From Resources to Resourcefulness: The Promise of Clean Energy

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“We are at a crossroads between reliance on fossil fuels of the past and the renewable energy future ahead.” It wasn’t so long ago that these words would only have been uttered by an environmentalist, an executive at a start-up renewable energy company, or a Green party candidate. But in 2016, it was Canada’s Natural Resources Minister Jim Carr who delivered this message at the Future of Energy Summit in New York City, hosted by Bloomberg New Energy Finance.

It’s not just the federal government that changed in 2015. Global energy markets roiled with unexpected changes: oil and gas prices plunged, as did capital investment. Coal companies were going bankrupt. And many analysts predicted that clean energy investment would similarly stall out—how could renewable energy possibly compete with cheap oil, gas and coal?

But clean energy did compete, and it won.

As Bloomberg New Energy Finance reports, more money was invested in clean energy in 2015—a record US$329 billion—than in oil and gas (US$321 billion). That trend also held when looking just at investments in electricity generation, with investment in renewable energy outstripping investment in fossil fuel power by a greater than two to one margin.

The countries that saw the majority of this investment are also worth noting: for the first time, more money was invested in clean energy in developing countries than in developed ones. Clean energy investment in China was up 17 per cent to US $110 billion last year, and China is expected to remain the world’s dominant clean energy player in the years ahead. India saw investment rise 23 per cent to US $10.9 billion—and with some of the most aggressive renewable energy growth targets in the world, India is just getting started.

Investment was also up among leading developed countries: Investment in the United States grew 7 per cent to US$56 billion, rose 3 per cent to US$43.6 billion in Japan, and the UK saw investment grow 23 per cent to US$23.4 billion.

How did Canada fare? Unfortunately, not so well, with a dramatic 46 percent drop in investment to US$4 billion.

But there are signs that 2015 will prove anomalous, rather than the
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The end of 2015 was marked by a flurry of changes in Canada’s clean energy landscape: new commitments to renewable power in Alberta and Saskatchewan, the promise of carbon pricing in more provinces and even nationally, and a renewed federal commitment to climate leadership on the global stage in Paris. This was reinforced by the Vancouver Declaration in which provincial and territorial leaders and the new prime minister agreed to work together to develop a pan-Canadian framework on clean growth and climate change, and implement it by early 2017.

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As Achim Steiner—Executive Director of the UN Environment Program—said during a visit to Canada earlier this year, “The future markets, the technologies, the energy systems will be low-carbon...Whether you build the next pipeline or not...the economy of Canada will not be centered around a fossil-fuel based extractive economy.”

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Canada’s oil sands are a high-cost, high-carbon source of oil, so today’s low oil prices are already posing a challenge to the sector. As we move to an increasingly low-carbon world, demand for oil—particularly oil with a high carbon footprint—can be expected to fall.

A perfect illustration of what the transition to low carbon means for oil demand comes from projections that show a significant scaling-up of electric cars. A recent analysis from Bloomberg found that continued declines in the cost of electric car batteries—they fell 35 per cent last year alone—will make electric vehicles cost-competitive with internal combustion engines by 2022.

This would drive a big boost in electric vehicle sales and, as a result, the displacement of 2 million barrels per day of oil demand by 2028. Why is 2 million barrels per day of oil displacement significant? It’s a glut of oil on the market equivalent to what triggered the 2014 oil crisis.

The prospects for liquefied natural gas (LNG) exports also face growing uncertainty. The U.S. Energy Information Administration recently released data showing that LNG imports into Japan, South Korea and China dropped five per cent in 2015. And just as demand for LNG is softening, there has been a surge of LNG production. The result? Stubbornly low prices and fierce competition among would-be LNG producers.

B.C. is competing with a host of other prospective LNG suppliers, but it’s also competing with other forms of energy. The restart of nuclear reactors in Japan, coupled with growing use of renewable energy, are expected to push down LNG imports by as much as 10.5 per cent by 2020. And a recent study from economists at the Brattle Group, a respected economic consultancy, suggests that North American LNG faces increasing competition from renewable energy.

The Brattle group’s study, LNG and Renewable Power: Risk and Opportunity in a Changing World, finds intensifying links between global natural gas and electricity markets. With renewable power costs falling all the time, the study suggests there is significant investment risk in proposed LNG export
projects in North America: why import LNG when you can use clean power for less? The Brattle group concludes that if the cost of renewable power is low enough in the markets B.C. aims to sell LNG into, “it could dampen the attractiveness of North American-sourced LNG as a fuel for electric generation and the willingness of market participants to continue to contract for LNG export infrastructure.”

So when Prime Minister Trudeau recently told the World Economic Forum “My predecessor wanted you to know Canada for its resources. I want you to know Canadians for our resourcefulness,” he was, like Wayne Gretzky, skating to where the puck is headed. We’re going to need that resourcefulness to seize the opportunity of transitioning our energy system to clean energy—and to effectively capture its export potential.

Which brings us back to the Vancouver Declaration and its commitment to delivering a pan-Canadian framework for clean growth and climate change. What would success look like?

Countries leading the way on clean energy and climate action—developing new technologies and services, deploying them at home and exporting them abroad—stand to benefit economically and environmentally, and will emerge as the energy leaders and economic winners of the 21st century. If we are truly going to realize a pan-Canadian framework on clean growth and climate change, we need a unified climate and energy plan—call it a clean energy plan, perhaps—that delivers on both our emission reduction obligations and our economic aspirations.

Central to such a plan is the role that electricity will play in decarbonizing Canada’s economy, as illustrated by study after study, which should be assertively communicated as a key strength and advantage for Canada. As the Canadian Council of Academies’ recent report on Technology and Policy Opportunities for a Low-Emission Energy System in Canada noted, “Low-emission electricity is the foundation for economy-wide emission reductions in transportation, buildings, and industry.” In other words, we need to electrify parts of the economy currently reliant on fossil fuels. As the Canadian Council on Renewable Electricity has noted, the fact that we already have such a clean grid (Canada’s power is 65 per cent renewable today)—as well as plentiful renewable energy resources distributed across the country—offers Canada a competitive advantage over our peers. But it’s going to take a joint effort by federal and provincial governments to enable growth in renewable energy at the scale we need. That means choosing smart, strategic clean energy policies across Canada, from carbon pricing to electricity infrastructure.

Beyond the economic opportunities associated with deploying more renewable energy and other clean energy solutions in Canada, careful consideration needs to be given to how governments can foster and support export opportunities for Canadian companies—from clean electronics to the U.S. to clean energy technologies and services to markets around the world.

Thanks to President Obama’s Clean Power Plan south of the border—which expressly allows states to import new Canadian clean power as a means of attaining their targets—the North American Electric Reliability Council believes that Canadian power exports to the U.S. could triple by 2030."

Looking beyond our neighbour, there are growing clean energy opportunities in markets around the world—including key trading partners such as countries in the EU, Africa and Asia. Canadian project developers, technology developers, manufacturers and energy service providers are eager to take advantage of those opportunities. Competing successfully will require dedicated support from the federal government, which could be modelled after President Obama’s American Renewable Energy and Energy Efficiency Export Initiative, launched in 2009.

After a decade of federal indifference to climate and clean energy, we have some catching up to do. So it’s great news that Canada’s governments have set themselves an aggressive deadline to deliver a national framework for clean growth and climate change. If they succeed, it will prove a historic turning point for the future of Canada and all Canadians.

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