Recommendations for Budget 2015

Executive Summary

Clean Energy Canada is working to accelerate Canada's transition to a clean energy economy.

According to Bloomberg New Energy Finance, in 2013 new global clean energy investment around the world totaled USD$254 billion. In Canada, clean energy investment in 2013 totalled $6.5 billion, moving this country from 12th to 7th place among its G20 peers. Canada's cleantech sector, which comprises more than 700 companies collectively generating over $11 billion in revenues, constitutes one percent of the global clean technology market today, with many of the sector's leaders anticipating strong growth from that starting point.

This brief makes two recommendations to help ensure Canada can prosper and compete in the global clean-energy economy. In Budget 2015, the federal government should:

- Provide tax incentives to encourage the growth of solar power and power storage technologies in Canada, and
- Introduce rebates for Canadians who purchase electric vehicles that align with the U.S. government's existing electric-vehicle rebate program.

Introduction

Founded in 2010, Clean Energy Canada opened an Ottawa office in May 2014. The policy priorities for our federal work include:

- Effective federal support for renewable energy and efficiency, and
- Promoting clean transportation, particularly through an accelerated transition to electric vehicles.

This brief presents recommendations for Budget 2015 that would support Canada's transition to a clean-energy economy. The recommendations address several of the themes identified by the House of Commons Standing Committee on Finance to guide the 2014 pre-budget consultations, most notably:

- "Increasing the competitiveness of Canadian businesses through research, development, innovation and commercialization
- "Ensuring prosperous and secure communities, including through support for infrastructure

- "Improving Canada's taxation and regulatory regimes," and
- "Maximizing the number and types of jobs for Canadians." [1]

A Growing Global Market for Clean Energy

According to Bloomberg New Energy Finance, in 2013 new clean energy investment around the world totalled USD$254 billion.[2] Further, the costs of clean energy technologies are dropping, which means this investment is building more clean-energy capacity—dollar for dollar—than ever before. For example, Bloomberg tracked an 80 percent drop in solar module prices between 2008 and2012.[3]

In Canada, clean energy investment in 2013 totalled $6.5 billion, moving this country from 12th to 7th place among its G20 peers.[4]

The International Energy Agency's (IEA) 2014 *Energy Technology Perspectives* assessment notes that "double-digit growth rates for wind and solar PV electricity generation" have helped push renewable energy's global share to 20 percent by 2011. However, if we want to avoid serious climate disruption, countries will need to deploy clean electricity far more aggressively, so that its share of the global energy supply reaches 65 percent by 2050. Overall, realizing the IEA's low-carbon scenario would require an additional USD$44 trillion in global investment by 2050.[5]

Transformation at this scale would create an immense export opportunity for Canada's cleantech industry, a sector that—according to Analytica Advisors—today accounts for more than 700 companies and $11 billion in revenues.[6]

Canada already accounts for one per cent of the current global clean technology market, and many analysts see potential for significant growth.[7] For example, a 2012 study produced by global consultants McKinsey & Company for Natural Resources Canada found that Canada has a clear advantage in conventional hydropower and the potential to increase its global competitiveness in next-generation automobiles. McKinsey also found that Canada could take the lead in

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[1] http://www.parl.gc.ca/HousePublications/Publication.aspx?DocId=6653302&Parl=41&Ses=2.

[2] See Slide 4, "New Investment in Clean Energy 2004–2013," http://about.bnef.com/presentations/clean-energy-investment-q4-2013-fact-pack/

[3] See Slide 8, "PV Experience Curve 1976–2012," at http://www.cleanenergyministerial.org/Portals/2/pdfs/BNEF_presentation_CEM4.pdf

[4] http://www.newswire.ca/en/story/1333657/pew-report-finds-clean-energy-investment-in-canada-rose-45-last-year

[5] International Energy Agency, *Energy Technology Perspectives 2014: Harnessing Electricity's Potential, Executive Summary*, available at http://www.iea.org/etp/etp2014/

[6] Analytica Advisors, *Executive Summary: 2014 Canadian Clean Technology Industry Report,* http://www.analytica-advisors.com/sites/default/files/Stand%20alone%20ES.pdf.

[7] Ibid.

several emerging clean- energy sectors, including solar photovoltaics, bioenergy, unconventional hydropower / marine power, and energy- efficient buildings.[8]

Seizing Canada's Opportunity

What will it take to quickly grow clean-energy generation in Canada?

Like any other sector, clean energy will only grow if there is growing demand for the product it produces.

That demand largely depends on provincial choices—as provincial governments have jurisdiction over electricity generation in Canada—but, as noted above, it can also come from markets outside Canada. The United States is our natural market for exports of clean electricity, but Canadian companies can (and do) also supply clean-power expertise, technologies, and services to the growing global market.

For Budget 2015, we offer two recommendations to directly and indirectly boost Canadian clean-energy investment: provide the sector with tax support that would accelerate investment, and encourage the shift to electric vehicles in Canada.

Recommendation: Improve the Tax Treatment of Solar and Power Storage Technologies

To its credit, the federal government has been systematically adding clean technologies to Capital Cost Allowance classes 43.1 and 43.2, allowing companies to write off clean energy and energy conservation assets more quickly and thus reduce their near-term tax bills.

This year, technologies that make a building "solar-panel ready" as well as building-integrated photovoltaics—which replace traditional roof and wall materials with solar photovoltaic materials—need that boost.

So do power-storage technologies. Unlike coal or nuclear, many clean-energy sources provide power on a variable basis: the wind isn't always blowing and the sun isn't always shining. Technologies that store power help close the gaps, allowing wind, solar and other clean energy technology to move beyond a niche role to become major power suppliers in Canada.

Currently, Class 43.2 of the *Income Tax Act* covers some energy-storage technologies (e.g. fuel cells) but leaves others out. We recommend broadening its scope to include expenditures on *all* tangible stand-alone energy storage assets. We also recommend eliminating an existing requirement in Class 43.1 which mandates that the energy stored must be generated by photovoltaic, wind, or hydroelectric equipment to be eligible for the tax reduction.

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[8] McKinsey & Company, *Opportunities for Canadian Energy Technologies in Global Markets,* http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/files/pdf/2013/McK-Report-eng.pdf

Why? First, better power storage can improve the efficiency of *all* forms of electricity generation, which reduces costs and environmental impacts. Second, while we are confident that renewable energy such as wind and solar will be the biggest beneficiary of investments in bulk storage systems over time, a requirement to source stored electricity only from renewable sources risks making storage overly burdensome for grid operators in the near term, thus potentially stunting its growth below the level needed to support renewable power at scale.[9]

Finally, a Residential Solar Energy Tax Credit—along the lines of the government's extremely successful Home Renovation Tax Credit—would help support Canadian homeowners interested in installing rooftop solar systems.[10]

Recommendation: Encourage Cleaner Transportation with an Electric Vehicle Rebate

Demand for clean electricity will grow as more Canadians choose to drive electric vehicles (EVs) instead of those powered by gasoline engines. For example, the Canadian Electricity Association points to the rate of electric vehicle adoption as one of the "key variables" influencing the future size of the electricity system in Canada.[11]

Canada's power supply is relatively low-carbon today, with hydropower supplying more than 60 percent of our electricity.[12] This makes plugging an electric vehicle into our grid an environmental winner: EVs are more efficient than gasoline-powered vehicles, so they reduce emissions even with high-carbon power—an advantage that is magnified with cleaner power sources.[13]

Personal transportation vehicles accounted for more than 12 percent of Canada's total greenhouse gas emissions in 2012[14]—and Canada has a very big gap to close to get on track for its national 2020 greenhouse gas reduction target.[15] Getting more EVs on the road can help reduce transportation sector emissions before the 2020 deadline.

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[9] See the Green Budget Coalition's *Recommendations for Budget 2014*, 35–36, for more detail: http://www.greenbudget.ca/main_e.html.

[10] Contact the Canadian Solar Industries Association (http://www.cansia.ca/) for more information.

[11] http://powerforthefuture.ca/wp-content/uploads/2014/04/Vision2050.pdf, 19.

[12] Hydropower accounted for 61 per cent of Canada's electricity generation in 2012 (*National Inventory Report 1990–2012*, Part 3, Table A13–1, 69). Available from http://unfccc.int/national_reports/annex_i_ghg_inventories/national_inventories_submissions/items/8108.php

[13] http://www.plugndriveontario.ca/environmental-benefits

[14] Cars, trucks and motorcycles for passenger transportation accounted for 85 of Canada's 699 million tonnes in total emissions in 2012. (*National Inventory Report 1990–2012*, Table 2–13, 47.)

[15] http://www.ec.gc.ca/ges-ghg/985F05FB-4744-4269-8C1A-D443F8A86814/1001-Canada%27s%20Emissions%20Trends%202013_e.pdf.

Support for EVs helps create revenues and high-quality jobs in Canada's electric-mobility sector, which includes companies producing charging infrastructure, chargers, batteries, electric motors, and vehicle components as well as those providing engineering and design expertise.[16]

Electric vehicles also save Canadian drivers money on fuel—the electricity costs to operate an electric vehicle in Ontario, for example, are about one-sixth of the cost of gasoline—and on maintenance.[17] But like most new technologies, today's electric vehicles cost more upfront than conventional vehicles.

In a 2012 poll, Environics Research identified purchase price as the single largest barrier for Canadians considering an EV.[18] Given this, it's probably not surprising that electric-vehicle consumer incentives enjoy a strong track record: 97 percent of EV sales to date in Canada have occurred in the three provinces (B.C., Ontario and Quebec) that provide or have provided rebates.[19]

Ottawa often characterizes its climate and energy policies as "harmonized" with those of Washington, particularly when it comes to the highly integrated North American auto market. The two countries' vehicle fuel-efficiency standards are indeed harmonized: our short- and medium-term regulations are essentially identical to those in force south of the border. But while the United States has provided consumer electric-vehicle rebates for several years, Ottawa has yet to adopt an equivalent. The U.S. policy is already showing results, with more than 220,000 electric vehicles sold in the U.S. to date.[20] Canada's total, in comparison, is just over 7,400—well below the U.S. adoption rate even on a per-capita basis.[21]

Indeed, according to Electric Mobility Canada, the national trade association representing EV manufacturers and service providers, ours is the only G7 country without a national EV support program.[22]

We propose that Canada's 2015 budget catches up to what the United States already has on the books: rebates ranging from $2,500 to $7,500 on the purchase of any of

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[16] https://emc-mec.ca/eng/pdf/Electric_Mobility_Resources_2008.pdf

[17] http://www.plugndriveontario.ca/cost-benefits

[18] http://awsassets.wwf.ca/downloads/wwf_electric_vehicles_survey_report___sept_21_2012.pdf

[19] http://www.wwf.ca/conservation/global_warming/transportation/electric_vehicles__where_are_we_now_/

[20] Recent U.S. figures show total EV sales at over 222,000 (see http://energypolicyinfo.com/2014/07/two-record-months-of-electric-vehicle-sales/). Internal Revenue Service tracking for EV rebates shows cumulative sales of over 181,000: http://www.irs.gov/Businesses/IRC-30D-Plug-In-Electric-Drive-Motor-Vehicle-Credit-Quarterly-Sales

[21] http://www.plugndriveontario.ca/

[22] http://www.emc-mec.ca/eng/pdf/Rapid_Adoption_of_EVs_in_Canada_December_2010.pdf

the electric-vehicle models currently on sale in Canada.[23] The existing U.S. regulation limits costs to the treasury by capping the rebate to the first 200,000 vehicles sold by a manufacturer;[24] in Canada, a comparable cap could be placed at 20,000 vehicles.

Meanwhile, Washington isn't standing still. President Obama's 2015 budget proposed even more ambitious rebates, of up to USD$10,000 per vehicle on a wider range of alternative-fuel vehicles, with no cap before 2019.[25] The rebates would also top out at USD$7,500 for vehicles with a sticker price of over USD$45,000. While it's not yet certain whether these changes will be enacted, Ottawa's legislators may want to consider matching the latest U.S. proposals.

Some jurisdictions also provide tax credits for homeowners who install charging infrastructure. For example, Ontario offers a rebate of up to $1,000 for homeowners who invest in home or business retrofits to allow for EV charging.[26] Support for such charging infrastructure would provide an effective complement to vehicle rebates.

Federal legislators may be concerned about the benefit of adding a federal rebate in areas where a provincial incentive currently exists. However, California's experience demonstrates that the combination of federal and state-level rebates[27] can be very powerful; the state is a clear leader in U.S. electric vehicle adoption, with consumers choosing an EV for every 40 vehicles sold in Q4 of 2012.[28]

Conclusion

A global clean energy transition is well underway, and Canada has the expertise, clean-power resources and ingenuity to rank among the winners in this world-wide shift. Accelerating Canada's transition to a clean-energy, low-carbon future offers both economic and environmental rewards. The steps we propose for Budget 2015 would help the strengthen the foundation Canada has laid for a prosperous and competitive clean-energy economy.

Contact

Merran Smith
Director
merran@cleanenergycanada.org
604-947-2200

Clare Demerse
Senior Policy Advisor
clare@cleanenergycanada.org
613-562-3447 x222

[23] http://electricvehicles.caa.ca/electric-vehicles-available-in-canada/

[24] http://www.irs.gov/Businesses/Plug-In-Electric-Vehicle-Credit-%28IRC-30-and-IRC-30D%29

[25] http://www.treasury.gov/resource-center/tax-policy/Documents/General-Explanations-FY2015.pdf, 114–115.

[26] http://news.ontario.ca/mto/en/2012/12/helping-electric-vehicle-drivers-plug-in.html

[27] https://energycenter.org/clean-vehicle-rebate-project

[28] http://www.plugincars.com/1-40-california-car-sales-were-evs-q4-2012-126646.html