

# COMPARISON OF LEGISLATIVE CLIMATE CHANGE TARGETS

## WORLD RESOURCES INSTITUTE

DECEMBER 8, 2008

Attached is an update to the World Resources Institute's analysis of the greenhouse gas (GHG) reduction targets and timetables of climate legislation proposed in the 110<sup>th</sup> Congress. This includes a set of charts (annual and cumulative) as well as a reference table comparing all current legislative climate change targets and timetables under consideration in the 110<sup>th</sup> Congress (as of December 8, 2008)

<b>Table of Contents</b>	<b>Page</b>
COMPARISON OF LEGISLATIVE CLIMATE CHANGE TARGETS IN THE 110 <sup>TH</sup> CONGRESS	2
COMPARISON OF CUMULATIVE EMISSIONS RANGES UNDER LEGISLATIVE CLIMATE CHANGE TARGETS IN THE 110TH CONGRESS	3
GENERAL ASSUMPTIONS AND METHODOLOGIES	5
APPENDIX 1. GHG EMISSIONS AND EMISSION REDUCTION ESTIMATES UNDER 110 <sup>TH</sup> CONGRESS LEGISLATIVE PROPOSALS FOR SELECTED YEARS	11

## COMPARISON OF LEGISLATIVE CLIMATE CHANGE TARGETS IN THE 110<sup>TH</sup> CONGRESS

The World Resources Institute's analysis of emissions targets and cumulative emissions budgets attempts to objectively, fairly and accurately compare GHG reductions from explicit carbon caps and complementary policies contained in climate proposals submitted in the 110<sup>th</sup> Congress. Emissions from capped sectors are calculated based on the text of the respective legislation. For sectors that are not covered by the legislation, emissions are estimated to continue uncontrolled in line with projections published by EPA. This analysis uses a single set of carefully selected data and methods to provide a consistent comparison across all climate proposals in the 110<sup>th</sup> Congress. This analysis is not a projection of actual future emissions under the various proposals nor is it an analysis of economic impacts resulting from the enactment of these policies.

“Comparison of Legislative Climate Change Targets in the 110<sup>th</sup> Congress” (Figure 1) compares targets for legislative proposals of mandatory cap and trade programs for greenhouse gas emissions. Specifically, each line reflects the mandatory caps plus the growth in uncovered emissions as well as a range of additional possible reductions that could occur through complementary policies. Appendix 1 contains a table that includes the underlying data and estimates of emission reductions for selected years. This chart is a revision of a similar analysis by World Resources Institute released during the 109<sup>th</sup> Congress and subsequently updated through September 8, 2008.

This update includes the following:

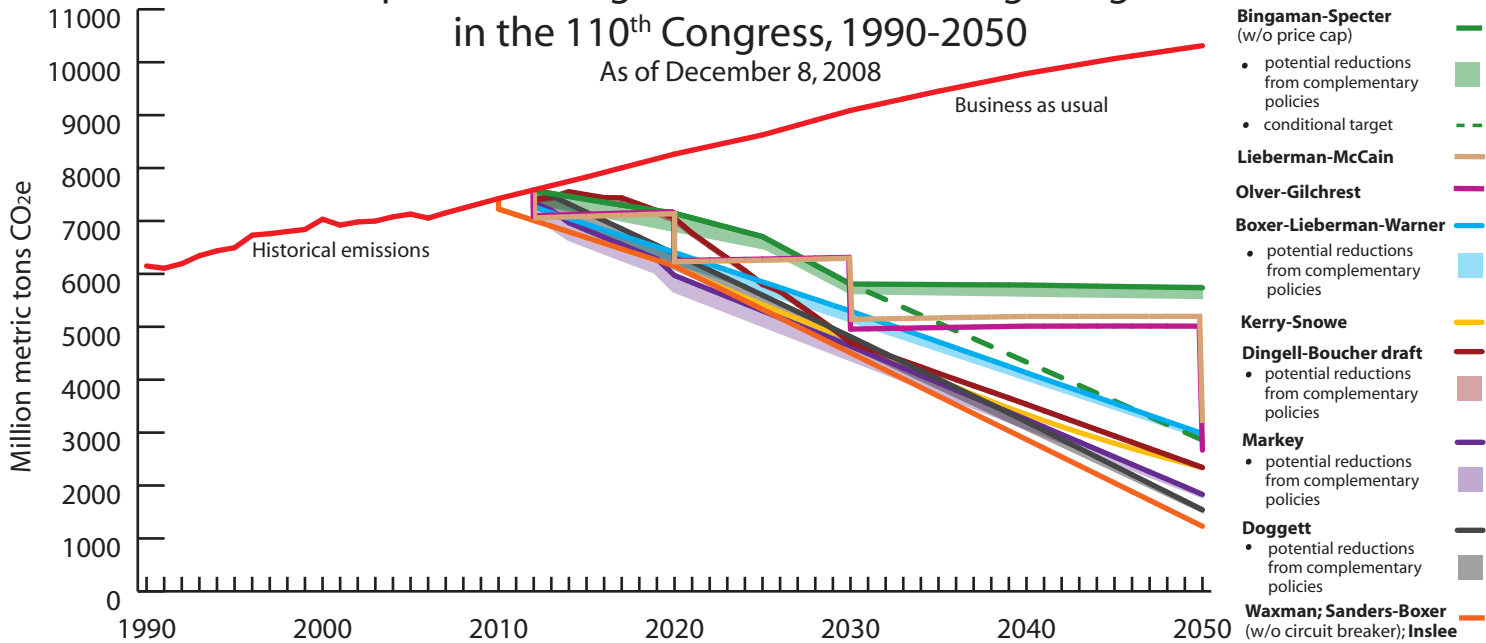
- An analysis of discussion draft legislation introduced by Representatives Dingell and Boucher. In addition to estimates of GHG reductions under the proposed cap and trade program and auction revenue funding for GHG reductions in uncapped sectors, this analysis incorporates GHG reduction estimates from additional regulations on uncapped sources.

“Comparison of Cumulative Emissions Budgets under Legislative Climate Change Targets in the 110th Congress” (Figure 2) offers a different perspective on the same data. This figure depicts the cumulative greenhouse gas emissions budgets for the proposals over two time periods. While the speed with which emissions reductions are implemented is an important determinant of the efficacy of climate change legislation, cumulative emissions reductions are also an essential indicator of the overall environmental stringency of a policy proposal. Time periods of 2010-2030 and 2010-2050 were chosen to evaluate how ambitious the proposals are in both the short and long term. In addition, for the Boxer-Lieberman-Warner, Bingaman-Specter, Markey, Doggett and Dingell-Boucher proposals, mandatory reduction and potential reduction scenarios are presented to account for changes in U.S. emissions that may result from conditional targets as well as mandatory and incentive based complementary policies included in these bills. These estimates do not include changes to the targets or annual emissions levels that may result from the use of cost-containment provisions included in some proposals.

FIGURE 1

## Comparison of Legislative Climate Change Targets in the 110<sup>th</sup> Congress, 1990-2050

As of December 8, 2008

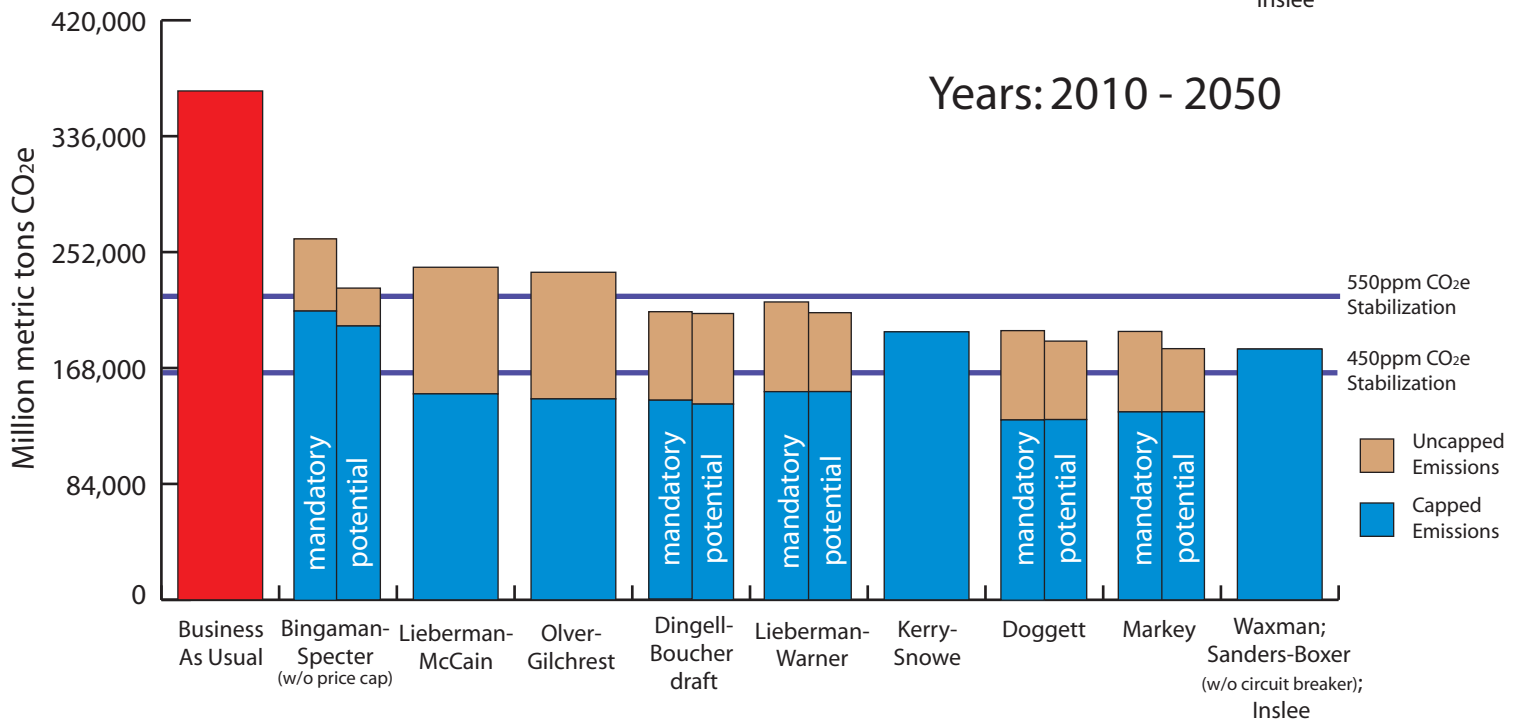
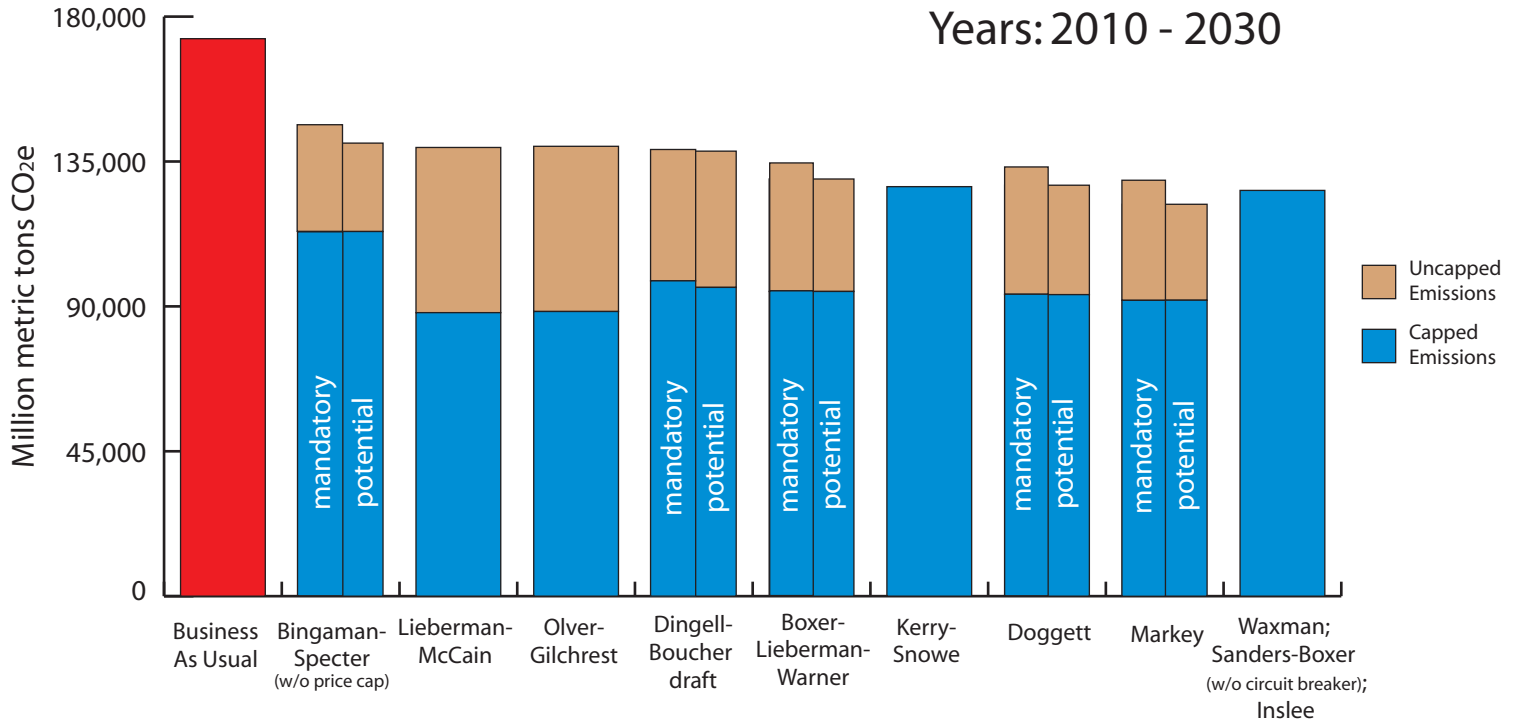


For a full discussion of underlying methodology, assumptions and references, please see <http://www.wri.org/usclimatetargets>. WRI does not endorse any of these bills. This analysis is intended to fairly and accurately compare explicit carbon caps in Congressional climate proposals and uses underlying data that may differ from other analyses. Price caps, circuit breakers and other cost-containment mechanisms contained in some bills may allow emissions to deviate from the pathways depicted in this analysis.

FIGURE 2

## Comparison of Cumulative Emissions Ranges under Legislative Climate Change Targets in the 110<sup>th</sup> Congress

As of December 8, 2008



# GENERAL ASSUMPTIONS AND METHODOLOGIES

Many assumptions have been made to simplify the analysis and should not be taken as statements of fact. These assumptions apply to all charts and data included in both the Senate and Congressional comparison. In many situations, these assumptions highlight contentious issues which must be resolved to ensure the environmental integrity of a market-based approach to addressing the threat of climate change. As new emissions data, economic or technical analyses are published by EPA, DOE or other relevant organizations WRI will update our analysis to reflect this new information.

For this analysis, WRI assumes that:

- All proposals are enacted in 2008. Where annual data are unavailable, years between targets or projections are interpolated using a simple linear formula.
- Caps will impact only capped sectors.
  - Bills with caps or reduction targets that explicitly apply to 100 percent of U.S. emissions are taken at face value.
  - Bills that define which sectors or entities will be capped are assumed to impact only covered sectors. Estimates of emissions coverage for each proposal are generated based on legislative language and the EPA inventory. Emissions from the rest of the economy are assumed to increase at annual rates derived from the EPA's modeling of the McCain-Lieberman, Bingaman-Specter and Lieberman-Warner proposals as appropriate.
  - This analysis does not take into account potential leakage of emissions from capped sources to uncapped sources either within sectors or between sectors.
- Some complementary policies may achieve emission reductions in non-covered sectors beyond what would result from the cap. Policies that have clear mandates for additional reductions are depicted in the solid, "mandatory reductions" line, while policies with less clear requirements are depicted in a "potential reductions" range below the mandatory line.
  - Allocations to support domestic and/or international biological sequestration are assumed to achieve one tonne of net emission reductions per allowance allocated.
  - Complementary policies aimed at reducing emissions from capped sectors and entities, such as increased fuel economy standards or renewable electricity standards, may affect the price of emissions allowances but would not lower economy-wide GHG emissions below the mandated cap.
  - Complementary policies aimed at reducing emissions from uncapped sectors and entities, such as performance standards for landfills, are included where reasonable, robust estimates can be calculated.
- Offsets will be real, permanent and additional.
  - This representation assumes offsets represent a real reduction in total global GHG emissions. As a result, emissions under each bill are portrayed as total emissions minus offsets.
- Borrowing and banking will not allow increases in cumulative GHG emissions.
  - Annual emissions may stray above or below the cap, but cumulative GHG emissions over the life of the program would be the same with or without borrowing or banking.
  - Although borrowing and banking may allow actual emissions in a given year to differ from a bill's stated cap, this analysis does not predict when and how much this would occur; therefore it is assumed that there would be no changes to the cap.
- Price caps and circuit breakers, while providing price certainty, potentially compromise a bill's environmental integrity and reduce the certainty of emissions reductions that could be achieved by the proposed cap and trade program.
  - This analysis does not show the effects of the price cap under the Bingaman-Specter proposal or the circuit breaker in the Sanders-Boxer proposal due to a lack of comparable data (earlier versions using EIA data did include the price cap, however in April 2008, the analysis migrated from EIA to EPA data).
  - The price cap provision could result in emissions above the line presented in Figure 1 and in greater cumulative emissions than those presented in Figure 2.

## Bill methodologies

- **Business as Usual**
  - Projections of total U.S. emissions under no federal action (referred to here as business as usual) are sourced from EPA's Scenario 1 using the ADAGE model as published in its economic analyses of proposals put forward in the 110<sup>th</sup> Congress.
- **Lieberman-Warner, S.2191 (not included in this analysis)**
  - Since the bill authors proposed a substitute to this bill in May, 2008 (S. 3036) it has been removed from this analysis. For a full description of how S.2191 was analyzed by WRI please see previous updates (such as June 4, 2008) of this analysis available at: <http://www.wri.org/publication/usclimatetargets>.











