-intense energy sources." Mr. Oliver says this and other activities aim to "lay the infrastructure and create the technological framework for the de-carbonization of the economy."

Achieving bottom-line GHG reductions will take time, says Mr. Oliver. "We have an economy that is largely based on fossil-based energy sources. It's hard to turn that off and switch over to something that's clean and green in an instant."

While noting that stronger action on climate change is urgent, Mr. Hoggan says that not all Canadians are laggards.

For example, the University of British Columbia's laudable GHG reduction efforts surpass Kyoto Protocol targets, he said. "UBC and other universities are paying attention because this matters to young people and there is a moral imperative here. Provinces and municipalities are also taking action. And tens of thousands of individual Canadians take various steps like eating less meat or reducing the amount of plane travel."

Mr. Horne also sees a difference between what is happening, or not happening, at the federal level and the actions of local and provincial governments, companies and individuals.

But the headway made through personal or local initiatives won't be enough, he says. "We are not going to [reach the goals of the Copenhagen Accord] without strong federal support and without strong policies across the board," he said. "We should be pushing for Canada to get a passing grade and, eventually, an exemplary one."

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Bob Oliver
is CEO of Pollution Probe

LEADERSHIP

Private and public efforts highlight progress

The heating for 52 homes of Drake Landing almost exclusively comes from solar energy. SUPPLIED

SOLAR POWERED

Some communities aspire to meet their energy needs through renewable sources. The Drake Landing Solar Community is doing it.

Located in Okotoks, Alberta, Drake Landing is North America's first large-scale seasonal storage solar heating system project. The project includes a district heating loop that uses solar energy to provide space heating for 52 homes. As of June 2013, the system set a world record by supplying 98 per cent of the community's space heating requirement.

The project was initiated in 2005 by Natural Resources Canada. Solar energy began to flow into the energy storage system in June 2007. The Drake Landing Company – United Communities, Sterling Homes, ATCO Gas and the town of Okotoks – oversees Drake Landing's ownership and operation.

"The Drake Landing Solar Community is yet another demonstration of why Canada is recognized for developing leading-edge energy technologies that have significant potential for energy production in the future," said federal Minister of Natural Resources Joe Oliver.

FIRST NATION HARNESSES WIND POWER

As the people of the M'Chigeeng First Nation know, the wind has always blown dependably across the bluffs overlooking West Bay on Manitoulin Island, Ontario.

Today, the enterprising M'Chigeeng First Nation is tapping that resource thanks, in part, to a partnership with Vector Wind Energy.

To put the project together, the community used its own financial resources, augmented by Ontario's Aboriginal Loan Guarantee Program and other enabling mechanisms, and worked closely with suppliers, services providers, the government and the Ontario Sustainable Energy Association.

The resulting Mother Earth Renewable Energy (MERE) wind project commenced operation in 2012. Developed by the MERE corporation, a company fully owned by the M'Chigeeng First Nation,

The Mother Earth Renewable Energy project is one of many First Nations initiatives that explore clean energy options. ISTOCKPHOTO.COM

the project's twin turbines are powerful symbols of perseverance and confidence.

Chris Henderson, author of *Aboriginal Power*, says that MERE is one of many First Nations initiatives focusing on hydro, wind, biomass and solar power. "In total, Aboriginal clean energy projects have the potential to reduce Canada's GHG emissions by at least four to five per cent," he said, explaining that 27 projects are in operation and 26 are in construction. Feasibility studies for 76 additional projects are underway.

MUNICIPALITIES MAKING STRIDES

Local governments across Canada are emerging as leaders in climate change mitigation by turning landfill gas into energy, improving public transit, retrofitting public buildings and shifting to more fuel-efficient vehicles. In the process, leading municipalities are also demonstrating that GHG reduction efforts can yield economic benefits too.

B.C.'s Columbia Shuswap Regional District capped the completed portion of its Salmon Arm Landfill, capturing gas and leachate to provide heating for hundreds of homes. By September 2011, an estimated 260 tonnes of methane had been eliminated.

The Greater Sudbury Housing Corporation installed a solar wall in a 250-unit high-rise. When sunlight hits the cladding, ventilation fans draw solar-heated air to heat the building. The project saves more than $23,000 annually and cuts GHG emissions by 108 tonnes.

The Salmon Arm landfill gas collection facility. SUPPLIED

To learn more about these and other positive efforts, visit the Green Municipal Fund and Partners in Climate Protection sections of the Federation of Canadian Municipalities website.

INCREASED PRODUCTION, LOWER EMISSIONS

While manufacturing accounts for only a small portion of Canada's GHG emissions, the Canadian Manufacturers & Exporters (CME) industry group says ensuring Canada has an effective, competitive and harmonized approach to climate change policy is a priority. "Our country contributes two per cent of the world's total emissions. Of that, industrial processes contribute only eight per cent," says Nancy Coulas, CME's director for environmental policy.

She explained that manufacturing emissions are down 11 per cent from 2005 levels, according to the Government of Canada's latest National Inventory Report.

"While it's true that the industry as a whole has reduced emissions due to a drop in production, even companies that are thriving have decreased their emissions amidst a spike in output," Ms. Coulas says. "Why? Because in our competitive climate, where every dollar counts, GHG emissions are waste, and excess waste means lost business."

She says companies must be as "lean" as possible to compete on the world stage. "The need to invest in new, more productive equipment and technologies often leads to less carbon-intensive production," Ms. Coulas added. "Industry has developed many tools to help reduce emissions. The best tool, however, remains the wealth of ingenuity and innovative thinking of manufacturing companies to meet the challenges of both today and tomorrow."

A MODEL CARBON TAX

It's not an everyday occurrence that Canadian climate change policy earns international praise. But British Columbia's carbon tax was recently hailed as a "textbook example" by the Organisation for Economic Cooperation and Development, which promotes policies that improve the economic and social well-being of people around the world.

B.C. residents increasingly decline to fill up. The result is a drop in local fuel consumption by 17.4 per cent per capita since 2008. ISTOCKPHOTO.COM

Whisked from its announcement by then Premier Gordon Campbell to implementation in just five months, B.C.'s carbon tax came into effect in 2008. Early evidence suggests the tax has been effective in curbing emissions. With a price imposed on roughly three-quarters of B.C.'s carbon pollution, emissions have been declining on a per-capita basis. Since 2008, fuel consumption in the province has fallen by 17.4 per cent per capita (and fallen by 18.8 per cent relative to the rest of Canada). These reductions have occurred across all the fuel types covered by the tax, not just vehicle fuel. Over the same period, B.C.'s gross domestic product has kept pace with the rest of Canada.

This report was produced by RandallAnthony Communications Inc. (www.randallanthony.com) in conjunction with the advertising department of The Globe and Mail. Richard Deacon, National Business Development Manager, rdeacon@globeandmail.com.

CLIMATE CHANGE

Ontario's energy security is tied to its energy advantages

By Don MacKinnon,
President, Power Workers' Union

In the last decade, Ontario has spent tens of billions of dollars on conservation, intermittent wind and solar and backup natural gas generation with troubling results. The province's electricity prices are on the way to being among the highest in North America. Electricity ratepayers are subsidizing Ontario industries to help keep them competitive while taxpayers are footing the $5-billion Clean Energy Benefit to allay consumer complaints over rising electricity prices.

The International Energy Agency defines energy security as the uninterrupted supply of energy at an affordable price. Short-term energy security focuses on the ability of the energy system to respond to sudden changes in the supply-demand balance. Long-term energy security is linked to timely energy investments in line with economic forecasts and environmental needs. Ontario's energy plan misses the boat on both counts.

Ontario's dependency on greenhouse gas (GHG) emitting natural gas generation has already increased, and recent price increases for shale gas underscore the historical price volatility of this fuel.

It appears the Ontario government intends to rely on more unverified conservation programs and wind and solar generation that are dependent on prerequisite natural gas generation.

Ontario's current temporary generation surplus is creating the false comfort that this path will work. Ontarians should remember it was only eight years ago that our province faced significant power shortages.

The global recession has reduced Ontario's electricity demand. Since 2003, Ontario has lost 200,000 good-paying manufacturing jobs. Recovery in the manufacturing sector, the increasing electrification of Ontario's transportation system and a projected population increase of 3.9 million people by 2036 will cause electricity demand to rise again.

If Ontario does not build two new nuclear units at Darlington, carbon-emitting natural gas generation will be a major new source of baseload electricity generation.

In 2020, the closure of the Pickering Nuclear Generating Station will remove 3,000 megawatts of GHG emission-free baseload generation. If Ontario does not build two new nuclear units at Darlington, carbon-emitting natural gas generation will be a major new source of baseload electricity generation. Even with the closure of the province's coal stations, Ontario's Environment Commissioner is worried that Ontario will not meet its GHG emission targets. An increased reliance on natural gas will make things much worse.

The Power Workers' Union and the Organization of Canadian Nuclear Industries recently commissioned Strategic Policy Economics Inc. to assess the GHG and economic impacts associated with two supply mix options. One scenario assumed new wind generation would proceed as proposed in the province's long-term energy plan, and the other assumed the planned nuclear refurbishments and the building of two new reactors.

The study showed that retaining the planned nuclear generation capacity would provide a $60-billion net incremental benefit to Ontario compared to the wind scenario. This would include $27 billion in savings to ratepayers and $29 billion in direct investment in Ontario. In addition, 108 million tonnes less GHG emissions would be produced by retaining nuclear as opposed to the wind scenario.

Ontario is converting the Atikokan and Thunder Bay coal stations to biomass. Converting the provincially owned Lambton and Nanticoke stations to biomass and natural gas would generate peak power on demand, reduce GHG emissions and improve Ontario's energy security.

Developing Ontario's remaining commercially viable hydroelectric potential can deliver additional benefits.

For continuing economic prosperity and a sustainable environment, Ontario needs an energy system that will deliver reliable, affordable, low-carbon electricity today and tomorrow. To get there, our political leaders have to make the right choices.

The choice is clear – abandon existing assets and give more revenue and control over our electricity system to big multinational companies, or leverage Ontario's existing electricity assets, nuclear industry, hydroelectric potential and vast renewable biomass resources to build a system for the future. Ontario's leaders know that the latter option can deliver reliability, price stability and lower GHG emissions while creating tens of thousands of jobs. It's time for smart choices.