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California's Climate Change Program: Lessons for the Nation

Mary D. Nichols*

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I.

INTRODUCTION

Climate change is a real and urgent threat to our communities, our states and our nation. California, like many other states, is already experiencing its impacts. Over the past 100 years, the Golden State has seen a seven-inch rise in sea level, eroding our coastal communities and threatening critical infrastructure.¹ In the winter, more of our precipitation now falls as rain rather than snow, leading to less water availability in the critical spring and summer months—an impact that threatens one of the most productive agricultural regions in the world and a pillar of the nation's export economy.² Climate change is also a major factor in California's longer and more severe wildfire season—an impact dramatically illustrated in 2008 when over 1 million acres burned and air quality monitors were overwhelmed in efforts to measure record-breaking levels of particulate matter. And these effects are merely a preview.

1. CAL. CLIMATE CHANGE CTR., CAL. ENERGY COMM'N, OUR CHANGING CLIMATE: ASSESSING THE RISKS TO CALIFORNIA 12 (2006) [hereinafter CHANGING CLIMATE], available at <http://www.energy.ca.gov/2006publications/CEC-500-2006-077/CEC-500-2006-077.PDF>.

2. *Id.* at 7, 14.

It is predicted that without major efforts to reduce greenhouse gases, in this century California will see an additional one- to two-foot rise in sea levels, a doubling in the frequency of drought years, a 55 percent increase of large forest fires and a 75 percent loss in California's snowpack, our state's biggest natural reservoir.³ These threats are mirrored around our nation and around the globe. I emphasize them to underscore my contention that the nation must follow California's lead by taking swift, decisive and comprehensive action to address climate change.

Not only is climate change an urgent and dire threat, it is also a complex one. The combustion of fossil fuels is a major source of greenhouse gas emissions, but by no means the only one. Sources as diverse as agriculture, forestry and industrial processes also contribute to climate change. Cutting emissions from these sources will require a multifaceted response that includes a variety of regulatory, market-based and voluntary actions undertaken at all levels of government, industry and society. And, like the diversity of sources that contribute to climate change, the opportunities to reduce emissions—and the economic opportunities to create new, clean technologies—vary between different industries, regions and individuals.

California has responded quickly and decisively to the threat of climate change with a comprehensive set of actions to cut emissions and transition our economy to one driven by clean, efficient and sustainable energy sources. Like the rest of the world, we have a long way to go, but we have already faced many of the difficult issues that the nation must face in developing a program that is both effective and cost-effective. While we don't pretend to have all the answers for a federal climate policy, we do have many lessons to share. And indeed, many of the programs that California and its partners in other states have pioneered will remain critical tools in the constellation of policies we use to tackle this urgent threat.

In this article, I will describe the comprehensive approach that California is taking to address climate change. In doing so, I hope to underscore the need for a national response that is similarly comprehensive and that taps into efforts at all levels and in all sectors of our society.

3. *Id.* at 12, 15.

II.

THE IMPERATIVE OF STATE CLIMATE ACTION

A. *Exercise of a State's Police Powers to Protect Public Health and Its Natural Resources*

A fundamental role of the fifty sovereign states and of the federal government is to protect the public health and welfare of their citizens and safeguard their natural resources. In Assembly Bill 32, The California Global Warming Solutions Act of 2006, the legislature's findings list the serious threats of global warming "to the economic well-being, public health, natural resources, and the environment of California" as well as "the detrimental effects on some of California's largest industries. . . ." ⁴ These threats are real and significant. Not only are heat deaths in California's hot, interior valleys expected to rise, but heat-related deaths in coastal areas from temperature spikes will also occur at a higher rate since residents in these regions are unaccustomed to heat episodes and less likely to have air conditioning. ⁵ Air quality will decline with increased ozone exposures linked to global warming ⁶ and with increased particulate matter from wildfires. ⁷ Water supply disruptions, early springtime flooding that may overwhelm levees and sewage treatment plants, and late summer water shortages are also anticipated. ⁸ This partial list of direct, adverse public health impacts parallels the widespread projected harms to California's natural resources and marine and terrestrial ecosystems. ⁹

4. CAL. HEALTH & SAFETY CODE § 38501(a), (b) (West 2008).

5. See generally DEBORAH DRECHSLER ET AL., CAL. CLIMATE CHANGE CTR., PUBLIC HEALTH-RELATED IMPACTS OF CLIMATE CHANGE IN CALIFORNIA (2006), available at <http://www.energy.ca.gov/2005publications/CEC-500-2005-197/CEC-500-2005-197-SF.PDF>.

6. Mark Z. Jacobson, *On the Casual Link Between Carbon Dioxide and Air Pollution Mortality*, GEOPHYSICAL RESEARCH LETTERS, Vol. 35 (2008), available at <http://www.stanford.edu/group/efmh/jacobson/2007GL031101.pdf>.

7. R.J. Delfino et al., *The Relationship of Respiratory and Cardiovascular Hospital Admissions to the Southern California Wildfires of 2003*, 66 OCCUPATIONAL & ENVTL. MEDICINE 189, 189-197 (2009).

8. See generally SARAH KAPNICK ET AL., CAL. CLIMATE CHANGE CTR., OBSERVED CHANGES IN THE SIERRA NEVADA SNOWPACK: POTENTIAL CAUSES AND CONCERNS (2006), available at <http://www.energy.ca.gov/2009publications/CEC-500-2009-016/CEC-500-2009-016-D.PDF>.

9. See generally SUSANNE MOSER ET AL., THE FUTURE IS NOW: AN UPDATE ON CLIMATE CHANGE SCIENCE IMPACTS AND RESPONSE OPTIONS FOR CALIFORNIA (2008), available at <http://www.energy.ca.gov/2008publications/CEC-500-2008-077/CEC-500-2008-071.PDF>.

California's response to this crisis has been to propose, adopt and implement a comprehensive set of actions designed to reduce overall greenhouse gas emissions in California, improve our environment, reduce our dependence on oil, diversify our energy sources, save energy, create new jobs and enhance public health. This response is a classic exercise of a state's historic police powers to respond to the threats triggered by global warming.

B. *Exercise of the State's Policy Prerogative: Laboratory of Democracy*

Some have claimed that because greenhouse gases are dispersed evenly throughout the globe's atmosphere, California is not addressing its local air concerns and has launched itself on a futile and expensive mission. Not so. California is taking significant steps to cut its share of emissions and is providing a national and international model as the legislature intended.¹⁰ In discussing climate change, the United States Supreme Court noted in *Massachusetts v. Environmental Protection Agency*: "Agencies, like legislatures, do not generally resolve massive problems in one fell regulatory swoop. They instead whittle away at them over time, refining their preferred approach as circumstances change and as they develop a more-nuanced understanding of how best to proceed."¹¹ The Supreme Court rejected the U.S. Environmental Protection Agency's (EPA) claim that "curtailing motor-vehicle emissions would reflect 'an inefficient, piecemeal approach to address the climate change issue'" and served as a valid reason not to regulate greenhouse gas emissions from passenger vehicles.¹² In contrast, California adopted its Clean Car

10. CAL. HEALTH & SAFETY CODE § 38501(c), (d) (West 2008):

(c) California has long been a national and international leader on energy conservation and environmental stewardship efforts, including the areas of air quality protections, energy efficiency requirements, renewable energy standards, natural resource conservation, and greenhouse gas emission standards for passenger vehicles. The program established by this division will continue this tradition of environmental leadership by placing California at the forefront of national and international efforts to reduce emissions of greenhouse gases.

(d) National and international actions are necessary to fully address the issue of global warming. However, action taken by California to reduce emissions of greenhouse gases will have far-reaching effects by encouraging other states, the federal government, and other countries to act.

11. *Massachusetts v. EPA*, 549 U.S. 497, 524 (2007).

12. *Id.* at 533.

program¹³ as a first step and is exploring and adopting other options for further action in a comprehensive, reasoned manner.

In 1932, during the depths of the Depression, the Supreme Court struck down an Oklahoma statute that regulated the manufacture and distribution of ice.¹⁴ In his dissenting opinion, Justice Brandeis offered a detailed explanation of the State of Oklahoma's efforts to assure that its citizens, particularly those who were poor or who resided in rural areas, would have access to ice at a fair price in order to preserve food for individual use and to transport dairy products and other perishable items from its farms.¹⁵ Oklahoma's effort to regulate ice manufacture was through a license, essentially a monopoly blessed by a certificate of public convenience and necessity and similar to a public utility company providing electricity.¹⁶ Although the goal was to eliminate unbridled competition to control potential overabundance, this approach was not uniformly viewed as one that would be successful and could have very well worsened the problem.¹⁷ Justice Brandeis' dissent recognized the risk that Oklahoma chose, criticized the majority opinion that struck down Oklahoma's statute, and observed: "It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country."¹⁸

By embarking on a comprehensive, economy-wide reduction of greenhouse gases, California is addressing public health and welfare threats in a systematic manner for its citizens and serving its long-standing role as a laboratory for air pollution control. While there are upfront costs to controlling greenhouse gases, standards and programs to catalyze new technology and energy efficiency will save consumers money over the long term—money that can be spent and invested in our state's economy—and promote new California green jobs and technologies. California's courageous experiment is proceeding full bore and already reaping benefits.

Of course, California was not regulating greenhouse gases on a blank slate. Rather; the California Air Resources Board

13. CAL. HEALTH & SAFETY CODE §§ 38500-99 (West 2008); CAL. CODE REGS. tit. 13, § 1961.1 (2009).

14. *New State Ice Co. v. Liebmann*, 285 U.S. 262, 280 (1932).

15. *Id.* at 280-311.

16. *Id.* at 298.

17. *Id.* at 309-11.

18. *Id.* at 311.

(CARB) was continuing a half-century tradition of setting aggressive yet achievable standards for automakers to reduce emissions. Congress first recognized that tradition in 1967 in waiving federal preemption of California's motor vehicle standards,¹⁹ strengthened the waiver provision in 1977,²⁰ and, in that same year, authorized other states to opt-in to California's tougher standards.²¹ In 1990, Congress endorsed over two decades of EPA waiver practice granting California dozens of on-road waivers by further strengthening the waiver provision and expanding California's authority to separately regulate off-road mobile sources,²² and extended states' opt-in options to include this broader array of mobile source controls.²³ This last amendment represented a Congressional endorsement of EPA's practice of granting California dozens of preemption waivers for passenger and larger vehicles. Under CARB's leadership, passenger vehicle emissions—which were uncontrolled in 1965—were reduced by progressively more stringent emission standards. By 2003, the main components of smog were reduced by 99.3 percent for hydrocarbons, 96.2 percent for carbon monoxide, and 88.2 percent for oxides of nitrogen in the dramatically cleaner cars that we drive today.²⁴ Congress' vision that California act as a laboratory for the nation was realized. For example, in 2003, these federal passenger vehicle exhaust emissions standards were essentially identical to California's.²⁵ A comparison of the CARB and federal regulatory initiatives for light-duty and medium-duty vehicles shows EPA generally lagging from one to five years behind California with the notable exception that, to date, EPA has not

19. Clean Air Act § 209(b), 42 U.S.C. § 7543(b) (West 2008); *see* Motor & Equip. Mfrs. Ass'n, Inc. v. EPA, 627 F.2d 1095, 1110 (D.C. Cir. 1979) (citing legislative history for the 1967 amendments).

20. Clean Air Act § 207, 42 U.S.C. § 7543(b); *see* Green Mountain Chrysler Plymouth Dodge Jeep et al. v. Crombie, 508 F. Supp. 2d 295, 304 (D. Vt. 2007) (discussing the amendment's strengthening of the waiver provision).

21. Clean Air Act § 177, 42 U.S.C. § 7507 (2003), PL 95-95, Aug. 7, 1977, 91 Stat 685 (HR 6161), § 129(b).

22. These additional off-road sources include equipment for mining, construction, airport ground support and port drayage. Clean Air Act § 209(e)(2)(A), 42 U.S.C. § 7545(e)(2)(A) (2003).

23. Clean Air Act § 209(e)(2)(b).

24. Hydrocarbons were reduced from 8.7 grams/mile to 0.062, carbon monoxide was reduced from 90 grams/mile to 3.4 or less, and oxides of nitrogen were reduced from 3.4 grams/mile to 0.4 or less. NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMIES, STATE AND FEDERAL STANDARDS FOR MOBILE-SOURCE EMISSIONS Table 3-3, 92-93 (2006), available at <http://books.nap.edu/openbook.php?isbn=0309101514>.

25. *Id.*

adopted greenhouse gas emissions standards.²⁶ The National Academy of Sciences recognized California's integral role in achieving clean vehicles both here and nationally in its 2006 recommendation:

California should continue its pioneering role in setting mobile-source emissions standards. The role will aid the state's efforts to achieve air quality goals and will allow it to continue to be a proving ground for new emissions-control technologies that benefit California and the rest of the nation.²⁷

C. *Future National Climate Policy Framework: A Federal-State-Local Partnership*

As the range of policies described below illustrate, adequately responding to climate change requires extensive coordinated effort. National, state and local governments all share an equal and undifferentiated responsibility to protect the health and welfare of their residents. At the same time, the costs and opportunities of climate policy vary between regions, as do the economic development opportunities and the impacts of changing climate. Cities and states have been the major leaders to date in climate policy because they recognize how closely their interests are linked to those of their citizens. Federal policy must harness the initiative and creativity of cities and states just as its policy should set free the creativity of markets, businesses, and individual citizens to find new and better ways to reduce emissions while cleaning air and water and building new industry.

In several policy areas, an explicit and detailed partnership must be developed among federal, state and local partners. For instance, retrofitting our existing stock of residential, commercial and industrial buildings and ensuring that new buildings are built to the highest cost-effective levels of efficiency will be an essential, front-line tool that reduces national emissions while saving consumers and businesses money. It can—and must—be one of the key strategies that we employ to cut emissions. Yet fully implementing it on a national scale will require a revamped model of partnership.

By establishing broad policy requirements for utilities and for appliance standards, the federal government can set a floor for the nation. States and locals can go further, but there must be a

26. *Id.* at Table 3-4, 94-96.

27. *Id.* at 264-65.

minimum national standard. The federal government will also have a role in funding energy efficiency programs, in designing measurement systems and ensuring performance and accountability for public funds spent to increase efficiency. States will set building standards and can carry out energy efficiency campaigns directly for businesses, industry or households. States will also oversee utilities and their energy efficiency programs, demanding accountability and effectiveness of ratepayer funds expended in the effort. Cities and community-based nonprofits or local businesses will carry out much of the actual work in retrofitting homes and buildings, and cities will be responsible for building code enforcement.

This kind of coordinated action is the essence of a future national climate policy regime. It is the “cooperative federalism” that has served the nation well, especially in environmental and other resource issues, since the founding of the republic. This is yet another reason that federal policy must build from the efforts in the states and local communities, including California. States are not just a model; we are the foundation.

III.

CALIFORNIA'S MODEL OF POLICY DEVELOPMENT: LEADERSHIP, CROSS-AGENCY ENGAGEMENT, AND STAKEHOLDER INVOLVEMENT

As in every successful policy challenge, sustained leadership backed by solid work is a critical ingredient. Within California, we have enjoyed consistent leadership at the highest levels in both the public and private sectors. This leadership has empowered public servants, stakeholders from community groups and nongovernmental organizations, businesses, the scientific and academic community, and everyday individuals to develop creative and cost-effective policy solutions that are grounded in fact and science. This is a very important lesson for policymakers at the federal level to heed: consistent leadership from the top will empower government, business and individual citizens to develop and implement solutions throughout society.

A. *Consistent Leadership*

California's tradition of leadership in tackling major public health and environmental challenges can be traced back many

decades.²⁸ For nearly half a century, CARB has been a national leader in developing aggressive policies to cut emissions of criteria pollutants that pose significant public health risks.²⁹ The California Energy Commission has a similarly successful track record in developing and implementing energy efficiency programs that have not just put a big dent in our state energy demands but also saved consumers billions of dollars in the process.³⁰ The type of leadership that spawned and supported these sorts of programs has been a key component in the state's efforts to address climate change.

California responded to the growing scientific consensus about the dangers of climate change with a series of efforts beginning in the 1980s. In 1988, state legislator Byron Sher authored Assembly Bill 4420, which directed the California Energy Commission to work with CARB and other state agencies on the preparation of an emissions inventory and a report on the impacts of global warming in California.³¹ Throughout the 1990s, California undertook a number of additional efforts to analyze both the sources and impacts of climate change and began the development of policy recommendations to respond.³² In 2000, Senator Sher authored Senate Bill 1771, which established the California Climate Action Registry to record and register voluntary greenhouse gas emission reductions made by California entities.³³

These early leadership efforts were expanded and built upon through a series of legislative, administrative and executive actions that have continued throughout this decade. In 2002, Assembly Bill 1493 was signed into law, requiring CARB to set greenhouse gas emission standards for passenger vehicles.³⁴ California furthered its tradition of bold leadership in 2005 when

28. Cal. Air Resources Board, Key Events in the History of Air Quality in California, <http://www.arb.ca.gov/html/brochure/history.htm> (last visited Apr. 8, 2009).

29. *Id.*

30. Cal. Energy Comm'n, California's Energy Efficiency Standards for Residential and Nonresidential Buildings, <http://www.energy.ca.gov/title24/> (last visited Apr. 8, 2009).

31. Assem. B. 4420, 1988 Reg. Sess., Cal. Statutes 1988, chapter 1506 (Cal. 1988).

32. California Climate Change Portal, History of California's Involvement in Air Pollution and Global Climate Change, <http://www.climatechange.ca.gov/background/history.html> (last visited Apr. 8, 2009).

33. Sen. Bill 1771, 2000 Reg. Sess., Cal. Statutes 2000, ch. 1018 (Cal. 2000) (codified as CAL. HEALTH & SAFETY CODE §§ 42800-70 (West 2008)); CAL. PUB. RES. CODE § 25730 (West 2008).

34. Assem. B. 1493, 2002 Reg. Sess., Cal. Statutes 2002, ch. 200 (Cal. 2002) (codified at CAL. HEALTH & SAFETY CODE §§ 38500-99 (West 2008)).

Governor Schwarzenegger issued Executive Order S-03-05, which established statewide emission reduction targets and created the Climate Action Team to coordinate state global warming strategies. In 2006, the groundbreaking Assembly Bill 32 (AB 32) was passed and signed into law. These and a number of other related efforts that continue to this day have put California in a position of leadership on the issue of climate change not just in this country, but internationally as well.

B. Efforts by California's State Agency Climate Action Team

In addition to establishing aggressive greenhouse gas emissions reduction targets for California, Governor Schwarzenegger's 2005 Executive Order established the Climate Action Team (CAT).³⁵ Led by the secretary of the California Environmental Protection Agency, the CAT has helped to coordinate and spearhead state emission reduction efforts across the administration. While CARB is charged as the lead agency for implementing AB 32, the magnitude and complexity of the effort requires a mobilization of resources across state government. In addition to ensuring that state policies are appropriately constructed to contribute towards California's climate efforts, the CAT has helped bring a renewed sense of political momentum to the various initiatives of individual state agencies as well.

The Climate Action Team consists of a number of agencies, boards, departments and commissions—all having key roles and responsibilities in developing and implementing strategies that will help California meet its emission reduction targets.³⁶ For instance, the Department of Water Resources is working on strategies to reduce the amount of energy to transport water in the state. A staggering 19 percent of electricity in the state is used to move water.³⁷ The Department of Forestry is developing policies to increase the amount of standing forest biomass—the state's

35. Exec. Order No. S-3-05 (June 1, 2005), available at <http://www.dot.ca.gov/hq/energy/ExecOrderS-3-05.htm>.

36. CAL. ENVTL. PROTECTION AGENCY, CLIMATE ACTION TEAM REPORT TO GOVERNOR SCHWARZENEGGER AND THE LEGISLATURE (Mar. 2006), available at http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF.

37. CAL. ENERGY COMM'N, CALIFORNIA'S WATER - ENERGY RELATIONSHIP 1 (2005), available at <http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF>; CAL. CLIMATE ACTION TEAM, PROPOSED WET-CAT STRATEGIES AND MEASURES (Mar. 24 2008), available at http://www.climatechange.ca.gov/wetcat/documents/wetcat-strategy_summaries_3-24-08.pdf.

living carbon sequestration, and the Department of Food and Agriculture is helping ranchers cut emissions from dairies and feedlots.³⁸ Similarly, the California Energy Commission and Public Utilities Commission are playing key roles in developing and carrying out strategies on energy efficiency and renewable energy.³⁹

C. *Stakeholders: Local Governmental Agencies, Industry, NGOs and Individuals*

Californians at all levels are responding to the shared challenge of cutting greenhouse gas emissions. The level of engagement between CARB and our partner agencies with stakeholders in developing California's comprehensive climate strategy has been unprecedented. Over the past several years, we have held hundreds of public workshops, meetings and dialogues and have received thousands of comments from individuals, businesses and organizations.⁴⁰ This process has and will continue to be a very important part of helping to shape and successfully implement our program.

Over 120 California cities and counties have signed the United States Conference of Mayors Climate Protection Agreement,⁴¹ and many have established offices of climate change and are developing comprehensive plans to reduce their carbon footprint. California's thirty-five local air districts—some individually and all through their statewide group, the California Association of Air Pollution Control Agencies—have taken steps to use planning, permitting and other tools to address climate change.⁴² California's local air district agencies will be a key partner in CARB's efforts to ensure the statewide AB 32 regulations are effectively enforced.

More than 300 companies, municipalities, organizations, and corporations are members of the California Climate Action Registry, reporting their greenhouse gas emissions on an annual ba-

38. CAL. AIR RESOURCES BOARD, CLIMATE CHANGE SCOPING PLAN 66, 69 (2008) [hereinafter SCOPING PLAN], available at http://www.arb.ca.gov/cc/scoping_plan/document/adopted_scoping_plan.pdf.

39. *Id.* at 44-46.

40. Cal. Air Resources Board, Summary of Scoping Plan Comments, <http://www.arb.ca.gov/cc/scopingplan/comments/summary.htm> (last visited Apr. 5, 2009).

41. Mayors Climate Protection Center, List of Participating Mayors, <http://www.usmayors.org/climateprotection/list.asp> (last visited Apr. 17, 2009).

42. Cal. Air Pollution Control Officers Association, Climate Change, <http://www.capcoa.org/climatechange/> (last visited Apr. 5, 2009).

sis.⁴³ Many other businesses and corporations are making climate change part of their fiscal and strategic planning, and individuals and households throughout the state have, and will continue to, take steps to reduce greenhouse gas emissions in their daily activities. To assist in these efforts, CARB has been working with the California Energy Commission, academia and non-profit organizations to develop a personal carbon calculator easily accessible via a website that includes tips and strategies that individuals or businesses can take to reduce greenhouse gas emissions.⁴⁴ In addition to developing and implementing regulatory programs to address climate change, we have found that a key part of our role is also providing information that gives all Californians the tools and knowledge necessary to participate in efforts to respond to our shared challenge.

IV. MULTIPLE CHALLENGES, MULTIPLE TOOLS

Addressing the threat of climate change will require a coordinated set of strategies to reduce emissions throughout the economy. These strategies will fit within the comprehensive emissions tracking, reporting and enforcement framework that is already being developed and implemented. And they will be informed by a number of key criteria, including: cost-effectiveness, overall societal benefits like energy diversification and public health improvements, minimization of emissions leakage, and minimization of impacts on specific groups like small business and disproportionately affected communities.⁴⁵ The comprehensive approach that California is taking to cut emissions reflects a balance among these and other important factors and will help ensure that California meets its greenhouse gas reduction targets in a way that promotes and rewards innovation, helps foster economic growth and delivers improvements to the environment and public health.

43. Cal. Climate Action Registry, <http://www.climateregistry.org/about.html> (last visited Apr. 5, 2009).

44. Cool California, <http://www.coolcalifornia.org/index.html> (last visited Apr. 5, 2009).

45. California Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE § 38562(b) (West 2006).

A. *Governor Arnold Schwarzenegger's Climate Change Executive Orders*

Many core elements of California's climate program are the result of executive orders⁴⁶ issued by California Governor Arnold Schwarzenegger over the past several years. These orders reflect overarching priorities of the state, especially in addressing overlapping goals, developing the promising economic potential of clean and green technology and—of course—in taking strong and quick action to tackle the urgent threat of global warming.

In 2005, prior to the passage and adoption of AB 32, Executive Order S-3-05 set ambitious targets for greenhouse gas reductions. This Executive Order called for a return to 1990 emission levels by 2020 and an 80 percent reduction from 1990 levels by 2050.⁴⁷ These targets mobilized the resources, political will and imagination of the state to take bold action to transform our economy to one driven by clean and efficient energy sources.

In 2006, following the passage of AB 32, Executive Order S-20-06 reemphasized the need for strong and coordinated action among state agencies and set out additional priorities in California's climate efforts.⁴⁸ Recognizing the role that California leadership could play beyond our state borders, this order called for the creation of the Market Advisory Committee to help design a cap-and-trade system that would create a hard cap on state emissions and that could be linked to other greenhouse gas reduction markets in the Western region, the European Union and elsewhere.⁴⁹

A number of other executive orders have put additional pieces of California's comprehensive climate plan in place. Executive Order S-06-06 set targets for increased use of the state's abundant agriculture, forestry and urban waste biomass resources to provide transportation fuels and electricity.⁵⁰ In January 2007, Executive Order S-01-07 set in motion the creation of the world's first low-carbon fuel standard to reduce the carbon intensity of transportation fuels by 10 percent and to accelerate a robust mar-

46. Office of the Governor, State of California, Executive Orders, <http://gov.ca.gov/archive/executive-orders> (last visited Apr. 5, 2009).

47. Exec. Order No. S-03-05 (June 24, 2005), available at <http://gov.ca.gov/executive-order/1861/>.

48. Exec. Order No. S-20-06 (Oct. 18, 2006), available at <http://gov.ca.gov/index.php?/executive-order/4484/>.

49. *Id.*

50. Exec. Order S-06-06 (Apr. 25, 2006), available at <http://gov.ca.gov/executive-order/183/>.

ket for the advanced fuels in the process.⁵¹ Executive Order S-14-08, signed on November 17, 2008, strengthened the powerful drivers for renewable electricity generation by increasing California's renewable portfolio standard so that all retail sellers of electricity shall serve 33 percent of their load as renewable energy by 2020.⁵² And another executive order issued in November 2008, S-13-08, called for the California Resources Agency to develop a climate adaptation strategy for California by June 30, 2009.⁵³

B. *California's Assembly Bill 32 Framework: Markets and Mandates*

The meat and potatoes of California's climate policy framework is set by legislation still referred to by its bill number: AB 32. More properly called The California Global Warming Solutions Act of 2006, the bill is distinctive in setting broad goals, defining specific criteria for action and empowering a few bodies to create the mechanisms to reach these goals.⁵⁴ Based on its long-standing, deep expertise in addressing complex pollution issues, CARB was given the lead task of devising the basic regulatory strategy to achieve the necessary greenhouse gas reductions.

AB 32 requires California to reduce its greenhouse gas emissions to 1990 levels by 2020.⁵⁵ An important first step was to develop a robust inventory of greenhouse gas emissions, and establish a 1990 emissions baseline from which reduction strategies could be appropriately developed and measured.⁵⁶ After a meticulous examination of all sources in every sector—the full inventory database is available online and includes close to 1,000 separate sources⁵⁷—the total reduction necessary to meet AB 32's target was estimated at 174 million metric tons, roughly the amount of carbon dioxide generated by 35 million cars in a year. The 2020 goal is a 15 percent reduction from current levels of greenhouse gas emissions, approximately a 30 percent reduction

51. Exec. Order S-01-07 (Jan. 18, 2007), *available at* <http://gov.ca.gov/executive-order/5172/>.

52. Exec. Order S-14-08 (Nov. 17, 2008), *available at* <http://gov.ca.gov/executive-order/11072/>.

53. Exec. Order S-13-08 (Nov. 14, 2008), *available at* <http://gov.ca.gov/executive-order/11036/>.

54. California Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE § 38550 (West 2006).

55. *Id.*

56. *Id.*

57. Cal. Air Resources Board, California Greenhouse Gas Emissions Inventory, <http://www.arb.ca.gov/cc/inventory/inventory.htm> (last visited Apr. 5, 2009).

from where California would be in 2020 under a business-as-usual scenario with nothing done to reduce greenhouse gas emissions. Viewed through the lens of an individual, the average person's annual greenhouse gas emissions, now at about 14 tons each year, must be cut to 10 tons by 2020.⁵⁸

Following development of the inventory, the next AB 32 milestone was met in December 2007, when the Board adopted mandatory reporting requirements with initial reports due in 2009 from about 800 sources.⁵⁹ AB 32's statutory demands continue to accelerate, and the first set of direct emission reduction regulations, called discrete early actions measures, must be in effect by January 1, 2010.⁶⁰ One early action regulation was the Board's July 2008 requirement that oceangoing ships docking in California ports turn off their auxiliary engines and plug into clean onshore electric power.⁶¹ Another early action measure, planned for adoption in the spring of 2009, will reduce emissions of methane, a potent greenhouse gas, from landfills.⁶²

In many ways, the centerpiece of AB 32 is its requirement for the creation of a scoping plan.⁶³ The scoping plan establishes the framework of measures, policies and approaches for every sector of the economy to achieve the emission reductions sufficient to meet the 2020 target and to set California on course for much deeper, sustained reductions well into the future.⁶⁴ The scoping plan was developed during a year-long period that included scores of workshops and stakeholder and public meetings to gather feedback on recommended measures.⁶⁵ In December 2008, the Board unanimously approved the scoping plan's recommendations, moving California further along the path toward the

58. SCOPING PLAN, *supra* note 38, at 10.

59. CAL. HEALTH & SAFETY CODE § 38530; CAL. AIR RESOURCES BOARD, RESOLUTION 07-54 (2007), available at <http://www.arb.ca.gov/regact/2007/ghg2007/res0754.pdf>; CAL. AIR RESOURCES BOARD, STAFF REPORT: INITIAL STATEMENT OF REASONS FOR RULEMAKING – PROPOSED REGULATION FOR MANDATORY REPORTING OF GREENHOUSE GAS EMISSIONS PURSUANT TO THE CAL. GLOBAL WARMING SOLUTIONS ACT OF 2006 iv, v, 5, 6, 63, 64 (2007), available at <http://www.arb.ca.gov/regact/2007/ghg2007/isor.pdf>.

60. California Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE § 38560.5 (West 2006).

61. CAL. CODE REGS. tit. 17, § 93118.3 (2007).

62. Cal. Air Resources Board, Landfill Methane Control Measure, <http://www.arb.ca.gov/cc/landfills/landfills.htm> (last visited Apr. 5, 2009).

63. California Global Warming Solutions Act of 2006, CAL. HEALTH & SAFETY CODE § 38561(a) (West 2006).

64. *Id.* at § 38561.

65. SCOPING PLAN, *supra* note 38, at ES-2, ES-3, 1.

implementation of a combination of targeted sector-specific regulations and an economy-wide cap-and-trade system.

Our cap-and-trade program will eventually cover 85 percent of our state's emissions, will be linked to our partners in the Western Climate Initiative (WCI)⁶⁶—currently including seven Western states and four Canadian provinces, and will create a reliable long-term price signal for industry and business to invest in clean technologies. The scoping plan also includes over fifteen sector-specific policies that incorporate flexible performance standards, market-based measures and voluntary incentives. Those policies are designed to break down market barriers to efficiency, kick-start transformative low-carbon technologies, harmonize related policies and provide significant co-benefits to California's economy, environment and residents.⁶⁷

As explained in more detail below, our policies to address transportation-related greenhouse gas emissions—from vehicles, their fuels and their usage—are excellent examples of this integrated and sequenced strategy outlined in the scoping plan.

C. *California's Upcoming Development of a Cap-and-Trade Program*

By establishing a firm cap on 85 percent of the state's greenhouse gas emissions, the cap-and-trade program is an essential component of the overall plan to meet the 2020 target and provides a robust mechanism to achieve the additional reductions needed by 2050. California is working closely with other states and provinces in the Western Climate Initiative to design a regional cap-and-trade program that can deliver reductions of greenhouse gas emissions throughout the region. The WCI Partner jurisdictions released the program design document on September 23, 2008.⁶⁸

The proposed cap-and-trade measure phases in different sectors over two compliance periods. Starting in the first compliance period (2012), a cap will be placed on in-state electrical generating facilities that emit over 25,000 metric tons of carbon

66. WESTERN CLIMATE INITIATIVE, DESIGN RECOMMENDATIONS FOR THE WCI REGIONAL CAP-AND-TRADE PROGRAM (2008), available at <http://www.westernclimateinitiative.org/ewebeditpro/items/O104F21252.pdf>.

67. SCOPING PLAN, *supra* note 38.

68. WESTERN CLIMATE INITIATIVE, DESIGN RECOMMENDATIONS FOR THE WCI REGIONAL GREENHOUSE GAS CAP-AND-TRADE PROGRAM (2008), available at <http://www.westernclimateinitiative.org/ewebeditpro/items/O104F21252.pdf>.

dioxide equivalent per year,⁶⁹ including electricity imports not covered by a WCI partner jurisdiction. The California Public Utilities Commission and the California Energy Commission recently conducted a joint proceeding to analyze design recommendations for the inclusion of the electricity sector in a multisector cap-and-trade program that will help inform CARB's process.⁷⁰

Large industrial facilities that emit over 25,000 metric tons carbon dioxide equivalent per year, including gases with high global warming potential, will also be included in the first compliance period.⁷¹ Starting in the second compliance period (2015), there will be upstream treatment of industrial fuel combustion at facilities with emissions at or below 25,000 metric tons carbon dioxide equivalent per year. All commercial and residential fuel combustion will be regulated where the fuel enters into commerce. Additionally, in this second period, transportation fuel combustion will be regulated where the fuel enters into commerce.

In developing the cap-and-trade program, California will face a number of issues for which no precedent exists. There are, to be sure, cap-and-trade systems such as the Regional Greenhouse Gas Initiative in the Northeast.⁷² And there have been successful programs in the past, including the original program itself, the acid rain cap-and-trade system.⁷³ Both these examples however, involve only a single sector of the economy—energy—and a limited number of participants. By contrast, the California program will involve nearly every sector of the economy and include hundreds, if not thousands, of participants and revenues that will run into the billions of dollars.

The launch date for the cap-and-trade program is targeted for January 1, 2012. By mid-2010, we plan to release the preliminary draft regulation, and present the regulation to the Board in November 2010. Leading up to these implementation benchmarks, CARB will seek input from experts on issues including allowance

69. Allowances will not be required for combustion emissions from carbon-neutral projects.

70. CAL. PUBLIC UTILITIES COMM'N & CAL. ENERGY COMM'N, PROPOSED FINAL OPINION ON GREENHOUSE GAS REGULATORY STRATEGIES, (2008), available at <http://www.energy.ca.gov/2008publications/CEC-100-2008-007/CEC-100-2008-007-D.PDF>.

71. SCOPING PLAN, *supra* note 38, at 31.

72. Reg'l Greenhouse Gas Initiative, <http://www.rggi.org/rggi> (last visited Apr. 5, 2009).

73. U.S. EPA, Clean Air Markets: Acid Rain Program, <http://www.epa.gov/airmarkets/progsregs/arp/index.html> (last visited Apr. 5, 2009).

distribution, use of program revenues, and how the program will impact the economy and public health. Another important issue is the role that offsets—reductions achieved through accredited programs in sectors or areas that are not under the cap—will play. The challenges facing California in this pathfinding enterprise are therefore legal, fiscal, technical and political all at once.

V.

COMPREHENSIVE POLICY EXAMPLE: TRANSPORTATION SECTOR

California, with its strong car culture and unique air pollution problems, has a long history of addressing emissions from transportation.⁷⁴ However, the transportation sector has always been a challenging one, with millions of individual vehicles; separation between the producers and the purchasers of vehicles, fuels and transportation infrastructure; and serious economic “market failures.”

Totaling about 40 percent of California’s greenhouse gas emissions,⁷⁵ mobile source emissions must be dramatically reduced if we are to meet our long-term goals, and, because of the time needed for fleet turnover, we must start now. The integrated combination of transportation-sector-specific measures such as those we are pursuing in California will generate much-needed innovation in vehicles and fuels, transforming these industries toward a low-carbon future—all while yielding net cost savings to consumers.

A. *California’s Passenger Vehicles Greenhouse Gas Regulation: The Pavley Standards*

In 2002, four years before AB 32 was enacted, California took a major step in the fight against global warming by adopting Assembly Bill 1493.⁷⁶ AB 1493, authored by Assembly member Fran Pavley, required CARB to set greenhouse gas emission standards for new passenger vehicles starting with model year 2009.⁷⁷ CARB’s regulations will significantly reduce greenhouse

74. History of California’s Involvement in Air Pollution and Global Climate Change, <http://www.climatechange.ca.gov/background/history.html> (last visited Apr. 5, 2009).

75. SCOPING PLAN, *supra* note 38, at 13.

76. Assem. B. 1493, 2002 Reg. Sess. (Cal. 2002) (codified in CAL. HEALTH & SAFETY CODE §§ 38500-99 (West 2008)).

77. *Id.*

gas emissions from passenger vehicles, make a significant contribution to the state's 2020 emission reduction goals and save drivers of Pavley-compliant vehicles an estimated \$30 each month in avoided fuel costs.⁷⁸

CARB's passenger vehicle standards are also serving as a bridge for other states to follow California's lead in implementing greenhouse gas reduction strategies. Pursuant to section 177 of the Clean Air Act, states required to submit plans to meet federal air quality criteria can opt-in to California's motor vehicle standards and require that only California-certified vehicles be sold in their state.⁷⁹ As with California's low-emission vehicle standards, many states are adopting California's greenhouse gas standards, giving their residents lower-polluting vehicles that save them money at the pump. As of early 2009, thirteen other states and Washington D.C. have used the section 177 process, and other states are considering adopting California's greenhouse gas standards that are now set through model year 2016.⁸⁰ As with our decades-long efforts to reduce smog emissions, CARB's future work will be to strengthen the Pavley regulations for model years after 2016. Over time, we envision more states adopting California's standards, or EPA setting stringent national greenhouse gas standards mirroring those technology-forcing standards set by California.

Air pollution control is a long standing exercise of California's police powers. When the auto industry challenged the Pavley standards in court, it argued that federal law preempted them. In upholding them as a classic exercise of California's police powers, the court highlighted this long history of California's actions and Congressional approval, and it referenced Justice Brandeis' "single courageous State" sentence from his *New State Ice Co.* dissent.⁸¹ California continues to serve its role as an innovator

78. SCOPING PLAN, *supra* note 38, at 39.

79. Clean Air Act, § 177, 42 U.S.C. § 7507 (2009).

80. The thirteen states that have adopted California emissions standards are: Arizona, Connecticut, Maine, Maryland, Massachusetts, Washington, Vermont, New York, Oregon, Pennsylvania, Rhode Island, New Mexico, New Jersey, and Washington D.C. See Clean Cars Campaign, <http://www.cleancarscampaign.org/> (last visited April 17, 2009).

81. *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295, 344-346 (D. Vt. 2007); see *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting) ("It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country.").

for vehicle greenhouse gases reductions and, to date, we and our partner states have successfully rebuffed repeated legal challenges from the auto industry on the Pavley regulations.⁸²

B. California's Low-Carbon Fuel Standard

Governor Schwarzenegger's Executive Order S-01-07 calling for the creation of a low-carbon fuel standard initiated what is quickly becoming a new policy paradigm in dealing with greenhouse gas emissions associated with transportation fuels.⁸³ The essence of the low-carbon fuel standard (LCFS) is a requirement that fuel providers reduce the average lifecycle greenhouse gas intensity of the transportation fuels they sell in California by at least 10 percent by 2020.⁸⁴ Following California's lead, the European Union has set about creating their own LCFS, several U.S. states and Canadian provinces are actively developing LCFS proposals, and several versions of a national LCFS have been proposed in Congress.⁸⁵

CARB adopted the LCFS for transportation fuels as a "discrete early action measure," meaning it would be developed as one of the first regulations to be implemented under AB 32.⁸⁶ The LCFS was formally noticed on March 6, 2009 and will be considered for adoption by the Board in the spring of 2009.

As with the Pavley regulations, flexibility is built into the LCFS. A carbon intensity level is set for providers of transportation fuels sold in California at an initial level for the statewide pool of transportation fuels, and the carbon intensity is incrementally lowered each subsequent year.⁸⁷ Providers can meet

82. *Id.* at 399; *Central Valley Chrysler-Jeep v. Goldstene*, 529 F. Supp. 2d 1151, 1190 (E.D. Cal. 2007); *Central Valley Chrysler-Jeep v. Goldstene*, 563 F. Supp. 2d 1158, 1161 (E.D. Cal. 2008) (following from the original decision, denying Plaintiff's Motion for Reconsideration and Motion for Modification of Terms of Injunctive Relief).

83. Exec. Order No. S-01-07 (Jan. 18, 2007), available at <http://gov.ca.gov/executive-order/5172/>.

84. *Id.*

85. National Low Carbon Fuel Standard Act of 2007, S. 1324, 110th Cong. (2007); see, e.g., American Clean Energy and Security Act of 2009, Draft Legislation (Introduced Mar. 31, 2009), 111th Cong. (2009), available at http://energycommerce.house.gov/Press_111/20090331/acesa_discussiondraft.pdf.

86. CAL. HEALTH & SAFETY CODE § 38560.5 (West 2008). LCFS was adopted as one of the discrete early action items. See Cal. Air Resources Board, Early Action Items, <http://www.arb.ca.gov/fuels/lcfs/lcfs.htm> (last visited April 17, 2009).

87. CAL. AIR RESOURCES BOARD, PROPOSED REGULATION TO IMPLEMENT THE LOW CARBON FUEL STANDARD, VOL. 1, STAFF REPORT, INITIAL STATEMENT OF REASONS (2009), available at <http://www.arb.ca.gov/regact/2009/lcfs09/lcfsisor1.pdf>.

the annual carbon intensity levels with any combination of fuels they produce or supply, and any shortfall can be made with LCFS credits generated in previous years or purchased from other fuel providers who over-complied with LCFS.⁸⁸ The LCFS does not specify which combination of transportation fuels the regulated parties must provide to comply with the requirements—fuel providers must simply balance the greenhouse gasses of traditional or high-greenhouse gas fuels with low-carbon fuels.⁸⁹

Like many of California's greenhouse gas regulations, the LCFS is designed to not just cut emissions but also to accelerate the creation of a robust market for clean and advanced fuels and technologies. All transportation fuels—including petroleum; biofuels; and non-biofuels such as compressed natural gas, electricity and hydrogen—are eligible compliance options under the LCFS.⁹⁰ In fact, the LCFS will support the transition to zero-emission vehicles by encouraging electricity and hydrogen fuels, something that a vehicle-oriented policy cannot do alone. To meet the long-term 2050 goal for greenhouse reductions, CARB intends to pursue strengthening the LCFS in the future and requiring more than a 10 percent reduction after 2020.

C. *Senate Bill 375: Land Use, Vehicle Miles Traveled, and Greenhouse Gas Reductions Through Incentives*

Because of their key position in local planning and land use decisions, local governments must play a crucial role in helping California achieve its AB 32 goals. Senate Bill 375 (SB 375), signed into law in 2008, sets out a process for CARB to work in collaboration with metropolitan planning organizations to set passenger vehicle greenhouse gas emission reduction targets.⁹¹ The SB 375 framework establishes a comprehensive framework that can promote smart growth, create more livable cities and provide mobility alternatives to driving.⁹²

Often referred to as the “third leg of the stool,” emissions associated with vehicle miles traveled as a result of land use and

88. *Id.*

89. *Id.*

90. *Id.*

91. S.B. 375 (Cal. 2008), CAL. PUB. RES. CODE § 21155 (West, Westlaw through 2008 legislation), available at http://info.sen.ca.gov/pub/07-08/bill/sen/sb_0351-0400/sb_375_bill_20080902_enrolled.pdf.

92. *Id.*

transportation planning decisions are notoriously difficult to address. Yet, we will not be able to sufficiently cut emissions from the transportation sector without addressing the need to provide more mobility options for the ever-increasing number of people traveling greater and greater distances to accomplish their daily tasks.

SB 375 is a bold experiment requiring California's regions to synthesize the land use, transportation and housing patterns that together create the physical setting for our vehicle travel and then set plans to reduce that travel. Historically, communities have planned their land use—homes, business, industry, schools and open space—and then they have planned transportation to serve this land use. SB 375 aims to integrate these processes—communities will be asked to plan their land use and transportation together, and then to choose the scenario that lets them achieve their social and economic goals with less need for automobile traffic. And it does this with a series of incentives—there is no command-and-control requirement on local communities to grow any particular way.⁹³

SB 375 requires CARB to establish regional passenger vehicle greenhouse gas reduction targets for all eighteen metropolitan planning organizations in the state by September 30, 2010.⁹⁴ SB 375 sets up a process to ensure that policymakers compare different planning alternatives that reduce greenhouse gases. That process must show how greenhouse gas targets will be met, while addressing the transportation, land use and housing needs in the region. Plans showing how targets will be met are labeled "Sustainable Communities Strategies" and must be part of the regional transportation plans. If targets cannot be reasonably met in a Sustainable Communities Strategy, an Alternative Planning Strategy must be prepared showing how targets will be met through alternative development patterns, infrastructure, or additional transportation measures or policies. If regions develop integrated land use, housing and transportation plans that meet the SB 375 targets, new residential and mixed-use residential projects can be relieved of certain review requirements imposed by the California Environmental Quality Act.⁹⁵

SB 375 capitalizes on CARB's expertise in modeling transportation sector emissions and the transportation demand manage-

93. *Id.*

94. *Id.*

95. *Id.*

ment and planning expertise both within CARB and with local and regional stakeholders. Over the decades it will take for many of the Sustainable Community or Alternative Planning strategies to come to fruition, the Pavley vehicle and low-carbon fuel standards will dramatically reduce vehicular emissions per mile, leaving vehicle miles traveled as the critical leg to reduce greenhouse gas emissions to the levels needed to meet our 2050 goals. By starting now, the SB 375 process will position California to holistically approach all aspects of passenger vehicle emissions, plugging a potential emissions loophole before it can develop.

VI.

CALIFORNIA'S HARD-WON CLIMATE CHANGE LESSONS FOR THE NATION

For well over a decade, California, along with certain other states, cities and even some agencies within the federal government, has been working hard on developing, testing and implementing measures to reduce greenhouse gas emissions and avert the threat of climate change. In the process, we have settled upon some recommendations for any federal system that we are confident will serve the nation well in its critical efforts.

A. Demonstrate Clear and Determined Leadership

The federal government must send clear and consistent signals that reducing greenhouse gas emissions at a level commensurate with our obligation as a partner in a concerted global effort is the determined policy of the United States. The Obama Administration has done well to send this message firmly and early from the President on down, and even Congress, a notoriously fractured body, is sounding relatively unified in its intention to act soon.

B. Act Now

There are strong, immediate actions that can return early emissions reductions, and just as important, prevent us from locking ourselves into an unsustainable emissions path. One positive sign of early action is the recent massive investment in energy efficiency and renewable energy, such as included in the Ameri-

can Recovery and Reinvestment Act.⁹⁶ Energy efficiency is the single largest and cheapest emissions reduction strategy, in most cases yielding a positive return on investment within two years or less. Accelerating the development and deployment of renewable energy is crucial to achieving long-term emission reductions. Equally important is to quickly put to use existing regulatory tools.

The Supreme Court ruled in April 2007 that greenhouse gases were pollutants under the federal Clean Air Act and the United States Environmental Protection Agency must either regulate greenhouse gases or provide an acceptable rationale for not doing so.⁹⁷ On April 17, 2009, EPA Administrator Lisa P. Jackson signed a Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, which EPA published for public comment.⁹⁸ One proposed finding is that the climate change effects from the current and projected levels of six greenhouse gases threaten public health and welfare, within the meaning of the Clean Air Act, and the related proposed finding is that four of these gases are emitted from motor vehicles and are contributing to this air pollution and threat.⁹⁹ If these findings are adopted, EPA will have taken a necessary, critical step towards regulating greenhouse gases under the Clean Air Act. Such regulation will be a welcome and powerful tool in the government's toolkit to address greenhouse gases, both as a bridge to a more comprehensive economy-wide policy, and as a component of that policy.

Under the Clean Air Act, the federal government can and should issue its own greenhouse gas standard for new vehicles, like California's Pavley standards.¹⁰⁰ EPA also can and should

96. American Recovery and Reinvestment Act of 2009, H.R. 1, 111th Cong. (2009), available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h1enr.pdf.

97. *Massachusetts v. EPA*, *supra* note 11.

98. 74 Fed. Reg. 18,886 (Apr. 24, 2009); EPA-HQ-OAR-2009-0171.

99. *Id.*

100. Section 202(a)(1) of the Clean Air Act, 42 U.S.C. § 7521(a)(1), provides: The [EPA] Administrator shall by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare. . . .; *Massachusetts v. EPA*, *supra* note 11, at 528 (“[T]he first question is whether § 202(a)(1) of the Clean Air Act authorizes EPA to regulate greenhouse gas emissions from new motor vehicles in the event that it forms a ‘judgment’ that such

develop a low-carbon fuels standard for the nation. This standard is compatible with and would build off of the renewable fuels standard authorized in the Energy Independence and Security Act of 2007.¹⁰¹ It would harmonize with and eventually supersede the renewable fuel standard, which applies to only a part of the fuel supply.¹⁰² These two transportation measures would make an immediate impact on reducing the nation's greenhouse gas emissions, would accelerate the deployment of efficient and innovative new vehicles and fuels, all while saving consumers money at the pump.

Under the Clean Air Act, EPA could also establish standards for major sources of global warming pollution such as electricity generators and certain large industries. These performance-based standards would not dictate specific technologies, but will encourage investment in the most efficient low-emission electricity sources, including providing a powerful driver for the introduction of new carbon control and storage technologies. The percentage of carbon dioxide required to be captured and stored could ramp into full effect over a few years, allowing a period for perfecting the technology. With appropriate lead time, best-in-class greenhouse gas emissions should also be required of existing plants. California has followed a similar policy since 2006, because we believe it is critical not to "lock-in" high-pollution facilities now and avoid locking-in our consumers to paying the price of high emissions in the future.

These Clean Air Act-based transportation measures and new source performance standards for new sources, as well as other Clean Air Act regulations, would be valuable and powerful tools to retain even if or when Congress passes an economy-wide cap-and-trade measure because the cost-effective innovation accelerated by these regulations is not expected to occur under a pure market system.

emissions contribute to climate change. We have little trouble concluding that it does.").

101. EPA's Advanced Notice of Proposed Rulemaking for Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 Fed. Reg. 44,354, 44,474-76 (July 30, 2008).

102. The Energy Policy Act of 2005, Pub. L. 109-58, Aug. 8, 2005, 119 Stat. 594, adopted Clean Air Act § 211(o), 42 U.S.C. § 7545(o); EPA issued implementing regulations, 72 Fed. Reg. 23,900 (May 1, 2007).

C. *Set a Specific, Declining Emissions Cap*

Congress must act to set a long-term emissions reduction goal for the country, and to empower citizens, firms, investors, and the government itself to plan and implement the strategies necessary to reach these goals over a timeframe of decades. And these goals must be binding, with environmental certainty that the emissions cap is enforceable and enforced. A cap-and-trade system is certainly an approach that California believes has a lot to offer and may be appropriate at the federal level.

D. *Engage Government and the Private Sector at All Levels and in All "Silos"*

One of the most powerful lessons from California should be the Climate Action Team. The federal government must also make it a priority in the Interior Department to remove siting and transmission impediments to renewable energy across the federal lands of the West and along the coasts. The Department of Defense must green its operations and take advantage of the vast potential for efficiency and renewable energy. The Labor Department must focus on supporting safe and secure jobs for clean energy jobs of the future. And the Department of Agriculture will be absolutely critical in ensuring the country's lands are managed in a way that optimizes the ability of forests and agricultural soils to sequester greenhouse gases.

Just as importantly, the federal government must support, engage and coordinate with state and local efforts to address global warming. State governors, mayors, county commissioners and other state and local leaders are all close to their residents, industry, small businesses, community organizations and stakeholder groups. They are well positioned to devise and implement unique solutions that can fit within a larger national framework. We've already seen how effective state and local governments can be in designing and implementing climate change policies that reflect local priorities and take advantage of local resources and potential. Moreover, they can act quickly and flexibly.

The issue of state or federal authority is not an either/or. We will have the most powerful and cost-effective strategy to reduce emissions if we build a partnership of local, state and federal authorities, each doing what they do best separately and working together to magnify the effect of each other's efforts.

E. *Federal Policy Must Engage the Effort of Stakeholders and Citizens from Across the Political and Economic Spectrum*

Certainly, we must ensure that any policy we undertake protects against unintended consequences. Moreover, all individuals affected by the policy must be enlisted to make it better. In California, our transparent scientific and regulatory process has elicited an unprecedented engagement by informed stakeholders on detailed specifics of measuring emissions or crediting reductions, and their contributions make the resulting regulations significantly stronger and more effective. While a stakeholder outreach process must not be allowed to become an excuse for delay, the benefits of engaging broadly pays off in more effective policies.

These initial policies are just the first ones to move our nation towards a low-carbon future. Whatever the specific policy, the end result must be actual reductions and must start now. If one policy does not achieve its promised reductions, then another fills its place so the targeted reductions are achieved. A systematic, cross-economy effort using a variety of strategies is the most effective approach. California's effort, encompassing its various statutes, executive orders, administrative actions and local initiatives, and embraced by a host of private and governmental entities, is the blueprint. What the nation needs now is a federal Global Warming Solutions Act, modeled after California's efforts, and building off of the time-tested "cooperative federalism" framework.