

Climate Change Legislation: National and Regional Activities

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Overview

- Background, UNFCCC, and the Kyoto Protocol
- Global and U.S. Greenhouse Gas Emissions
- Climate Legislation: The National Scene
- Bush Administration Initiatives
- State and Regional Climate Change Activities
- APS Policy on Climate Change Legislation
- Summary



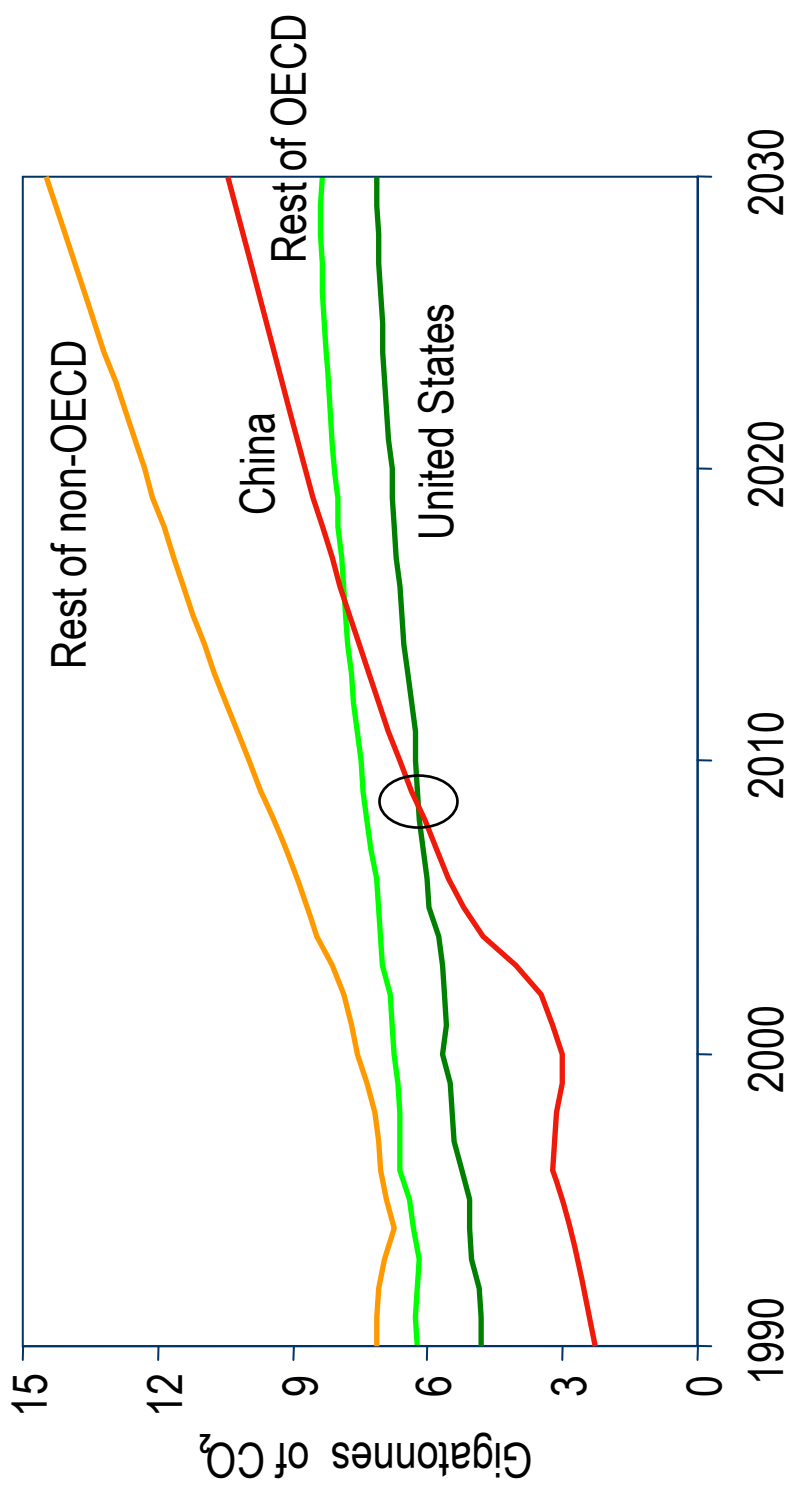
1992 UNFCCC (Rio Convention)

- Based on the conclusions of the Intergovernmental Panel on Climate Change (IPCC), the United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992
- The objective of the UNFCCC was:
 - “ stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system”
- U.S. Senate ratified the UNFCCC

THE KYOTO PROTOCOL

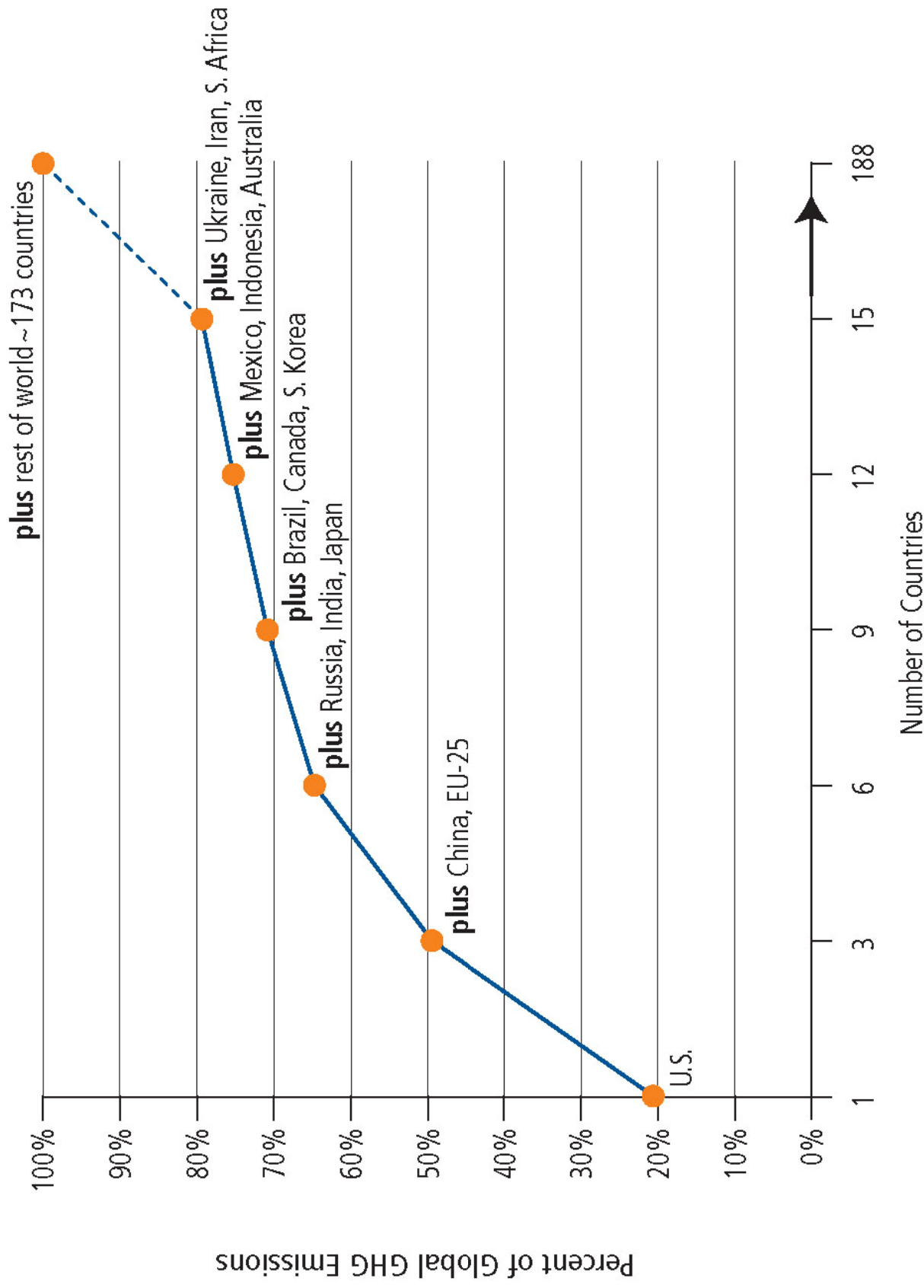
- UNFCCC's third meeting in 1997 adopted the “Kyoto Protocol” requiring industrialized countries to reduce their global average GHG emissions by 5.2% below 1990 level during 2008-2012
- The Kyoto Protocol established legally binding, “differentiated” emission limits for 38 countries
- The Kyoto Protocol is in effect, and the U.S. is the only major developed country not honoring it

Energy-Related CO₂ emissions by Region

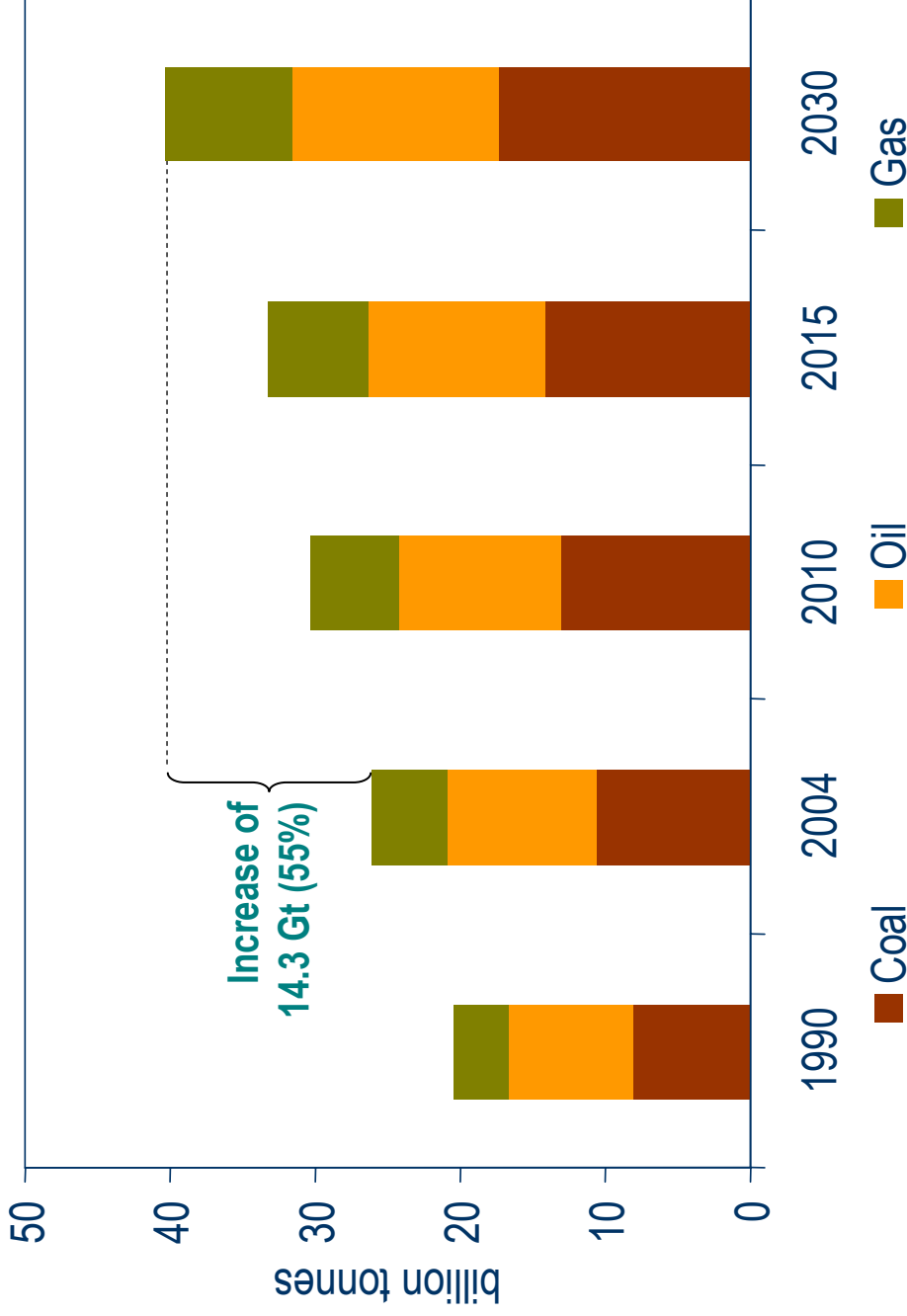


China overtakes the US as the world's biggest emitter before 2010, though its per capita emissions reach just 60% of those of the OECD in 2030

Largest Emitters: Developed and Developing

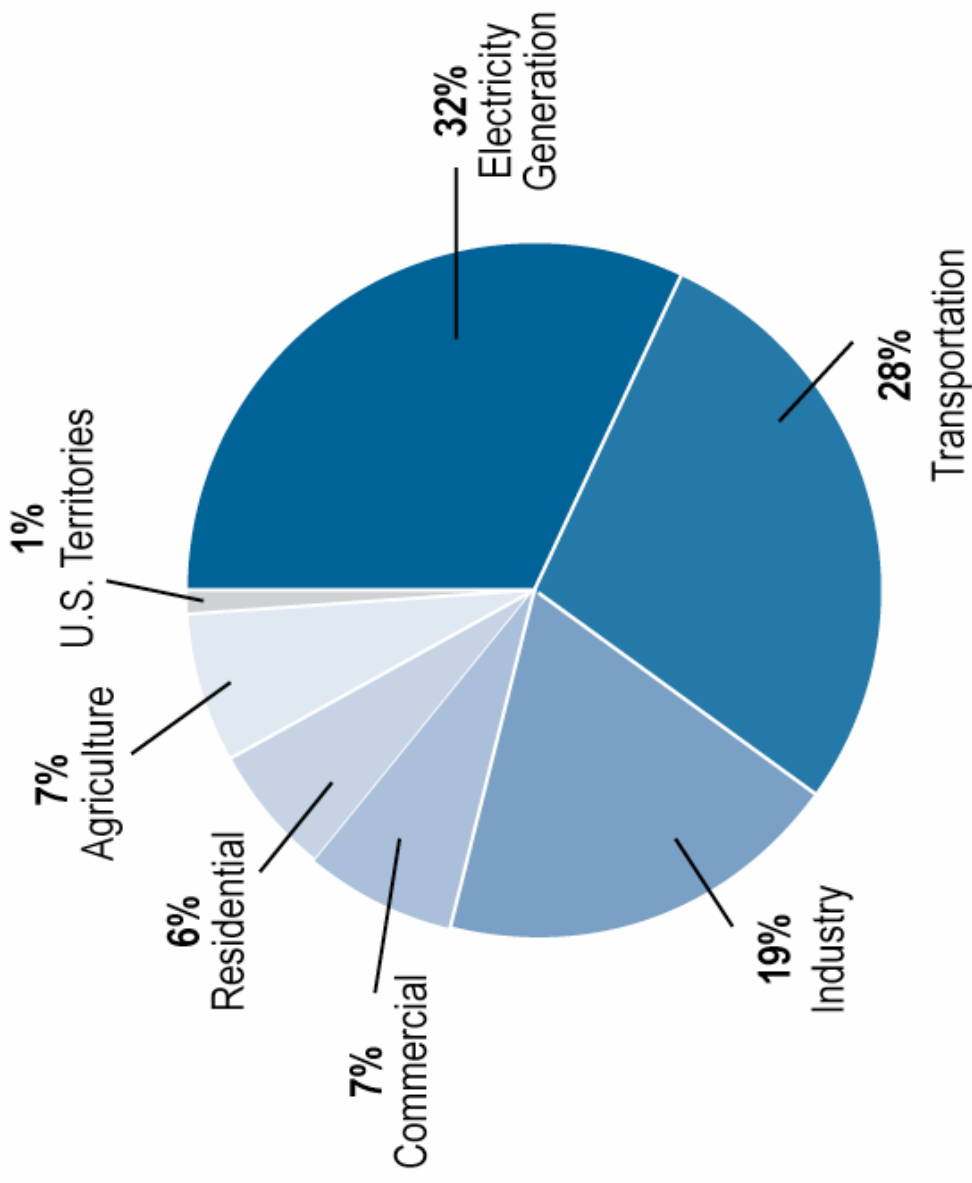


Energy-Related CO₂ Emissions by Fuel



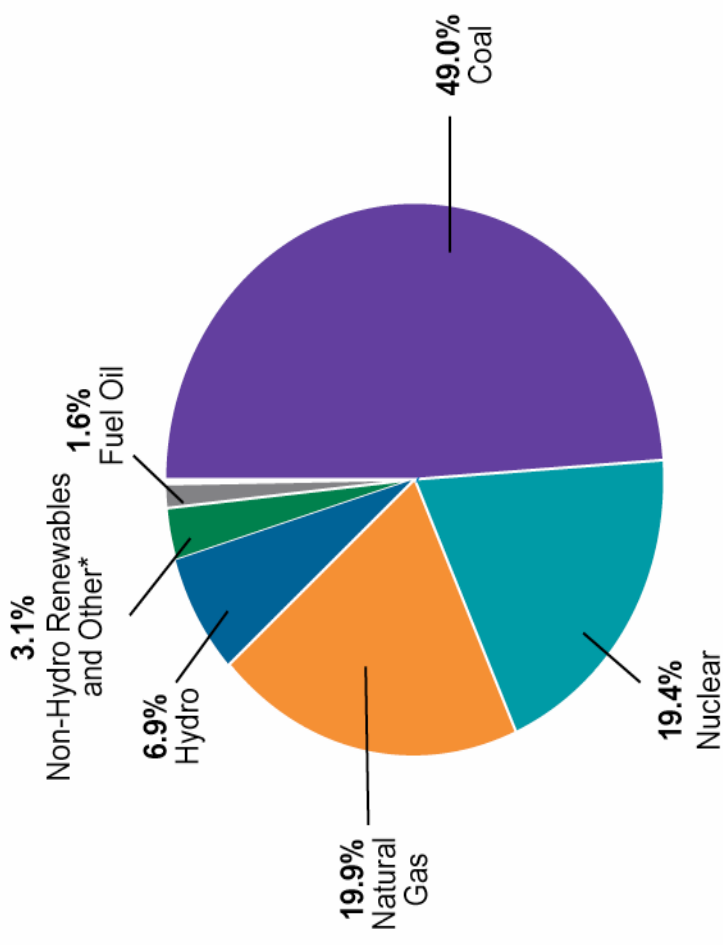
Half of the projected increase in emissions comes from new power stations, mainly using coal & mainly located in China & India

U.S. GHG Emissions by Sector



Electric Companies Use A Diverse Mix of Fuels to Generate Electricity

National Fuel Mix

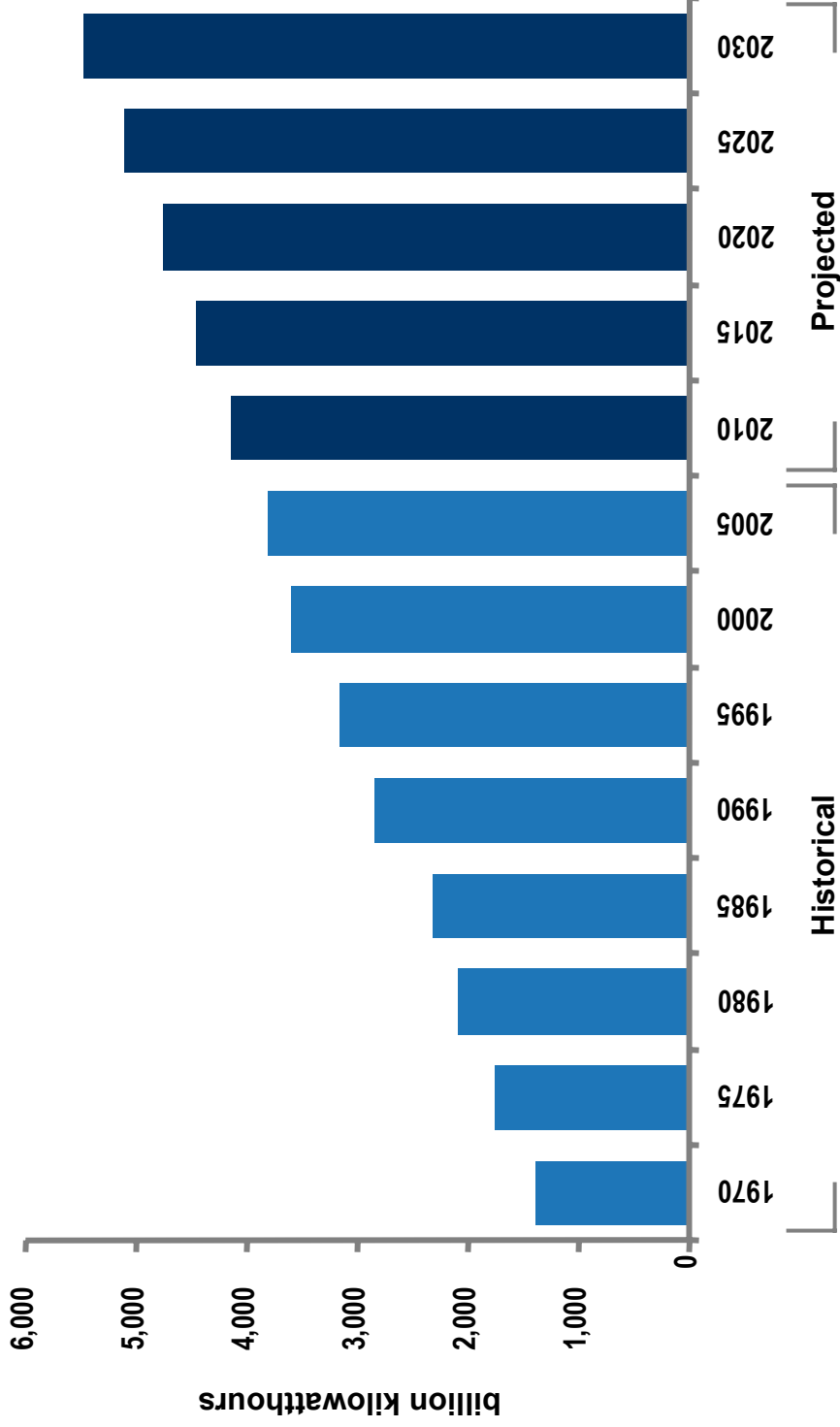


Note: Sum of components do not add to 100.0% due to independent rounding.

Non-Hydro Renewables and Other includes generation from solar, wind, geothermal, biomass (agricultural waste, municipal solid waste, landfill gas recovery, wood, pitch), hydrogen, batteries, chemicals, non-wood waste, purchased steam, sulfur and miscellaneous technologies.

Source: U.S. Department of Energy, Energy Information Administration, Power Plant Report (EIA-920), Combined Heat and Power Plant Report (EIA-920), and Electric Power Monthly (2006 Preliminary).

U.S. Demand for Electricity Is Projected to Increase 30% by 2030



* Electricity demand projections based on expected growth between 2005 and 2030.

Sources: U.S. Department of Energy, Energy Information Administration, *Annual Energy Review 2005* and *Annual Energy Outlook 2007*

Congressional Action?

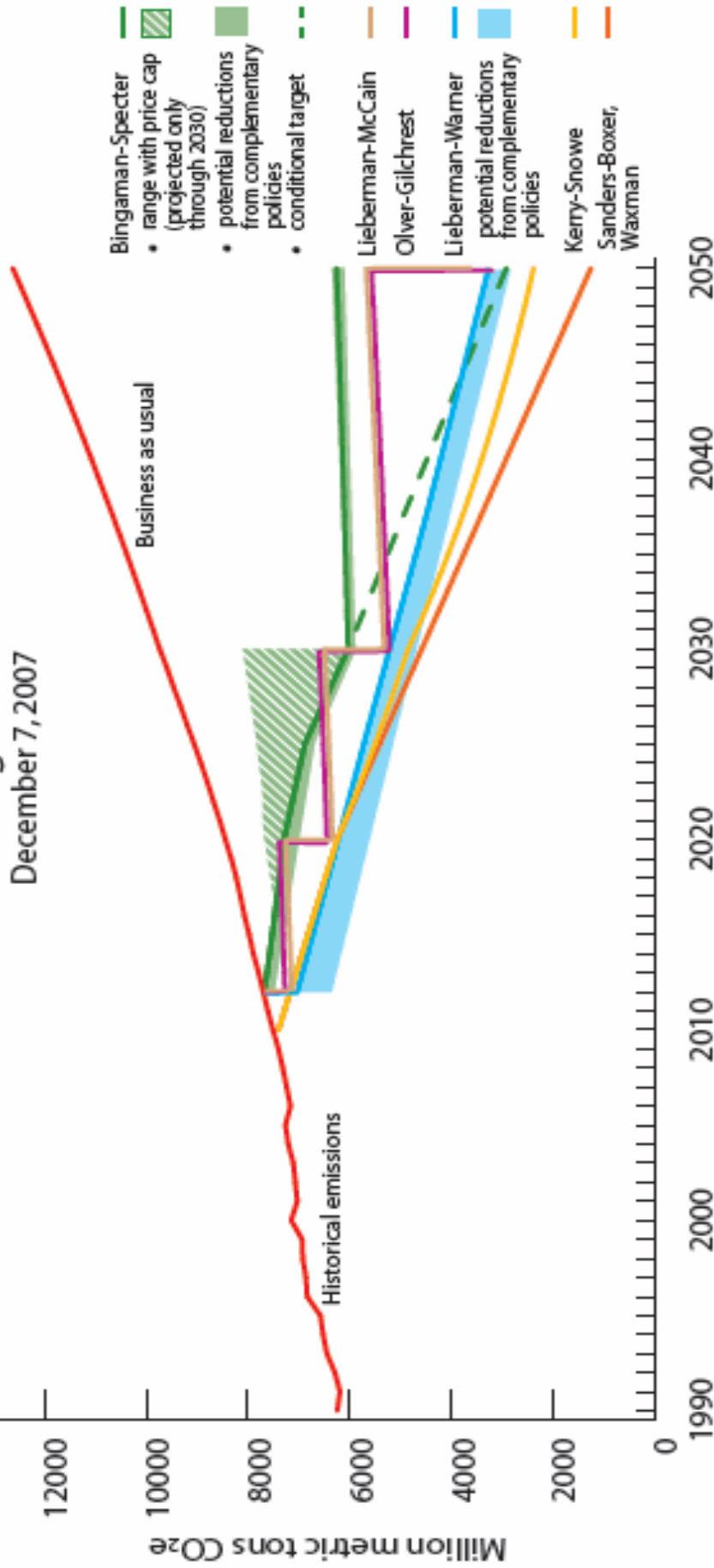


Legislative Proposals

- A number of bills have been introduced with varying levels of emission reduction targets and schedules
- Most bills would cover the whole economy while some would cover only the electric power generation sector
- Most bills would establish a “cap & trade” system similar to the Acid Rain Control Program
- Numerous hearings were held by a number of Senate and House Committees and Subcommittees

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

December 7, 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 intended to fairly and accurately compare explicit carbon caps in Congressional climate proposals and uses underlying data that may differ from other analyses. Data post-2030 may be derived from extrapolation of EIA projections.

Lieberman-Warner S.2191

- Economy-wide (82%), hybrid cap & trade program (upstream for petroleum & gas; downstream for coal)
- Emission targets and timelines
 - 2012: 5,775 MMT; 2020: 4,924 MMT
 - 2030: 3,860 MMT; 2050: 2,050 MMT
- Emissions certainty -- No “safety valve” for cost certainty
- Allowance auctions; declining levels of free allocations
- Auction proceeds for transition assistance and R & D
- Offsets: Domestic, 15%; International (restricted), 15%
- Carbon Market Efficiency Board (to minimize allowance price volatility)
- New entrants receive allowances
- Allows banking and borrowing of allowances
- Bonus allowances for Carbon Capture and Storage

Allocations & Auctions

- Allowance allocated to covered sectors based on historic emissions
- Initial allocations (68%)
 - Energy Intensive industry: 10%
 - Electric power sector: 19%
 - Rural electric cooperatives: 1%
 - Electric and gas distribution entities: 9%
 - Domestic agriculture and forestry: 5%
 - States: 5%
 - Carbon capture and sequestration: 4%
 - International forest protection: 2.5%
- Initial auctions (22.5%)
 - Increased to 70.5% by 2031 (free allocations end)

Economic Analysis of S. 2191

- Six research groups analyzed the bill under varying levels of assumptions
- Projected Allowance Price Comparison:

	CRAI	MIT	NI	CAT	EPA	SAIC
2015	\$48	48	18	18	29-40	55-64
2030	\$76	86	38	50	61-83	227+

- EPA estimated electricity prices will go up by 44% in 2030

Senate Action on S. 2191

- Voted out by the Senate Environment & Public Works Committee on Dec 5, 2007
- Full Senate consideration expected in June
- “No weakening of emission reductions”
- Potential Amendments:
 - Cost containment provisions (“safety valve”)
 - Proportion of allowance allocation vs auction
 - Timing of emission reductions and availability of technologies to reduce emissions (e.g., CCS)
 - Harmonization of federal/state programs -- preemption issue
 - Roles of offsets, domestic and international
 - International participation and global competitiveness
 - Role of nuclear

Climate Legislation in the House

- Speaker Pelosi appointed a select committee on Energy Independence and Global Warming, but legislative authority resides with the Energy & Commerce Committee
- A number of hearings were conducted
- Several “White Papers” were released addressing various aspects of cap & trade programs
- E & C Committee Chairman John Dingell and Subcommittee Chairman Rick Boucher are developing a bill to reduce economy-wide GHG emissions by 60-80% by 2050; bill expected in Spring
- They have expressed a desire to defer significant GHG reductions until CCS becomes commercially available
- Dingell has also introduced a “carbon tax” bill

U.S. Supreme Court Decision

- Last April, Supreme Court agreed that GHGs are “air pollutants” and that EPA can regulate them under the Clean Air Act, provided EPA first makes a “regulatory finding” that such gases are endangering public health and welfare
- In March, EPA Administrator notified Congress that EPA will soon initiate a “rulemaking process” (ANPR) toward a final endangerment decision
- A decision is not expected to occur until next year, giving Congress an opportunity to regulate GHGs under new climate legislation, instead of triggering CAA provisions

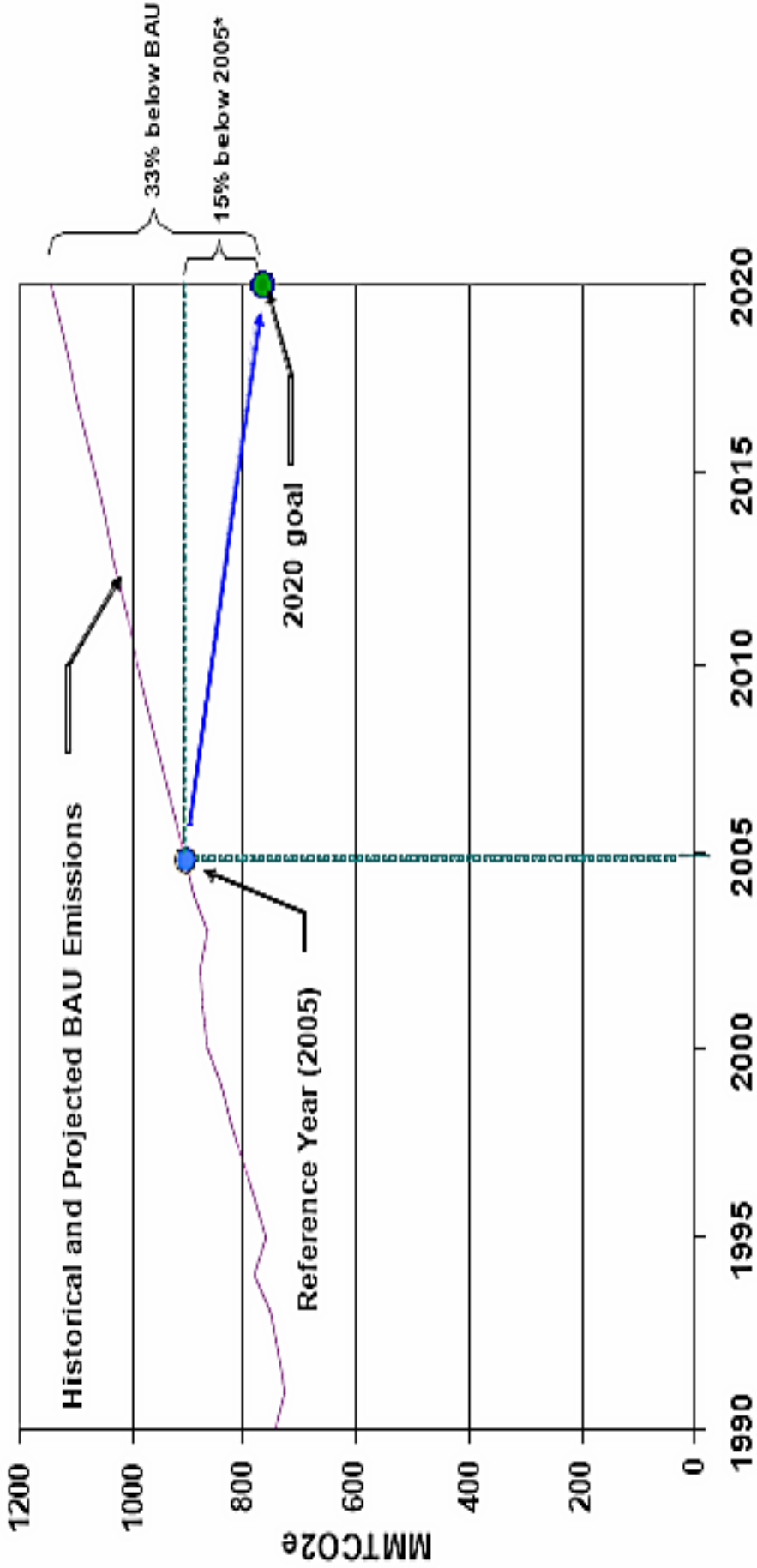
State/Regional Climate Activities

- In the absence of federal legislation numerous states have initiated climate action plans
 - California Legislation (AB 32)
 - Ten Northeastern States (RGGI)
 - Western Regional Climate Initiative (WCI)
 - Midwestern Governors GHG Accord
- Many major U.S. corporations have joined others (e.g., USCAP) in calling for federal climate legislation

Western Climate Initiative (WCI)

- Seven states and two Canadian provinces are “Partners” in WCI with others as “Observers”
- WCI agreed to collectively cut GHG emissions to 15% below 2005 levels by 2020
- WCI is designing a cap & trade program, to be unveiled by August 2008
- WCI issued 5 “Option Papers” (Scope, Allowances, Offsets, Electricity, and Emissions Reporting) describing the elements of a cap & trade program
- Regional and state-by-state “stakeholder meetings” are being held regularly to seek public input
- A Memorandum of Agreement (and the “design elements of a cap & trade” program) to be signed by the Partners by August 2008
- The cap & trade program to be implemented under the authority of each participating State/Province

WCI Partner GHG Emissions and Regional Goal³



BAU = Business-as-usual (projections).

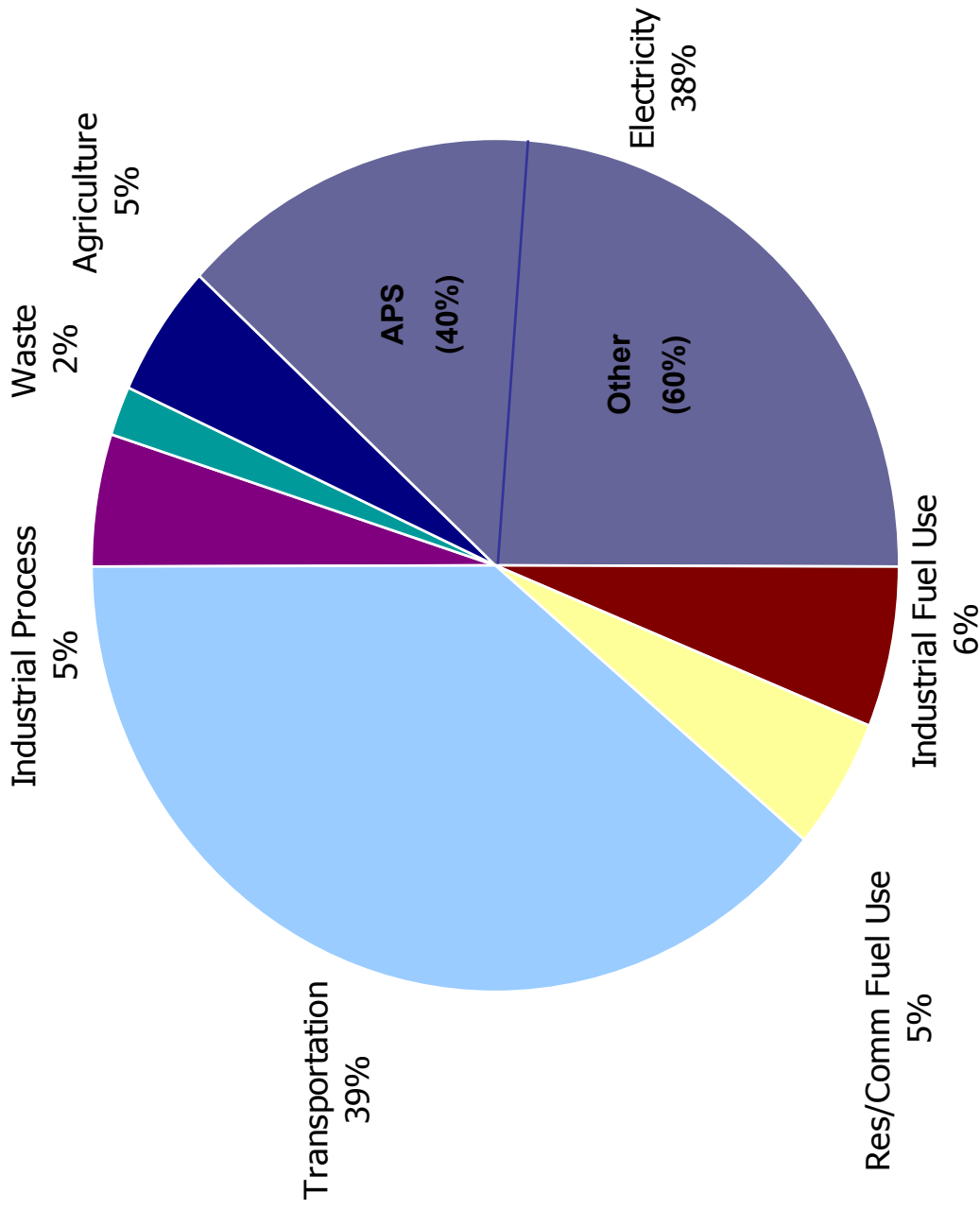
The arrow shown is purely directional: it illustrates the where regional emissions will need to be by 2020 rather than the specific path emissions are expected to follow during the 2007-2020 period.

* See footnote c in the Table 2 below.

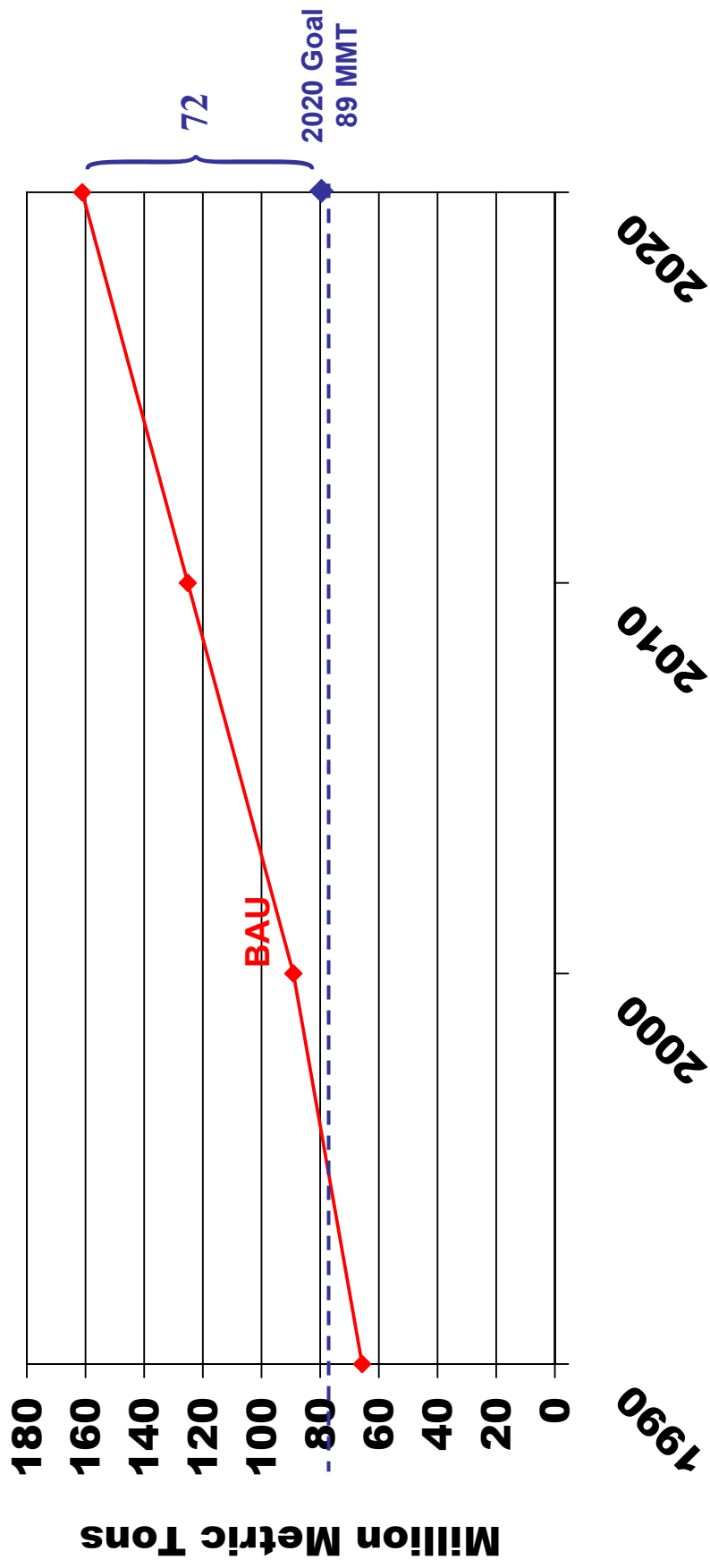
Arizona Climate Initiative

- Governor's Climate Advisory Committee recommended 49 programs in 2006
- Arizona is playing a lead role in the design of the WCI cap & trade program
- Arizona joined "The Climate Registry" – APS is a charter member of TCR
- As a WCI Partner, Arizona has agreed to reduce its GHG emissions by 72 MMT below its 2005 level by 2020

Arizona GHG Emissions by Sector, 2000



Arizona Emissions Goal



APS Climate Policy Positions

- Climate legislation must harmonize emission reduction targets and timelines with commercial availability of technologies to meet system-load requirements at affordable costs
- Any GHG emission reduction program must recognize regional differences in population growth and existing infrastructure for power generation
- Climate legislation must be applied economy-wide to maximize economic efficiency to benefit the entire society, and should not penalize one sector of the economy
- Any market-based programs to reduce GHG emissions (e.g., cap & trade) must include cost containment provisions such as a “safety valve” mechanism to ensure economic certainty during the initial stages of the program and until new technologies are commercially available
- Legislation must provide for research, development, and deployment of low- and no carbon emitting technologies and carbon sequestration and storage technologies
- National and state programs to deal with climate change should be harmonized to avoid conflicts and inconsistencies

THANK YOU