

# **Evolution and Current Status of GHG Emissions Mitigation Policies in the United States**

**Adam Diamant**

Manager, Economic Analysis

Global Climate Research Program

6<sup>th</sup> IEA-IETA-EPRI Emissions Trading Workshop

September 26-27, 2006

Paris, France

# U.S. National Context

- U.S. has been an active party to the UNFCCC since 1992
- Since 2000 emphasis on voluntary programs
  - EPA’s Climate Leaders
  - DOE’s 1605(b) program
  - DOE’s Climate Challenge – “Power Partners”
- More recently interest in role of technology development has increased
- Many national legislative proposals
  - McCain-Lieberman
  - Bingaman / NCEP Proposal
  - Others (e.g., Feinstein, Waxman, Udall-Petri...)
- Rapidly evolving state and regional initiatives
  - California (AB-32)
  - NE Regional GHG Initiative (RGGI)
  - Others



# Overview of U.S. Voluntary GHG Programs<sup>1</sup>

Program	Description
<b>US EPA – Climate Leaders</b>	Companies voluntarily establish a 5-10 year "aggressive" absolute or intensity-based GHG emissions reduction goal; report annual GHG emissions inventory to U.S EPA.
<b>US DOE – 1605(b) Program</b>	Companies can “register” entity-wide reductions in GHG emissions intensity or “report” project-related reductions, based on new, more stringent regulations adopted in 2006.
<b>US DOE – Climate Vision (“Power Partners”)</b>	Companies can report GHG emissions reduction efforts that support achievement of sector-specific, intensity-based GHG reduction goals. Electric sector goal is to achieve a 3-5% reduction in GHG intensity (CO <sub>2</sub> /MWh) between 2002-2012.
<b>Chicago Climate Exchange (CCX)</b>	Members agree to reduce absolute GHG emissions ~6% by 2010 over an agreed-upon baseline. CCX includes private companies, state governments, cities, and others.

1. Other private voluntary GHG reduction efforts include Environmental Defense’s Partnership for Climate Action (PCA), the Pew Center - Business Environmental Leadership Council (BELC) and the Carbon Disclosure Project.

# Electric Company GHG Reduction Goals in EPA's Climate Leaders Program



Company	Voluntary Programs	GHG Reduction Goal
<b>AEP</b>	CCX, Climate Leaders	6% below average 1998-2001 baseline by 2010
<b>Cinergy</b>	BELC, Climate Leaders	5% below 2000 baseline by 2010-2012
<b>Entergy</b>	BELC, Climate Leaders	Stabilize emissions at 2000 baseline through 2005 (working on new goal)
<b>Exelon</b>	Climate Leaders	8% below 2001 baseline by 2008
<b>FPL</b>	Climate Leaders	18% reduction in GHG emissions per MWh from 2001 to 2008
<b>PSE&amp;G</b>	Climate Leaders	18% reduction in GHG emissions per MWh from 2000 to 2008

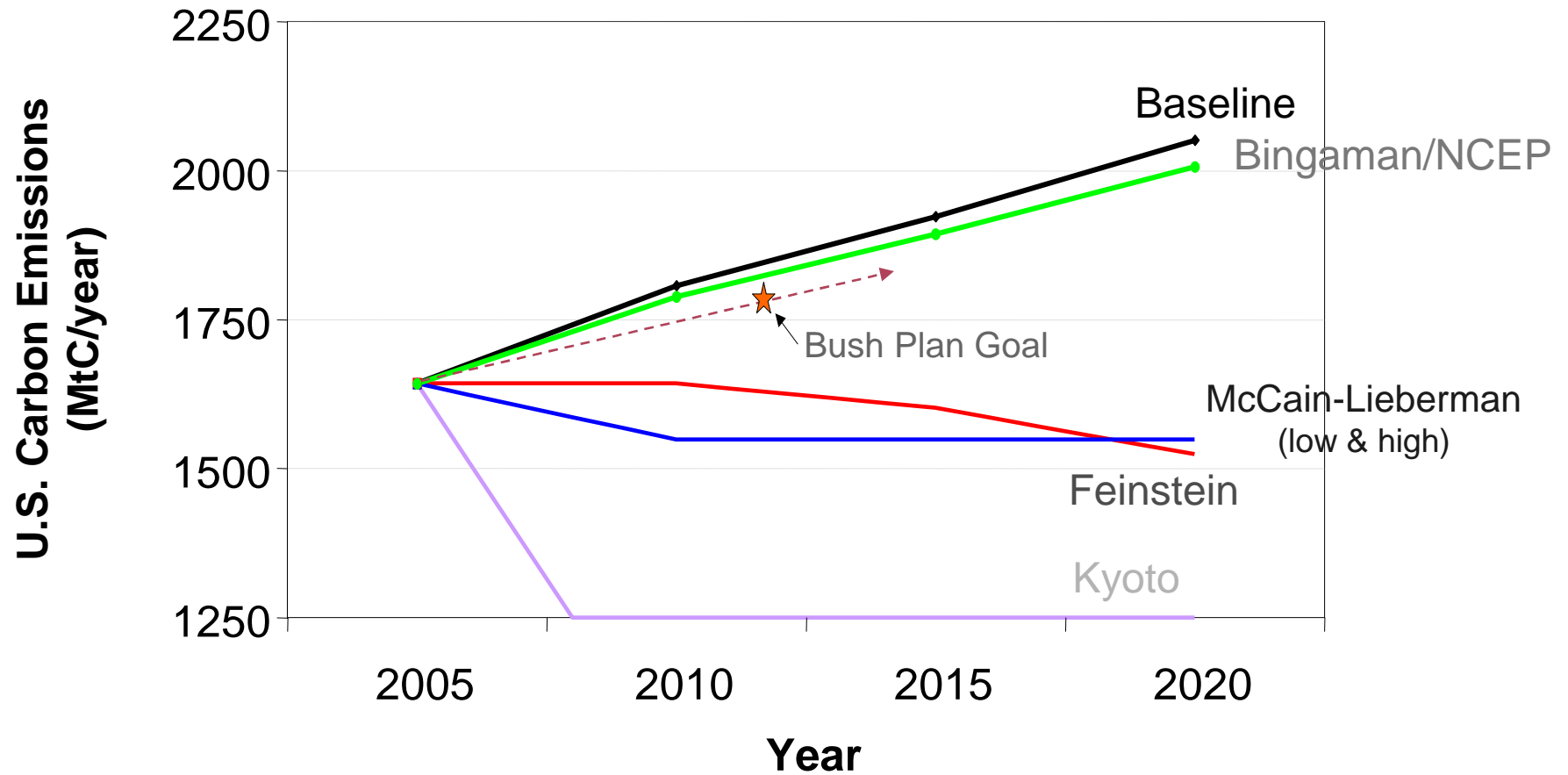
# McCain-Lieberman

- “Climate Stewardship and Innovation Act of 2005”
  - 2003 version (s.139) received 43 votes in the Senate
  - 2005 version (s.1151) received 38 votes in the Senate
- Key Elements
  - Cap-and-trade program for GHG emissions reductions
  - Covers about 85% of emissions
  - Covers all 6 GHGs
  - Goal: Reduce U.S. GHG emissions to 2000 levels by 2010-15.
  - Limits to 15% the emissions reductions to be derived from offsets and sequestration activities

# Bingaman Amendment / NCEP Proposal

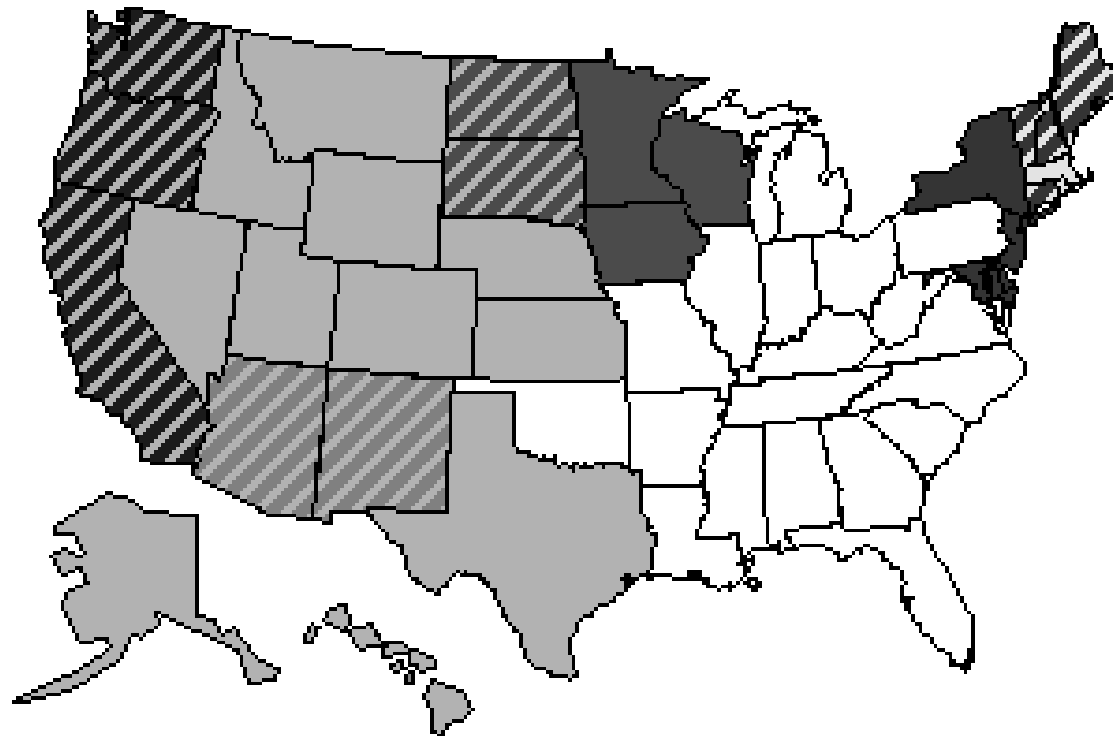
- A mandatory, economy-wide CO<sub>2</sub> emission trading program modeled on the work of the National Commission on Energy Policy (NCEP).
- Key Elements
  - Mandatory, economy-wide tradable-permit system;
  - 2.4% CO<sub>2</sub> emissions intensity reduction annually (based on preceding year) from 2010-2019;
  - 2.8% CO<sub>2</sub> emissions intensity reduction annually, from 2020-2024 and for each subsequent five-year period; and,
  - Inclusion of a CO<sub>2</sub> price “safety valve” of \$7 per tonne CO<sub>2</sub>e (nominal), increasing at 5% per year.







# Projected Emissions Paths under U.S. Proposals



Note: Results are from analysis using July 2005 version of MRN

# Regional GHG Initiatives

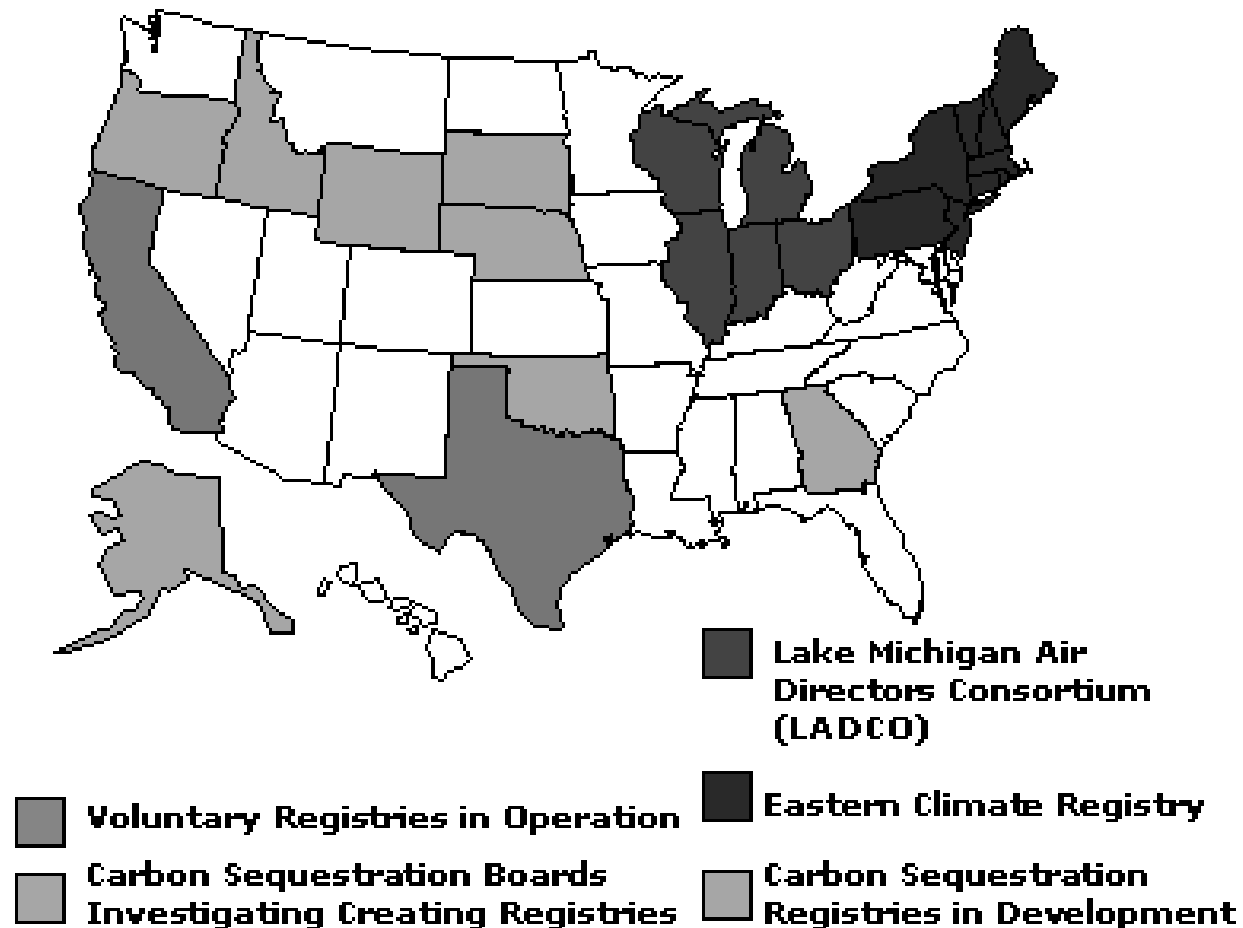


- |  |   |  |
|--|---|--|
|  <b>West Coast Governors' Initiative</b>    |  <b>Powering the Plains</b> |  <b>NEG/ECP</b> |
|  <b>Southwest Climate Change Initiative</b> |  <b>WGA</b>                 |  <b>RGGI</b>    |

Source: Pew Center on Global Climate Change website.  
[http://www.pewclimate.org/what\\_s\\_being\\_done/in\\_the\\_states/regional\\_initiatives.cfm](http://www.pewclimate.org/what_s_being_done/in_the_states/regional_initiatives.cfm)



# States with GHG Reporting & Registries



Source: Pew Center on Global Climate Change website.  
[http://www.pewclimate.org/what\\_s\\_being\\_done/in\\_the\\_states/regional\\_initiatives.cfm](http://www.pewclimate.org/what_s_being_done/in_the_states/regional_initiatives.cfm)

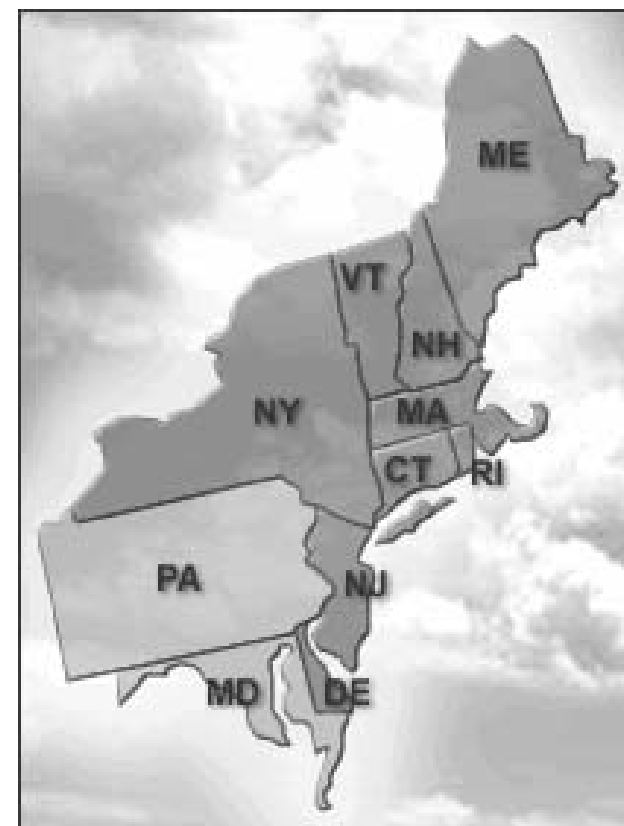
# US Regional GHG Targets & Timetables

Region	Baseline	GHG Goal	Period
<b>Arizona</b> <sup>1</sup> (E.O. 2006-13)	1. 2000 2. 2000	1. Maintain 2000 GHG level 2. Reduce 50% absolute	1. 2020 2. 2040
<b>California</b> <sup>2</sup> (AB-32)	1. 1990	1. Maintain 1990 level	1. 2020
<b>New Mexico</b> <sup>3</sup> (E.O. 2005-033)	1.2000 2.2000 3.2000	1. Maintain 2000 level 2. Reduce 10% absolute 3. Reduce 75% absolute	1. 2012 2. 2013-2020 3. 2021-2050
<b>RGGI</b> <sup>4</sup>	1. 2005 2. 2005	1. Maintain 2005 GHG levels 2. Reduce 10% absolute	1. 2009-2015 2. 2016-2019

- Notes:
1. Signed September 8, 2006.
  2. Passed by the CA legislature August 31, 2006; expected to be signed by Governor.
  3. Signed June 9, 2006.
  4. MOU signed December 2005; "Model" rule issued August 2006.

# Northeast Regional GHG Initiative (RGGI)

- Involves 7 Northeast and Mid-Atlantic states
  - Connecticut, Delaware, Maine, New Hampshire, New Jersey, New York and Vermont
  - Observers: Pennsylvania
  - Dropped out: Massachusetts and Rhode Island
- Creates a multi-state electric power sector CO<sub>2</sub> cap-and-trade program
  - Coverage: electric power plants >25 MW
  - CO<sub>2</sub> targets in 3 phases:
    1. Caps CO<sub>2</sub> emissions at 2005 levels in 2009
    2. Maintains 2009 CO<sub>2</sub> level through 2015
    3. 10% reduction over 2005 levels required by 2019
  - Limited use of GHG offsets tied to “trigger prices”
  - Requires at least 25% of allowances to be auctioned
- Current Status
  - 7 states signed memorandum of understanding (MOU) in December 2005
  - In 2006, Maryland passed a new law requiring the state to join RGGI
  - Final “model rule” adopted August 15, 2006
  - Program to become operational starting January 1, 2009



# California (1 of 2)

- The Global Warming Solutions Act of 2006
  - CA legislature passed AB-32 on August 31, 2006
  - Establishes the first comprehensive mandatory statewide GHG emissions cap to be implemented in the U.S.
- GHG emissions cap
  - Achieve 1990 GHG emissions level by 2020
  - ~25% cut in GHG emissions compared to projected BAU
  - Covers all 6 GHGs
- Elements
  - Covers all industrial GHG emissions (electricity, oil and gas, cement...)
  - Includes GHG emissions associated with consumption of electricity generated in state and imported
  - Encourages but does not require GHG cap and trade program
  - Allows “Alternative Compliance Mechanisms” (i.e., GHG offsets)
  - Encourages “...development of integrated and cost-effective regional, national and international GHG reduction programs....” (i.e., linking)
  - Regulatory development period 2007–2011



## California (2 of 2)

- Executive actions by Governor Schwarzenegger
  - 2005 Executive Order calls for dramatic GHG reductions
  - Accelerated RPS to 20% by 2010 and is committed to 33% by 2020.
  - Created Climate Action Team to develop policy recommendations
- CA Public Utilities Commission
  - Established “loading order” for new energy resources
  - Adopted \$8/tCO<sub>2</sub> “carbon adder” for power procurement
  - Adopted “load-based” CO<sub>2</sub> emissions cap for “load-serving entities” (12/05)
  - GHG performance standard being developed for new generation, based on CO<sub>2</sub> emissions from CCGT. Passed by CA legislature in August 2006.
  - Authorized \$2B energy efficiency programs (2006-2008) and \$3B for new solar technology incentives (2006 – 2010).
- CA Climate Action Registry created and is now operational
- Motor vehicle rules adopted to reduce GHG emissions 30% by 2015

# Some Key U.S. Climate Policy Developments

- 1992 – U.S. ratified UNFCCC
- 1997 – U.S. helps lead Kyoto Protocol negotiations
- 2000 – George Bush elected President
- 2001 – U.S. and Australia repudiated Kyoto Protocol
- 2002 – Bush adopts national GHG intensity target (-18%; 2002-2012)
- 2003
  - McCain-Lieberman (s. 139) received 43 Senate votes
  - Northeast Regional GHG Initiative (RGGI) launched
- 2005
  - Senator Bingaman’s “Sense of Senate” Resolution passed 53-44
  - RGGI MOU adopted
  - U.S. helps launch Asia-Pacific Partnership (AP6)
- 2006
  - Bingaman–Domenici “white” paper and climate policy hearings
  - RGGI “model” rule adopted
  - California passes AB-32 the “Global Warming Solutions Act of 2006

# GHG Policy Trends in the U.S.

- Rapid evolution of regional and state-wide GHG policies
  - RGGI
  - California
  - Others
- Interest in covering more GHG emissions and more sectors
  - Six GHGs versus CO<sub>2</sub> only?
  - Electric sector only, multiple sectors or economy-wide policies?
  - Ongoing debate regarding “absolute” v. “intensity-based” GHG reductions
  - Substantial disagreement exists regarding how best to accomplish goals
- Growing interest in controlling potential GHG mitigation costs
  - Bingaman/NCEP includes CO<sub>2</sub> price “safety valve” (~\$7/tCO<sub>2</sub>)
  - RGGI includes supply-based “price triggers”
  - CA AB-32 provides Governor with “emergency” powers to postpone implementation
- Growing desire to provide technology incentives / goals
  - Incentives – Administration, Congress, States (e.g., Energy Policy Act of 2005)
  - Goals – NRDC technology-based portfolio proposal

# Contact Information

## **Adam Diamant**

Electric Power Research Institute (EPRI)

Manager, Economic Analysis

Global Climate Research Program

3420 Hillview Avenue

Palo Alto, CA 94304 USA

Tel: 001-510-260-9105

Email: [adiamant@epri.com](mailto:adiamant@epri.com)