Focus Article

US climate change politics and policymaking

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The United States is often identified as a global laggard on climate change policymaking and implementation. Although this reputation may be deserved by the US federal government, a look across all levels of the US federal political system and a multitude of political actors demonstrates the existence of a significant number of climate change and energy-related activities. This brief review of US climate change politics covers climate change policy support and opposition across different governance levels, involving legal and political activities and interactions of a large number of public, private, and civil society sector actors. It examines US federal climate change legislation and politics, and how activities in Washington, DC are connected to both international politics and domestic conditions and debates. This discussion is linked to state and municipal level climate change action, followed by a discussion of how activities of firms and advocacy groups and aspects of US public opinion shape US climate change politics. The review ends with a few concluding remarks about the future of US climate change policymaking and implementation. *WIREs Clim Change* 2011 2 121–127 DOI: 10.1002/wcc.94

INTRODUCTION

In 2009, Barack Obama became the first US President to join leaders of other large economies to support the goal of keeping the world's average surface temperatures from rising no more than 2°C above pre-industrial levels. To meet this goal, the United States, as well as other large country emitters, will have to achieve substantial reductions in national greenhouse gas (GHG) emissions by mid-century. The United States is the world's largest GHG emitter in historical, cumulative terms. China surpassed the United States as the leading national GHG emitter, annually, during the 2000s. US national GHG emissions increased by 17% between 1990 and 2007 with per capita emissions growing to about 24 tons carbon dioxide (CO_2) equivalent. By comparison, per capita emissions in much of Europe are half of this figure and those of countries such as China and India are much smaller still. Many US states have GHG emissions equivalent to entire industrial or developing countries.

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The United States became an early party to the United Nations Framework Convention on Climate Change (UNFCCC). The US Senate ratified the UNFCCC in 1992, the year it was adopted. Through UNFCCC ratification, the United States committed to 'prevent dangerous anthropogenic interference with the climate system'. The 2°C goal repeatedly endorsed by President Obama and other world leaders, including in the 2009 Copenhagen Accord, was later formulated to meet this commitment. In contrast to its UNFCCC ratification, the United States during the George W. Bush administration was a leading opponent of the Kyoto Protocol. The country became the only major industrialized country to not become a party. Refusing to ratify the Kyoto Protocol, in large part because major developing countries did not have mandatory emission reduction requirements, angered many industrialized and developing countries, and shaped much global climate change politics in the 2000s.

The change in the White House from the George W. Bush administration to the Barack Obama administration in January 2009 resulted in a significant political shift in the executive branch's attitude toward domestic and international climate change policy. Nevertheless, the US Congress has repeatedly failed to pass national GHG controls into law. The Obama

administration was unwilling to commit to legally binding emission reduction commitments at international climate meetings during its first years in office, in part because of Congressional inaction. However, legal developments, politics, and policymaking around climate change grew increasingly wide-ranging and complex in subnational jurisdictions across the United States during the 2000s. The plethora of policy developments at the subnational level was partly a result of federal inaction, as policymakers and agencies outside Washington DC exercised their rights to formulate policies and regulations, while cooperating and competing to set standards on a whole host of climate change and energy issues.

Because of the importance of the federal structure of the US political system and its allocation of policymaking authority, this brief review of American climate change politics covers climate change policy support and opposition across different governance levels, involving a multitude of legal and political activities and interactions by a large number of public, private, and civil society sector actors. The review begins by discussing US federal climate change legislation and politics, and how activities in Washington DC are connected to international politics as well as domestic conditions, debates and policymaking. This discussion is linked to an overview of state and municipal level climate change action, followed by a discussion of how activities of firms and advocacy groups as well as aspects of US public opinion shape US climate change politics. The review ends with a few concluding remarks about the future of US climate change policymaking and implementation.

FEDERAL LEVEL POLITICS

Federal climate change politics has long been influenced by a staunch and vocal opposition to the Kyoto Protocol by prominent politicians and well funded private sector organizations. Leading critics of climate change policy have questioned the science behind human-induced climate change and the work of the Intergovernmental Panel on Climate Change (IPCC), and argued that costs of climate change policy action would be disastrously high. Senator James Inhofe (R-OK), former chair of the Senate Committee on Environment and Public Works, once described global warming as 'the greatest hoax ever perpetrated on the American people'.[1] Climate change policy opponents, including President George W. Bush, argue that regulatory measures mandating GHG reductions would have widespread negative economic consequences for the United States and threaten the international competitiveness of US firms.[2–4]

In 1997, just a few months before the Kyoto Protocol negotiations concluded, the Senate passed a 'Sense of the Senate' resolution introduced by Senators Robert Byrd (D-WV) and Chuck Hagel (R-NE) by 95-0. Although senators supported it for many different reasons, this resolution opposed the then draft of the Kyoto Protocol 'because of the disparity of treatment between Annex I Parties and Developing Countries and the level of required emission reductions, could result in serious harm to the "United States" economy, including significant job loss, trade disadvantages, increased energy and consumer costs, or any combination thereof'. Although the Clinton administration, represented by Vice President Al Gore, signed the Kyoto Protocol, it was never submitted to the US Senate for consideration; enough senators made it clear that the Kyoto Protocol would not receive the two-thirds majority vote needed for ratification. Senate opposition to the Kyoto Protocol continued throughout the 2000s.

When he ran for president, George W. Bush opposed the Kyoto Protocol, but expressed support for national controls on CO_2 emissions. However, just a few months into his presidency, he reversed his stance with strong backing from Vice President Dick Cheney.[5] After this reversal, the George W. Bush administration (2001–2009) consistently opposed the introduction of mandatory GHGs regulations, downplaying the climate change issue and often expressing skepticism about climate change science. During this period, federal policy instead focused on voluntary programs with a goal of reducing GHG intensity of the economy as measured by emissions/gross domestic product. Although GHG intensity improved, absolute increases in GHG emissions continued. Federal policy also supported scientific study of climate change and the development of emission-reducing technologies under the Climate Change Science Program and the Climate Change Technology Program, established in 2002.

When President Obama took office in January 2009, he supported returning US GHG emissions to 1990 levels by 2020. The Obama administration also pushed Congress to pass comprehensive climate change and energy legislation. However, legislative proposals to control GHG emissions throughout the 2000s failed to garner the support of the House of Representatives and/or the Senate to end debate (avoid filibuster) and pass a law. Congressional opposition results from several factors.[6] Voting patterns reveal substantial opposition from Republican, conservative members of both chambers. Many Republican congressional representatives have been vocal skeptics of the science behind human-induced climate change,

rejecting the need to take regulatory actions on CO_2 and other GHGs through a 'cap-and-trade' system or any other kind of policy instrument. This resistance is also connected to an ideological opposition to expand government regulations in the environmental and other policy areas.

Furthermore, some Congressional opposition seems linked to the natural resource base and energy uses of the states that the members of the House of Representatives and the Senate represent.[7] Both Republican and Democratic members from states with large resource extraction industries, in particular coal and oil, tend to side with industry interests against reducing fossil fuel subsidies and regulating GHG emissions. Similarly, Congressional Republican and Democratic members from states with heavy manufacturing—especially automobiles and other energy-intensive production industries—resisted efforts to put a price on CO_2 emissions, as they feared the local economic impact of higher energy costs. National discussions in the late 2000s about expanding the 'green economy' only changed this opposition marginally. In addition, at least some federal policymakers' positions are shaped by the extent to which their home states have adopted GHG controls and climate change action plans.

Alongside presidential and congressional involvement, climate change politics has also been shaped by the judicial branch.[8,9] In 1999, environmental groups petitioned the Environmental Protection Agency (EPA) to set CO_2 emission standards for vehicles. This request was rejected on the grounds that the Clinton era EPA did not believe the Clean Air Act provided authority for such controls. Frustrated by federal recalcitrance, Attorneys General from California, Connecticut, Illinois, Maine, Massachusetts, New Jersey, New Mexico, New York, Oregon, Rhode Island, Vermont and Washington in 2003 filed suit in federal court challenging this decision. Following a long legal process, with the George W. Bush administration, several states, and the auto industry in opposition, the Supreme Court in a significant 5-4 ruling in 2007 determined that CO_2, in fact, can be classified as a pollutant under the Clean Air Act.[10] This paved the way for at least some policy change.

The Energy Independence and Security Act of 2007 increased the national Corporate Average Fuel Economy (CAFE) standards for vehicles. Although modest, 35 miles per gallon by 2020, it was the first increase in CAFE standards in over 30 years. The act also included new product energy efficiency standards and subsidies and mandates to increase the use of ethanol and biofuels. Furthermore, the Obama administration EPA took administrative initiatives to regulate GHGs under the Clean Air Act, as Congress was unable to pass separate climate change legislation. This included an 'endangerment finding' in 2009, stating that the current and projected atmospheric concentrations of CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) threaten the public health and welfare of current and future generations. As such, federal climate change politics in the late 2000s involved a combination of legislative and administrative debates, initiatives and struggles.

STATE AND MUNICIPAL POLICYMAKING

By 2010, the most significant climate change policy making in the United States had occurred at state and municipal levels. Subnational policymaking is shaped by a complex set of factors that differ across jurisdictions, including a sense of responsibility to reduce GHG emissions, data on local vulnerabilities to climate change, promotion of energy efficiency and diversification, efforts to promote smart growth, and attempts to capture first-mover advantages in the transition toward a less carbon intense future. Many of these actions are consistent with a long-standing US tradition of environmental federalism, where policy-leading subnational entities are the first ones to act on environmental issues such as air pollution, hazardous substances, and waste management, pushing federal policymakers and authorities to eventually set national standards and regulations.[6] At the same time, many political leaders in states oppose far-reaching GHG controls, echoing political and economic reasons voiced by skeptics in Congress.

Yet unlike Washington DC politics, paralyzed by partisan entrenchment and lobbying interests, leader states developing increasingly ambitious GHG and energy policies are sometimes governed by a mixture of Republican and Democratic governors and legislatures. States implement many federal environmental laws, they issue more than 90% of all environmental permits, and they conduct more than 75% of all environmental enforcement actions. States can furthermore address GHG emissions through the many policy areas where they have regulatory competence and wide-ranging authority, including the generation and distribution of electricity, transportation infrastructure, land use and planning, agriculture and forestry, and waste management. This situation created a policy space for states to take on a multitude of issues as federal policymakers remained inactive or collectively immobilized.[3,6,11]

During the George H. W. Bush administration (1989–1993), a small number of states began to study the climate change issue and how climatic changes may impact the state. In some cases, these states formulated new policy, in part made possible through federal policy developments on air pollution, energy, and transportation. During the early years of the Clinton administration (1993–2001), some leader states scaled back their activities in anticipation of additional federal initiatives and policy (linked to global policy developments). In the late 1990s, however, state opposition toward expanding climate change policymaking and GHG controls also grew. During 1998 and 1999, 16 states passed legislation or resolutions highly critical of the Kyoto Protocol and opposed ratification by the US Senate. Some states like West Virginia went further and passed legislation preventing state agencies from entering into any agreement with any federal agencies to reduce GHG emission.[12]

During the George W. Bush administration (2001–2009), a rapidly growing number of states intensified their climate change and energy activities, partly as a result of federal inaction and disengagement from global policy instruments. Federal inaction, however, created a policy room for state experimentation; there is not 'one best way' to reduce GHG emissions. In some cases where states took a policy lead, such as California and many New England and other East Coast states including New York and New Jersey, politicians and policymakers made explicit references to climate change and the need to reduce GHG emissions when presenting new policy and regulatory initiatives.[13,14] In other instances, such as in the cases of Texas, Nebraska, and Georgia, state leaders framed their actions more in terms of smart growth and energy diversification, while toning down linkages to GHG emissions and climate change for political reasons.[12]

Since the early 2000s, leader states have initiated a growing number of policy initiatives, even as several other states remained largely passive. By 2010, states had passed a long list of initiatives; the Pew Center on Global Climate Change tracks 21 different policies related to climate change and energy issues enacted at the state level. For example, half of all states have adopted individual GHG reduction targets ranging from modest to quite ambitious. Almost 30 states have established renewable portfolio standards, or goals requiring in-state electricity providers to obtain a minimum percentage of their power from renewable sources. Many states have also formulated separate mandates and incentives for ethanol production. A growing number of states are following California in setting CO_2 vehicle emission standards, which are directly related to similar efforts by the US EPA following the 2007 ruling by the Supreme Court. State agencies are furthermore adopting green building standards, expanding investments in energy efficiency programs, and mandating the sale of more efficient appliances and electronic equipment.

In addition to independent action, US leader states also engage in collaborative initiatives. In 2000, the Conference of New England Governors (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut) and Eastern Canadian Premiers (Nova Scotia, Newfoundland and Labrador, Prince Edward Island, New Brunswick, and Quebec) adopted a resolution that recognized climate change as a joint concern that affected local environments and economies. This resolution eventually produced a Climate Change Action Plan in 2001. Under this action plan, states and provinces pledged to reduce their GHGs to 1990 levels by 2010 and 10% below 1990 levels by 2020. They agreed to ultimately decrease emissions to levels that do not pose a threat to the climate, which according to an official estimate would require a 75–85% reduction from 2001 emission levels.[14]

The Regional Greenhouse Gas Initiative (RGGI), North America's first public GHG emissions trading scheme, is another major multi-state initiative.[14] Launched in 2009, RGGI is a mandatory cap-and-trade scheme for CO_2 emissions from major power plants in ten states: Maryland, Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Delaware. This trading scheme is designed to stabilize CO_2 emissions from the region's power sector between 2009 and 2015. Between 2015 and 2018, each state's annual CO_2 emissions budget is designed to decline by 2.5% per year, achieving a total 10% reduction by 2019. Although the RGGI requirements and goals are relatively modest, the development of this trading scheme was important. It influenced federal discussions about the establishment of a national cap-and-trade scheme and the RGGI states hope that they will reap first-mover advantages if a federal trading system is created. RGGI also helped to inspire other groups of states to debate and design similar programs.

Groups of states on the West Coast and around the Great Lakes also initiated climate change cooperation (some of which also include multiple Canadian provinces and Mexican states as participants and observers). These efforts include plans to establish a joint carbon cap-and-trade system among several US states and Canadian provinces and/or linking up with other regional systems like RGGI. These joint state initiatives draw from The Climate Registry, which is the regional initiative

involving the largest group of states, launched in 2007. The Climate Registry is a collaborative effort to develop a common system for private and public entities to calculate and report GHG emissions, allowing for the consistent measurement, verification, and reporting of emissions. By 2010, The Climate Registry had 61 member states, provinces, and tribes from all three North American countries (41 US states, the District of Columbia, 9 Canadian provinces, 6 Mexican states, and 4 native tribes). Like with RGGI, members hope this will shape federal policy.

In conjunction with the expansion of state-level climate change action, many US municipalities have enacted serious climate change policies as they participate in domestic and international organizations and networks which serve to disseminate policy ideas and lessons on climate change related issues across cities that may not otherwise interact.[15,16] These fora include the United States Conference of Mayors Climate Protection Center, which oversees the US Conference of Mayors Climate Protection Agreement. By 2009, more than 1000 mayors from all 50 states had signed this agreement. Signatories strive to meet or beat the US Kyoto Protocol target for GHG reductions in their own communities (a 7% reduction from 1990 levels by 2012), push for state governments to enact GHG reduction policies, and urge Congress to pass bipartisan legislation establishing a national GHG emissions trading system.

Furthermore, over 150 US cities are members of the International Council for Local Environmental Initiatives (ICLEI) and its Cities for Climate Protection program (CCP) (most of which have also signed Mayors Climate Protection Agreement). Members of the CCP program commit to a five-step process for addressing climate change: (1) creating a GHG emissions inventory and forecast; (2) setting an emission reduction plan; (3) developing a local action plan; (4) implementing the local action plan; and (5) monitoring progress and reporting results. A few major cities such as Philadelphia, New York City, Houston, Los Angeles, and Chicago are also members of the C40 network partnering with the Clinton Foundation to promote ways of reducing GHG emissions and improve energy efficiency. Although the effects of many municipal climate change programs are modest so far, a few cities promoting urban sustainability more broadly have achieved noteworthy results.[16]

FIRMS, ADVOCACY GROUPS AND PUBLIC OPINION

During the 1990s, many US firms and trade associations led private sector opposition against the introduction of mandatory GHG emission reductions nationally and internationally.[17] A series of industry-funded campaigns portrayed the Kyoto Protocol as unfair to the United States because developing countries were not required to make GHG reductions. During the 2000s, however, a growing number of leaders of large and small firms (outside of the oil, coal, and automobile sectors) added their voices to those advocating serious federal climate change mitigation polices, including through the United States Climate Action Partnership (USCAP). In at least some cases, this is driven by a desire to have a national standard replace a plethora of different state-level standards and requirements. Yet, a large number of lobbyists in Washington DC and in state capitals across the country continue to work against mandatory GHG controls as climate change remains a divisive issue among firms as well as politicians.

Nevertheless, a growing numbers of firms take measures to reduce their GHG emissions and prepare for a more carbon-constrained economy, for example, by increasing investments in the development of more energy efficient products and technologies and renewable energy production.[18] The Chicago Climate Exchange (CCX), which opened in 2003, is private sector initiated voluntary market for trading CO_2 emission permits. Related to the establishment of RGGI and other trading schemes, the market for consultancy and accounting firms offering services to private and public organizations that want to participate in credit and/or offset schemes for CO_2 reductions grew rapidly in the 2000s. At the same time, there is considerable private sector opposition to more stringent climate change policy, as firms and organizations such as the US Chamber of Commerce can exercise extensive influence over environmental policymaking.[19]

Opposition to climate change policy and mandatory GHG reductions also involves a plethora of activities by conservative and free market oriented think tanks, many of which receive funding from firms and industry associations who share their ideology and policy goals.[20] Representative of these efforts, the Competitive Enterprise Institute in 2006 launched a widespread media campaign against efforts to control CO_2 emissions with the slogan 'They call it pollution; we call it life'. Many other similar efforts have been launched, seeking to discredit the scientific research and assessment about human-induced climate change, arguing that mandated GHG reductions are prohibitively expensive to households and firms, and opposing nearly all government involvement in climate change issues. Groups also collaborate with states and firms initiating legal measures to stop

GHG controls on, for example, vehicles, as pushed by California and other leader states and also endorsed by the Obama administration.

Although conservative opposition continues, many major US environmental groups have seen increases in their membership, indicating that many US citizens continue to have an interest in environmental issues broadly. However, leading environmental groups have only had a limited impact on the national public and media debate and federal policymaking on climate change, where viewpoints of opponents to more aggressive climate change action often have dominated. Where environmental advocacy groups have been active and influential participants in climate change politics and policymaking, is largely at regional and local levels shaping state and municipal initiatives. Many observers have argued that unsuccessful climate change policy advocacy among environmental groups is a major reason why national politicians, federal policymakers, and government agencies have been so slow to act.[21,22]

US public opinion trends also help to explain the country's divisive and complex politics around climate policy. In the 2009 National Survey of American Public Opinion on Climate Change, 66% of respondents stated a belief that there is solid evidence for the claim that the average temperature on earth has been getting warmer over the past four decades.[23] There were, however, significant differences across party lines; 80% of Democrats, 61% of Independents, and 49% of Republications expressed this belief. In addition, 51% of respondents said that climate change is a 'very serious' problem while 40% said that it was a 'somewhat serious' problem. Yet, only 14% would 'strongly support' while 28% would 'somewhat support' a cap-and-trade program that increased energy costs by $15 a month. That support fell even further at higher projected price increases.

THE FUTURE OF US CLIMATE CHANGE POLITICSL AND POLICYMAKING

The United States is often identified as a global laggard on climate change policymaking. Since the 1990s, this has been true at the federal level where the national government has been largely passive. Instead, US climate change politics has been characterized by bottom-up dynamics and policy developments.[4,6,24] Yet, many national and local policymakers and private sector representatives remain unconvinced about the need for more comprehensive climate change policy. The national political debate remains largely focused on short-term GHG mitigation costs with little discussion about costs and consequences resulting from different kinds of possible climatic changes. There has also been very little public debate about adaptation. On both mitigation and adaptation, a very wide range of costs estimates have been cited with little to no agreement among policy makers and stakeholders on how to best determine these.

Despite noteworthy bottom-up policymaking and activism, US national GHG emissions are likely to continue to increase into the future absent more aggressive federal policymaking and state-level implementation. Additional, significant policy measures are required to stabilize and then bring down national GHG emissions. To date, most existing climate change policy has been exacted by leader states and municipals choosing to go beyond federal mandates. This has created a complex subnational web of initiatives and requirements. Additional policies at the state and federal levels face the challenge of integrating their goals and requirements with this existing web of institutions. State and municipal action remains legally and politically important, given the way regulatory authority is divided in the US federal system. Despite the need for federal action to stem national emission growth, Congress and the federal government have not demonstrated the willingness to act aggressively in the short term, let alone to sustain GHG mitigation or adaptation actions over decades.

Many Americans, especially those who self-identify as Republicans, furthermore do not view climate change as a problem that requires fundamental societal change or the introduction of policy measure that increase carbon or energy costs. Policymakers and advocates seeking to expand federal and local climate change policy also face important legal and political challenges. At the same time, many subnational efforts are ongoing, but implementation records are inconsistent. Politicians may also seek to connect US policymaking with external policy making and programs to achieve cost-effective GHG reductions, including; Canadian and Mexican actions as these economies are linked under the North American Free Trade Agreement, the European Union including its regional emissions trading scheme, and political and technical initiatives by China and India and other leading developing countries. These possibilities and many more, come together under ongoing debates and negotiations under the UNFCCC system.[25]

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