

Review of Cap and Trade Regulation



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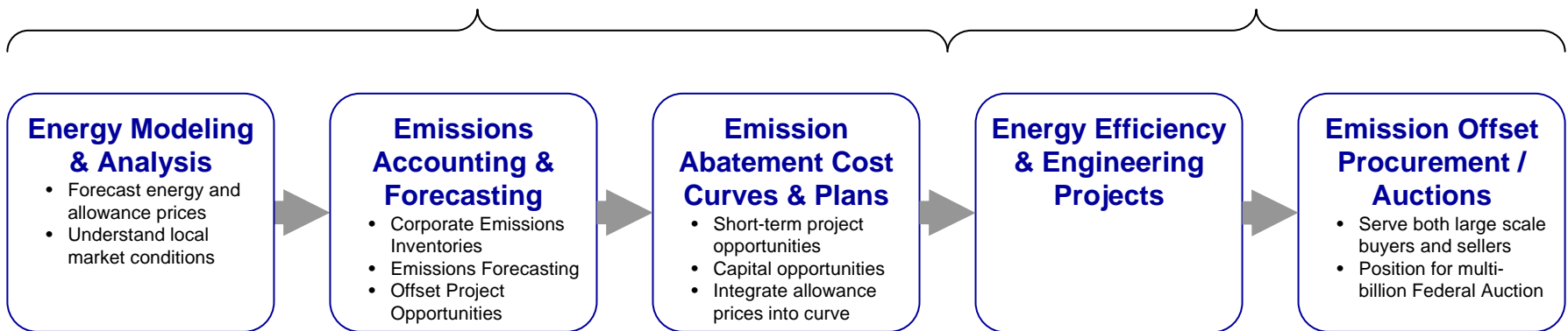
- ▶ Introduction
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 - Regional Trading Systems
 - *RGGI*
 - California
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 - *Key aspects of the bill*
 - *Politics*
 - *Impacts*
 - Issues to Watch

Introduction

SAIC Climate Change Services

Policy Consulting & Decision Support

Implementation Projects



SAIC Successes

- 38 years of continuous growth
- \$8.9 billion in annual revenue during FY 08
- Nearly 44,000 employees worldwide
- Rated Moody's A3, S&P A-
- Key positions on issues of national importance
 - *Energy*
 - *Environment*
 - *Infrastructure*
 - *National Security*
 - *Healthcare*

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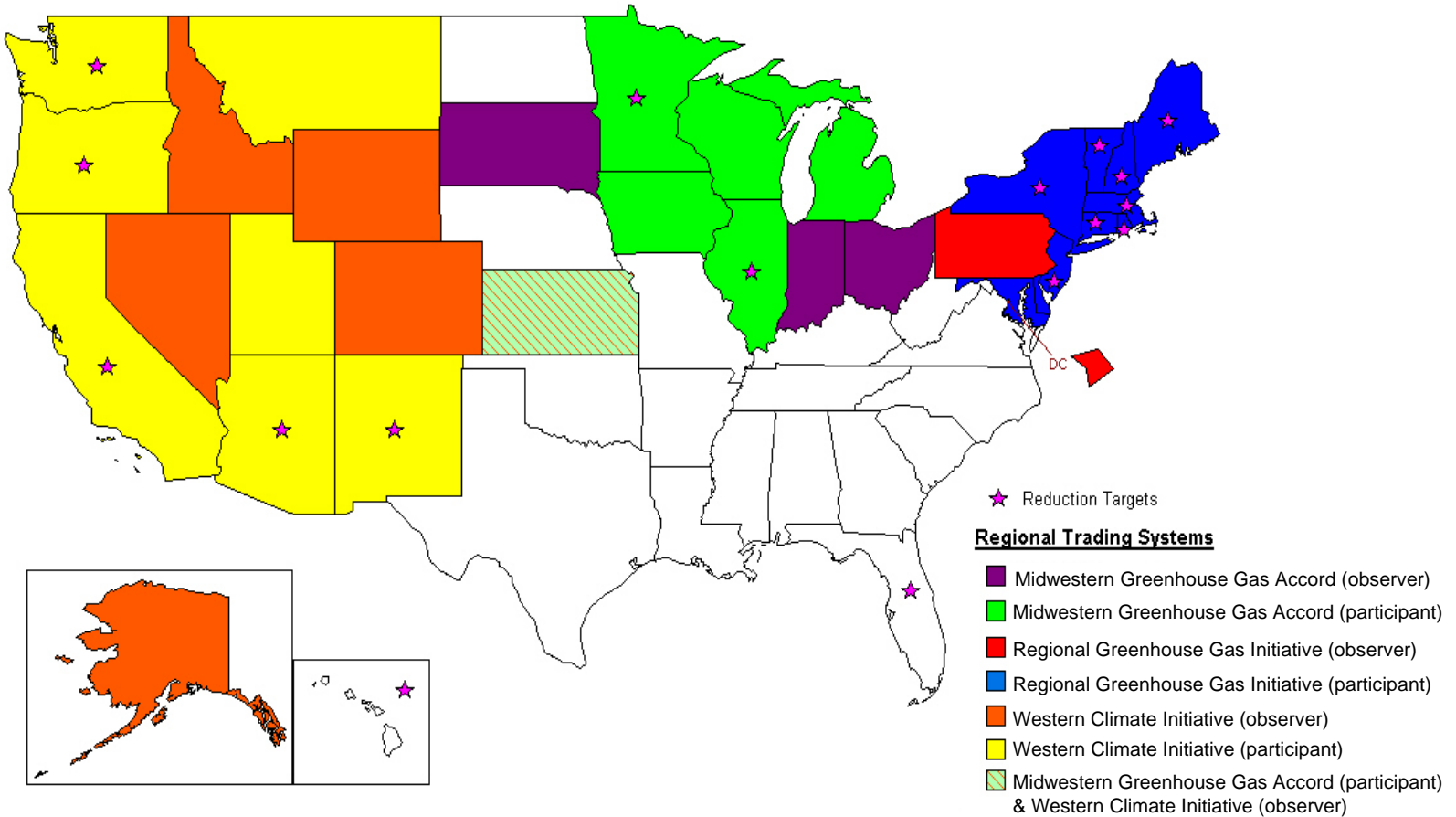
- Asst. Vice President, Climate Change Services
- 15 years of experience in emissions accounting, program support, policy analysis and development, and strategic planning
- UNFCCC Roster of Experts - Inventory Preparation and Project Evaluation





Regional and State Initiatives

Regional Trading Systems Participating States



Approximately 55% of U.S. emissions would be accounted for under these Regional Trading Systems

Ref: http://cdiac.esd.ornl.gov/trends/emis_mon/stateemis/emis_state.htm

Regional Greenhouse Gas Initiative

	RGGI
Sectors	Fossil fuel-fired electric generators ≥ 25 MW
Regulated sources	~702 units
Political jurisdiction	Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont [<i>Observers:</i> District of Columbia, Pennsylvania, Eastern Canadian Provinces and New Brunswick]
Emissions covered	CO ₂
Emissions cap	188.1 MTCO ₂ (short tons) for 2009-2014; 10% below this in 2018 (i.e., 2.5%/yr decline in emission budget)
Allocation	$\geq 25\%$ of each state's allowances must be auctioned for consumer benefit purposes, such as end-use energy efficiency
Offset types allowed	Landfill gas ♦ Sulfur hexafluoride (SF ₆) ♦ End-use energy efficiency ♦ Afforestation ♦ Farming operations ♦ Natural gas transmission and distribution (T&D)
Offset price < \$7	Offsets capped at 3.3% of each generator's emissions RGGI offsets = 1:1 ton ratio; North America offsets = 2:1 ton ratio
Offset price > \$7	5% offset cap and North America offsets = 1:1 ton ratio
If price \geq \$10/ton (12 mo. Avg)	Safety valve control period rules take effect (see below)
Implementation	1 st control period 2009-2011; 2 nd 2012-14; 3 rd 2015-17 (Each control period may be extended to 4 years if price rises to \geq \$10/ton)

- ▶ Concerns about over-allocation that would lead to EUETS pilot-phase like price collapse
 - All states to take uniform and coordinated auction approach
 - Subset of states in initial auction followed by laggards, yet to complete auction regulations
 - World Energy/SAIC team selected as auctioneer
 - First auction planned for September 10, 2008
 - States will be allowed to emit 188.1 MTCO₂/year total (short tons) during 2009-2014
 - Uniform-price sealed bid auction
 - *Ensures that must-have entities can get minimum needed allowances*
 - Auctions open to all
 - *Maximum purchase of 25% of total lot*
 - Auctions held quarterly
 - Future allowances auctioned up to 4 years in advance
 - Reserve price = \$1.86
 - Early forward trades between \$5.00 and \$7.00 per ton
 - Unsold allowances
 - *Held in reserve, rolled into future auctions*



➤ **Passed August 31, 2006**

➤ **Reduce CO₂ emissions 25% (to ~1990 levels) by 2020, starting in 2012**

- Covers electric power, industrial, and commercial sectors
- Institutes a schedule for emission reductions
- Requires reporting of emissions

➤ **October 2006 Executive Order**

- Required recommendations on the design of a market-based program; report released June 29, 2007
- Directs CARB and CALEPA to develop a market-based program that permits trading with the EU and RGGI

➤ **Upcoming Activities**

- May 5: Scenarios Workshop
- June 26: Draft Scoping Plan released for public comment
- Scoping plan to be adopted by CARB by November 2008



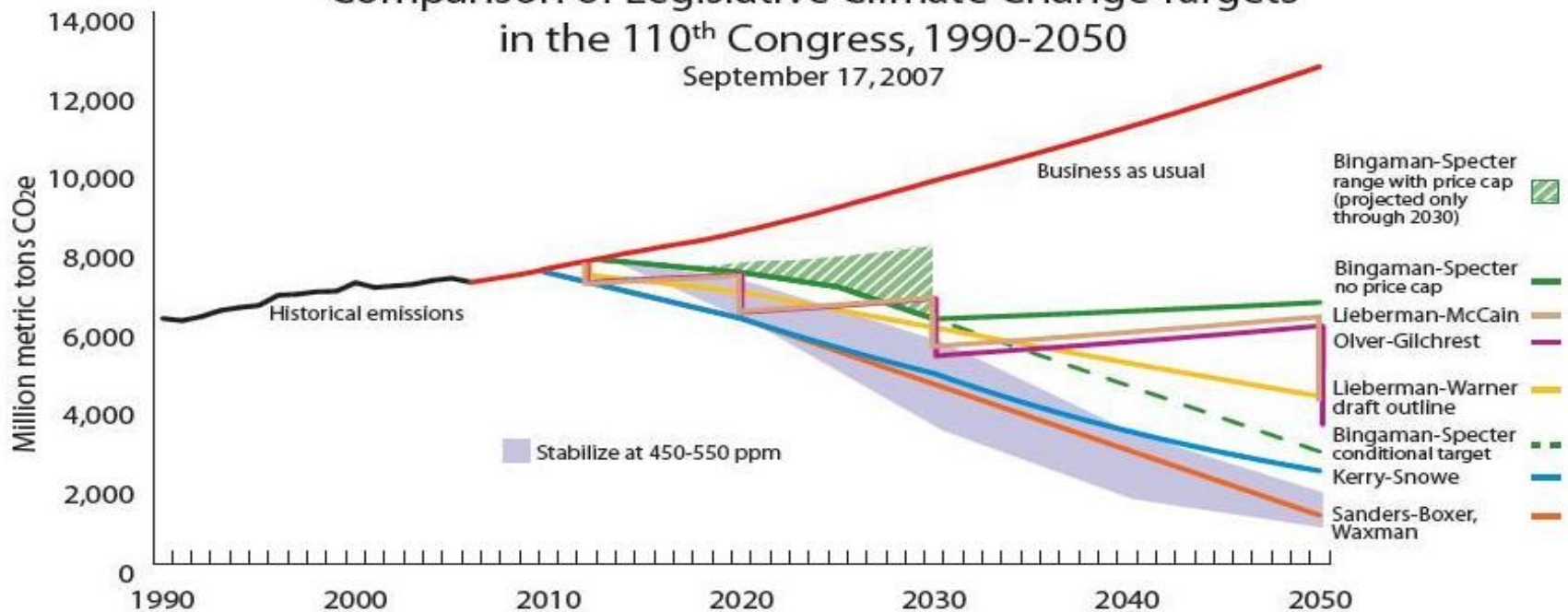
Proposed Federal Legislation


Proposed Federal Legislation Overview

Bill	Scope	Emissions Cap 2010-2012	Emissions Cap 2020	Emissions Cap 2050	Allocation versus Auction	Offsets
Bingaman-Specter (S. 1766) <i>Intro Remarks, EPW, 8/2/07.</i>	6 Major GHGs Economy-wide Upstream	2012 in 2012.	2006 by 2020.	1990 by 2030. President may set long-term target >60% below 2006 levels by 2050.	Increasing auction. Some sector allocations.	10% limit on international credits. 5% set-aside for bio sequestration. \$12/ton safety valve starting 2012; increasing 5%/year.
Lieberman-Warner (S. 2191) <i>Passed with Amendments, EPW, 12/5/07</i>	6 Major GHGs Economy-wide "Hybrid" Up: transportation fuels Down: electric utilities, large sources	2005 by 2012	15% < 2005 in 2020	33% <2005 in 2030 52% <2005 in 2040 70% <2005 in 2050	Increasing auction. 21.5% in 2012 to 69.5% beginning in 2031. Some sector allocations.	15% limit on domestic offsets and international credits.
Gilchrest-Olver (H.R. 4226) <i>En and Com; Sci and Tech; Nat Resources; Foreign Affairs; Ag; Ways and Means, 11/15/07</i>	6 Major GHGs Economy-wide "Hybrid" Up: transportation fuels Down: electric utilities, large sources	2006 by 2012	2006 in 2019 15% <2006 in 2029	15% <2006 in 2029 37% <2006 in 2039 75% <2006 in 2049	Allocation. Initial allocations for early action and accelerated participation.	15% limit on domestic offsets and international credits.
Kerry-Snowe (S. 485) <i>Finance Com., 2/1/07.</i>	6 Major GHGs Economy-wide Downstream	1.5% <2009 in 2010	1.5%/yr reduction 2010-2019	2.5%/yr reduction 2020-2029 3.5%/yr reduction 2030-2050	President determines.	Potential for offsets generated from biological sequestration.
Lieberman-McCain (S. 280) <i>Hearings, 7/24/07.</i>	6 Major GHGs Economy-wide "Hybrid" Up: transportation Down: electric utilities, large sources	2004 by 2012	1990 in 2020	20% <1990 in 2030 60% <1990 in 2050	Administrator determines.	30% limit on international credits and domestic reduction or sequestration offsets.
Olver (H.R. 620) <i>Subcom Energy and Environment, 1/31/07; Subcom Energy and Air Quality, 2/2/07; Subcom Fisheries and Wildlife, 2/7/07.</i>	6 Major GHGs Economy-wide "Hybrid" Up: transportation Down: electric utilities, large sources	2004 by 2012	1990 in 2020	20% <1990 in 2030 60% <1990 in 2050	Administrator determines.	30% limit on international credits and domestic reduction or sequestration offsets.
Sanders-Boxer (S. 309) <i>Intro Remarks, EPW, 6/13/06.</i>	6 Major GHGs Economy-wide Downstream	N/A	1990 in 2020	27% <1990 in 2030 53% <1990 in 2040 80% <1990 in 2050	Cap and trade not required.	Potential for offsets generated from biological sequestration.
Waxman (H.R. 1590) <i>Intro Remarks, Energy and Commerce 3/21/07.</i>	6 Major GHGs Economy-wide	2009 in 2010 2%/yr reduction 2011-2019	1990 in 2020 5%/yr reduction 2021-2050	5%/yr reduction 2021-2050 20% <1990 in 2050	President and Administrator determine.	N/A.

Proposed Federal Legislation Overview

Comparison of Legislative Climate Change Targets
in the 110th Congress, 1990-2050
September 17, 2007



 WORLD RESOURCES INSTITUTE

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 for comparative purposes only. Data post-2030 may be derived from extrapolation of EIA projections.

Key Features

- ▶ Least restrictive
 - Bingaman-Specter (with price caps)
 - ✓ *Requires nominal reductions of CO₂ emissions from Business As Usual (BAU) by 2050*
- ▶ Most restrictive
 - Sanders-Boxer
 - ✓ *Requires 80% reduction from BAU by 2050*
- ▶ Currently most focused on
 - Lieberman-Warner
 - ✓ *Requires 70% reduction from 2005 levels by 2050 (about 63% below 1990 levels)*
- ▶ Influencing negotiations on Lieberman-Warner
 - Bingaman-Specter

- Incrementally declining emissions cap
 - 2005 Levels by 2012
 - 15% below 2005 levels in 2020
 - 30% below 2005 levels in 2030
 - 50% below 2005 levels in 2040
 - 70% below 2005 levels in 2050 (equivalent to 63% below 1990 levels by 2050)

- Total emission allowances
 - 5.775 billion in 2012
 - Declining annually to 1.73 billion in 2050

- Portion Auctioned
 - 21.5% in 2012
 - 69.5% from 2031 -2050

- Covered Entities
 - Two separate caps
 1. Facilities that produce HFCs
 2. Facilities that:
 - *Use > 5,000 tons of coal annually;*
 - *Process, produce, or import natural gas;*
 - *Produce or import petroleum or coal-based fuel;*
 - *Produce for sale or distribution or import more than 10,000 CO₂e of chemicals; and*
 - *Emit as a by-product of HCFC production more than 10,000 CO₂e of HFCs.*
 - Overall, the two caps combined are expected to cover over 80% of total U.S. GHG emissions

- Trading
 - Emissions allowances may be traded, sold, exchanged, or transferred between parties (no restrictions on who can own them)
- Banking
 - Allowances do not retire or diminish in compliance value over time
- Borrowing
 - Entities may borrow emission allowances to meet up to 15% of their compliance obligations; borrowed allowances must be allowances already established for a specific future calendar year (within 5 years).
 - Borrowed allowances subject to interest during the year from which the allowance is borrowed; the entity must submit allowances equal to 1.1 times the number of years in advance that the allowance was borrowed.
- Recycling of Revenue
 - All revenue from auctioned allowances will go to the Treasury's Energy Technology Deployment Program

Offsets

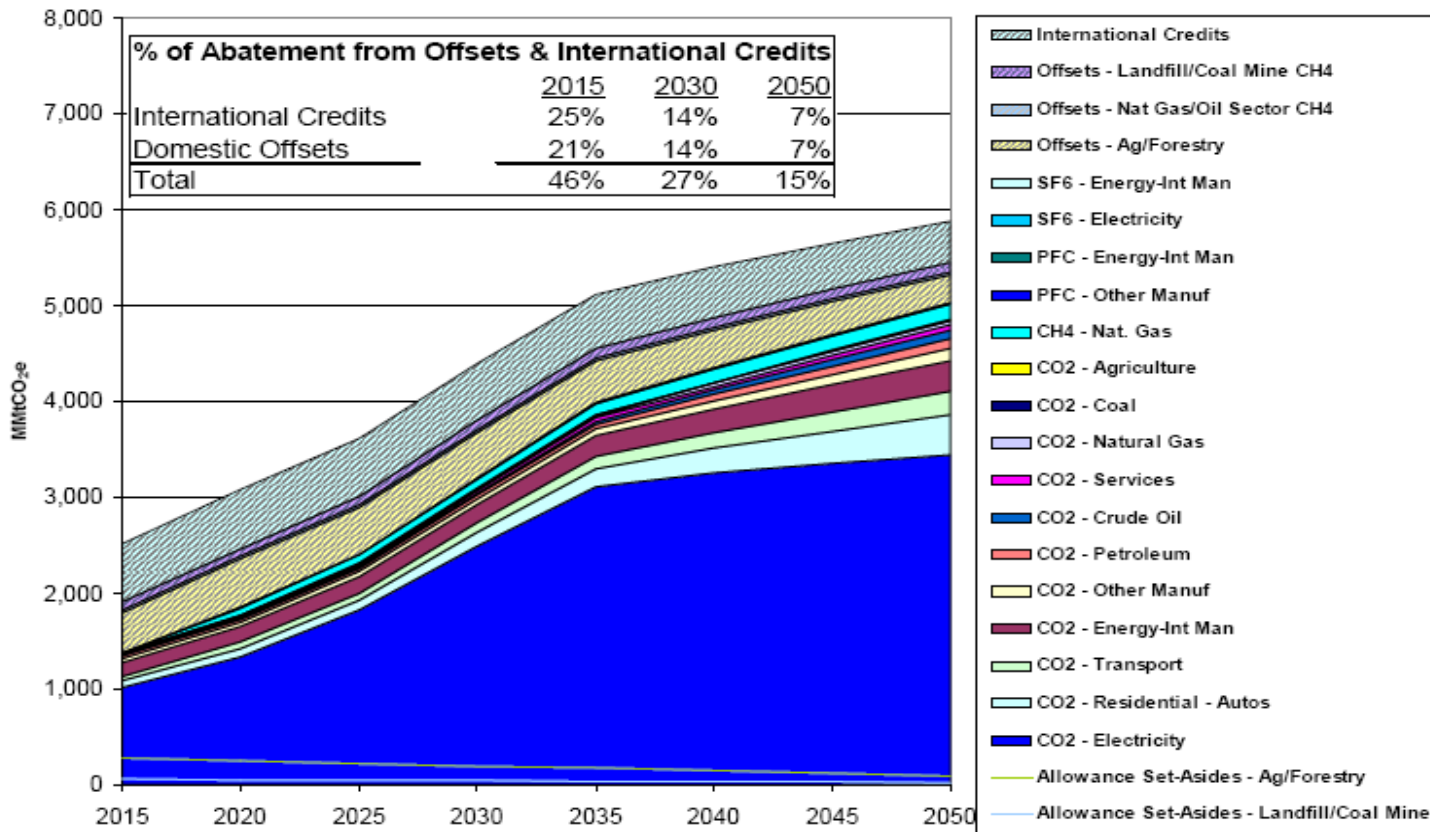
- Beginning 2012, covered entities may satisfy up to 15% of total allowance submission requirements by submitting offset allowances, which are additional to the total quantity of emissions allowances established for each year.
 - *Eligible Activities*
 - *Agricultural/Rangeland Sequestration (altered tillage, winter overcropping, continuous cropping, etc, conversion of cropland to rangeland/grassland, reduction of nitrogen fertilizer use, reduction of rice paddy flooding, reduction in carbon emissions from organic soils),*
 - *Forestry Activities (afforestation, reforestation, forest management),*
 - *Manure Management (waste aeration, methane capture and combustion)*
 - *Others (capture of fugitive emissions, methane capture/combustion at non-agricultural facilities, etc)*
- Pre-existing Projects
 - Offsets/allowances submitted under other, prior Federal/State/Private programs can be submitted to the registry provided they meet appropriate requirements.
- International Credits
 - Covered facilities may satisfy up to 15% of their allowance requirements by submitting allowances obtained in foreign markets provided they meet appropriate requirements.

- ▶ S.2191 introduced October 2007
- ▶ Reported out of committee December 2007
- ▶ Floor debate in June 2008, if Senate gets to cloture
- ▶ Current cloture vote count
 - 50 aye
 - 29 nay
 - 21 uncommitted
- ▶ Six Senators (Boxer, Lieberman, Warner, Baucus, Bingaman, Specter) seeking agreement to get to 60
 - Would include price safety valve like seen in Bingaman-Specter
- ▶ Due to the lack of a house matching bill on the horizon and presidential opposition, it is not likely that bill would become law in 2008
 - May be pulled by Senator Reid before vote because of difficult economic climate and impact on constituents

- President Bush's slow, stop, reverse emissions designed to give Senate Republicans political cover
 - Stop U.S. emissions growth after 2025
- All three contenders for the Presidency are vehement supporters of a Cap and Trade approach
- Post-Kyoto international agreement to be negotiated in Copenhagen, December 2009
- U.S. likely to seek a post-Kyoto target in line with domestic cap and trade targets
- Suggests law to be signed Fall 2009

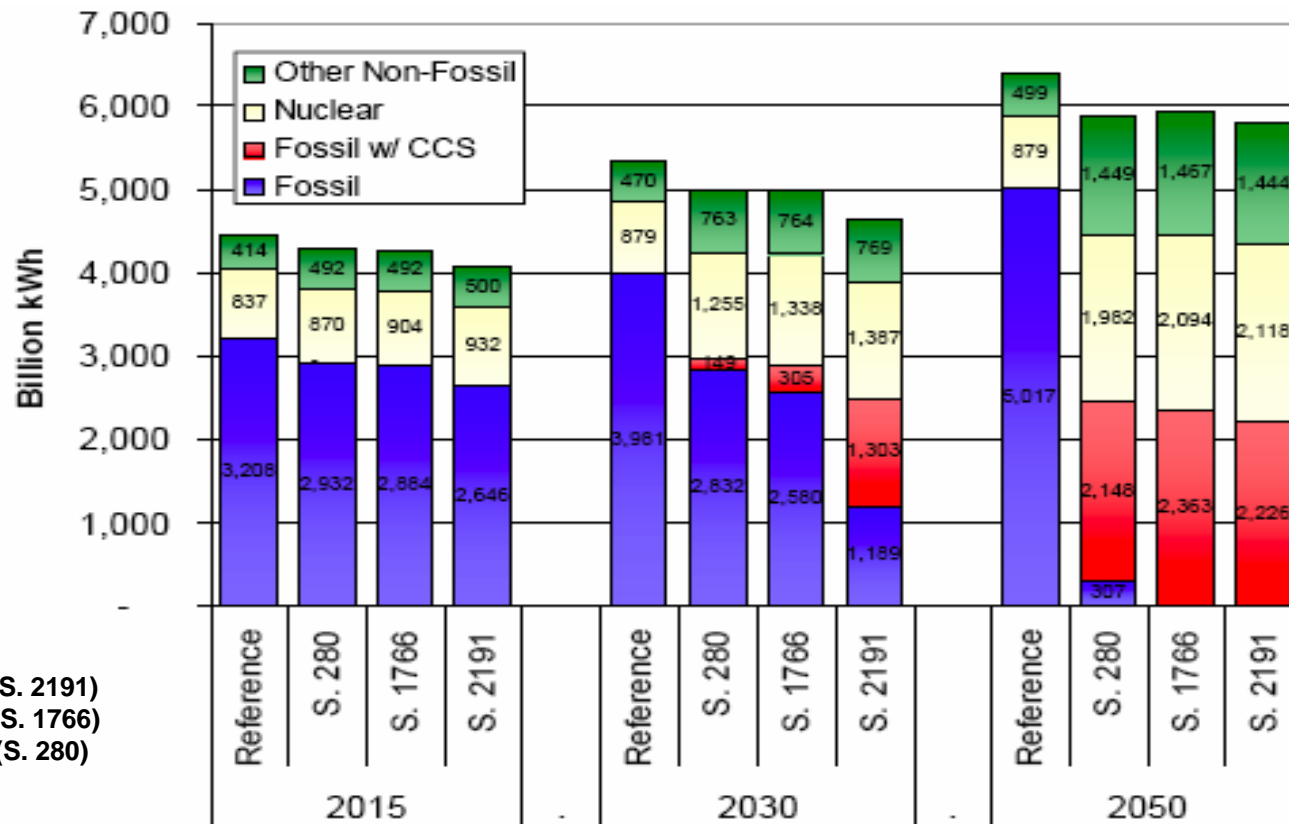
- Allowance prices act very much like a tax on the end-user
 - Gasoline Consumers
 - ✓ *1 cent per gallon per each \$1.00 per ton of carbon tax or allowance price*
 - Electricity Consumers
 - ✓ *1 cent per kWh for each \$16.00 per ton of carbon tax or allowance price*
 - Natural Gas Consumers
 - ✓ *5 cents per MMBTU for each \$1.00 per ton carbon tax or allowance price*

Sources of GHG Abatement



Source: EPA Analysis of S. 2191
Scenario 2 (ADAGE)
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf

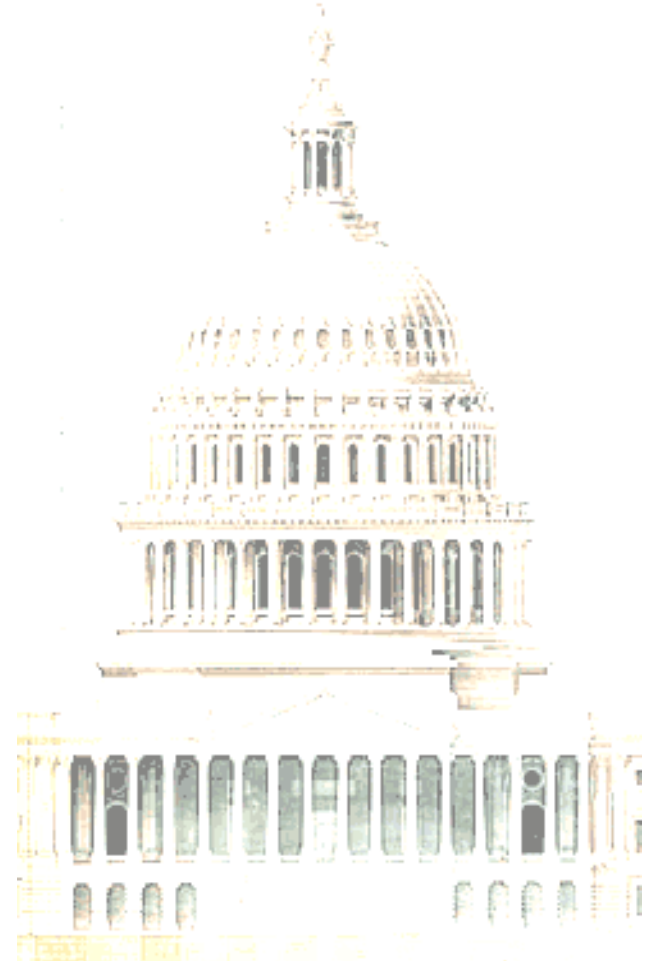
Policy Comparison: Electricity Generation



Lieberman Warner (S. 2191)
Bingaman-Specter (S. 1766)
Lieberman-McCain (S. 280)

Source: EPA Analysis of S. 2191 (ADAGE)
http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf

- ▶ Targets and time periods
- ▶ Allocation method
 - Auctioning vs. “grandfathering”
- ▶ Sectors included
- ▶ Scope
 - Upstream vs. Downstream
- ▶ Early action credit
- ▶ Linkage to international systems
- ▶ Price control mechanisms
 - Safety Valves, Carbon Boards
- ▶ Use of offsets
- ▶ Addition of other policies and measures
 - Provision for clean technology
 - National Renewable Portfolio Standards





Please contact us to discuss how SAIC's energy and climate change teams can help you:

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