



Climate Change Regulation in the U.S. – Will It Affect You and How To Prepare

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August 9, 2007

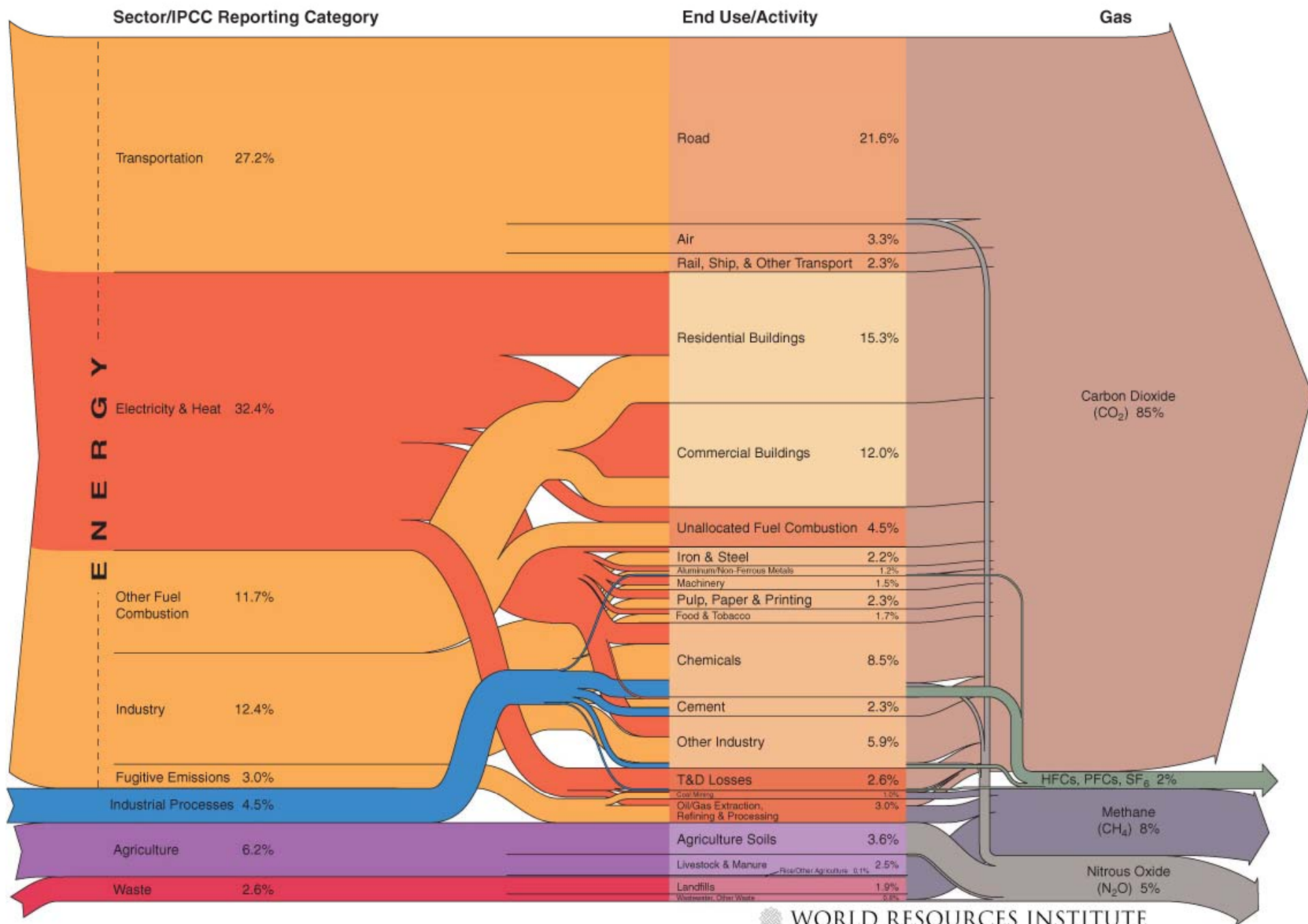
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Outline

- U.S. greenhouse gas (GHG) emissions
- Climate change litigation
- Current key regulatory initiatives
 - ◆ Federal
 - ◆ Regional
 - ◆ State
- Voluntary registries and initiatives
- What to do and why

U.S. GHG Emissions Flow Chart





Climate Change Litigation



Climate Change Litigation: Massachusetts v. EPA

- April 2007: Supreme Court Rules on GHG in *Massachusetts v. EPA*
 - ◆ Ruled 5-4 in favor of plaintiff
 - ◆ Ordered U.S. EPA to reconsider its decision to not regulate GHG from new motor vehicles
 - ◆ Stated U.S. EPA has the discretion to regulate from mobile sources (automobiles)
 - ◆ To not regulate, U.S. EPA must scientifically determine that GHGs do not contribute to climate change – otherwise, they must regulate



Climate Change Litigation: Massachusetts v. EPA

- **Outcomes of April 2, 2007 Supreme Court Decision:**
 - ◆ Plaintiffs' have legal standing to challenge EPA's denial of rulemaking petition
 - ◆ Greenhouse gases fit well into the CAA capricious definition of an "air pollutant" and can be regulated.
 - ◆ EPA can avoid taking further action only if it determines that GHGs do not contribute to climate change.
- **Short Term Impact** – California's regulation of car tailpipe emissions can move forward.
- **Long Term Impact** - EPA's position that it does not have regulatory authority over GHGs overruled by Supreme Court easing the way for regulations at a Federal level.

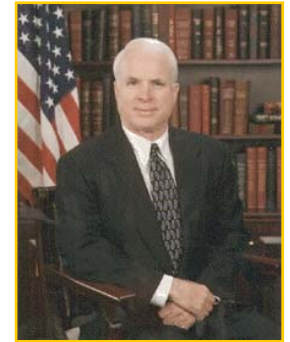


Federal Legislation

Federal Legislation

S.280 - Climate Stewardship and Innovation Act

- Establish a National Greenhouse Gas Database designed to collect, verify, and analyze greenhouse gas emissions data by entity
- Caps electric power, industrial, commercial and transport sectors
- Covered entities include companies, organizations, government agencies, etc. that own or control at least one single facility that emits greenhouse gases in excess of 10,000 metric tons of carbon equivalent per year
- Require covered entities to report greenhouse gas emissions beginning in 2011 for calendar year 2010
- Establish tradable greenhouse gas emission allowances that result in the following emission reductions:
 - ◆ Emissions to 1990 levels by 2020
 - ◆ Emissions 22% below 1990 levels by 2030
 - ◆ Emissions 60% below 1990 levels by 2050
- Establish an international credit plan by which covered entities can earn tradable allowances from project activities in developing countries resulting in certified emissions reductions (up to 30%)
- Promote expansion of nuclear power



John McCain,
R-AZ



Joseph Lieberman
I-CT



Federal Legislation

H.620 – Low Carbon Economy Act of 2007 (Bingaman-Spector)

- Emissions intensity targets (GDP-based) translated to an annual GHG cap
 - ◆ Emissions to 2006 levels by 2020
 - ◆ Emissions to 1990 levels by 2030
- Regulated entities include:
 - ◆ Regulated fuel distributors (natural gas pipelines, petroleum refineries, coal mines of a certain size, natural gas processing plants, and fuel importers)
 - ◆ Non-fuel regulated entities (producers or importers of HFCs, PFCs, SF₆, or N₂O; cement or lime producers; aluminum smelters; and various other non-fuel-related emitters)
- Initial cost of additional emission permits – \$12/metric ton then increasing by 5% above inflation annually
- Funds from permit sales would finance research in clean energy, compensate farmers for higher fuel costs, and help low-income families with energy bills
- U.S. would target green technology to China, India, Brazil and other developing nations
- If cleanup efforts in these nations were deemed inadequate (by the President), would impose fees on imports of carbon-intensive products (steel, automobiles, etc.)

Federal Legislation

Title/Sponsors	Scope	Target Level	Attributes
Global Warming Pollution Reduction Act (S.309) – Sanders and Leahy	Economy-wide	Stabilize at 450 ppm, 1990 levels by 2020, 80% below by 2050	Multi-sector cap-and-trade, national renewable energy quotas, energy efficiency goal, carbon sequestration
Global Warming Reduction Act (S.485), Kerry and Snowe	Economy-wide	Reduction to 60% below 1990 levels by 2050, at increasing annual reductions at 1.5% per year for the first ten years	National renewable fuels standard, national renewable energy quota of 20% by 2020
Safe Climate Act (HR 1590) , Waxman	Economy-wide	Cap at 2009 level in 2010, in 2011 emissions reduce 2% per year falling to 1990 levels by 2020. In 2021, cuts of 5% falling to 80% below 1990 levels by 2050	National renewable energy standard of 20% by 2020, Energy efficiency targets Bill has 139 co-sponsors
Climate Stewardship Act (HR.620), Olver and Gilchrest	Economy-wide	Current levels from 2012 to 2019, reduction of 15% by 2020, 38% in 2030, 75% by 2050 (70% below 1990 levels)	Same as McCain-Lieberman, except offset credits limited to 15% and early action credits limited to 20% of cap. No nuclear provisions, unlike McCain-Lieberman.

Source: Point Carbon North America, August 1, 2007, Legislation Summary

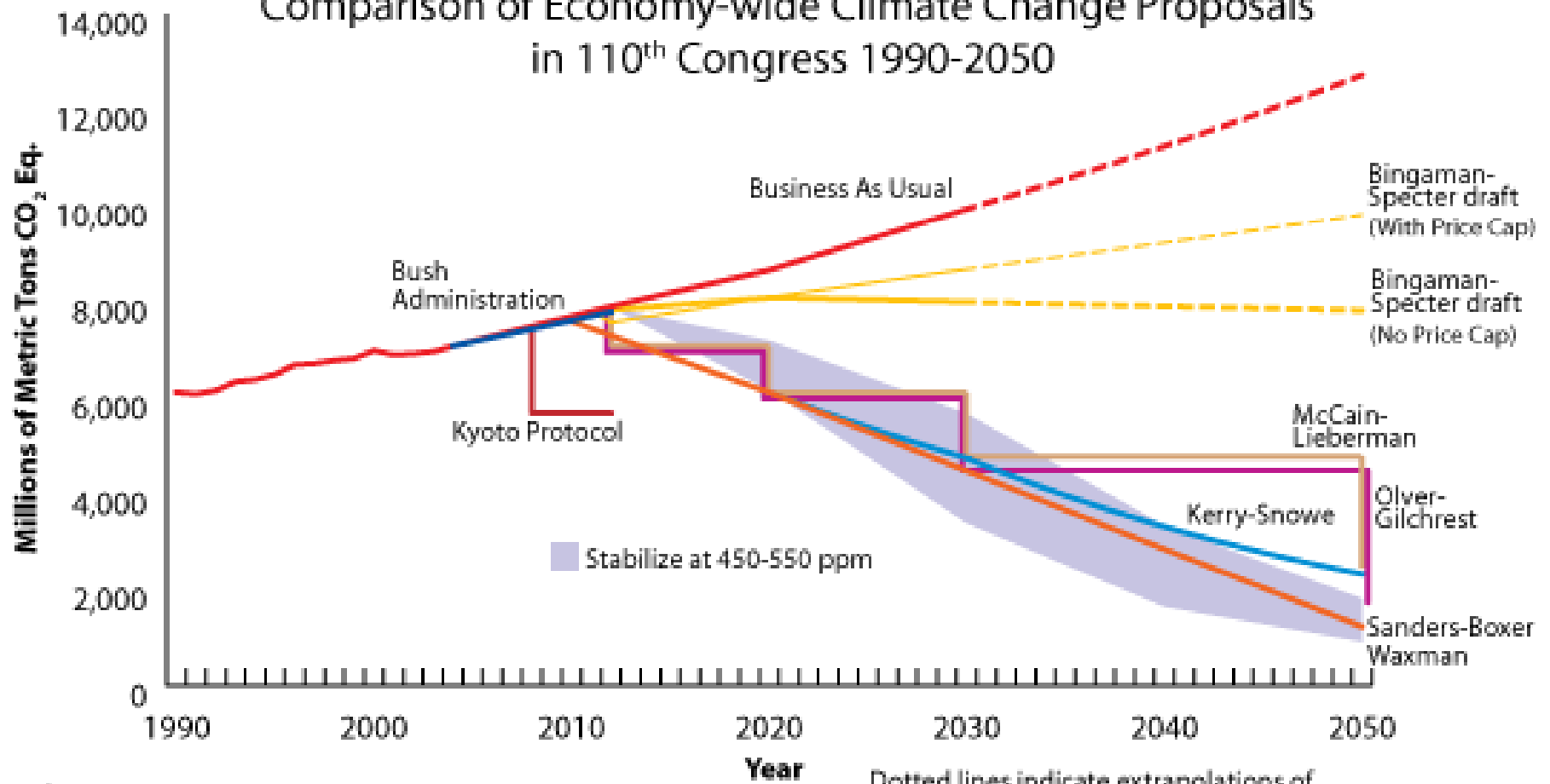
Federal Legislation

Title/Sponsors	Scope	Target Level	Attributes
Electric Utility Cap-and-Trade Act (S.317), Feinstein and Carper	Power sector only	Caps current emissions by 2011, then 2001 levels by 2012, 1% reduction/year through 2020, EPA review	Auctioning of credits, use of offsets. Independent scientific panel to advise EPA every four years on reduction rate required
Clean Air Planning Act (S.1177), Carper	Power sector only	Power plant CO ₂ emissions capped at current levels in 2012, 2001 levels in 2015, annual reductions to obtain 25% below 1990 by 2050	Offsets allowed, output based allocation, new entrant reserve
Clean Air/Climate Change Act of 2007 (S.1168), Alexander and Lieberman	Power sector only	Power plant CO ₂ emissions capped at 2.3 billion tonnes (2006 levels) in 2011, 2.1 billion in 2012, 1.8 billion in 2020 (1990 levels), and 1.5 billion tonnes in 2025 and beyond (17% below 1990 levels)	Offsets allowed, new entrant reserve of no more than 5% of the year's allowances, emissions performance standards for plants built after 2015 (no more than 1,100 lbs CO ₂ /MWh)
Clean Power Act, Sanders	Power sector only	Same as S1168, if no economy-wide CO ₂ bill passed by 2012, then CO ₂ emissions must be decreased by 3% each year	CO ₂ performance standard for new plants, renewable energy standard of 20% by 2020, energy efficiency targets, credit trading system,

Source: Point Carbon North America, August 1, 2007, Legislation Summary

Federal Legislation

Comparison of Economy-wide Climate Change Proposals in 110th Congress 1990-2050





Regional Initiatives

Regional Greenhouse Gas Initiative (RGGI)



- 10 Northeastern and Mid-Atlantic States (CT, DE, ME, NH, NJ, NY, VT, MD, RI, and MA)
- Mandatory CO₂ cap and trade program to reach state-specific targets
- Program will begin January 1, 2009 and will cap regional GHG emissions at 1990 levels by 2014, 10% below 1990 levels by 2018
- For CO₂ only, from utilities (electric generating units with a nameplate capacity ≥ 25 MW)
 - ◆ **50% Biomass Exemption** – If a source burns bio-mass for more than 50% of its total fuel, then it would not be subject to RGGI
 - ◆ **Behind the Meter Exemption (Optional)** – If a unit supplies less than 10% of its electrical output to the grid, then it could apply to be exempted from the program.



Western Regional Climate Action Initiative

- 6 Western states (AZ, CA, NM, OR, UT, WA) and 2 Canadian Provinces (British Columbia, Manitoba)
- Development a regional target for GHG reductions within the next 6 months
- Development of a market based program within next 18 months
- Members join multi-state registry to track regional GHG emissions



State Actions



Overview of State Actions – Southern Section States

- Alabama
 - ◆ The Climate Registry
- Georgia
 - ◆ Carbon sequestration registry underway (forestry commission)
 - ◆ Development of state GHG inventory
 - ◆ The Climate Registry
- Tennessee
 - ◆ The Climate Registry



Overview of State Actions – South

- Florida
 - ◆ Governor Charlie Crist signed Executive Order on July 13, 2007
 - ◆ Cut GHG emissions from power sector
 - ◆ CA GHG regulation of motor vehicles (Pavley)
 - ◆ Emphasis on renewable energy (especially solar and wind)
 - ◆ The Climate Registry
- North Carolina
 - ◆ CA GHG reductions (Pavley) under consideration
 - ◆ CAPAG to evaluate climate reduction goal and stringency by April 2008
 - ◆ The Climate Registry
- South Carolina
 - ◆ Governor Executive Order to develop climate plan
 - ◆ The Climate Registry



Overview of State Actions – California

- Global Warming Solutions Act (AB-32)
 - ◆ Signed by Governor on September 27, 2006
 - ◆ Establishes annual mandatory reporting of GHG emissions for “significant” sources and sets emission limits to cut GHG emissions to 1990 levels by 2020
 - ◆ All six GHGs are regulated under AB-32
 - ◆ California Air Resources Board (CARB) will be implementing AB-32, not local Air Quality Management Boards
- GHG Vehicle Standards (AB-1493)
- California Climate Action Registry



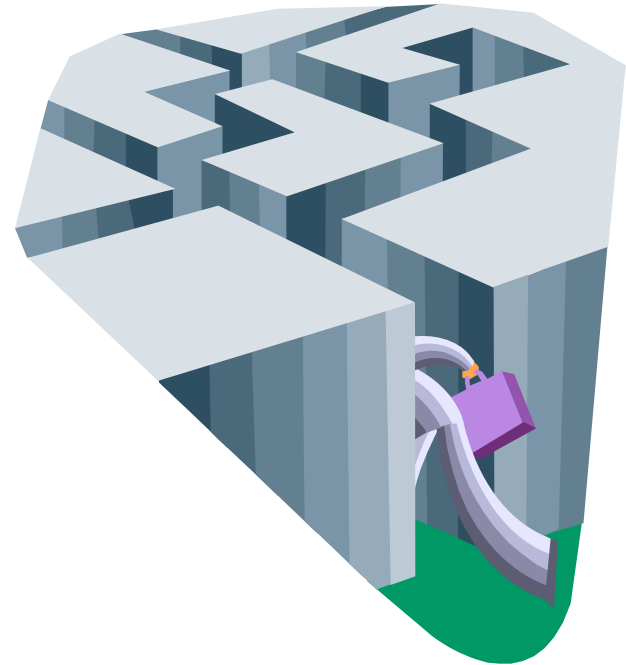
Overview of State Actions – Other States

- Arizona
- Connecticut
- Illinois
- Iowa
- Maine
- Maryland
- Massachusetts
- New Hampshire
- New Jersey
- New Mexico
- Oregon
- Washington
- Wisconsin

State and Local Programs

Worst-Case Scenario:

In the absence of a federal program, we end up with 50 different state programs





Voluntary Registries and Initiatives



Climate Change – Other Initiatives

California Climate Action Registry

- Private, non-profit voluntary registry for GHG emissions
- Oversight by California Energy Commission (at present)
- Participant members are required to:
 - ◆ Create GHG baseline
 - ◆ Certify baseline through a third-party
 - ◆ Report annual CA GHG emissions from direct and indirect emissions from electricity, US emissions optional
- Protocols and reporting tools will be used as a template for other state registries, including The Climate Registry
- Protocols are aligned with Kyoto/WRI GHG Protocol and will be relied upon for ARB mandatory reporting under AB-32



Climate Change – Other Initiatives

The Climate Registry

- 30 state representatives met in CA in early Sept 2006
- 37 States, 2 Indian Tribes, 2 Canadian Provinces, and 1 Mexican State have joined
- Targeted launch in late 2007/early 2008
- Decrease costs, increase linkages for policy and management systems, standardize best practices
- Establish common infrastructure for current and future mandatory reporting programs



Climate Change – Other Initiatives

EPA Climate Leaders

- EPA Climate Leaders' Program
 - ◆ Company Commitments:
 - Inventory corporate-wide GHG emissions
 - Set aggressive emissions reduction goal
 - Annually report emissions and progress toward goal
 - ◆ EPA Commitments:
 - Publicize company participation
 - Technical assistance for GHG inventories
 - GHG Protocols for use by participants
 - ◆ <http://climatebiz.com/>

Climate Change – Other Initiatives

Chicago Climate Exchange

- Chicago Climate Exchange
 - ◆ Voluntary cap-and-trade program for reducing and trading greenhouse gas emissions.
 - ◆ Phase I - 1% GHG reduction each year for 4 years: 2003 through 2006 (baseline is determined from average of 1998-2001 emissions)
 - ◆ Phase II - 6% below baseline through 2012
 - ◆ Trading approximately 3.3 million metric tons CO₂ in July 2007
 - ◆ Now approximately \$3.65 to \$3.75/ton
 - ◆ US, Canada, Mexico, Brazil
 - ◆ <http://www.chicagoclimatex.com/>



CO2 6¹/₈+¹/₄ SO2 146 ⁵/₈+³/₄ NOX 486³/₈-2 VOC 1124+3¹/₂ PM10 4322-6¹/₄ CH4 128³/₈5¹/₄ N2O 1898³/₈+77¹/₂ SF6 20000+800 NF6 4625+185



What to Do and Why

What to Do and Why: Educate the Decision-Makers

- What are the relevant issues?
- How might these affect the organization?
- What are our response options?
- What are the associated financial impacts?
- What is our competition doing?



What to Do and Why: Quantify Emissions of GHGs

- Define organizational and operational boundaries for the GHG inventory
 - ◆ Direct emissions
 - ◆ Indirect emissions
- Identify calculation methodologies
- Define frequency of monitoring
- Define data acquisition and management needs
- Create appropriate metrics





What to Do and Why: Develop a Climate Change Strategy

- Should you participate in voluntary emission reduction programs?
- Value of enhancing the company's environmental stewardship image
- Secure support from the highest level – President/CEO, Board of Directors
- Scope of program
- Invest in GHG emission reductions:
 - ◆ Renewable energy / clean fuels
 - ◆ Process improvements / operational changes
 - ◆ Energy conservation
 - ◆ Waste management
 - ◆ Transportation
- Partnering with customers and suppliers to address climate change

What to Do and Why: Track Developments

Global climate change policy developments are very dynamic. Your company's strategy should be reviewed regularly to ensure that it remains appropriate.





What to Do and Why: Shareholder/Investor Pressures

- Shareholder resolutions on climate change issues
 - ◆ 32 resolutions filed in 2006, 12 resolutions withdrawn based on agreements with receiving companies
- Institutional investors Carbon Disclosure Project
 - ◆ 2006 questionnaire sent to 2,100 companies on behalf of 225 **institutional investors**; 2006 Response rate - 72%
 - ◆ 2007 questionnaire sent to 2,400 companies on behalf of 280 **institutional investors**
 - ◆ Responses (and non-responses) listed on website <http://www.cdproject.net> and published in annual report

What to Do and Why

- Future weather risks
 - ◆ Business interruption
 - ◆ Supply chain problems
 - ◆ Physical asset risks
- Regulatory risks
 - ◆ Abatement
 - ◆ Fuel cost
 - ◆ Energy security
- Reputation management
 - ◆ Competitive advantage
 - ◆ Fiduciary and governance developments
 - ◆ Shareholder activism
 - ◆ Access to capital/credit rating
- Learning by doing in the marketplace





**“The challenge of our generation
will be addressing climate change
while sustaining a growing
economy.”**

Eileen Claussen
Executive Director
Pew Center on Global Climate Change

