

# COMPARISON OF LEGISLATIVE CLIMATE CHANGE TARGETS

## WORLD RESOURCES INSTITUTE

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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)

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## 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:

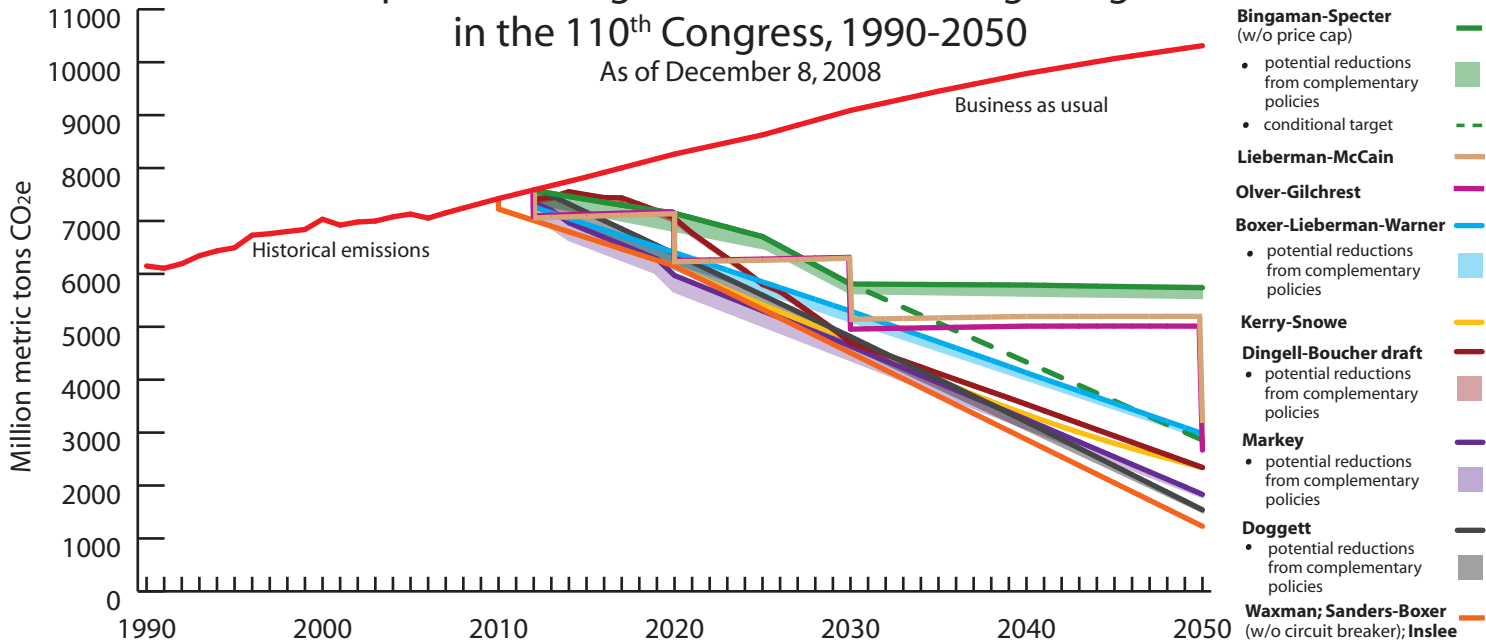
- An analysis of discussion draft legislation introduced by Representatives Dingell and Boucher. In addition to estimates of GHG reductions under the proposed cap and trade program and auction revenue funding for GHG reductions in uncapped sectors, this analysis incorporates GHG reduction estimates from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



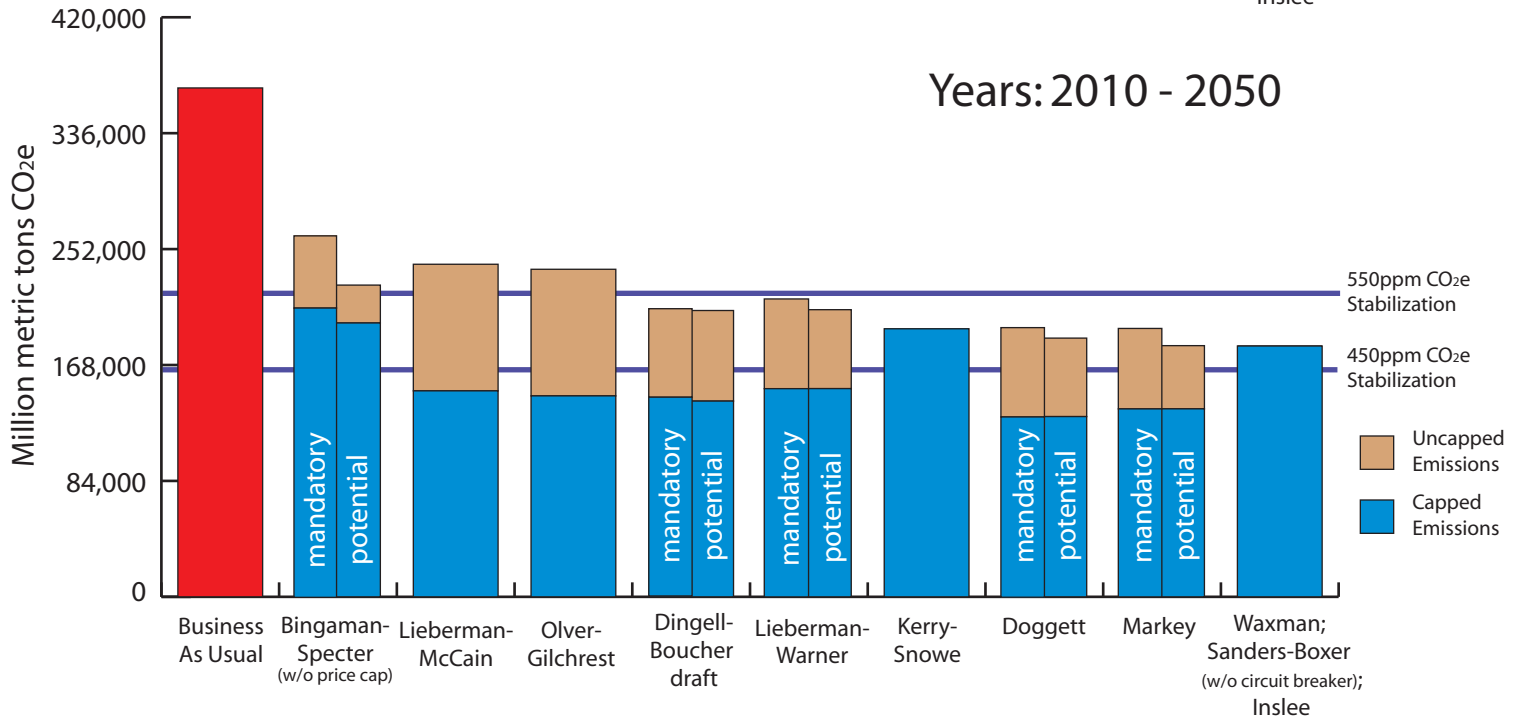
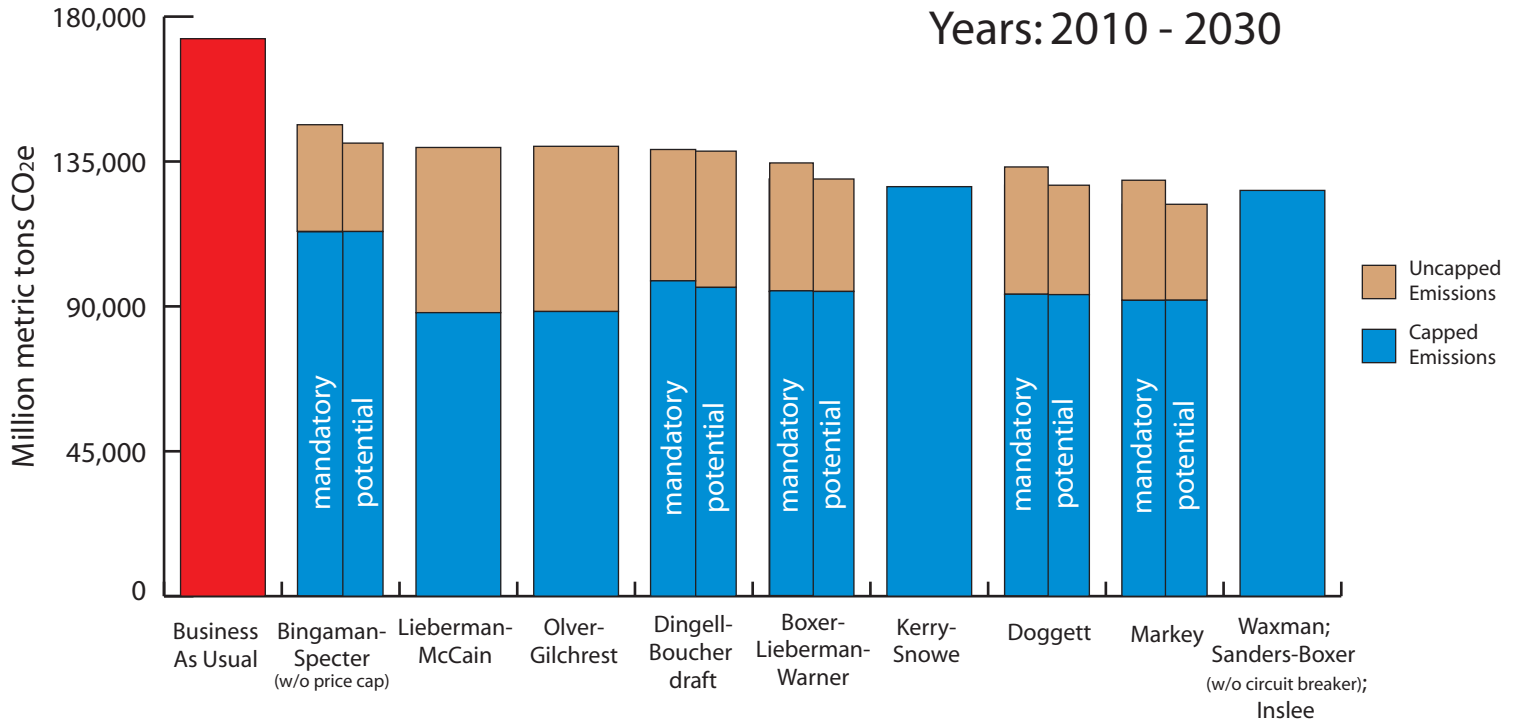
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For a full discussion of underlying methodology, assumptions and references, please see <http://www.wri.org/usclimatetargets>. WRI does not endorse any of these bills. This analysis is intended to fairly and accurately compare explicit carbon caps 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



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.

# 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>.

- **Kerry-Snowe, S.485**
  - **Cap and coverage:** The bill language stipulates a declining cap, to cover 100 percent of U.S. emissions starting in 2010. The chart reflects the text of the language - annual reductions from 2010 through 2020 that bring economy-wide emissions down to 1990 levels by 2020, then annual 2.5 percent reductions from 2021 through 2029 and 3.5 percent annual reductions from 2030 through 2050.
  
- **Sanders-Boxer, S.309; Inslee, HR.2809; and Waxman, HR.1590**
  - **Cap and coverage:** The bill language stipulates a declining cap, to cover 100 percent of U.S. emissions starting in 2010. Emissions are reduced linearly to reach 1990 levels by 2020. From there, emissions are reduced linearly to reach 80 percent below 1990 levels by 2050. Although the text of Representative Waxman’s proposal is somewhat different from the Sanders-Boxer proposal, staff confirms that the cap is intended to follow an identical trajectory. It is assumed that Representative Inslee’s proposal operates in the same fashion. According to this analysis this straight line trajectory is equal to an average annual reduction of approximately 5.2 percent.
  - **Cost containment mechanisms:** S.309 includes a “circuit breaker” which could breach the environmental integrity of the cap. It is uncertain how much emission abatement would occur if the circuit breaker were triggered. Due to a lack of appropriate data, this breach is not depicted in our analysis.
  
- **McCain-Lieberman, S.240 and Olver-Gilchrest, HR.620**
  - **Cap and coverage:** The bill’s cap is applied approximately 75 percent of 2006 total U.S. emissions. Although the rest of emissions are not explicitly covered, adjustments are made reflect growth in some uncovered emissions categories by:
    - Subtracting 2000 levels of emissions from exempted sources (unquantifiable emissions within covered sectors – 8.3 percent of economy emissions).
    - Subtracting the 2012, 2020, 2030 and 2050 estimated emissions from non-covered entities (entities from covered sectors that emit less than 10,000 mmt CO<sub>2</sub>e – 5.2 percent of economy emissions) for each cap period following a cap tightening.

A thorough discussion of emissions coverage under the McCain-Lieberman proposal can be found in a memo from the EPA to the EIA dated 3/6/07 and titled “Emissions that Fall under the Cap under S.280.”
  - **Growth of uncovered emissions:** The remaining 25 percent of emissions are increased in line with EPA projections of uncovered emissions growth under the McCain-Lieberman proposal. These annual growth rates, while varying from year to year, average 0.27 percent through 2050.
  
- **Bingaman-Specter, S.1766**
  - **Cap and coverage:** The bill is calculated to cap 86 percent of 2006 total U.S. emissions.
  - **Growth of uncovered emissions:** The remaining 14 percent of economy emissions are increased in line with EPA’s projections of uncovered emissions growth under the proposal. These annual growth rates, while varying from year to year, average -0.02 percent through 2050.
  - **Cost containment mechanisms:** According to EPA analysis, without significant additional complementary policies, it is highly likely that the bill’s price cap will be triggered, breaching the environmental integrity of the cap. It is uncertain how much emission abatement would occur if the price cap were triggered. Due to a lack of appropriate data, this breach is not depicted in our analysis.
  - **Complementary policies and allocations:** A range of potential emissions is presented to reflect the possible impacts of complementary policies included in the bill. The upper bound of this range (mandatory reductions) depicts the impacts of the proposal’s clearly stated, mandatory emission reductions. In the case of S.1766, this includes only the GHG emissions cap. The lower bound (potential reductions) incorporates additional emission reductions that may be achieved through the implementation of the proposal, but are not mandated. This bound (mandatory reductions) assumes:
    - Allocations for domestic and international agriculture and forestry activities generate one tonne of net emission reductions per allowance allocated.
    - The text of the bill requires that, by 2030, if the five largest trading partners have enacted comparable policies, the President, based on findings from an interagency review, will recommend to Congress more stringent targets to reduce total (100 percent) U.S. emissions at least 60 percent below 2006 levels. This cap is shown on the chart as the conditional target.
  
- **Boxer-Lieberman-Warner substitute, S.3036**
  - **Cap and coverage:** The bill proposes the creation of two caps – one to phase down U.S. HFC production and another to reduce all other GHG emissions.

- The bill's two caps combine to equal a limit of 5,981 million tonnes of CO<sub>2</sub>e emissions in 2012. WRI calculations, based on the EPA GHG Inventory, indicate that covered entities emitted approximately 5,769 million tonnes in 2006 or approximately 82 percent of total U.S. emissions in that year.
  - The Boxer-Lieberman-Warner bill creates a separate cap for HFC consumption. Since HFC consumption is not equivalent to HFC emissions, an adjustment was made to convert this consumption cap to an emissions cap. We have assumed an adjustment of 83 MMTCO<sub>2</sub>e in 2012, based on EPA estimates of the historical difference between these numbers found in an EPA memo to the EIA titled "Emissions that Fall under the Cap under S.280" and the EPA GHG Inventory. After making this adjustment, the cap is tightened at the same rate as outlined in the legislative language. As a result, we assume the combined caps allow covered sources to emit only 5,981 MMTCO<sub>2</sub>e in 2012 decreasing to 1,789 MMTCO<sub>2</sub>e in 2050.
- **Growth of uncovered emissions:** The 18 percent of economy emissions not covered in the bill are increased in line with EPA estimates of uncovered emissions growth rates under the proposal. These annual growth rates, while varying from year to year, average -0.2 percent annually through 2050.
- **Complementary policies and allocations:** A range of potential emissions is presented to reflect the possible impacts of complementary policies included in the bill. The upper bound of this range (mandatory reductions) depicts the impacts of the proposal's clearly stated, mandatory emission reductions. In the case of S.3036, these policies include:
  - The GHG emissions cap: depicted as described above; and
  - Mandatory policies to reduce end use HFC emissions: This analysis currently does not include such policies due to data limitations. Inclusion of such policies would result in a slight increase in GHG reduction estimates.

The lower bound (potential reductions) incorporates additional emission reductions that may be achieved through the implementation of the proposal, but are not mandated. Such policies include:

- Allocations for domestic and international agriculture and forestry activities: These allocations are assumed to generate one tonne of net emission reductions per allowance allocated.
    - State allocations: While states and other entities could retire additional allowances under S.3036 such amounts are difficult to quantify and therefore no estimates are included in this analysis.
- **Markey, HR.6186**
    - Estimates should be considered preliminary pending additional peer review and inclusion of analysis of complementary policies for HFCs.
    - **Cap and coverage:** The legislation phases in coverage of GHG emissions in two steps:
      - Entities covered in 2012 emitted approximately 5,984 million tonnes in 2006 or approximately 85 percent of total U.S. emissions in that year. The bill caps these emissions at 6,098 million tonnes of CO<sub>2</sub>e emissions in 2012.
      - Coverage is increased to 87 percent of total U.S. 2006 emissions after 2019 when HFCs are incorporated into the overall cap. HFCs are assumed to be capped based on emissions rather than production. WRI is currently exploring whether an adjustment similar to those made for S.2191 and S.3036 is necessary to accurately portray this portion of the proposal. If an adjustment is deemed to be necessary, total GHG reduction estimates could be slightly greater than those included in this preliminary analysis.
    - **Growth of uncovered emissions:**
      - From 2006 through 2019, HFC emissions are assumed to increase in line with EPA's ADAGE reference case projections.
      - The remaining 13 percent of economy emissions are increased in line with EPA estimates of uncovered emissions growth rates under S.2191. These annual growth rates, while varying from year to year, average -0.2 percent annually through 2050.
    - **Complementary policies and allocations:** A range of potential emissions is presented to reflect the possible impacts of complementary policies included in the bill. The lower bound of this range informs the maximum reduction scenario depicted in the cumulative emission budget comparison and assumes: The upper bound of this range (mandatory reductions) depicts the impacts of the proposal's clearly stated, mandatory emission reductions. In the case of H.R. 6186, these policies include:
      - The GHG emissions cap: depicted as described above.
      - Mandatory policies to reduce end use HFC emissions: This analysis currently does not include such policies due to data limitations. Inclusion of such policies would result in a slight increase in GHG reduction estimates.
      - Mandatory regulations for uncovered sectors: Best available control technology standards for uncapped sources are assumed to achieve additional reductions of approximately 100 million tonnes CO<sub>2</sub>e based on estimates conducted by the EPA. These regulations are assumed to take effect in 2014.

This estimate may be conservative as it does not take into account reductions of methane from enteric fermentation or improvements in best available control technology over time.

The lower bound (potential reductions) incorporates additional emission reductions that may be achieved through the implementation of the proposal, but are not mandated. Such policies include:

- Allocations for domestic and international agriculture and forestry activities: These allocations are assumed to generate one tonne of net emission reductions per allowance allocated.
- International allocations: Additional reductions that could be achieved outside of the U.S. through international clean technology deployment funds contained in this proposal are not included in this analysis. Depending on the performance of such programs as well as the level of international engagement, additional overseas GHG reductions could be substantial. However, attribution and quantification of such reductions is difficult.

- **Doggett, HR.6316**

- **Cap and coverage:** WRI calculations, based on the EPA GHG Inventory, indicate that covered entities emitted approximately 5,769 million tonnes in 2006 or approximately 82 percent of total U.S. emissions in that year. The bill caps these emissions at 6,351 million tonnes of CO<sub>2</sub>e emissions in 2012.
- **Growth of uncovered emissions:** Before adjustments are made to reflect estimates of additional GHG reductions that could be achieved through regulatory the remaining 18 percent of economy emissions are increased in line with EPA estimates of uncovered emissions growth rates under the proposal. These annual growth rates, while varying from year to year, average -0.2 percent annually through 2050.
- **Complementary policies and allocations:** A range of potential emissions is presented to reflect the possible impacts of complementary policies included in the bill. The upper bound of this range (mandatory reductions) depicts the impacts of the proposal's clearly stated, mandatory emission reductions. In the case of H.R. 6316, these policies include:
  - The GHG emissions cap: depicted as described above.
  - EPA regulations: The proposal would require the EPA to prevent uncapped sector emissions from increasing after 2012. This analysis holds uncovered emissions at 2012 levels unless these emissions are projected to fall below 2012 levels at some point in the future. In the latter case, projected uncovered emissions values are used.

The lower bound (potential reductions) incorporates additional emission reductions that may be achieved through the implementation of the proposal, but are not mandated. Such policies include:

- Allocations for domestic and international agriculture and forestry activities: These allocations are assumed to generate one tonne of net emission reductions per allowance allocated.

- **Dingell-Boucher, discussion draft**

- **Cap and coverage:** The discussion draft proposes the creation of two caps – one to phase down U.S. HFC production and another to reduce all other GHG emissions.
  - The HFC cap would go into effect in 2012, covering the production of specifically identified HFCs. These HFCs were responsible for approximately 2 percent of 2006 emissions. A range of reduction targets are proposed for the HFC cap. WRI's mandatory reduction scenario assumes the least stringent end of the range is applied. WRI's potential reduction scenario assumes the most stringent end of the range is applied.
  - Coverage of non-HFC GHG emissions is phased in over the first 5 to 9 years of the program.
    - The initial 2012 cap, set at 4987 million tonnes of emissions, is estimated to cover approximately 69 percent of total 2006 U.S. emissions.
    - In 2014, the cap would be expanded to include most industrial emissions – increasing coverage to 77 percent of 2006 U.S. emissions.
    - An additional expansion of the cap in 2017 to include natural gas emissions would occur if a national consumption performance standard is not met. If the performance standard is met the cap is expanded in 2021. In either event this expansion increases coverage to 83 percent of U.S. emissions by including emissions from residential and commercial natural gas combustion. Based on a review of historic trends in natural gas consumption, WRI assumes that this third phase occurs in 2017.
  - When combined with the HFC cap and complementary policies, the draft bill would cover up to 84 percent of 2006 U.S. emissions.
- **Growth of uncovered emissions:** Uncovered emissions are assumed to increase in line with EPA's ADAGE reference case projections. Specific emissions growth rates are approximated for each group of emissions incorporated under the cap at each phase of cap expansion. These annual growth rates, while varying from year to year, average -0.2 percent annually through 2050 for emissions that are never covered, -0.2 percent annually



for natural gas emissions that would be covered beginning in 2017 or 2021, and 1.0 percent annually for industrial emissions that would be covered beginning in 2014.

- **Complementary policies and allocations:** A range of potential emissions is presented to reflect the possible impacts of complementary policies included in the discussion draft. The upper bound of this range (mandatory reductions) depicts the impacts of the proposal's mandatory emission reductions. In the case of the Dingell-Boucher discussion draft, these policies include:
    - The GHG emissions cap for non-HFC emissions: depicted as described above assuming natural gas is covered beginning in 2017.
    - The higher end of the proposed range for the HFC cap
    - Supplemental Greenhouse Gas Reduction Program: Allocations made under Part F, "Supplemental Greenhouse Gas Reduction Program", are anticipated to achieve additional GHG reductions. At a minimum, the bill would allocate 2,346 million allowances to this program through 2025. Although the bill does allow the funding to be spent on a diversity of programs, it requires program administrators to achieve 500 million tonnes of additional abatement between 2012 and 2020, and an additional 500 million tonnes of abatement between 2021 and 2025. This analysis assumes that the allocations are sufficient to achieve these reductions and that the program does not achieve any further mitigation post 2025. Each set of 500 million tonnes of abatement are evenly distributed over the relevant time-period.
    - Industrial performance standards: The proposal phases in industrial performance standards between 2012 and 2019. EPA is instructed to cover 95 percent of total industrial emissions (including industrial process and F-gas emissions) with a combination of the cap and performance standards. WRI estimates that 84 percent of these emissions are covered under the cap leaving 11 percent subject to standards. Since the structure of these standards is to be designed by the administrator, it is unknown precisely how much mitigation the standards would achieve. This analysis assumes emissions subject to performance standards are held constant from the effective year onward.
- The lower bound (potential reductions) incorporates additional emission reductions that may be achieved through the implementation of the proposal, but are not mandated. Such policies include:
- The lower end of the proposed range for the HFC cap
  - The GHG emissions cap, assuming natural gas is covered in 2021

- **Stabilization**

- Stabilization lines for atmospheric CO<sub>2</sub> equivalent concentrations of 450 and 550 parts per million are derived from van Vuuren and den Elzen *et al.* 2006. These curves represent reductions the U.S. would need to achieve in tandem with immediate and significant commitments from all industrialized countries and the eventual cooperation of all major developing country emitters to prevent atmospheric greenhouse gas concentrations from exceeding 450ppm or 550 ppm based on the multi-stage scenario used in this study.

### **Acknowledgements:**

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**Appendix 1. GHG Emissions and Emission Reduction Estimates Under 110th Congress  
Legislative Proposals for Selected Years (Million metric tons of CO<sub>2</sub>e)**

<b>Absolute Emissions</b>					
	<b>2012</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>
<b>Business as usual emissions</b>	7,586	8,264	9,089	9,786	10,312
<b>Bingaman-Specter, S.1766</b>	7423 to 7244	7145 to 6835	5808 to 5567	5789 to 4334	5738 to 2860
<b>McCain-Lieberman, S.280</b>	7,057	6,229	5,139	5,196	3,181
<b>Olver-Gilchrest, HR.620</b>	7,098	6,251	4,956	5,012	2,668
<b>Boxer-Lieberman-Warner, S.3036</b>	7266 to 6963	6404 to 6146	5297 to 5094	4130 to 3976	2982 to 2887
<b>Kerry-Snowe, S.485</b>	7,010	6,148	4,773	3,343	2,341
<b>Dingell-Boucher Draft</b>	7405 to 7380	7050 to 7010	4699 to 4699	3536 to 3529	2342 to 2335
<b>Markey, HR.6186</b>	7343 to 6999	5970 to 5621	4636 to 4381	3248 to 3088	1832 to 1767
<b>Doggett, HR.6316</b>	7636 to 7297	6382 to 6062	4814 to 4593	3204 to 3083	1541 to 1519
<b>Waxman, HR.1590; Sanders-Boxer, S.309; Inslee, HR.2809</b>	7,010	6,148	4,509	2,869	1,230
<b>Percent change from 2005 emissions</b>					
	<b>2012</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>
<b>Business as usual emissions</b>	6	16	27	37	45
<b>Bingaman-Specter, S.1766</b>	4 to 2	0 to -4	-19 to -22	-19 to -39	-20 to -60
<b>McCain-Lieberman, S.280</b>	-1	-13	-28	-27	-55
<b>Olver-Gilchrest, HR.620</b>	0	-12	-30	-30	-63
<b>Boxer-Lieberman-Warner, S.3036</b>	2 to -2	-10 to -14	-26 to -29	-42 to -44	-58 to -60
<b>Kerry-Snowe, S.485</b>	-2	-14	-33	-53	-67
<b>Dingell-Boucher Draft</b>	4 to 4	-1 to -2	-34 to -34	-50 to -51	-67 to -67
<b>Markey, HR.6186</b>	3 to -2	-16 to -21	-35 to -39	-54 to -57	-74 to -75
<b>Doggett, HR.6316</b>	7 to 2	-10 to -15	-32 to -36	-55 to -57	-78 to -79
<b>Waxman, HR.1590; Sanders-Boxer, S.309; Inslee, HR.2809</b>	-2	-14	-37	-60	-83
<b>Percent change from 1990 emissions</b>					
	<b>2012</b>	<b>2020</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>
<b>Business as usual emissions</b>	23	34	48	59	68
<b>Bingaman-Specter, S.1766</b>	21 to 18	16 to 11	-6 to -9	-6 to -30	-7 to -53
<b>McCain-Lieberman, S.280</b>	15	1	-16	-15	-48
<b>Olver-Gilchrest, HR.620</b>	15	2	-19	-18	-57
<b>Boxer-Lieberman-Warner, S.3036</b>	18 to 13	4 to 0	-14 to -17	-33 to -35	-51 to -53
<b>Kerry-Snowe, S.485</b>	14	0	-22	-46	-62
<b>Dingell-Boucher Draft</b>	20 to 20	15 to 14	-24 to -24	-42 to -43	-62 to -62
<b>Markey, HR.6186</b>	19 to 14	-3 to -9	-25 to -29	-47 to -50	-70 to -71
<b>Doggett, HR.6316</b>	24 to 19	4 to -1	-22 to -25	-48 to -50	-75 to -75
<b>Waxman, HR.1590; Sanders-Boxer, S.309; Inslee, HR.2809</b>	14	0	-27	-53	-80

*(Note: These estimates portray the range of emission reductions that could be achieved by each proposal. They include mandatory caps and projections of uncovered emissions as well as additional reductions achieved through complementary policies but do not take into account changes in annual emissions due to cost containment provisions.)*