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POLICY BRIEF

A Climate Gift or a Lump of Coal? The emission impacts of Canadian and U.S. greenhouse gas regulations in the electricity sector

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Table of Contents

1.0 Introduction

With President Obama's June 2013 speech to kick off his Climate Action Plan, we are starting to see movement out of the United States on federally driven climate policy. With its focus on clean energy, it seems that the United States is finally moving toward achieving their Copenhagen target and setting themselves up for more reductions down the road. Central to U.S. mitigation aspirations are federal regulations to control greenhouse gas (GHG) emissions from coal-fired thermal electricity units.

The proposed U.S. regulations announced on June 2 come two years after the Government of Canada published regulations to regulate emissions from coal-fired generating units. The U.S. Environmental Protection Agency (EPA) has emphasized that its proposed electricity rules will reduce emissions from the country's most significant source of emissions: EPA Administrator Gina McCarthy said that "the EPA is delivering on a vital piece of President Obama's climate action plan by proposing a clean power plan that will cut harmful carbon pollution from our largest source—power plants" (Goldenberg, 2014). Conversely, the messaging from the Government of Canada in the wake of the U.S. policy announcement has been that Canada took similar action on coal-fired plants in 2012, and Prime Minister Harper predicted that the percentage drop in emissions from those plants is likely to be proportionately greater than those proposed by Washington (Ditchburn, 2014). However, both the U.S. view—which emphasizes impacts on sectoral emissions—and the Canadian view—which emphasizes impacts on individual plants—leave largely unanswered the question of the extent to which the two policies will affect total emissions. This is an important question, both for the attainment of each country's Copenhagen target and for revealing what is possible in the post-2020 era where Nationally Determined Contributions are being contemplated.

This policy brief addresses this question of GHG impacts. It explores two aspects of the GHG reductions that will occur as a result of the proposed U.S. policy and the Canadian regulations: GHG impacts on total national emissions pledges and on sector emissions. In both cases, it assesses the GHG impact in 2020, the Copenhagen pledge year and, in 2030, the period when nationally determined contributions are contemplated.

On the first question, the policy brief concludes that the proposed U.S. regulations deliver more total national GHG reductions relative to the Canadian regulations in 2020 and 2030. And while both policies will reduce total national emissions, significant gaps are likely to remain with respect to both countries' Copenhagen pledges to reduce 2020 emissions to 17 per cent below 2005 levels—with the U.S. projected to be 7.6 per cent below 2005 levels by 2020, and Canada 0.4 per cent..

By 2020 the Canadian policy is projected to mitigate 0.4 per cent of national emissions relative to 2005 levels, and the U.S. policy 5.4 per cent. This outcome is not surprising given both the U.S. electricity sector's greater share of national emissions and its much greater reliance on coal-fired electricity plants compared with Canada. However, an important factor in understanding the relatively lower Canadian GHG reductions in 2020 is the difference in the timing of the regulatory impact. The proposed U.S. regulations target annual reductions from facilities through a performance standard, thereby delivering significant mitigation immediately after implementation.[1] In contrast, the Canadian regulation bans new coal plants while existing plants must shutter at the end of their useful life, as defined by the regulations (45–50 years old). But since few existing Canadian plants are scheduled to reach their "regulatory" end of life prior to 2020, there is a negligible impact on plant operations and, hence, emissions in 2020. The Canadian

[1] This assumes timely implementation of the policy, which is by no means guaranteed.

regulations therefore have a very small impact on the country's Copenhagen pledges, while the U.S. policy perhaps could deliver about a third of the U.S. Copenhagen target.

Between 2020 and 2030, the Canadian policy's impacts become more significant as more existing plants reach the end of their useful life as defined by the regulations, and the U.S. policy's impacts also grow. By 2030 the Canadian policy is forecast to mitigate 3.4 per cent of total national emissions relative to 2005 levels, and the U.S. policy 8.9 per cent.

On the second question of emission reductions from the electricity sector, the proposed U.S. policy delivers more in 2020, but then the Canadian policy delivers more reductions thereafter. By 2020, the Canadian policy mitigates 3.4 per cent of sectoral emissions relative to 2011 sector levels, compared to the U.S. policy's 15.3 per cent. Again, it is the timing of the impact on emissions that drives this outcome, with few plants affected in the Canadian sector by 2020. However, by 2030 the Canadian policy achieves greater sector reductions as more plants reach the end of their useful lives, mitigating 27.7 per cent of 2011 sector GHGs, compared to the U.S. policy's 25.3 per cent.

2.0 The Policy Context

Canada and the United States have made the same emission mitigation pledges under the Copenhagen Accord—a 17 per cent reduction in economy-wide emissions by 2020 relative to 2005 levels (United Nations Framework Convention on Climate Change [UNFCCC], n.d.). This policy alignment was a priority for Canada in order to try to avoid the negative trade or competitiveness impacts that could have been associated with differing targets given the close economic relationship between the two countries. Also aligned are the countries' overall approaches to emission mitigation, with a focus on sector-by-sector regulation rather than alternative approaches like a nationwide carbon tax or cap-and-trade system. Further, the two countries also both have considerable variations in the types of approaches their subnational governments are pursuing for emission mitigation, and where flexibility provisions in national policies allow recognition of subnational mitigation policies.

While Canada and the United States are pursuing very similar emission mitigation policies in some sectors, in others there are important differences. The subsections below provide an overview and comparison of the various policies being pursued by both countries in key areas.

Transport Sector Regulations

Given the integrated automobile market in North America, transportation regulations are largely mirrored on both sides of the border to prevent complications in cross-border production and trade. Passenger vehicles and light-duty trucks are subject to regulations through 2025 that require average GHG emissions be reduced by 50 per cent from vehicles from the 2008 model year; heavy-duty vehicles are also subject to regulations through the 2018 model year. In both cases, Canadian and U.S. regulations are aligned. Harmonizing regulations in transport obviously makes sense in such an integrated market where the major manufacturers operate on both sides of the border. Inconsistent regulations would have either dramatically increased costs or would simply drive carmakers to align with the more efficient standard in an effort to contain costs with respect to compliance.

Oil and Gas Regulations

Neither Canada nor the United States has a national regulatory approach to oil-and-gas-sector GHG emissions. Oil and gas production is regulated in the Province of Alberta under the Specified Gas Emitters Regulation (SGER), which places a binding intensity standard of 12 per cent improvement per year on large industrial emitters, including oil and gas facilities; emitters that fail to meet these standards have multiple compliance options, including facility-level reductions, trading emission reduction credits, offsets from unregulated sectors and, as a last resort, payment of $15/tonne into a clean energy technology fund on the emissions that exceed their intensity standard. The SGER intensity standards encourage improvements in the emission intensity of production but do little to limit the absolute growth in oil and gas emissions, which will grow significantly going forward and soon make oil and gas Canada's highest-emitting sector (Environment Canada, 2013).

Canada had previously indicated it would be developing federal GHG regulations for the sector, but has since changed its position to indicate that it is waiting for the United States to develop sector regulations so that the approaches could be developed in parallel and competitiveness impacts avoided. Similarly, Alberta has been close to updating the current SGER with a more stringent intensity standard and a higher price ceiling for the technology fund. To date no action has been taken in the United States, where the oil and gas sector forms a much smaller share of total emissions, and

there has been little discussion about regulating this sector aside from potentially regulating refineries and methane emissions. But refinery regulations would only come after the current electricity sector regulations are finalized, implying they would come into effect after the current president's tenure. The regulation of fugitive methane emissions and flaring and venting in the oil and gas sector (which, given its shale gas boom, are significant and expected to grow substantially) are, at this stage, only under consideration.

Subnational Policies

The role of subnational policies in emission reductions is extremely important in the North American context. The Western Climate Initiative (WCI) and Regional Greenhouse Gas Initiative (RGGI) have proven that interstate (and inter-country) emissions trading can and does work. WCI, in particular, is a global leader in carbon trading—with a relatively stable emissions price of over US$11 per tonne in the latest California and Quebec emissions auctions (California Environmental Protection Agency, 2014; Government of Quebec, 2014). It is unique among other North American regional cap-and-trade systems in that it covers emissions from consumption of fossil fuels in all sectors. These successes have resulted in talk of increased regional cooperation, exemplified by an agreement between Quebec and Ontario to cooperate on climate action (Office of the Premier of Ontario, 2014) and the Pacific Coast Collaborative (n.d.). Other provincial actions have also shown leadership on carbon mitigation, including the B.C. carbon tax, the Ontario coal-fired electricity phase-out and the Alberta SGER.

Finally, 38 states and all provinces have either renewable portfolio standards, alternative energy portfolio standards or renewable or alternative energy goals or programs (Center for Climate and Energy Solutions, n.d.; Pembina Institute, n.d.). While not directly related to emission reduction goals, these renewable electricity programs have served an important role in both increasing clean energy implementation into the continental grid and assisting in the transition away from coal.

Short-Lived Climate Pollutants

Both countries are members of the Climate and Clean Air Coalition (CCAC). The coalition seeks to limit emissions of short-lived climate pollutants such as methane, black carbon and hydrofluorocarbons, which not only have very powerful greenhouse effects but also contribute to localized air pollution. CCAC activities are undertaken in developing countries, and both countries are currently funding a variety of initiatives internationally.

3.0 Emission Trends

Despite having areas of policy alignment, Canada and the United States have markedly different emissions inventories and trajectories, and face very different challenges in achieving their Copenhagen pledges. In 2005 total net annual emissions in the United States were 6,197 million tonnes (Mt) and are projected to reach 5,918–6,201 Mt by 2020, representing a drop of approximately 0 to 4.5 per cent. In Canada, emissions were 737 Mt in 2005 and are expected to decrease to 734 Mt[2] by 2020, a fall of 0.4 per cent. These emission trends, drawn from the two countries' 2014 biennial update reports, account for policies in place in the United States as of September 2012 (U.S. Department of State, 2014) and in Canada as of October 2013 (Government of Canada, 2014). The U.S. emission trend projection therefore does not include the impact of the Obama administration's June 2013 Climate Action Plan, a comprehensive list of planned measures for cutting emissions in a range of sectors[3] that the United States believes will put it "on a course to meet the 2020 goal" (U.S. Department of State, 2014). However, because few of the plan's listed measures specify the timing of executive branch actions or the quantitative GHG reductions expected, at this stage the ultimate impacts of the plan remain uncertain, and so the 2020 emission trend above is believed to reflect all currently known and articulated policies. Canada has made no major climate policy announcements since the September 2013 policy baseline it uses for its projections.

When interpreting the two countries' emission trend figures, it is important to note that, in the absence of the mitigation policies already enacted by both countries, emissions would have grown significantly by 2020 instead of slightly falling as now projected. In fact, Canada's seemingly modest projected mitigation of 0.4 per cent represents 50 per cent of the gap between 2005 levels and what 2020 emissions would have been in the absence of climate policies enacted so far (Government of Canada, 2014). However, regardless of the progress that has been made when compared to business-as-usual emissions, because mitigation policies take time to develop and implement, and because in many cases their impacts take time to be realized, delivering significant mitigation by 2020 relative to 2005 levels will be extremely difficult for Canada given its present emission trends (Office of the Auditor General of Canada, 2012).

While the two countries' emission trajectories relative to their targets are important to understand, they also tend to obscure the differences between their emission inventories. These differences are evident in the two countries' electricity sectors, the target of the regulations assessed in this policy brief. As seen in Figures 1 and 2, the Canadian electricity sector is much more reliant on non-emitting sources than its U.S. counterpart.

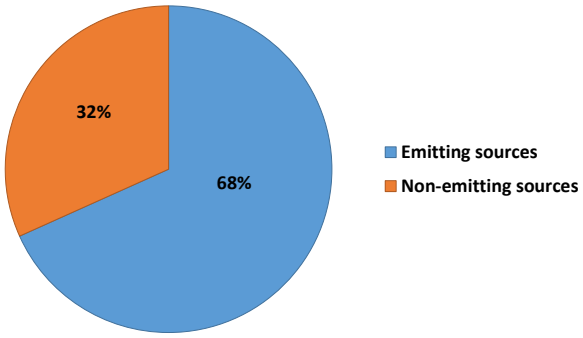

FIGURE 1. U.S. ENERGY SECTOR GENERATION MIX, 2012

[2] It should be noted that these baseline figures include the impacts of the Canadian coal policy but not those of the United States.
[3] For an IISD Policy Brief of Obama's June 2013 Climate Action Plan visit http://www.iisd.org/publications/obamas-climate-change-strategy-details-response-and-implications-canada

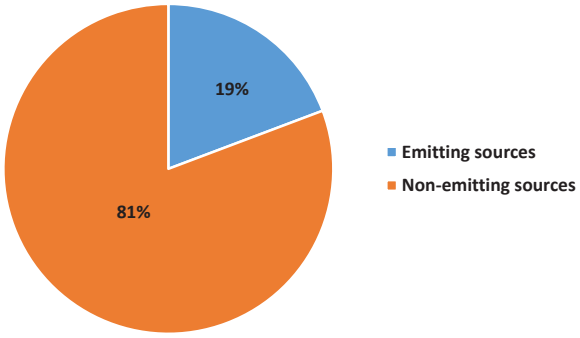

FIGURE 2. CANADIAN ENERGY SECTOR GENERATION MIX, 2011

And while the carbon intensity of both countries' electricity sectors is expected to decline, this drop is much more significant in Canada than the United States, where sectoral emissions are anticipated to fall 7.8 per cent between 2005 and 2030 (from 2,416 Mt to 2,227 Mt), compared to Canada's fall of 31 per cent in the same period (from 121 to 84 Mt) (U.S. State Department, 2014; Government of Canada, 2014). This means that the U.S. electricity sector's emissions form a much larger share of the country's emissions inventory than Canada's, and that the difference is expected to grow. This is made most clear when the two countries' electricity sectors' emissions are shown as a share of total national emissions, as in Figure 3 below. The significant difference in the relative size of each country's electricity sector as a share of its total emissions will be shown below to be an important driver of the aggregate impact of the two countries' coal policies.

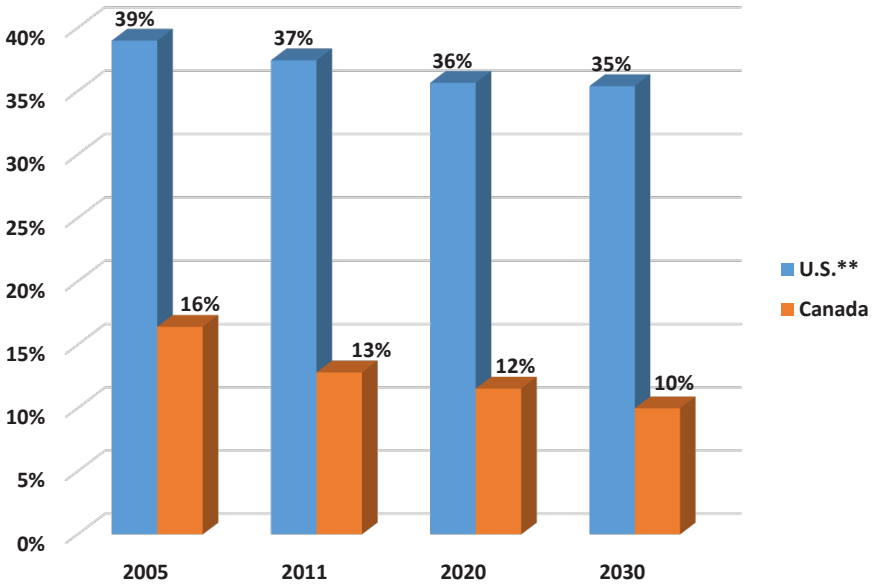

FIGURE 3. ELECTRICITY SECTOR EMISSIONS AS A SHARE OF NATIONAL GHGs*

**Electricity sector figures shown here do not include the impact of either country's coal policies, which are discussed in Section 4.*

***Total projected 2020 and 2030 emissions for the United States used for this graph represent the average between the EPA's modelled high- and low-sequestration scenarios.*

4.0 Comparing Canadian and U.S. Thermal Electricity Policies

On September 12, 2012, the Government of Canada finalized in the *Canada Gazette* its "Reduction of Carbon Dioxide Emissions from Coal-Fired Generation of Electricity Regulations" (Government of Canada, 2012). Coming into effect July 1, 2015, the regulations apply a performance standard to any new coal-fired electricity generation units and existing units that have reached the end of their useful life, which the regulation defines as 45 or 50 years of age (depending on the case). The performance standard is set at the emission intensity level of natural gas combined cycle technology (a type of high-efficiency natural gas generation) and is fixed at 420 tonnes/gigawatt hour (GWh).

On June 2, the U.S. EPA released a proposal for regulating GHG emissions from electric-utility-generating units in the country (EPA, 2014). The regulations will focus on existing plants, building on regulations concerning new plants that the EPA proposed in 2013.[4] The new proposed regulations will undergo a one-year public consultation process before taking effect.

In contrast to Canada, the EPA's regulations propose state-specific, rate-based goals for emissions from the power sector. They aim to reduce GHG emissions in the sector by 30 per cent relative to 2005 levels by 2030. Each state's goal is different based on (EPA, 2014):

- "how much the EPA believes that state can reduce the carbon intensity of power plants through efficiency improvements;
- how much a state can offset its emissions from the most-polluting power plants with natural gas and renewables; and
- how many energy efficiency measures have been taken by electric power customers that reduce the demand for electric power."

The two policies are similar in that they both carry flexibility for subnational jurisdictions to design and implement policy. In Canada, provinces are able to negotiate equivalency agreements if they have existing or planned policies that would achieve equivalent outcomes in terms of GHG abatement, with an equivalency agreement recently struck between Canada and Nova Scotia. The Canadian policy also has some transition measures in place that allow for some flexibility in the definition of end-of-useful-life that can ease the transition in some cases. In the United States, provisions in Section 111(d) of the *Clean Air Act* allow flexibility in states' implementation approaches, where each state can determine the appropriate combination of measures, such as increased generation and consumer efficiencies, expanded lower carbon (natural gas/nuclear) and renewable power generation, and increased transmission and distribution efficiency upgrades. In addition, the proposed guidelines would also allow states to collaborate and to demonstrate emissions performance on a multi-state basis, since many states' electricity sectors are closely tied, and to recognize and leave room for multi-state emission mitigation initiatives such as RGGI. The two countries' policies are also both flexible in that they do not prescribe technological solutions. The flexibility provisions found in both regulations enable states and provinces to deploy mitigation options cost-effectively and in ways that consider their unique contexts.

[4] The EPA's policy on new plants is not included in this analysis because, according to this policy's Regulatory Impact Analysis Statement, its impacts are believed to be negligible: "Analyses performed both by the EPA and the EIA project that generation technologies other than those utilizing coal (including natural gas-fired and renewable sources) are likely to be the technology of choice for new generating capacity due to current and projected economic market conditions. Therefore … the EPA anticipates that the proposed *EGU New Source GHG Standards* will result in negligible CO_2 emission changes, energy impacts, quantified benefits, costs, and economic impacts by 2022" (EPA, 2013, p. 13).

Divergences

As mentioned above, one significant difference between the two policies is that the target used in the Canadian policy is a benchmark based on the emissions intensity of a natural gas combined cycle unit, while in the United States the benchmark is state-specific and determined via a complex range of factors. Another divergence is that the Canadian regulations are targeted specifically at thermal coal units, while the U.S. regulations are targeted at the electricity sector in general. Because of coal's prominence in U.S. electricity sector emissions (75 per cent of sectoral carbon dioxide emissions in 2012 [EPA, 2012]), the U.S. policy is to some degree effectively targeted at coal, but the general electricity sector targeting does make for a nominally broader policy. However, this difference is mitigated by the fact that Canadian provinces can pursue equivalency agreements and thereby focus policy implementation on the electricity sector as a whole, if they choose.

A critical distinction between Canadian and U.S. coal emission regulations is the treatment of existing plants. The proposed U.S. regulations require emission reductions from the electricity sector as a whole, regardless of a plant's age. By contrast, the Canadian regulations require the shuttering of plants older than 50 years (45 years in some cases) unless they can be retrofitted to meet the standards, but require no mitigation action from existing plants until they reach this age. This distinction is an important temporal driver of their relative contributions to emission reductions.

Impacts

The Canadian electricity regulations are projected by the Government of Canada to mitigate 3.1 Mt carbon dioxide equivalent (CO_2e) of electricity sector emissions by 2020, or 0.4 per cent of 2011 total emissions, while the U.S. policy is projected to mitigate 283–383 Mt CO_2e[5] by 2020, or 4.9–6.6 per cent of 2011 total U.S. emissions.[6] The picture improves for the Canadian policy by 2030 as more of the country's coal plants reach the end of their useful life, with the policy contributing 24.9 Mt CO_2e of mitigation in 2030, or 3.5 per cent of total 2011 Canadian emissions. The U.S. policy's mitigation similarly improves by 2030, reaching 545–555 Mt CO_2e, or 9.4–9.6 per cent of total 2011 U.S. GHG emissions (EPA, 2014; Government of Canada, 2012). These various impacts are summarized in Figure 4.

[5] The range provided for U.S. emission mitigation estimates accounts for the different possible implementation approaches that could be adopted by states.

[6] The 2011 base year is used because it is the most recent year for which estimates are available for both countries.

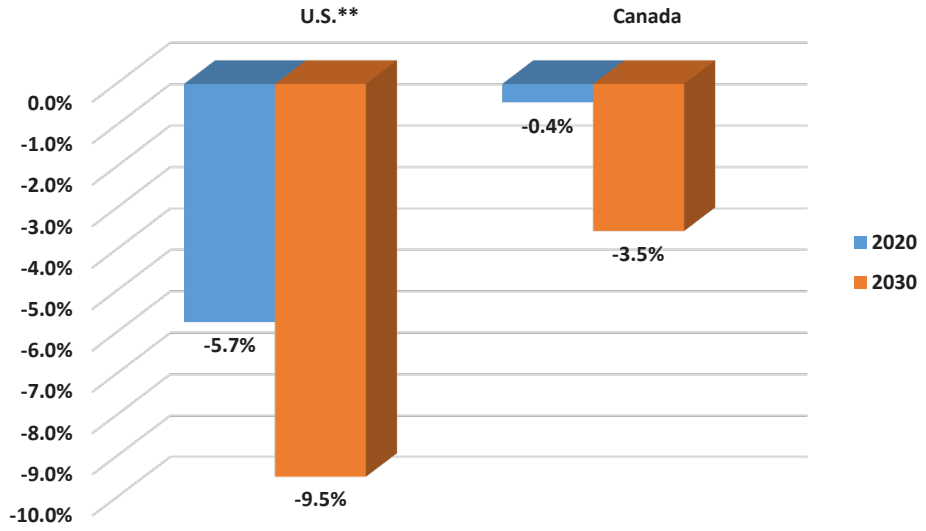

FIGURE 4. MITIGATION IMPACTS OF U.S. AND CANADIAN COAL REGULATIONS RELATIVE TO TOTAL 2011 EMISSIONS*

**The 2011 base year is used because it is the most recent year for which estimates are available for both countries*

***U.S. coal policy emission mitigation figures were graphed using the average impact of the various implementation scenarios modelled by the EPA in its Regulatory Impact Analysis Statement.*

As Figure 4 demonstrates, in terms of its contribution to 2020 Copenhagen pledges, the U.S. policy is much more impactful. Looking out to 2030, the impact of both policies increases significantly, but the contribution of the U.S. policy is still over two and a half times as large. An important driver of the U.S. policy's greater contribution by 2020 is its focus on the full inventory of power plants, compared to the Canadian policy's focus on only new plants and plants older than 50 years (45 in some cases). Another key driver of the U.S. policy's larger mitigation impacts is the fact that the U.S. electricity sector forms a larger share of the country's total emissions, as shown in Figure 3. When the effect of its larger electricity sector is removed and the emissions impact is instead expressed as a share of total 2011 sectoral emissions, as in Figure 5, the impact of the Canadian policy becomes more significant when looking to 2030, as more plants reach the end of their useful life between 2020 and 2030. The U.S.'s electricity sector GHG policies are comparatively less impactful on sectoral emissions by 2030 due to the fact that the country's shale gas revolution has lowered natural gas prices, which, combined with existing air pollution regulations, are facilitating a transition from construction of coal-based electricity production capacity to natural gas-based, thereby making associated GHG mitigation attributable to these broader trends and not to the country's electricity sector GHG policies.

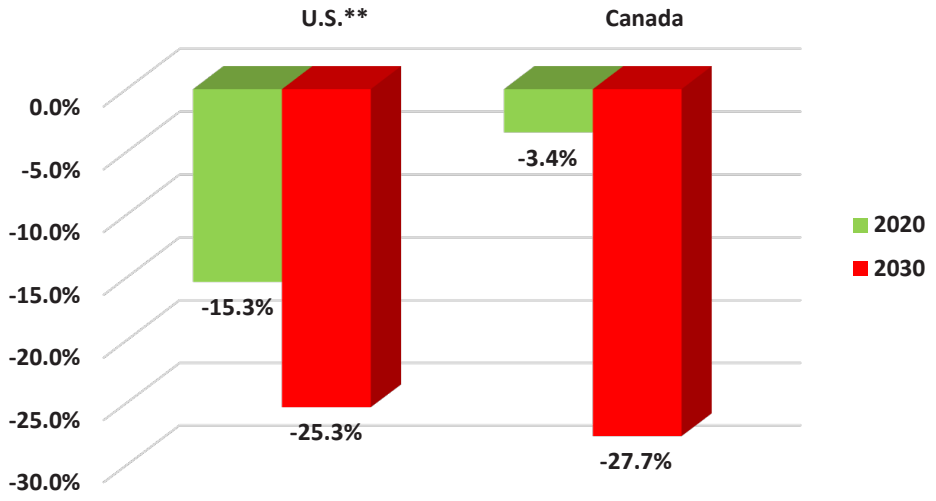

FIGURE 5. MITIGATION IMPACTS OF U.S. AND CANADIAN COAL REGULATIONS RELATIVE TO 2011 ELECTRICITY SECTOR EMISSIONS*

**The 2011 base year is used because it is the most recent year for which estimates are available for both countries*
***U.S. coal policy emission mitigation figures were graphed using the average impact of the various implementation scenarios modelled by the EPA in its Regulatory Impact Analysis statement.*

But overall, while this sectoral perspective is important, it is mitigation policies' impacts on a country's national inventory that measure their overall worth, and in this view the U.S. policy is much more impactful. It is, however, important to note that in both cases the emission mitigation figures are projections, which are subject to estimation errors and will ultimately depend on the degree to which the policies are successfully implemented. And the uncertainty surrounding implementation is particularly pronounced for the U.S. policy which, unlike the Canadian policy, has only been proposed and still needs to be enabled through state-level implementation plans while weathering federal and state legal challenges.

5.0 Discussion

As outlined in Section 3, the two countries' broad emission trajectories reveal a significant gap in the achievement of their Copenhagen pledges of 2020 emissions being 17 per cent below 2005 levels. The two electricity sector GHG regulations contribute to the achievement of these mitigation pledges but still leave large gaps, especially for Canada. By 2020, Canada's electricity sector policy delivers mitigation of 0.4 per cent relative to 2005 levels, while the U.S. policy delivers 4.6–6.2 per cent. Still, accounting for other policies and broader trends, this leaves the United States with a Copenhagen gap of approximately 9.4 per cent of 2005 emissions[7] and Canada with a gap of 16.6 per cent of 2005 emissions. These figures are summarized in Figure 6.

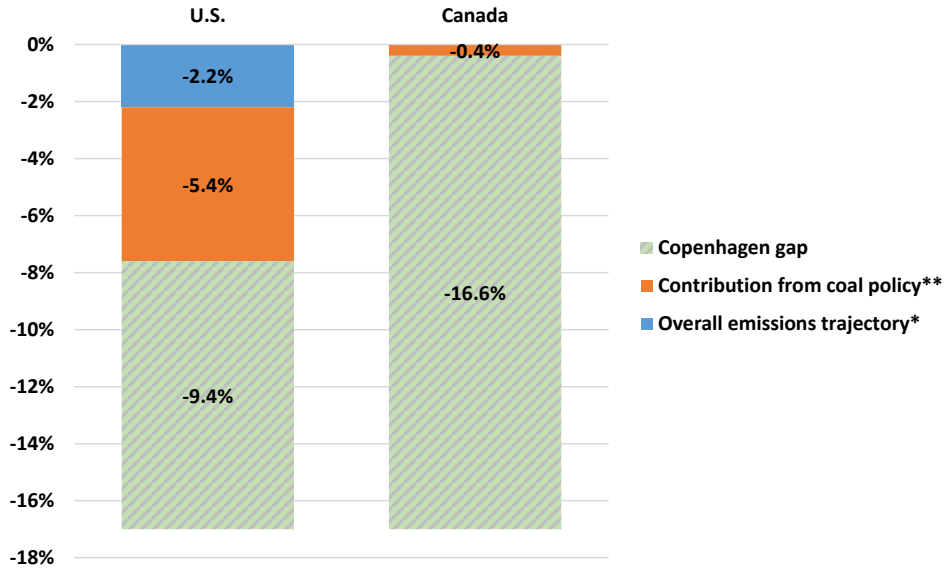

FIGURE 6. U.S. AND CANADIAN PROJECTED 2020 EMISSIONS, RELATIVE TO 2005 LEVELS

**The two countries' emissions trajectories account for the emission mitigation programs and policies in place in the United States as of September 2012 and Canada as of October 2013. The U.S. emissions trajectory represents the average between the EPA's modelled high- and low-sequestration scenarios. In the absence of its coal policy, Canada's 2020 emissions would be approximately equal to its 2005 emissions.*

***U.S. coal policy emission mitigation figures were graphed using the average impact of the various implementation scenarios modelled by the EPA in its Regulatory Impact Analysis Statement (EPA, 2014).*

By 2030 GHG electricity policies in both countries are expected to deliver greater annual mitigation.[8] Canada's policy would deliver mitigation of 3.4 per cent in 2030 relative to 2005 levels. Taken against the 14 per cent increase in emissions that would have occurred in the absence of the policy, this creates a net emissions increase of 10.6 per cent relative to 2005 level emissions, a significant increase from its 2020 levels. In comparison, the U.S. policy in 2030 delivers mitigation of about 9 per cent relative to 2005 levels, and taken against the 1.5 per cent increase in emissions that would have occurred otherwise creates a net emissions decrease of 7.4 per[9] cent relative to 2005 level emissions, which represents a slight increase from projected 2020 levels. These impacts are summarized in Figure 7.

[7] This figure represents the averages of the EPA's estimates for the contributions of the coal policy and of other policies.
[8] Neither country currently has yet made any mitigation pledges for 2030 but as part of a new international climate agreement will be developing post-2020 mitigation targets, or Nationally Determined Contributions. They are expected to be announced by March 2015.
[9] This figure represents the averages of the EPA's estimates for the contributions of the coal policy and of other policies.

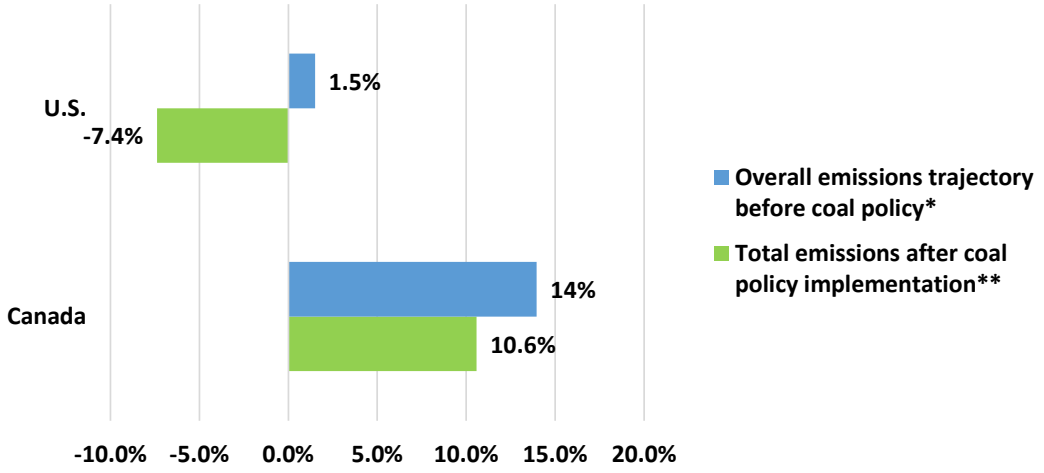

FIGURE 7. U.S. AND CANADIAN PROJECTED 2030 EMISSIONS, RELATIVE TO 2005 LEVELS

**The two countries' emissions trajectories account for the emission mitigation programs and policies in place in the U.S. as of September 2012 and Canada as of October 2013. The U.S. emissions trajectory represents the average between the EPA's modelled high- and low-sequestration scenarios. The impact of Canada's coal policy on 2030 emissions has been removed from its overall emissions trajectory figure so that it can be shown separately in the graph.*

***U.S. coal policy emission mitigation figures were graphed using the average impact of the various implementation scenarios modelled by the EPA in its Regulatory Impact Analysis Statement (EPA, 2014).*

As Figures 6 and 7 demonstrate, the United States has proposed a coal sector emission regulation policy that would have a significant impact on its national emissions inventory and contribute to honouring its 2020 mitigation pledge. This is because it targets both existing and new plants, as well as the fact that the electricity sector forms a very large share of total emissions in the United States. But it should be noted that, even with this policy, a Copenhagen gap of 9.4 per cent of 2005 emissions remains. The position of the EPA is that President Obama's Climate Action Plan will close the gap, but with no implementation timetable in place for many of the measures this remains uncertain.

In comparison to the United States, Canada's coal policy does little in terms of contributing to the country's 2020 Copenhagen pledge, even though it was proposed almost a full three years before the U.S. policy (Government of Canada, 2011). This is driven by the fact that the Canadian electricity sector is less carbon-intensive due to the predominance of hydroelectricity, and the fact that the regulations only deliver emission reductions from new and end-of-useful-life plants and do not require mitigation from existing plants that have not yet reached 50 years of age (45 in some cases). Given the current age of many plants in Canada, the policy affects few existing plants before 2020. Overall, given the lack of concrete additional mitigation plans and the time required for mitigation policy development and implementation, it is highly unlikely that Canada will be able to meet its 2020 commitment (Office of the Auditor General of Canada, 2012).

6.0 Conclusions

The Canadian and proposed U.S. electricity sector regulations have a number of similarities but also a number of important differences. The most important distinction between them in terms of the impact they have on national emissions by 2020 stems from the fact that the Canadian regulations prohibit new coal plants that do not meet the regulation's emissions standards and require the shuttering of plants older than 50 years (45 years in some cases) unless they can be retrofit to meet the standards. However, they require no emission mitigation from existing plants until they reach this age. The proposed U.S. regulations conversely seek ongoing reductions from a broader set of facilities through the imposition of a state-wide intensity standard to be met on an annual basis. This, along with the fact that the U.S. electricity sector forms a significantly larger share of total emissions than Canada's, contributes to the U.S. policy's greater mitigation impacts. If implementation proceeds in a timely fashion, the U.S. policy is expected to mitigate 5.4 per cent of 2020 emissions and 8.9 per cent of 2030 emissions, relative to 2005 levels, compared to the Canadian policy's mitigation of only 0.4 per cent of 2020 emissions and 3.4 per cent of 2030 emissions, relative to 2005 levels.

However, despite the larger relative contribution of the U.S. policy, neither country is currently on track to achieving its Copenhagen target of a 17 per cent reduction in economy-wide emissions by 2020 relative to 2005 levels, with significant gaps likely in both countries—with the U.S. projected to be 7.6 per cent below 2005 levels by 2020, and Canada 0.4 per cent. And between 2020 and 2030, emissions in both countries are expected to grow instead of fall, significantly so in Canada. If the two countries are serious about limiting their emissions, they will require both a timely implementation of existing plans and significant additional mitigation policy tackling emissions in other sectors.

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