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Cooperative State Cap and Trade to Mitigate Climate Change

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COOPERATIVE STATE CAP AND TRADE TO MITIGATE CLIMATE CHANGE

John Stegman*

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INTRODUCTION

The *Massachusetts v. EPA*¹ decision, which opened the door to the U.S. Environmental Protection Agency's ("EPA") greenhouse gas² ("GHG") emissions regulation under the Clean Air Act³ ("CAA"), was one of the first significant steps in the United States toward recognizing the effects of climate change. Although the EPA has made some progress toward reducing GHG emissions,⁴ the anticipated consequences of climate change, including "drought, increasingly severe weather events, and rising sea levels,"⁵ provide strong incentives for states to supplement the EPA's efforts. Climate change will have a tangible, economic impact, including damage from increased storms, erosion and flooding,⁶ as well as decreased water supplies and crop yields.⁷ Such effects are seemingly consistent with the EPA's determination that climate change endangers "public welfare," as defined in the CAA.⁸ Upon considering the CAA's corresponding constraints, however, the necessity of state action in tangent with federal regulation to substantially mitigate GHG emissions becomes apparent.⁹

1. *Massachusetts v. EPA*, 549 U.S. 497 (2007) (holding that greenhouse gases qualified as an "air pollutant" for purposes of the Clean Air Act and that the EPA was therefore required to determine whether emissions should be regulated or clarify their reason for refusing to do so).

2. The term "greenhouse gases" generally includes carbon dioxide, methane, nitrous oxide, and fluorinated gases. *Overview of Greenhouse Gases*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/climatechange/ghgemissions/gases.html> (last updated Apr. 15, 2014).

3. Clean Air Act (CAA), 42 U.S.C. §§ 7401–7671.

4. *See infra* Part I.A.

5. *Coal for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 114 (D.C. Cir. 2012), *rev'd in part, sub nom. Utility Air Regulatory Grp. v. EPA* ("UARG"), No. 12–1146, 2014 WL 2807314, at *1 (U.S. June 23, 2014).

6. *Climate Impacts on Coastal Areas*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/climatechange/impacts-adaptation/coasts.html> (last updated August 28, 2014).

7. *Climate Impacts on Agriculture and Food Supply*, U.S. ENVTL. PROTECTION AGENCY, <http://www.epa.gov/climatechange/impacts-adaptation/agriculture.html> (last updated August 28, 2014).

8. *See* Clean Air Act (CAA), 42 U.S.C. § 7602(h) (2012) ("[E]ffects on welfare include[], but [are] not limited to, effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being . . .").

9. *See infra* Part II.C.

Despite the differing global warming consequences facing states, the CAA does not expand states' power to independently mitigate climate change. While states retain some ability to regulate in a manner consistent with the EPA's regulations, doing so can subject them to litigation and a competitive disadvantage.¹⁰ Although developments in renewable power have made states less dependent on fossil fuels, which are primary sources of carbon dioxide, relying exclusively on renewable energy is unworkable in light of technological, infrastructure, and economic limitations.¹¹ While emissions reductions can be achieved at state and local levels,¹² the effects will likely be too piecemeal to sustain the progress necessary to avoid unsustainable temperature rise.¹³ Obtaining substantial reductions in national GHG emissions requires a system that provides additional support to state-level GHG reduction policies and prevents other states from undermining those reductions. As the federal government is unlikely to pass legislation creating a national cap and trade system, a multijurisdictional program administered by states is necessary to produce change substantial enough to effectively reduce national exacerbation of climate change.

This Comment first examines the basis for GHG emissions reduction regulation and the contemporary federal

10. See *infra* Part II.D.

11. See Rebecca Smith, *California Girds for Electricity Woes*, WALL ST. J.L. (Feb. 26, 2013), <http://online.wsj.com/news/articles/SB10001424127887323699704578328581251122150> (noting that while states are investing in renewable energy sources to meet their growing needs for electricity, the unreliable nature of some of these sources will likely require coal-fueled power plants, which will likely bear the brunt of GHG regulation, to continue operating).

12. For example, significant reductions in Los Angeles's emissions (51.6 million metric tons of CO₂ in 2004), *City Carbon Index: Los Angeles*, GLOBAL GREEN USA, <http://www.globalgreen.org/articles/global/67> (last visited June 21, 2014), could produce a substantial overall impact, as its climate footprint exceeds Norway's (50.94 million metric tons of CO₂ in 2004), See *City Carbon Index: Los Angeles*, GLOBAL GREEN USA, <http://www.globalgreen.org/articles/global/67> (last visited June 21, 2014); *Climate Analysis Indicators Tool*, WORLD RESOURCES INSTITUTE, <http://cait2.wri.org/wri/> (last visited June 21, 2014).

13. See OTTMAR EDENHOFER ET AL., IPCC, 2014: SUMMARY FOR POLICYMAKERS 9 (2014) ("Without additional efforts to reduce GHG emissions beyond those in place today, emissions growth is expected to persist driven by growth in global population and economic activities. Baseline scenarios, those without additional mitigation, result in global mean surface temperature increases in 2100 from 3.7 to 4.8°C compared to pre-industrial levels . . .").

and state regulatory schemes.¹⁴ Those programs have not effectively reduced domestic GHG emissions for numerous reasons, including partisanship,¹⁵ suits against the EPA,¹⁶ limitations on both EPA and state authority to regulate GHG emissions under the CAA,¹⁷ and separation of powers concerns.¹⁸ A state-lead multilateral cap and trade program including states with the highest GHG emissions would be a feasible solution to these issues because the EPA's policies are aligned with such a program;¹⁹ regional cap and trade programs are already in use and capable of linkage;²⁰ and the incentives of such a program could persuade other states to join.²¹

I. BACKGROUND: COOPERATIVE FEDERALIST GHG REGULATION

A. EPA GHG Emissions Regulation

The CAA requires the EPA to regulate the emission of air pollutants that are reasonably anticipated to endanger public health or welfare.²² In *Massachusetts v. EPA*, the Court held that greenhouse gases met the Clean Air Act's air pollutants definition, requiring the EPA to either determine whether GHGs posed a risk to public health or welfare, or provide a legitimate reason for refusing to reach such findings.²³ The EPA subsequently issued a finding that GHGs,²⁴ by changing the Earth's climate, endangered public welfare and announced the "Tailpipe Rule," confirming that vehicle GHG emissions would be regulated.²⁵ This chain of events

14. See *infra* Part I.A–B.

15. See *infra* Part II.A.

16. See *infra* Part II.B.

17. See *infra* Part II.C–D.1.

18. See *infra* Part II.D.2–3.

19. See *infra* Part III.A.

20. See *infra* Part III.B.

21. See *infra* Part III.C.

22. 42 U.S.C. § 7408(a)(1)(A)(1998).

23. *Massachusetts*, 549 U.S. at 534–35.

24. The GHG compounds listed as air pollutants included a combination of "well mixed" gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride. *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, <http://www.epa.gov/climatechange/endangerment/petitions/decision.html> (dated July 29, 2010).

25. *Id.*

heralded the beginning of the EPA's efforts to regulate GHG emissions from stationary sources.

By interpreting air pollutant regulation pursuant to an endangerment finding and thereby automatically triggering the CAA's Prevention of Serious Deterioration ("PSD") provision,²⁶ the EPA essentially determined that the Tailpipe Rule required stationary GHG emission sources regulated under that provision.²⁷ The PSD requires facilities to obtain a permit before constructing or modifying a "major emitting facility"—emitting over 250 tons per year²⁸ ("tpy") or 100 tpy²⁹ of regulated air pollutants—depending on the type of facility. Applying the 100 tpy threshold to GHGs, however, would cause an enormous increase in the volume of PSD-regulated sources,³⁰ requiring permitting authorities to hire an additional 230,000 full-time staff and incurring exponentially higher costs.³¹ Since literally applying the PSD to GHG emitters would bring "millions of new sources" within its scope, the EPA increased the PSD threshold to 100,000 tpy for construction and 75,000 tpy for modification of a major emitting source.³² This decision, the "Tailoring Rule," substantially reduced the scope of major GHG-emitting sources, thereby making regulation of the remaining sources under the PSD more feasible.³³ The U.S. Supreme Court subsequently determined in *Utilities Air Regulatory Group v. EPA* that the Tailoring Rule exceeded the EPA's authority,

26. Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs ("Timing Rule"), 75 Fed. Reg. 17,004 (Apr. 2, 2010).

27. *Id.* at 17,019.

28. 42 U.S.C. § 7479(1) (2012).

29. *Id.*

30. *Coalition*, 684 F.3d at 144 (stating that "if the Title V 100 tpy threshold applied immediately to greenhouse gases, sources needing operating permits would jump from 14,700 per year to 6.1 million per year.").

31. *Id.* The program would "face over \$21 billion in additional permitting costs each year due to [greenhouse gases], compared to the current program cost of \$62 million each year." *Id.* (alteration in original) (quoting Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule ("Tailoring Rule"), 75 Fed. Reg. 31,514, 31,563 (June 3, 2010) (codified at 40 C.F.R. pts. 51, 52, 70, and 71)).

32. *Zeroing in on EPA Authority over Stationary Sources*, LAW 360, (Oct. 28, 2013), <http://www.law360.com/articles/483582/zeroing-in-on-epa-authority-over-stationary-sources>.

33. *Coalition*, 684 F.3d at 116. The Tailoring Rule requires PSD permits only for sources emitting "over 100/250 tpy of actual pollutants, in addition to exceeding the 75,000/100,000 tpy carbon dioxide equivalent." *Id.*

but preserved the EPA's ability to regulate GHG emissions from would-be major emitters of other pollutants regulated under the PSD.³⁴

B. State GHG Emissions Regulation

1. Combining Comprehensive Regulation with Cap and Trade

Some states are already attempting to substantially reduce GHG emissions by combining traditional regulation with market-driven programs. For example, California's Global Warming Solutions Act of 2006 ("AB 32") required the California Air Resource Board ("CARB") to attain a specific emissions-reduction target through various measures, including development of "early action" GHG emissions reduction measures and a "scoping plan" to identify the most feasible and cost-effective mechanisms to reduce GHG emissions.³⁵ By mandating that the issues of duplicative efforts and conflict with similar programs be taken into account before implementing regulations, the scoping plan helps focus regulatory efforts on achieving genuinely new emissions reductions.³⁶ AB 32 ensures that regulatory development continues by requiring CARB to "update its plan for achieving the maximum technologically feasible and cost-effective reductions of greenhouse gas emissions at least once every five years."³⁷ The Act also grants CARB the power to enjoin or penalize violations.³⁸ AB 32's approach therefore provides tools for California to pursue its own climate change mitigation policies.

Pursuing a multi-pronged regulatory approach to reducing emissions would help states achieve significant GHG reductions. For instance, California began building a framework for GHG regulation by starting with emissions reductions tailored by source.³⁹ AB 32 also instituted a cap

34. See *infra* Part II.B.

35. See generally California Global Warming Solutions Act of 2006, CAL. HEALTH AND SAFETY CODE, Div. 25.5, Pt. 4 (West 2014).

36. See CAL. HEALTH AND SAFETY CODE § 38561(a), (c) (West 2014).

37. CAL. HEALTH AND SAFETY CODE § 38561(h) (West 2014).

38. CAL. HEALTH AND SAFETY CODE § 38580 (West 2014).

39. For example, CARB's Early Action GHG Reduction Measures created a low carbon fuel standard and regulated methane emissions from landfills, hydrofluorocarbon emissions from automobile air conditioning, semiconductor emissions, sulfur hexafluoride reductions from non-electric and non-

and trade program, which incorporated the sources of eighty-five percent of California's GHG emissions.⁴⁰ The program uses a phased approach, applying first to electric utilities and large industrial facilities and then to fuel producers.⁴¹ In 2011, the ARB set the program cap, or maximum emissions permitted, at two percent below California's 2012 emissions forecast, and required annual reductions in the cap by two percent in 2014 and three percent between 2015 and 2020.⁴² Sources could use U.S. emissions-reducing project offsets for up to eight percent of their compliance obligation.⁴³ Annually, included facilities are required to "provide allowances and offsets for thirty percent of previous year's emissions . . ."⁴⁴ Failing to meet that requirement or missing the deadline incurs a penalty of "four allowances . . . for every ton of emissions that was not covered in time . . ."⁴⁵ While electric utilities and large industrial facilities both initially received free allowances, industrial facilities would later have to pay for their allowances while publicly owned electric utilities would continue to receive free allowances, "with value of allowances to benefit ratepayers[.]"⁴⁶

It is unclear what effects the policies implemented in California's cap and trade program will have on power consumption. While the free utility allowances lessen the possibility of price increases burdening the consumer, they also relieve pressure on the electricity generation sector to improve production efficiency and reduce consumption. Since electric power generation and the industrial sector emit similar amounts of CO₂-equivalent ("CO₂e") GHGs,⁴⁷

semiconductor applications, GHGs emitting in producing consumer products, emissions measures for heavy trucks and ships at shore, and tire inflation. See *Early Action Items*, CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY AIR RESOURCES BOARD (Dec. 23, 2011), <http://www.arb.ca.gov/cc/ccea/ccea.htm>; see also *infra* Part II.D.2 (discussing the low carbon fuel standard).

40. *Overview of ARB Emissions Trading Program* ("ARB Trading Program"), CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY AIR RESOURCES BOARD (Oct. 20, 2011), http://www.arb.ca.gov/newsrel/2011/cap_trade_overview.pdf.

41. *Id.*

42. *Id.*

43. Eligible projects were initially limited to "forestry, urban forestry, dairy digesters, and destruction of ozone-depleting substances." *Id.*

44. *Id.*

45. *Id.*

46. *ARB Trading Program*, *supra* note 42.

47. In 2011, electric power emitted 86.6 million tons of CO₂e while the industrial sector emitted approximately 94 million tons. *California Greenhouse*

subsidizing allowances appears counter-productive to the goal of decreasing overall emissions. However, large price increases would likely cause consumer dissatisfaction and possibly provoke political backlash.⁴⁸ Instead, California chose to partially reimburse consumers for increased costs through a “climate credit” incorporated into their electric utility bills.⁴⁹ Current consumption-friendly U.S. energy policy makes it unlikely that electricity production and industrial facilities will be held to equivalent standards in future cap and trade developments.⁵⁰ As the market becomes more established, the effects of providing free allowances can be further analyzed to determine whether subsidizing electricity allowances is ultimately an effective strategy.

California’s cap and trade system has withstood numerous legal challenges,⁵¹ which in turn helped established precedent for a more widely-linked system. While states may achieve substantial GHG emissions reductions by regulating activity taking place solely within their borders, various constraints prevent them from improving mitigation efforts beyond those borders.⁵² Pursuing a similar regulatory approach in tangent with a cap and trade program linked with other states’ carbon markets, however, provides additional opportunities to make more substantial reductions.

Gas Emissions for 2000 to 2011—Trends of Emissions and Other Indicators, CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY AIR RESOURCES BOARD (2013).

48. See Jeff Gerth, *Regulators Struggle With a Marketplace Created by Enron*, NEW YORK TIMES (Nov. 10, 2001), <http://www.nytimes.com/2001/11/10/business/regulators-struggle-with-a-marketplace-created-by-enron.html?module=Search&mabReward=relbias%3Aw%2C%7B%22%22%3A%22RI%3A15%22%7D> (discussing the regulatory consequences of Enron’s alleged manipulation of energy prices).

49. See *California Climate Credit – FAQ*, CALIFORNIA PUBLIC UTILITIES COMMISSION, <http://www.cpuc.ca.gov/PUC/energy/capandtrade/climatecreditfaq.htm> (last modified Oct. 1, 2014).

50. See Joseph P. Tomain, *The Dominant Model of United States Energy Policy*, 61 U. COLO. L. REV. 355, 375 (1990) (noting that U.S. energy policy focuses on abundant supply and low prices).

51. Graham Noyes, Allison C. Smith & Parissa Ebrahimzadeh, *Calif. Cap and Trade Still Under Fire*, LAW360 (Dec. 9, 2013), <http://www.law360.com/articles/492883/calif-cap-and-trade-still-under-fire> (discussing prior legal challenges).

52. See *infra* Part III.D.2.

2. Multilateral Cap and Trade Programs

A national cap and trade program could successfully be developed based on existing multilateral frameworks, with certain adjustments based on the successes and failures of current programs. Several large companies have incorporated the cost of complying with cap and trade into their economic projections,⁵³ indicating that broad-scale compliance is possible.

Legislative adoption of a national cap and trade program is both unlikely and unnecessary, as it could preempt similar programs at the state level, furthering the potential for additional legal battles between federal and state entities.⁵⁴ Instead, states should form a broad, multilateral cap and trade program, linking their markets together to provide market stability and prevent leakage, while retaining the same flexibility to implement independent GHG reduction policies.

Nine states in the eastern U.S. participate in the Regional Greenhouse Gas Initiative (“RGGI”)—one of the first collaborative domestic cap and trade programs.⁵⁵ Participating states have developed a linked carbon market to achieve a ten percent reduction below 2009 power sector CO₂ emissions by the end of 2018.⁵⁶ The budget-trading program apportions the regional base annual CO₂ emissions cap to each state, allowing the state to “issue CO₂ allowances in a number equivalent to its portion of the regional cap.”⁵⁷ The state’s allocation decision is subject to the requirement that twenty-five percent be set aside “for a consumer benefit or

53. Coral Davenport, *Large Companies Prepared to Pay Price on Carbon*, NEW YORK TIMES (Dec. 5, 2013), http://www.nytimes.com/2013/12/05/business/energy-environment/large-companies-prepared-to-pay-price-on-carbon.html?_r=0. Those companies included Microsoft, General Electric, Walt Disney, ConAgra Foods, Wells Fargo, DuPont, Duke Energy, Google, Delta Air Lines, Exxon Mobil, ConocoPhillips, Chevron, BP and Shell. *Id.*

54. *See infra* Part III.

55. *See Program Design*, REGIONAL GREENHOUSE GAS INITIATIVE, <http://www.rggi.org/design> (last visited June 21, 2014). The RGGI currently includes Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. *Id.*

56. *RGGI Executive Summary*, REGIONAL GREENHOUSE GAS INITIATIVE, http://www.rggi.org/docs/RGGI_Executive_Summary.pdf (last visited Nov. 12, 2014).

57. *Id.*

strategic energy purpose.”⁵⁸ An independent market monitor makes the program self-regulating.⁵⁹

Other U.S. programs could be aligned for linkage with the RGGI. California’s recent carbon market linkage with Quebec demonstrates that its cap and trade program was designed to link with others.⁶⁰ While the linkage of only two markets does not necessarily provide a realistic model of how a broader linkage would operate, the results of this linkage will likely determine whether other states decide to join shared carbon markets. Additionally, the program design for the Midwestern Regional Greenhouse Gas Reduction Accord (“MRGGRA”), which included six states and the Canadian province of Manitoba, was completed in 2010, but “participating states are no longer pursuing it.”⁶¹ Should the former MRGGRA and Western Climate Initiative participants⁶² decide to link their markets with the existing California-Quebec and RGGI carbon markets, a substantial framework would be created for a broad cap and trade program lead and administered by states and provinces.

Outside the U.S., the European Union’s Emission Trading Scheme (“ETS”) serves as an additional model cap

58. Memorandum of Understanding § 2(G)(1), REGIONAL GREENHOUSE GAS INITIATIVE (Dec. 20, 2005), <http://www.rggi.org/design/history/mou> (noting that such a benefit or purpose includes “the use of the allowances to promote energy efficiency, to directly mitigate electricity ratepayer impacts, to promote renewable or carbon-neutral energy technologies, to stimulate or reward investment in the development of innovative carbon emissions abatement technologies with significant carbon reduction potential, and/or to fund administration.”).

59. *RGGI Executive Summary*, *supra* note 56 (the market monitor “observe[s] the conduct of the auction qualification process and the conduct of the auction, and . . . report[s] on whether the auction was conducted in accordance with the participating states’ regulations and the noticed auction procedures and whether the auction results represented a competitive outcome.”).

60. *See infra* Part III.B.

61. *Midwest Greenhouse Gas Reduction Accord*, CENTER FOR CLIMATE AND ENERGY SOLUTIONS, <http://www.c2es.org/us-states-regions/regional-climate-initiatives/mgggra> (last visited June 21, 2014).

62. New Mexico, Arizona, Washington, Oregon, Montana and Utah were also formerly participating but pulled out to join the North America 2050 Initiative, which they claimed gave states more options to reduce emissions. *6 States Pull Out of Western Climate Initiative*, SUSTAINABLEBUSINESS.COM (Nov. 22, 2011), <http://www.sustainablebusiness.com/index.cfm/go/news..display/id/23178>. It does not appear that the initiative itself involves additional development of cap and trade markets. *See About NA2050*, NORTH AMERICA 2050, <http://na2050.org/about/> (last visited June 21, 2014).

and trade system. The ETS utilizes a scaled allowance system tailored by industry.⁶³ For example, the manufacturing industry received eighty percent of its allowances for free in 2013, but that figure will face annual reductions until it reaches its thirty percent floor in 2020.⁶⁴ This “phased” approach essentially subsidizes industry changes, gradually placing a greater burden on the industry to secure its allowances by auction.⁶⁵ However, this approach initially resulted in low allowance prices during the first phase of the ETS.⁶⁶ Purchasers may internalize low allowance costs by raising prices without actually reducing their total emissions.

Combining the California-Quebec and RGGI markets would provide a strong start to a broader multilateral system, which could incorporate features from other programs, such as the ETS. International pacts can also be utilized to incorporate additional markets by securing foreign states’ symbolic commitment. For example, California, Washington, and Oregon recently signed a climate change pact with British Columbia stating their intent to implement cap and trade programs, strive for zero-emissions vehicles to account for ten percent of vehicle purchases in 2016, and achieve long-term reductions in GHG emissions.⁶⁷ While non-binding in nature,⁶⁸ this pact represents a commitment to multilateral cooperation. Such commitment is necessary to fill the gap left by national failures to enact cap and trade programs.

63. *The EU Emissions Trading System*, EUROPEAN COMMISSION, http://ec.europa.eu/clima/policies/ets/index_en.htm (last updated Apr. 4, 2014).

64. *Free Allocations Based on Benchmarks*, EUROPEAN COMMISSION, http://ec.europa.eu/clima/policies/ets/cap/allocation/index_en.htm (last updated June 29, 2014).

65. “In 2013 more than 40% of allowances will be auctioned, and this share will rise progressively each year[.]” *The EU Emissions Trading System*, EUROPEAN COMMISSION, http://ec.europa.eu/clima/policies/ets/index_en.htm (last updated June 29, 2014).

66. Chris Wold, et al., *CLIMATE CHANGE AND THE LAW* 411 (2d ed. 2013).

67. *Governor Brown Joins Oregon, Washington, British Columbia Leaders to Combat Climate Change*, CA.GOV (Oct. 29, 2013), <http://gov.ca.gov/news.php?id=18284>; Paul Rogers, *Climate Change Pact Signed by California, Oregon, Washington and British Columbia*, MERCURY NEWS (Oct. 29, 2013), http://www.mercurynews.com/ci_24406734/california-oregon-washington-and-british-columbia-sign-climate.

68. *Pacific Coast Action Plan on Climate and Energy*, PACIFIC COAST COLLABORATIVE (Oct. 28, 2013), <http://www.pacificcoastcollaborative.org/Documents/Pacific%20Coast%20Climate%20Action%20Plan.pdf>.

II. IDENTIFICATION OF THE LEGAL PROBLEM AND ANALYSIS: AN UNTENABLE BALANCE

While federal and state governments may reduce GHG emissions using the tools discussed above, such tools are unlikely to sufficiently mitigate the effects of climate change. Given current resistance to federal legislative and regulatory measures to reduce GHG emissions, as discussed in this section, states must voluntarily reduce their own emissions. A state-lead multilateral cap and trade program is the best way to accomplish this, as other regulatory options to reduce pollutants are restricted by statutory and constitutional considerations.

A. Political Deadlock Precludes National Cap and Trade

Political reluctance to enact a national cap and trade system is likely due to a combination of general misconceptions about climate change and hesitancy to divert resources to prevent future, theoretical issues rather than contemporary, tangible ones.⁶⁹ Some politicians, likely either hesitant to support additional regulation or pandering to their constituents' skepticism, have made statements that oversimplify the issue or conflate weather patterns with climate shifts.⁷⁰ Others emphasize the uncertain nature of climate change impacts to justify their inaction.⁷¹ Regardless

69. Perhaps this will change due to recent announcements that the effects of climate change are already being felt. See Justin Gillis, *U.S. Climate Has Already Changed, Study Finds, Citing Heat and Floods*, NEW YORK TIMES (May 6, 2014), http://www.nytimes.com/2014/05/07/science/earth/climate-change-report.html?_r=0. However, political opposition continues after these announcements, such as Senator Mitch McConnell's statement that "Even if we were to enact the kind of national energy regulations the President seems to want so badly, it would be unlikely to meaningfully impact global emissions anyway unless other major industrial nations do the same thing." Kevin Liptak et. al, *Climate Change is Here, Action Needed Now, Says New White House Report*, CNN.COM (May 6, 2014), <http://www.cnn.com/2014/05/06/politics/white-house-climate-energy/>.

70. For example, Minnesota Representative Collin Peterson's statement, "[T]hey're saying to us, 'Oh, it's such a big problem because it's going to be warmer than it usually is.' My farmers are going to say that's a good thing - we're going to be able to grow more corn." Allison Winter, *'Tough' Negotiator Peterson Rocks Climate Debate*, NEW YORK TIMES (June 17, 2009), <http://www.nytimes.com/gwire/2009/06/17/17greenwire-tough-negotiator-peterson-rocks-climate-debate-2199.html?pagewanted=all>.

71. "[T]here is so much we don't know about this complex field, which is made even more difficult by our inability to make predictions and test climate hypotheses, except with computer simulations that have questionable

of the causes, efforts to establish a nationwide cap and trade program have thus far failed⁷² and the minimal level of bipartisan cooperation in the U.S. indicates that this is unlikely to change in the near future.

B. Challenges to EPA Regulation of GHGs

Litigation attacking the EPA's regulatory strategy casts doubt on the efficacy of using the CAA to regulate GHG emissions.

The Supreme Court recently determined in *Utilities Air Regulatory Group v. EPA*⁷³ that the EPA could not "rewrite" the CAA by creating the Tailoring Rule, but that the EPA could regulate GHG emissions from major stationary sources already subject to regulation under the PSD program.⁷⁴ Justice Scalia argued that the EPA has traditionally applied "a narrower, context-appropriate meaning" to the designation of "air pollutant" than the Tailoring Rule's interpretation.⁷⁵ Although GHGs are air pollutants under the CAA, the majority opinion notes, the EPA retains discretion to avoid regulating GHG emission where doing so would require statutory revision.⁷⁶ Therefore, the EPA could interpret the definition of "air pollutant" in the relevant sections of the CAA to not include GHG emissions where the program would otherwise be "unworkable."⁷⁷

assumptions built in." Rick Santorum, *Challenging Science Dogma as with Evolution, the 'Consensus' on Climate Change has become an Ideology*, PHILLY.COM (Dec. 17, 2009), http://articles.philly.com/2009-12-17/news/25269547_1_data-or-testable-theories-global-warming-science-scientific-consensus.

72. Matt Negrin, *Whatever Happened to Cap and Trade?*, ABC NEWS (July 17, 2012), <http://abcnews.go.com/Politics/OTUS/environment-happened-cap-trade-global-warming/story?id=16790018>.

73. *Utility Air Regulatory Group v. EPA* ("UARG") 134 S. Ct. 2427 (2014).

74. Jonathan H. Adler, *Supreme Court Rejects EPA's Rewrite of the Clean Air Act, But Greenhouse Gas Regulation Will Go Forward*, THE WASHINGTON POST (June 23, 2014), <http://www.washingtonpost.com/news/volokh-conspiracy/wp/2014/06/23/scotus-rejects-epas-rewrite-of-the-clean-air-act-but-ghg-regulation-will-go-forward/>.

75. *UARG*, 134 S. Ct. at 2439.

76. *See id.* at 2441 ("*Massachusetts v. EPA*, 549 U.S. 497 (2007)] does not strip EPA of authority to exclude greenhouse gases from the class of regulable air pollutants under other parts of the Act where their inclusion would be inconsistent with the statutory scheme.").

77. *Id.* at 2442 ("[T]here is no insuperable textual barrier to EPA's interpreting 'any air pollutant' in the permitting triggers of PSD and Title V to encompass only pollutants emitted in quantities that enable them to be sensibly regulated at the statutory thresholds, and to exclude those atypical pollutants

While some justices supported the EPA's interpretation, the majority opinion held that the Tailoring Rule was essentially re-writing the CAA. Although Justice Breyer argued that the Tailoring Rule was consistent with the purpose of the 250 tpy threshold because "limit[ing] the PSD program's obligations to larger sources while exempting the many small sources whose emissions are low enough that imposing burdensome regulatory requirements on them would be senseless[.]"⁷⁸ this reasoning was not accepted by the majority. Instead, Justice Scalia's opinion noted that the EPA had overreached its statutory authority by attempting to regulate sources that could not reasonably be regulated under the express terms of the PSD provision.⁷⁹

The majority also took issue with the PSD's requirement for sources to implement "best available control technology" ("BACT"). The majority stated that "[t]here is no indication that the Act elsewhere uses, or that EPA has interpreted, 'each pollutant subject to regulation under this chapter' to mean anything other than what it says," with regard to BACT.⁸⁰ Finally, the Court distinguished requiring BACT for sources already regulated under the PSD to be permissible because it would be only a moderate expansion of regulation.⁸¹ Justice Scalia remarked that the EPA got "almost everything it wanted in this case," since the EPA could continue regulating eighty-three percent of GHG-emitting stationary sources (compared to eighty-six percent).⁸²

The *UARG* ruling is unlikely to impact the EPA's recent proposed regulations to reduce power plant GHG emissions,

that, like greenhouse gases, are emitted in such vast quantities that their inclusion would radically transform those programs and render them unworkable as written.").

78. *Id.* at 2453 (Breyer, J., dissenting).

79. *Id.* at 2446 (noting that "an agency may not rewrite clear statutory terms to suit its own sense of how the statute should operate.").

80. *UARG*, 134 S. Ct. at 2446.

81. *Id.* (noting that "[w]e are not talking about extending EPA jurisdiction over millions of previously unregulated entities, but about moderately increasing the demands EPA (or a state permitting authority) can make of entities already subject to its regulation.").

82. Adam Liptak, *Justices Uphold Emission Limits on Big Industry*, NEW YORK TIMES (June 23, 2014), http://www.nytimes.com/2014/06/24/us/justices-with-limits-let-epa-curb-power-plant-gases.html?hp&action=click&pgtype=Homepage&version=LedeSum&module=first-column-region®ion=top-news&WT.nav=top-news&_r=0.

which would be authorized by section 111(d) of the CAA.⁸³ However, the proposed 111(d) regulations are likely to open the door to a more active state role in regulating GHG emissions, including the development of broader multilateral cap and trade programs.⁸⁴

Alternatively, the EPA could designate combined GHGs as a criteria pollutant within the PSD program, but this would create other problems. As the *Coalition* petitioners noted, the EPA must comply with Section 166 of the CAA to create National Ambient Air Quality Standards (“NAAQS”) for criteria pollutants, “including a required study of the pollutant and a one-year delay before the effective date of regulations.”⁸⁵ However, even if the EPA attempted to designate some or all GHGs as criteria pollutants, states could not rely only on the PSD program to whittle down American GHG emissions. As the program establishes national goals rather than tailoring them according to each region’s capabilities, it does not fully utilize each state’s resources. Due to the inherent qualities of GHGs, the CAA is simply not the most effective tool to reduce emissions.

C. Limitations on the EPA’s Authority to Regulate GHGs

The key difference between GHGs and other CAA-regulated pollutants exists in the sheer scope of emissions. The EPA’s adoption of the Tailoring Rule exemplifies the difficulties of regulating GHGs in a feasible manner under the CAA. Although Justice Scalia noted in *Utilities Air Regulatory Group* that EPA would lose its ability to regulate only three percent of the sources it intended to,⁸⁶ the EPA’s difficulties in regulating GHG emissions demonstrate that the CAA was not adopted with climate change in mind.

Furthermore, regulating GHG emissions under the PSD program is unlikely to advance fast enough to significantly mitigate climate change.⁸⁷ While the EPA can develop its own implementation plan if a state fails to submit a plan

83. David G. Savage, *Supreme Court Upholds Rules Curbing Greenhouse Gases from Power Plants*, LA TIMES (June 23, 2014), <http://www.latimes.com/nation/nationnow/la-na-nn-supreme-court-power-plants-20140610-story.html>.

84. See *infra* Part III.A.

85. *Coalition*, 684 F.3d at 143.

86. See *supra* note 84 and accompanying text.

87. See *UARG*, 134 S. Ct. at 2436.

complying with NAAQS, the EPA must first wait for the state's initial submission and assess its compliance with the promulgated standards.⁸⁸ Since the EPA cannot promulgate standards that only some states could attain, such regulation fails to realize the potential of states with stronger economies. More substantial measures would be needed to sufficiently reduce GHG emissions, and the most significant progress would likely be accomplished by allowing states to take a more active, cooperative role in effectuating reductions. A state-based multilateral cap and trade program would plug the gaps in the current system by giving states increased flexibility to pursue emissions reductions on a faster timescale without adding to the EPA's burden.

D. Issues Complicating State Efforts to Fill the Void

1. CAA Preemption

The CAA limits state power to independently regulate air pollutants, which, by the *Massachusetts v. EPA* definition, include GHG emissions.⁸⁹ The CAA expressly preempts states from regulating vehicle emissions of air pollutants.⁹⁰ The EPA, however, retains the discretion to waive the statute's application to California's vehicle emissions standards, provided the state standard is "at least as stringent as the comparable applicable Federal standard."⁹¹ The EPA may deny a waiver request if it finds that the state's determination of equivalency is "arbitrary and capricious," or that the state standard is not necessary "to meet compelling and extraordinary conditions," or that it conflicts with Title 42, Section 7521(a) of the U.S. Code.⁹² The outcome turns on whether the state action comports with the CAA's intent as shown by its "history and text."⁹³ The intent behind the preemption provision has been interpreted "not to hamstring localities in their fight against air pollution but to prevent the burden on interstate commerce which would result if, instead

88. *EME Homer City Generation, L.P. v. EPA*, 696 F.3d 7, 28 (D.C. Cir. 2012), *rev'd on other grounds*, 134 S. Ct. 1584 (2014).

89. *See supra* note 1.

90. 42 U.S.C. § 7543(a) (2012).

91. 42 U.S.C. § 7543(b)(1)–(2) (2012).

92. 42 U.S.C. § 7543(b)(1)(A)–(C) (2012).

93. *Allway Taxi, Inc. v. City of New York*, 340 F. Supp. 1120, 1124 (S.D.N.Y. 1972).

of uniform standards, every state and locality were left free to impose different standards.”⁹⁴ Therefore, states are free to incorporate vehicle emissions into cap and trade programs, provided the action does not effectively force vehicle manufacturers to develop different cars for different markets.

2. *Burdening Interstate Commerce*

The Dormant Commerce Clause bars state regulatory action that substantially harms interstate commerce unless justified by a legitimate state interest that cannot be met by a less burdensome alternative.⁹⁵ “States . . . may not attach restrictions to exports or imports in order to control commerce in other States.”⁹⁶ However, if a state law regulates “evenhandedly to effectuate a legitimate local public interest” and affects interstate commerce only incidentally, it “will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits.”⁹⁷ State legislation can affect commerce without violating the Commerce Clause, provided it does not discriminate against interstate commerce.⁹⁸ Regulating some interstate commercial activity is not discriminatory *per se*.⁹⁹

The Commerce Clause affords states considerable regulatory flexibility, even in the context of widely-dispersed pollutants, such as GHGs. *Rocky Mountain Farmers Union v. Corey*¹⁰⁰ recently explored the boundary between *affecting* interstate commerce and *burdening* it. There, the plaintiffs contended that the CAA’s Renewable Fuel Standard¹⁰¹ (“RFS”) preempted the California Air Resources Board’s (“CARB”) Low Carbon Fuel Standard¹⁰² (“LCFS”) and violated the Commerce Clause.¹⁰³ The LCFS set an annual limit on the “carbon intensity” of fuel consumed within California and

94. *Id.*

95. *Maine v. Taylor*, 477 U.S. 131, 151 (1986).

96. *C&A Carbone, Inc. v. Town of Clarkstown, N.Y.*, 511 U.S. 383, 393 (1994).

97. *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970).

98. *Raymond Motor Transp., Inc. v. Rice*, 434 U.S. 429, 440 (1978).

99. *Exxon Corp. v. Governor of Maryland*, 437 U.S. 117, 126 (1978) (“The fact that the burden of a state regulation falls on some interstate companies does not . . . establish a claim of discrimination against interstate commerce.”).

100. *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070 (9th Cir. 2013).

101. 42 U.S.C. § 7545(o) (2012).

102. Cal. Code Regs. tit. 17, §§ 95480–90 (West 2014).

103. *Rocky Mountain*, 730 F.3d at 1077.

allowed fuel producers that exceeded the limit to offset excess with “credits” purchased from other producers in the manner of a cap and trade program.¹⁰⁴ Carbon intensity was measured by “lifecycle analysis,” which factored in “all aspects of the production, refining, and transportation of a fuel” to reduce GHGs emitted in its production.¹⁰⁵

The challengers argued that the LCFS discriminated against ethanol produced out-of-state.¹⁰⁶ Fuels incorporating ethanol produced out-of-state tended to have higher carbon intensity since the ethanol was often created in less efficient facilities that relied on electricity from coal-fueled power plants.¹⁰⁷ The challengers also argued that the LCFS disadvantaged crude oil, which did not include ethanol and therefore could not take advantage of the carbon offset provided by growing crops used to produce ethanol.¹⁰⁸ Further, CARB’s 2011 provision established that “no crude oil could be assessed a carbon intensity below the market average, but newer sources causing higher emissions were assessed at their individual carbon intensity,” leaving crude oil producers no alternative to meeting the LCFS except for “supplying alternative fuels or buying credits from the sellers of alternative fuels.”¹⁰⁹

The Ninth Circuit Court of Appeals held that the LCFS did not facially violate the Commerce Clause or discriminate in purpose or effect against out-of-state crude oil producers and remanded the case to the district court “to consider whether the LCFS’s ethanol provisions discriminate in purpose or in practical effect.”¹¹⁰ The court differentiated this case from cases that found a discriminatory purpose¹¹¹ by concluding that no sufficient basis existed for finding differential treatment resulting from discrimination.¹¹² The

104. *Id.* at 1080.

105. *Id.* at 1081.

106. *Id.* at 1086.

107. *Id.* at 1083.

108. *Rocky Mountain*, 730 F.3d at 1084–86.

109. *Id.* at 1085.

110. *Id.* at 1078.

111. *See Oregon Waste Sys., Inc. v. Department of Env’tl. Quality of State of Or.*, 511 U.S. 93, 101 (1994) (reasoning that discrimination was origin-based where out-of-state waste was no more harmful or costly than instate waste); *Chemical Waste Mgmt., Inc. v. Hunt*, 504 U.S. 334 (1992) (holding an Alabama law as discriminatory for imposing import fees on out-of-state waste where there was no association between place of origin and risk to Alabama).

112. *Rocky Mountain*, 730 F.3d at 1089.

court determined, therefore, that “if an out-of-state ethanol pathway does impose higher costs on California by virtue of its greater GHG emissions, there is a nondiscriminatory reason for its higher carbon intensity value.”¹¹³

Although the challengers argued that origin was “inextricably intertwined” with transportation and electricity sources’ contribution to carbon intensity, the court responded that “[u]nless and until either the United States Supreme Court or the Congress forbids it, California is entitled to proceed on the understanding that global warming is being induced by rising carbon emissions and attempt to change that trend.”¹¹⁴ The court clarified that states cannot regulate “wholly out-of-state transactions,” but are not barred from regulating “within their boundaries with the goal of influencing the out-of-state choices of market participants.”¹¹⁵ The court also noted that out-of-state producers had alternatives to reduce their carbon intensity and “the dormant Commerce Clause does not guarantee that ethanol producers may compete on the terms they find most convenient.”¹¹⁶ The regulation’s specified purpose justified the LCFS factors.¹¹⁷ Furthermore, the LCFS factors were not discriminatory “because they reflect[ed] the reality of assessing and attempting to limit GHG emissions from ethanol production.”¹¹⁸ The court noted that while the LCFS did have “incidental effects on interstate commerce,” it did not violate the dormant Commerce Clause because “it does not control conduct wholly outside the state.”¹¹⁹

Along similar lines, California’s Senate Bill 1368 set an emissions standard for power contracts and baseload generation at 1,100 pounds of CO₂ per megawatt-hour—the emissions rate of a combined-cycle gas turbine power plant.¹²⁰

113. *Id.* at 1089–90.

114. *Id.* at 1090.

115. *Id.* at 1103.

116. *Id.* at 1091–92 (citing *Exxon Corp. v. Governor of Md.*, 437 U.S. 117, 127 (1978)).

117. *See Rocky Mountain*, 730 F.3d at 1091 (justifying the transportation factor with the regulation’s specified purpose of measuring real differences in the harmful effects of ethanol production).

118. *Id.* at 1093.

119. *Id.* at 1106.

120. *Power Sector*, EPA, <http://www.epa.gov/statelocalclimate/state/tracking/individual/ca.html> (last visited Feb. 20, 2014).

The law seems susceptible to challenges alleging that it unduly burdens interstate commerce “[s]ince most of the generation that exceeds that standard is located outside California.”¹²¹ However, the California Public Utilities Commission determined that any burden was “incidental and not clearly excessive in relation to the substantial local benefits of the [Emissions Performance Standard].”¹²²

It remains unclear, however, whether future Commerce Clause challenges to state actions touching on sources in other states are foreclosed. Refusing to abandon their Commerce Clause challenge to California’s LCFS, the *Rocky Mountain* petitioners requested an *en banc* hearing,¹²³ which the Ninth Circuit denied.¹²⁴ Judge Gould’s concurrence clearly supported the prior determination, affirming that “California is free to regulate commerce *within* its borders even if it has an ancillary goal of influencing the choices of actors in other states.”¹²⁵ In remanding the determination of whether the LCFS discriminated in purpose or effect against out-of-state-commerce to the lower court, Judge Gould was careful to point out that the court had not actually upheld the LCFS, but rather remanded due to finding that it did not “*facially discriminate* against out-of-state commerce,” remanding to the lower court the determination of whether the LCFS discriminated in purpose or effect against out-of-state commerce.¹²⁶ Finally, Judge Gould restated that “as long as there is ‘some reason, apart from their origin, to treat them differently,’ California may distinguish between Midwestern, Brazilian, and California ethanols.”¹²⁷ The

121. Robert Meltz, CONG. RESEARCH SERV., R42613, CLIMATE CHANGE AND EXISTING LAW: A SURVEY OF LEGAL ISSUES PAST, PRESENT, AND FUTURE 78 (2013).

122. Order Instituting Rulemaking to Implement the Commission’s Procurement Incentive Framework and to Examine the Integration of Greenhouse Gas Emissions Standards into Procurement Policies, 2007 WL 403573 (Cal.P.U.C Jan. 25, 2007).

123. Mica Rosenberg, *Case to Watch: California’s Low Carbon Fuel Standard on Appeal*, REUTERS LEGAL (Jan. 6, 2014), <https://1.next.westlaw.com/Document/I526d0c4076c511e38089abd4e0a44763/View/FullText.html?transitionType=CategoryPageItem&contextData=%28sc.Default%29>.

124. See *Rocky Mountain Farmers Union v. Corey*, 740 F.3d 507, 508 (9th Cir. 2014).

125. *Id.* at 509.

126. *Id.* (emphasis added).

127. *Id.* at 510 (citing *Philadelphia v. New Jersey*, 437 U.S. 617, 627 (1978)).

subsequent petition for *certiorari* was recently denied.¹²⁸

For the moment, states appear confident in pursuing similar fuel standards, which would help support a multilateral cap and trade program. For example, the governors of Washington and Oregon are apparently contemplating executive orders to implement a LCFS in their respective states.¹²⁹

3. *Multilateral Agreement Limitations*

Regional climate change programs may run afoul of other barriers, including the foreign affairs powers granted to the federal government¹³⁰ and the U.S. Constitution's Compact Clause, which prohibits states from "enter[ing] into any agreement or compact with another state, or with a foreign power" without congressional consent.¹³¹ The prohibition against state involvement in foreign affairs generally applies only when states "set up their own authorities as mini-state-departments, with power to oversee and either approve or disapprove foreign regimes or the negotiation efforts of the U.S. Executive Branch . . ." ¹³² The Commerce Clause precludes multilateral agreements that "may encroach on or interfere with" the federal government's authority.¹³³ Permissible multilateral agreements, therefore, must not give states additional power, surrender any state power, or coerce other states.¹³⁴

128. *Rocky Mountain Farmers Union v. Corey*, 34 S. Ct. 2875 (2014) (denying petition for *certiorari* to *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070 (9th Cir. 2013)).

129. See Carolyn Whetzel, *West Coast States, British Columbia Talk Carbon Collaboration*, BLOOMBERG BNA (Apr. 1, 2014), <http://www.bloomberg.com/news/2014-04-01/west-coast-states-british-columbia-talk-carbon-collaboration.html>; Erik Smith, *Will Inslee Impose Low Carbon Fuel Standards by Executive Order? – Issue Looms Over Legislature's Upcoming Transportation Debate*, WASHINGTON STATE WIRE (Jan. 3, 2014), <http://washingtonstatewire.com/blog/will-inslee-impose-low-carbon-fuel-standards-by-executive-order-issue-looms-over-legislatures-upcoming-transportation-debate/>.

130. See U.S. CONST. art. II, § 2, cl. 2 ("Treaty Clause"); U.S. CONST. art. I, § 8, cl. 11 ("War Power"); U.S. CONST. art. I, § 8, cl. 12 ("Army Clause").

131. U.S. CONST. art. I, § 10, cl. 3.

132. Robert Huffman & Jonathan Weisgall, *Climate Change and the States: Constitutional Issues Arising from State Climate Protection Leadership*, SUSTAINABLE DEV. L. & POL'Y, 6, 12 (2008).

133. *Virginia v. Tennessee*, 148 U.S. 503, 519 (1893).

134. See generally *U.S. Steel Corp. v. Multistate Tax Comm'n*, 434 U.S. 452 (1978) (the Multistate Tax Compact is not invalid and the application of the

Massachusetts recognized that state power to regulate GHG emissions may be limited by foreign policy considerations. The Court noted that a state “cannot negotiate an emissions treaty with China or India, and in some circumstances the exercise of its police powers to reduce in-state motor-vehicle emissions might well be pre-empted.”¹³⁵ In the context of corporate average fuel economy standards’ federal regulation, the court in *Central Valley Chrysler-Jeep v. Witherspoon* found that state regulation in that area, when disruptive to foreign policy, is preempted regardless of waiver.¹³⁶ The district court held that challengers of a state regulation had “stated a claim for preemption of the regulations based on foreign policy” by showing that the regulations could undermine “the Executive’s ability to pursue such agreements.”¹³⁷ It is possible, however, that changes in U.S. foreign policy could moot such matters.¹³⁸ Furthermore, since the decision was merely “a preliminary decision on a motion for judgment on the pleading. . . . Any statements . . . that go beyond the adequacy of the pleadings are purely dicta.”¹³⁹

It appears that state GHG regulation is now consistent with U.S. foreign policy. The *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie* court recently noted that the State Department acknowledged the regulation of GHG emissions as an “important factor in the success of GHG

Compact Clause is limited to agreements that are “directed to the formation of any combination tending to the increase of political power in the States, which may encroach upon or interfere with the just supremacy of the United States.”).

135. *Massachusetts*, 549 U.S. at 519. As discussed in this Article, however, foreign policy considerations have not stopped American states from entering agreements with the Canadian provinces of Quebec, Manitoba, and British Columbia.

136. *Cent. Valley Chrysler-Jeep v. Witherspoon*, 456 F. Supp. 2d 1160, 1172–73 (E.D. Cal. 2006) (concerning an attempt to enjoin CARB’s vehicle GHG emissions standards).

137. *Id.* at 1183.

138. See *In re Order Instituting Rulemaking to Implement Commission’s Procurement Incentive Framework, Examine the Integration of Greenhouse Gas Emissions Standards into Procurement Greenhouse Gas Emissions Standards*, 2007 WL 1584321, at *7 (Cal. Pub. Util. Comm’n P.U.C. May 24, 2007) (noting that the “EPA’s earlier position regarding foreign policy preemption is no longer viable” because *Massachusetts v. EPA* “disapproves the argument that the President’s foreign policy regarding GHG preempts all domestic GHG regulation.”).

139. *Id.*

emission reduction policies.”¹⁴⁰ Further, the EPA recently stated that it “support[ed] and recognize[d] the success and necessity of State programs as a vital component in achieving GHG emissions reductions, particularly those focused on energy efficiency improvements.”¹⁴¹ President Obama has also issued a memorandum reinforcing the principle that “preemption of State law by executive departments and agencies should be undertaken only with full consideration of the legitimate prerogatives of the States and with a sufficient legal basis for preemption.”¹⁴² The EPA has also noted that Executive Order 13132 requires “agencies [to] construe federal statutes as preempting state law or issue regulations authorizing preemption only where the statute contains an express preemption provision, there is clear evidence that Congress intended to preempt state law, or the exercise of state authority conflicts with the exercise of federal authority.”¹⁴³ Since the EPA’s proposed regulations pursuant to section 111(d) of the CAA recognize the legitimacy of regional cap and trade programs and Congress is unlikely to develop a comprehensive cap and trade law, state-administered cap and trade programs linked with foreign governments do not conflict with the federal foreign affairs power.

III. PROPOSAL: PROMOTING A LARGE-SCALE MULTILATERAL CAP AND TRADE PROGRAM

A. *The EPA’s Role*

Given the EPA’s role in regulating GHG emissions, cap and trade programs will likely succeed where their goals align with the EPA’s programs. It is unclear whether the

140. *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295, 397 (D. Vt. 2007) (concerning an attempt to enjoin Vermont regulations adopting California’s vehicle GHG emissions standards).

141. *Mandatory Reporting of Greenhouse Gases*, 74 Fed. Reg. 56,260, 56,284 (Oct. 30, 2009).

142. Memorandum for the Heads of Executive Departments and Agencies, Subject: Preemption (May 20, 2009), *available at* http://www.whitehouse.gov/the_press_office/Presidential-Memorandum-Regarding-Preemption/.

143. *Endangerment and Cause or Contribute Findings for Greenhouse Gases*, EPA, <http://www.epa.gov/climatechange/endangerment/comments/volume11.html#12-4/> (last visited June 21, 2014).

EPA has authority under the CAA to create a cap and trade program for GHGs. While the EPA has already implemented a cap and trade program for the gases SO₂ and NO_x,¹⁴⁴ such gases are criteria pollutants which are regulated under a different section of the CAA.¹⁴⁵ Therefore, it appears unlikely that the EPA has the statutory authority to pursue a similar program for GHGs. Alternatively, some suggest the EPA could emphasize the role of interstate cooperation and multilateral programs in its NAAQs guidance to states.¹⁴⁶

In a similar manner, the EPA recently took a significant step to encourage states to use cap and trade programs. The EPA's proposed section 111(d) regulations¹⁴⁷ will likely encourage additional linkage between existing cap and trade programs. These regulations would require the power sector to increase efficiency, utilize opportunities for lower-emitting generation, and reduce demand¹⁴⁸ in order to cut its 2005 CO₂ emissions-levels by thirty percent by 2030.¹⁴⁹ According to the EPA, the regulations would produce substantial health and climate benefits while retaining coal and natural gas as the primary power plant fuels.¹⁵⁰ The EPA would create state-specific CO₂ reduction goals and states would independently or cooperatively develop plans to meet such milestones.¹⁵¹ Specifically mentioning existing cap and trade programs as a vehicle through which states could meet their

144. *Cap and Trade Programs*, EPA, <http://www.epa.gov/captrade/programs.html> (last visited June 21, 2014).

145. The EPA's interpretation that the GHG endangerment finding automatically triggered the PSD program relies on Section 165 of the CAA, which is not tied to Section 166's requirements. *See Coalition*, 684 F.3d at 143–44. The EPA's interpretation that the Tailpipe Rule automatically triggered the PSD program relies on Section 165 of the CAA, which is not tied to Section 166's requirements. *Id.* at 115, 143.

146. Dallas Burtraw et. al., RESOURCES FOR THE FUTURE, DP 13-04, LINKING BY DEGREES, INCREMENTAL ALIGNMENT OF CAP-AND-TRADE MARKETS 3 (2013), *available at* <http://www.rff.org/Publications/Pages/PublicationDetails.aspx?PublicationID=22167/>.

147. *See generally* Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 117 34,829 (June 18, 2014) (to be codified at 40 C.F.R. pt. 60) [hereinafter *Electric NSPS*].

148. *Id.* at 34,852.

149. *Id.* at 34,832.

150. The EPA anticipates these regulations will produce “net climate and health benefits of \$48 billion to \$82 billion,” while “coal and natural gas would remain the two leading sources of electricity generation in the U.S., with each providing more than 30 percent of the projected generation.” *Id.*

151. *Id.* at 34,833.

reduction goals,¹⁵² the regulations strengthen the possibility of broader multijurisdictional programs. By endorsing cooperative cap and trade programs as a viable option to attain reductions, the proposed regulations provide the impetus for reluctant states to join in a broad, state-administered cap and trade program.

B. Multilateral Mechanics

Pre-existing cap and trade programs can function as platforms to build linked cap and trade programs, but differences between these programs may complicate linkage. To bridge the gap between existing programs, some have proposed making incremental changes, or “linking by degrees.”¹⁵³ Such a process would allow states to gradually align their programs with others before committing to a linkage, allowing them to continue pursuing reductions and integrate the most successful attributes of their programs into the joint program.

The existing California cap and trade program could function as a framework for a multilateral agreement. The program, developed with the input of the RGGI architects,¹⁵⁴ has already begun linking with other markets.¹⁵⁵ Although California and Quebec intentionally designed their programs with compatibility in mind,¹⁵⁶ the differences between the markets show that cap and trade programs need not be perfectly synchronized (although differences may create price differentials).¹⁵⁷ While the linkage is in its early stages, the

152. Electric NSPS, 79 Fed. Reg. at 117, 34,834.

153. Burtraw, *supra* note 146, at 1.

154. *Id.* at 3.

155. *Id.* at 4 (“California and RGGI already are linking by degrees through cooperation and sharing of information, mutual learning and borrowing from each other’s program design.”).

156. *California ARB to Link Carbon Market with Quebec*, MCGUIRE WOODS (Apr. 22, 2013), <http://www.mcguirewoods.com/Client-Resources/Alerts/2013/4/California-ARB-to-Link-Carbon-Market-with-Quebec.aspx>.

157. See *California Amends Cap and Trade Regulation to Link to Quebec*, EVOLUTION MARKETS (May 10, 2012), http://www.evomarkets.com/desks/carbon_ca/post/5885 (“A key difference between Quebec and California is the surrender obligations between the two programs. California entities are required to surrender 30% of the annual obligation each year leading up to a true up at the end of the compliance period. This will lead to a drawing down of supply from the market by California entities over the compliance period. In Quebec, entities have until the end of the compliance period to surrender their full obligations. Additionally, California’s

future looks positive: while Quebec's initial carbon allowance auction¹⁵⁸ had fairly low sales of future allowances, most future allowances were purchased at the auction following the official announcement of the linkage.¹⁵⁹

While programs do not need to be exactly aligned to successfully link, "program elements that are not aligned could have important distributional or environmental consequences or generally contradict the founding principles of one of the constituent programs."¹⁶⁰ Generally, there are a few key areas that a broad, multilateral cap and trade program would have to address.

Preventing participating jurisdictions' goals from being undermined requires aligning each program's market stringency, offset policies, price floors and ceilings, and procedures for program changes and de-linkage as closely as possible. Some have suggested that large discrepancies between price allowances in participating markets can be addressed by implementing an "exchange rate" for allowances purchased in a linked market.¹⁶¹ Essentially, a state with higher-priced allowances could make a certain number of allowances purchased in a lower-priced market equivalent to one of its own allowances and reevaluate that number according to a particular schedule or pre-established formula.¹⁶² To avoid losing the power to choose the sorts of offsets that could be used in a particular cap and trade program, states can "impose import quotas, fees, or discount

offset system will retain provisions related to invalidation of offsets, whereby Quebec's program will not. This could lead to differentiation of pricing across Quebec and California offsets in the bilateral markets."); *see also* Burtraw, *supra* note 146, at 27–31 (discussing that linkage between California and the RGGI is possible, despite differences in sector focus and emissions caps).

158. Cap and trade programs typically allow carbon allowances to be purchased on a quarterly basis through government-run auctions. In California, for example, the state and utility companies within the state may sell allowances to emit CO₂ for the current year or future years. *See California Cap and Trade Updates*, ENVIRONMENTAL DEFENSE FUND, <http://www.edf.org/california-cap-and-trade-updates> (last visited Oct. 20, 2014). Emitters of threshold levels of CO₂ may purchase those allowances to meet their compliance obligations. *See id.*

159. Gloria Gonzalez, *Quebec's Carbon Market Rebounds After California Hook Up*, ECOSYSTEM MARKETPLACE (Mar. 10, 2014), http://www.ecosystemmarketplace.com/pages/dynamic/article.page.php?page_id=10242.

160. Burtraw, *supra* note 146, at 11.

161. *Id.* at 28.

162. *Id.*

rates” on undesirable offsets.¹⁶³ However, differing standards on offsets creates a “free-up effect,” meaning that offsets prohibited in one jurisdiction would be largely available in those that permitted them.¹⁶⁴ Therefore, the policy goals of each party are best effectuated by reaching consensus on offset eligibility. Additionally, maintaining investor confidence in the market requires trigger prices for the floor and ceiling to coincide.¹⁶⁵ Finally, “[t]he contingencies should be anticipated by each jurisdiction to provide reassurance to investors and legislatures.”¹⁶⁶ Participating states could further counteract the possibility of leakage¹⁶⁷ by enacting other regulation in tandem, such as California’s previously-discussed low carbon fuel standard.¹⁶⁸

C. Convincing States to Sign On

One of the greatest benefits provided by a multilateral state-based program is that it could yield substantial results even if only the largest-emitting states participated. In fact, a program incorporating the top five GHG-emitting states would address approximately one-third of total U.S. emissions.¹⁶⁹ Such a program should be fiscally appealing, as it would produce increased revenue for states without raising taxes.¹⁷⁰ Additionally, a variety of incentives could be offered

163. *Id.* at 29.

164. *Id.* at 28–29.

165. Burtraw, *supra* note 146, at 29 (“Different trigger prices for the floor and ceiling will influence allowance flows and prices and there also is a strong potential for differing floors to erode the environmental integrity of the linked programs. If they are not aligned, linking could undermine the value of previous investments and thereby the confidence of investors going forward.”).

166. *Id.* at 30.

167. “[A]chieving noticeable benefit from reducing emissions requires a significant undertaking that exceeds the reach of any one program especially in light of the fundamental free rider characteristic of the climate policy challenge.” *Id.* at 2.

168. “[C]ompetitiveness and leakage concerns might be ameliorated via an independent and parallel program that introduced a price on emissions either through cap and trade, a tax or some types of regulations.” *Id.* at 9.

169. Based on 2010 data, the U.S. emitted 5,661.79 MtCO₂e of GHGs, of which Texas, California, Ohio, Pennsylvania, Illinois accounted for 1,918.85 MtCO₂e (over 33.89%). WORLD RESOURCES INSTITUTE, *Climate Analysis Indicators Tool*, [http://cait2.wri.org/wri/US%20State%20GHG%20Emissions?indicator\[\]=Total%20GHG%20Emissions%20Excluding%20LUCF&indicator\[\]=Total%20GHG%20Emissions%20Including%20LUCF&year\[\]=2010&chartType=geo](http://cait2.wri.org/wri/US%20State%20GHG%20Emissions?indicator[]=Total%20GHG%20Emissions%20Excluding%20LUCF&indicator[]=Total%20GHG%20Emissions%20Including%20LUCF&year[]=2010&chartType=geo) (last visited June 21, 2014).

170. “After six auctions, [California’s cap and trade] program has generated

to convince states with diverging interests to take part in a multilateral cap and trade program and link existing markets.

First, participating states—by giving their businesses an incentive to adopt clean technology—would be leading the way in technological development and increasing economic competitiveness. Encouraging states to invest in such technologies and reduce their manufacturing costs would reduce the price gap between renewable and traditional energy.¹⁷¹ Using the market to make renewable technologies more attractive would ultimately allow the benefits of renewable energy to be more widespread,¹⁷² creating greater demand and benefitting states containing industry associated with such technologies.

Additionally, participation in a widespread program would signal a more united front and reinforce the image of strong commitment to further climate change mitigation efforts.¹⁷³ Further, a more uniform system would reduce both administration and compliance costs.¹⁷⁴ Therefore, business entities required to participate in cap and trade programs would likely prefer a more uniform, predictable system to a patchwork one.¹⁷⁵

Moreover, states with less economic power could benefit

\$663 million for the state so far, according to the California Air Resources Board. [California State Senator] Steinberg's office projects the permits could soon bring in \$3 billion to \$5 billion a year." Jeremy B. White, *Steinberg Plan Would Dedicate California Cap-and-Trade Dollars to Housing, Transit*, THE SACRAMENTO BEE (Apr. 14, 2014), <http://blogs.sacbee.com/capitolalert/latest/2014/04/steinberg-proposes-california-cap-and-trade.html>.

171. See U.S. Department of Energy, *Photovoltaics: Technologies, Cost, and Performance*, (Feb. 2012), available at http://www1.eere.energy.gov/solar/pdfs/47927_chapter4.pdf ("[R]educing the price of [photovoltaic] systems by about 75% by 2020—is projected to make [them] competitive with conventional sources on a levelized cost of energy (LCOE) basis.").

172. See *id.* ("Achieving this electricity price parity is projected to result in large-scale U.S. deployment of [photovoltaic] technologies, which would meet 11% of contiguous U.S. electricity demand in 2030 and 19% in 2050 . . .").

173. "The incremental alignment of program elements and the prospect of formal linking contribute a political benefit because they signal progress toward greater levels of cooperation necessary to achieve significant scale across jurisdictions." Burtraw, *supra* note 146, at 2.

174. *Id.* at 2–3.

175. "[B]oth formal and incremental linking help reduce the costs for regulated business by reducing the uncertainty they face in the development of different trading programs." *Id.* at 2.

from offset projects styled on Clean Development Mechanism (“CDM”) and REDD+ projects.¹⁷⁶ These states could commit to a “unilateral” linkage, which functions as an “exporting” market of allowances that the other market “imports” as offsets.¹⁷⁷ These projects would provide low-cost offsets while allowing market forces to help states with smaller economies gradually adopt cleaner or more efficient technology and infrastructure or retain more forest land. For example, CDM-style projects could address domestic improvements, such as upgrading railroad systems and updating the electric grid to increase electric power distribution efficiency. Giving states an incentive to preserve their forests also provides an alternative to developing those areas. Further, introducing cheaper allowances provides for mitigation gains at less cost, ultimately increasing the efficiency of the GHG reductions achieved.¹⁷⁸ Such projects would change the nature of the program to be more akin to an infrastructure investment than a tax, which could in turn increase public support.¹⁷⁹

While states would retain the ability to withdraw from the agreement—as New Jersey did from the RGGI—withdraw would not prove fatal to the system.¹⁸⁰ Further, the previously-discussed benefits provided by a widespread cap and trade program would likely make continued participation a logical course of action.

CONCLUSION

A broad, state-administered, multilateral cap and trade

176. REDD+ (Reduced Emissions from Deforestation and Forest Degradation), which is intended to fund forest preservation, remains a controversial policy for various reasons. See Chris Lang, *Debate: Should California Cap and Trade Use Forestry Offsets?*, REDD-MONITOR.ORG (May 21, 2013), <http://www.redd-monitor.org/2013/05/21/debate-should-california-cap-and-trade-use-forestry-offsets/>.

177. Burtraw, *supra* note 146, at 5.

178. *Id.* at 32.

179. In 2009, about fifty percent of Americans supported cap and trade and eleven percent were “unsure.” Pew Research Center, *Cap & Trade: Few Know What it is but Half Support the Idea*, (Nov. 10, 2009), <http://www.pewresearch.org/daily-number/cap-trade-few-know-what-it-is-but-half-support-the-idea/>.

180. Burtraw, *supra* note 146, at 30. The RGGI continues operating despite New Jersey’s withdrawal. See Mireya Navarro, *Christie Pulls New Jersey From 10-State Climate Initiative*, NEW YORK TIMES (May 26, 2011), http://www.nytimes.com/2011/05/27/nyregion/christie-pulls-nj-from-greenhouse-gas-coalition.html?_r=0.

program provides states with the flexibility they need to more aggressively mitigate climate change without subjecting them to litigation or worrying about other states undercutting their efforts. While aligning programs sufficiently to preserve the efficiency benefits of a cap and trade program requires states to compromise with each other, such compromises should be manageable without sacrificing the policies each state seeks to advance. Existing cap and trade programs provide a framework for other states to follow, and their success has established investor confidence that should carry on to a more widely-linked system. As it is unlikely a cap and trade program will be implemented on a federal level, states have the responsibility to join in their own program, preserving a high level of control over the system while benefitting directly from the resulting revenue.