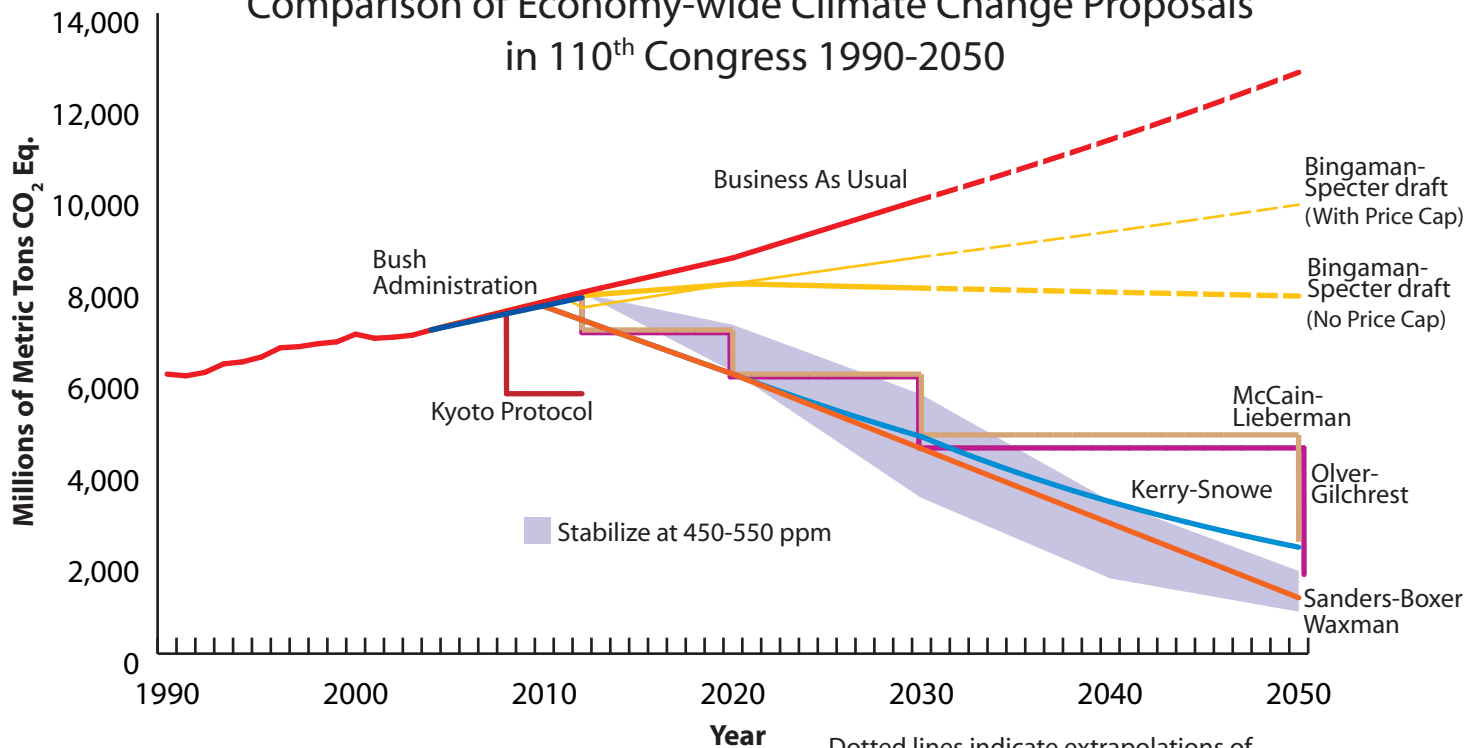


# Comparison of Economy-wide Climate Change Proposals in 110<sup>th</sup> Congress 1990-2050



This analysis was completed by John Larsen, Research Analyst, World Resources Institute  
jlarsen@wri.org 202-729-7661

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### Assumptions

All proposals are assumed to be enacted in 2007. Where annual data are unavailable, years between targets or projections are interpolated using a simple linear formula.

*AEO 2006 Reference Case Business as Usual.* Historical emissions from 1990-2004 come from the EPA's U.S. Inventory of Greenhouse Gas Emissions and Sinks 1990-2004. Emissions projections through 2030 come from the Energy Information Agency's (EIA) Annual Energy Outlook 2006 (Table 15) and are extrapolated from that report for 2030-2050 at the average annual rate from 2005-2030 or 1.2%. BAU is economy-wide and contains all GHGs

*Bingaman 2007.* Cap starts in 2012. Cap for 2012 through 2030 is derived from: EIA Energy Market and Economic Impacts of a Proposal to Reduce Greenhouse Gas Intensity with a Cap and Trade System January 2007, Figure 4 where annual target is estimated and then non-covered emissions for 2020 and 2030 from EIA "Energy Market Impacts of Alternative Greenhouse Gas Intensity Reduction Goals" March 2007 tables 2a and 2b (Cap and Trade 2 scenario) are added to target to estimate economy wide cap. Straight lines are then drawn from 2012 to 2020 and 2020-2030. Cap for 2031-2050 is derived from average annual reduction of target from EIA 2007 Figure 4 between 2022 and 2030 (when stricter Intensity target kicks in) and then applied to 2030 emissions onward out to 2050. This is a rate of 0.11% annually. Projected emissions from Bingaman derived from same EIA analysis with emissions trend from 2022-2030 extrapolated out to 2050 using the annual average rate of increase of 0.62%

*Udall-Petri 2006* cap is based on average of projected emissions between 2007 and 2009. Projected Emissions out to 2030 are derived from EIA 2006 "Energy and Economic Impacts of H.R.5049, the Keep America Competitive Global Warming Policy Act". The trend in emissions from 2010 through 2030 is then extrapolated out to 2-5- at the average annual rate of increase (between 2010 and 2030) of 0.91%

*McCain Lieberman and Oliver Gilchrest 2007* caps are derived from legislative language. These bills are assumed to cover 85% of 2004 total US emissions. Caps charted here present cap over 100% of emissions. 2020 cap is legislated to be 5239 MMTCO<sub>2e</sub> or roughly 1990 level emissions from covered sectors, the cap is charted as 1990 levels here. A ratio calculation is used to chart caps beyond 2029. For example: The legislative cap is 5239 MMTCO<sub>2e</sub> through 2029 and 1990 emissions were 6109 MMTCO<sub>2e</sub>. Thus the charted cap for 2030 is the legislated cap 4100 multiplied by the ration of the 2012 cap to total emissions or 6109/5239 producing a charted cap of MMTCO<sub>2e</sub>. Note that in the out years Oliver-Gilchrest has slightly more stringent targets than Mc-L.

*Kerry-Snowe 2007* The bill language stipulates an economy wide declining cap that starts in 2010. The cap is charted just as the legislation says Which is annual reductions from 2010 through 2020 that bring economy-wide emissions down to 1990 levels by 2020, then 2.5% per year from 2021 through 2029 and 3.5% per year from 2030 through 2050

*Sanders-Boxer 2007* and *Waxman 2006* Both bills require emissions to be reduced by about 2% per year from 2010 through 2020 to get emissions back to 1990 levels. From there, emission are reduced linearly to reach 80% below 1990 levels by 2050. the Waxman language is somewhat misleading but his staff confirm that his bill's cap is identical to Sanders-Boxer

*Feinstein-Carper 2007* This bill applies to CO2 from electric power only. Cap is modeled here by using EIA AEO 2006 reference case for electric power CO2 emissions. The cap holds electric power emissions at 2006 levels from 2011 through 2014 and then 2001 levels in 2015 with 1% reductions there after through 2019 and then 1.5% reductions annually indefinitely starting in 2020. Cap is modeled here by subtracting AEO 2006 Electric Power Reference case CO2 emissions from AEO economy-wide BAU and then adding permitted electric power emissions under the F-C cap. for 2031 onward reference case electric power emissions are extrapolated at a rate of 1.3% annually.

*Bush Administration.* Emissions intensity would be reduced 18% from 2002-2012. Based on EIA AEO 2006 page 60

*Kyoto Protocol.* The U.S. commitment would have been a 7% reduction from 1990 levels for 2008-2012.

*Stabilize at 450/550ppm.* Derived from modeling data presented in den Elzen et al. 2006 *Regional abatement and costs under allocation schemes for emission allowances for achieving low CO2-equivalent concentrations* , Figure 8-2. Chapter 8 of MNP Report 500114002/2006 File available here: [http://www.mnp.nl/en/publications/2006/Stabilisinggreenhousegasconcentrationsatlowlevels\\_anassessmentofoptionsandcosts.html](http://www.mnp.nl/en/publications/2006/Stabilisinggreenhousegasconcentrationsatlowlevels_anassessmentofoptionsandcosts.html) The "Multistage scenario" is used for both 550 and 450ppm stabilization.