Order Code RL34067

CRS Report for Congress

Climate Change Legislation in the 110th Congress

June 29, 2007

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Prepared for Members and Committees of Congress

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Summary

Congressional interest in climate change legislation has grown in recent years. In the 110th Congress, Members have introduced multiple bills that directly address various aspects of climate change. These bills cover a wide spectrum, ranging from climate change research to comprehensive greenhouse gas (GHG) emissions cap-and-trade programs. Additional bills focus on GHG reporting or registration, or on power plant emissions of carbon dioxide (CO_2) as part of wider controls on pollutant emissions.

Within several broad categories, the bills vary in their approaches to climate change issues. For example, some bills covering research issues focus solely on modeling the effects of future climate change, whereas others address the development of monitoring systems. Bills focusing on technology deployment do so through tax incentives and credit-based programs within the United States or by promoting technology deployment in developing countries. Bills that include GHG registries are designed either as a part of a larger reduction bill or as a method for establishing a baseline for some future reduction program. Bills with mandatory emission reductions differ by the entities covered, the gases limited, and the emission targets required.

This report briefly discusses the basic concepts on which these bills are based, and compares major provisions of the bills in each of the following categories: climate change research; emissions reduction technologies; U.S. actions pursuant to international emission reduction agreements; adaptation to the effects of climate change; GHG reporting and registration; and GHG emissions reduction programs.

Contents

List of Tables

Climate Change Legislation in the 110th Congress

Introduction

In the 110th Congress, Members have introduced numerous bills that would directly or indirectly address climate change. This report describes and compares bills that directly address climate change, as opposed to those that primarily address other issues (e.g., energy efficiency and conservation) but could have ancillary impacts on climate.[1] In some cases, it is difficult to draw a line between direct and indirect climate change bills, because a specific bill or action may seek to achieve multiple objectives.

This report focuses on legislative actions — including comprehensive bills with individual climate change titles or sections — that explicitly address climate change issues. These bills fall into six major categories: (1) research on the causes and effects of climate change and on methods to measure and predict climate change; (2) deployment of emission-reducing technologies in the United States or other countries; (3) requirements for U.S. participation in international climate agreements; (4) investments in systems to adapt to changes in climate; (5) establishment of greenhouse gas (GHG) monitoring systems as a basis for research or for any potential reduction program; and (6) implementation of mandatory GHG emission reduction programs. These categories are not mutually exclusive, and several bills address more than one of the above categories.

There has been considerable interest in climate change issues in the 110th Congress. As of June 29, 2007, Members have introduced 52 bills — 27 in the Senate and 25 in the House — that would directly address climate change issues. One bill has passed the Senate and three bills have passed the House. Five bills in the Senate and four in the House have been reported (or ordered to be reported). In addition, various committees and subcommittees have held more than 45 hearings on climate change issues.

The major provisions of the climate change bills covered in this report are categorized in **Appendix 1** and summarized in **Appendix 2**.

Climate Change Research and Studies

Global climate change is a complex issue. While most scientists agree that the climate is changing in response to GHG emissions, uncertainties concerning the causes and effects of climate change remain and are a continuing subject of extensive

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[1] Congressional resolutions that address climate change-related issues, but do not directly call for action on greenhouse gas emissions, are likewise not included in this report.

scientific research.[2] These uncertainties include the potential effects on natural systems, as well as effects on social and political systems. Further, research is ongoing regarding technologies that improve efficiency, reduce fossil fuel consumption, and capture and store carbon dioxide (CO_2) emissions.

The legislative proposals that address climate change research and other related studies vary widely. Some of the proposals would focus on the underlying causes and effects of climate change. Several bills would require the U.S. intelligence and defense communities to study how changes in climate could affect their global operations or U.S. national security.

As of June 29, 2007, the House has passed three bills with climate change research provisions, and the Senate has passed one such bill:

- H.R. 1126 (Lipinski), which passed the House March 12, 2007, would require the Secretary of Energy to consider potential steel industry GHG reductions when reviewing research and development (R&D) activities for inclusion in Department of Energy research on steel.

- H.R. 2082 (Reyes), which passed the House May 11, 2007, would require the Director of National Intelligence to submit to Congress a National Intelligence Estimate on the potential geopolitical effects of climate change and the implications for U.S. national security.

- H.R. 1585 (Skelton), which passed the House May 17, 2007, would require the Department of Defense to assess the risks of projected climate change to the Department's facilities, capabilities, and missions.

- H.R. 6, Senate version, (Reid), which passed the Senate June 21, 2007, would expand the carbon capture research and development program and direct the Department of the Interior to conduct a national assessment of geologic storage capacity for CO_2.

Deployment of Greenhouse Gas Reduction Technology

One approach to addressing climate change is to promote the deployment and diffusion of technologies to reduce GHG emissions, such as carbon capture and storage (or sequestration). Within the legislative proposals, there are different methods of promoting technology deployment. One deployment strategy may involve tax incentives for investment in technologies to improve efficiency and/or lower emissions. Other deployment strategies would provide grants, loans, and other incentives for technology transfer to developing countries.

In the 110th Congress, some bills deal solely with technology deployment through tax incentives for lower-carbon technology or grants to develop and deploy

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[2] For more information on the science and policy of global climate change, see CRS Report RL33849, *Climate Change: Science and Policy Implications*, by Jane A. Leggett.

carbon capture and sequestration, or through requirements that the federal government use technology with lower emissions. Other bills that create mandatory GHG reduction programs also include technology deployment as one component.

As of June 29, 2007, the Senate has passed one bill that would promote technology deployment. The Senate version of H.R. 6 (Reid), which passed June 21, 2007, would implement a program through the Department of Energy to demonstrate technologies for the large-scale capture of CO_2 from industrial sources.

International Agreements

The United States ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1992. Five years later, the United States signed the convention's Kyoto Protocol, but it was never submitted to the Senate for ratification.[3] In 2001, President George W. Bush rejected the Kyoto Protocol and withdrew the United States from subsequent negotiations. Since that time, the United States has entered into other cooperative agreements, including the Asia-Pacific Partnership on Clean Development and Climate. This partnership focuses on voluntary action by member states to promote cleaner technology and related goals. However, U.S. participation in discussions over binding agreements has been limited.

Several bills in the 110th Congress would address the relationships and interactions the United States shares with other nations concerning climate change issues. In general, these bills urge the Administration to re-engage in international climate change negotiations.

Adaptation Bills

Some critics of GHG regulation argue that the effects on global GHG concentrations — and consequently the effects on climate — from any reduction scheme will be limited. Some therefore contend that investment should focus on preparing communities and systems to adapt to the effects of a changing climate. This notion is shared by some proponents of GHG regulation, who argue that because of earlier greenhouse gas emissions, some level of warming will occur regardless of mitigation activity. Those stakeholders support adaptation initiatives in concert with mitigation efforts.

Members have offered a few bills in the 110th Congress that would address adaptation to climate change in some fashion. Most of the bills would provide grants or other incentives to affected communities (e.g., coastal communities) to prepare for the potential effects of climate change. There are no stand-alone adaptation bills; adaptation provisions are contained in broader legislation on climate action or research.

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[3] President Clinton did not submit the Protocol to the Senate for advice and consent because the Senate was on record in mid-1997 (S.Res. 98), objecting to a treaty that had no mandatory obligations for developing countries. For more discussion, see CRS Report RL33826, *Climate Change: The Kyoto Protocol and International Actions*, by Susan R. Fletcher and Larry Parker.

Greenhouse Gas Reporting and Registry Bills

Pursuant to the UNFCCC, the United States publishes annual reports on its GHG emissions.[4] The U.S. Environmental Protection Agency (EPA) reports this information using various techniques (e.g., fuel analysis for CO_2). The 2005 emissions estimates indicate that the three dominant sources of GHG emissions are electricity generation (33%), transportation (28%), and industry (19%).[5]

At the national level, the 1990 Clean Air Act requires most electric utilities to report their GHG emissions, but there is no overall national GHG reporting requirement. However, some states also gather data through voluntary registries or mandatory GHG emissions reporting mechanisms.[6]

In the 110th Congress, several bills would explicitly establish new mandatory reporting systems. Others would implicitly establish such a system by requiring the EPA to develop regulations to control GHG emissions from one or multiple economic sectors.

Greenhouse Gas Emission Reduction Bills

The United States has no federal GHG reduction requirements, although there have been proposals to require such reductions.[7] These proposals include "command and control" regulations and market-based techniques to limit emissions. Market-based programs typically take as their model the Clean Air Act's acid rain program, which employs a cap-and-trade design to control several air pollutants.[8]

In the 110th Congress, Members have introduced several bills that would establish a market-based, cap-and-trade program for GHG emissions. Cap-and-trade systems set strict limits on specific emissions from a particular group of sources. Sources may reduce their own emissions or purchase credits (i.e., trade) from other sources that have reduced emissions below their individual allotment. This flexibility in who makes reductions can lead to lower costs. In an efficient market, entities that face relatively low emission-reduction costs would have an incentive to achieve extra emission reductions, because these additional reductions could be sold to entities that face higher emission-reduction costs. An entity facing higher costs

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[4] These reports are issued by the Environmental Protection Agency, and are available at [http://epa.gov/climatechange/emissions/index.html].

[5] U.S. Environmental Protection Agency, *Inventory of U.S. GHG Emissions and Sinks 1990-2005*, p. ES-14. Additional sources are agriculture (8%), commerce (6%), and residential activities (5%).

[6] For more information, see CRS Report RL33812, *Climate Change: Action by States To Address Greenhouse Gas Emissions*, by Jonathan L. Ramseur.

[7] President Bush has articulated the goal of reducing U.S. greenhouse gas emissions intensity — the ratio of GHG emissions to economic output. However, that goal is voluntary, not mandatory.

[8] For more discussion of the different emission reduction policy options, see CRS Report RL33799, *Climate Change: Design Approaches for a Greenhouse Gas Reduction Program*, by Larry Parker.

could purchase allowances that would allow it to emit more than its initial emissions allotment. Total U.S. emissions may decrease or increase, depending on the entities covered, the GHGs controlled, and the emissions trading schemes. In the 110th Congress, some bills cover just the electric utility sector, while others cover most or all emissions throughout the economy.[9]

Another market-based option is to establish a "carbon tax" — a direct tax on GHG emissions or on the fuels that generate emissions when combusted. To the extent that emissions reductions can be achieved at costs lower than the tax rate, those reductions will be undertaken; if emissions reductions are more expensive, covered entities would opt to pay the tax. In this way, there is an upper limit to the cost of the control program.[10] As of June 29, 2007, one carbon tax bill has been introduced in the 110th Congress, H.R. 2069 (Stark).

Sector-Specific Reduction Bills. Members have introduced several bills in the 110th Congress that would control emissions from only the electric utility sector. The rationale for such a policy is that electricity generation emits the highest percentage of GHGs by sector, and the number of covered sources would be relatively small compared to other sectors (e.g., transportation). Moreover, power plants have experience with reporting (if not reducing) their CO_2 emissions under the Clean Air Act.

Sector-specific bills generally fall into two categories: (1) bills that would control only GHGs and (2) bills that would control both GHGs and other pollutants such as mercury, sulfur dioxide, and nitrogen oxides. This latter category of bills is generally referred to as "multi-pollutant" legislation.[11]

Comprehensive GHG Emissions Reductions. A broader approach is to require emission reductions from multiple economic sectors. Several bills in the 110th Congress would apply to most or all U.S. GHG emissions. These bills are often described as an "economy-wide" GHG reduction approach. These bills vary in their coverage: some bills cover the most high-emitting sectors (e.g., electricity and transportation) while excluding other sectors (e.g., residential and commercial); other bills grant EPA broad authority to establish regulations to reduce the most emissions at the lowest cost.

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[9] For detailed information on GHG reduction bills, see CRS Report RL33846, *Climate Change: Greenhouse Gas Reduction Bills in the 110th Congress*, by Larry Parker and Brent D. Yacobucci.

[10] A hybrid of cap-and-trade and carbon tax schemes would require tradeable emissions permits, but establish a "safety valve" price. In this case, if the market value of a permit remains below a set price — the safety valve — the emissions targets will be achieved at low cost. If prices rise above the safety valve, covered entities can purchase an unlimited number of permits from the government. In this way, the overall price to covered entities — and the economy — is limited, but specific emission reduction targets may not be reached. However, no such bills have been introduced in the 110th Congress.

[11] For more information on multi-pollutant bills, see CRS Report RL34018, *Air Quality: Multi-Pollutant Legislation in the 110th Congress*, by Larry Parker and John Blodgett.

Appendix 1. Major Focus Areas of Climate Change Bills in the 110th Congress

Bill Number and Sponsor	Climate Change Research			Technology Deployment		International Agreements	Adaptation	GHG Reporting / Registry	GHG Reductions		
	Causes or Effects on Natural Systems	Effects on Social and Political Systems	Emission Mitigation Techniques	Domestic	Foreign				Economy-Wide	Sector-Specific	Multi-Pollutant
SENATE BILLS											
H.R. 6 - Senate Version (Reid)			X	X							
S. 183 (Stevens)								X			
S. 280 (Lieberman)			X	X	X		X	X	X		
S. 309 (Sanders)	X			X		X		X	X	X	
S. 317 (Feinstein)			X	X	X			X		X	
S. 485 (Kerry)	X		X	X		X		X	X	X	
S. 1018 (Durbin)		X									
S. 1059 (Clinton)				X							
S. 1072 (Stevens)				X							
S. 1073 (Feinstein)				X						X	
S. 1168 (Alexander)								X		X	X
S. 1177 (Carper)			X	X				X		X	X
S. 1201 (Sanders)				X				X		X	X
S. 1297 (Boxer)			X	X						X	
S. 1321 (Bingaman)			X	X							
S. 1324 (Obama)				X						X	
S. 1387 (Klobuchar)								X			
S. 1411 (Lautenberg)								X			
S. 1419 (Reid)			X	X							

Bill Number and Sponsor	Climate Change Research			Technology Deployment		International Agreements	Adaptation	GHG Reporting / Registry	GHG Reductions		
	Causes or Effects on Natural Systems	Effects on Social and Political Systems	Emission Mitigation Techniques	Domestic	Foreign				Economy-Wide	Sector-Specific	Multi-Pollutant
S. 1424 (Schumer)	X										
S. 1508 (Dorgan)				X							
S. 1538 (Rockefeller)		X									
S. 1547 (Levin)		X									
S. 1554 (Collins)	X			X				X		X	X
S. 1602 (Hagel)			X					X			
S. 1696 (Feinstein)								X			
S.Res. 30 (Biden)						X					
HOUSE BILLS											
H.R. 620 (Olver)	X	X	X	X			X	X	X		
H.R. 823 (Welch)				X							
H.R. 906 (Udall)	X	X				X					
H.R. 1126 (Lipinski)			X								
H.R. 1215 (Rogers)				X							
H.R. 1451 (Lungren)				X							
H.R. 1507 (McDermott)	X										
H.R. 1585 (Skelton)		X									
H.R. 1590 (Waxman)				X				X	X	X	
H.R. 1691 (Markey)		X									

Bill Number and Sponsor	Climate Change Research			Technology Deployment		International Agreements	Adaptation	GHG Reporting / Registry	GHG Reductions		
	Causes or Effects on Natural Systems	Effects on Social and Political Systems	Emission Mitigation Techniques	Domestic	Foreign				Economy-Wide	Sector-Specific	Multi-Pollutant
H.R. 2069 (Stark)									X[12]		
H.R. 2082 (Reyes)		X									
H.R. 2144 (DeLauro)	X										
H.R. 2215 (Inslee)										X	
H.R. 2337 (Rahall)	X		X								
H.R. 2338 (Dicks)	X										
H.R. 2342 (Allen)	X										
H.R. 2420 (Lantos)					X	X					
H.R. 2447 (Wynn)				X							
H.R. 2483 (Hall)			X								
H.R. 2556 (Wilson)			X	X							
H.R. 2635 (Waxman)			X							X	
H.R. 2651 (Engel)								X			
H.Con.Res. 96 (Dicks)									X		
H.Con.Res. 104 (Carnahan)						X					

[12] This bill uses a carbon tax approach. Other economy-wide GHG reduction bills would establish or authorize a cap-and-trade system.

Appendix 2. Key Provisions of Climate Change Legislation in the 110th Congress

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
SENATE BILLS				
H.R. 6 (Senate Version)[13]	**Reid**	Renewable Fuels, Consumer Protection, and Energy Efficiency Act of 2007	Proposed June 12, 2007; passed the Senate June 21, 2007	Among other provisions, amends the Energy Policy Act of 2005 to expand the carbon capture research and development program; directs the Department of the Interior to conduct a national assessment of geologic storage capacity for carbon dioxide (CO_2); instructs the Department of Energy to implement a program to demonstrate technologies for the large-scale capture of CO_2 from industrial sources of CO_2.
S. 183	**Stevens**	Improved Passenger Automobile Fuel Economy Act of 2007	Introduced January 4, 2007; referred to the Senate Committee on Commerce, Science, and Transportation	Among other provisions, requires the Secretary of Commerce to establish a voluntary greenhouse gas (GHG) registry system.
S. 280	**Lieberman**	Climate Stewardship and Innovation Act of 2007	Introduced January 12, 2007; referred to the Senate Committee on Environment and Public Works (companion to H.R. 620)	Creates a GHG cap-and-trade program that covers the electric power, transportation, industrial, and commercial sectors (accounting for for about 85% of U.S. GHG emissions); the cap would take effect in 2012 and would decline further in 2020, 2030, and 2050; by 2050, the emissions cap would decline to 60% below 1990 levels. Calls for research on abrupt climate change and the impact of climate change on the world's poor, among others, and creation of a national GHG database; establishes a new program to develop Innovation Infrastructure, along with program initiatives to promote less carbon-intensive technology (such as nuclear energy), adaptation, sequestration, and related activities; requires periodic review of target adequacy by the Under Secretary of Commerce for Oceans and Atmosphere, who oversees the National Oceanic and Atmospheric Administration (NOAA).

[13] The House passed H.R. 6 January 18, 2007, but the House version does not contain research provisions regarding carbon capture and storage.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
S. 309	**Sanders**	Global Warming Pollution Reduction Act	Introduced January 16, 2007; referred to the Senate Committee on Environment and Public Works	Creates an economy-wide GHG cap that would take effect in 2010 and decline annually, reaching 1990 levels by 2020; with subsequent annual cap declines, cap would fall to 80% below 1990 levels by 2050; EPA has the discretion to employ a market-based approach (e.g., cap-and-trade system). Requires mandatory GHG emission standards for vehicles by 2010, for new electric powerplants that begin operation after December 31, 2011, and a new energy efficiency performance standard; establishes a Renewable Portfolio Standard (RPS) that would require a certain percentage of electricity to be generated from renewable energy sources; the RPS would increase periodically, reaching 20% by 2020; sets up a new low-carbon generation requirement and trading program; calls for a periodic review of target adequacy by the National Academy of Sciences (NAS).
S. 317	**Feinstein**	Electric Utility Cap and Trade Act of 2007	Introduced January 17, 2007; referred to the Senate Committee on Environment and Public Works	Creates a GHG cap-and-trade program that applies to electric generating facilities of more than 25 megawatts (MW); the emissions cap for the covered sources would decline each year. Establishes a program to encourage offsets from the agricultural sector; requires periodic review of target adequacy by EPA taking into account the recommendations of the Climate Science Advisory Panel, a group created by the bill.
S. 485	**Kerry**	Global Warming Reduction Act of 2007	Introduced February 1, 2007; referred to the Senate Committee on Finance	Creates an economy-wide GHG cap-and-trade program that would require emission reductions of approximately 60% below 1990 levels by 2050. Requires GHG emission standards for vehicles by 2010, and a new energy efficiency standard beginning in 2009; establishes a Renewable Portfolio Standard and credit program; increases biofuel mandates under the Renewable Fuels Standard, and mandates infrastructure for biofuels; expands and extends existing tax incentives for alternative fuel and advanced technology vehicles, and establishes manufacturer tax credit for advanced technology vehicle investment; sets up a new National Climate Change Vulnerability and Resilience Program; requires periodic review of target adequacy by the NAS.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
S. 1018	**Durbin**	Global Climate Change Security Oversight Act	Introduced March 28, 2007; referred to the Senate Select Committee on Intelligence (companion to H.R. 1961)	Requires the Director of National Intelligence to submit to Congress a National Intelligence Estimate on the anticipated geopolitical effects of global climate change and the implications of such effects on U.S. national security; directs the Secretary of Defense to report to Congress on the projected impact on military installations, capabilities, and operations of the effects of global climate change as assessed in the estimate, and to recommend research and analysis needed to further assess the impacts on the military of global climate change; requires the Secretary of State to report to Congress on the potential for (1) large migrations of people in countries of strategic interest or humanitarian concern as a response to changes in climate and the implications for U.S. security interests; and (2) diplomatic opportunities and challenges facing U.S. policy makers as a result of social, economic, or political responses of groups or nations to global climate change.
S. 1059	**Clinton**	Zero-Emissions Building Act of 2007	Introduced March 27, 2007, referred to the Senate Committee on Energy and Natural Resources	Amends the Energy Conservation and Production Act to instruct the Secretary of Energy to establish revised federal building energy efficiency performance standards; the standards require (if life-cycle cost-effective) new federal buildings to meet specifications that would reduce GHG emissions by specified percentages between FY2007 and FY2030.
S. 1072	**Stevens**	Federal Agency Environmental Responsibility Act	Introduced March 29, 2007; referred to the Senate Committee on Homeland Security and Governmental Affairs	Promotes energy efficiency and GHG reductions from the federal agencies by requiring reductions of energy intensity; directs each agency to reduce energy intensity by either 3% per year until the end of FY2014 or 30% by the end of FY2014, relative to the agency’s 2003 baseline.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
S. 1073	**Feinstein**	Clean Fuels and Vehicles Act of 2007	Introduced March 29, 2007; referred to the Senate Committee on Environment and Public Works	Amends the Clean Air Act to establish a program within EPA to determine the life-cycle GHG emissions of motor fuels; requires applicable parties (generally those that produce or supply the fuels to the U.S. market) to reduce the average life-cycle GHG emissions per unit of energy delivered to a motor vehicle; by 2015, parties must reduce 3% below a 2007 baseline (determined by EPA); at subsequent five-year intervals, further 3% reductions (below the preceding year's average emissions baseline as determined by EPA) are required; reduction requirements would be implemented through a credit trading system. Requires automobile manufacturers to improve the GHG performance of their vehicle fleet; for model year 2016 vehicles, companies must reduce the fleet average quantity of GHG emissions per vehicle mile 30% below the 2002 model year baseline.
S. 1168	**Alexander**	Clean Air/Climate Change Act of 2007	Introduced April 19, 2007; referred to the Senate Committee on Environment and Public Works	Creates a "multi-pollutant" cap-and-trade program that requires reductions in sulfur dioxide (SO_2), nitrogen oxides (NOx), mercury (Hg), and carbon dioxide (CO_2); CO_2 reductions apply to electric-generating units (above 25 MW) in the 48 contiguous states; CO_2 emissions capped at 2.3 billion metric tons (tonnes) in 2011, declining to 1.5 billion tonnes in 2025.
S. 1177	**Carper**	Clean Air Planning Act of 2007	Introduced April 20, 2007; referred to the Senate Committee on Environment and Public Works	Creates a "multi-pollutant" cap-and-trade program that requires reductions in sulfur dioxide (SO2), nitrogen oxides (NOx), mercury (Hg), and carbon dioxide (CO_2); CO_2 reductions apply to electric-generating units (above 25 MW); CO_2 emissions capped at 2.47 billion metric tonnes in 2012, declining by 1% annually beginning in 2016, and by 1.5% beginning in 2020.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
S. 1201	**Sanders**	Clean Power Act of 2007	Introduced April 24, 2007; referred to the Senate Committee on Environment and Public Works	Creates a "multi-pollutant" cap-and-trade program that requires reductions in sulfur dioxide (SO_2), nitrogen oxides (NOx), mercury (Hg), and carbon dioxide (CO_2); CO_2 reductions apply to electric generating units (above 25 MW); CO_2 emissions capped at 2.3 billion metric tons (tonnes) in 2011, declining to 1.5 billion tonnes in 2025, and incrementally thereafter until 2050. Creates a new Low-Carbon Generation Requirement and credit trading program beginning in 2015; creates new Energy Efficiency Performance Standard and credit program beginning in 2008; creates a Renewable Portfolio Standard and credit program, beginning in 2008; requires final geological CO_2 disposal standards within six years of enactment and biological sequestration standards within two years of enactment.
S. 1297	**Boxer**	Advanced Clean Fuels Act of 2007	Introduced May 3, 2007; referred to the Senate Committee on Environment and Public Works	Amends the Clean Air Act to establish a program within EPA to determine the life-cycle GHG emissions of motor fuels; requires applicable parties (generally those that produce or supply the fuels to the U.S. market) to reduce the average life-cycle GHG emissions per unit of energy delivered to a motor vehicle; by the end of 2011, the average life-cycle GHG emissions must be at least equal to the 2008 baseline (as determined by EPA), by the end of 2015, 5% below baseline, and by the end of 2020, 10% below baseline; the reduction program would be implemented through a credit trading system. Amends the Clean Air Act to establish a program within EPA to reduce life-cycle GHG emissions of motor fuels; implements reduction requirements through a credit trading system.
S. 1321	**Bingaman**	Biofuels for Energy Security and Transportation Act of 2007	Introduced May 7, 2007; reported by the Senate Committee on Energy and Natural Resources May 7, 2007 (S.Rept. 110-65) (companion to H.R. 2556)	Amends the Energy Policy Act of 2005 by enhancing the carbon capture research and development program; directs the Department of the Interior to complete a national assessment of geologic storage capacity for CO_2; instructs the Department of Energy to implement a program to demonstrate technologies for the large-scale capture of CO_2 from industrial sources of CO_2.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
S.1324	**Obama**	National Low-Carbon Fuel Standard Act of 2007	Introduced May 7, 2007; referred to the Senate Committee on Environment and Public Works	Amends the Clean Air Act to establish a program within EPA to determine the life-cycle GHG emissions of motor fuels; requires applicable parties (generally those that produce or supply the fuels to the U.S. market) to reduce average life-cycle GHG emissions per unit of energy delivered to a motor vehicle; by 2011, the average life-cycle GHG emissions must be substantially equivalent to the baseline (as determined by EPA and based on average of years 2005-2007), by 2015, 5% below baseline, and by 2020, 10% below baseline; subject to EPA assessment, further reductions would be required every subsequent five years beyond 2020; the reduction program would be implemented through a credit trading system.
S. 1387	**Klobuchar**	National Greenhouse Gas Registry Act of 2007	Introduced May 14, 2007; referred to the Senate Committee on Environment and Public Works	Amends the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) to establish a mandatory GHG inventory, registry, and information system; requires affected facilities (those generating more that 10,000 metric tons of GHG emissions during a calendar year) to submit annual reports to an appropriate state agency (which sends the amassed state reports to EPA) describing GHG emissions.
S. 1411	**Lautenberg**	Federal Government Greenhouse Gas Registry Act of 2007	Introduced May 16, 2007; referred to the Senate Committee on Environment and Public Works	Amends the Clean Air Act to create a Federal Emissions Inventory Office within EPA to annually measure and report on the GHG emissions of federal agencies.
S. 1419	**Reid**	Carbon Capture and Sequestration Act of 2007 (Title III of bill)	Introduced May 17, 2007; [inserted into S.Amdt. 1502 to H.R. 6]	Among other provisions, amends the Energy Policy Act of 2005 by enhancing the carbon capture research and development program; directs the Department of the Interior to complete a national assessment of geologic storage capacity for CO_2; instructs the Department of Energy to implement a program to demonstrate technologies for the large-scale capture of CO_2 from industrial sources of CO_2.
S. 1424	**Schumer**	Farm, Nutrition, and Community Investment Act of 2007	Introduced May 17, 2007; referred to the Senate Committee on Finance	Among other provisions, sets up grant program for applicable universities to conduct climate change research, including the use of land management practices to increase soil carbon sequestration and the effects on agriculture of increased GHGs and global warming.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
S. 1508	**Dorgan**	Clean Energy Production Tax Incentives Act of 2007	Introduced May 24, 2007; referred to the Senate Committee on Finance	Among other provisions, provides tax incentives for capturing and sequestering CO_2 (or reinjecting it for enhanced oil recovery).
S. 1538	**Rockefeller**	Intelligence Authorization Act for Fiscal Year 2008	Introduced May 31, 2007; reported to the Senate by the Select Committee on Intelligence May 31, 2007 (S.Rept. 110-75); referred to the Senate Committee on Armed Services (companion to H.R. 2082)	Among other provisions, requires Director of National Intelligence to submit to Congress a National Intelligence Estimate (NIE) on the anticipated geopolitical effects of global climate change and the implications of such effects on the national security of the United States.
S. 1547	**Levin**	National Defense Authorization Act for Fiscal Year 2008	Introduced June 5, 2007; reported by the Senate Committee on Armed Services June 5, 2007 (S.Rept. 110-770); referred to Select Committee on Intelligence (companion to H.R. 1585)	Among other provisions, requires the Department of Defense to assess the risks of projected climate change to the Department's facilities, capabilities, and missions.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
S. 1554	**Collins**	Energy Independence, Clean Air, and Climate Security Act of 2007	Introduced June 6, 2007; referred to the Senate Committee on Finance	Creates a "multi-pollutant" cap-and-trade program that requires reductions in sulfur dioxide (SO_2), nitrogen oxides (NOx), mercury (Hg), and carbon dioxide (CO_2); CO_2 reductions apply to electric-generating units (above 15 MW); CO_2 emissions capped at 2.05 billion tons in 2022, with further declines if the EPA determines the levels "are not reasonably anticipated to protect public health or welfare or the environment." Amends the Clean Air Act to establish a program within EPA to determine the life-cycle GHG emissions of motor fuels; requires applicable parties (generally those that produce or supply these fuels to the U.S. market) to reduce the average life-cycle GHG emissions per unit of energy delivered to a motor vehicle; by the end of 2011, the average life-cycle GHG emissions must be at least equal to the 2008 baseline (as determined by EPA), by the end of 2015, 5% below baseline, and by the end of 2020, 10% below baseline; the reduction program would be implemented through a credit trading system. Sets up grant program to support research involving low-carbon fuels; creates a program within the National Oceanic and Atmospheric Administration (NOAA) to conduct research regarding abrupt climate change.
S. 1602	**Hagel**	Clean, Reliable, Efficient and Secure Energy Act of 2007	Introduced June 12, 2007; referred to the Senate Committee on Energy and Natural Resources	Amends the Energy Policy Act of 1992 and the voluntary GHG reporting program (Section 1605(b) of that act) to encourage new and increased voluntary efforts to reduce, avoid, or sequester emissions of GHGs; directs the Secretary of Energy to establish a program that would provide annual public recognition to persons and entities demonstrating GHG reduction, avoidance, or sequestration. Instructs the National Academy of Sciences (under direction of the Department of Energy) to study the uses, including industrial applications, for captured CO_2 other than sequestration, enhanced oil recovery, or carbon trading. Directs the Department of the Interior to complete a national assessment of geological storage capacity for CO_2; establishes a Regulatory Reform for Carbon Sequestration Commission that would identify any regulatory barriers to siting new manufacturing facilities, power plants, and other necessary infrastructure in close proximity to the potential CO_2 storage sites identified in the national assessment.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
S. 1696	**Feinstein**	Department of the Interior, Environment, and Related Agencies Appropriations Act, 2008	Introduced June 26, 2007; reported by the Senate Committee on Appropriations June 26, 2007	Provides funding for EPA to use its existing authority under the Clean Air Act to develop and publish a rule requiring mandatory reporting of GHG emissions above appropriate thresholds in all sectors of the economy; the bill requires EPA to publish the final rule no later than December 31, 2008.
S.Res. 30	**Biden**	Expressing the sense of the Senate regarding the need for the United States to address global climate change through the negotiation of fair and effective international commitments	Introduced January 16, 2007; reported by the Senate Committee on Foreign Relations March 29, 2007 (companion of H.Con.Res. 104)	Expresses the sense of the Senate that the United States should participate in negotiations under the United Nations Framework Convention on Climate Change with the objective of securing United States participation in binding agreements that advance and protect the economic and national security interests of the United States; establish mitigation commitments by all major greenhouse gas emitters; establish flexible international mechanisms to minimize the cost of reduction efforts; and achieve a significant long-term reduction in global greenhouse gas emissions. Expresses the sense of the Senate that a bipartisan Senate observer group be established to monitor any international negotiations on climate change and ensure that the advice and consent function of the Senate is exercised in a manner to facilitate timely consideration of any applicable treaty submitted to the Senate.
HOUSE BILLS				
H.R. 620	**Olver**	Climate Stewardship Act of 2007	Introduced January 22, 2007; referred to the House Committee on Energy and Commerce and two other committees (companion to S. 280)	Creates a GHG cap-and-trade program that covers the electric power, transportation, industry, and commercial sectors (accounting for about 85% of U.S. GHG emissions); by 2050, the emissions cap would decline to approximately 70% below 1990 levels. Calls for studies on the impacts of climate change on coastal ecosystems and communities, and the world's poor, among others; requires an assessment of adaptation technologies; creates a national GHG database; mandates a periodic review of target adequacy by the Under Secretary of Commerce for Oceans and Atmosphere, which oversees the National Oceanic and Atmospheric Administration (NOAA).

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
H.R. 823	**Welch**	None	Introduced February 5, 2007; referred to the House Committee on Oversight and Government Reform, and two other committees	Authorizes federal agencies and legislative branch offices to purchase qualified tradeable: (1) GHG offsets and (2) renewable energy credits.
H.R. 906	**Udall**	Global Change Research and Data Management Act of 2007	Introduced February 7, 2007; ordered reported by the House Committee on Science and Technology June 6, 2007	Establishes an interagency United States Global Change Research Program to improve understanding of global change and to provide periodic assessments of the vulnerability of the United States and other regions to global change; creates an Office of Global Change Research Information; directs the Secretary of State to initiate discussions with other nations leading toward international protocols and other agreements to coordinate global climate change research activities.
H.R. 1126	**Lipinski**	None	Introduced February 16, 2007; passed House March 12, 2007; referred to Senate Committee on Energy and Natural Resources	Requires the Secretary of Energy, when reviewing research and development activities for possible inclusion in the steel research and development initiative, to expand the plan in order to consider among steel project priorities the development of technologies which reduce GHG emissions.
H.R. 1215	**Rogers**	None	Introduced February 22, 2007; referred to the House Committee on Energy and Commerce and House Committee on Science and Technology	Amends the Energy Policy Act of 2005 to instruct the Secretary of Energy to make loan guarantee commitments to domestic motor vehicle manufacturers and suppliers for advanced conservation and fuel efficiency technology projects for gasoline and diesel vehicles, flexible fuel vehicles, and hybrid electric vehicles that reduce dependence on oil and reduce GHG emissions.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
H.R. 1451	**Lungren**	New Options Petroleum Energy Conservation Act of 2007	Introduced March 9, 2007; referred to House Committee on Ways and Means, and two other committees	Among other provisions, allows a tax credit for investment in a "climate neutral combustion facility," defined as any facility that (1) burns matter to produce electricity; (2) captures and uses CO_2 released during combustion to recover hydrocarbon fuel; and (3) produces no emissions of mercury or GHG and no emissions that form fine particulate, smog, or acid rain; extends through 2012 the tax credits for investment in solar energy property and for residential energy efficient property expenditures; directs the Secretary of Energy to establish a program to award $1 billion to the first U.S. automobile manufacturer that manufactures and sells in the United States 60,000 mid-sized sedans that operate on gasoline and can travel at 100 miles per gallon.
H.R. 1507	**McDermott**	Salmon Economic Analysis and Planning Act	Introduced March 13, 2007; referred to the House Committee on Natural Resources	Requires the Secretary of Commerce to enter into an arrangement with the National Academy of Sciences for scientific analysis of federal salmon protection, restoration, and recovery actions. Part of this analysis would identify the effect of global climate change on ocean conditions and on hydrological conditions in the Snake and Columbia rivers and their salmon and steelhead-bearing tributaries; examines how such global climate change impacts might affect the federal resources necessary to achieve recovery of naturally spawning wild salmon and steelhead populations to self-sustaining, harvestable levels.
H.R. 1585	**Skelton**	National Defense Authorization Act for Fiscal Year 2008	Introduced March 20, 2007; passed House May 17, 2007 (companion to S. 1547)	Among other provisions, requires the Department of Defense to assess the risks of projected climate change to the department's facilities, capabilities, and missions.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
H.R. 1590	**Waxman**	Safe Climate Act of 2007	Introduced March 20, 2007; referred to the House Committee on Energy and Commerce and House Committee on Foreign Affairs	Creates an economy-wide GHG cap-and-trade program that would take effect in 2010; the cap would decline annually to reach 1990 levels by 2020; subsequent annual declines (of roughly 5% per year) would require emission reductions of approximately 80% below 1990 levels by 2050. Requires mandatory GHG emission standards for vehicles by 2010 and a new energy efficiency standard beginning in 2010; establishes a Renewable Portfolio Standard; requires a periodic review of adequacy of GHG emissions target by the National Academy of Sciences (NAS); the NAS review would take account of international activity and recommend actions for both the United States and other nations to take if the GHG targets are not likely to avoid dangerous climate change.
H.R. 1961	**Markey**	Global Climate Change Security Oversight Act	Introduced April 19, 2007; referred to the House Committee on Intelligence and two other committees (companion to S. 1018)	Requires the Director of National Intelligence to submit to Congress a National Intelligence Estimate on the anticipated geopolitical effects of global climate change and the implications of such effects on U.S. national security; directs the Secretary of Defense to report to Congress on the projected impact on the military installations, capabilities, and operations of the effects of global climate change as assessed in the estimate, and to recommend research and analysis needed to further assess the impacts on the military of global climate change; requires the Secretary of State to report to Congress on the potential for (1) large migrations of people in countries of strategic interest or humanitarian concern as a response to changes in climate and the implications for U.S. security interests; and (2) diplomatic opportunities and challenges facing U.S. policymakers as a result of social, economic, or political responses of groups or nations to global climate change.
H.R. 2069	**Stark**	Save Our Climate Act of 2007	Introduced April 26, 2007; referred to the House Committee on Ways and Means	Amends the Internal Revenue Code to impose a carbon excise tax ($10 per ton of carbon content) on any taxable fuel sold by a manufacturer, producer, or importer. Defines “taxable fuel” as coal (including lignite and peat), petroleum and any petroleum product, and natural gas.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
H.R. 2082	**Reyes**	Intelligence Authorization Act for Fiscal Year 2008	Introduced May 1, 2007; passed House May 11, 2007; referred to Senate Select Committee on Intelligence (companion to S. 1538)	Section 407 requires the Director of National Intelligence to submit to Congress a national intelligence estimate on anticipated geopolitical effects of global climate change and its implications on U.S. national security.
H.R. 2144	**DeLauro**	Farm, Nutrition, and Community Investment Act of 2007	Introduced May 3, 2007; referred to the House Agriculture Committee and three other committees	Among other provisions, amends the Agricultural Risk Protection Act of 2000 by establishing the climate carbon cycle, renewable energy, and climate change research program; instructs the Secretary of Agriculture to provide grants to eligible universities to conduct the research.
H.R. 2215	**Inslee**	To provide a reduction in the aggregate greenhouse gas emissions per unit of energy consumed by vehicles and aircraft, and for other purposes.	Introduced May 8, 2007; referred to the House Committee on Energy and Commerce	Directs the EPA to establish low carbon fuel performance standards that would apply in 2015.
H.R. 2337	**Rahall**	Energy Policy Reform and Revitalization Act of 2007	Introduced May 16, 2007; ordered reported by the House Committee on Natural Resources June 13, 2007	Title IV requires the Department of the Interior (DOI) to complete a national assessment of capacity for the geologic storage of CO_2; requires the DOI to assess the amount of carbon stored in various ecosystems, and the processes related to terrestrial sequestration, including land management practices that may improve sequestration; directs the DOI to maintain an inventory of the amount of CO_2 stored from federal leases; requires the DOI to report to Committee on Natural Resources on a recommended regulatory and certification framework for conducting geological carbon sequestration activities on federal lands; directs the DOI to promulgate a national strategy for mitigating the impacts of global warming on wildlife populations in the United States.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
H.R. 2338	**Dicks**	Global Warming Wildlife Survival Act	Introduced May 16, 2007; referred to the House Committee on Natural Resources and House Committee on Agriculture	Directs the Department of the Interior (DOI) to promulgate a national strategy for mitigating the impacts of global warming on wildlife populations in the United States (note: similar, if not identical, to Title IV, Subtitle D of H.R. 2337)
H.R. 2342	**Allen**	National Integrated Coastal and Ocean Observation Act of 2007	Introduced May 16, 2007; referred to the House Committee on Natural Resources and House Committee on Science and Technology	Establishes a National Integrated Coastal and Ocean Observation System composed of federal and non-federal components; authorizes research activities regarding climate change, particularly effects on coastal waters and Great Lakes.
H.R. 2420	**Lantos**	International Climate Cooperation Re-engagement Act of 2007	Introduced May 22, 2007; reported from the House Committee on Foreign Affairs June 28, 2007	Establishes within the Department of State an Office on Global Climate Change; promotes clean and efficient technologies in developing countries; creates International Clean Energy Foundation within the executive branch that serves the long-term foreign policy and energy security goals of reducing global GHG emissions.
H.R. 2447	**Wynn**	Energy and Environment Block Grant Act of 2007	Introduced May 23, 2007; referred to the House Committee on Energy and Commerce and House Committee on Science and Technology	Establishes Energy and Environment Block Grant Program within the Department of Energy to award grants to eligible cities/counties to support local GHG reduction activities.
H.R. 2483	**Hall**	Energy for America Act	Introduced May 24, 2007; referred to the House Committee on Science and Technology	Title VIII requires the Secretary of Energy to submit to the Congress the results of a study on the feasibility of large-scale biological sequestration of CO_2 for coal power systems, including an analysis of the feasibility of creating a closed loop carbon cycle through biological sequestration.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
H.R. 2556	**Wilson**	Energy Savings Act of 2007	Introduced May 24, 2007; referred to the House Committee on Energy and Commerce and four other committees (companion to S. 1321)	Title III (Carbon Capture and Sequestration Act of 2007) amends the Energy Policy Act of 2005 by enhancing the carbon capture research and development program; directs the Department of the Interior to complete a national assessment of geologic storage capacity for CO_2; instructs Department of Energy to implement program to demonstrate technologies for the large-scale capture of CO_2 from industrial sources of CO_2.
H.R. 2635	**Waxman**	Carbon-Neutral Government Act of 2007	Introduced June 7, 2007, ordered reported by the House Oversight and Government Reform Committee June 12, 2007	Requires each federal agency to provide an annual report of its GHG emissions for the preceding fiscal year; calls for the EPA to develop GHG reduction targets for the combined federal agencies; beginning in FY2011, each agency would freeze its proportionate share of emissions at 2010 levels and decrease, at a minimum, by 2% each fiscal year, so as to achieve zero net annual GHG emissions from the agencies by FY2050; directs various agencies to study management policies that could enhance net biological sequestration of GHGs and reduce negative impacts of global warming on ecosystems; mandates that federal vehicle fleet meet GHG emission standards developed by California (standards would take effect when they are applicable in California).
H.R. 2651	**Engel**	Greenhouse Gas Accountability Act of 2007	Introduced June 11, 2007; referred to the House Committee on Energy and Commerce and House Committee on Financial Services	Requires large, publicly traded companies and significant emitters of GHGs to report their emissions to the EPA.

Bill No.	Sponsor	Short Title	Major Actions	Key Provisions
H.Con.Res. 96	**Dicks**	Expressing the sense of the Congress that there should be enacted a mandatory national program to slow, stop, and reverse emissions of greenhouse gases	Introduced March 21, 2007; referred to the House Committee on Energy and Commerce	Expresses the sense of the Congress that Congress should enact a comprehensive, mandatory, market-based program to slow, stop, and reverse the growth of greenhouse gas emissions at a rate and in a manner that will not significantly harm the United States economy, and will encourage comparable action by other nations that are major trading partners and key contributors to global emissions.
H.Con.Res. 104	**Carnahan**	Expressing the sense of Congress regarding the need for the United States to address global climate change through the negotiation of fair and effective international commitments	Introduced March 29, 2007; referred to the House Committee on Foreign Affairs (companion of S.Res. 30)	Expresses the sense of the Congress that the United States should participate in negotiations under the United Nations Framework Convention on Climate Change with the objective of securing United States participation in binding agreements that advance and protect the economic and national security interests of the United States; establish mitigation commitments by all major greenhouse gas emitters; establish flexible international mechanisms to minimize the cost of reduction efforts; and achieve a significant long-term reduction in global greenhouse gas emissions. Would also establish a bipartisan House observer group to monitor any international negotiations on climate change; and ensure that the advice and consent function of the Senate is exercised in a manner to facilitate timely consideration of any applicable treaty submitted to the Senate.