Regulation of Greenhouse Gas Emissions

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Thanks to:

- Don Brown
- Bob McKinstry
- Sonny Popowsky

Climate change law:

A) Exists only in places like Europe.

B) Is not likely to occur because of the recession.

C) Will happen over my dead body.

D) Is already here.

Primary sources of climate change law:

1) International law
2) State (and local) law
3) National law
   --Environmental law
   --Energy law
4) Business law
5) Increasingly: laws and policies that directly address climate change

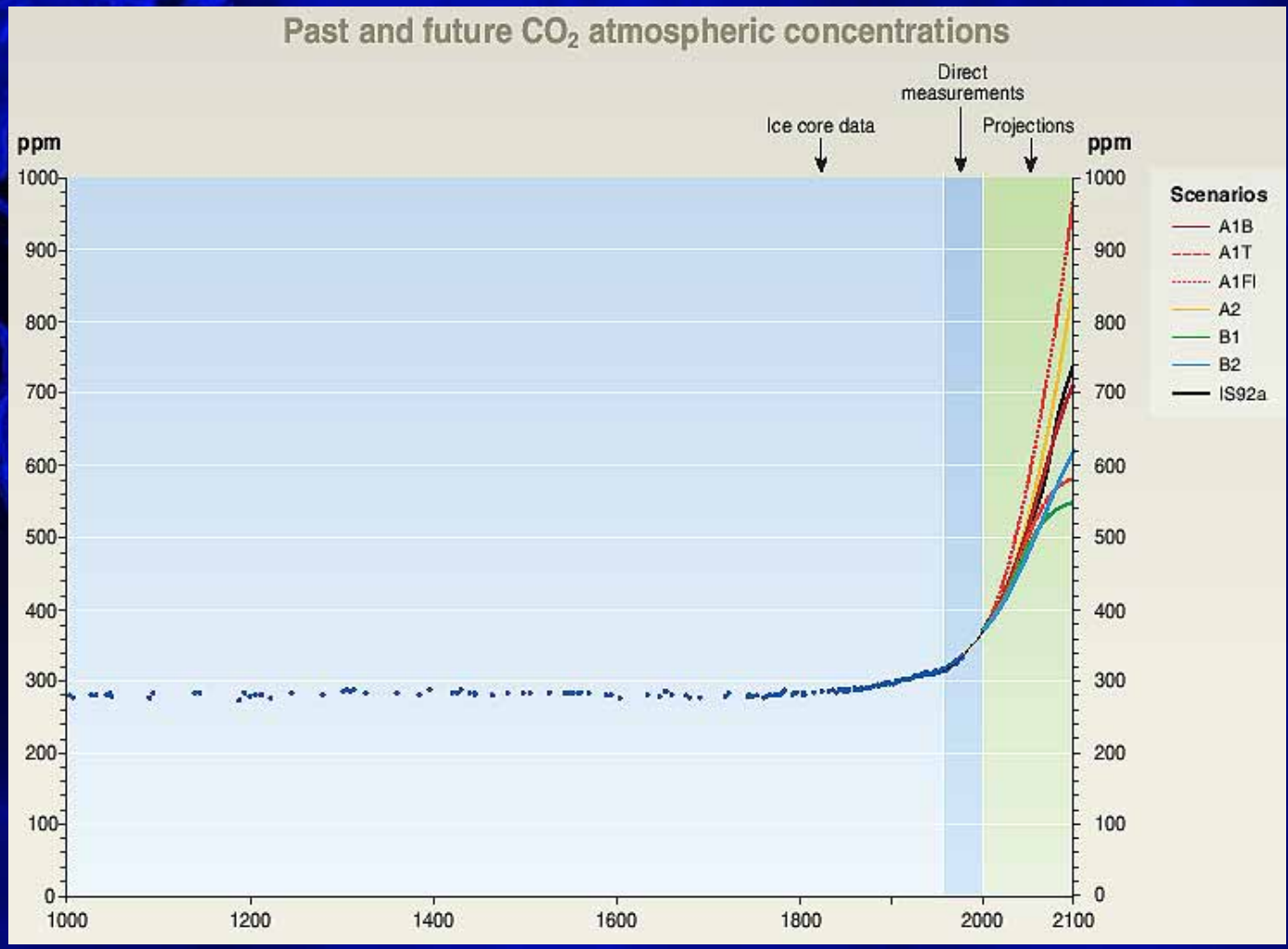
Take-Home Messages

- Science is getting more convincing and more urgent
- President Obama is committed to national legislation to reduce greenhouse gas emissions
- International expectation or hope of post-Kyoto agreement by end of 2009
- Challenges:
  - Making domestic and international trajectories converge
  - Doing something serious during a recession

Overview

1. Science and Emissions
2. A Post-Kyoto Protocol?
3. National Actions
4. Pennsylvania Actions

1. Science and Emissions



Science indicates urgency

"Most [of us] were skeptical that we would see strong signs of human-induced climate change in our lifetimes. But by the beginning of this decade, we observed that global temperatures are rising, plant and animal ranges are shifting, glaciers are in retreat globally, and arctic sea ice is retreating…."

"To the extent that these changes result from human alteration of the atmosphere, we know that they are just the first small increment of climate change yet to come if human societies do not curb emissions of greenhouse gases."

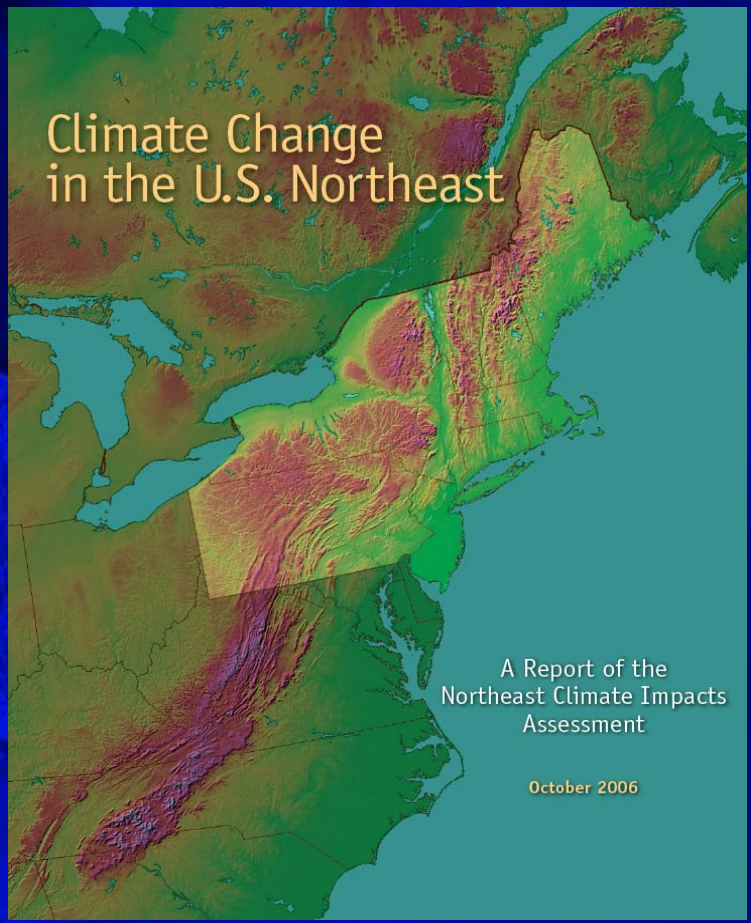
--Brief of Amicus Curiae Climate Scientists, Massachusetts v. EPA (U.S. 2006)

Science: Intergovernmental Panel on Climate Change (2007)

- Working Group I: Physical Science Basis
- Working Group II: Impacts, Adaptation, & Vulnerability
- Working Group III: Mitigation of Climate Change
- Working Group IV: Synthesis

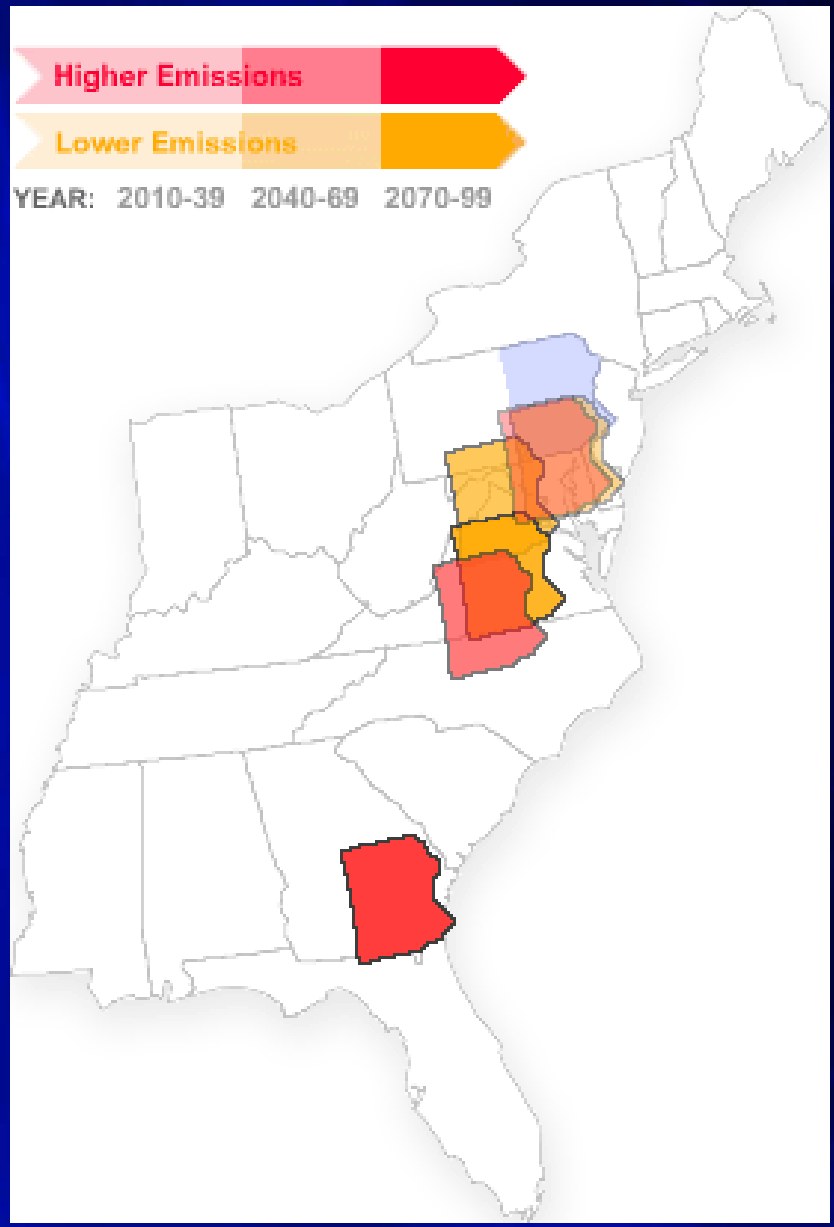
http://www.ipcc.ch/

1. Projected climate change impacts on Pennsylvania



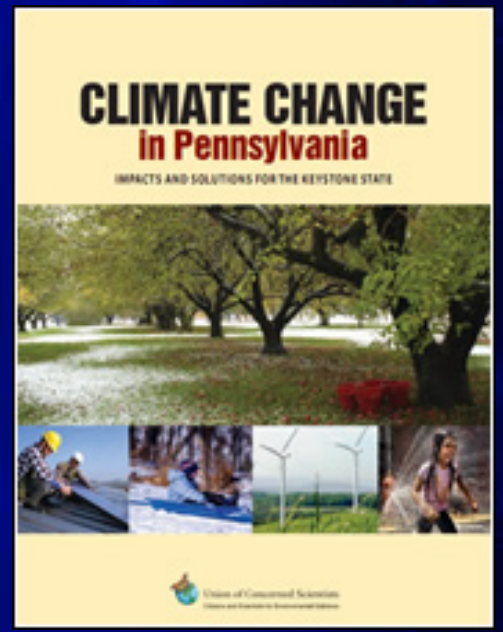
http://www.northeastclimateimpacts.org/

- Lower emissions pathway: some migration of our climate.
- Higher emissions pathway: greater migration of our climate.



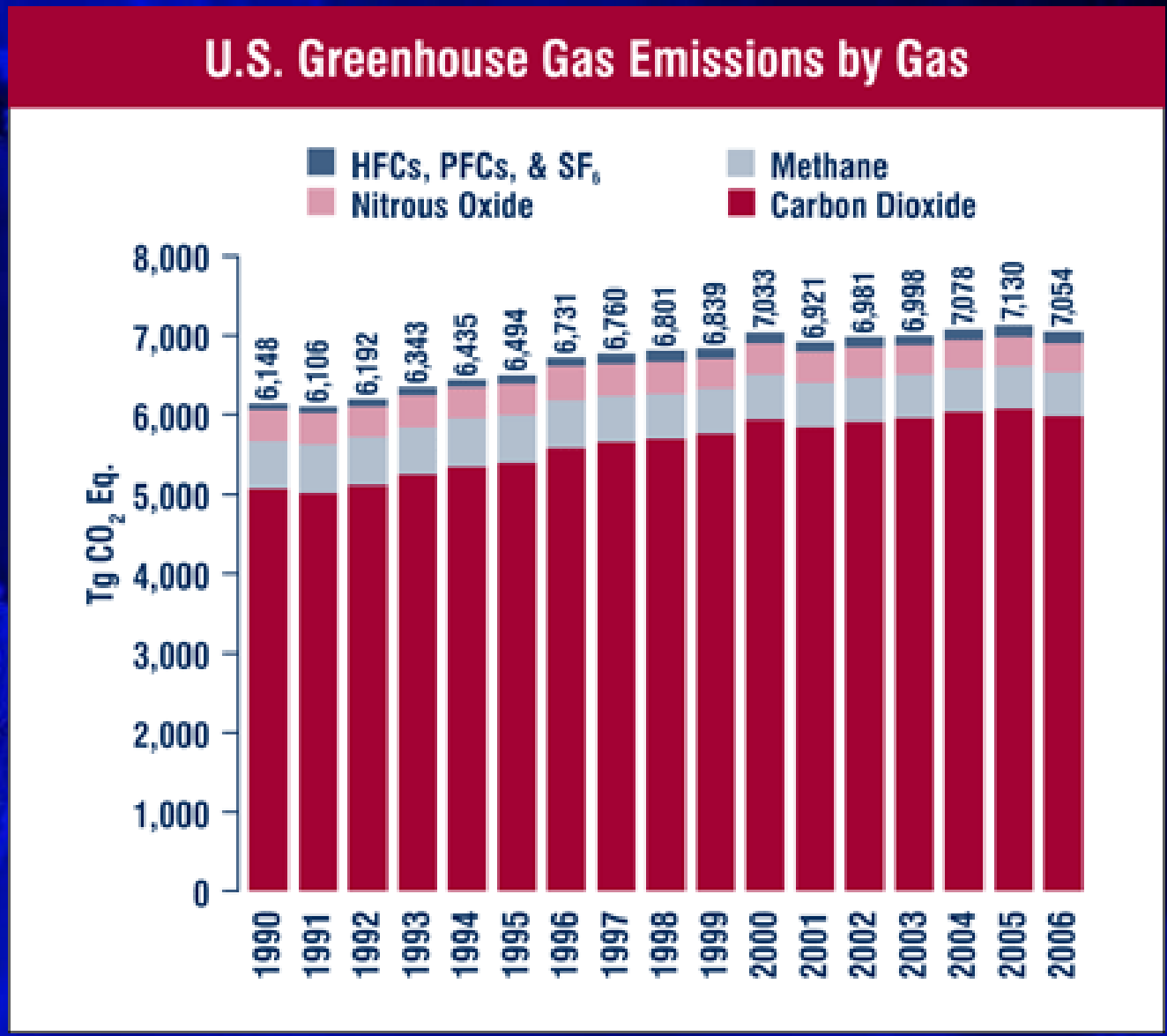
If we follow the higher-emissions pathway, during the lifetime of today's kindergartener:

- Many Pennsylvanian cities can expect dramatic increases in the number of summer days over 90°F
- Heat could cause air quality to deteriorate substantially.
- Heat stress on dairy cattle may cause declines in milk production.
- Widespread ski resort closures can be expected.
- Climate conditions suitable for prized hardwood tree species such as black cherry, sugar maple, and American beech are projected to decline or even vanish from the state.
- Substantial changes in bird life are expected, including loss of preferred habitat for many resident and migratory species.

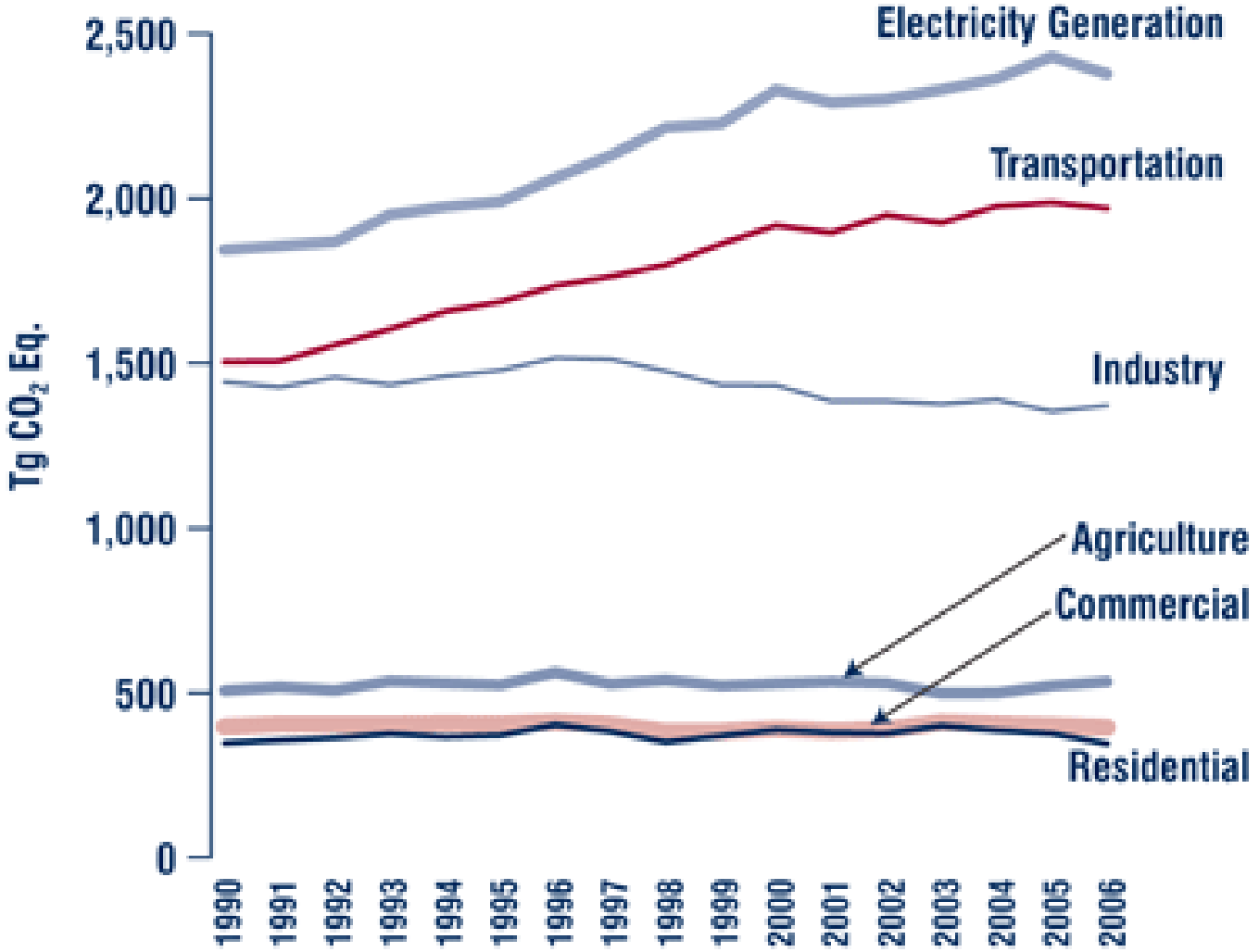


Climate Change In Pennsylvania (2008)
http://www.ucsusa.org/global_warming/science_and_impacts/impacts/climate-change-pa.html

- U.S. greenhouse gas emissions increased 14.7% between 1990 and 2006.

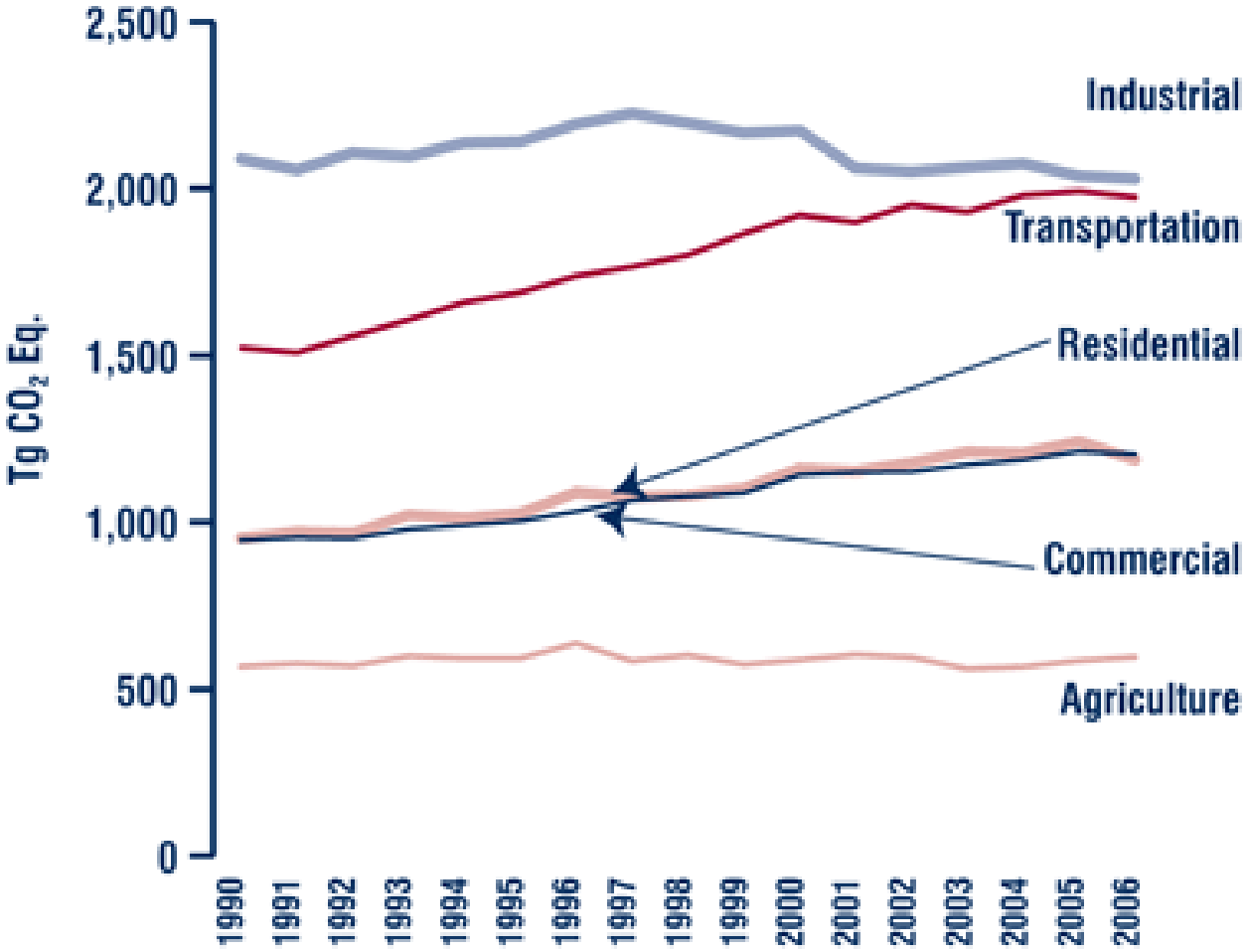


Emissions Allocated to Economic Sectors



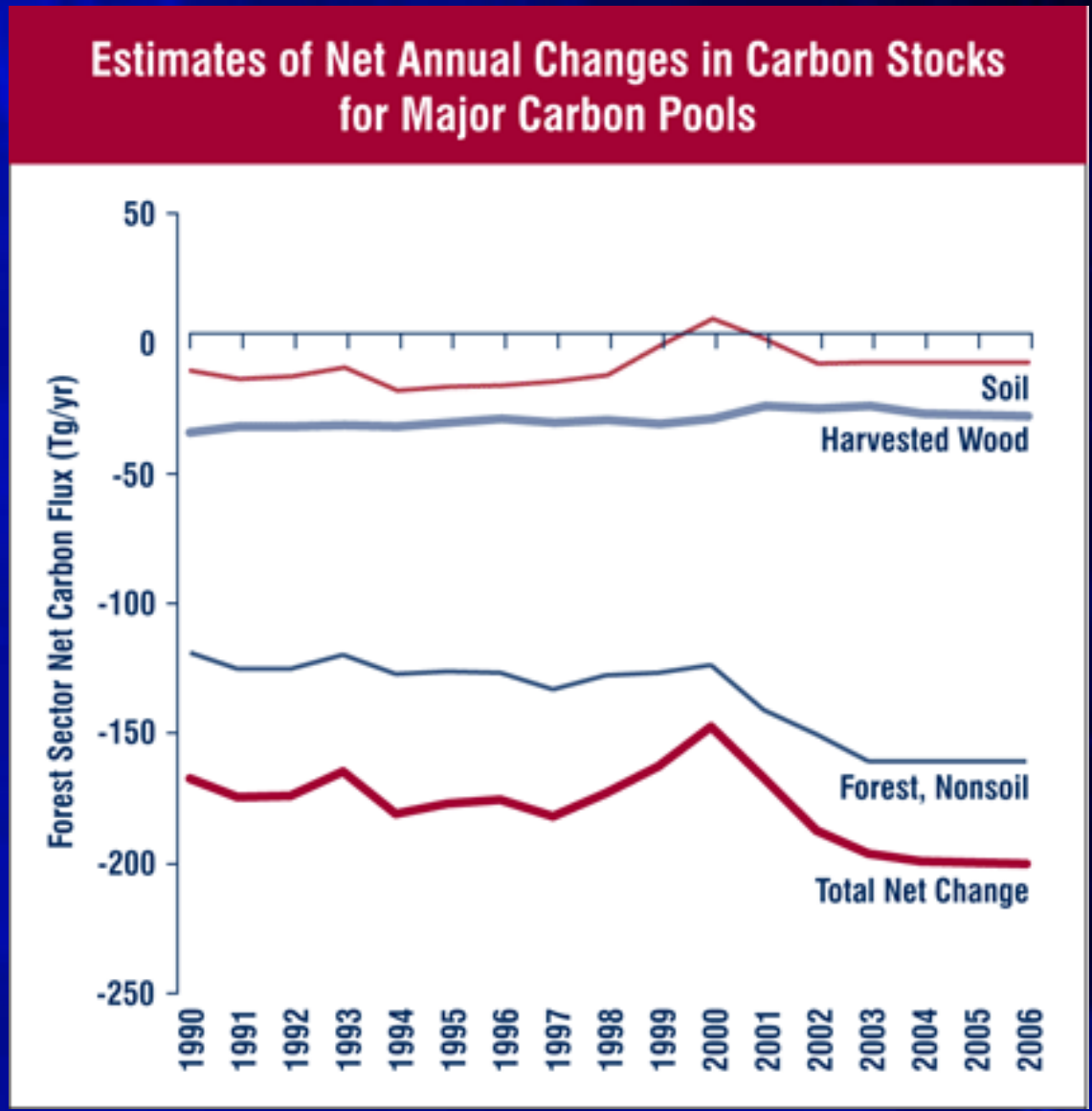
Note: Does not include U.S. territories.

Emissions with Electricity Distributed to Economic Sectors



Note: Does not include U.S. territories.

- Carbon dioxide can be removed from the atmosphere through activities such as planting trees, improving existing forests and soil management. Total carbon sequestration in the U.S. in 2006 removed approximately 13 percent of total U.S. emissions.



Basic choices

- Reduce emissions
- Reduce energy use
- Adapt
- Store carbon on a long-term basis
  (a/k/a carbon sequestration)

Most observers believe all four approaches are needed.

2. A Post-Kyoto Protocol?

U. N. Framework Convention on Climate Change

- Purpose: prevent “dangerous” human interference with climate.
- Created structure to monitor and address climate change.
- Developed countries have contributed most to historic greenhouse gas emissions and have most economic and technological resources.
- Therefore, developed countries should take the lead in addressing climate change.
- In 1992, U.S. ratified this convention.

Kyoto Protocol

- Developed countries agreed to reduce their greenhouse gas emissions by 5% below 1990 levels by 2008-2012.
- U.S. would have reduced its greenhouse gas emissions by 7% below 1990 levels.
- Contains variety of trading/market based programs proposed by U.S. to reduce costs.
- U.S. did not ratify.
- Kyoto Protocol went into effect in 2005—including Europe, Russia, Canada, and Japan.

December 2007 Bali Meeting

- Established a process for negotiating and reaching a decision on an agreement for addressing climate change after the end of the 2008-2012 Kyoto period
- Anticipated date and place of agreement: Conference of Parties, Copenhagen, Denmark, Nov. 30-Dec. 11, 2009


solar


united nations
climate change conference


UNFCCC
Change Conferenc
14 December 2007

Bali Action Plan

- Parties are to “address,” among other things, a “shared vision for long-term cooperative action, including a long-term global goal for emission reductions, to achieve the ultimate objective of the Convention”
- No agreement for a short-term goal

- Developed and developing country parties agreed to address “enhanced” action on:
  - climate change mitigation
  - adaptation
  - technology development and transfer
  - provision of financial resources and investment

  And there was a separate agreement to develop a program to avoid deforestation.

In summary….

- There are many more negotiating “tracks”—involving more policy choices—than with Kyoto.
- Most of the hard bargaining has not yet occurred; very little was decided in December 2008 meeting in Poznan, Poland.
- The Obama administration has only begun.
- Very high likelihood of “framework” agreement with details to be filled in later.

4. U.S. Actions

Three ways the U.S. can enter international agreements

- Advice and consent under Article II: "He [the President] shall have power, by and with the advice and consent of the Senate, to make treaties, provided two thirds of the Senators present concur…."
- Congressional-executive agreements (used to approve NAFTA)
- Executive agreements

Many moving parts

They include:

- Economic stimulus legislation
- Clean Air Act implementation
- Public reporting of greenhouse gas emissions
- Energy Efficiency legislation
- Climate change legislation

Economic stimulus legislation

- Energy Economic Stabilization Act of 2008 (last year)
  - $17 billion in energy tax credits, including renewed credits for wind, solar, biomass, energy efficiency
- Also in 2008, Congress approved $25 billion in low interest loans to encourage production of more fuel-efficient cars

American Recovery and Reinvestment Act of 2009

- $30 billion--Modernization of the electric grid, advanced battery manufacturing, energy efficiency grants
- $5 billion--Home weatherization grants to low and middle-income families
- $6.3 billion--Energy efficiency upgrades to federally-supported and public housing, including new insulation, windows and frames
- $8 billion--High-speed rail investments
- $8.4 billion--Public transit improvements and infrastructure investments

Clean Air Act

- Greenhouse gases are air pollutants under Clean Air Act—Massachusetts v. EPA (U.S. S. Ct. 2007)
- EPA now plans to make a finding on whether greenhouse gases from motor vehicles endanger public health and welfare, triggering regulation.
- If EPA did make that finding, it would initiate rulemaking

Clean Air Act—California Waiver

- California is allowed to have more stringent auto emission standards than the federal government, if EPA approves waiver.
- California has adopted greenhouse gas limits for motor vehicles, and 13 states (including Pennsylvania) have adopted California rules.
- EPA denied waiver in 2008.
- EPA is taking comment until April 6 on whether it should reverse this decision. 74 Fed. Reg. 7040 (Feb. 12, 2009).

California auto emissions standard

- In 2002, California legislature required California Air Resources Board (CARB) to "develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles." California Health & Safety Code § 43018.5
- In 2004, CARB adopted regulations restricting emissions of four greenhouse gases from motor vehicles. The standards would have taken effect for model year 2009, becoming more stringent each year until 2016. Cal. Code Regs. Tit. 13, § 1961.

The waiver rules (42 U.S.C. § 7543)

(a) Prohibition. No State or any political subdivision thereof shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part [42 USCS §§ 7521 et seq....

(b) Waiver.

(1) The Administrator shall, after notice and opportunity for public hearing, waive application of this section to any State..., if the State determines that the State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards. No such waiver shall be granted if the Administrator finds that--

(A) the determination of the State is arbitrary and capricious,

(B) such State does not need such State standards to meet compelling and extraordinary conditions, or

(C) such State standards and accompanying enforcement procedures are not consistent with section 202(a) of this part [42 USC § 7521(a)].

Other states may then adopt the California standards for which a waiver has been granted. 42 U.S.C. § 7507.

GHG limits on stationary sources

Under Section 111 of the Clean Air Act, 42 U.S.C. § 7411, EPA is authorized to issue performance standards for air pollutants from new or modified stationary sources. EPA has not done that.

Litigation

- *New York v. EPA*, No. 06-1322
- In 2006, a coalition of environmental groups, states, and cities challenged EPA's newly adopted New Source Performance Standards for certain utility and industrial power plants. During comment period, petitioners had asked EPA to regulate greenhouse gas emissions under these standards. EPA declined, saying it did not have authority to regulated greenhouse gases.

Litigation over Proposed New Coal Plants

- Under the federal Prevention of Serious Deterioration (PSD) permitting regulations, only newly constructed or modified major sources that emit one or more "regulated NSR pollutants," under 40 C.F.R. 52.21(b)(50), are subject to the requirements of the PSD program.
- These include a requirement to install the best available control technology (BACT) for those regulated NSR pollutants that the facility emits in significant amounts.
- If carbon dioxide is a “regulated NSR pollutant,” then new coal plants need to install BACT for carbon dioxide.

- On Dec. 18, 2008, then-Administrator Stephen Johnson issued a memorandum saying that the PSD regulation did not apply to greenhouse gas emissions from such sources.
- On Feb. 17, 2009, EPA decided to reconsider the memorandum, and said it would take public comments.

Public Reporting of Greenhouse Gas Emissions

- On December 26, 2007, President Bush signed the FY2008 Consolidated Appropriations Act.
- Act authorized funding for EPA to "develop and publish a draft rule…to require mandatory reporting of GHG emissions above appropriate thresholds in all sectors of the economy of the United States."
- Proposed rule was to be published within 9 months, with a final rule "not later than 18 months after the date of enactment of this act."
- Consolidated Appropriations Act, 2008, Pub. L. No.110-161, 121 Stat 1844, 2128 (2008).

- On March 10, 2009, EPA Administrator Lisa Jackson signed a proposed rule to establish the “first comprehensive national system for reporting emissions of carbon dioxide and other greenhouse gases produced by major sources in the United States.”
- New reporting requirements would apply to suppliers of fossil fuel and industrial chemicals, manufacturers of motor vehicles and engines, as well as large direct emitters of greenhouse gases with emissions equal to or greater than a threshold of 25,000 metric tons per year.
- Much to study: preamble (818 pp.) and proposed rule (593 pp)
- Comment period: 60 days after publication in *Federal Register*

Energy Efficiency Legislation

- Energy Independence and Security Act of 2007 (P.L. 110-140) (Dec. 19, 2007)
  - Raises corporate average fuel efficiency standard for passenger automobiles and light trucks to at least 35 miles per gallon for model year 2020.
  - Raises required use of renewable fuels from 4 billion gallons in 2006 to 36 billion gallons in 2022 (with some requirements concerning lifecycle greenhouse gas emissions)
- Comprehensive energy efficiency legislation is also under consideration

Climate change legislation

- Considerable debate on climate legislation in prior Congress
- Obama Plan announced in Feb. 26 budget proposal:
  - Would cut U.S. emissions 14 percent by 2020 from 2005 levels and 83 percent from those levels by 2050.
  - equates to a 69 percent cut from 1990 emissions levels by 2050.
  - Economy-wide emissions trading program would auction permits to companies that emit greenhouse gases.
  - Would raise $646 billion in federal revenue between 2010 and 2019.

Challenges ahead

- Enactment of substantial domestic program to address climate change.
- Exercising international leadership on climate change
- Ensuring that international agreement(s) on climate change can be approved t home

4. Pennsylvania—with special emphasis on 2008 legislation

Alternative Energy Portfolio Standards Act of 2003

- •Requires 18% of the electricity sold to retail electric customers to come from eligible alternative energy sources in fifteen years
- •Tier I –8%
  - –Eligible Sources: Solar photovoltaic energy, wind power, low-impact hydropower, geothermal energy, biologically derived methane gas, fuel cells, biomass energy, coal-mine methane
  - –Includes a .5% Solar Share

Tier II –10%

- Eligible Sources: Waste Coal, Distributed Generation, Demand-Side Management, Large-Scale Hydropower, Municipal Solid Waste (only existing facilities), Electricity from Pulping and Wood Manufacturing Processes

Act 129 of 2008

- Act 129 addresses two primary areas: (1) utility procurement of "default" generation for customers who do not switch to competitive suppliers; and (2) utility requirements to implement energy efficiency and demand response programs (including requirements for "smart meters").

47

Act 129 - Energy Efficiency and Demand Response

- By July 1, 2009, each electric utility must file with the PUC an energy efficiency and conservation plan.
- Under the plan, the utility must reduce total annual electricity consumption by at least 1% by May 31, 2011; and by 3% by May 31, 2013.
- The utility must also reduce peak demand during the 100 highest use hours of the year by at least 4.5% by May 31, 2013.
- Utilities that do not meet the reduction requirements can be fined up to $20 million.

48

Act 129 -- Smart Meters and Real Time Pricing

- Each utility also must file plans to replace all of its meters over the next 15 years (or sooner upon an individual customer's request and on all new construction).
- The new meters must be capable of allowing utilities to measure customer usage on an hourly basis and to communicate energy price information to consumers in real time.
- Utilities must offer optional time of use and real time rates to all customers on a voluntary basis.

49

PUC January 2009 Implementation Order – Energy Efficiency

- Act 129 required immediate action by the PUC to adopt an Energy Efficiency and Conservation ("EE&C") Program Order that would guide Electric Distribution Companies ("EDCs") in the development of energy efficiency and demand response plans.

- On Jan. 16, 2009, the Commission recently issued its Implementation Order to address the standards that each electric utility should seek to meet through its EE&C plan. Implementation Order, Energy Efficiency and Conservation Program, Docket No. M-2008-2069887.

50

Pennsylvania Alternative Energy Investment Act of 2008

- Act establishes $650 million grant and loan program for renewable energy and energy efficiency.

- The act provides $500 million for purposes that include:
- • $165 million for loans and grants for alternative and renewable energy projects (except solar) for businesses and local governments;
  • $100 million for loans, grants and rebates that cover up to 35 percent of the costs residences and small businesses incur for installing for solar energy technology;
  • $80 million in grants and loans for economic development projects in the solar sector;
  • $40 million to the Ben Franklin Technology Development Authority to support early stage activities, such as incubator support services, translational and early stage research in startup businesses that develop and implement energy efficiency technologies;
  • $25 million for wind energy and geothermal projects;
  • $25 million for green buildings. Homeowners and small businesses will benefit from grants and loans to build energy efficient structures or renovate an existing building to improve its energy efficiency.

- Law also establishes a $150 million **consumer energy program for individuals and small businesses** that will support projects that conserve energy and use it more efficiently.

- The $150 million will be allocated over eight years, with $20 million annually through 2014-15 and another $10 million in 2015-16. Funding includes:

  • $92.5 million so homeowners and small business owners can cover 25 percent of the cost of purchasing and installing energy conservation tools and weatherize their buildings;

  • $50 million in tax credits of up to $1 million a year per project for developing and building alternative energy projects, which will help Pennsylvania companies invest and grow here;

  • $5 million to support an Energy Efficiency Loan Fund through the Pennsylvania Housing Finance Agency.

Act 70 of 2008, the Pennsylvania Climate Change Act

- Requires DEP to publish report on potential effect of climate change on Pennsylvania and economic opportunities.
- Requires DEP to compile annual inventory of greenhouse gas emissions.
- Establishes climate change advisory committee.
- Requires DEP to establish voluntary greenhouse gas registry.

Climate Change Action Plan

- Within 15 months from effective date, and every three years thereafter, the DEP, in consultation with the committee, is to submit to Governor a Climate Change Action Plan.
- Plan is to :
  - Identifies GHG emission and sequestration trends and baselines in this Commonwealth.
  - Evaluate cost-effective strategies for reducing or offsetting GHG emissions from various sectors.
  - Identify costs, benefits and cobenefits of greenhouse gas reduction strategies recommended by the plan.
  - Identify areas of agreement and disagreement among committee members about the plan.
  - Recommend to the General Assembly legislative changes necessary to implement the plan.

http://www.depweb.state.pa.us/energy/cwp/view.asp?a=1532&q=539829

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