Overview of U.S. Climate Policy

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Discussion Overview

- Climate policy basics
- A look at state and regional efforts
- Business community support for climate policy
- Recent history of federal climate policy
- New Administration and Congress
- What's next?

Pew Center on Global Climate Change

- Founded in May 1998
- Independent, non-profit, non-partisan
- Divided into five major program areas:
  - Scientific Studies/Analyses
  - Domestic and International Strategies
  - Outreach Activities
    - Business
    - States
  - Solutions
  - Communications

Climate policy basics

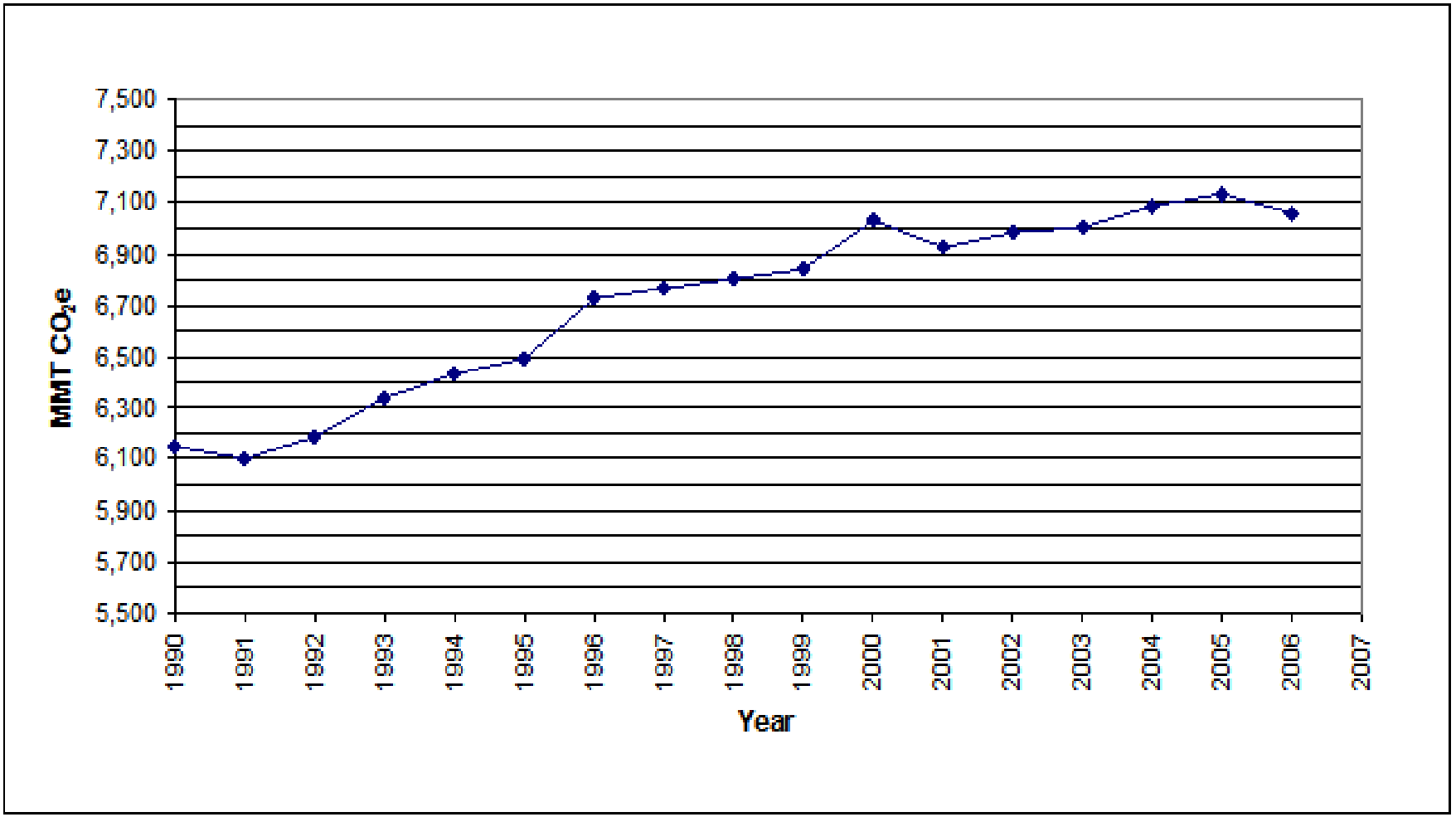
A two-tiered climate policy

"Avoiding the unmanageable and managing the unavoidable"*

- Avoiding the unmanageable → mitigation
  - Emissions reduction policies at state, regional, federal, and international levels
- Managing the unavoidable → adaptation
  - Preparedness, resilience, ecosystem management, protecting vulnerable populations

*Title of the UN Foundation Scientific Expert Group Report on Climate Change and Sustainable Development

U.S. GHG Emissions 1990-2006



Source: US EPA

Mitigation = a price on GHGs

- Currently, GHGs can be emitted into the atmosphere for free, but the impacts of these emissions impose real costs on society
- Setting a price on GHG emissions corrects this
- Thousands of sources, thousands of solutions
- We know how to get significant GHG reductions
- Challenge is to get the vast reductions we need and produce new, low-carbon innovation

→Markets are especially well-suited to dealing with climate change

Carbon tax basics

- Sets a price on GHGs equal to the tax.
- Establishes a predictable price.
- Drives reductions that cost less than the tax.

- Key Design Issues for Carbon Taxes
  - Setting the tax rate
  - Distributional equity
  - Political considerations
  - Linkages across jurisdictions

Cap and trade basics

- Sets a cap for each year – the upper limit for emissions
  - Total number of allowances determined by cap.
  - Allowance: a limited right to emit GHGs. Generally, 1 ton CO2e = 1 allowance.
- Markets drive low cost emission reductions:
  - Covered entities must hold allowances equal to emissions.
  - Covered entities that can reduce emissions at low cost will either buy fewer allowances or sell their allowances to those that cannot.
  - Trading sets the market price for GHG emissions.

Carbon Tax vs. Cap-and-Trade

	Carbon Tax	Cap-and-Trade
Emission reduction levels	Uncertain	Certain; Set by cap
Price of emissions	Set at level of tax	Function of supply and demand
Provides market signal to reduce emissions, spur innovation	Yes	Yes
Revenue source	Yes	Yes, if allowances auctioned
Prior experience	Norway; Sweden British Columbia; Quebec Boulder, CO; Bay Area, CA	EU Emissions Trading System for CO_2 New Zealand; Australia 24 US states developing/ participating in GHG cap-and-trade programs U.S. programs for non-GHG pollutants

Why Cap and Trade?

Advantages of cap and trade:

- GHGs are well-mixed in the atmosphere, therefore…
  - The location of reductions is irrelevant
  - Might as well get the cheapest reductions first
- Making the policy fit the environmental goal
- International linkage
- Providing positive incentives to innovation
- Growing support and experience

But keep in mind…

- Some sectors are difficult to address through cap and trade. Other policy mechanisms (R&D, sectoral programs) will likely be needed as well

What is Cap and Trade?

Cap and trade basics:

- Determine what facilities and GHG gases are covered by the policy
- Set the level of allowable GHG emissions – the “cap”
- Distribute tradable allowances (permits to emit) to the covered facilities
- Covered facilities must hold enough allowances at the end of the compliance period to cover their emissions
- Those facilities with excess allowances can sell - or “trade” - allowances to facilities that do not have enough to cover their emissions
- Trading occurs because firms face different costs of reducing emissions
- The “cap” declines over time creating scarcity and a robust market for allowances

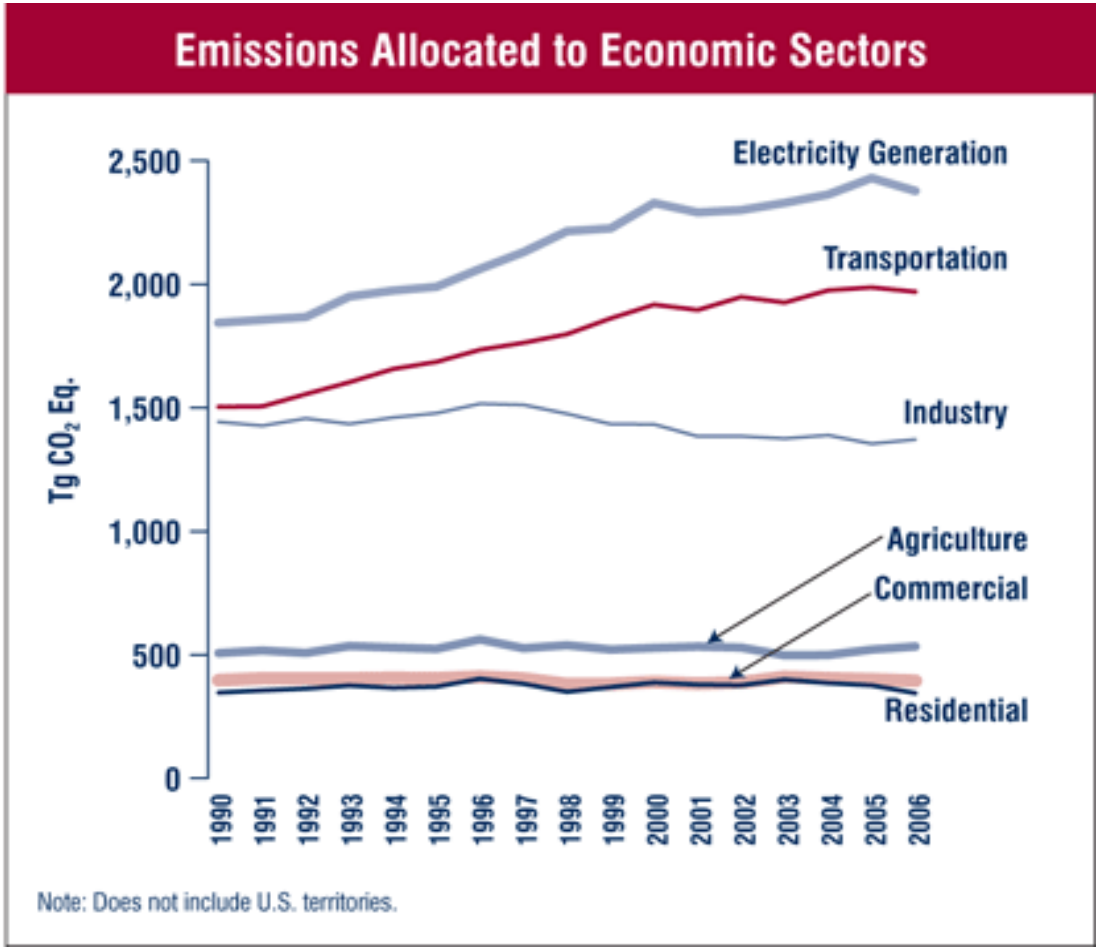
Cap and trade puts a price on GHG emissions and creates an incentive to reduce emissions

Design Decisions

- Must establish:
  - Targets and timetables
  - Scope and point of regulation
  - Allowance distribution
  - Cost containment/flexibility mechanisms
  - Use of offsets

Design Decisions – Scope & Point of Regulation

- Who should be covered?
  - More sources and gases = broader range of opportunities for low-cost reductions
  - Too many small sources can make the program too administratively complex
- Include what works well in the market before turning to regulation
  - Cover all GHGs in all major emitting sectors
  - Large point sources



Source: INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2006 (USEPA #430-R-08-005)

Design Decisions - Allowance Distribution

- Allocation is primarily a distributional question—it does not affect overall environmental benefits or costs of meeting program targets
- However, if auction proceeds are used to reduce distortionary taxes, a net economic gain to society could be realized
- Either auction proceeds or allowances can be:
  - Used to achieve program goals such as maintaining competitiveness, supporting technology investment, reducing impacts of the transition to regulated firms and affected consumers, etc.
  - Distributed to folks other than covered entities such as consumers, workers, companies not covered by the program, etc (point of allocation can differ from point of regulation)
- Allowances can be kept separate from other forms of revenue

Design Decisions – Cost Containment

- Banking and borrowing of allowances – gives compliance flexibility
- Safety valve – sets limit on price of allowances
- Offsets
  - Allow entities outside the capped sector to participate and reduce emissions
  - Examples include methane capture, credits from other programs
  - Need criteria for inclusion to ensure that reductions are real, additional, measurable, etc.

Market Fundamentals

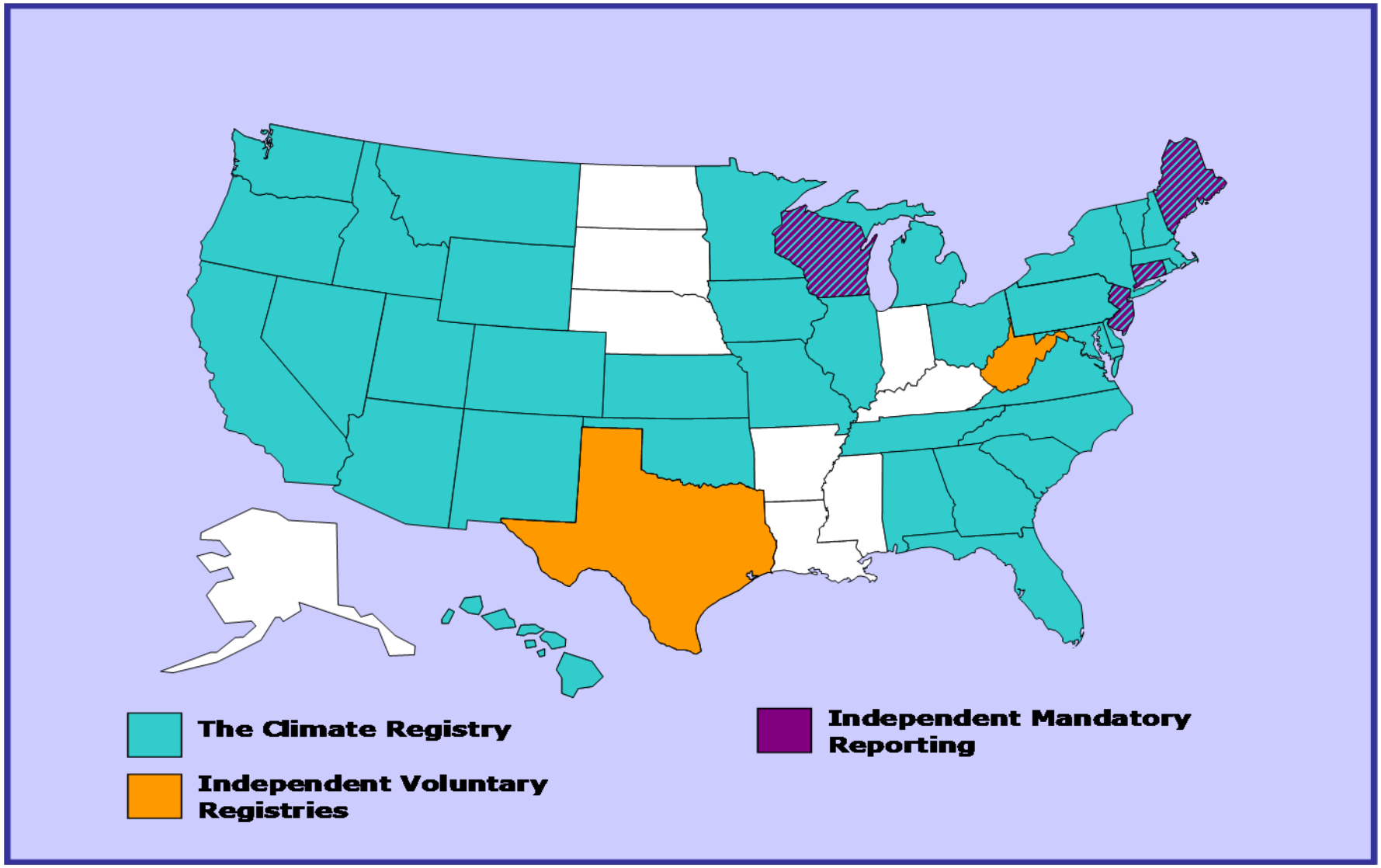
- Measurement, monitoring and reporting
- Allowance tracking
- Consistent and transparent rules
- Good enforcement
- Minimize transaction costs

Tough questions to answer

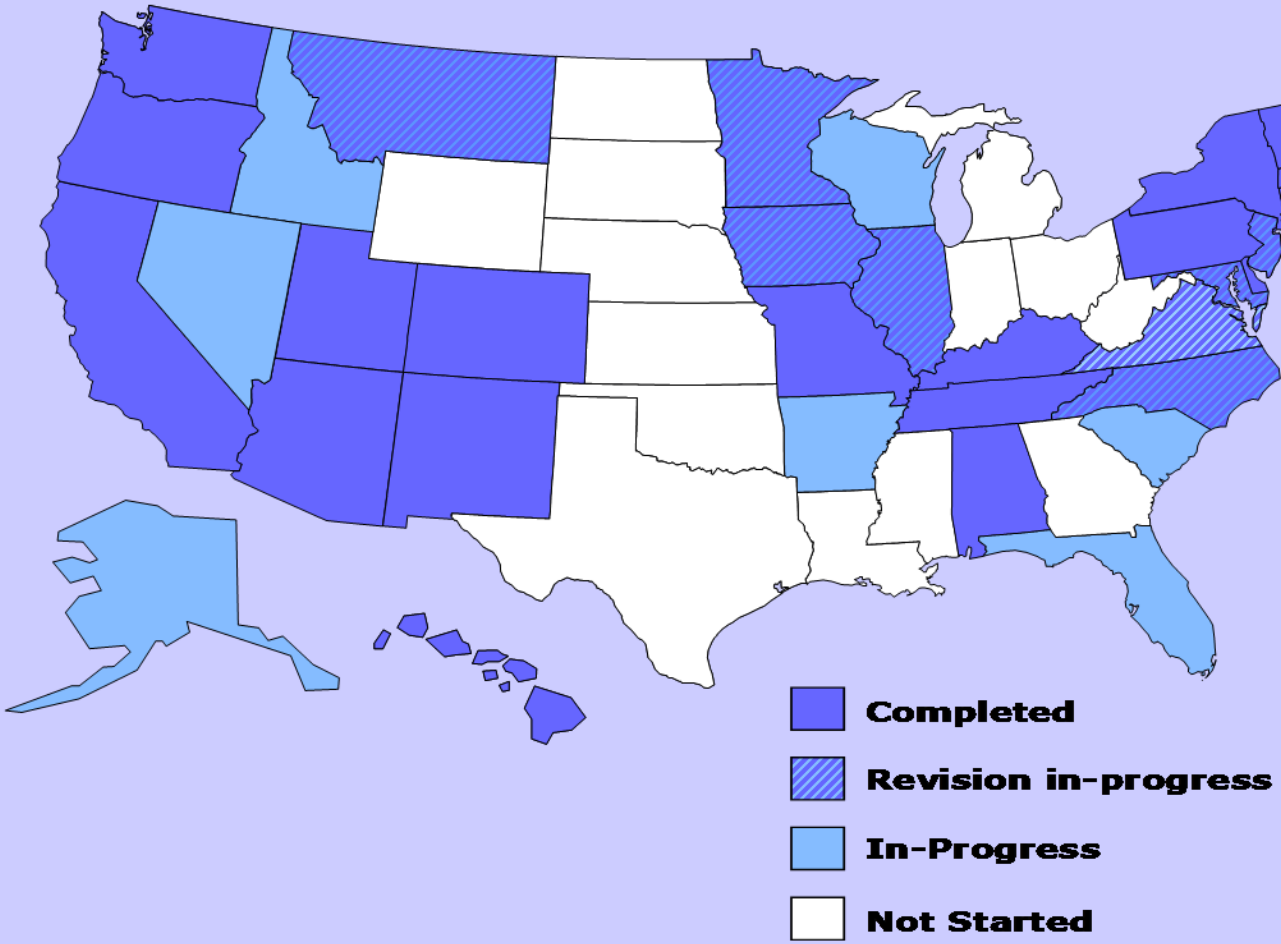
- What targets and timetable?
- Which industries are covered by program?
- How to allocate or auction GHG allowances? How to contain program costs?
- How to ensure offset quality?
- How to promote rapid deployment of low-carbon technologies? (including carbon capture & sequestration of coal power emissions)
- How to protect US manufacturers from price advantage for imports from countries without GHG mitigation programs?

A look at state and regional efforts

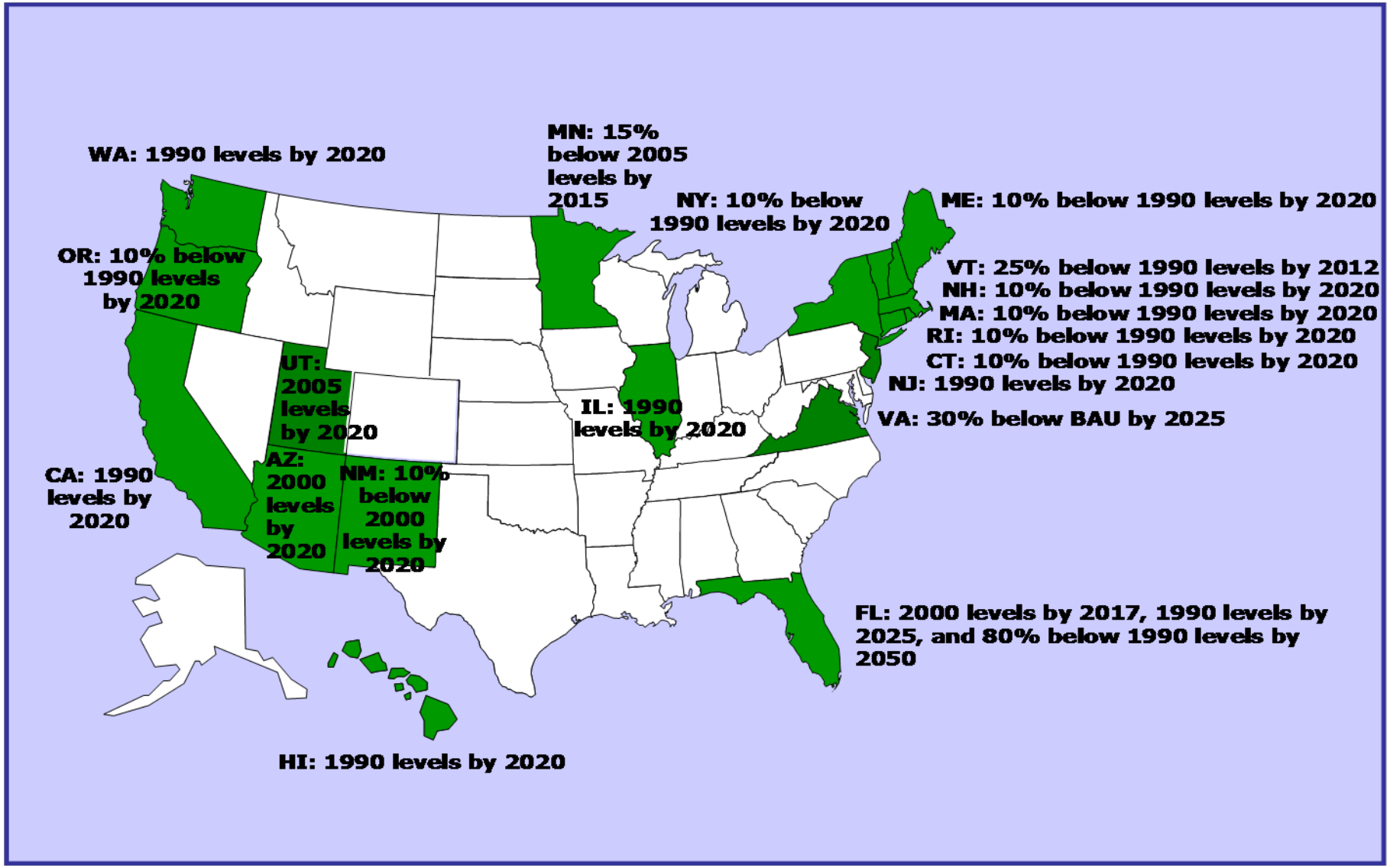
GHG Reporting and Registries



Climate Action Plans

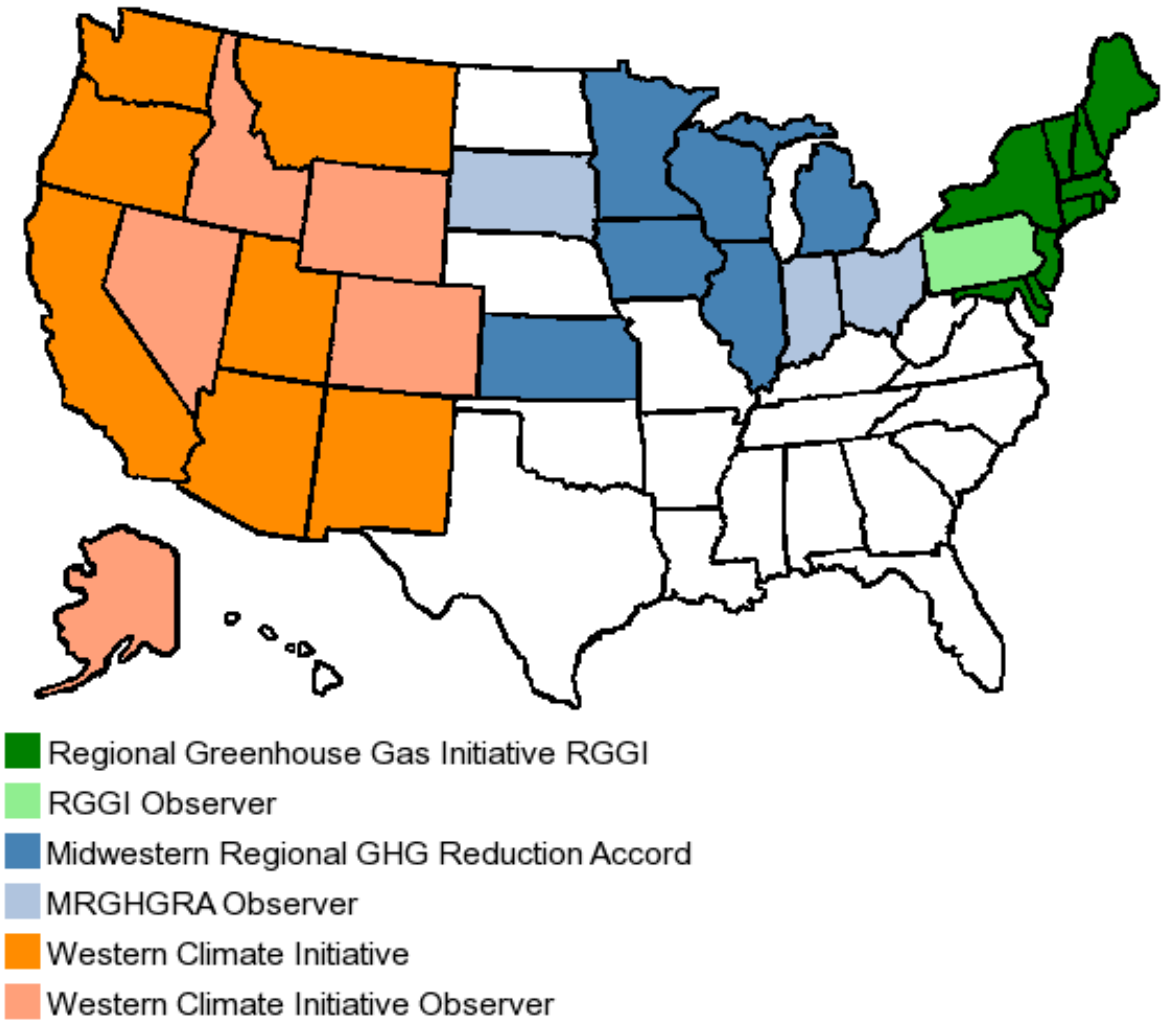


19 States with GHG Emission Targets



U.S. GHG Cap-and-Trade Programs

- 24 states participating in/developing cap and trade
- These states emit ~42% of total US emissions
- Three regional cap-and-trade programs
- Florida is developing its own program and considering linking with one or more regional programs



Appropriate Roles for State and Federal Government

- States have historical role as first-movers and policy innovators on important environmental issues, especially in the area of climate change
- On the other hand, national policy is needed to comprehensively address climate change.
- Relevant question is which level of government should tackle which parts of the challenge.
  - Role of states in implementing cap and trade
  - Role of states in allowance distribution
  - Role of states in complementary policies (transportation, land-use planning, renewable energy)

Business community support for climate policy

42 BELC Companies

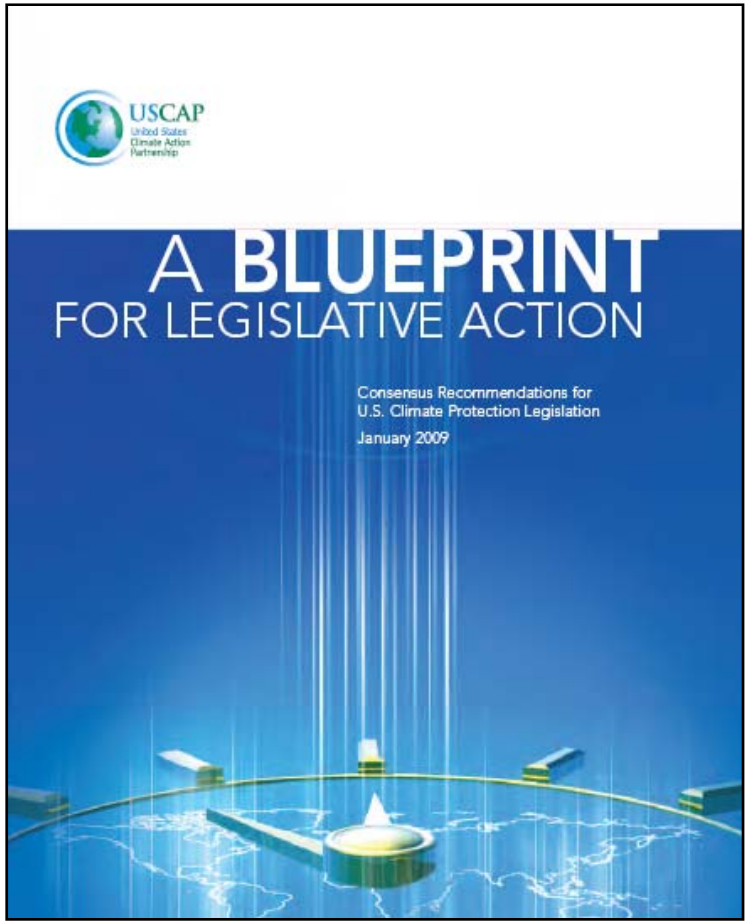
USCAP Partnership

USCAP Recommendations - January 2007

- Economy-wide cap-and-trade system is essential to create market price signal for GHGs
- Additional policies/measures where price signal alone is not sufficient
  - Transportation
  - Power generation
  - Buildings and energy efficiency
- Technology research, development, demonstration, and deployment
- Need for renewed U.S. leadership in international efforts

USCAP Recommendations - January 2009

- Working to urge the Administration and Congress to take immediate action
- Well-crafted federal legislation can:
  - Create meaningful action to slow, stop and reverse greenhouse gas emissions
  - Spur innovations in new technologies
  - Enhance energy security
  - Increase investment and provide the foundation for a low-carbon economy
  - Eliminate the economic cost of uncertainty



Business Developments

- Growing belief in US industry that climate action is now inevitable and possibly desirable
- Increasing number of businesses:
  - Want regulatory certainty
  - Concerned that US EPA will regulate GHGs using Clean Air Act authority in response to Supreme Court ruling (Mass v EPA)
  - Concerned with state action
  - Concerned with US public pressure
  - Already experienced GHG regulation in European Union
  - Want United States to influence post-2012 treaty negotiations

Recent history of federal climate policy

US Federal Action to Date

1992

- President George H.W. Bush supports UN Framework Convention on Climate Change (UNFCCC)
- Senate quickly ratifies UNFCCC
  - Objective: "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system"
  - UNFCCC greenhouse gas reductions voluntary

US Federal Action to Date

1993 - 2000

- Senate passes Byrd-Hagel resolution opposing U.S. participation in a climate treaty that does not require GHG reduction commitments from developing countries, 95 – 0 (1997)
- Clinton supports 1997 Kyoto Protocol, but offers no legislation to meet Kyoto's requirements
- In Congress, a "No Man's Land" between Kyoto and do-nothing

US Federal Action to Date

2001 – 2006

- G.W. Bush opposes Kyoto, breaks promise to limit power plant CO2 emissions (2001)
- Democrats and moderate Republicans begin to offer climate proposals (2001)
- Large minority of Senators vote for McCain-Lieberman GHG cap-and-trade bill (2003)
- Majority of Senators vote for nonbinding resolution supporting mandatory climate action (2005)

Congressional Debate 2007 - 2008

2007 – 2008

- In 110th Congress (2007-2008) there were at least 213 hearings held and 235 bills introduced
- 2007 Energy Bill has effect on GHG emissions:
  - Vehicle efficiency standards
  - Renewable fuel standard
  - Appliance efficiency standards
- Today in Washington, “climate bill” generally = GHG cap-and-trade bill

Cap and Trade Bills in the 110th

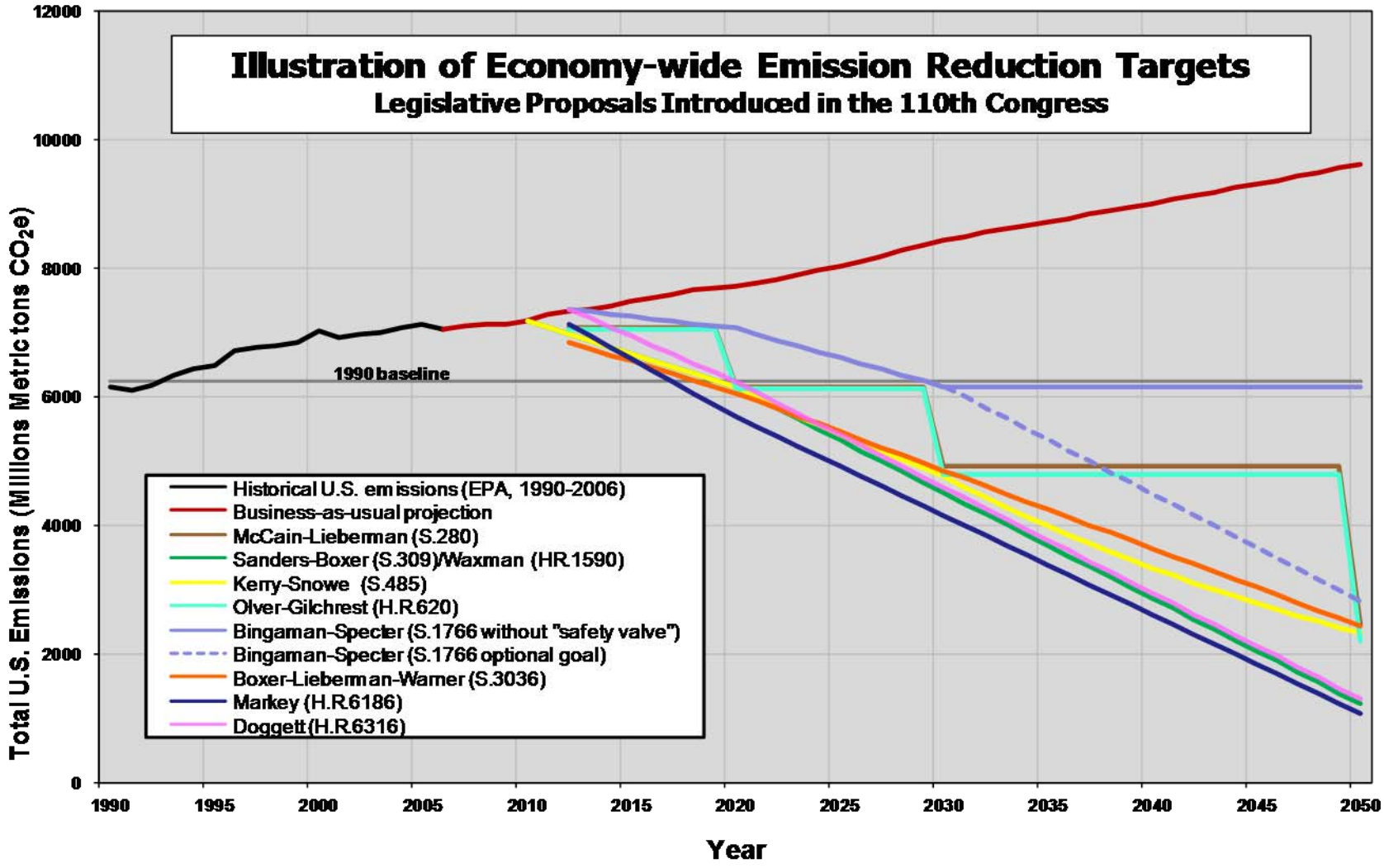
Senate

- Lieberman-Warner: economy-wide, funds for technology, adaptation, and mitigating impacts. Approximately 66% below total U.S. 2005 emissions levels by 2050
- Bingaman-Specter: offsets, "safety valve" of $12/ton rising 5%/year above inflation, funds and bonus allowances for tech R&D. Aspires to ≥ 60% below current by 2050. Requires aggressive external policies to avoid safety valve
- Lieberman-McCain: economy-wide, technology title. 60% below 1990 in 2050
- Sanders-Boxer: economy-wide, cap & trade permitted but not required, other sectoral standards. 80% below 1990 in 2050
- Feinstein-Carper: electricity sector only, funds for tech R&D. 25% below 1990 in 2050
- Kerry-Snowe: economy-wide, other sectoral standards, funds for tech R&D. 62% below 1990 in 2050

House

- Dingell-Boucher: discussion draft: economy-wide, covers 88% of GHG emissions, modest start but steep long-term reductions, pre-emption of state cap and trade and lists options to pre-empt CAA transport authority
- Markey: economy-wide (7 GHGs), almost 100% auction with proceeds to tax rebates for energy consumers, 85% below 2005 levels in 2050
- Olver-Gilchrest: economy-wide, 60% below 1990 in 2050
- Waxman: economy-wide, cap & trade permitted but not required, funds for tech R&D, other sectoral standards. 80% below 1990 in 2050

Cap and Trade Bills in the 110th



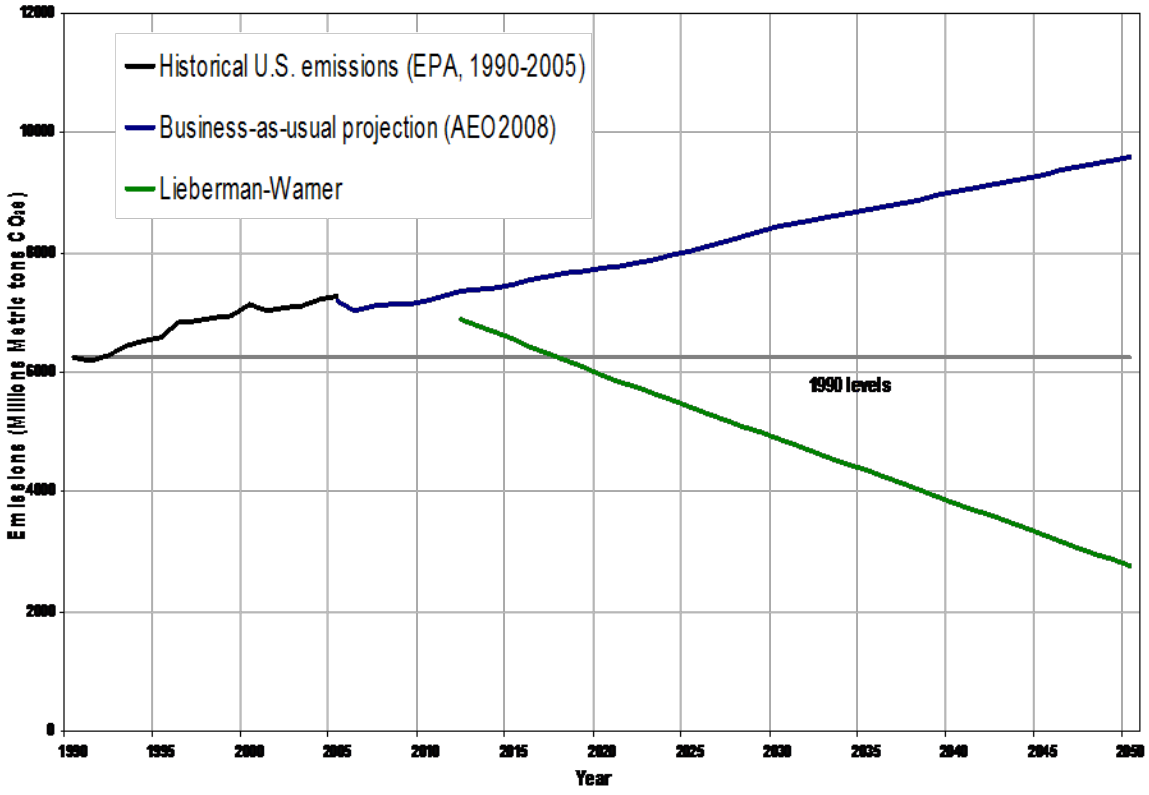
Lieberman-Warner Highlights

- Covered sectors represent approximately 87% of total U.S. emissions
  - Downstream on coal (power plants and industries using over 5,000 tons of coal per year)
  - Upstream (producers and importers) on natural gas, petroleum, or coal-based liquid or gas fuels (assuming no sequestration or destruction)
  - Manufacturers or importers of >10K t/CO_2e of GHGs (e.g., SF_6, PFCs) assuming no sequestration/destruction
  - Facilities that emit HFCs (>10K tons) as byproduct of HCFC production (note: separate cap for HFC consumption)

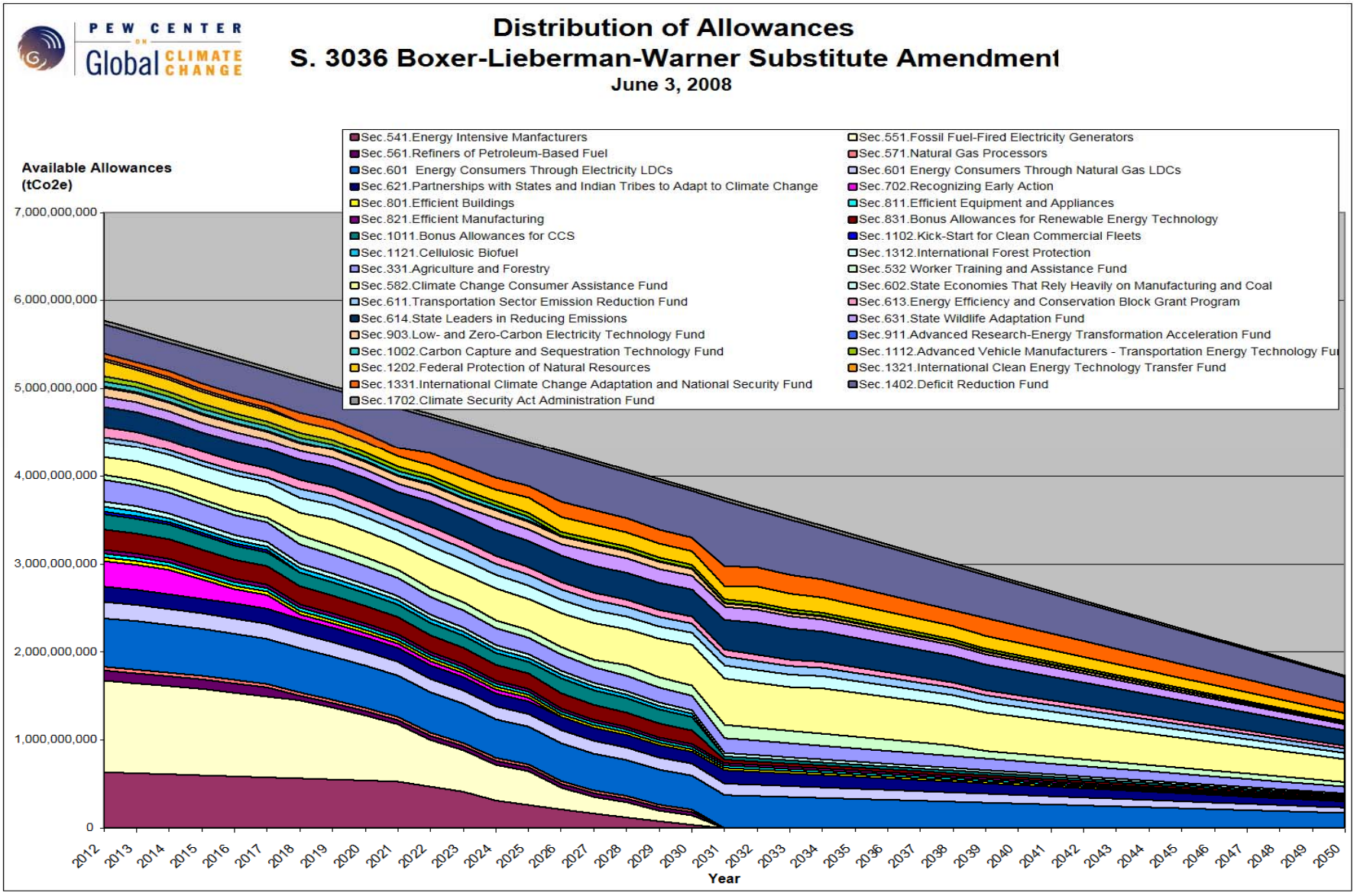
  But…
  - Many industrial process emissions are not covered (e.g., cement, lime, and aluminum production) totaling roughly 104 MtCO_2e (1.4% US emissions)
  - Emissions from agriculture, landfills, etc. not covered – 826 MtCO_2e (11% US emissions)

Lieberman-Warner Targets

- Emissions caps require reductions across covered sectors below 2005 levels as follows:
  - 2012: 4%
  - 2020: 19%
  - 2050: 71%
- Reductions in total U.S. emissions would depend on the growth in uncovered sectors, use of offsets, etc.



Lieberman-Warner Allocation



Note: Does not include cost-containment provisions

Lieberman-Warner Debate

Senate held a “debate” on Boxer-Lieberman-Warner GHG cap-and-trade bill, June 2 – 6, 2008 :

- Debate was very disappointing
- No votes were held on amendments
- No final vote was held on the bill itself
- The vote on whether to amend and have a final vote on bill failed
- Too much discussion of gasoline prices and the economy
- Too little understanding of the negligible effect of B-L-W bill would have on gasoline prices and economy

Lieberman-Warner Highlights

Cloture votes on Boxer-Lieberman-Warner (S.3036)

Yes: 48

Akaka (D-HI)	Inouye (D-HI)	**Pryor** (D-AR)
Baucus (D-MT)	Kerry (D-MA)	Reed (D-RI)
Bayh (D-IN)	Klobuchar (D-MN)	Reid (D-NV)
Bingaman (D-NM)	Kohl (D-WI)	Rockefeller (D-WV)
Boxer (D-CA)	Lautenberg (D-NJ)	Salazar (D-CO)
Cantwell (D-WA)	Leahy (D-VT)	Sanders (I-VT)
Cardin (D-MD)	**Levin** (D-MI)	Schumer (D-NY)
Carper (D-DE)	Lieberman (ID-CT)	**Smith** (R-OR)
Casey (D-PA)	**Lincoln** (D-AR)	Snowe (R-ME)
Collins (R-ME)	**Martinez** (R-FL)	Stabenow (D-MI)
Dodd (D-CT)	McCaskill (D-MO)	**Sununu** (R-NH)
Dole (R-NC)	Menendez (D-NJ)	Tester (D-MT)
Durbin (D-IL)	Mikulski (D-MD)	**Warner** (R-VA)
Feingold (D-WI)	Murray (D-WA)	Webb (D-VA)
Feinstein (D-CA)	Nelson (D-FL)	Whitehouse (D-RI)
Harkin (D-IA)	**Nelson** (D-NE)	Wyden (D-OR)

Ten signed letter indicating would not have voted for the Boxer substitute in its current form but expressing support for climate policy: Stabenow, Rockefeller, Levin, Lincoln, Pryor, Webb, Bayh, McCaskill, Brown, and Nelson

No: 36

Alexander (R-TN)	Corker (R-TN)	Johnson (D-SD)
Allard (R-CO)	Crapo (R-ID)	Kyl (R-AZ)
Barrasso (R-WY)	Domenici (R-NM)	Landrieu (D-LA)
Bennett (R-UT)	Dorgan (D-ND)	Lugar (R-IN)
Bond (R-MO)	Ensign (R-NV)	McConnell (R-KY)
Brown (D-OH)	Enzi (R-WY)	Roberts (R-KS)
Brownback (R-KS)	Grassley (R-IA)	Sessions (R-AL)
Bunning (R-KY)	Hagel (R-NE)	Shelby (R-AL)
Burr (R-NC)	Hatch (R-UT)	Thune (R-SD)
Chambliss (R-GA)	Hutchison (R-TX)	Vitter (R-LA)
Coburn (R-OK)	Inhofe (R-OK)	Voinovich (R-OH)
Cochran (R-MS)	Isakson (R-GA)	Wicker (R-MS)

Not Voting: 16

Biden (D-DE)	Craig (R-ID)	Murkowski (R-AK)
Byrd (D-WV)	DeMint (R-SC)	Obama (D-IL)
Clinton (D-NY)	Graham (R-SC)	Specter (R-PA)
Coleman (R-MN)	Gregg (R-NH)	Stevens (R-AK)
Conrad (D-ND)	Kennedy (D-MA)	
Cornyn (R-TX)	McCain (R-AZ)	

Six sent letters indicating would have voted yes if had been present: Biden, Clinton, **Coleman**, Kennedy, McCain, and Obama

Lieberman-Warner Highlights

Still, something can be learned from event

- Underlying B-L-W bill did not have enough support – perhaps no more than 35 – 40 Senators
- Nevertheless, a majority of U.S. Senators support mandatory climate action, probably in the form of GHG cap-and-trade
- However, the design of the cap-and-trade program is still very controversial
- Without strong presidential leadership, the debate could last for years

A new Administration and Congress

The New Political Landscape

President Obama Determined to Lead

"That we are in the midst of crisis is now well understood…. [E]ach day brings further evidence that the ways we use energy strengthen our adversaries and threaten our planet. …

For everywhere we look, there is work to be done. The state of the economy calls for action, bold and swift, and we will act - not only to create new jobs, but to lay a new foundation for growth. We will build the roads and bridges, the electric grids and digital lines that feed our commerce and bind us together. We will restore science to its rightful place, and wield technology's wonders to raise health care's quality and lower its cost. We will harness the sun and the winds and the soil to fuel our cars and run our factories. And we will transform our schools and colleges and universities to meet the demands of a new age. All this we can do. And all this we will do….

With old friends and former foes, we will work tirelessly to lessen the nuclear threat, and **roll back the specter of a warming planet**."

- President Barack Obama, January 20, 2009

Obama's Climate Team

Carol Browner White House Energy and Climate Czar	**Nancy Sutley** White House CEQ Chair	**John Holdren** White House Science Advisor
Hillary Clinton Secretary of State	THE WHITE HOUSE WASHINGTON	**Ray LaHood** Department of Transportation
Steven Chu Secretary of Energy	**Lisa Jackson** EPA Administrator	**Jane Lubchenco** NOAA Administrator

The 111th Congress

U.S. Senate

- 58-42 D majority
- Majority Leader Reid
- EPW Chairman Boxer
- Need 60 votes for a bill
- Need 67 votes for treaty

U.S. House of Representatives

- 256-179 D House majority
- Speaker Pelosi
- EC Chairman Waxman
- Need 218 votes for a bill

What's next?

Predictions and Unknowns

- Most expecting enactment of national GHG legislation in 2010
  - Sen. Boxer expected to release cap and trade principles; Chairman Waxman has announced his intent to get a climate bill to the House floor by Memorial Day
  - Stars in alignment ➔ rapid progress or overreaching?
- What will EPA do with its Clean Air authority in response to the Supreme Court?
- International agreement in 2011 or 2012

Boxer Principles for Global Warming Legislation

1. Reduce emissions to levels guided by science to avoid dangerous global warming.

2. Set short and long term emissions targets that are certain and enforceable, with periodic review of the climate science and adjustments to targets and policies as necessary to meet emissions reduction targets.

3. Ensure that state and local entities continue pioneering efforts to address global warming.

4. Establish a transparent and accountable market-based system that efficiently reduces carbon emissions.

5. Use revenues from the carbon market to:
   - Keep consumers whole as our nation transitions to clean energy;
   - Invest in clean energy technologies and energy efficiency measures;
   - Assist states, localities and tribes in addressing and adapting to global warming impacts;
   - Assist workers, businesses and communities, including manufacturing states, in the transition to a clean energy economy;
   - Support efforts to conserve wildlife and natural systems threatened by global warming; and
   -Work with the international community, including faith leaders, to provide support to developing nations in responding and adapting to global warming. In addition to other benefits, these actions will help avoid the threats to international stability and national security posed by global warming.

6. Ensure a level global playing field, by providing incentives for emission reductions and effective deterrents so that countries contribute their fair share to the international effort to combat global warming.

EPA

- Supreme Court in Mass. V. EPA essentially ordered EPA to regulate GHGs;
- EPA has a number of options for moving forward
- Key questions:
  - How fast will EPA act?
  - Which parts of the Clean Air Act will it use?
- EPA likely has authority to do GHG cap and trade, but would be constrained
- Threat of EPA action may drive legislation

International Action

- U.S. likely to:
  - be constructive in international negotiations, but not repeat mistake of Kyoto in negotiating internationally first and then hoping to move domestically
  - enact domestic cap and trade and then commit to international agreement
    - *provided* it sees willingness by Europe to accept US target range, and by major developing economies to take on commitments of some sort
- So best possible outcome is:
  - U.S. domestic legislation, in the form of a cap and trade, in 2009-2010
  - An interim agreement in Copenhagen in 2009 on the structure of a post 2012 framework
  - A final global treaty agreed in 2010-2011

Executive Leadership is Critical

- Climate change is cross-cutting – the whole government is involved
- Climate change is intergenerational – need to look way beyond normal political time horizons
- Climate change is international – need to work with other countries
- Climate change is all-encompassing – the whole economy is involved
- Climate change requires a vision

For More Information

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