



Climate Policy Update

14th Annual Natural Gas STAR Implementation Workshop
Houston, TX
October 23-24, 2007

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- Introduction to Pew
- Context
- Where we are today on Climate Policy
 - State
 - USCAP
 - Federal
- Implications for Natural Gas

The Pew Center (*Founded 1998*)



Research and analysis

90+ peer-reviewed reports on climate science, economics, policy, solutions

Business Environmental Leadership Council

45 companies (most Fortune 500) in energy, mining, transportation, manufacturing, consumer products, high-tech, other sectors

Policy dialogue and input

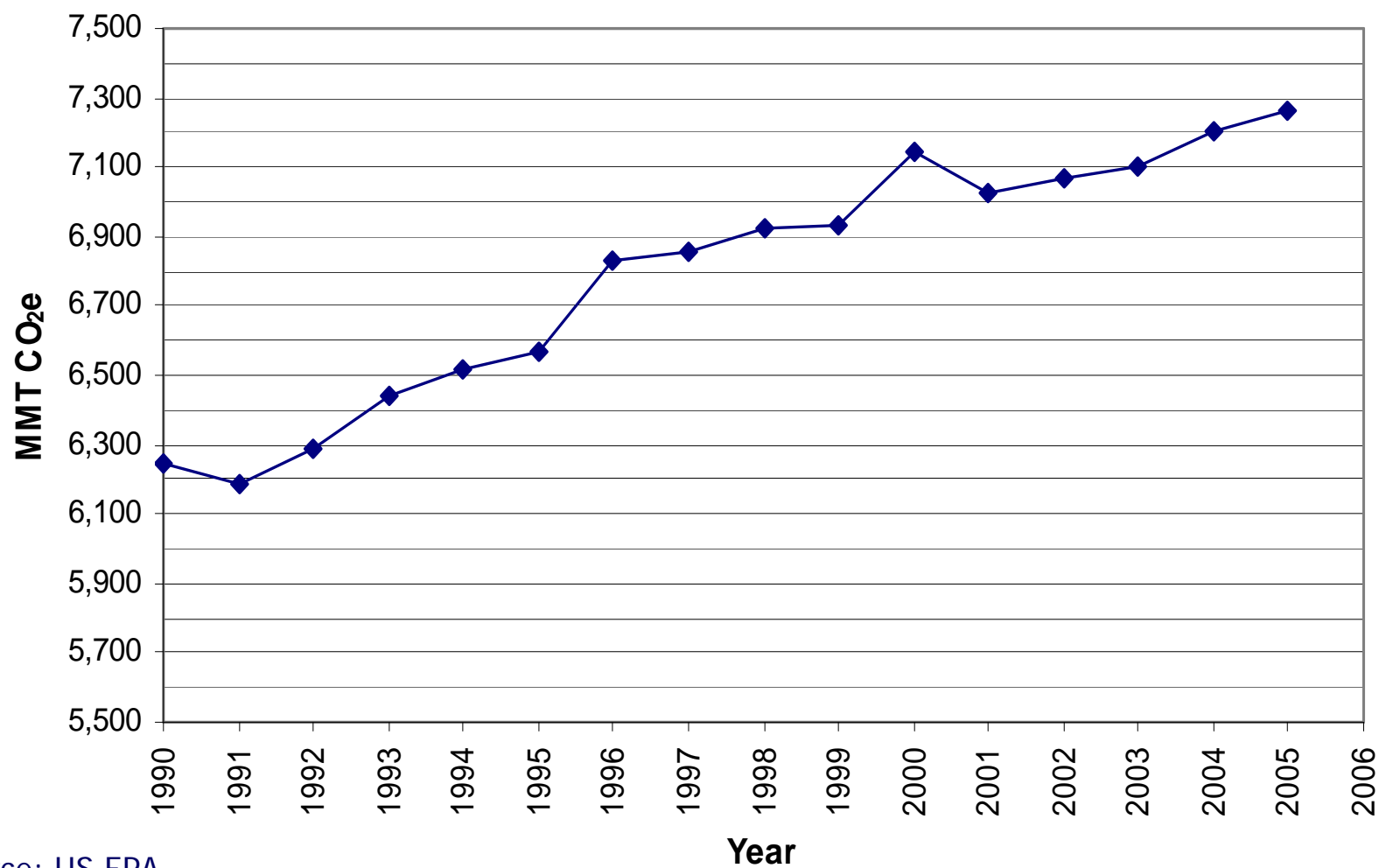
State, federal, international

Today – Bush Climate Policy



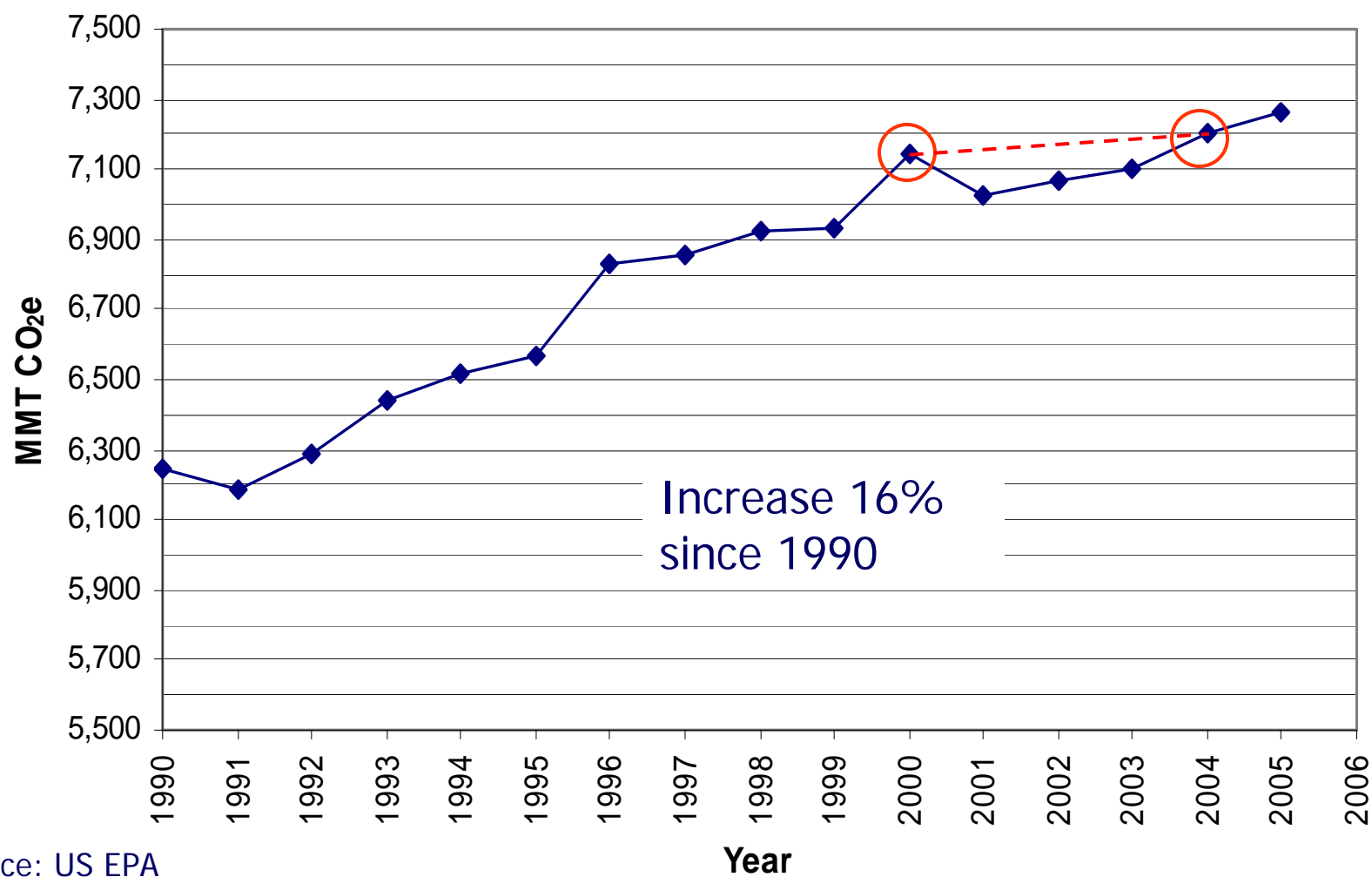
- No Kyoto
- Research
- GHG Intensity Target
- Voluntary reporting
- Long-term technology development

U.S. GHG Emissions 1990-2005

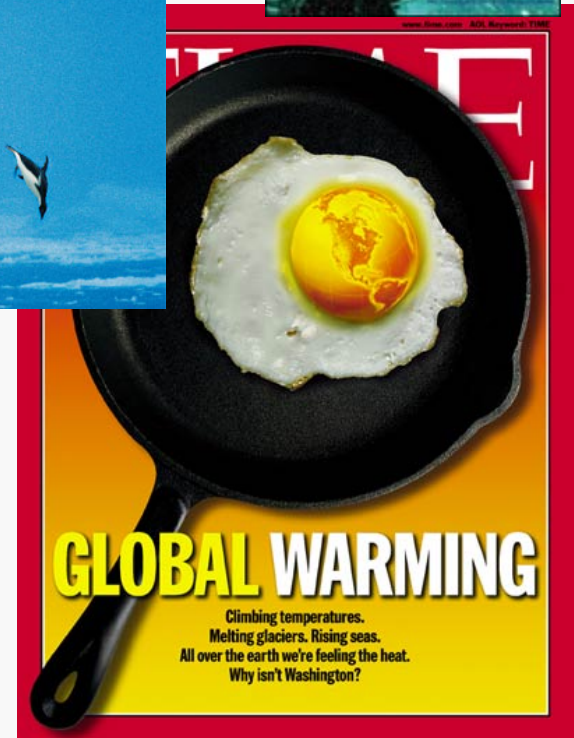
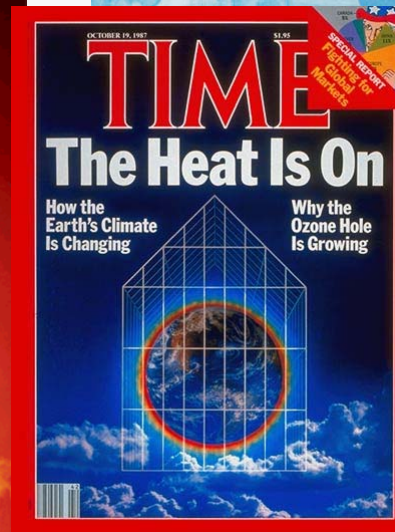
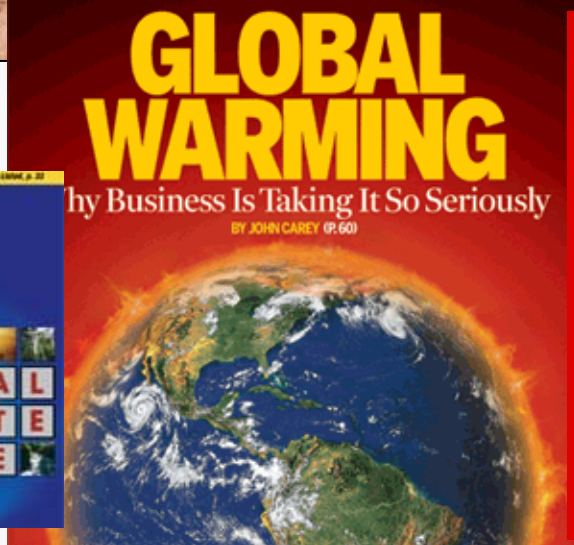
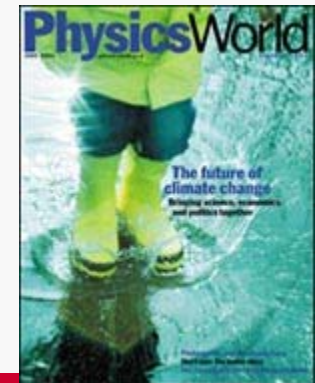


Source: US EPA

U.S. GHG Emissions 1990-2005



Increased Attention 2007



Increased Attention – Why?



- IPCC, polar bears, record annual temperatures, Katrina
- California, RGGI, other state actions
- Gore's movie & concert, Branson's prize
- Supreme Court: CO₂ is a pollutant
- State of the Union mention
- Shifts by Exxon, trade associations
- Debate in Congress over climate legislation

ABC NEWS/STANFORD UNIVERSITY POLL (4/2007)

Views of Global Warming: Then & Now

	1998	2006	2007
Think it's probably happening	80%	85%	84%
Personally see it as very/extremely important	31	49	52
Know at least a moderate amount about it	44	58	62
Think U.S. government should do more about it	--	68	70
Think scientists disagree about it	67	64	56

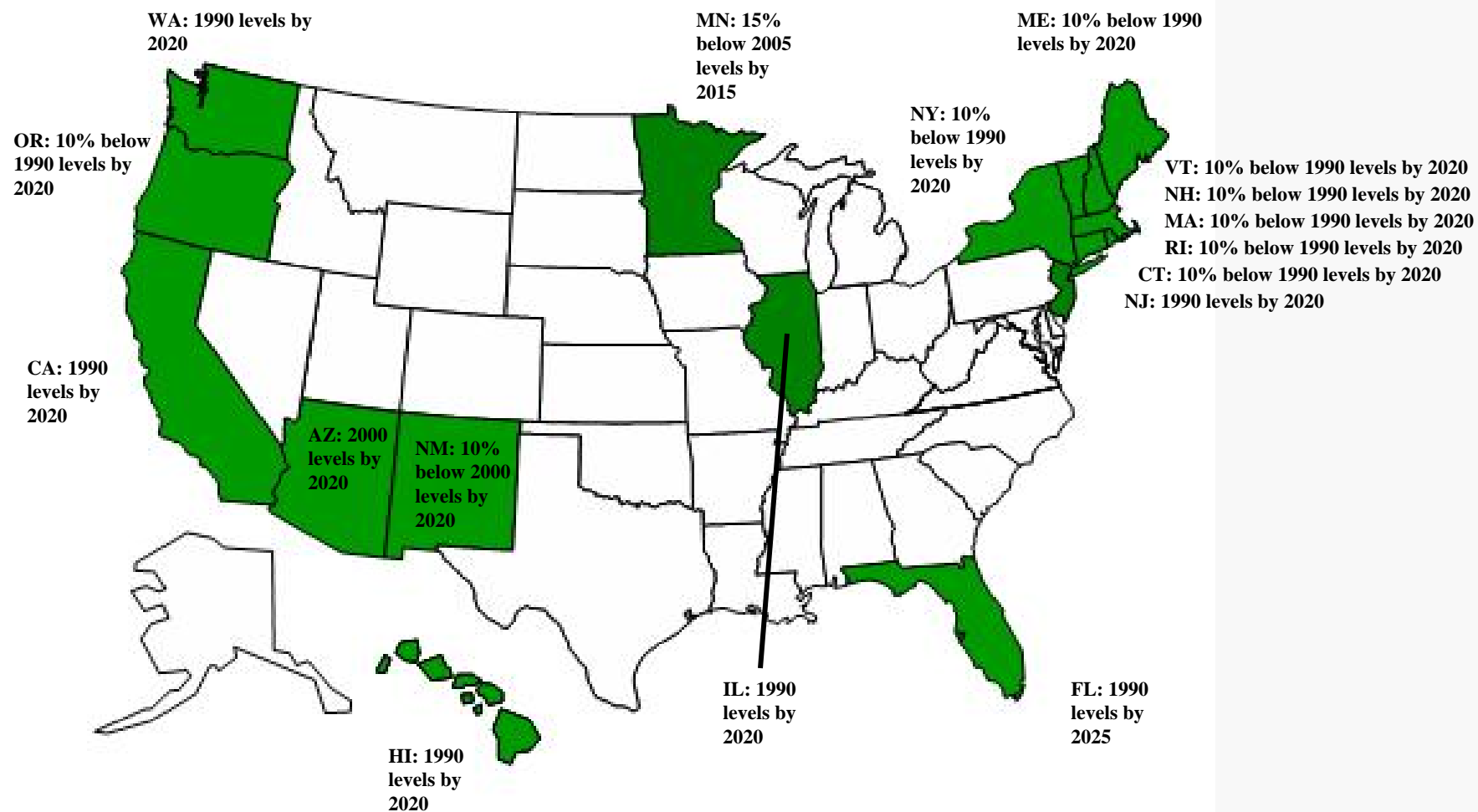
US State Action to Date



2005 – 2007 in the States:

- RGGI: Northeastern states cap power plant CO₂
- Gov. Schwarzenegger greenhouse gas targets (2005):
 - 1990 levels by 2020
 - 80% below 1990 levels by 2050
 - California law (2006): 1990 levels by 2020
- Western Regional Climate Initiative – 6 states, 2 CD Provinces
- Florida – first state in the SE to adopt a target and by 2008 Cap-trade
- 41 state GHG reporting registry launched (2 CD Provinces)
- Much activity in other states

State GHG Emission Targets



Industry Developments 2007



USCAP

United States
Climate Action
Partnership

"We are committed to a pathway that will slow, stop and reverse the growth of U.S. emissions while expanding the U.S. economy."



Boston
Scientific



CATERPILLAR®



ConocoPhillips



Duke Energy®



e
ENVIRONMENTAL DEFENSE
finding the ways that work

Exelon®

FPL GROUP.



Johnson & Johnson

 **JOHN DEERE**

MARSH



The Nature Conservancy.
Protecting nature. Preserving life.



PEPSICO



PG&E Corporation.

PNM Resources™



RIO TINTO
SIEMENS



PEW CENTER
on
Global CLIMATE CHANGE



WORLD
RESOURCES
INSTITUTE

XEROX®

USCAP

- CEO partnership
- Slow, Stop, and Reverse
- 15 Year target = 10 – 30% below today's level
- 2050 Target = 60 – 80% reduction
- Call for rapid enactment of legislation, including:
 - Greenhouse gas cap-and-trade
 - Technology RD&D
 - Additional policies/measures

The 110th Congress

- Over 120 climate-related hearings
- Around 150 bills mention climate change
- Small minority still debating climate science

Activity in the 110th Congress (1)



Senate:

Lieberman-McCain: economy-wide, offsets, technology. 60% (1990) by 2050

Sanders-Boxer: economy-wide, cap-trade ?, sector standards. 80% (1990) by 2050

Feinstein-Carper: electricity sector, offsets, tech R&D, 25% (1990) by 2050

Kerry-Snowe: economy-wide, offsets, sector standards, tech R&D. 62%(1990) by 2050

Bingaman-Specter: Based on NCEP recommendations including a “safety valve” of \$12/ton rising 5%/year above inflation, funds and bonus allowances for tech R&D. Aspires to $\geq 60\%$ below current by 2050. May require aggressive external policies to avoid safety valve.

Landrieu-Graham-Lincoln-Warner: Safety-valve alternative using Carbon Market Efficiency Board who can expand the percentage of offsets, increase firm borrowing, adjust interest rate and implement government/program borrowing if price reaches specific levels.

Lieberman-Warner: Compromise Bill - introduced on 10/17/07

Lieberman-Warner Bill

Key elements:



- Declining Cap – 70% by 2050
- Increasing auction over time
- Offsets - Domestic limit 15%; International 15% – (countries with absolute cap)
- International imports – must hold allowances
- Carbon Market Efficiency Board
- No safety valve upper limit on price
- Bonus allowances for CCS
- Funds for technology, adaptation, and mitigating impacts on poor.
- Corporate Environmental Disclosure to SEC¹⁶

Activity in the 110th Congress (2)



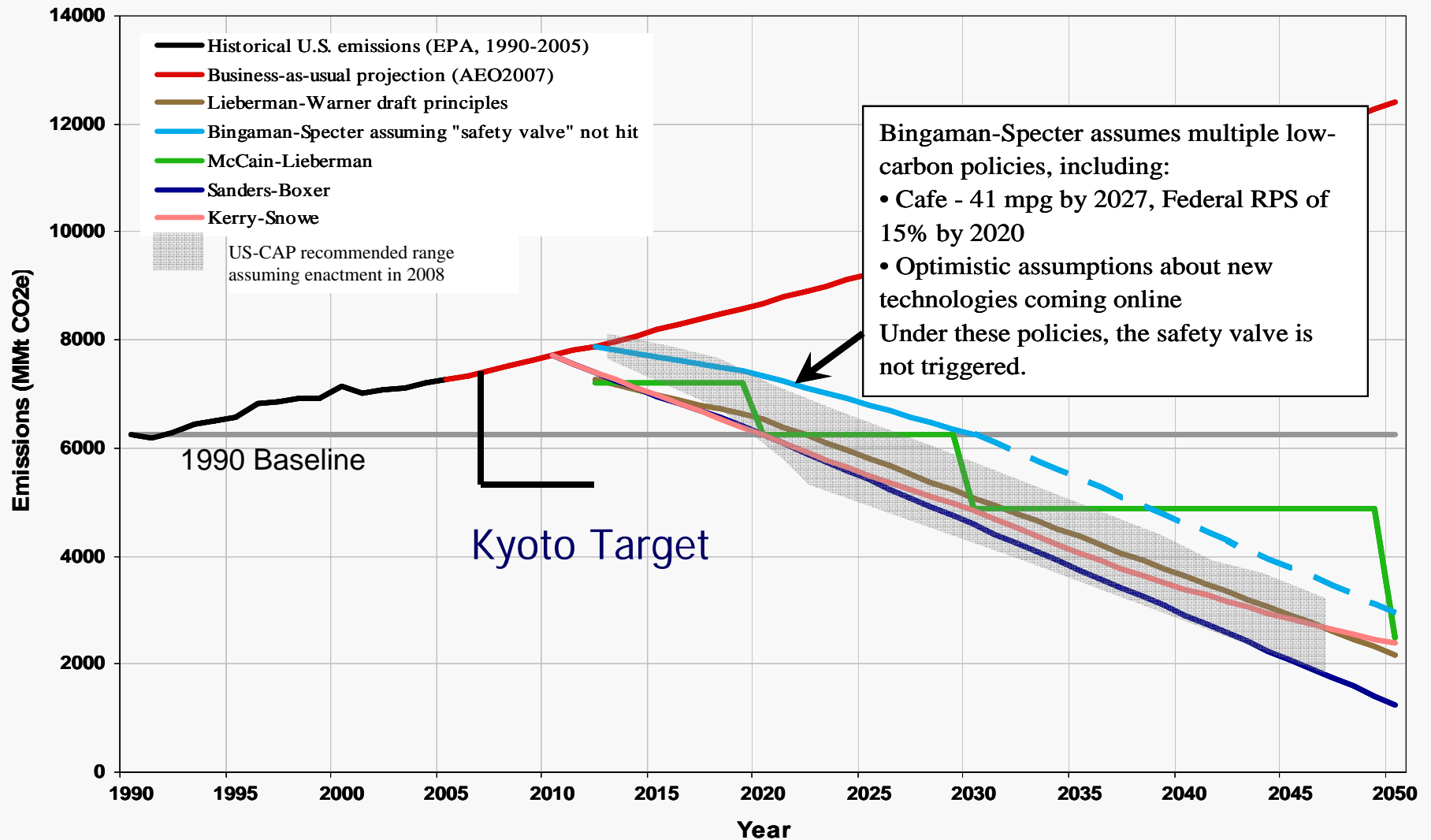
House

Olver-Gilchrest: economy-wide, offsets, 60% below 1990 in 2050

Waxman: economy-wide, cap & trade permitted but not required, offsets not specified, funds for R&D, other sectoral standards. 80% below 1990 in 2050

Dingell White Paper: economy-wide, cap & trade, offsets, R&D, other policies. 60-80% by 2050

Comparison of Senate Proposals and USCAP Emissions Targets



Key Elements of Policy - 2007



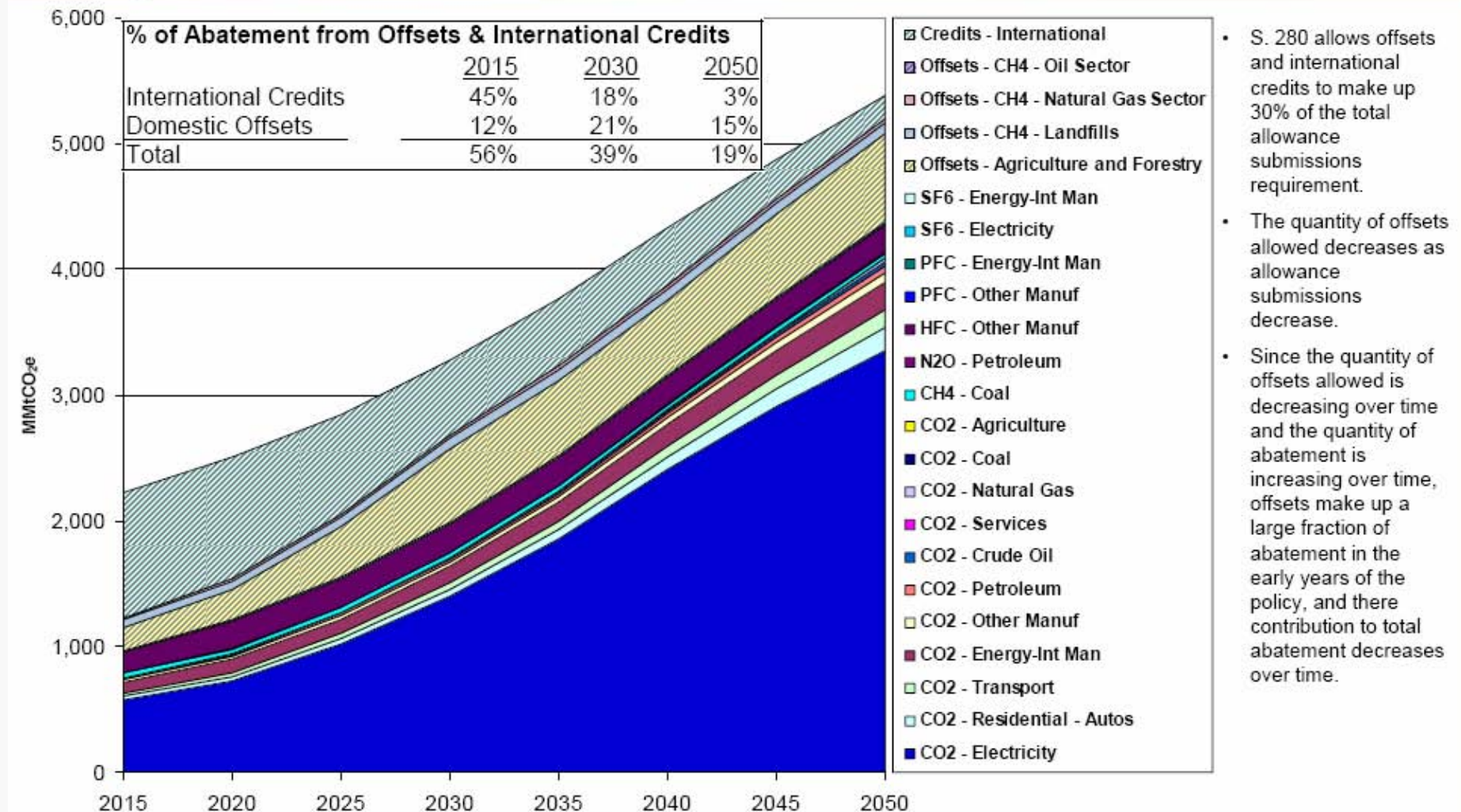
- Cap and Trade - Economy wide steep future reductions
- Offsets - with limits
- Increasing Auction
- Safety valve
 - Bingaman-Specter
 - Landrieu-Graham-Lincoln-Warner

- How likely is enactment of a greenhouse gas cap-and-trade law in 2008 or 2010?
- Pew Center's assessment:
 - Plausible by end of 2008
 - Very likely by 2010

Impact of cap and trade falls heaviest
on electricity

No analysis of Lieberman Warner yet but S. 280 is similar

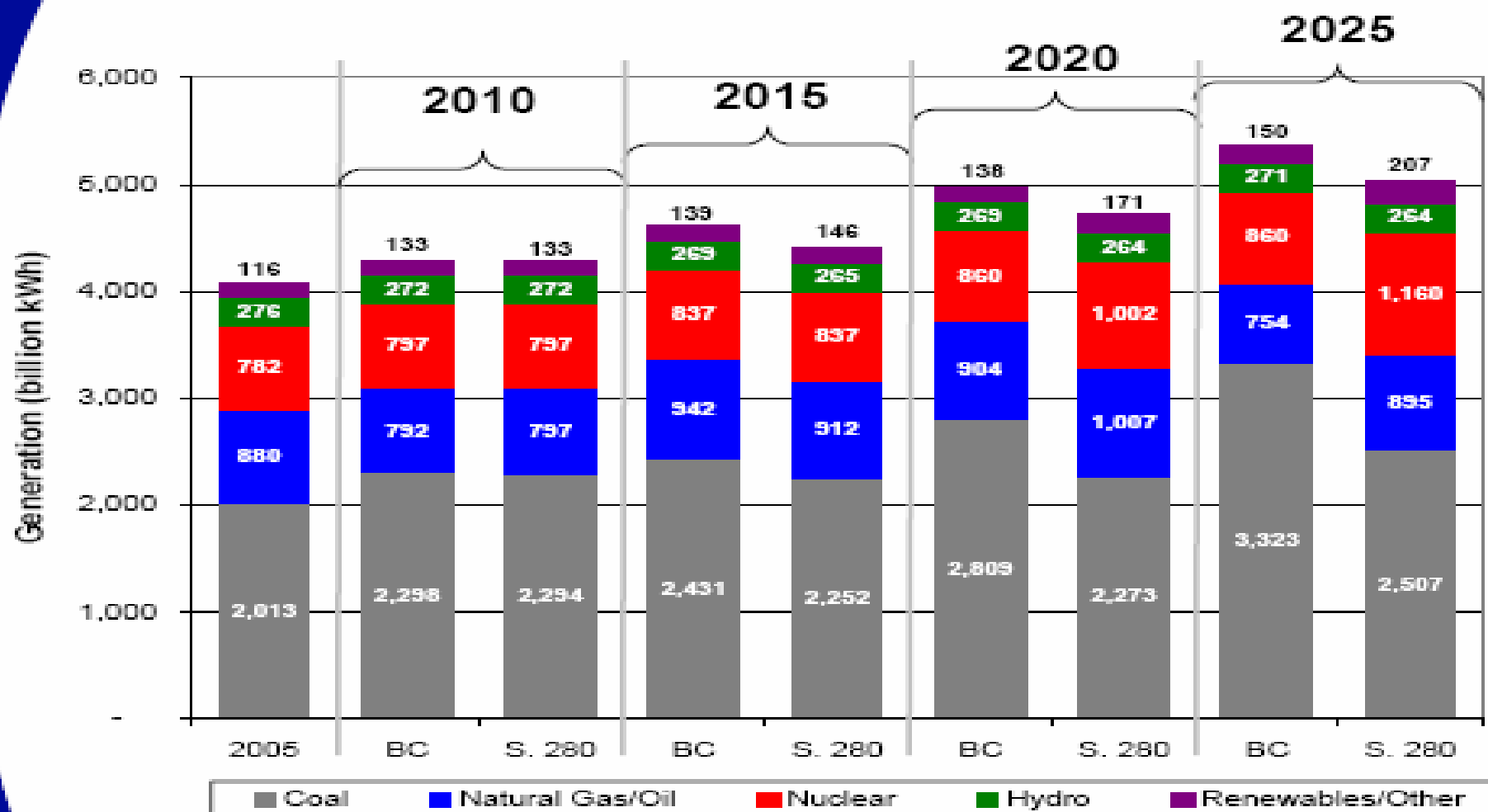
Sources of Abatement Modeling S. 280



Electricity Mix - Modeling S. 280

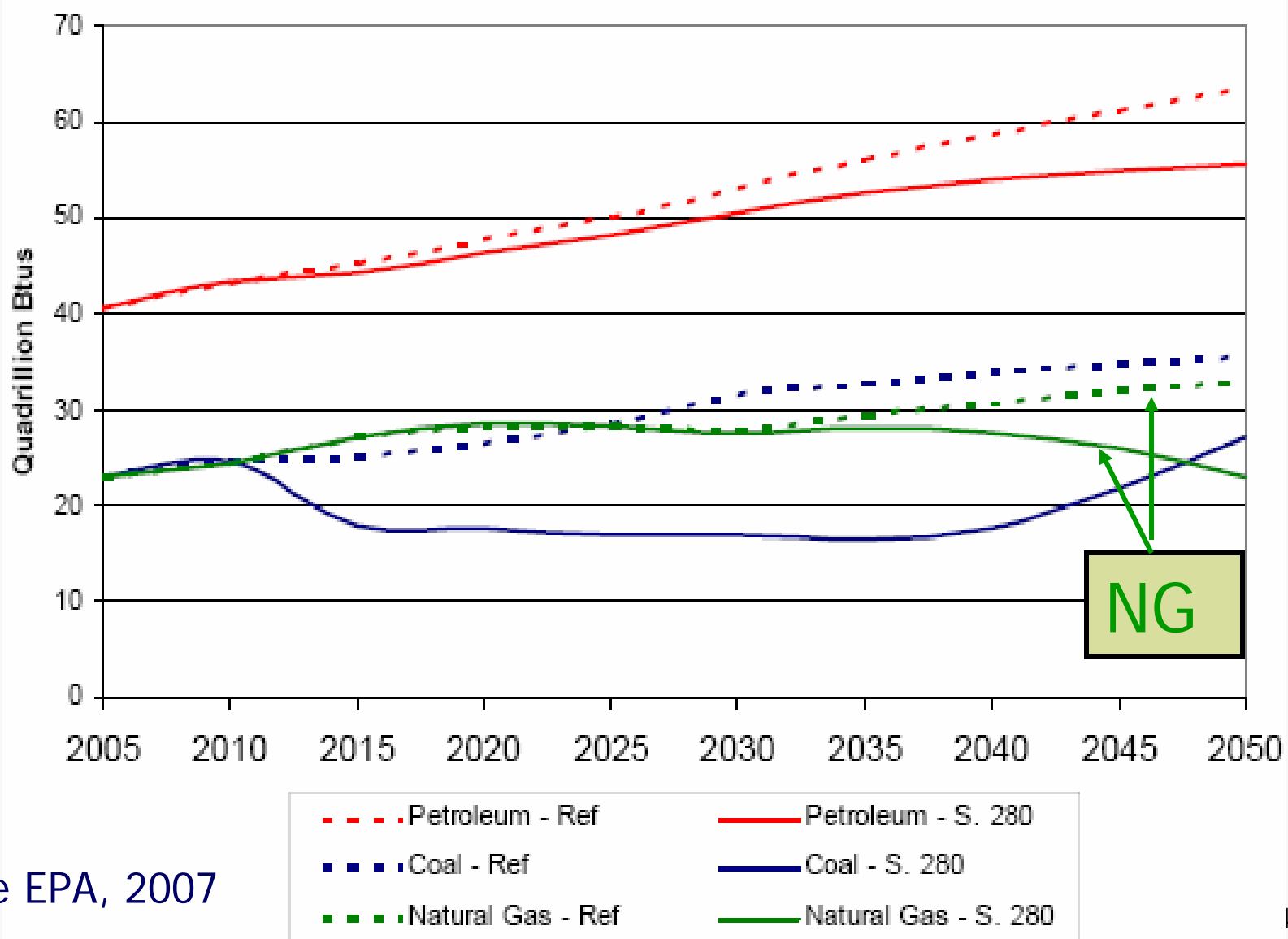


Projected Generation Mix in 2010, 2015, 2020, and 2025 with S. 280



Source: EPA, 2007

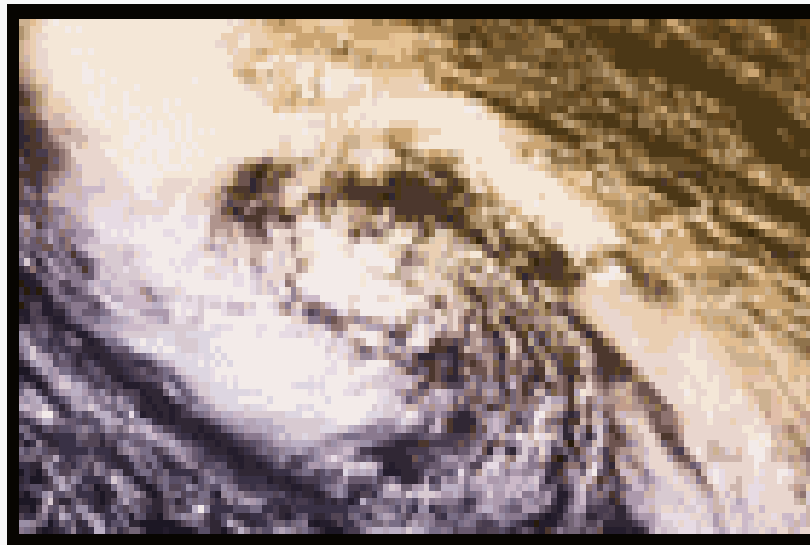
Primary Energy Use – Modeling S. 280



For More Information



www.pewclimate.org



Extra Slides on S. 280 Impacts

Fuel Price Adders - S. 280



			2030	
			Cost of	End -
	2005 Price	Producer Price	Carbon	User Price
			Content	
Metric Ton of CO ₂	n/a		\$29.30 *	
Metric Ton of Carbon	n/a		\$107.44	
Barrel of Oil	\$50.28	\$56.92	\$12.54	\$69.46
Gallon of Gasoline	\$2.34	\$2.65	\$0.26	\$2.91
Short Ton of Coal	\$36.79	\$37.70	\$64.77	\$102.47
Short Ton of Coal w/ CCS	\$36.79	\$37.70	\$6.48	\$44.18
tCf of Natural Gas	\$7.51	\$6.16	\$1.59	\$7.75

* Average of ADAGE and IGEM allowance prices

Allowance Prices (2005\$ t/CO₂e)

Year	Price	Price (w/low Nuclear)	Price (w/no CCS)
2015	\$16 - \$20	\$14	\$19
2030	\$ 27 - \$32	\$28	\$40