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## Briefing Paper

# Tackling emissions from industry

## Federal regulation of industrial greenhouse gas emissions in the United States, and the implications for Canada

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### At a glance

In January 2011, the U.S. Environmental Protection Agency (EPA) will begin requiring new and expanded large industrial facilities to limit their emissions of greenhouse gases. The EPA could also regulate greenhouse gas emissions from all large industrial facilities, although it has not yet outlined plans to do so.

Despite announcing its intention to harmonize its climate change approach with the U.S., the Government of Canada has not yet announced a comparable regulatory program. Regulations like those the EPA is proposing could have significant implications for new industrial facilities in Canada; if adopted here, they would apply to rapidly growing sources of emissions, such as the oilsands sector. However, the significant uncertainty posed by legal and legislative challenges in the U.S. further strengthens the case for Canada to urgently implement a comprehensive greenhouse gas reduction plan of its own.

Proposals for new legislation to control greenhouse gases (GHGs) have stalled in the U.S. Senate, and are not anticipated to advance in the near term.<sup>1</sup> But the Obama Administration is introducing regulations<sup>2</sup> under an existing law — the Clean Air Act (CAA). This is currently the primary federal option for limiting U.S. emissions. This paper describes and assesses the regulatory approach to industrial GHG emissions being taken by President Obama's Environmental Protection Agency (EPA), its likelihood of success, and the implications of the U.S. approach for Canada.

### 1. Context

In light of the U.S. Congress's failure to date to pass comprehensive climate legislation, regulatory action from the EPA is currently the main proposed approach to curbing U.S. GHG emissions from industrial facilities. The CAA gives the EPA several means of regulating these

emissions, and the EPA is currently preparing to regulate GHG emissions from large industrial facilities using these existing authorities.

The Government of Canada has stated its intention to align its climate change policy approach with that of the U.S. For industrial facilities — which account for over half of Canada’s GHG emissions<sup>3</sup> — this includes the choice of cap-and-trade or more conventional regulation, as Environment Canada’s website explains: “Canada will only adopt a cap-and-trade regime if the U.S. signals that it will do the same. Our position on harmonizing our climate change approach with the United States’ applies equally to regulation. We have already completed much of the extensive analysis and consultation work required to prepare us for both of those options.”<sup>4</sup>

Then-Environment Minister Jim Prentice recently indicated his view that a conventional regulatory approach is more likely in the short term than cap-and-trade:<sup>5</sup>

“We will not introduce cap and trade legislation that is divorced from our principal economic and environmental partner. However, if the United States is prepared to go down a regulatory road, then we are prepared to go down that road on a continental basis.

At this point, my assessment is that it is unlikely that the U.S. Senate will introduce or pass cap and trade legislation in this year, and possibly unlikely even next year. ...

Over the course of the next year, you will see, for what is essentially a third of all of Canada’s emissions [principally those from transportation], a complete set of continental standards that we are developing in unison with the United States Environmental Protection Agency. That is the approach you will see over the course of the next few years on all sources of emissions [i.e., including industrial emissions].”

Minister Prentice re-iterated this view in advance of the U.S. mid-term elections, saying he anticipated that cap-and-trade “would be on the back burner for a continued period of time.”<sup>6</sup> This view has also been shared by Canada’s new “interim” Environment Minister John Baird, who replaced Mr. Prentice when he retired from Cabinet in early November.<sup>7</sup>

This paper outlines the most likely U.S. federal approach to regulating GHGs from “major stationary sources” — a category dominated by large industrial facilities such as power plants or oil refineries — and will explore the implications of the U.S. approach for Canadian climate policy.

## 1.1 The Clean Air Act’s regulatory tools

Under the CAA, the EPA can regulate GHG emissions from major stationary sources using three main tools:<sup>8</sup>

- **Pre-construction permitting:** Permits issued to new facilities or major modifications of existing facilities prior to construction, based on use of the best available control technology. The EPA will require these permits under the CAA once the EPA’s car and light truck GHG standards come into effect, which will happen in January 2011. The regulations for pre-construction permitting are discussed in Section 2, below.

- **Technology/performance standards:** Specific emissions limits for major “categories” of industrial sources based on the use of a specified technology or the achievement of a specified level of performance. These regulations are discussed in Section 3, below.
- **Air quality standards:** Maximum allowable concentration for an air pollutant. The EPA sets National Ambient Air Quality Standards (NAAQS) for each pollutant, then states are responsible for bringing each area into compliance (or maintaining compliance) with the standards. Most analysts agree that this approach is poorly suited to GHG regulation and is unlikely to be used. For this reason, we do not discuss it in this paper.

The EPA is legally required to proceed with the first of the options above. Additional regulatory action — constituting a more comprehensive regulatory approach to GHGs — may use either of the two remaining tools in parallel with the first. It appears that the EPA has the discretion to decide which it chooses, although some disagree with that interpretation.<sup>9</sup>

Assuming that this discretion holds, the EPA has given indications that it regards a GHG program based on technology/performance standards as a far better fit and far more likely than one based on air quality standards.<sup>10</sup> For these reasons, most experts agree that the most likely path for the EPA to take in regulating GHG pollution, beyond the required permitting programs, is through New Source Performance Standards (NSPS) under Section 111 of the CAA.<sup>11</sup>

This paper will therefore focus on the two most likely elements of the U.S. regulatory approach to industrial GHGs: pre-construction permitting (Section 2) and technology/performance standards (NSPS, Section 3).

It should be noted, however, that any approach the EPA chooses is subject to challenge from both legislators and the courts. The EPA must tread a fine line between fulfilling its statutory duties to regulate, and potentially provoking lawmakers into removing its authority to do so.<sup>12</sup> Legislators have already made several attempts to curtail or temporarily suspend the EPA’s ability to regulate GHGs, and these are expected to continue. In addition, court challenges to all of the EPA’s GHG rules are already underway.<sup>13</sup> Continued challenges appear inevitable, no matter which way the EPA chooses to progress. Legal and legislative challenges are outlined in Section 5.

## 2. Prevention of Significant Deterioration — Regulating new and modified sources using permitting

The EPA currently regulates emissions of various pollutants, including “criteria air contaminants” like NO<sub>2</sub>, SO<sub>2</sub> and lead, through the permits it issues to large industrial facilities. Once a regulation to control an air pollutant takes effect, the CAA requires new and modified major sources of that pollutant to obtain a permit and to demonstrate the application of the best available control technology.<sup>14</sup>

The Supreme Court ruled in 2007 that GHGs were pollutants under the CAA and ordered the EPA to determine whether GHG emissions from motor vehicles cause or contribute to air pollution reasonably anticipated to endanger public health or welfare.<sup>15</sup> The EPA issued its final “endangerment” and “cause or contribute” findings for GHGs on December 15, 2009,<sup>16</sup> requiring the agency to regulate GHG emissions from cars and trucks. Tailpipe GHG emission standards for light duty vehicles from the model years 2012 to 2016 were finalized in May 2010.<sup>17</sup>

According to the EPA, since these standards will be the first regulations to control GHGs under the CAA, they will trigger permitting requirements for GHG emissions from stationary sources when they take effect.<sup>18</sup> This date has been identified as January 2, 2011, the first day manufacturers may sell a model year 2012 vehicle. Thus, from January 2, 2011, GHGs must be included in permitting programs.<sup>19</sup>

The EPA administers several such programs. Prevention of Significant Deterioration (PSD) is a process under the New Source Review (NSR) program that companies must complete in order to construct or modify a major facility.<sup>20</sup> The PSD program is designed to ensure that air quality is maintained and that state-of-the-art pollution control technology is used.<sup>21</sup> To obtain a PSD permit, proposed new or modified major sources of pollutants must apply “Best Available Control Technology,” or BACT.<sup>22</sup> BACT is defined as “an emission limitation based on the maximum degree of reduction of each pollutant... which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility through the application of production processes and available methods, systems and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant.”<sup>23</sup>

It should be noted that the “permitting authorities” under the CAA are typically state governments, with permitting administered at the state level through EPA-approved State Implementation Plans (SIPs). States may further delegate authority to county or metropolitan area air quality authorities.

## Determining BACT

BACT is determined by the permitting authority (i.e., the federal, state or local government, depending on the context) on a case-by-case basis, typically using a top-down process. After drawing up a menu of all available emission control technologies, technologically infeasible options are removed, the remaining options are ranked by control effectiveness, and the relative environmental, economic, and energy impacts of each option are evaluated. The permitting authority then selects the BACT, and a PSD permit is granted specifying an emission limit corresponding to the use of BACT.<sup>24</sup>

The EPA’s recently published guidance on BACT highlights a heavy emphasis on energy efficiency, particularly in the initial stages of BACT for GHGs.<sup>25</sup> However, the guidance makes clear that “add-on” controls, or a combination of the two, may also be considered. In order to assist permitting authorities in conducting these reviews swiftly, the EPA has issued a series of “technical white papers” outlining readily available control technologies for a number of common emissions sources; it will also examine means of streamlining the BACT determination process in its Step 3 rulemaking (see Section 2.2). Some have suggested that the EPA may establish a “presumptive BACT,” setting a clear benchmark for what constitutes BACT in common situations, which permitting authorities would then be expected to apply.<sup>26</sup> However, many view this as unlikely, given the case-by-case nature of BACT determinations.<sup>27</sup>

The EPA has established an advisory group to guide its work on BACT for GHGs. The group's first report reveals a lack of consensus in many areas. Clearly, some BACT determinations will be difficult to make, and there is a considerable range of potential outcomes.<sup>28</sup> Ultimately, the stringency of these determinations will be guided by the EPA's level of ambition, as well as that of the permitting authorities. But as noted in Section 4, the emission-reducing effectiveness of the EPA's regulations appears likely to be lower than that of most of the recent legislative proposals that the U.S. Congress considered.<sup>29</sup>

## 2.1. Need for the Tailoring Rule

The PSD program outlined above currently defines a major source as one that emits over 100 or 250 short tons<sup>30</sup> per year (tpy) of a regulated air pollutant.<sup>31</sup> These thresholds would apply to GHGs beginning on January 2, 2011. In other words, a literal interpretation of the CAA would require any new or modified stationary source emitting more than 100/250 tpy of carbon dioxide (CO<sub>2</sub>) or another GHG to obtain a permit from the beginning of 2011.<sup>32,33</sup> For comparison, 100 tpy of CO<sub>2</sub> is equivalent to the annual emissions of about eight typical U.S. homes.<sup>34</sup> The EPA has estimated that this literal interpretation of the CCA would mean that "PSD permit applications would increase nationwide from 280 per year to over 81,000, a 300-fold increase, requiring state permitting authorities to add almost 10,000 full-time employees and incur additional costs of \$1.5 billion per year."<sup>35</sup>

The EPA's "Tailoring Rule," which was finalized on May 13, 2010, seeks to prevent this proliferation of permitting requirements by "tailoring" the applicability criteria for GHGs under the PSD programs.<sup>36</sup> The rule adjusts the major source thresholds to cover only the biggest emitters, and the program is designed to phase in through several steps. Sources emitting less than 50,000 tpy CO<sub>2</sub>e<sup>37</sup> are excluded from permitting requirements for GHGs until at least April 30, 2016.<sup>38</sup>

## 2.2 Coverage and phase-in of the Tailoring Rule

Under the Tailoring Rule, the EPA has opted to phase in GHG permitting through several steps. After Steps 1 and 2 (outlined below) are completed, the EPA estimates that its permitting programs will cover 70% of GHGs from stationary sources — equivalent to roughly a third of total U.S. GHG emissions.<sup>39</sup>

**Step 1 (Jan 2, 2011<sup>40</sup>):** Under this initial phase of the Tailoring Rule, only new facilities or modifications to existing sources that would already have been subject to the PSD process are covered. This applies only to facilities or modifications that (i) increase GHGs by 75,000 tpy<sup>41</sup> CO<sub>2</sub> equivalent (CO<sub>2</sub>e) or more and (ii) would trigger the PSD process anyway for another pollutant. If these criteria are met, permitting the construction or modification of these "anyway" PSD sources will require a BACT review. The EPA estimates that Step 1 will apply to fewer than 400 facilities.<sup>42</sup>

**Step 2 (July 1, 2011):** Beginning with Step 2, new sources with the potential to emit 100,000 tpy<sup>43</sup> CO<sub>2</sub>e or more are subject to PSD, regardless of whether they trigger PSD for other pollutants.<sup>44</sup>

Additions or modifications to a major source resulting in a net increase of 75,000 tpy CO<sub>2</sub>e are also subject to the PSD process, even if PSD is not triggered for any other pollutants.<sup>45</sup> The EPA anticipates there will be roughly 900 PSD permits issued for GHGs each year under Step 2.<sup>46</sup>

**Step 3 (July 1, 2013):** The EPA has also committed in the Tailoring Rule to implement an additional regulation to facilitate the PSD process and, potentially, add or permanently exclude smaller sources. The additional rule will be finalized by July 1, 2012 and will enter into force one year later. As noted above, sources below 50,000 tpy CO<sub>2</sub>e cannot be covered before April 30, 2016.

## CCS, BACT and performance standards

The potential role of carbon capture and storage (CCS) in GHG regulations is the subject of much debate. The EPA advisory committee for BACT has agreed that whether CCS can be ruled as BACT depends on the feasibility of both capture and sequestration systems.<sup>47</sup> Many factors determining the feasibility of sequestration will be site-specific. The EPA's BACT guidance classifies CCS as an add-on pollution control technology that is "available" for "large CO<sub>2</sub>-emitting facilities including fossil fuel-fired power plants and industrial facilities with high-purity CO<sub>2</sub> streams (e.g., hydrogen production, ammonia production, natural gas processing, ethanol production, ethylene oxide production, cement production, and iron and steel manufacturing)," meaning that CCS should be listed amongst options for consideration for these facilities.<sup>48</sup> However, they acknowledge that, "at this time CCS will not be a technically feasible BACT option in certain cases."<sup>49</sup> Moreover, despite its potential technical feasibility, "on the basis of the current costs of CCS," the EPA "expect[s] that CCS will often be eliminated from consideration... even in some cases where underground storage of the captured CO<sub>2</sub> near the power plant is feasible. However, there may be cases at present where the economics of CCS are more favorable (for example, where the captured CO<sub>2</sub> could be readily sold for enhanced oil recovery), making CCS a more viable option."<sup>50</sup>

CCS-level emissions limitations could also be mandated via an NSPS (see Section 3, below). This could be done by setting NSPS levels for certain source categories, such as power plants, at such a level that any new coal-fired plant could only achieve the standard with full or partial CCS.<sup>51</sup> This approach has already been taken in a number of jurisdictions, including California, Illinois, Washington and Montana. In California and Washington, new baseload electricity generation (whether generated in or out of state) may not exceed the emissions of older natural gas combined cycle (NGCC) plants — a standard that requires partial CO<sub>2</sub> capture.<sup>52</sup> New utility coal plants constructed in Montana have been required to implement 50% or more CCS since 2007.<sup>53</sup> Illinois requires new coal plants to capture increasing amounts of emissions based on when they are scheduled to commence operation (at time of construction). Plants scheduled to open before 2016 must capture 50%; 70% capture is required for plants openings in 2016 or 2017, while plants switching on after 2017 must capture 90% of their emissions.<sup>54</sup> Like those state regulations, the EPA can also determine when the NSPS applies, allowing time for CCS to mature. An evaluation by the Pew Centre concluded that a CCS standard applying to new plants from 2015–20 appears reasonable.<sup>55</sup> In addressing GHG emissions from existing facilities, the EPA can also direct states to apply an NSPS based on the age of the facilities.

## 2.3 Implementation of the Tailoring Rule

CAA permitting programs are generally administered by states through EPA-approved State Implementation Plans (SIPs). The EPA published two proposals in August 2010 aimed at facilitating the implementation of the Tailoring Rule.<sup>56</sup> The EPA is calling on 13 states to amend their SIPs to ensure that GHGs are covered before tailored GHG permitting takes effect. The EPA has also proposed a Federal Implementation Plan (FIP) that would allow it to issue permits for emitters in states that are not ready as an interim measure, until those jurisdictions implement amended SIPs of their own. Analysis of state responses by the National Association of Clean Air Agencies finds that every state and territory except Texas will be ready to begin permitting GHGs on January 2, 2011 or shortly thereafter, whether through their own amended SIP or the proposed FIP.<sup>57</sup>

## 2.4 Implications for Canada of PSD permitting

If Canada is to harmonize its climate change policy approach with that of the U.S., then Canadian regulations covering GHGs from new or modified major stationary sources will need to come into force in January 2011. In a harmonized Canadian approach, any new facilities or major modifications that would increase annual emissions by ~68 kilotonnes (kt) CO<sub>2</sub>e or more and also significantly increase emissions of another air pollutant should be subject to a BACT-type review from January 2, 2011. This is equivalent to the 75,000 tpy threshold in the Tailoring Rule. Six months later, BACT review should also be required for all new facilities with the potential to emit over ~91 kt CO<sub>2</sub>e per year, even if they do not significantly increase emissions of another air pollutant.<sup>58</sup> (In practice, nearly all facilities that are major GHG emitters will also have significant emissions of other air pollutants.)

Adopting this approach in Canada would have implications for GHG emission levels for new facilities and planned expansions, particularly in the oilsands sector — the most rapidly growing major industrial sector in the country. Although the BACT approach does not necessarily lead to an absolute reduction in emissions, it would require companies to use effective emission control technologies. It is important to note that the EPA's GHG requirements will apply to facilities that had already obtained a permit if construction has not yet begun (or has lapsed) by January 2<sup>nd</sup>.<sup>59</sup> Applied to Canada, this would mean that all new oilsands facilities or major expansions that had not begun construction would be subject to GHG regulations, even if they had already been approved.

If it proceeds with an approach to regulating industrial GHG emissions that resembles the EPA's, the Government of Canada will have to decide how it wishes to determine BACT. Some emission sources that are relatively unique to Canada — including oilsands upgraders or gas plants processing shale gas with high formation CO<sub>2</sub> (such as those in the Horn River Basin in Northeastern B.C.)<sup>60</sup> — are unlikely to be prioritized by the EPA in their guidance<sup>61</sup> or addressed by permitting authorities, which means that the Government of Canada would need to establish BACT guidelines of its own.

### 3. New Source Performance Standards — Regulating new and existing sources using emissions intensity standards or cap-and-trade

In parallel to permitting programs like PSD, described above, the EPA could also regulate GHGs through the New Source Performance Standards (NSPS) program under Section 111 of the CAA. This route is recognized by most analysts as the best fit for an EPA program to regulate GHGs, and has been the focus of study as the most likely pathway forward for additional GHG regulation.<sup>62</sup>

The NSPS are emissions limitations applied by source category, based on application of the best demonstrated technology. There are currently more than 60 source categories and subcategories, including Portland cement, boilers and turbines used in power plants, nitric and adipic acid plants, and oil refineries.<sup>63</sup> Despite their name, NSPS can apply to both new and existing facilities. Best demonstrated technology is defined as:

“The degree of emission limitation and the percentage reduction achievable through application of the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated.”<sup>64</sup>

For new facilities, the NSPS are set by the EPA. However, once a source category is regulated, Section 111(d) of the CAA also requires states to cover existing facilities, under guidance from the EPA. In doing so, states may take into account the age and “remaining useful life” of facilities to which they are applying the standard, giving them additional flexibility (for example, as to when the standards would apply, or at what level of stringency).<sup>65</sup>

The EPA can address GHGs through NSPS in two ways. One is to use a traditional approach to the NSPS, which means adding GHG performance standards — i.e., standards for emissions intensity<sup>66</sup> — for each source category one by one.<sup>67</sup> Another alternative is to establish a broader cap-and-trade system.<sup>68</sup> The CAA also allows for the option of implementing a limited cap-and-trade system beginning with one sector (electric utilities, for example), and expanding it in future to cover more sectors.<sup>69</sup>

#### 3.1 Cap-and-trade under NSPS

Some form of cap-and-trade proposal is widely seen as the best way forward under the NSPS.<sup>70</sup> Although there is limited precedent for trading under Section 111, the EPA has proposed and implemented trading systems before, for other pollutants, and maintains it has the authority to implement such a system for GHGs under Section 111(d).<sup>71</sup> However, as one group notes, “[legal] challenge is likely and victory is not certain.”<sup>72</sup>

The EPA could lay out a model plan for a cap-and-trade system at the same time it issues guidelines to the states for regulating their existing facilities. This guidance would be binding and the EPA would be able to establish a FIP (federal implementation plan) for states that are unwilling or unable to adopt the program.<sup>73</sup> If the EPA combines existing source categories, such a system could potentially cover multiple sectors. However, it is unlikely that a cap-and-trade

system under the NSPS would be able to include offsets.<sup>74</sup> It should be noted that, in the near term, a state-instigated approach to cap-and-trade under the NSPS seems much more likely than a national system.<sup>75</sup> Given the political shifts of the recent mid-term elections and the potential for legal challenges (see Section 5), it appears unlikely the EPA would propose a mandatory cap-and-trade system, at least in the next two years.

There are a number of benefits to a cap-and-trade approach under the NSPS. By allowing trading, this approach would generate reductions more cost-effectively. Because there is considerable flexibility in the scope and design of the system, the EPA could seek to emulate the key compromises and agreements made in congressional negotiations for recent legislative proposals to implement cap-and-trade. The EPA could also tailor the regulations to reflect the specificities of individual sectors and could work with industry in designing the regulations, as it did in formulating the recent light-duty vehicles regulation.<sup>76</sup> States could use their jurisdiction to implement allowance auctioning.<sup>77</sup> By using past legislative proposals as a model, the EPA's program could serve as the foundation for future legislation that could either build on or replace the EPA's system.<sup>78</sup>

### 3.2 Waiver for innovative technologies

Under Section 111(j) of the CAA, the EPA may grant a waiver that exempts a facility from NSPS requirements if that facility opts to use innovative technologies that have not yet been adequately demonstrated and where “there is a substantial likelihood that such system or systems will achieve greater continuous emission reduction than that required to be achieved under the standards... or achieve at least an equivalent reduction at lower cost in terms of energy, economic, or non-air quality environmental impact.”<sup>79</sup>

In theory, granting this waiver serves to accelerate the development and deployment/demonstration of new emission control technologies. Such waivers remain in effect for the shortest of the following:

- a. Seven years from their date of issue;
- b. Four years after the source in question commences operation; or
- c. Until the Administrator deems the technology has failed to demonstrate a level of reductions at least equivalent to the standard or that it does not “cause or contribute to an unreasonable risk to public health, welfare, or safety in its operation, function, or malfunction.”<sup>80</sup>

Alternatively, the EPA can establish multi-phased standards for a particular source category, requiring increased levels of stringency over time in line with anticipated deployment of emerging technologies, such as CCS.<sup>81</sup>

### 3.3 Implications for Canada of the New Source Performance Standards

Whether, when and how the EPA intends to introduce NSPS for GHGs is not yet clear. Equally unclear is the level of stringency the EPA would apply to the standards, if implemented. However, should the EPA proceed with NSPS for GHGs, Canada must be prepared to follow if it seeks to be harmonized with U.S. policy on industrial emitters.

Implementing a Canadian version of NSPS at the federal level would involve the same challenge described above in Section 2 for the EPA's permitting approach: the Government of Canada would need to decide what constitutes "best demonstrated technology" for several emission source categories that are relatively unique to Canada.

Establishing a cap-and-trade system harmonized with the U.S. would raise additional issues related to the desirability of linking cap-and-trade systems.<sup>82</sup>

The Government of Canada's recently announced approach to regulating GHGs from coal-fired electricity generation<sup>83</sup> is broadly similar to an NSPS. The exemption available for facilities implementing CCS is similar in concept to the innovative technology waiver available under Section 111(j) of the CAA. However, alignment with the CAA would require the length of the Canadian exemption to be shortened (see Section 3.2, above) from the current federal proposal of 10 years (if plant begins operation in 2015) to seven years or less. Furthermore, while Canada's proposed federal coal-fired electricity regulations (as outlined to date) are generally consistent with the CAA, they address only new units and those reaching the end of their economic lives. It is clear that NSPS for U.S. coal plants would also require reductions from existing facilities that are not approaching the end of their economic lives.

#### 4. Emission reductions achievable with regulations and broader implications

Although no studies are publicly available for Canada, the World Resources Institute (WRI) has estimated the amount of emission reductions feasible through federal GHG regulation in the U.S.<sup>84</sup> The outcomes vary with the level of stringency assumed, but it is noteworthy that even the most ambitious scenario falls well short of the 2020 GHG emissions target adopted by both the U.S. and Canada.<sup>85</sup> Two important implications can be drawn from this for Canada.

First, while PSD permitting for major sources will begin in 2011, WRI assumes that NSPS for existing sources will not take effect until 2016 at the earliest. This reflects the time required to develop the standards federally, then at the state level, and to give existing sources adequate time for compliance. As in the U.S., such a lengthy delay would seriously jeopardize Canada's ability to achieve its 2020 GHG target.

Second, Canada's emissions are growing more rapidly than those of the U.S. They have risen slightly relative to their 2005 level, while U.S. emissions have declined.<sup>86</sup> More importantly, Canada's emissions are anticipated to resume rapid growth,<sup>87</sup> while U.S. emissions are projected to remain below 2005 levels until 2025.<sup>88</sup> These factors make it very unlikely that regulations whose stringency was designed with the U.S. national GHG target in mind would enable Canada to meet its own national emissions target.

#### 5. Legal and legislative challenges

No matter which approach the EPA takes to the regulation of GHGs, legal and legislative challenges are virtually certain. Indeed, these have already begun. As the managing director of the Brookings Institution recently put it, "amid legislative uncertainty, people are going to rush to the courts to modify the playing field to best advantage for their team. This is going to be the battleground for the near future."<sup>89</sup> To date, roughly 90 legal challenges have been filed related to

four distinct GHG-related EPA actions, with submissions from over 140 groups — including 37 states.<sup>90</sup>

What is not yet clear is whether these lawsuits will delay implementation of the regulations. It is up to the courts to decide whether or not to issue a stay of each (or any) of the regulations while the legal challenges are being heard.<sup>91</sup> The Obama Administration argues that challengers “cannot establish any — let alone all — of the elements required for issuance of a stay: that movants are likely to succeed on the merits; that they will be irreparably harmed absent a stay; that a stay would redress the harms of which they complain; and that these factors clearly outweigh the substantial harms to others and to the public interest that will occur if a stay is issued.”<sup>92</sup> In the Administration’s view, by challenging the stationary source regulation “that would automatically ensue, purely by operation of statute, once greenhouse gases become subject to regulation under the Act through any means,”<sup>93</sup> opponents “essentially seek to stay the Clean Air Act itself,” which courts cannot do.<sup>94</sup> A decision on possible stays is expected imminently.<sup>95</sup>

Because it relaxes, by interpretation, clear statutory text, many experts agree that the Tailoring Rule is the weakest link in the legal chain required to regulate GHGs.<sup>96</sup> The EPA’s authority to include GHGs in its permitting programs is highly unlikely to be challenged successfully,<sup>97</sup> but its discretion to tailor emissions thresholds and timing has raised legal questions.<sup>98</sup> This means that even if the Tailoring Rule is struck down, the EPA will still be required to include GHGs in its permitting efforts. But instead of restricting that process to large facilities, the loss of the Tailoring Rule would expose thousands more small sources to regulation. As the Administration puts it, “[i]n their zeal to challenge *any* possible underpinning of EPA’s actions, [challengers] even seek to stay the Tailoring Rule — a rule intended to *alleviate*, for literally *millions* of stationary sources, the very regulatory burdens [the challengers] abhor.”<sup>99</sup> According to U.S. analysts, one consequence of this is that Congress would likely decide to step in and amend the CAA.<sup>100</sup>

Another court challenge that could interfere with the EPA’s regulatory plans is a lawsuit that would force the EPA to establish a national ambient air quality standard (NAAQS) for GHGs, a requirement some environmental groups believe was triggered by the “endangerment” finding.<sup>101</sup> Pollutants subject to a NAAQS cannot be regulated under CAA Section 111(d), meaning that existing sources could no longer be regulated through the NSPS.<sup>102</sup>

In addition to the legal challenges, the EPA has also been the target of legislators seeking to remove or temporarily suspend its authority to regulate GHGs.<sup>103</sup> These efforts are expected to intensify following significant Republican gains in the mid-term elections.<sup>104</sup>

The Senate is expected to vote, as early as this fall, on a proposal to suspend the EPA’s regulations for two years.<sup>105</sup> If such a vote takes place in 2011, it may garner an additional 10 votes or more compared to the current Senate. Although the new Senate will still be controlled by the Democrats, it will be more conservative. This, according to analysts, brings the number of votes up to 57 — very close to the 60 votes effectively needed to pass a bill in the Senate.<sup>106</sup> Republicans will hold a majority in the House of Representatives and could pass a similar bill there. However, it is still unclear whether such a proposal could be passed into law, because the President has in the past announced his intention to veto any attempt to undermine the EPA’s

authority.<sup>107</sup> Following poor results for the Democrats in the mid-terms, some speculate he may feel more pressure to compromise.<sup>108</sup>

The Republican representative most likely to chair the House Energy and Commerce Committee has already signaled that challenging EPA regulations will be his top priority.<sup>109</sup> His main competitor for the position has promised to “aggressively review the endangerment finding” if he becomes chairman.<sup>110</sup> Lawmakers are also expected to challenge the EPA’s regulatory ability through the appropriations process, attempting to either strip the agency’s funding for GHG regulations, or attach a rider suspending its regulatory authority over GHGs to a critical budget bill. This approach is being urged by the Chamber of Commerce and American Petroleum Institute.<sup>111</sup> Such bills need to be signed by the President, however, so a veto is possible here as well.<sup>112</sup>

## 6. Conclusion

While Canada has adopted a national GHG emissions target identical to the U.S. target of 17% below the 2005 level by 2020, the Government of Canada has not published a plan, bill or set of regulations to meet that target. At a minimum, if the Government of Canada is serious about harmonization with the U.S., it should have GHG regulations in effect in 2011 for new major industrial facilities, as the U.S. will do under the EPA’s approach. This must, of course, include any new oilsands facilities.

However, the Pembina Institute’s perspective is that waiting for and then imitating decisions made in Washington — whether they pertain to legislation or regulation — is not a responsible approach to climate policy for Canada, and is not in Canada’s best interests. This is especially true when the timeline and ultimate outcome of U.S. policy development are so uncertain. While we recognize that U.S. climate law and policy is an important consideration as Canada determines the policies and measures required to meet its targets to limit GHG emissions, there is no guarantee that an approach that works in the U.S. will be adequate to meet Canada’s own 2020 GHG target. In fact, economic analysis suggests that Canada will need a higher price on emissions to reach the same 2020 target (17% below the 2005 emission level) as the U.S.<sup>113</sup> As noted above, federal regulatory options currently available in the U.S. are unlikely to generate the emissions reductions required to meet its own target, even with a high level of ambition. This means they would be even less adequate to attain Canada’s.

If the Government of Canada does intend to reach — or, even better, exceed — the level of emission reductions it committed to through the Copenhagen Accord, Canada’s policymakers will need to implement policies aligned with that goal, even if that means moving more quickly than the U.S. Of course, any U.S. climate and energy bill or regulatory approach will be designed with the U.S.’s particular situation in mind; as this backgrounder has noted, the U.S. regulatory approach would need to be adapted to suit Canada’s specific economic, emissions, regional and jurisdictional situation.

The EPA has initiated a process to enforce emission standards for some industrial facilities beginning in January 2011. In our view, the best way for Canada to provide much-needed certainty to investors, to cut its own emissions, and to increase its leverage and influence in Washington, is to move ahead with strong federal action as soon as possible. As part of that, the

Government of Canada needs to develop a specific and credible strategy to address its fastest growing source of GHG emissions, those from the oilsands sector.

Implementing a carbon pricing or regulatory approach for GHGs of demonstrably greater stringency than the U.S. approach is also surely the most effective way to protect Canadian industries from border “carbon tariff” policies.

*“In fact, uncertainty as to future regulation is becoming a major barrier to investment in nonconventional oil and natural gas industries. Canada should thus remain vigilant and not import avoidable climate-policy uncertainty from its neighbour.”*

— OECD, 2010<sup>114</sup>

## Endnotes

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<sup>1</sup> Patrick Reis and Elana Schor, “Cap and trade dead next session — Reid,” *E&ENews PM*, November 16, 2010. For an assessment of the impact the recent mid-term elections may have on climate legislation see, for example, Dina Fine Maron and Saqib Rahim, ‘House goes Republican; enviros brace for climate changes,’ *ClimateWire*, November 3, 2010.

<sup>2</sup> Note: in the U.S., regulations are also commonly referred to as “rules.”

<sup>3</sup> P.J. Partington and Matthew Bramley, *Canada’s Main Sources of Greenhouse Gas Emissions — 2008* (Drayton Valley, AB: The Pembina Institute, 2010). Available online at <http://pubs.pembina.org/reports/canada-2008-summary-v3.pdf>.

<sup>4</sup> Government of Canada, *Cap and Trade*, <http://www.climatechange.gc.ca/default.asp?lang=En&n=8343927F-1> (accessed October 19, 2010)

<sup>5</sup> Senate of Canada, *Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources*, Issue 2 — Issue 2, Evidence, April 15, 2010. Available online at [http://parl.gc.ca/40/3/parlbus/commbus/senate/Com-e/eng-e/02evc-e.htm?Language=E&Parl=40&Ses=3&comm\\_id=5](http://parl.gc.ca/40/3/parlbus/commbus/senate/Com-e/eng-e/02evc-e.htm?Language=E&Parl=40&Ses=3&comm_id=5).

<sup>6</sup> CBC News, *Cap-and-trade likely on hold: Prentice*, November 2, 2010, <http://www.cbc.ca/technology/story/2010/11/02/canada-prentice-cap-trade-elections.html>.

<sup>7</sup> Malorie Beauchemin, “Conférence de Cancún: Ottawa va garder le cap,” *La Presse*, November 16, 2010. Available online at <http://www.cyberpresse.ca/environnement/climat/201011/15/01-4342999-conference-de-cancun-ottawa-va-garder-le-cap.php>.

<sup>8</sup> Nathan Richardson et al., *Greenhouse Gas Regulation under the Clean Air Act: Structure, Effects, and Implications of a Knowable Pathway* (Washington, DC: Resources for the Future, 2010). Available online at <http://www.rff.org/News/Features/Pages/Greenhouse-Gas-Regulation-under-the-Clean-Air-Act-Structure-Effects-and-Implications-of-a-Knowable-Pathway.aspx>. Several of these tools could be authorized under multiple, distinct sections of the CAA as part of a more comprehensive regulatory program for GHGs. These options are outlined in Richardson et al. For further discussion, see Timothy Mullins and M. Rhead Enion, “(If) Things Fall Apart: Searching for Optimal Regulatory Solutions to Combating Climate Change Under Title I of the Existing CAA if Congressional Action Fails,” *Environmental Law Reporter* 40(9) (2010). Available online at <http://nicholasinstitute.duke.edu/climate/policydesign/if-things-fall-apart>.

<sup>9</sup> Richardson et al. See also Jonas Monast et al., *Avoiding the Glorious Mess: A Sensible Approach to Climate Change and the Clean Air Act* (Durham, NC: Duke University, 2010). Available online at <http://nicholasinstitute.duke.edu/climate/policydesign/avoiding-the-glorious-mess>.

<sup>10</sup> Richardson et al.

<sup>11</sup> Ibid; Monast et al.; Mullins and Enion; and Nicholas Bianco and Franz Litz, *Reducing Greenhouse Gas Emissions in the United States Using Existing Federal Authorities and State Action* (Washington, DC: World Resources Institute, 2010). Available online at <http://www.wri.org/publication/reducing-ghg-emissions-using-existing-federal-authorities-and-state-action>.

<sup>12</sup> Monast et al.

<sup>13</sup> Gabriel Nelson, “It’s red states vs. blue in legal war over EPA rules,” *Greenwire*, October 12, 2010.

<sup>14</sup> Environmental Protection Agency, *Final Rule: Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule*, fact sheet (Washington, DC: Government of the United States, 2010). Available online at <http://www.epa.gov/nsr/documents/20100413fs.pdf>.

<sup>15</sup> Supreme Court of the United States, *Opinion of the Court: Massachusetts et al. v. Environmental Protection Agency et al.*, No. 05-1120 (Washington, DC: Supreme Court of the United States, 2007), 26, 29–30. Available online at <http://www.supremecourt.gov/opinions/06pdf/05-1120.pdf>.

<sup>16</sup> Environmental Protection Agency, *Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act*, web page, October 15, 2010, <http://www.epa.gov/climatechange/endangerment.html>.

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<sup>17</sup> Environmental Protection Agency and National Highway Traffic Safety Administration, “Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule,” *Federal Register* 75, no. 88 (2010). Available online at [http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/CAFE-GHG\\_MY\\_2012-2016\\_Final\\_Rule\\_FR.pdf](http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/CAFE-GHG_MY_2012-2016_Final_Rule_FR.pdf).

<sup>18</sup> Environmental Protection Agency, “Reconsideration of Interpretation of Regulations that Determine Pollutants Covered by Clean Air Act Permitting Programs; Final Rule,” *Federal Register* 75(17) (2010). Available online at <http://www.federalregister.gov/articles/2010/04/02/2010-7536/reconsideration-of-interpretation-of-regulations-that-determine-pollutants-covered-by-clean-air-act>.

<sup>19</sup> Ibid.

<sup>20</sup> GHGs will also be covered through “title V” operating permits. However, as these permits do not add new emissions control requirements, we will not discuss them in this paper.

<sup>21</sup> Environmental Protection Agency, “Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule,” *Federal Register* 75(106) (2010). Available online at <http://www.gpo.gov/fdsys/pkg/FR-2010-06-03/pdf/2010-11974.pdf#page=1>. Note that PSD is referred to by some analysts as NSR (see, for example, Richardson et al.). In this context, these terms refer to the same process.

<sup>22</sup> Ibid.

<sup>23</sup> Clean Air Act, Section 169(3).

<sup>24</sup> A detailed outline of the BACT determination process is provided by Environmental Protection Agency, *New Source Review / BACT Review*, presentation to the Climate Change Workgroup of the CAAAC Permits, New Source Review and Toxics Subcommittee, 6/10/2009. Available online at <http://www.epa.gov/air/caaac/climate/NSRBACTReview20091006.pdf>. A case study of real-world BACT determination for GHGs is provided by Calpine, *GHG BACT Analysis Case Study: Russell Energy Center* (Washington, DC: EPA, 2010). Available online at <http://www.epa.gov/air/caaac/climate/NSRBACTReview20091006.pdf>.

<sup>25</sup> Environmental Protection Agency, *PSD and Title V Permitting Guidance for Greenhouse Gases* (Washington, DC: Government of the United States, 2010). Available online at <http://www.regulations.gov/search/Regs/contentStreamer?objectId=0900006480b8662b&disposition=attachment&contentType=pdf>. The EPA also released a series of technical “white papers” outlining key control techniques for GHGs by sector to assist with the BACT process. See <http://www.epa.gov/nsr/ghgpermitting.html>.

<sup>26</sup> Franz Litz and Nicholas Bianco, “What to Expect From EPA: Regulation of Greenhouse Gas Emissions Under the Clean Air Act,” *Environmental Law Reporter* 40(5) (2010).

<sup>27</sup> Personal communications, November 2010.

<sup>28</sup> Environmental Protection Agency, *Interim Phase I Report of the Climate Change Work Group of the Permits, New Source Review and Toxics Subcommittee, Clean Air Act Advisory Committee* (Washington, DC: Government of the United States, 2010). Available online at [http://www.epa.gov/oar/caaac/climate/2010\\_02\\_InterimPhaseIReport.pdf](http://www.epa.gov/oar/caaac/climate/2010_02_InterimPhaseIReport.pdf).

<sup>29</sup> See, for example, Richardson et al.

<sup>30</sup> The EPA finalized the tailoring rule using short tons, a non-metric measurement, to maintain consistency with the CAA programs it applies to (see EPA, *Tailoring Rule*, 102–104). 1 short ton is equivalent to 0.90718 metric tonnes.

<sup>31</sup> For PSD permitting, the threshold is 250tpy for new construction (except for 28 specified categories where it is 100tpy) and 0 tpy for modification of a major source. For title V permitting (see earlier footnote), the statutory threshold is 100tpy. 100/250 short tons = 91/227 metric tonnes.

<sup>32</sup> Environmental Protection Agency, “Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule.”

<sup>33</sup> That is, any such new facility or facility modification that has not yet received its permit and begun construction by January 2, 2011, will be subject to a BACT standard for GHGs. See Environmental Protection Agency, *PSD and Title V Permitting Guidance for Greenhouse Gases*.

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<sup>34</sup> Calculated using the EPA's *Greenhouse Gas Equivalencies Calculator* (updated March 2010), <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>.

<sup>35</sup> Environmental Protection Agency and Department of Justice, *EPA's Response to Motions to Stay* (Washington, DC: Government of the United States, 2010), 16, note 7. Available online at [http://www.eenews.net/assets/2010/10/29/document\\_pm\\_01.pdf](http://www.eenews.net/assets/2010/10/29/document_pm_01.pdf).

<sup>36</sup> And also the title V permitting program. See Environmental Protection Agency, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule."

<sup>37</sup> Note: 50,000 short tons = 45,359 metric tonnes.

<sup>38</sup> Environmental Protection Agency, "Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule."

<sup>39</sup> Environmental Protection Agency, *EPA Proposes Rules on Clean Air Act Permitting for Greenhouse Gas Emissions*, news release, August, 18, 2010. Available online at <http://yosemite.epa.gov/opa/admpress.nsf/e77fdd4f5afd88a3852576b3005a604f/708bd315d348b5568525777d0060c5da!OpenDocument>. In other words, PSD requirements for GHGs would apply to 70% of emissions from existing stationary sources if those sources were built or modified following July 1, 2011. The EPA has also estimated that the Step 2 requirements "will still reach fully 86% of the greenhouse gas emissions that would be covered using the statutory 100/250 tpy thresholds." Environmental Protection Agency and Department of Justice, 17–18.

<sup>40</sup> Companies applying for PSD/title V permits on or after this date must include GHGs, where applicable.

<sup>41</sup> Note: 75,000 short tons = 68,039 metric tonnes.

<sup>42</sup> Lisa Jackson, letter to Senator Rockefeller, February 22, 2010, 5. Available online at [http://epa.gov/oar/pdfs/LPJ\\_letter.pdf](http://epa.gov/oar/pdfs/LPJ_letter.pdf).

<sup>43</sup> Note: 100,000 short tons = 90,718 metric tonnes.

<sup>44</sup> Provided that GHGs or another regulated pollutant also exceed the relevant statutory threshold (100/250tpy) on mass basis (ie. not adjusted for global warming potential).

<sup>45</sup> Provided that the modification also increases GHGs on a mass basis (i.e. net change in GHGs, not adjusted for global warming potential, must be >0 kg).

<sup>46</sup> Environmental Protection Agency, *Final Rule: Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule*, fact sheet.

<sup>47</sup> Environmental Protection Agency, *Interim Phase I Report of the Climate Change Work Group of the Permits, New Source Review and Toxics Subcommittee, Clean Air Act Advisory Committee*.

<sup>48</sup> Environmental Protection Agency, *PSD and Title V Permitting Guidance for Greenhouse Gases*, 33-34.

<sup>49</sup> *Ibid*, 37.

<sup>50</sup> *Ibid*, 43.

<sup>51</sup> Edward Rubin, *Coal Initiative Reports: A Performance Standards Approach to Reducing CO<sub>2</sub> Emissions from Electric Power Plants* (Arlington, VA: Pew Center on Global Climate Change, 2009). Available online at <http://www.pewclimate.org/publications/report/coal-initiative-series-performance-standards-approach-reducing-co2-emissions-ele>.

<sup>52</sup> *Ibid*, 8. The maximum emissions level is codified at 1,100lbs (500kg) CO<sub>2</sub>e/MWh.

<sup>53</sup> *Ibid*, 9.

<sup>54</sup> *Ibid*.

<sup>55</sup> *Ibid*.

<sup>56</sup> Environmental Protection Agency, *Proposed Rules on Clean Air Act Permits for Sources of Greenhouse Gas Emissions under the Prevention of Significant Deterioration Program*, fact sheet (Washington, DC: Government of the United States, 2010). Available online at <http://www.epa.gov/nsr/documents/20100810SIPFIPFactSheet.pdf>.

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<sup>57</sup> National Association of Clean Air Agencies, *GHG Permitting Programs Ready to Go by January 2<sup>nd</sup>* (Washington, DC: NACAA, 2010). Available online at [http://www.eenews.net/assets/2010/10/28/document\\_gw\\_01.pdf](http://www.eenews.net/assets/2010/10/28/document_gw_01.pdf).

<sup>58</sup> New facilities that *do* significantly increase emissions of another air pollutant would remain subject to the 68kt CO<sub>2</sub>e threshold.

<sup>59</sup> Bianco, e-mail communication.

<sup>60</sup> National Energy Board, *Energy Briefing Note: a Primer for Understanding Canadian Shale Gas* (Calgary, AB: Government of Canada, 2009). Available online at <http://www.neb-one.gc.ca/clf-nsi/rnrgynfmtn/nrgyrprt/ntrlgs/prmrndrstndngshlgs2009/prmrndrstndngshlgs2009-eng.pdf>.

<sup>61</sup> Neither are these source categories likely to be included in the potential establishment of any “presumptive BACT” guidelines.

<sup>62</sup> Richardson et al.

<sup>63</sup> *Ibid.*, 20.

<sup>64</sup> Clean Air Act, Sec. 111(a)1.

<sup>65</sup> Clean Air Act, Sec. 111(d)1.

<sup>66</sup> Emissions intensity measures emissions per unit of activity, e.g., emissions per barrel or oil produced.

<sup>67</sup> Several source categories are expected to undergo periodic NSPS revisions in the coming year, including power plants and petroleum refineries. GHG standards could be added by source category during these revisions, or the EPA could create new, aggregated categories for GHGs. In the case of petroleum refineries, the EPA is expected to rule in November 2010 on a petition requesting the inclusion of GHG standards in NSPS. See Environmental Protection Agency, *Spring 2010 Semiannual Regulatory Agenda* (Washington, DC: Government of the United States of America, 2010), 25. Available online at <http://www.epa.gov/lawsregs/documents/regagendabook-spring10.pdf>.

<sup>68</sup> Richardson et al.

<sup>69</sup> Monast et al.

<sup>70</sup> *Ibid.* See also Richardson et al., Rhead and Enion. It is worth noting, however, that regulators may be inclined to proceed with a more traditional approach to the NSPS (at least initially), given the potential for legislative challenges in the current political climate.

<sup>71</sup> Richardson et al. See also Monast et al., Litz and Bianco. The EPA currently operates a small trading program for NO<sub>x</sub> emissions from municipal waste combustors under Sec. 111. The proposed Clean Air Mercury Rule for power plants would also have introduced a cap-and-trade program under Sec. 111, however it was rejected by a court challenge for unrelated reasons. The EPA’s large cap-and-trade program for SO<sub>2</sub> was established by the 1990 CAA amendments under Sec. 403.

<sup>72</sup> Richardson et al., 33.

<sup>73</sup> Although NSPS are traditionally emissions intensity standards, a cap-and-trade system under the NSPS could well include an absolute cap on emissions. However, this interpretation might perhaps not be upheld by the courts. Nicolas Bianco, World Resources Institute, e-mail communication, November 29, 2010.

<sup>74</sup> Litz and Bianco.

<sup>75</sup> That is to say, it is more likely that the EPA would allow states to use the flexibilities in Sec. 111(d) to implement cap-and-trade if they chose to, than propose a model system whereby it was mandatory.

<sup>76</sup> Monast et al.

<sup>77</sup> Richardson et al.

<sup>78</sup> Monast et al.

<sup>79</sup> Clean Air Act, Section 111(j)(1)(A)(ii).

<sup>80</sup> Clean Air Act, Section 111(j)(1)(A)(iii).

<sup>81</sup> Litz and Bianco.

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<sup>82</sup> Matthew Bramley et al., *Linking National Cap-and-Trade Systems in North America* (Drayton Valley, AB and Winnipeg, MB: The Pembina Institute and IISD, 2009). Available online at <http://www.pembina.org/pub/1955>. See also Dave Sawyer and Carolyn Fischer, *Better Together? The Implications of Linking Canada – US Greenhouse Gas Policies* (Toronto, ON: C.D. Howe Institute, 2010). Available online at [http://www.cdhowe.org/pdf/commentary\\_307.pdf](http://www.cdhowe.org/pdf/commentary_307.pdf).

<sup>83</sup> Environment Canada, *Key Elements of Proposed Regulatory Approach*, backgrounder, August 20, 2010. Available online at <http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=55D09108-5209-43B0-A9D1-347E1769C2A5>.

<sup>84</sup> Bianco and Litz. Resources for the Future also examined NSPS approaches to GHG emissions from the coal-fired electricity sector and estimated that reductions of up to 10% were feasible (5% from efficiency improvements and 5% from biomass cofiring), reducing national emissions by up to 3%. See Richardson et al.

<sup>85</sup> *Ibid.*, 3. The “go-getter” (highest ambition) scenario achieves reductions of 12% below the 2005 level by 2020.

<sup>86</sup> Canada’s national emissions in 2008 were 734 Mt CO<sub>2</sub>e, compared to 731 Mt CO<sub>2</sub>e in 2005. U.S. emissions were 6,957 Mt and 7,133 Mt, respectively.

<sup>87</sup> Government of Canada, *Fifth National Communication on Climate Change: Actions to Meet Commitments Under the United Nations Framework Convention on Climate Change* (Ottawa, ON: Government of Canada, 2010), 41. Available online at [http://unfccc.int/resource/docs/natc/can\\_nc5.pdf](http://unfccc.int/resource/docs/natc/can_nc5.pdf).

<sup>88</sup> Energy Information Administration, *Annual Energy Outlook 2010 – with projections to 2035* (Washington, DC: Government of the United States of America, 2010). Available online at <http://www.eia.doe.gov/oiaf/aeo/index.html>.

<sup>89</sup> Nelson, ‘It’s red states vs. blue in legal war over EPA rules.’

<sup>90</sup> *Ibid.*

<sup>91</sup> Richardson et al.

<sup>92</sup> Environmental Protection Agency and Department of Justice, 6.

<sup>93</sup> *Ibid.*, 3.

<sup>94</sup> *Ibid.*, 5.

<sup>95</sup> Lawrence Hurley, “Court consolidates 2 to emission regulations,” *Greenwire*, November 17, 2010.

<sup>96</sup> Nelson, ‘It’s red states vs. blue in legal war over EPA rules.’ See also Gregory Wannier, *EPA’s Impending Greenhouse Gas Regulations: Digging through the Morass of Litigation* (New York, NY: Columbia Center for Climate Change Law, 2010). Available online at [http://www.law.columbia.edu/null/download?&exclusive=filemgr.download&file\\_id=541712](http://www.law.columbia.edu/null/download?&exclusive=filemgr.download&file_id=541712).

<sup>97</sup> As noted above, this authority is clearly spelled out in the CAA and supported by an opinion of the Supreme Court. However, it is being challenged by the National Association of Manufacturers and several others on the basis that PSD should only cover NAAQS pollutants. In addition, some groups are challenging the “endangerment” finding (which is a necessary basis for the light-duty vehicle standards), as well as challenging the vehicle standards directly. Since it is the vehicle regulation that triggers coverage of GHGs under the permitting programs, a reversal of the endangerment finding or of the vehicle standards could potentially impact PSD permitting for GHGs. However, it is very unlikely that the endangerment finding — which was mandated by the *Mass. v. EPA* Supreme Court decision and based on robust scientific findings — would be overturned. The same arguments apply to the vehicle standards. Lastly, groups are also challenging the Timing Decision (EPA’s interpretation that GHGs must be included in permitting programs beginning Jan 2, 2011), however, as the Administration notes, this decision was “the ineluctable result of the application of statutory text, EPA’s regulatory interpretations of that text, and a seminal opinion of [the] Court” and is based solely on EPA decisions that are now beyond challenge. See Environmental Protection Agency and Department of Justice, 56.

<sup>98</sup> Monast et al.

<sup>99</sup> Environmental Protection Agency and Department of Justice, 5. Emphasis in original.

<sup>100</sup> Richardson et al.

<sup>101</sup> *Ibid.* See, in particular, note 13.

<sup>102</sup> Clean Air Act, Sec. 111(d)1.

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<sup>103</sup> Monast et al.

<sup>104</sup> Gabriel Nelson, “Republican wins boost battle to block climate rules,” *Greenwire*, November 3, 2010.

<sup>105</sup> Katherine Ling, “Congress down but not out on climate debate next session,” *Greenwire*, October 18, 2010.

<sup>106</sup> Nelson, “Republican wins boost battle to block climate rules.” See also Evan Lehmann, “Senate is more conservative, and so is its approach to climate,” *ClimateWire*, November 3, 2010.

<sup>107</sup> Ling, “Congress down but not out on climate debate next session.”

<sup>108</sup> Nelson, “Republican wins boost battle to block climate rules.”

<sup>109</sup> Katherine Ling, “Leading contender for top GOP energy spot to battle EPA regs,” *Greenwire*, October 19, 2010.

<sup>110</sup> Katherine Ling, “Barton ‘confident’ of chairing energy panel if GOP wins,” *E&E News PM*, October 28, 2010. See also Katherine Ling, “Jackson, Sutley would be in hot seat under Barton energy reign,” *Greenwire*, October 27, 2010.

<sup>111</sup> Katherine Ling, “Battle heats up on 2011 funding for EPA emissions regulations,” *E&E News PM*, 28/10/2010.

<sup>112</sup> *Ibid.*

<sup>113</sup> Bramley et al.

<sup>114</sup> Organization for Economic Cooperation and Development, *OECD Economic Surveys: Canada* (Paris, FR: OECD, 2010), 41.