

Energy Efficiency and Federalism

ANN E. CARLSON*

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I. INTRODUCTION

Everyone loves energy efficiency. Among an array of carbon-reducing strategies, energy efficiency surely ranks as the least controversial. Indeed, increasing energy efficiency is frequently lauded as having “net negative costs”—to use the terminology of the Intergovernmental Panel on Climate Change—meaning that the benefits outweigh the costs, even excluding benefits from avoided climate change.¹

* Shirley Shapiro Professor of Environmental Law and Faculty Director, Emmett Center on Climate Change and the Environment, UCLA School of Law. An earlier version of this article appeared online in 107 MICH. L. REV. FIRST IMPRESSIONS 63 (2008), <http://www.michiganlawreview.org/firstimpressions/vol107/carlson.htm> (2008). I thank Jonathan Zasloff for insightful comments on an earlier draft, Danae McElroy for superb research assistance, Lesley McAllister and the *San Diego Journal of Climate & Energy Law* for inviting me to their outstanding inaugural symposium, and the editorial staff of the Journal.

1. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT 58 n.22 (2007).

Yet the U.S. system for regulating appliances, which account for a huge percentage of the nation's carbon emissions,² is a mess. Since the federal government began regulating appliance efficiency in the 1970s, the process has been characterized by frequent delays and foot-dragging, followed by lawsuits and legislative overhauls. Amidst the turmoil, a number of states have attempted to assert leadership in setting appliance standards but have often faced federal roadblocks in so doing. I suggest that a reallocation of regulatory authority to parallel our system of auto emissions regulation is in order.

II. ENERGY EFFICIENCY AND CARBON EMISSIONS

Energy efficiency can include any number of policy strategies, such as setting tougher building standards, reducing transmission line leakage, and improving the efficiency of consumer and commercial products like air conditioners and computers. The savings in carbon emissions from adopting these strategies could be astoundingly large; buildings in the United States, for example, are responsible for 10% of worldwide emissions. Close to 60% of U.S. commercial building emissions and 75% of residential building emissions come from appliances, including water heaters, air conditioners, heaters, refrigerators, and electronics.³ Another 28% of commercial emissions and 13% of residential emissions come from lighting,⁴ which is regulated together with appliances under federal law. Thus, more than 85% of commercial and residential emissions come from appliances and lighting.⁵ The charts in Figure 1 below illustrate the sources of building emissions by commercial and residential sectors, respectively.

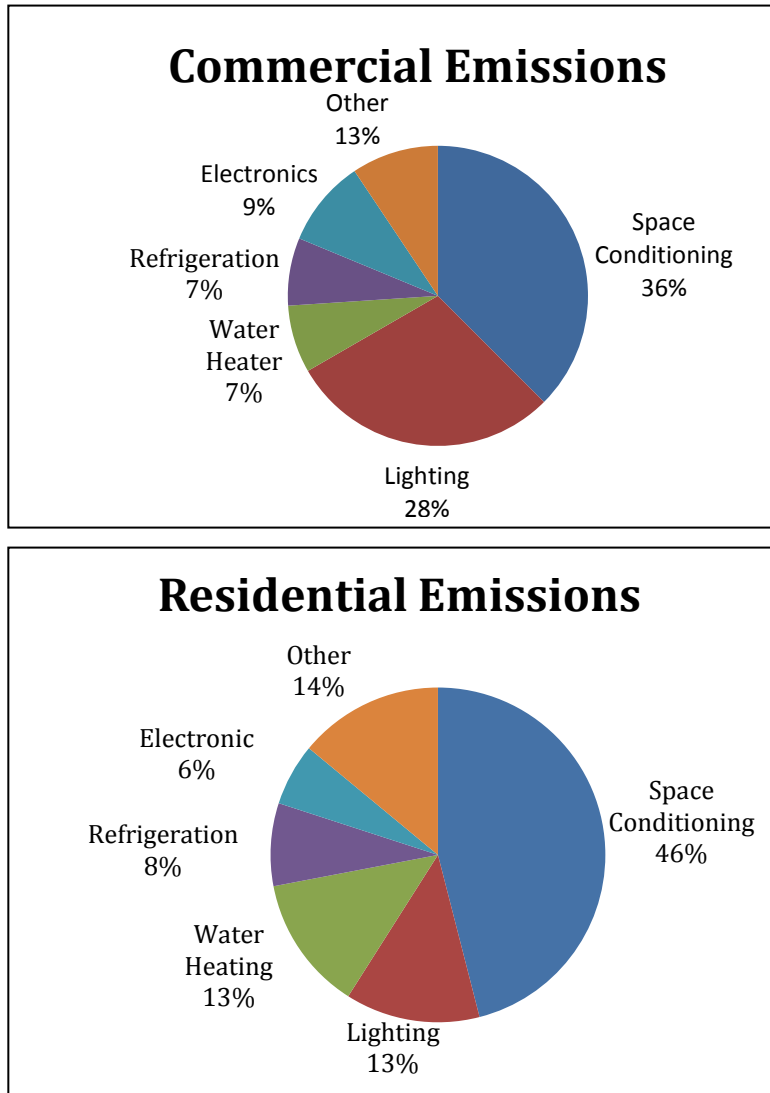
2. U.S. ENVIRONMENTAL PROTECTION AGENCY, U.S. GREENHOUSE GAS INVENTORY REPORTS, EXECUTIVE SUMMARY 8, 17 (2008), http://www.epa.gov/climatechange/emissions/downloads/08_ES.pdf.

3. *See* DEPARTMENT OF ENERGY, OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, 2005 BUILDINGS ENERGY DATA BOOK 3-1, 3-1 to 3-4 (2005).

4. *Id.*

5. *Id.*

FIGURE 1. U.S. CARBON EMISSIONS FROM BUILDINGS,
BY END USE



Source: Department of Energy, Energy Efficiency & Renewable Energy
Building Energy Data Book 2005

In the long run, a shift to alternative energy sources that emit no carbon would dramatically reduce emissions from buildings. But in the near and medium term, improvements in the energy efficiency of appliances may achieve more reductions at less cost. Moreover, unless the U.S. economy moves entirely away from fossil fuels as an energy source, energy efficiency can and should play a central role in stabilizing or reducing overall energy demand. Even if we replace our entire energy stock with renewable fuels, making appliances that reduce the use of those fuels is surely a laudable goal.

III. FEDERALISM AND APPLIANCE STANDARDS

California first began regulating appliance standards in the 1970s,⁶ and New York, Florida, and Kansas quickly followed.⁷ These states regulated appliance standards in order to overcome a market failure: appliances are often purchased not by those who will pay utility bills (renters/lessees of commercial and residential property and owners of new homes) but by developers and landlords, whose incentives are to purchase appliances with the cheapest initial cost rather than those that provide long term energy savings.⁸

In response to state regulatory activity in setting appliance standards, the federal government stepped in. In 1978, Congress enacted legislation that, in large measure, preempts states from adopting their own standards if the federal government has adopted a standard for the product at issue.⁹ States can apply for a waiver of preemption requirements for products with federal standards,¹⁰ but to date, the Department of Energy (DOE) has rejected the only waiver request that has been submitted—California’s 2006 petition for a waiver for residential clothes washers.¹¹

6. HOWARD GELLER, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY, NATIONAL APPLIANCE EFFICIENCY STANDARDS: COST EFFECTIVE FEDERAL REGULATIONS 1 (1995), available at <http://www.aceee.org/pubs/a951.htm>.

7. STEVEN NADEL ET AL., AM. COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY, LEADING THE WAY: CONTINUED OPPORTUNITIES FOR NEW STATE APPLIANCE AND EQUIPMENT EFFICIENCY STANDARDS 2 (2006), available at <http://www.aceee.org/pubs/a062.htm>.

8. For an extensive analysis of market failures and various energy using devices, see generally Mark D. Levine et al., *Energy Efficiency Policy and Market Failures*, 20 ANN. REV. ENERGY & ENV'T 535 (1995).

9. National Energy Conservation Policy Act, Pub. L. No. 95-619, 92 Stat. 3264 (1978).

10. *Id.*

11. NADEL ET AL., *supra* note 7, at 50; see U.S. Dep’t of Energy, Appliances and Commercial Equipment Standards: State Petitions, www1.eere.energy.gov/buildings/appliance_standards/state_petitions.html (last visited Oct. 19, 2009). California has requested reconsideration of the DOE denial. See CALIFORNIA ENERGY COMMISSION, PETITION FOR EXEMPTION FROM FEDERAL PREEMPTION OF CALIFORNIA’S WATER CONSERVATION

The standards for a waiver of preemption requirements are tough to meet. Under the Energy Policy Act, a state needs to show that more stringent state regulation is necessary to meet “unusual and compelling State or local energy or water interests” that “are substantially different in nature or magnitude than those prevailing in the United States generally.”¹² States must also seek a waiver to regulate products that lack federal standards, but generally speaking, the DOE has granted such waivers liberally. Essentially then, we have federal standards for major appliances (central air conditioning, heat pumps, furnaces, boilers, refrigerators, freezers, washers, dryers, ovens dishwashers, etc.) and state standards for less significant appliances (hot tubs, pool pumps, compact audio products, and DVD players, to name a few).¹³

Federal preemption of appliance standards is not problematic if federal authority is used effectively. If the aim of federal regulation is to promote improved energy efficiency, however, the federal government’s track record to date is not promising. Over the past forty years, federal performance on appliance standards has often included delay in implementing enabling legislation followed by litigation, grudging compliance, and the adoption of relatively weak standards. Weak standards obviously produce fewer energy savings and, hence, fewer greenhouse gas emissions reductions than stronger standards. Delay in the context of climate change has clear significance given the long shelf life of various greenhouse gases—100 years for carbon dioxide, for example¹⁴—and the resulting accumulation of gases in the atmosphere.

Federal foot-dragging in setting appliance standards began in the late 1970s and early 1980s.¹⁵ The National Energy Conservation Policy Act, passed in 1978, mandated energy efficiency standards for thirteen appliances if the regulations could be economically justified.¹⁶ In 1982, the DOE announced that it would not issue any standards.¹⁷ In *NRDC v.*

STANDARDS FOR RESIDENTIAL CLOTHES WASHERS, DOE Docket Number EE-RM-PET-100 2 (2007), http://www1.eere.energy.gov/buildings/appliance_standards/pdfs/cec_reconsideration_request.pdf.

12. 42 U.S.C. § 6297(d)(1) (2007).

13. Appliance Standards Awareness Project, Federal Standards, <http://www.standards asap.org/federal.htm> (last visited October 19, 2009).

14. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2001: SYNTHESIS REPORT 137 (2001).

15. GELLER, *supra* note 6.

16. Nat’l Res. Def. Council v. Herrington, 768 F.2d 1355, 1362-63 (D.C. Cir. 1985).

17. Julia Richardson & Robert Nordhaus, *The National Energy Act of 1978*, 10-SUM NAT. RESOURCES & ENV’T 62, 86 (1995).

Herrington, the D.C. Circuit overturned the DOE's regulatory declination.¹⁸

In the meantime, since the DOE had a general policy to approve state waiver requests in the absence of federal standards, several states stepped in to regulate, including California, New York, Florida, Connecticut, and Massachusetts.¹⁹ The flurry of state legislative activity led to manufacturers again clamoring for national standards and federal preemption.²⁰ The Natural Resources Defense Council worked with appliance trade groups to pass the National Appliance Energy Conservation Act (NAECA) in 1987.²¹ The NAECA set appliance standards statutorily for a number of residential appliances rather than relying on the DOE to set them.²² However, many appliances remained without standards, so the pattern has repeated itself several times. States issue standards for appliances omitted in federal legislation, then Congress preempts those standards in legislation, as it did in the 1992 Energy Policy Act²³ and again in the 2005 Energy Policy Act.²⁴ Pending legislation introduced in the current Congressional session includes new provisions to preempt state standards for various types of lighting, water dispensers, and several other smaller appliances.²⁵

The pattern of state regulation followed by federal preemption poses at least two potential problems. First, the federal government frequently sets standards at levels lower than seems appropriate when balancing energy savings with increased manufacturing costs. Second, manufacturers may be faced with competing state standards as well as the prospect of manufacturing separate products for a number of different markets around the country.

18. *Herrington*, 768 F.2d at 1433.

19. GELLER, *supra* note 6.

20. Martin Tolchin, *An Industry Asks for Regulation*, N.Y. TIMES, Feb. 17, 1987, available at <http://www.nytimes.com/1987/02/17/us/washington-talk-an-industry-asks-for-regulation.html?scp=1&sq=An%20Industry%20Asks%20for%20Regulation&st=cse>.

21. *Air Condition. & Refrig. Inst. v. Energy Res. Conserv. & Dev. Comm'n*, 410 F.3d 492, 499 (9th Cir. 2005).

22. National Appliance Energy Conservation Act of 1987 (NAECA), Pub. L. No. 100-12, 101 Stat. 103 (1987).

23. Energy Policy Act of 1992, Pub. L. No. 102-468, 106 Stat. 2776 (1992).

24. Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005).

25. See U.S. HOUSE OF REPRESENTATIVES, SECTION-BY-SECTION ON DISCUSSION DRAFT OF "THE AMERICAN CLEAN ENERGY AND SECURITY ACT OF 2009" at 4, http://energycommerce.house.gov/Press_111/20090331/acesa_sectionssummary.pdf. This is precisely the prediction that Elliott, Ackerman, and Millian made in their important 1985 article. See generally E. Donald Elliott et al., *Toward a Theory of Statutory Evolution: The Federalization of Environmental Law*, 1 J.L., ECON. & ORG. 313 (1985).

IV. LAX APPLIANCE STANDARDS AND DELAYS IN PROMULGATION

The federal government's decision to issue no efficiency standards in 1982 is only one instance of federal inaction. In 2005, fifteen states sued the DOE for failing to upgrade efficiency standards for twenty-two separate appliances.²⁶ As of 2006, the DOE was behind schedule in setting new standards by as many as thirteen years.²⁷ President Obama has made appliance standards an important part of his energy plan and has directed the DOE to complete standards that can produce the largest amount of energy savings ahead of schedule.²⁸ Nevertheless, the historical track record of the DOE has hardly been inspired—the General Accountability Office found in a 2007 report that the department had never met a statutory deadline for setting appliance efficiency standards.²⁹

The DOE has also been subject to political pushes and pulls in standard-setting.³⁰ For example, the Clinton Administration adopted a Seasonal Energy Efficient Ratio (SEER) 13 standard for all new air conditioning equipment as of January 2006, an increase from the existing SEER 10 standard.³¹ In 2001, the Bush Administration announced it was rolling back the standard to SEER 12, despite the position of its own Environmental Protection Agency that the rollback was based on a DOE analysis that both overstated the costs of the SEER 13 standard and underestimated the resulting savings.³² In 2004, the Second Circuit found the Bush Administration's promulgation of the

26. Consent Decree at 2-5, *State of New York, et al. v. Dep't of Energy*, No. 7807 (S.D.N.Y. Apr. 6, 2006).

27. Connecticut Attorney General's Office, *Attorney General Announces Federal Government Agrees to Tougher Appliance Energy Efficiency Standards* (Nov. 13, 2006), <http://www.ct.gov/ag/cwp/view.asp?A=2426&Q=327996>.

28. For a description of the current status of proposed federal standards and President Obama's position on appliance standard deadlines, see generally AM. COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY, *KA-BOOM! THE POWER OF APPLIANCE STANDARDS: OPPORTUNITIES FOR NEW FEDERAL APPLIANCE AND EQUIPMENT STANDARDS* (2009), <http://www.standardsasap.org/documents/Ka-BOOM!%20Executive%20Summary.pdf>.

29. GENERAL ACCOUNTABILITY OFFICE, *ENERGY EFFICIENCY: LONG-STANDING PROBLEMS WITH DOE'S PROGRAM FOR SETTING EFFICIENCY STANDARDS CONTINUE TO RESULT IN FORGONE ENERGY SAVINGS 5* (2007), <http://www.gao.gov/new.items/d0742.pdf>.

30. See *NRDC v. Abraham*, 355 F.3d 179, 184-191 (2d Cir. 2004); Ann E. Carlson, *Heat Waves, Global Warming, and Mitigation*, 26 *UCLA J. ENVTL. L. & POL'Y* 169, 211-212 (2007).

31. Environmental and Energy Study Institute, *Air Conditioner Efficiency Standards: SEER 13 vs. SEER 12*, http://www.eesi.org/030602_SEER_13 (last visited Oct. 19, 2009).

32. *Id.*

SEER 12 standard invalid in *NRDC v. Abraham*,³³ and the SEER 13 standard took effect January 1, 2007. The difference between the two standards is huge: the SEER 13 standard will reduce energy usage equivalent to the annual energy use of twenty-six million U.S. households (4.2 quads of energy) over twenty-five years versus only three quads of energy under the SEER 12 standard.³⁴ Further, the higher SEER standard will reduce 25% more smog-forming metric tons of nitrous oxides and carbon than the SEER 12 standard.

V. MULTIPLICITY OF STANDARDS FOR NATIONAL PRODUCT MARKETS

A byproduct of the federal government's failure to enact standards for certain appliances is that multiple states can step in to fill the regulatory void.³⁵ The result can mean a patchwork of state standards for numerous products.

Even proponents of a strong state role in environmental policymaking advocate federal preemption for the regulation of products for which there is a national market, such as appliances. The argument in favor of national standards is twofold. First, without national standards, states can shift the costs of regulation outside their jurisdictional boundaries.³⁶ For instance, an appliance manufacturer in Michigan may bear many of the costs of regulation imposed by Massachusetts. Second, national product manufacturers enjoy economies of scale in producing the same products for consumers in all fifty states.³⁷ Multiple state regulations not only eliminate this advantage but also likely increase compliance costs. Industry frequently looks to Congress to preempt state laws in favor of national legislation following a flurry of state regulatory activity. This is precisely the pattern that has repeated itself several times with respect to appliance standards.³⁸

Certainly, there are counterarguments to those made in favor of national preemption. Empirical evidence of more stringent auto emissions regulations in California suggests that residents of the state, rather than manufacturers, bear the financial burden of their cleaner

33. *Abraham*, 355 F.3d at 197-206.

34. Environmental and Energy Study Institute, *supra* note 31.

35. See NADEL ET AL., *supra* note 7, at iii.

36. Benjamin K. Sovacool, *The Best of Both Worlds: Environmental Federalism and the Need for Federal Action on Renewable Energy and Climate Change*, 27 STAN. ENVTL. L.J. 397, 418-19 (2008); see Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 624-25 (1996).

37. See, e.g., Richard L. Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 MINN. L. REV. 535, 544 (1997).

38. NADEL ET AL., *supra* note 7, at 2-3.

technology.³⁹ The argument that manufacturers will face fifty separate emission standards absent federal legislation also seems overstated. States often piggyback on one another's standards,⁴⁰ and few states in the country have market shares large enough to impose separate regulations with confidence that manufacturers will continue to serve their states. Delaware is not California.

In the context of appliance standards not covered by federal standards, some states jump into the regulatory void to enact their own standards. Most states, however, simply follow California's lead and enact California standards.⁴¹ Nevertheless, they are not required to follow California's lead, and there is no process for harmonizing state regulations to minimize regulatory multiplicity.

VI. CALIFORNIA AS REGULATORY LEADER

We have several problems, then, with our current system of appliance standards regulation. The federal government has frequently dragged its feet in issuing national standards, and the standards it has issued are often weaker than they could be to achieve significant energy savings at manageable cost. And for those appliances where no federal standards exist, multiple states jump in and sometimes issue different regulations for the same product. Moreover, many appliances remain subject to no regulation in states that choose not to regulate.

We frequently view our regulatory options in environmental policymaking as 1) federal regulation, 2) state devolution, or 3) some hybrid of cooperative federalism where the federal government sets minimum standards and states implement those standards while taking local conditions into account. With respect to automobile emissions standards under the Clean Air Act (CAA),⁴² however, we use a fourth option. Under the CAA, California has special regulatory authority to issue emissions standards that are at least as protective of public health

39. See Daniel Sperling et al., *Analysis of Auto Industry and Consumer Response to Regulations and Technological Change, and Customization of Consumer Response Models in Support of AB 1493 Rulemaking* (June 1, 2004).

40. See NADEL ET AL., *supra* note 7, at 2; STEVEN NADEL, AM. COUNCIL FOR AN ENERGY EFFICIENT ECONOMY, APPLIANCE AND EQUIPMENT EFFICIENCY STANDARDS: HISTORY, IMPACTS, CURRENT STATUS AND FUTURE DIRECTIONS 3 (1996), <http://www.aceee.org/pubs/a963.htm>.

41. NADEL ET AL., *supra* note 7.

42. Clean Air Act, 42 U.S.C. §§ 7401-7671 (2008).

and welfare as federal standards.⁴³ All other states are preempted from regulating auto emissions, but they can opt into the California standards.⁴⁴ As a result, about one-third of the country drives “California cars” and the remainder drives “federal cars.”

This unique scheme of federalism—what I’ve elsewhere called “iterative federalism”—has achieved remarkable reductions in pollutants from cars.⁴⁵ To take one example, California cars are more than 99% cleaner than they were in 1970.⁴⁶ Moreover, the California experience has allowed the state to take policy risks that, if successful, can be and have been exported to the rest of the country. Indeed, over the course of the forty-two years since California was first granted its “super-regulator” status, the federal government has followed California’s regulatory lead on at least ten separate occasions.⁴⁷ The California provision allows for the best of centralization and decentralization: the state serves as a laboratory of democracy while endorsing industry’s desire to avoid multiple state standards.

Why not adopt a similar regulatory scheme for the regulation of appliance standards? As long as California adopts standards at least as stringent as federal standards, the state should be allowed to regulate all appliances, not just those without federal standards. States that wish to follow California’s regulatory lead should be allowed to opt in, just as they can choose to follow California’s auto emissions standards. States other than California should be preempted from issuing their own standards. The country can then gain the benefits of policy experimentation and leadership while avoiding overlapping and potentially conflicting state standards.

Why California? The state has a long history of regulating in this area—a history that predates federal regulation—and is the de facto regulatory leader for appliances not subject to federal standards. Thus, it already possesses the regulatory capacity and expertise to take on the role. Moreover, the state obviously has a large enough consumer market to ensure that manufacturers will continue to serve Californians.

Congress should provide California with special status to regulate appliance standards whether or not it passes an economy-wide cap-and-

43. 42 U.S.C. § 7543.

44. 42 U.S.C. § 7507.

45. Ann Carlson, *Iterative Federalism and Climate Change*, 102 Nw. U. L. REV. 1097 (2009).

46. Kelly Zito, *Not All Share in Bay Area’s Cleansing Air*, SAN FRANCISCO CHRONICLE, Oct. 17, 2008, available at <http://www.sfchron.com/cgi-bin/article.cgi?f=/c/a/2008/10/17/BABE13CBGO.DTL>.

47. See Carlson, *supra* note 45, at 1110-28.

trade scheme to regulate carbon emissions.⁴⁸ In theory, such a scheme should raise energy prices enough to encourage appliance manufacturers to increase the energy efficiency of their products. In practice, though, the same market failure that led to appliance standards in the first place—a disconnect between those who buy appliances and those who pay their long term energy costs—will likely interfere with price signals sent by a carbon cap-and-trade system. Instead, Congress should allow California to set standards more stringent than federal law in order to encourage policy innovation that, if successful, can ultimately be exported to the rest of the country.

VII. CONCLUSION

Tackling climate change will require regulatory innovation across sectors and across levels of government, from cities to states to the federal government to international organizations. Appliance-efficiency regulation is an area that has largely escaped scholarly attention, yet it holds the promise of significant carbon reductions at a cost savings. Locating regulatory power in both the federal government and California magnifies the likelihood of maximizing these savings.

48. President Obama has proposed a cap-and-trade scheme to reduce carbon emissions as have leading members of Congress. See The White House, *Energy & Environment*, http://www.whitehouse.gov/issues/energy_and_environment (last visited Oct. 30, 2009). The leading House proposal is contained in the American Clean Energy and Security Act of 2009, introduced by Representatives Henry Waxman and Edward Markey. The Waxman-Markey bill passed the House of Representatives in June of 2009. See http://energycommerce.house.gov/index.php?option=com_content&view=article&id=1633&catid=155&Itemid=55 for the text of the bill as passed by the House. Senators Barbara Boxer and John Kerry introduced a Senate bill containing a cap-and-trade program, The Clean Energy Jobs and American Power Act, in September 2009. See U.S. Senate Comm. on Envtl. & Pub. Works., *Kerry, Boxer Introduce Clean Energy Jobs and American Power Act* Sept. 30, 2009, http://epw.senate.gov/public/index.cfm?FuseAction=Majority.PressReleases&ContentRecord_id=0c00344c-802a-23ad-4f4d-db0c9408d2e.