

YONSEI LAW JOURNAL

VOL.2 No. 1, MAY 2011

CONFERENCE PAPER

CLIMATE CHANGE: A U.S. PERSPECTIVE*

*Daniel Farber***

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ABSTRACT

Although the United States has not yet passed national legislation to reduce greenhouse gas emissions, there have been other important legal developments. The federal courts have directed the government to take action regarding climate change under existing laws, and state governments have made aggressive efforts to limit emissions. The federal government has begun to plan for adapting to climate change,

* This article was prepared for International Conference on Climate Change; Paradigm Shift in Law and Policy in the Climate Change Era, held in 2010. It was sponsored by Korea Metrological Administration, Environmental Law Association and Institute for Legal Studies at Yonsei Law School.

** Daniel Farber is the Sho Sato Professor of Law and chair of the Energy and Resources Group at the University of California, Berkeley. He is also the Faculty Director of the Center for Law, Energy, and the Environment. He serves on the editorial board of Foundation Press, and is a member of the American Academy of Arts and Sciences and a life member of the American Law Institute. He is the editor of Issues in Legal Scholarship. He is a graduate of the University of Illinois, where he earned his BA., MA., and J.D. degrees. He graduated, summa cum laude, from the College of Law and was the class valedictorian. He is the author or editor of fifteen books and over 150 published articles.

and it has returned to the international bargaining table in order to play a constructive role in climate negotiations. Although the lack of national legislation is unfortunate, the American system of separation of powers allows other legal action to be taken despite the paralysis in Congress.

In comparison to Europe, the United States has been a notorious laggard in the area of climate change. The U.S. never ratified the Kyoto Protocol. For most of the first decade of this century, the White House was occupied by George W. Bush, a fervent opponent of action to limit greenhouse gas emissions. Even when the White House changed hands, the situation remained frustrating because of the inability of the new administration to pass climate change legislation through Congress.

Nevertheless, it would be a mistake to assume that U.S. law has ignored the issue of climate change. The American constitutional system diffuses power between Congress, the executive branch, the federal courts, and state government. When one or more of those institutions fails to act, others may step in to fill the breach. That is exactly what has happened with climate change. Due to the vigorous efforts of federal courts and of many state governments, important and constructive steps have been taken to address climate change.

The first part of this article discusses the activities of the federal courts concerning climate change and shows how they have pressed the federal executive branch to take action. The second part of the article discusses the role that state governments have played in creating climate policy. That section also introduces some of the constitutional issues regarding federalism that may restrict state regulation. Finally, the article discusses the evolving U.S. efforts climate change adaptation plans, and the evolving U.S. role in international, climate negotiations, particularly in relation to China. Because the U.S. and China are the two largest emitters, it is crucial to understand the differences between their positions.

I. THE FEDERAL COURTS

During the George W. Bush Administration, Congress and the executive branch took little constructive action regarding climate change. Nevertheless, the federal courts began to exert pressure for stronger federal action under existing environmental laws.

The United States Supreme Court decided its first case about climate change in 2007, *in Massachusetts vs. EPA*. The Court's ruling in this case was a major step forward. The federal air pollution law, the Clean Air Act, requires the government to set limits on any air pollutant from cars that may endanger human health or welfare. The Environmental Protection Agency (EPA) is the federal agency responsible for enforcing federal environmental laws, including the Clean Air Act. The Bush Administration argued that the federal government had no authority to regulate greenhouse gases under the statute, because greenhouse gases were not "pollutants" within the meaning of this statute. Moreover, the Administration said, even if it did have authority, it did not consider it wise to exercise that jurisdiction because doing so might undermine the effort to negotiate greenhouse gas reduction internationally with countries such as China. The Administration also argued that

the regulations might conflict with federal rules about fuel efficiency for cars. The state of Massachusetts and several other plaintiffs sued to force the government to regulate car emissions. By a vote of five to four, the Court rejected the Administration's arguments and held that the Environmental Protection Agency was required to set limits on greenhouse gas emissions from cars.

Before the Court could even consider these arguments, it first had to determine that the plaintiffs had standing to bring the case. In order to bring a lawsuit in federal court, a plaintiff must establish standing by demonstrating that the allegedly illegal action impacts the plaintiffs' concrete interests. Under U.S. law, standing has three requirements: (1) the plaintiffs must suffer an actual injury, (2) the injury must be caused by the defendant, and (3) the courts must be able to provide a remedy.

The first element is injury in fact. As to this element, the Court said that "[t]he harms associated with climate change are serious and well recognized." Indeed, a report that the EPA had praised as objective "identifies a number of environmental changes that have already inflicted significant harms, including 'the global retreat of mountain glaciers, reduction in snow-cover extent, the earlier spring melting of rivers and lakes, [and] the accelerated rate of rise of sea levels during the 20th century relative to the past few thousand years ...'"¹

The Court noted that these effects posed a particular threat to the state of Massachusetts' interests: "If sea levels continue to rise as predicted, one Massachusetts official believes that a significant fraction of coastal property will be either permanently lost through inundation or temporarily lost through periodic storm surge and flooding events."² "Remediation costs alone, petitioners allege, could run well into the hundreds of millions of dollars."³

As to the second element, causation, EPA did "not dispute the existence of a causal connection between man-made greenhouse gas emissions and global warming."⁴ EPA argument was that since automobiles are only one source of greenhouse gases and because the United States as a whole accounts for only a portion of these gases globally, the EPA regulation that the plaintiffs sought would not have a significant impact on global warming. The Court rejected this "erroneous assumption that a small incremental step, because it is incremental, can never be attacked in a federal judicial forum."⁵

Instead, the Court stressed that "[a]gencies, like legislatures, do not generally resolve massive problems in one fell regulatory swoop" but "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."⁶ Moreover, the Court recognized that this particular first step would be far from insignificant: "Considering just emissions from the transportation sector, which represent less than one-third of this country's total carbon dioxide emissions, the United States would still rank as the third-largest emitter of carbon dioxide in the world,

¹ *Massachusetts v. EPA*, 549 U.S. 497, 521 (2007).

² *Id.*, at 523.

³ *Id.*

⁴ *Id.*

⁵ *Id.*, at 524.

⁶ *Id.*

outpaced only by the European Union and China."⁷

Finally, the Court concluded that a judicial remedy would be meaningful even though the amount of emissions involved was small compared to total global emissions. "While it may be true that regulating motor-vehicle emissions will not by itself *reverse* global warming, it by no means follows that we lack jurisdiction to decide whether EPA has a duty to take steps to *slow* or *reduce* it."⁸ As the Court noted, the government had strongly supported voluntary efforts to reduce greenhouse gases, and it would "presumably not bother with such efforts if it thought emissions reductions would have no discernable impact on future global warming."⁹

Summarizing the Court's holding on standing, Justice Stevens said that the plaintiffs had standing because the sea level rise "has already harmed and will continue to harm Massachusetts," the "risk of catastrophic harm" was remote but real, and the risk "would be reduced to some extent if petitioners received the relief they seek."¹⁰

On the merits, the Court then held that EPA had misapplied the Clean Air Act in several critical respects. EPA had argued that CO₂ is not a "pollutant" within the meaning of the Clean Air Act. The Court found this view incompatible with the plain language of the statute. The Court also found that EPA had considered impermissible extraneous factors in making its determination.¹¹ The Court remanded to the EPA, ordering them to further consider their obligations under the correct statutory standards. The Court directed the EPA to make a determination of whether greenhouse gases from cars were a threat to human health or welfare.

In response to the Supreme Court's ruling, the EPA ultimately issued a finding that greenhouse gases endanger human health and safety.¹² EPA has begun developing regulations to reduce greenhouse gases based on this finding.¹³ Designing these regulations presents difficulties, because the provisions of the Clean Air Act concerning emissions from factories and electrical generators do not fit very well with the kinds of controls needed for greenhouse gases. The statute is primarily designed to deal with local pollution problems, rather than global ones. However, EPA has been trying to design rules that are reasonably suitable and do not violate the statute. If Congress fails to take effective action, EPA may well end up creating the primary mechanism for controlling greenhouse emissions through this administrative process. Potentially, these regulations could provide the basis for a comprehensive federal regulation of greenhouse gas emissions. Obviously, it would be preferable for Congress to create a new legislative framework for greenhouse gases. Given political realities, however, EPA action may be the best available option.

Since *Massachusetts v. EPA*, several lower courts have had occasion to consider

⁷ *Id.*, at 524-25.

⁸ *Id.*, at 525.

⁹ *Id.*, at 526.

¹⁰ *Id.*

¹¹ *Id.*, at 533-34.

¹² See Environmental Protection Agency, Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act (Oct. 26, 2010), available at <http://www.epa.gov/climatechange/endangerment.html>.

¹³ The proposed regulations are described on the EPA website. Environmental Protection Agency, Climate Change-Regulatory Initiatives (Oct 26, 2010), available at <http://www.epa.gov/climatechange/initiatives/index.html>.

standing in climate litigation. Some judges have applied climate standing generously.¹⁴ On the other hand, the D.C. Circuit restricted *Massachusetts v. EPA* to its "unique circumstances."¹⁵ The Supreme Court has continued its wobbling course on standing more generally, with the most recent development a restrictive opinion written by Justice Scalia in *Summers v. Earth Island Institute*.¹⁶

When deciding climate litigation on the merits, some lower court decisions have ruled in favor of innovative attempts to force reductions in greenhouse gas emissions. One federal appeals court has upheld the right to bring a lawsuit under tort law against emitters of greenhouse gases.¹⁷ In another notable case, the court held that impacts on climate change are a sufficient basis to require the creation of an environmental impact statement before a decision can be made.¹⁸

II. ACTIONS BY THE STATE GOVERNMENTS

Perhaps surprisingly,¹⁹ state governments have moved much more aggressively than the federal government to address climate change.²⁰ By 2006, every state had taken steps of some kind to address climate change.²¹ California is in the lead with legislation aimed at reducing greenhouse emissions from automobiles and electrical generators, as well as an ambitious mandate to reduce emissions to 1990 levels by the end of the next decade.²² A brief description of California's regulatory effort is useful to understand what can be achieved at the local level.

¹⁴ See *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309, 332, 344 (2d Cir. 2009) (extending standing both to state governments and to private land trusts); *Comer v. Murphy Oil USA*, 585 F.3d 855, 863-66 (5th Cir. 2009) (extending standing to private parties in nuisance case) (later vacated because the Fifth Circuit granted rehearing en banc but then lacked a quorum).

¹⁵ *Center for Biological Diversity v. U.S. Dep't of the Interior*, 563 F.3d 466, 476 (D.C. Cir. 2009).

¹⁶ 129 S. Ct. 1142 (2009) (denying standing because the plaintiffs could not identify a particular individual who would be affected by any specific future sale, although it was virtually certain that some member of the organization would be affected by some future sale).

¹⁷ *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309, 332, 344 (2d Cir. 2009).

¹⁸ *Center for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 508 F.3d 508 (9th Cir. 2007).

¹⁹ For speculation about the causes of this state-level response to climate change, see J.R. DeShazo & Jody Freeman, *Timing and Form of Federal Regulation: The Case of Climate Change*, 155 U. PA. L. REV. 1499, 1516-38 (2007); Kirsten H. Engel, *State and Local Climate Change Initiatives: What Is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. LAW. 1015 (2006).

²⁰ A survey of state efforts can be found in Pace Law School Center for Environmental Legal Studies, *The State Responses to Climate Change: 50-State Survey*, in GLOBAL CLIMATE CHANGE AND U.S. LAW 371 (Michael B. Gerrard ed., 2007) [hereinafter Pace Center]. State efforts are also described in Barry Rabe, *Race to the Top: The Expanding Role of U.S. State Renewable Portfolio Standards*, 7 SUSTAINABLE DEV. L. & POL'Y 10 (2007); Eleanor Stein, *Regional Initiatives to Reduce Greenhouse Gas Emissions*, in GLOBAL CLIMATE CHANGE AND U.S. LAW 315 (Michael B. Gerrard ed., 2007); David Hodas, *State Initiatives*, in GLOBAL CLIMATE CHANGE AND U.S. LAW 343 (Michael B. Gerrard ed., 2007).

²¹ Hodas, *supra* note 20, at 343.

²² Pace Center, *supra* note 20, at 375.

A. CALIFORNIA AS AN EXAMPLE

In California, efforts focusing specifically on climate change can be traced back to 1988, when a law required the first inventory of in-state greenhouse gas emissions.²³ Since then, California has continued to pursue a wide range of policies to reduce greenhouse gas emissions. In 2006, Governor Schwarzenegger signed into law the capstone of the state's climate policy, the *California Global Warming Solutions Act of 2006*, or A.B. 32.²⁴

A.B. 32 sets a binding greenhouse gas emissions target, requiring California to reduce emissions to the 1990 level by 2020 and to make deeper reductions by 2050.²⁵ This law generated world-wide attention, including a statement by the British Prime Minister that its signing represented a "historic day for the rest of the world as well."²⁶ The Prime Minister and the Governor of California also entered an agreement to share best practices on market-based systems and to cooperate to investigate new technologies; similar agreements now exist between California and states and provinces in Australia and Canada.²⁷ In the November elections, a ballot initiative to suspend indefinitely the operation of A.B. 32 was soundly defeated, with 61% of Californians voting to keep A.B. 32 in effect.²⁸ The vote showed that there is significant grassroots support for climate change legislation, at least in California.

In implementing A.B. 32, the California state air pollution board has already developed nine "discrete early action greenhouse gas emission reduction measures"²⁹ designed to go into effect before the cap on carbon emissions is implemented. The early action items went into effect on January 1, 2010.³⁰ Four of these actions focus on reducing emissions of high global warming potential (GWP) gases, which are gases whose impact on the climate is hundreds or thousands of times greater than that of carbon dioxide. The nine discrete early actions are:

- Establishing a low-carbon fuel standard, per Executive Order S-01-07,³¹ to reduce the greenhouse gas intensity of transportation fuels by 10 percent by 2020;³²
- Reducing emissions from small containers of automotive refrigerants with high global warming potential;³³

²³ A.B. 4420, 1988 Cal. Stat Ch.1506.

²⁴ A.B. 32. 2006 Cal. Stat Ch. 488 (codified as CAL. HEALTH & SAFETY CODE §§ 38500-99 (West 2010)).

²⁵ Erwin Chemerinsky et al., *California, Climate Change, and the Constitution*, 37 ENVTL. L. REP. 10053, 10053 (2007).

²⁶ *Id.*, at 10654.

²⁷ *Id.*, at 10659.

²⁸ Margot Roosevelt, *Prop. 23 Battle Marks New Era in Environmental Politics*, L.A. TIMES, Nov. 4, 2010, available at <http://articles.latimes.com/2010/nov/04/local/la-me-global-warming-20101104>.

²⁹ CAL. HEALTH & SAFETY CODE § 38560.5(a-b).

³⁰ Sandra Emerson, *Environmental Rules, Regulations Enter into 2010*, INLAND VALLEY DAILY BULLETIN, Mar. 6, 2010.

³¹ *Gov. Arnold Schwarzenegger*, Cal. Exec. Order No. S-01-07 (Jan. 18, 2007), available at <http://www.arb.ca.gov/fuels/lcfs/eos0107.pdf>.

³² ALEXANDER E. FARRELL & DANIEL SPERLING, A LOW-CARBON FUEL STANDARD FOR CALIFORNIA, PART 2: POLICY ANALYSIS (Institute of Transportation Studies, University of California, Davis 2007), available at <http://pubs.its.ucdavis.edu/downloadpdf.php?id=1084>.

³³ California Air Resources Board, HFC Emission Reduction Measures for Mobile Air Conditioning (June 24,

- Increasing capture of methane from landfills.³⁴
- Establishing aerodynamic efficiency standards for heavy-duty tractors and trailers to improve fuel efficiency - these standards are based on the U.S. Environmental Protection Agency's Voluntary SmartWay Program,³⁵
- Creating a tire pressure program that allows owners of older vehicles to properly maintain, their tire pressure (note that the original regulations for this program were disapproved by California's Office of Administrative Law and a new effective date has been proposed for September 1, 2010),³⁶
- Reducing diesel emissions from ports by providing electricity to berthed ships;³⁷
- Setting a limit on emissions from pressurized gas dusters with high global warming potential;³⁸
- Reducing emissions of perfluorocarbons (PFCs) from the semiconductor industry,³⁹ and
- Reducing sulfur hexafluoride (SF₆) emissions in non-electric and non-semiconductor applications.⁴⁰

B. STATE GREENHOUSE GAS REDUCTION STRATEGIES

In general, state efforts to address climate change have focused on two key sectors: electrical power generation and transportation. These sectors lend themselves to different regulatory approaches. Power generation and distribution are industrial activities that are already regulated through public utility laws and have a relatively few, large-scale emission sources. Power can be produced with a number of different fuels, with varying carbon intensities. On the other hand, transportation in the United States is largely in the hands of individual consumers, and the only available fuel for nearly all of them is currently gasoline, sometimes with small amounts of ethanol as an additive. The electricity sector and the transportation sector are discussed in more detail below.

1. THE ELECTRICITY SECTOR

Essentially, there are four ways to reduce carbon. emissions from electrical

2010), available at <http://www.arb.ca.gov/cc/hfc-mac/hfc-mac.htm>.

³⁴ California Air Resources Board, Landfill Methane Control Measure (June 30, 2010), available at <http://www.arb.ca.gov/cc/landfills/landfills.htm>.

³⁵ California Air Resources Board, Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Regulation (Oct. 2, 2010), available at <http://www.arb.ca.gov/cc/hdghg/hdghg.htm>.

³⁶ California Air Resources Board, Tire Inflation Regulation (Oct. 18, 2010), available at <http://www.arb.ca.gov/cc/tire-pressure/tire-pressure.htm>.

³⁷ California Air Resources Board, Shore Power for Ocean-Going Vessels (Feb. 4, 2010), available at <http://www.arb.ca.gov/ports/shorepower/shorepower.htm>.

³⁸ California Air Resources Board, Greenhouse Gases in Consumer Products (June 17, 2010), available at <http://www.arb.ca.gov/consprod/regact/ghgcp/ghgcp.htm>.

³⁹ California Air Resources Board, (April 23, 2010), available at <http://www.arb.ca.gov/cc/semiconductors/semiconductors.htm>.

⁴⁰ California Air Resources Board, SF₆ Reductions from Non-Electric and Non-Semiconductor Applications (Nov. 4, 2010), available at <http://www.arb.ca.gov/cc/sf6nonelec/sf6nonelec.htm>.

generation: (1) switching fuels at existing plants to those with a higher energy content (and hence lower emissions per unit of electricity generated); (2) increasing the share of electricity from existing renewable sources compared with the share produced from fossil fuels; (3) increasing the construction of carbon-neutral ("renewable") generating facilities while restricting fossil fuel generators; or (4) decreasing the total amount of electricity produced. States have used varying combinations of these techniques. In most cases, the result is less a strategy than a plethora of loosely related initiatives that are difficult to describe as a coherent policy. This section will merely touch upon some of the initiatives that have been adopted by the states.

Renewable portfolio standards are an important option for state regulators. These programs require that a certain percentage of retail electricity sales be derived from renewable sources. The programs are quite diverse in their ambition and effectiveness.⁴¹ California's program requires that 33 percent of electricity be generated from renewable sources by 2011.⁴² Public benefit finds are another regulatory option that are similar to portfolio standards. Public benefit finds impose a surcharge on consumers, in order to create funding for investment in clean energy supply.⁴³

Some of the most interesting initiatives are regional rather than state-based.⁴⁴ The best-known regional program is the Northeastern Regional Greenhouse Gas Initiative (RGGI), which includes eight states, and creates a cap-and-trade program for power plant emissions. There are also regional initiatives in New England, the Great Plains, the Southwest, and the West Coast.⁴⁵ Regional cooperation is feasible because two-thirds of Americans receive their power from regional transmission organizations.⁴⁶ Coverage is incomplete, however - five companies are virtually outside these agreements but account for a quarter of the electricity sector's emissions.⁴⁷ Approximately half of the states are involved in at least one regional initiative; this obviously leaves about half that are not.⁴⁸

Because RGGI (pronounced "Reggie") is the most notable of these regional plans, it deserves a detailed discussion. RGGI is currently supported by the governors or legislators of eight eastern states.⁴⁹ In addition, the governor of California has announced plans to become a trading partner of RGGI.⁵⁰ RGGI is aimed at creating a multistate trading system, capping emissions at current levels until 2015 and then achieving a ten percent reduction by 2019.⁵¹ Allowances will be initially allocated to generators on the basis of current emissions, but sources will also be allowed to offset emissions to a limited extent with verifiable reductions

⁴¹ Michael B. Gerrard, *Introduction to GLOBAL CLIMATE CHANGE AND U.S. LAW 22* (Michael B. Gerrard ed., 2007).

⁴² Hodas, *supra* note 20, at 356. Hodas provides a list of which electricity sources are considered renewable by various states.

⁴³ *Id.*, at 359.

⁴⁴ See Kirsten H. Engel, *Mitigating Global Climate Change in the United States: A Regional Approach*, 14 N.Y.U. ENVTL. L.J. 54 (2005).

⁴⁵ Stein, *supra* note 20, at 316. For more on the systems other than RGGI, see *Id.*, at 336-330.

⁴⁶ *Id.*, at 317.

⁴⁷ *Id.*, at 318.

⁴⁸ Hodas, *supra* note 20, at 347.

⁴⁹ Stein, *supra* note 20, at 321.

⁵⁰ *Id.*

⁵¹ *Id.*

in other emission sources.⁵² A continuing concern is leakage: the purchase of cheaper electricity from higher emitting sources outside the trading area.⁵³

California's development of a cap-and-trade approach in cooperation with neighboring states demonstrates the potentials of regional cooperation. A.B. 32 requires a reduction in emissions, without mandating the use of a cap-and-trade program to achieve that goal.⁵⁴ However, the California Air Resources Board (CARB), the state agency responsible for implementing A.B. 32, has decided to implement a cap-and-trade system in 2012.⁵⁵ The California Air Resource Board recently released its draft proposal for the cap-and-trade system.⁵⁶ The system is designed to achieve a fifteen percent reduction in greenhouse gases by 2020, but it is also designed to take into account the needs of different industries and to allow a smooth transition into the more rigorous requirements. In developing its cap-and-trade program, California has worked closely with the Western Climate Initiative (WCI), a group of western U.S. states and Canadian provinces developing a regional cap-and-trade program.⁵⁷ The California cap-and-trade program is designed to link with the state- and provincial-level programs of other WCI jurisdictions.

However, there may be legal challenges to California's regulatory scheme. Industry may claim that the cap-and-trade system violates the dormant commerce clause or that parts of it are preempted by federal legislation relating to the wholesale market in electricity. We will consider some similar arguments relating to other California climate regulations.

Another prong of state regulation has been efficiency standards for electrical appliances. State appliance standards are normally subject to federal preemption, but the federal Department of Energy has proposed waiving preemption so that states can provide for higher energy conservation standards. At least ten states have set such standards, benefiting consumers in the process.⁵⁸ California estimates that by 2020 its standards will save consumers \$3 billion and eliminate the need for three new power plants.⁵⁹ Electricity regulation can create significant federalism issues, which state need to directly address.⁶⁰ In adopting utility regulation for greenhouse gases, the California Public Utility Commission (PUC) has been very conscious of potential *federalism issues*. *Its Interim Opinion on Phase.1 Issues: Greenhouse Gas Emissions Performance Standards*⁶¹ discusses an array of potential legal objections to the standards. The rulemaking involves environmental performance

⁵² *Id.*, at 324-25.

⁵³ *Id.*, at 322.

⁵⁴ Juliet Howland, *Not All Carbon Credits Are Created Equal: The Constitution and the Cost of Regional Cap-and-Trade Market Linkage*, 27 UCLA J. ENVTL. L. & POL'Y 413, 419 (2009).

⁵⁵ *Id.*

⁵⁶ Felicity Barringer, *Cap-and-Trade, the California Way*, E&E NEWS PM, Oct. 29, 2010, available at <http://www.eenews.net/eenewspm/2010/10/29/1/>.

⁵⁷ Western Climate Initiative Governors' Agreement (Feb. 26, 2007), available at http://westernclimateinitiative.org/component/remository/func-download/12/chk.713c312597469dafef342956282e9f3/no_html.1/.

⁵⁸ Hodas, *supra* note 20, at 364. In addition to California, at least four states are considering implementing higher standards (New Hampshire, Massachusetts, Oregon, and Washington). *Id.*

⁵⁹ *Id.*

⁶⁰ For an overview of these federalism issues, see Kirsten H. Engel, *The Dormant Commerce Clause Threat to Market-Based Environmental Regulation: The Case of Electricity Deregulation*, 26 ECOLOGY L.Q. 243 (1999).

⁶¹ Order Instituting Rulemaking to Implement the Commission's Procurement incentive Framework and to Examine the integration of Greenhouse Gas Emissions Standards into Procurement Policies, Decision No.07-01-039 (Jan. 25, 2007), available at <http://docs.cpuc.ca.gov/published/FINAL.Decision/64072.htm>.

standards for long-term supply contracts entered into by California power systems. The impetus for the rules is the risk that future greenhouse limitations could imperil supplies or requires costly retrofits that would be charged to consumers. Much of California's electricity comes from out of state, so the regulation clearly affects sales by out-of-state generators.

Opponents of the rule raised several legal objections to the PUC as the rule was being drafted, some of which probably will also be used to attack California's cap-and-trade scheme. First, opponents claimed that the California rule would conflict with foreign policy, which is exclusively under the control of the federal government. The PUC considered it "unclear how California, which is not proposing to sign any international agreement here, could be undermining such a policy."⁶² Second, opponents also claimed the proposed rule was preempted by various federal statutes.⁶³ Under U.S. constitutional law, state laws cannot prevail over federal statutes. But the federal government does not regulate retail electrical firms, and the proposed regulation applied only to those firms (though it did limit their contracts with some generators via wholesalers). Third, opponents argued that the regulation would violate the dormant commerce clause, which guarantees free movement of goods and services throughout the United States.⁶⁴ The PUC rejected the claim that the rule would have a discriminatory effect on out-of-state coal-fuel generation plants. In the PUC's view, this claim failed because the rule "does not discriminate based on geographic origin."⁶⁵ Moreover, the regulation did not unduly burden interstate commerce.⁶⁶ The burden on some out-of-state producers⁶⁷ was reasonable in comparison with benefits, at least in the Commission's mind.⁶⁸

This rule indicates the ability of states to take initiative in areas such as climate change. However, it also suggests that they can face substantial legal barriers in doing so, where their actions may conflict with national regulations or impair the free movement of goods and services. Nevertheless, with sufficient effort and careful design of regulations, states have a fairly large field for independent action.

2. THE TRANSPORTATION SECTOR

The transportation sector is a critical part of climate change regulation. In this area, California again has taken the lead. A statute known as A.B. 1493 or the "Pavley Act" required the state to set standards for greenhouse gas emissions from new cars. Beginning with the 2009 model year, the California Air Resources Board has a statutory mandate to reduce CO₂ emission from new car models by 30 percent.⁶⁹ The CARB must adopt regulations that achieve "the maximum feasible and cost-effective reduction of greenhouse

⁶² *Id.*, at 193.

⁶³ *Id.*, at 199.

⁶⁴ *Id.*, at 206.

⁶⁵ *Id.*, at 207.

⁶⁶ *Id.*, at 213.

⁶⁷ *Id.*, at 217-18.

⁶⁸ *Id.*, at 220.

⁶⁹ Kirsten H. Engel & Scott R. Saleska, *Subglobal Regulation of the Global Commons: The Case of Climate Change*, 32 *ECOLOGY L.Q.* 183, 221 (2005). The statutory mandate is A.B. 1493, CAL. HEALTH & SAFETY § 43018.5(a) (West 2006).

gas emissions from motor vehicles."⁷⁰ The CARB may not, however, impose fees or taxes, ban sports utility vehicles or light trucks, or impose speed limits.⁷¹ California is also moving toward adoption of a low-carbon fuel standard, which will encourage the use of biofuels and electrical vehicles.⁷²

Federalism has been a significant issue in terms of vehicle regulation, particularly regarding the new car regulations authorized by A.B. 1493. The state's regulatory scheme has been challenged on several grounds. To begin with, the Clean Air Act prohibits any state from adopting regulations governing emissions from new vehicles. The sole exception is for California, which can be granted a waiver from preemption if the EPA determines that the state's standards are at least as stringent as the federal standards. If California sets stricter standards than federal law, other states are also allowed to adopt the California standards.⁷³ Originally, EPA contended that carbon dioxide was not an "emission" within the meaning of the statute, generating controversy about the application of the preemption and California waiver provisions.⁷⁴ Ultimately, EPA granted the waiver, but that decision is now the subject of litigation.

California also faces claims that its regulations are preempted by the federal. They are Corporate Average Fuel Economy ("CAFE") standards. The statute establishing the federal standards explicitly prohibits states from issuing any regulations that "relate to fuel economy standards."⁷⁵ Reducing carbon dioxide emissions from automobiles requires burning less gasoline. The question is whether the CARB can craft regulations that may indirectly have this effect without falling into the realm of regulation forbidden by the CAFE standards. In *Massachusetts v. E.P.A.*,⁷⁶ the Supreme Court emphasized that EPA's obligation to reduce greenhouse gases and the obligation to improve fuel efficiency are overlapping but distinct.⁷⁷ The Court was not directly addressing the issue of state preemption, but the Court's language does suggest that the Court views fuel efficiency rules and limitations on carbon dioxide emissions as two very different matters.

The first ruling relevant to the validity of the California program came in *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie* ("*Green Mountain Chrysler*"⁷⁸) There, a Vermont district court considered challenges to the state of Vermont's "California-adopted" vehicle emission standards brought by a consortium of auto makers. The court addressed the question of whether the tension between federal fuel economy standards and California's waiver from the EPA was reconcilable, or if it required the annulment of the state

⁷⁰ CAL. HEALTH & SAFETY § 43018.5(a).

⁷¹ See Ann E. Carlson, *Federalism, Preemption, and Greenhouse Gas Emissions*, 37 U.C. DAVIS L. REV. 281, 292 (2003).

⁷² See DeShazo & Freeman, *supra* note 19, at 1527. For the relevant gubernatorial executive order, see Gov. Arnold Schwarzeneger, Exec. Order No. 5-01-07 (Jan. 18, 2007), available at <http://gov.ca.gov/index.php?/print-version/executive-order/5172/>.

⁷³ 42 U.S.C. § 7543 (2006).

⁷⁴ Carlson, *supra* note 71, at 293-96. EPA also had the authority to reject the preemption waiver because California failed to establish "compelling and extraordinary conditions" justifying the waiver. *Id.*, at 296-97.

⁷⁵ *Id.*, at 303.

⁷⁶ 49 U.S. 497 (2007).

⁷⁷ *Id.*, at 530-32.

⁷⁸ 508F. supp. 2d 295 (D. Vt. 2007).

regulations.⁷⁹ The court held that the state greenhouse gas regulations encompassed much more than a fuel economy mandate, because the regulations included upstream emissions from refineries and other fuel sources.⁸⁰ The court also held that the challengers had failed to prove that the rules were technologically or economically infeasible.⁸¹ The court rejected the argument that the California rules improperly intruded into the field of foreign affairs,⁸² noting that the State Department had, in fact, praised state and local efforts in its reports to international agencies.⁸³

California's program also passed muster in a separate challenge, *Central Valley Chrysler-Jeep, Inc. v. Goldstene* ("*Central Valley*").⁸⁴ Relying heavily on *Massachusetts v. EPA* for guidance about the relationship between the Clean Air Act and CAFE standards, a California district court ruled that if the California standards were approved by EPA, the Department of Transportation ("DOT") would have a duty to harmonize its CAFE standards with the California requirements.⁸⁵ The district court also relied on *Massachusetts* in concluding that policy promulgated by the executive branch could not override the congressionally mandated standards for California's waiver request.⁸⁶ The district court held that a claim of foreign policy preemption would require a showing that the state law conflicted with an international agreement, or at least a program that derived from international negotiations, neither of which was present.⁸⁷

A full discussion of all the federalism issues raised by state transportation regulations would be too lengthy and complex to be included here. There is no doubt that states are using their powers aggressively, and that they will face serious legal challenges. Nevertheless, they have managed to keep climate mitigation alive in the United States when the federal government's policies have been less favorable.

III. CLIMATE ADAPTATION

Adaptation to climate change is unavoidable. The fact is that some degree of climate change has already begun, and further change is inevitable.⁸⁸ This section will survey some of the most likely impacts of climate change and the adaptation measures that may be required in the United States.

A. THE IMPACTS OF CLIMATE CHANGE

Sea level rise will have substantial impacts on the United States. It may well cause

⁷⁹ *Id.*, at 356.

⁸⁰ *Id.*, at 353.

⁸¹ *Id.*, at 357.

⁸² *Id.*, at 395.

⁸³ *Id.*, at 396.

⁸⁴ 529 F. Supp. 2d 1151 (E.D. Cal. 2007).

⁸⁵ *Id.*, at 1170.

⁸⁶ *Id.*, at 1181.

⁸⁷ *Id.*, at 1186-89.

⁸⁸ Donald A. Brown, *The U.S. Performance in Achieving its 1992 Earth Summit Global Warming Commitments*, 32 ENVTL. L. REP. 10741 (2002).

dramatic losses in wetlands in the United States.⁸⁹ Because the slope of coastal areas on the Atlantic and Gulf Coasts is low, a forty centimeter rise in sea level could result in as much as sixty meters of beach erosion and may cost billions of dollars.⁹⁰ To get a sense of the potential economic impact, consider the following estimates regarding sea level rise: A half-meter sea level rise would place \$185 billion of property in jeopardy by 2100, and the cost of protecting developed areas from a half meter rise would be \$115 to \$274 billion.⁹¹

Flood risks can be intertwined with water supply issues, as in the California Delta, where potential levee collapses due to flooding would drastically impair water supplies for much of the state.⁹² Meanwhile, in the Southwest, the future of the water supply is uncertain, with potentially major impacts on agriculture.⁹³ One research project surveyed twenty-four separate computer models, nearly all of which projected an increasingly arid climate in the southwest.⁹⁴ This transition to more arid conditions, which is already beginning, is likely to include periods of drought that will last longer than a decade.⁹⁵

Water system adaptation measures can include a variety of responses.⁹⁶ Some involve use of longer-range predictions to guide water reservoir use. Managing water demand is another option, including increased use of market transfer among users or conservation and efficiency improvements.

It is also important to evaluate the risks to water infrastructure posed by more severe floods. The Stern Report estimates that the cost of adapting infrastructure "to a higher-risk future could be \$15 - 150 billion each year (0.05 - 0.5% of GDP), with one-third of the costs borne by the U.S. and one-fifth in Japan."⁹⁷ The difficulty of adaptation varies directly with the pace of climate change and the potential increase in extreme events. "Extreme events such as floods and drought cause extensive damage to many parts of society, and thus a critical issue for adaptation is the degree to which frequency, intensity, and persistence of extreme events change."⁹⁸

Public health impacts of climate change are also a concern.⁹⁹ By midcentury, the number of heat wave days in Los Angeles is expected to at least double the number from the late twentieth century. By the end of the century, the number of heat waves will quadruple.¹⁰⁰

⁸⁹ Cat Lazaroff, *Climate Change Could Devastate U.S. Wetlands*, ENV'T NEWS SERVICE, Jan. 29, 2002, available at <http://www.ens-newswire.com/ens/jan2002/2002-01-29-06.asp>.

⁹⁰ David Grossman, *Warming Up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation*, 28 COLUM. J. ENVTL. L. 1, 12-14 (2003).

⁹¹ WILLIAM E. EASTERLING III ET AL., COPING WITH GLOBAL CLIMATE CHANGE: THE ROLE OF ADAPTATION IN THE UNITED STATES 14 (2004), available at <http://www.pewclimate.org/docuploads/Adaptation.pdf>.

⁹² LOUISE BEDSWORTH & ELLEN HANAK, PREPARING CALIFORNIA FOR A CHANGING CLIMATE 8 (2008), available at <http://www.ppic.org/content/pubs/report/R.1108LBR.pdf>.

⁹³ See Jason Mark, *Climate Change Threatens to Dry Up the Southwest's Future*, EARTH ISLAND J., Nov. 18, 2008, available at <http://www.alternet.org/story/103366/>.

⁹⁴ Juliet Eilperin, *Faster Climate Change Feared: New Report Points to Accelerated Melting, Longer Drought*, WASH. POST, Dec. 25, 2008, available at <http://www.washingtonpost.com/wpdyn/content/article/2008/12/24/AR2008122402174.html?hpid=moreheadlines>.

⁹⁵ *Id.*

⁹⁶ LEVI D. BREKKE ET AL., CLIMATE CHANGE AND WATER RESOURCES MANAGEMENT: A FEDERAL PERSPECTIVE 29-31 (2008).

⁹⁷ *Id.*

⁹⁸ NICHOLAS STERN, THE ECONOMICS OF CLIMATE CHANGE 417 (The Stern Review 2007).

⁹⁹ EASTERLING ET AL., *supra* note 91, at 17.

¹⁰⁰ See LOUISE BEDSWORTH, CLIMATE CHANGE AND CALIFORNIA'S PUBLIC HEALTH INSTITUTIONS (2008).

¹⁰⁰ *Id.*, at 2.

The most vulnerable group (those over 65) will double as a proportion of the California population over the same time.¹⁰¹ Higher ozone levels due to the increased temperature will cause additional deaths.¹⁰² The probability of large wildfires is also expected to increase by 12-53% by the end of the century.¹⁰³

B. GOVERNMENT ADAPTATION MEASURES

Adaptation covers a wide spectrum of responses "ranging from purely technological (e.g., sea defenses), to behavioral (e.g., altered food and recreational choices) to managerial (e.g., altered farm practices), to policy (e.g., planning regulations).¹⁰⁴ State and local governments are beginning to understand the need for adaptation. For instance, Chicago has issued a guide to adaptation for municipalities.¹⁰⁵ The guide considers a broad range of impacts including shoreline erosion, invasive species, health threats from heat waves and increased ozone, damage to key infrastructure, and flood damage.¹⁰⁶

It is important to understand that climate change adaptation can overlap with mitigation efforts. For instance, green building can be a way of mitigating climate change through reduced energy use but it can also help adapt to climate change through more efficient water use or internal temperature control. The trend toward green building may push some regulatory decision making from the local level to the state level,¹⁰⁷ and it is easy to imagine that the federal government might step in to promote the move to green building. Similarly, water systems are a significant source of energy use, so water conservation efforts can both respond to climate change and help mitigate future change.

Adaptation poses serious challenges.¹⁰⁸ The federal government is beginning to seriously address these issues. President Obama appointed a task force composed of key federal agencies to investigate adaptation. The task force's preliminary report called for more research, a unified strategic vision, comprehensive risk assessment, and involvement of all levels of government.¹⁰⁹ On October 14, the White House's Climate Change Adaptation Task Force released its recommendations for how federal agencies can better prepare the United

¹⁰¹ *Id.*, at 3.

¹⁰² *Id.*, at 7.

¹⁰³ *Id.*, at 10.

¹⁰⁴ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE WORKING GROUP II, CLIMATE CHANGE 2007: CLIMATE CHANGE IMPACTS, ADAPTATION AND VULNERABILITY 18 (2007), *available at* http://www.ipcc.ch/publications_and_data/publications_ipcc_fourth_assessment_report_wg2_report_impacts_adaptation_and_vulnerability.htm.

¹⁰⁵ MWH GLOBAL, CHICAGO AREA CLIMATE CHANGE QUICK GUIDE: ADAPTING TO THE PHYSICAL IMPACTS OF CLIMATE CHANGE (Julia Parzen ed., 2008), *available at* http://www.chicagoclimataction.org/filebin/pdf/Chicago_Quick_Guide_to_Climate_Change_Preparation_June_2008.pdf.

¹⁰⁶ *Id.*, at 13.

¹⁰⁷ See Sara C. Bronin, *The Quiet Revolution Revived: Sustainable Design, Land Use Regulation, and the States*, 93 MINN. L. REV. 231 (2008).

¹⁰⁸ These challenges are discussed in U.S. GOVERNMENT ACCOUNTABILITY OFFICE, CLIMATE CHANGE ADAPTATION: STRATEGIC FEDERAL PLANNING COULD HELP GOVERNMENT OFFICIALS MAKE MORE INFORMED DECISIONS (2010), *available at* <http://www.gao.gov/products/GAO-10-113>.

¹⁰⁹ INTERAGENCY CLIMATE CHANGE ADAPTATION TASK FORCE, PROGRESS REPORT OF THE INTERAGENCY CLIMATE CHANGE ADAPTATION TASK FORCE (2010), *available at* <http://www.whitehouse.gov/sites/default/files/microsites/ceq/20100315-interagency-adaptation-progress-report.pdf>.

States to respond to the impacts of climate change.¹¹⁰ The Task Force's report is a solid step forward in preparing the U.S. to deal with the challenges of climate change. The report includes five key recommendations.

First, according to the Report, adaptation needs to become a standard part of agency planning.¹¹¹ Agency adaptation plans should prioritize the most vulnerable people, places, and infrastructure. The plans should utilize ecosystem based approaches. Getting agencies to prepare these plans may be hard enough, but getting them to implement the plans is the crucial step.

Second, the government needs to ensure that scientific information about the impacts of climate change is easily accessible.¹¹² Without solid scientific information, public and private sector decision-makers cannot build adaptive capacity into their plans and activities. This effort would build on the U.S. Geologic Survey and its National Climate Assessment. Serious efforts need to be made if this information is going to be accessible to and understandable by the public at large.

Third, the government needs to address climate impacts that out across agency jurisdictions and missions.¹¹³ Unfortunately, most of the main impacts of climate change, such as those that threaten water resources, public health, oceans and coasts, and communities, reach across the mission of any single federal agency. Important arenas for agency cooperation are the improvement water-use efficiency, strengthening public health systems, and developing an open-source risk assessment model.

Fourth, the U.S needs to support international adaptation.¹¹⁴ The report calls for leveraging federal resources to help developing countries reduce their vulnerability to climate change.¹¹⁵ One interesting recommendation is to enhance collaboration. on adaptation among national security agencies.¹¹⁶ In addition, USAID issued a guidance document on integrating adaptation into foreign assistance programs. One virtue of the Report is its awareness of the potentially important role that the private sector can play in adaptation.

Fifth, the federal government needs to support adaptation efforts by state, local, and tribal officials.¹¹⁷ As the report recognizes, much of the adaptation effort will be locally driven, with the federal government playing a supporting role. Developing metrics to evaluate adaptation efforts is one important step. Another is providing technical support for government units across the country.

The Task Force Report is not an adaptation plan. Instead, it is essentially a plan of how to *begin* adaptation planning. Nevertheless, this is an important first step to responding to those impacts from climate change that cannot be avoided by reducing emissions.

¹¹⁰ WHITE HOUSE COUNCIL ON ENVIRONMENTAL QUALITY, PROGRESS REPORT OF THE INTERAGENCY CLIMATE CHANGE ADAPTATION TASK FORCE: RECOMMENDED ACTIONS IN SUPPORT OF A NATIONAL CLIMATE CHANGE ADAPTATION STRATEGY (2010), *available at* <http://www.whitehouse.gov/sites/default/files/microsites/ceq/Interagency-Climate-Change-Adaptation-Progress-Report.pdf>.

¹¹¹ *Id.*, at 25-30.

¹¹² *Id.*, at 30-34.

¹¹³ *Id.*, at 34-44.

¹¹⁴ *Id.*, at 44-48.

¹¹⁵ *Id.*, at 47.

¹¹⁶ *Id.*

¹¹⁷ *Id.*, at 50-51.

IV. INTERNATIONAL NEGOTIATIONS BY THE UNITED STATES AND U.S. -CHINA RELATIONS

The U.S. did not ratify the Kyoto Protocol. However, with the election of President Obama, the U.S. has reentered climate negotiations. At Copenhagen, President Obama helped broker a political agreement, which "provides for explicit emission pledges by all the major economies - including, for the first time, China and other major developing countries - but charts no clear path toward a treaty with binding commitments."¹¹⁸

The U.S. believes that both developed and developing countries should commit to legally binding emissions limits, monitoring, and verification. Following the recent Tianjin meetings, U.S. Chief Climate Negotiator Todd Stern openly criticized China for what he perceived as backpedaling by China on the Copenhagen Accord, which included commitments from industrialized and developing nations aimed at limiting global temperature increases to two degrees Celsius and an agreement to work toward independent monitoring to verify countries' respective commitments.¹¹⁹

The U.S. believes that both developing and developed countries have the responsibility to act on emissions limits, monitoring, and verification; neither can act on a purely voluntary basis. The U.S. is pressing for adherence to the Copenhagen Accord's agreement that developed countries reduce their emissions on an absolute basis, below a baseline of 2005 and 1990 and that developing countries reduce their emissions on a relative basis.¹²⁰ In terms of its own responsibilities, the U.S. is maintaining its "international commitment to reduce emissions by 17 percent by 2020," despite the fact that Congress has yet to pass a climate bill.¹²¹

The U.S. thinks that developing countries should "commit to mandatory cuts [in emissions] and international verification."¹²² Moreover, the U.S. challenges the contention, advanced by developing countries, that they only have voluntary obligations under Kyoto and the Framework Convention. Todd Stern does not interpret "common but differentiated responsibilities" to mean voluntary obligations. "The obligations for developed countries, especially under Kyoto, are certainly more specific, but developing countries have legally binding obligations to formulate, implement and publish their mitigation programs."¹²³ This finding is

¹¹⁸ ELLIOT DIRINGER, SUMMARY OF COP 15 AND CMP 5 PREPARED BY THE PEW CENTER ON GLOBAL CLIMATE CHANGE 1 (2009), available at <http://www.pewclimate.org/docUploads/copenhagen-cop15-summary.pdf>; Jim Efstathiou Jr., *China Spurns Pledges in Climate-Change Accord, U.S.'s Stern Says*, BLOOMBERG, Oct. 8, 2010, available at <http://www.bloomberg.com/news/2010-10-08/china-spurns-pledges-in-cancun-climate-change-accord-u-s-s-stern-says.html>.

¹¹⁹ Efstathiou, *supra* note 118.

¹²⁰ Todd Stern, A New Paradigm: Climate Change Negotiations in the Post-Copenhagen Era, Remarks as Prepared at the University of Michigan Law School (Oct. 8, 2010), available at <http://j.mp/SternUNFCCC1010>; see also Todd Stern, Energy and Climate Change 2010: Back to the Future, Keynote Address as Prepared for the Brookings Conference (May 18, 2010), available at http://www.brookings.edu/rmedia/Files/events/2010/20100518_energy...dClimate/20100518_stern_prepared.pdf. This is Stern's assessment of the agreement at Copenhagen, and is up for interpretation.

¹²¹ John M. Broder & Elisabeth Rosenthal, *Poor Prospects for New Climate Meeting*, N.Y. TIMES, Oct. 7, 2010, available at <http://www.nytimes.com/2010/10/08/world/americas/Ofclimate.html?j1>.

¹²² *US Envoy: Climate Deal Still Possible in Mexico*, ASSOCIATED PRESS, Oct. 22, 2010, available at <http://www.google.com/hostednews/ap/article/ALeqM5i2uARvffGzn3hVZXIJrMJRIkWQ?docId=ea757d8df57a4908999ebde4436f2399>.

¹²³ Stern, Energy and Climate Change 2010: Back to the Future, *supra* note 120, at 2.

based on what he calls textual exegesis, and an argument about need for 1992 agreements to evolve given present realities.

In this vein, the U.S. challenges the developing vs. developed, country framework as presently interpreted. The framework, according to Todd Stern, "does not prevent differentiation among developing countries or among developed countries."¹²⁴ For example, the U.S. thinks that China should not be treated the same as Chad, when China is now the world's largest emitter, is the second largest *historic* emitter, will be 60% largest than the U.S. by 2020, and has even surpassed France in *per capita* emissions. Instead, you need to start with all the major emitters, both developed and developing, accounting for some 85% of global emissions and build out from there.¹²⁵

From a pragmatic position, U.S. negotiators think that, in order to receive domestic support for any agreement, it must also require action "from China and the other emerging markets."¹²⁶

The fixture path of international negotiations will depend significantly on whether the United States and China, the world's two largest emitters, are able to reach agreement. However, China's views are different from those of the United States. It is important to examine those differences because they are the now the fundamental barriers to international action on climate change.

China and the U.S. have very different perspectives on who should bear the burden of greenhouse gas reductions. China argues that the U.S. and other wealthy nations, who are larger historic contributors to greenhouse gas emissions, should submit to larger emissions cuts than developing countries.¹²⁷ After Copenhagen, China voluntarily submitted an emissions target of 40-45% per unit of GDP by 2020 compared to the 2005 level; increase the share of non-fossil energy in its primary energy consumption to around 15% by 2020; and increase forest coverage by 40 million hectares and forest stock volume by 1.3 billion cubic meters by 2020 from 2005 levels.¹²⁸

China has joined Brazil, South Africa, and India (BASIC), in calling for "developed nations to commit to more ambitious emission reduction targets for the second commitment period of the Kyoto Protocol" and for non-Kyoto developed countries (i.e. the United States) to "undertake comparable emission reduction targets under the United Nations Framework Convention on Climate Change (UNFCCC)."¹²⁹

At the same time, "China rejects an internationally binding limit on its greenhouse gas emissions [for itself] ... because it contributed less to the problem historically, its emissions per-capita are still relatively low and it needs leeway to grow its economy."¹³⁰ Recall that the United States believes strongly in the need to include developing countries in emissions

¹²⁴ *Id.*

¹²⁵ Stern, A New Paradigm: Climate Change Negotiations in the Post-Copenhagen Era, *supra* note 120.

¹²⁶ *Id.*

¹²⁷ *US Envoy: Climate Deal Still Possible in Mexico*, *supra* note 122.

¹²⁸ Krittivas Mukherjee, *China Reiterates Goals for Curbing Climate Change*, REUTERS, Jan. 29, 2010, available at <http://www.reuters.com/article/idUSLDE60S21N>.

¹²⁹ *BASIC Members Urge Developed Countries to Meet Obligations*, XINHUA NEWS, Oct. 11, 2010, available at http://news.xinhuanet.com/english2010/china/2010-10/11/c_13551854.htm.

¹³⁰ Chris Buckley, *China Greenhouse Gas Growth "Daunting": U.S. Envoy*, REUTERS, Oct. 22, 2010, available at <http://www.alertnet.org/thenews/newsdesk/T0E69LO35.htm>.

limitations. China's chief climate negotiator has said that it is unreasonable to expect rising economies to put an absolute cap on their emissions since it will limit their economic growth."¹³¹ Nevertheless, China has also recognized the desirability of limiting emissions in order to prevent climate change that would be destructive to China as well as other countries; The U.S. is likely to demand a clearer commitment, however, rather than simply an expression of good intentions.

Contrary to the United States position, China also rejects the requirement of independent monitoring verification of its progress. In rejecting such monitoring and verification, China stands alongside Brazil, South Africa, and India, to form (BASIC), the largest developing countries.¹³² Xie Zhenhua noted that "We fully support to increase the transparency of all countries' mitigation action." But that "what we are opposed [to] is some countries asking developing countries [to take] domestic actions or international consultation and analysis by stricter standards which should be applied to developed countries. This is truly against the principle of common but differentiated responsibilities."¹³³ The U.S. seems to see the responsibilities as more common and less differentiated, while china has the opposing view.

Despite these major differences from the U.S. position, China is beginning to show signs that may be favorable to negotiations. On a related but ancillary note, there is evidence that China is taking steps toward greater transparency and improving capacity, according to analyst Damien Ma:

Sun Cuihua, the Deputy General-Director of the Climate Change Coordination Office in China's National Development and Reform Commission announced at a side event that China is currently working on a centralized database of GHG emissions, which would include emissions data from Chinese municipalities and provinces and would eventually become open for the public. Although no specific timeline was given for completion, this is a major announcement, considering the most recent publicly-available data for GEIG emission levels of Chinese provinces dates back to 1994.¹³⁴

Finally, another possible source of tension between the U.S. and China involves border adjustments. Some groups within the United States seek border adjustments so that imports from countries with weak emissions limits will not have an unfair competitive advantage. China and other developing countries reject proposed tariffs on goods that "border adjustments" for countries who do not agree to binding emissions caps, which they view as

¹³¹ Tini Tran, *Climate Talks in Tianjin, China Make Little Progress*, HUFFINGTON POST, Oct. 6, 2010, available at http://www.huffingtonpost.com/2010/06/climate-talks-in-tianjin-_n_752714.html.

¹³² International Centre for Trade and Sustainable Development, *Tianjin Climate Meeting Delivers Little, Overshadowed by US-China Spat*, BRIDGES WKLY. NEWS TRADE DIG., Oct. 13, 2010, at 3, available at <http://ictsd.org/i/news/bridgesweekly/86988>.

¹³³ Lisa Friedman, *Negotiations: China Says Developing Countries Are Being Held to 'Stricter Standards'*, CLIMATE WIRE, Oct. 5, 2010, available at <http://www.eenews.iict/climatewire/2010/10/05/3>.

¹³⁴ Damien Ma, *Account of the Tianjin Climate Talks*, ATLANTIC, Oct. 15, 2010, available at <http://www.theatlantic.com/international/archive/2010/10/account-of-the-tianjin-climate-talks/64649/>.

unilateral protectionist measures by developed countries.¹³⁵ India noted that this would violate the UNFCCC's principle of "common but differentiated responsibilities."¹³⁶

Despite these disagreements with China and other developing countries, in the latest round of negotiations, the U.S. has been supporting some important steps forward:

Most notably, a plan to pay developing countries with large forested areas to save those areas from development was moved forward. Other key areas emerged include technology transfer, a shared vision for long-term cooperative action, oversight of the \$30 billion fast-track adaptation fund, and financial considerations tied to capacity building.¹³⁷

Nevertheless, crucial areas of conflict remain, particularly with respect to disagreements between the U.S. and China. Tensions are real:

One day after U.S. Climate Change envoy Todd Stem, speaking in Michigan, criticized China for refusing to take on more responsibilities than smaller developing countries, China's top climate change negotiator Su Wei, speaking in Tianjin, said the U.S. was trying to deflect attention from its own inaction on the climate.¹³⁸

Frustration about the inability of the U.S. to pass national climate legislation is understandable, and this frustration is shared both in the U.S. and abroad. Moving forward will require a willingness to consider opposing viewpoints about the responsibilities of developed countries, underdeveloped countries, and rapidly developing countries. Discussions may be difficult, but it is in the interest of the entire world to reach some understanding. It is also critical that the United States demonstrate an ability to curb its own emissions as it asks others to do the same.

Although there are strong differences of viewpoints, compromise between the U.S. and China seems to be possible in terms of the target emissions for various countries. The differences over whether reductions are voluntary and about monitoring are also serious, but it should be possible to devise mechanisms for transparency that respect the sovereignty of all countries while still providing a basis for credible commitments. What matters is not the formality of whether commitments are "enforceable" under international law but whether they are strong enough that other countries can rely upon them.

V. CONCLUSION

For advocates of decisive action on climate change, the United States has provided

¹³⁵ International Centre for Trade and Sustainable Development, *supra* note 132.

¹³⁶ *Id.*

¹³⁷ U.N. Talks in Tianjin Make Gains on Forestry, Post-Kyoto Plan, but U.S.-China Rift Remains, INTERNATIONAL ENV'T REP., Oct. 9, 2010.

¹³⁸ *Id.*

considerable frustration. First, the Bush Administration resisted any meaningful action for eight years. Even under the Obama administration, inaction in the U.S. Senate has prevented comprehensive national legislation. As a result, the usual channels for making major national policies have been blocked.

Nevertheless, American climate law is far from dormant. The Supreme Court has pushed the EPA into regulating climate change under existing air pollution laws. In the meantime, state governments have acted individually and in groups to address climate change.

From the point of view of environmental advocates, the situation remains frustrating in some respects. And from the point of view of the legal process, it seems regrettable that the national legislation has left a vacuum to be filled by the states, the federal courts, and administrative agencies. Nevertheless, it is a sign of the adaptability of the American legal system that even the absence of national legislation has not prevented fruitful progress on such a major issue as climate change. However, much remains to be done. The U.S. and the Chinese need to find common ground in addressing climate change. The United States also needs a clear legal commitment to address climate change at the national level in order to be able to help advance international negotiations, so that the entire planet can benefit from a global strategy to address climate change.

KEYWORDS

U.S. law, climate change, climate change adaptation, international law

Manuscript received: Dec. 20, 2010; review completed: May 19, 2011; accepted: May 24, 2011