



# CRS Issue Statement on Climate Change

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The Earth's climate is warming, with observable effects on human and ecological systems. Since 1900, the average global temperature has risen some 1.0 to 1.3°F, with most warming since the 1970s. The current global temperature is approaching, possibly exceeding, the maximum experienced by human civilizations. Virtually all scientists conclude that most of the recent warming is due to human activities, driven by emissions of such greenhouse gases (GHG) as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and other air pollutants, as well as land use changes. Northern high-latitude regions, such as Alaska have warmed the most. Although worldwide precipitation has increased by about 2% since 1900, some regions have gotten wetter, while others have dried, especially Africa. Demonstrable effects of observed climate change include: improved cereal crop productivity in some regions; shrinkage of Arctic ice extent, the Greenland ice sheet, and glaciers globally; accelerated sea level rise; shifts in fisheries; and preliminary evidence of more of the most intense hurricanes in the Atlantic. The wide occurrence of observable impacts has contributed to a growing sense of urgency among scientists and a large part of the public to respond through both mitigation and adaptation.

While many uncertainties remain, most models project GHG-driven change to have important impacts on regional economies, human safety and health, and ecosystems, with the potential for surprising and abrupt shifts. Although some experts argue that the scientific uncertainties and potential costs of mitigation outweigh the impulse for immediate action, diverse initial actions are already underway at national and local levels in the United States and dozens of additional countries. The question of appropriate timing of actions is exacerbated by the long time lags between emissions and climate change impacts, raising potential inter-generational trade-offs.

Internationally, nearly all countries (192)—including the United States—have joined under the 1992 United Nations Framework Convention on Climate Change (UNFCCC) to “avoid dangerous anthropogenic interference in the climate system.” Subsequently, 175 nations—not including the United States—ratified the 1997 “Kyoto Protocol,” which sets binding GHG targets -- on average a 5% reduction below 1990 levels during 2008-2012 for 38 industrialized countries. Nations' views diverge concerning the Kyoto Protocol and “post-Kyoto” steps: Avoiding substantial climate change would not be possible, and industrialized nations fear harm to their economic competitiveness, if developing countries do not also reduce emissions. Developing nations, the source of most future emissions, argue that such industrialized countries as the U.S. have been responsible for most historical emissions and should reduce emissions first and deeper, allowing low-income nations to give priority to alleviating poverty. In December 2007, Parties to the UNFCCC agreed to the “Bali Action Plan” to negotiate the next round of international commitments by 2010 to succeed the Kyoto Protocol. Intensified negotiations are expected throughout 2009, with agreement scheduled for the end of 2009.

The election of Barack Obama to the U.S. Presidency has altered the climate change policy dynamic: In his budget overview for FY2010, Obama proposed to cap covered greenhouse gas emissions at 14% below 2005 levels by 2020 and allow emission trading, a policy that the Administration estimated would generate \$650 billion over 10 years beginning in 2012. The plan would also eliminate \$30 billion of subsidies to oil and gas, and spend \$15 billion per year on investments in low-GHG technologies. Obama's policy foresees reducing GHG emissions further to 80% below 1990 levels by 2050. While putting such a policy into place through legislation or regulation may prove challenging, this request marks an abrupt change in U.S. policy. In 2001, the George W. Bush Administration rejected the Kyoto Protocol, citing controversy over the science, the economic impacts of mitigation, and the waiver from actions by developing countries. The Bush Administration approach was to advance science and technologies in order to lessen uncertainties and to develop new options, while supporting voluntary actions that would

reduce energy intensity and greenhouse gas intensity by providing technical assistance and various incentives.

Congressional activities have included ratification of the UNFCCC (1992), enactment of implementing legislation and funding of research and development. For example, the Energy Independence and Security Act of 2007 raised vehicle efficiency standards, which should reduce related carbon dioxide emissions. Also, the Senate has twice passed resolutions—one saying the United States should not agree to a Kyoto Protocol without developing country commitments (in 1997), and another more recently (2005), calling for international commitments and domestic policies to reduce GHG emissions over the long term without disrupting the economy. Congress has also authorized and funded scientific and technological research that most experts agree is necessary to stimulating the radical technological change that would be necessary to reduce GHG emissions below current levels. A number of evaluations have proposed changes to the structure and priorities in the research programs, as well as an increase in mitigation and adaptation measures.

More than 20 bills calling for near-term, specific and mandatory GHG reductions were introduced in the 110<sup>th</sup> Congress, and one saw action on the Senate floor. Majority leaders in both chambers of Congress have stated intentions to pass GHG control legislation in the 111<sup>th</sup> Congress. Some suggest that passage of a new law in 2009 is unlikely. Interplay between a possible international agreement, due at the end of 2009, and U.S. domestic policy on climate change highlights the importance of the Congressional role in 2009: key issues will include authorities and mandates to abate GHG, adequacy of appropriations and fiscal incentives to achieve goals and meeting international commitments for assistance, and the Congressional-Executive Branch coordination on the form of an international agreement, ratification and implementation.

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