



Joint Meeting

Environment & Natural Resources Council Committee on Energy

ACTION REPORT

**Wednesday, January 9, 2008
10:00 AM
Morris Hall**

**Marco Rubio
Speaker**

**Stan Mayfield
Paige Kreegel
Chairs**

Council Meeting Notice

HOUSE OF REPRESENTATIVES

Speaker Marco Rubio

Environment & Natural Resources Council

Start Date and Time: Wednesday, January 09, 2008 10:00 am
End Date and Time: Wednesday, January 09, 2008 12:00 pm
Location: Morris Hall (17 HOB)
Duration: 2.00 hrs

JOINT MEETING

The Council will meet jointly with the Committee on Energy to hear the following presentation:

The Florida Energy Commission 2007 Recommendations to the Florida Legislature
Tommy Boroughs, Commission Chairman

NOTICE FINALIZED on 01/02/2008 16:24 by BLR

COUNCIL MEETING REPORT
Environment & Natural Resources Council

1/9/2008 10:00:00AM

Location: Morris Hall (17 HOB)

Attendance:

	<i>Present</i>	<i>Absent</i>	<i>Excused</i>
Stan Mayfield (Chair)	X		
Debbie Boyd	X		
Mary Brandenburg	X		
Faye Culp	X		
Richard Glorioso	X		
Denise Grimsley	X		
Will Kendrick	X		
Paige Kreegel	X		
Rick Kriseman	X		
Richard Machek	X		
Bryan Nelson	X		
Stephen Precourt	X		
Scott Randolph	X		
Baxter Troutman	X		
Trudi Williams	X		
Totals:	15	0	0

Committee meeting was reported out: Wednesday, January 09, 2008 12:21:24PM

COMMITTEE MEETING REPORT

Committee on Energy

1/9/2008 10:00:00AM

Location: Morris Hall (17 HOB)

Attendance:

	<i>Present</i>	<i>Absent</i>	<i>Excused</i>
Paige Kreegel (Chair)	X		
Gary Aubuchon	X		
Loranne Ausley	X		
Donald Brown	X		
Edward Bullard	X		
Larry Cretul	X		
Terry Fields	X		
Andy Gardiner	X		
Kurt Kelly	X		
Rick Kriseman	X		
Seth McKeel	X		
Stephen Precourt	X		
William Snyder	X		
Shelley Vana	X		
Totals:	14	0	0

Committee meeting was reported out: Wednesday, January 09, 2008 12:46:34PM

COUNCIL MEETING REPORT
Environment & Natural Resources Council

1/9/2008 10:00:00AM

Location: Morris Hall (17 HOB)

Other Business Appearance:

Florida Energy Commission 2007 Recommendations to the Legislature
Tommy Bouroughs, Commission Chairman (At Request Of Chair) - Information Only
Florida Energy Commission
600 S. Calhoun Strret, Suite 254
Tallahassee FL 32301
Phone: 922-0999

Potential & Cost of Greenhouse Gas Reductions
Richard Duke, Director - Information Only
Center for Marketing Innovation, Natural Resources Defense Council
40 West 20th Street
New York New York
Phone: 212-727-4489

Committee meeting was reported out: Wednesday, January 09, 2008 12:21:24PM

COUNCIL MEETING REPORT
Environment & Natural Resources Council

1/9/2008 10:00:00AM

Location: Morris Hall (17 HOB)

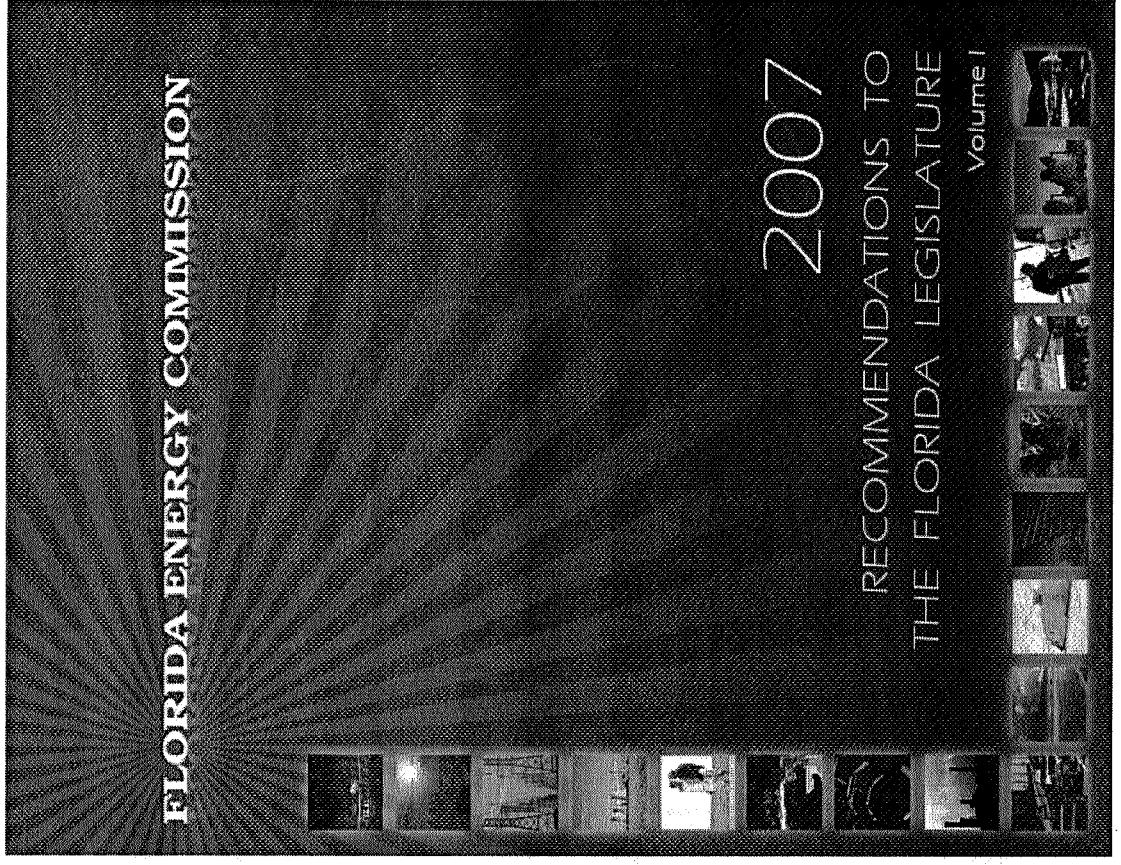
Summary: No Bills Considered

Committee meeting was reported out: Wednesday, January 09, 2008 12:21:24PM

Florida Energy Commission

2007

Recommendations to the Legislature



FLORIDA ENERGY COMMISSION

- Statutorily charged to make annual energy-policy recommendations to the President and Speaker
- Legislation passed in 2006. First meeting held Feb. 2007
- 9 members appointed by Senate President and Speaker of the House
- Charge is broad
- Responsibility to make recommendations is ongoing - impossible in first year to address every issue
- This year, climate change was a major issue, but was not the major issue in terms of an overall strategic energy policy

2007 Recommendations to the Legislature

2007 ACTIVITIES

- 4 advisory groups comprised of 60 diverse stakeholders
- FEC and advisory groups met 26 times
- Nearly 80 presentations by members of energy, environmental and business communities
- Extensive public involvement

WHY DO WE NEED A

STRATEGIC ENERGY POLICY?

- Energy security
- Climate change
- Energy costs
- Fuel diversity
- Growing demand
- Energy infrastructure
- Aging workforce
- Energy policy governance

85 RECOMMENDATIONS >

7 POLICY GOALS

- Restructure Energy Policy Governance
- Increase Energy Efficiency and Conservation Efforts
- Maximize Renewable Energy Resource Development
- Enhance Energy Related Education and Research
- Strengthen Energy Supply and Delivery Infrastructure
- Respond to Climate Change
- Out year issues

POLICY GOAL:

Restructure the Governance of Florida's Energy Polices And Programs

- Unify governance of Florida's energy policy
- Streamline energy policy development
- Increase accountability

POLICY GOAL:

Increase Florida's Energy Efficiency And Conservation Efforts

- Energy efficiency of buildings - 83 % of all electricity consumed in buildings and homes
- Utility demand-side management
- Public sector policies that lead by example
- Consumer incentives and assistance programs

POLICY GOAL:

Maximize Florida's Renewable Energy

Resources

- Clearly define “renewable energy”
- Assess and evaluate current renewable energy resources
- Systematic approach to creating a renewable portfolio standard
- Require distributed generation, interconnection and net metering
- Renewable energy incentives

POLICY GOAL:
**Enhance Florida's Energy-Related Education,
Research and Development Programs**

- Coordination of University research and development
- Research should support the overall state energy plan
- Research should be geared to moving technology into the marketplace
- Consumer education and awareness
- Energy workforce training and education

POLICY GOAL:

Strengthen Florida's Energy Supply and Delivery

Infrastructure

- Electric transmission & distribution
- Enhance, expand, diversity Florida's energy infrastructure
- Generation diversity - 37 % of energy from natural gas makes us subject to supply disruption
- Integrate energy policy and land use planning

POLICY GOAL:
**Respond to the Challenges Of Global Climate
Change**

- Measure state greenhouse gases
- Create greenhouse gas reduction targets
- Education effort

POLICY GOAL:

Respond to the Challenges Of Global Climate Change

Greenhouse gas reduction targets

- 2000 levels by 2020
- 1990 levels by 2030
- 80 percent of 1990 levels by 2050
- Targets sunset in 2013

POLICY GOAL:

Respond to the Challenges Of Global Climate Change

- Allows three years more than executive orders to:
 - Add more nuclear power to the state's generation mix
 - Increase availability and affordability of biomass and solar energy.
 - Solar photovoltaic (PV) panels are commercially available now, but can have a higher installation cost. The industry predicts the price of solar PV will be cut in half before 2015.

POLICY GOAL:

Issues for 2008 Report

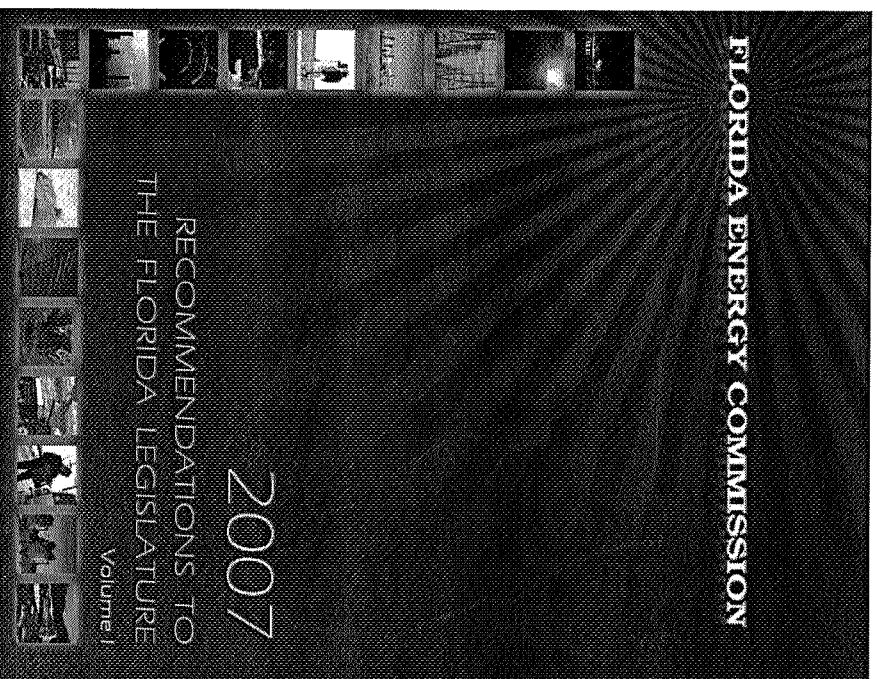
- Incentives and Decoupling
- Dedicated Funding Source
- Continued Efforts on Greenhouse Gases and Climate Change
- GHG Associated with the Transportation Sector

ENERGY POLICY IS NOT STATIC

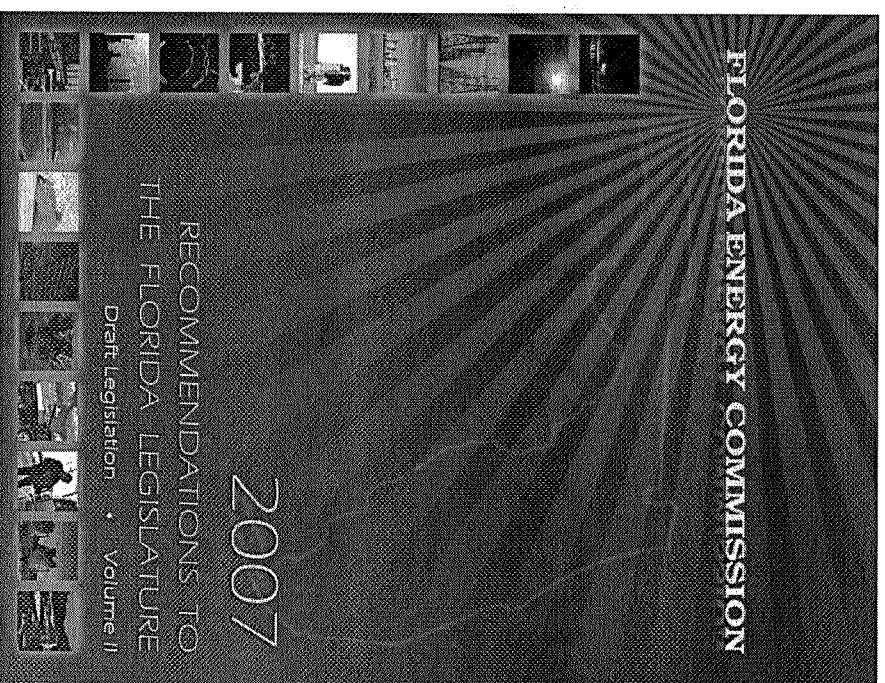
FLORIDA ENERGY COMMISSION

2007 Recommendations to the Legislature

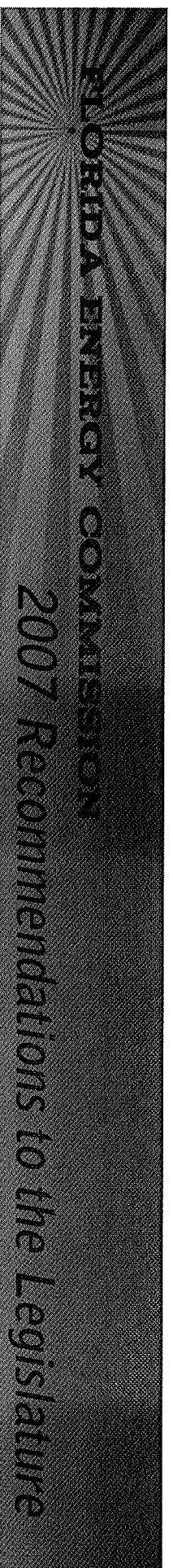
www.floridaenergycommission.gov

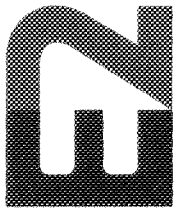


Volume I

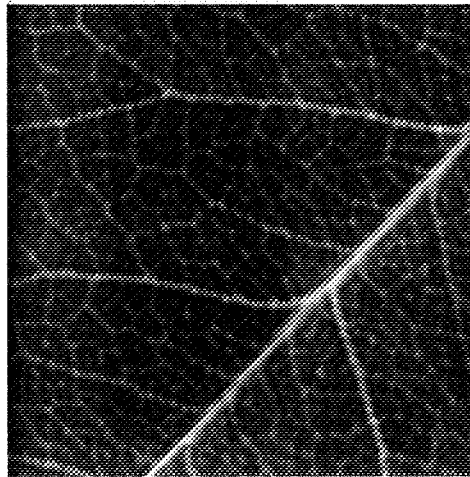


Volume II



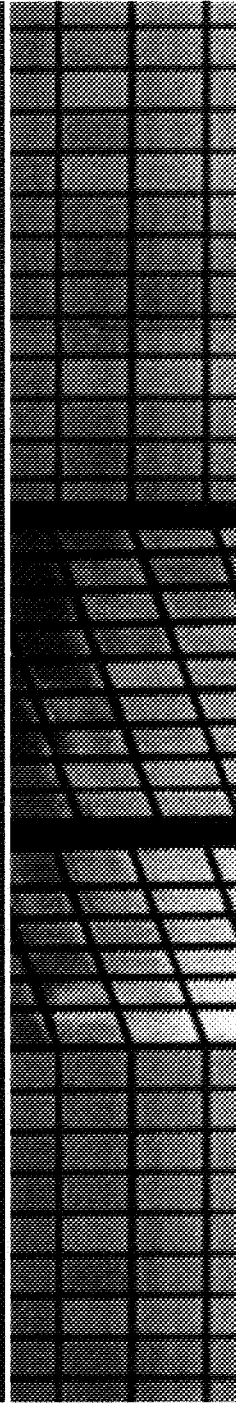
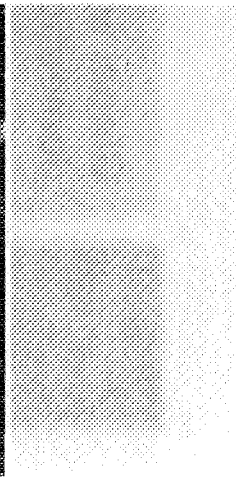


**ENVIRONMENTAL
ENTREPRENEURS**



**The McKinsey Global
Warming Solutions Map**

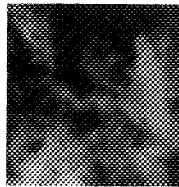
Rick Duke
January 11, 2008



Key Messages



Global warming has started and the US must aggressively reduce domestic emissions while negotiating a global solution



Rapid and comprehensive action can slash global warming pollution with existing technology and minimal economic impact

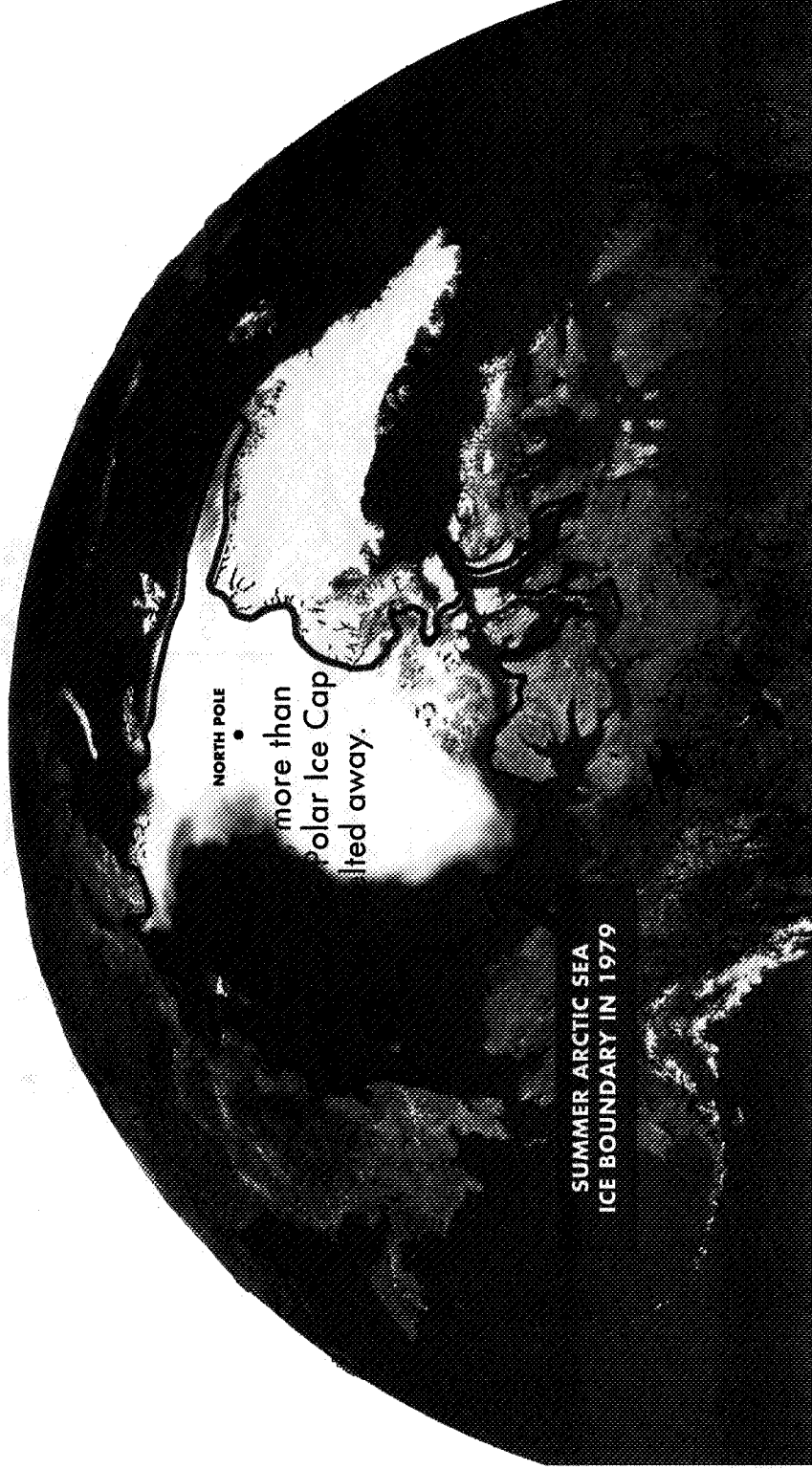


NRDC is working to unleash this abatement potential with policies to cap emissions, scale efficiency, and promote innovation

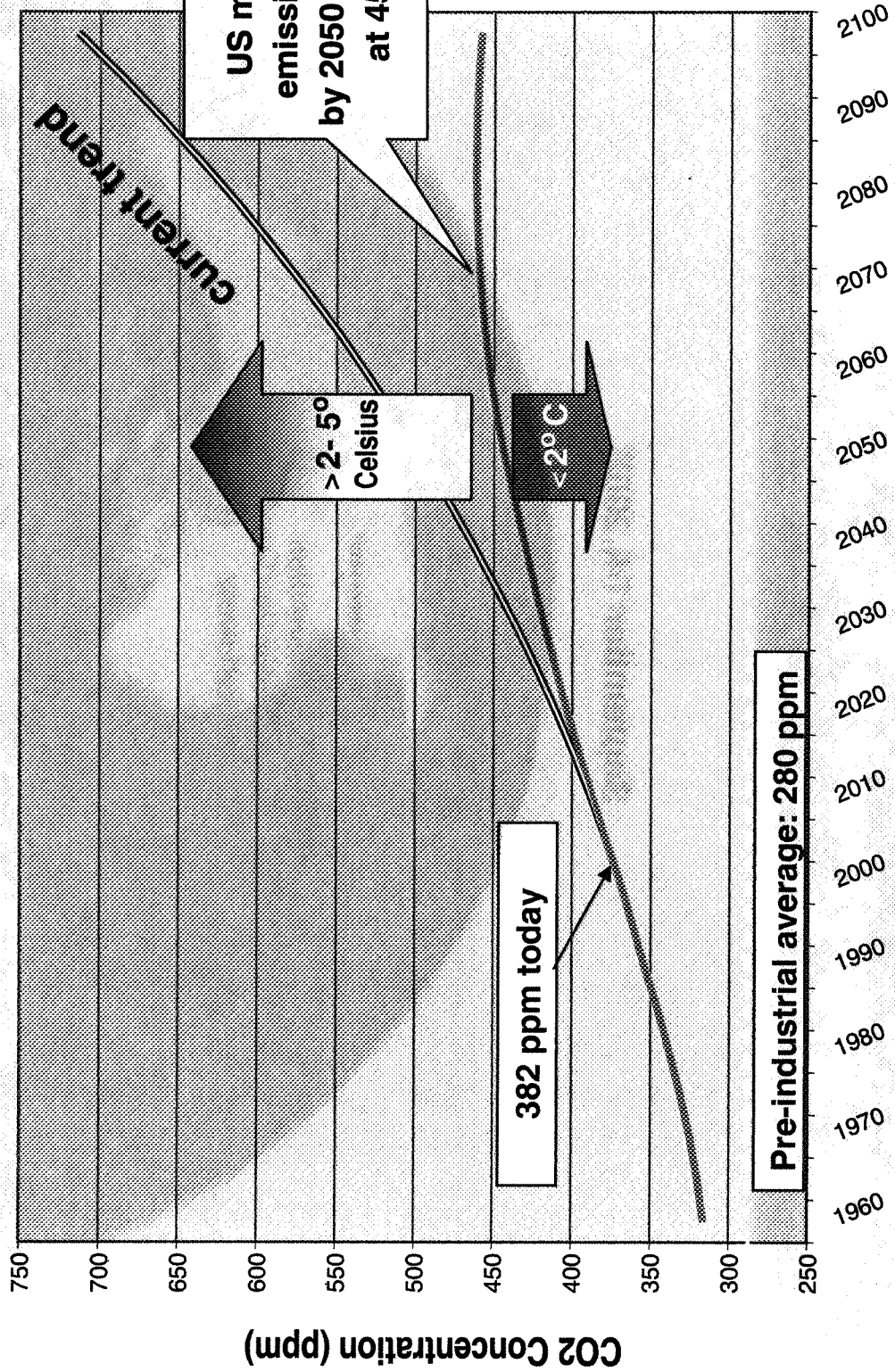
Global Warming Impacts Are Increasingly Clear



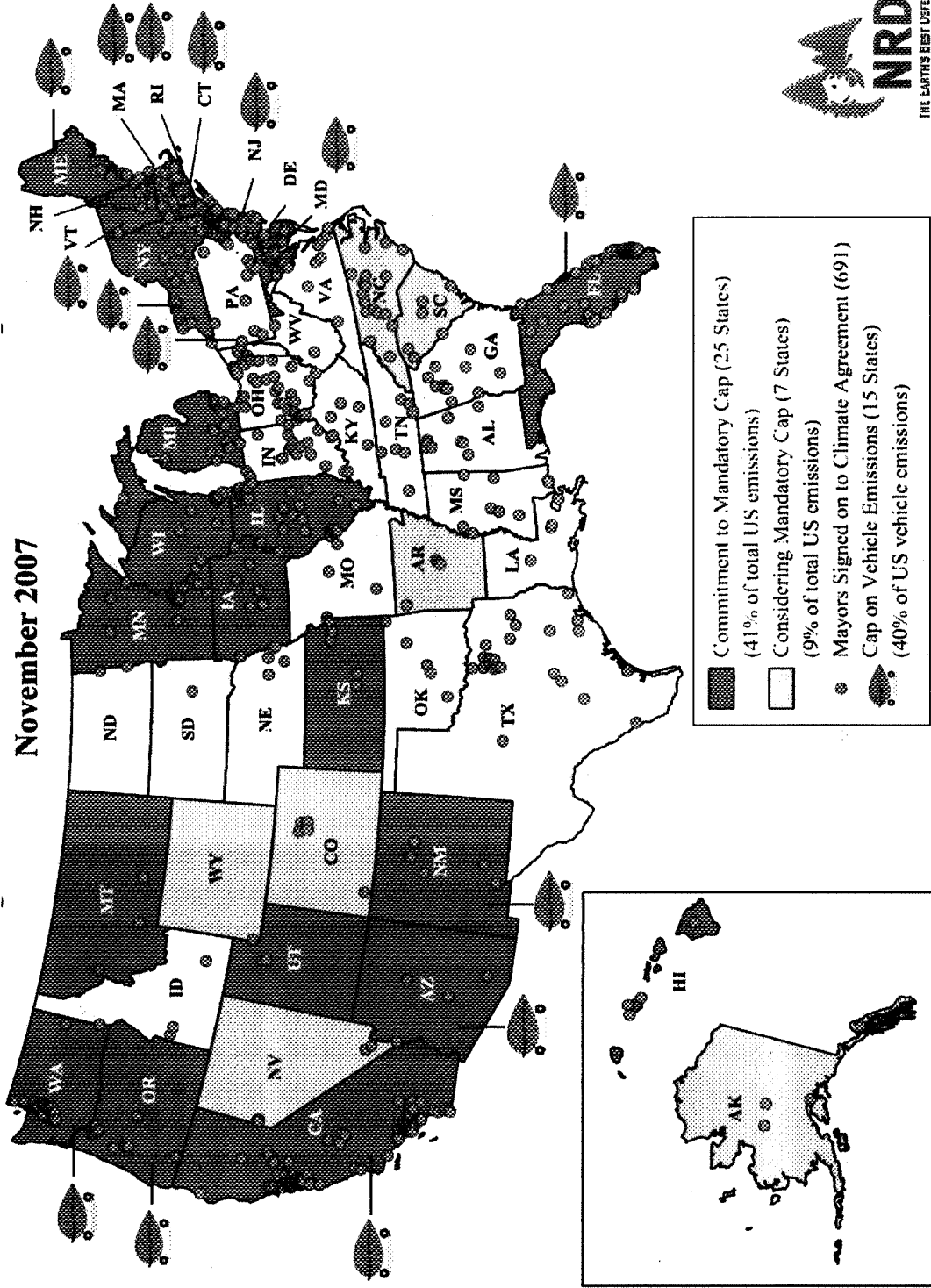
September 14, 2007



Fast Action Can Contain Most Severe Consequences



States/Cities Acting but Federal Leadership Needed



McKinsey Report Conclusions

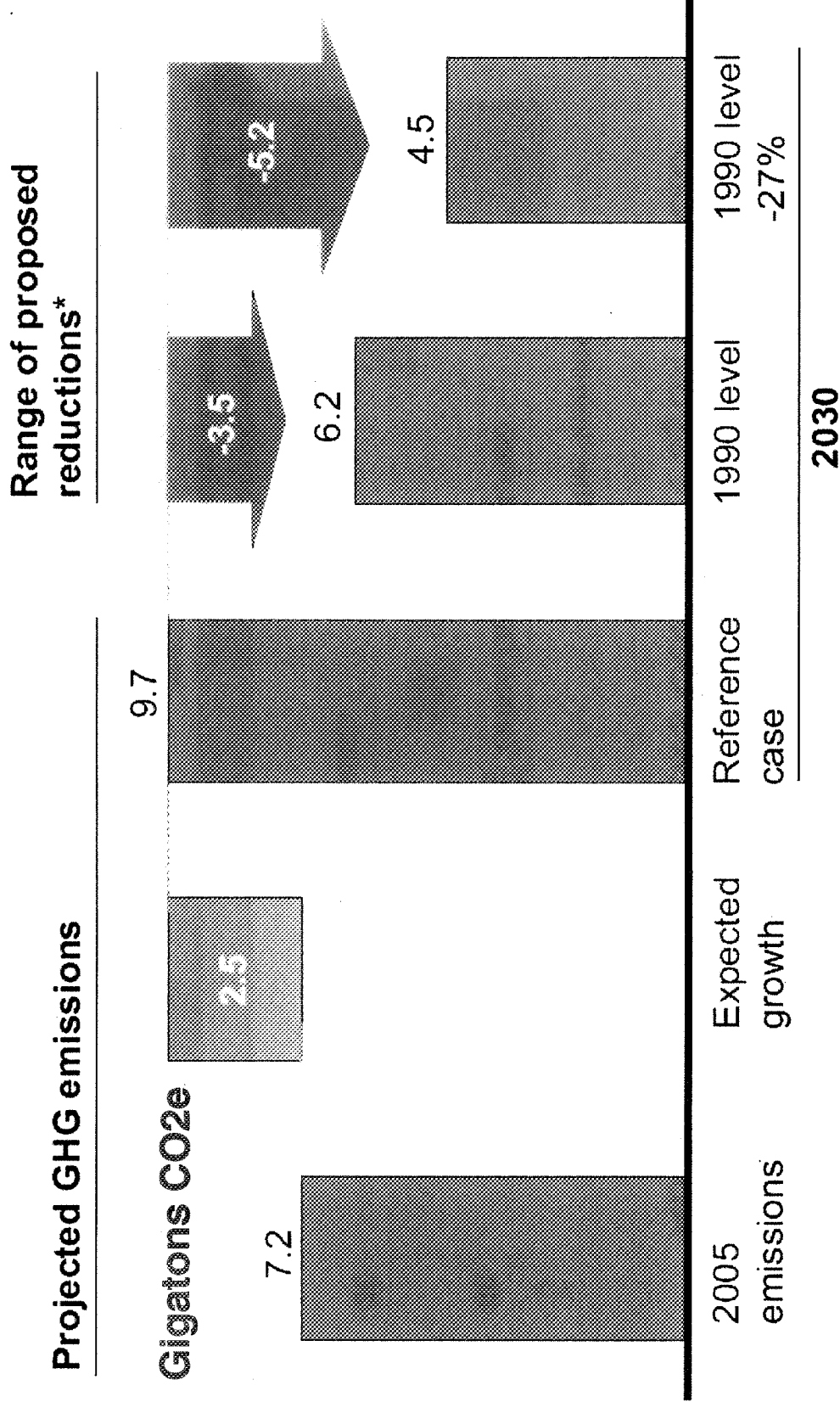


U.S. can cut GHG emissions 30% by 2030 without new technology or reduction in standard of living

- **Strong net economic benefits**
 - Energy savings roughly pay for clean supply
 - Also lowers oil/coal prices and reduces health impacts
 - Averts global warming costs estimated at up to 20% of GDP by Stern Report and others
- **NRDC policy solutions**
 - Overcome “non-price” barriers to energy efficiency
 - Carbon cap to drive investment towards cleaner technologies
 - Support for research, development and deployment to accelerate innovation



U.S. Emissions Expected to Rise Rapidly, Far Beyond 2030 Target Levels

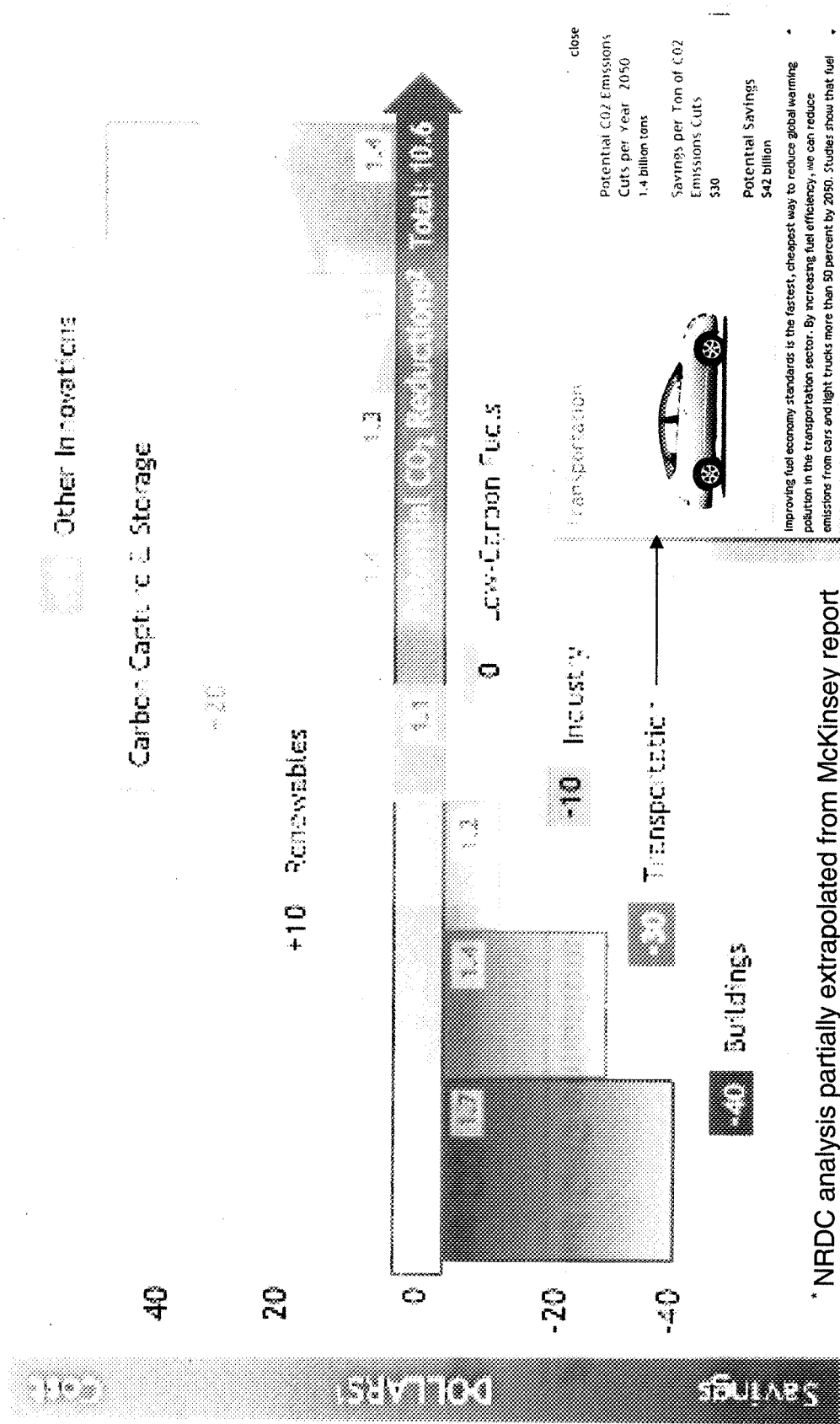


*Based on bills introduced in Congress that address climate change and/or GHG emissions on an economy-wide basis and have quantifiable targets
 Source: IEA; EPA; Global Insight; Pew Center on Global Climate Change; McKinsey analysis

U.S. GHG Can Be Cut 80% by 2050*



Abatement Curve Shows Cost and Payoff by Sector

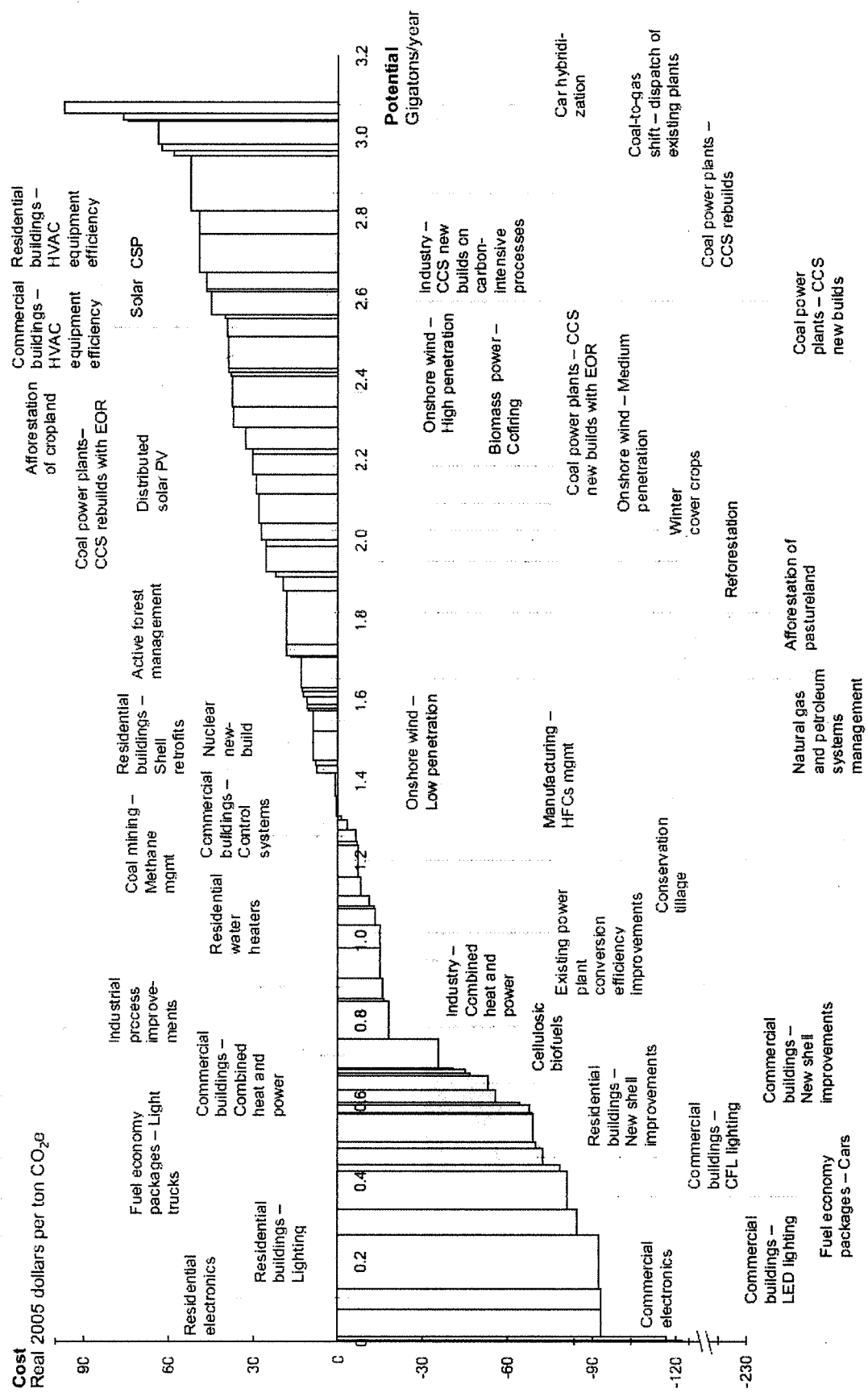


* NRDC analysis partially extrapolated from McKinsey report



Smart Efficiency Policies Now Can Pay For Supply-side Measures

2030 U.S. abatement potential under mid-range commitment and action

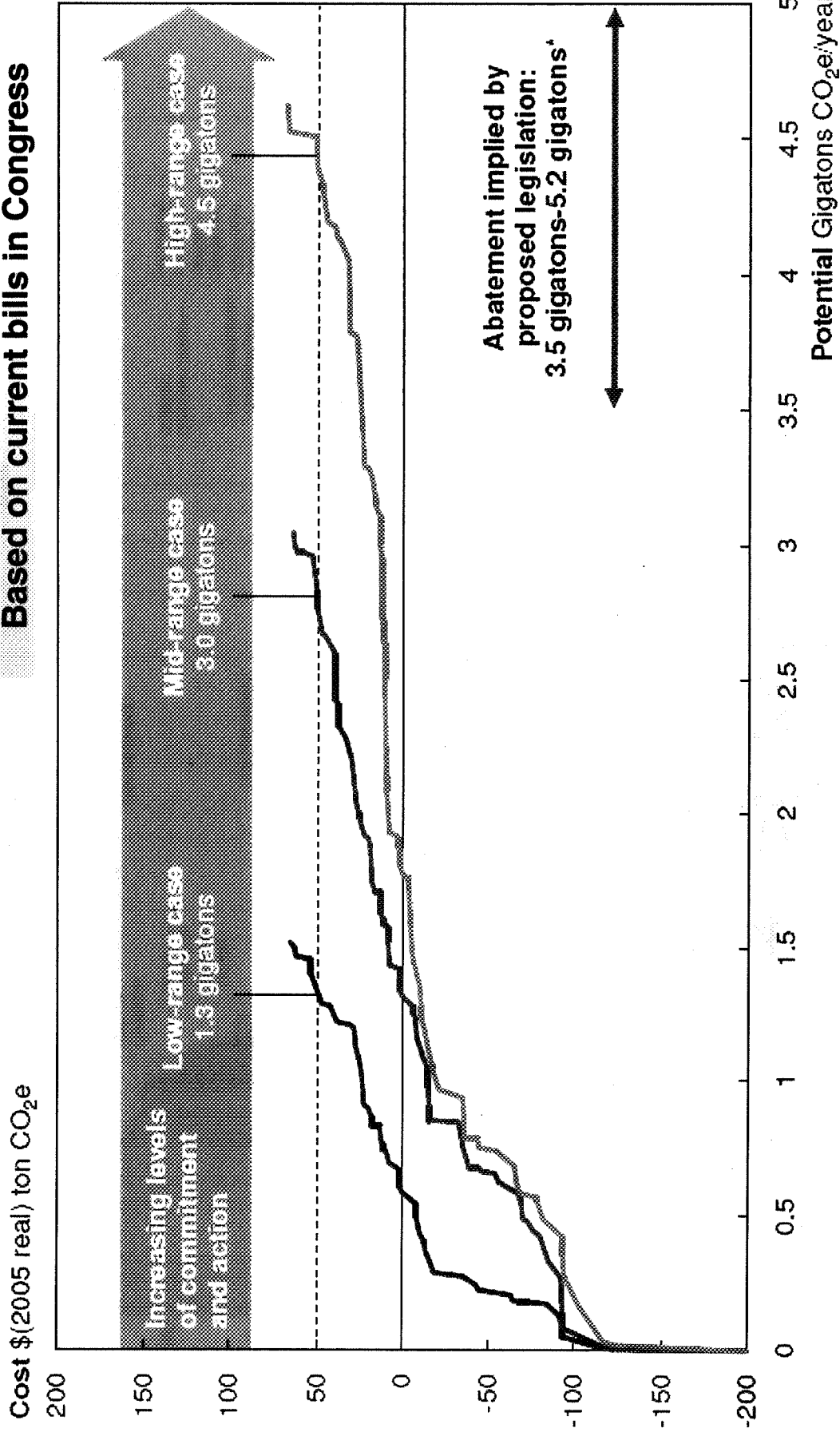


Source: McKinsey

Faster Action Means Lower Cost to Reach 2030 Goals



Based on current bills in Congress



* Targets calculated off the 2030 U.S. GHG emissions of 9.7 GtCO₂e/year (DOE/USDA/EPA reference case)
 Source: McKinsey analysis

Drivers of GHG Abatement Potential – 2030



	2005	Low-range case	Mid-range case	High-range case
Coal with CCS Gigawatts	<ul style="list-style-type: none"> • Rebuilds – 0 • New builds – 0 	9 13	32 23	50 33
Nuclear Gigawatts	<ul style="list-style-type: none"> • Nuclear - 100 	113	129	153
Renewables Gigawatts	<ul style="list-style-type: none"> • Wind – 10 • Solar CSP } <1 • Solar PV } 	70 10 28	116 30 50	164 80 148
Biofuels Billion gallons	<ul style="list-style-type: none"> • Starch - 4 • Cellulosic - 0 	12 5	16 14	16 51
Light-duty vehicles	<ul style="list-style-type: none"> • Cars* – 29 mpg • Light trucks* – 22 mpg • Alternatives** – 3% 	34 mpg 27 mpg 14%	47 mpg 34 mpg 60%	53 mpg 38 mpg 71%
Buildings energy efficiency***	<ul style="list-style-type: none"> • Efficient lighting: 8% • Efficient homes: N/A 	15% 25 million	70% 37 million	75% 49 million
		1.3	3.0	4.5

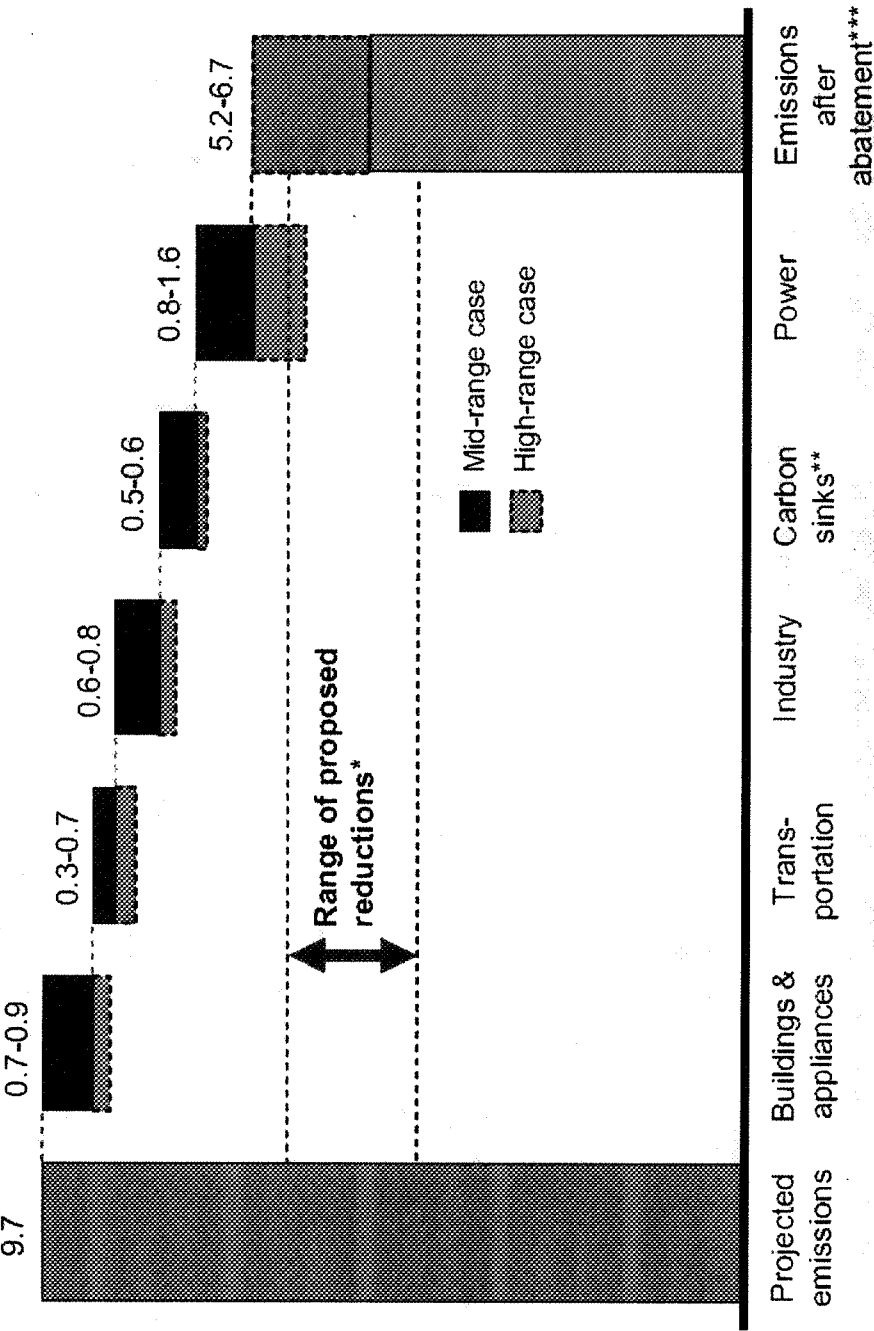
* Average for new vehicle sales; average across gasoline internal combustion, diesel, hybrid electric and plug-in hybrid electric vehicles; includes opportunities above \$50 per ton

** Alternatives to conventional gasoline propulsion: diesel, hybrid electric and plug-in electric hybrid vehicles; share of new sales

*** Lighting: CFLs and LEDs. share of new residential sales. Homes: incremental total built (or rebuilt) to Energy Star efficiency or higher

Substantial Potential Beyond High-Range Case

Clusters of abatement potential – 2030
 Gigatons CO₂e, options less than \$50 per ton CO₂e



Additional potential:

- Options >\$50 per ton
- Demand response
- Breakthrough technology innovations
- Lifestyle choices

* Based on bills introduced in Congress that address climate change and/or GHG emissions on an economy-wide basis and have quantifiable targets; targets calculated off the 2030 U.S. GHG emissions of 9.7 gigatons CO₂e/year (reference case)
 ** Including abatement in the agriculture sector
 *** Adjusted for cumulative rounding errors

Study Omits Consumer Response to Changing Energy Prices Under Carbon Controls



Fuel	CO ₂ e produced (kg)	CO ₂ e cost at \$10/tonne CO ₂ e	CO ₂ e cost at \$50/tonne CO ₂ e
1 gallon gasoline	8.9	\$0.089	\$0.44
1,000 ft ³ natural gas	54.7	\$0.55	\$2.75
1 kilowatt-hour electricity	0.61*	\$0.0061	\$0.031

■ Sustained \$50/ton CO₂e would cut gasoline consumption

- 5-10% driving reduction plus voter demand for “smart growth”**
- Consumers shift to fuel efficient cars
- More impact possible through creative pricing, e.g. pay-as-you-drive insurance

* Based on average carbon intensity of U.S. national power grid in 2005. Note that for electricity, the actual cost would vary according to the carbon content of the marginal generating source, and hence requires market-specific information to calculate

** Assumes \$2/gallon retail gasoline based on \$59/barrel crude in the DOE 2030 business as usual forecast and a price elasticity of demand for driving of -0.3

Study Does NOT Account for Likely Drop in Energy Price as Fossil Fuel Consumption is Reduced

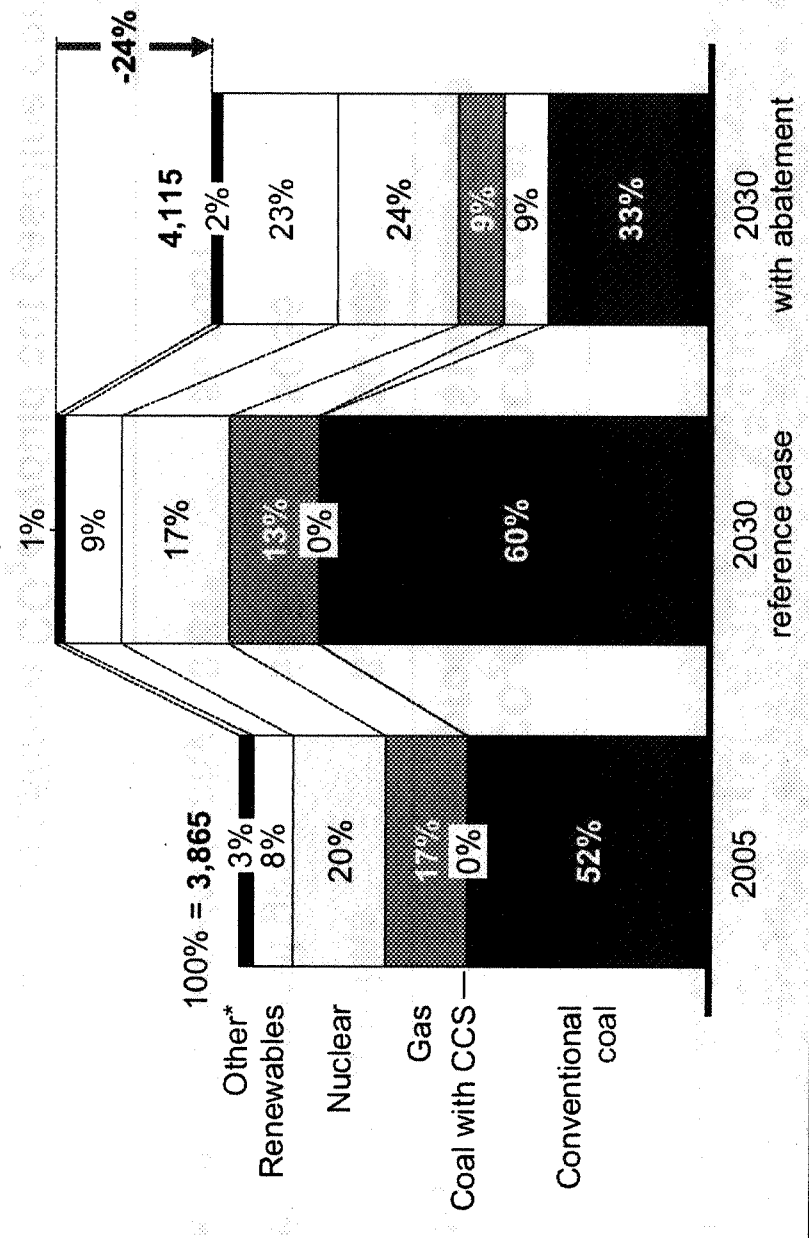


Changes in composition of U.S. power generation

Terawatt-hours, Percent

Mid-Range Case - 2030

5,385



■ Coal usage far below forecast

■ Natural gas usage roughly at forecast levels

■ US crude oil demand declines by ~1/3.

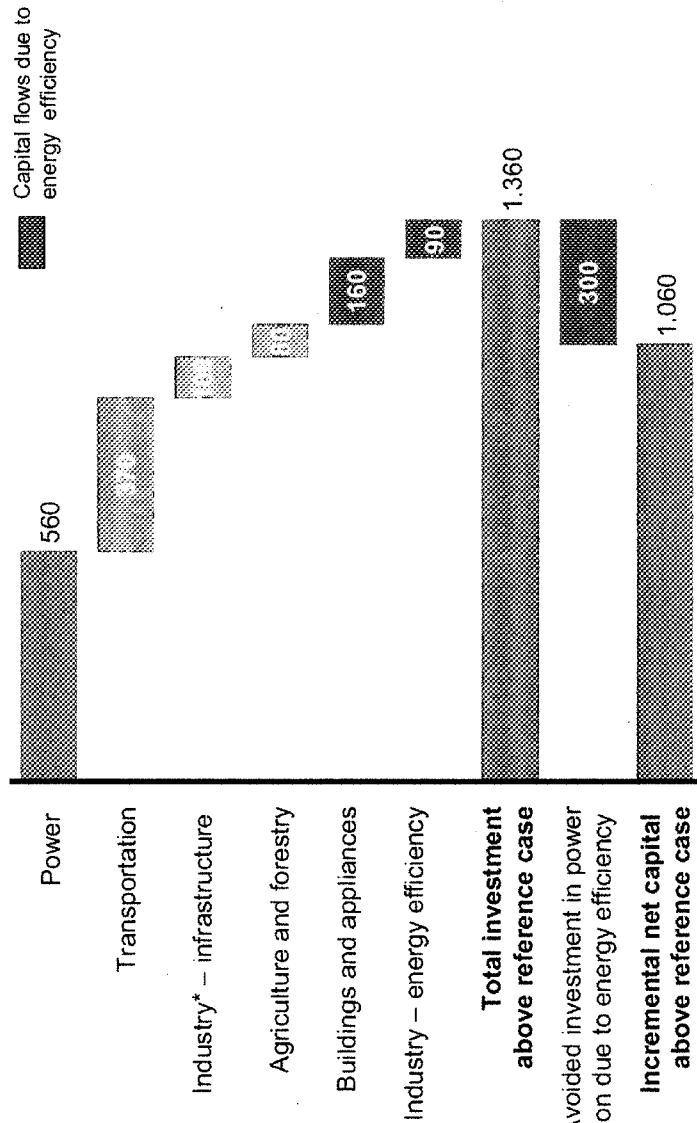
* Includes oil, geothermal, municipal solid waste, and pumped storage
 Source: U.S. EIA Annual Energy Outlook (2007) "Reference case", McKinsey analysis

Strong Policy Signals Needed to Redirect Capital to Clean Solutions...



Incremental capital investment in mid-range

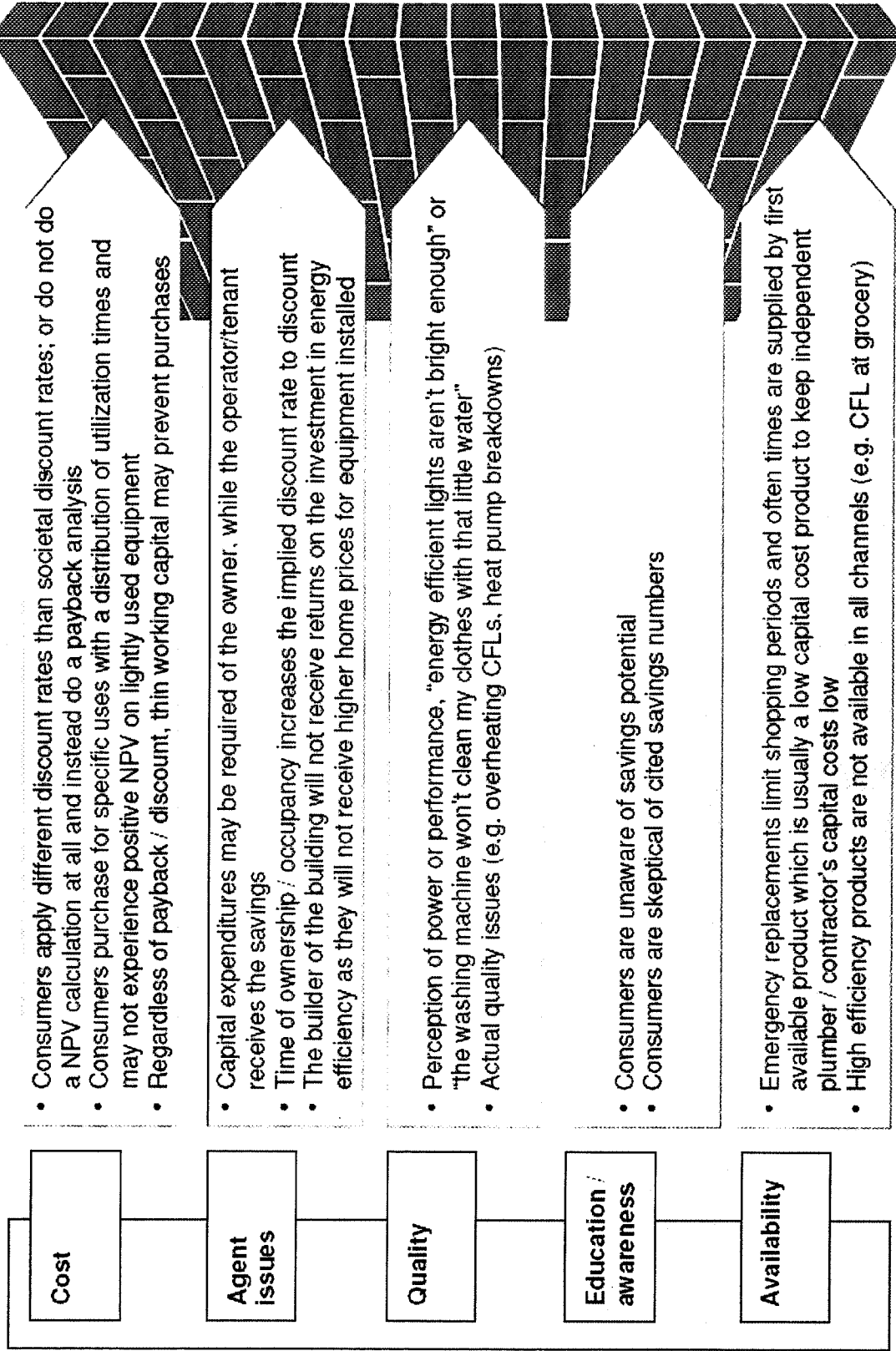
Real 2005 \$ billions, cumulative through 2030; options LT \$50/ton CO₂e



- Over \$1 trillion in new capex, plus redirecting the \$3 trillion currently expected for conventional supply
- Energy efficiency savings pay back this entire investment
- Capital increment is minor relative to \$77 trillion economy-wide investment expected through 2030

* Including Waste industry
Source: McKinsey analysis

...Including measures Required to Overcome Barriers to Efficiency



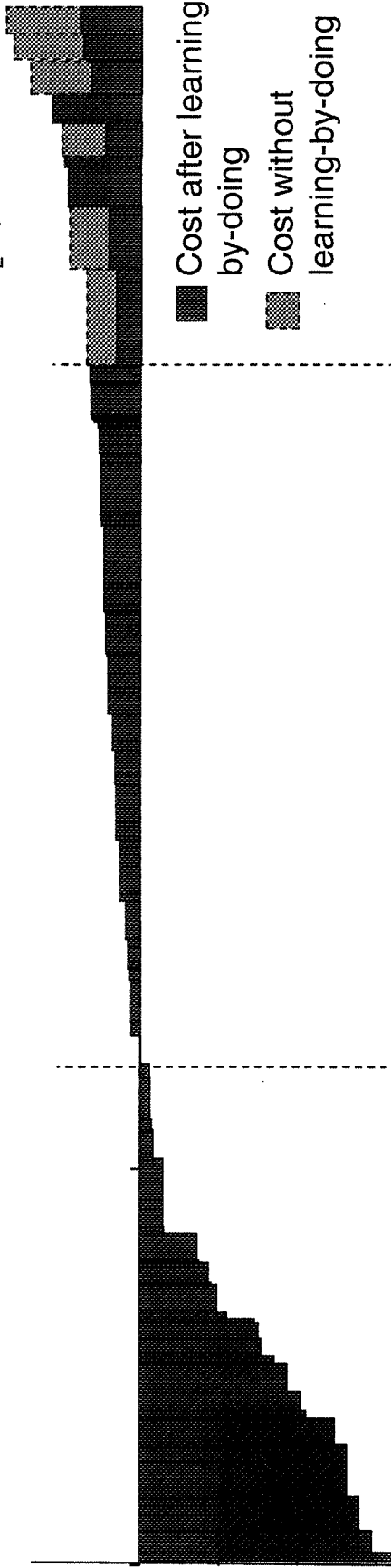
* Industry is generally better informed and responsive to energy price signals
 Source: DOE lighting market characterization; McKinsey

NRDC Policy Solutions to Unlock Abatement



Cost of abatement
\$/tCO₂e

Abatement
GtCO₂e/year in 2030



1 Policies and standards to overcome non-price market barriers to efficiency

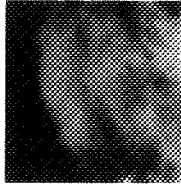
2 Federal emissions cap to drive investment in proven cleaner technologies by pricing greenhouse gas emissions*

3 RD&D incentives to bring down cost of new technologies

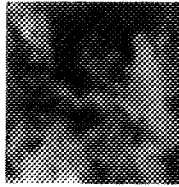
Must also negotiate global post-2012 system to limit fossil CO₂ and provide incentives for reducing forestry, agriculture and industrial emissions

* Putting a price on CO₂ and other greenhouse gas emissions also helps on the margin to encourage energy efficiency and innovation

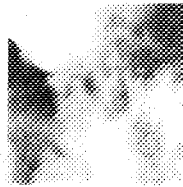
Key Messages



Global warming has started and the US must aggressively reduce domestic emissions while negotiating a global solution



Rapid and comprehensive action can slash global warming pollution with existing technology and minimal economic impact



NRDC is working to unleash this abatement potential with policies to cap emissions, scale efficiency, and promote innovation



A more detailed discussion can be found in the forthcoming issue paper "The New Energy Economy," which will be available online at <http://www.nrdc.org/globalwarming/energy/contents.asp>

For more information, please contact **Rick Duke** at (212) 727-4489 or **Dan Lashof** at (202) 289-6868

The New Energy Economy: Putting America on the path to solving global warming

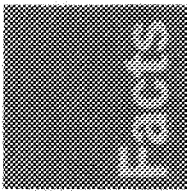
America and the world face serious and urgent challenges rooted in the way we fuel and power our economies. How we respond to global warming and our growing demand for energy—and whether we respond in time—will determine what kind of planet we have for generations to come. The scale of the challenge will require an unprecedented response, one that transforms U.S. and global energy markets from archaic dirty technologies to newer cleaner solutions. Fortunately, many of the technologies and policy tools we need to make this transformation already exist and we can deploy them without harming the economy. The next step is decisive U.S. government action to facilitate these investments and reduce our global warming pollution the necessary 80 percent, or 10.6 billion tons, by the year 2050.



www.nrdc.org/globalwarming/energy/contents.asp

December 2007

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Climate Facts

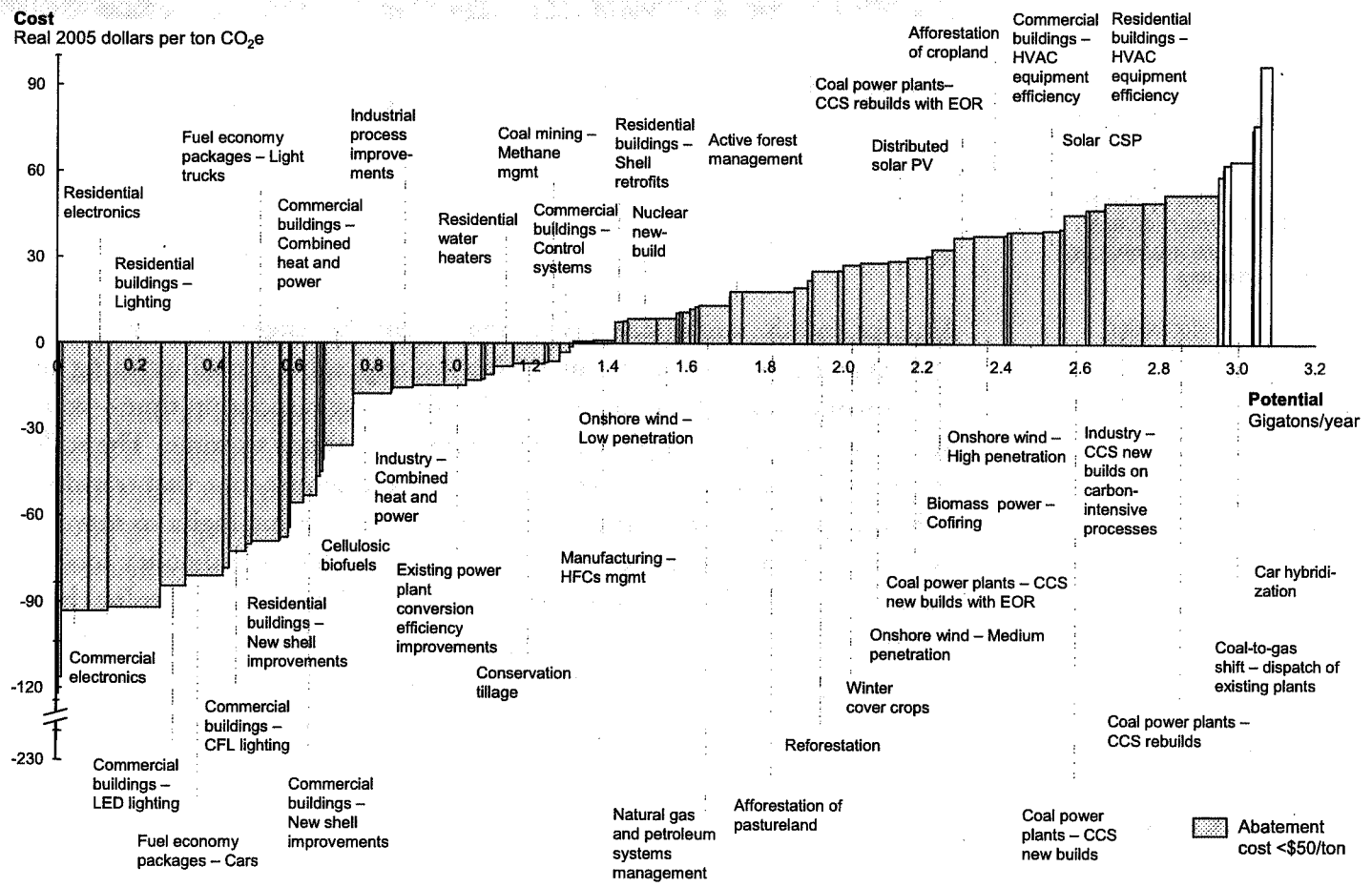
The New Energy Economy: Putting America on the path to solving global warming

In just the next 20 years, the United States is expected to invest more than \$3 trillion in expanding and retooling its energy infrastructure—electric power plants, fuel refineries, transmission and transportation infrastructure—as well as billions more on energy-consuming buildings, appliances, and vehicles.¹ Directing these resources toward cleaner, energy-efficient technologies and development patterns is critical if we are to meet the global warming challenge in time.

A new study by the business consulting firm McKinsey & Company, co-sponsored by NRDC,

examines the cost and market potential of more than 250 greenhouse gas abatement technologies and concludes that the United States can do its part to stabilize the climate at little to no cost, considering energy-efficiency savings.² In sharp contrast, estimates of the annual costs of failing to stop global warming range as high as 20 percent of total economic output. Moreover, the transition to a cleaner and more efficient energy economy will improve air and water quality, protect public health, and increase our energy security and productivity, all while we continue to grow our economy as forecasted, decade after decade.

U.S. Mid-Range Abatement Curve - 2030



Source: McKinsey analysis
Note: The McKinsey report only examines scenarios through 2030. NRDC recommends a goal of 80 percent emissions reductions by 2050.

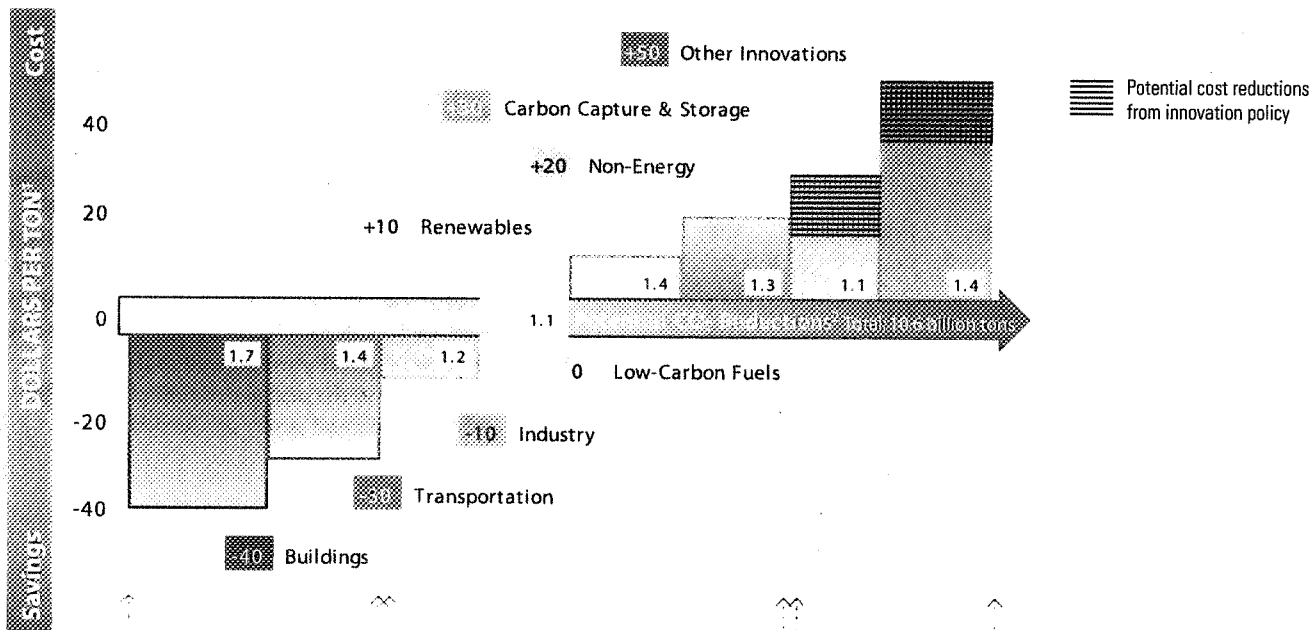
We Must Act Now to Stop Global Warming

Global warming is happening faster than expected. The Nobel Prize-winning Intergovernmental Panel on Climate Change (IPCC) confirmed in its latest report that "warming of the climate system is unequivocal."³ Global average surface temperature has increased by almost 1 degree Celsius since 1906, and scientists who have studied the problem for decades are surprised to see how quickly the ice caps and glaciers are melting, mountain snow pack is shrinking, and natural systems are beginning to break down. We are already seeing significant environmental and economic impacts: severe and persistent droughts; sea-level rise; coral bleaching, infestation and disease; disruptions in the food chain; and more intense heat waves and tropical storms. Scientists are increasingly concerned that if global temperatures rise by more than another

1 degree Celsius, very dangerous impacts may become inevitable, including the irreversible melting of the Greenland ice sheet and dramatic sea level rise.

To avoid locking ourselves and future generations into a dangerously disrupted climate, industrialized nations need to reduce global warming pollution by 80 percent from current levels by mid-century. Major developing economies need to adopt advanced energy technologies that will enable them to grow without following our highly polluting development path. The European Union and a few other countries have already begun to act, but the world will not reach the necessary targets unless the United States quickly enacts mandatory limits and moves aggressively to reduce its pollution by shifting investments to low-carbon, high-efficiency fuels and technologies.

Cutting U.S. Global Warming Pollution 80% by 2050: Cost and Payoff by Sector



1. Mainly efficiency to be unlocked by **policies and standards** that overcome non-price market barriers such as lack of consumer information and split incentives

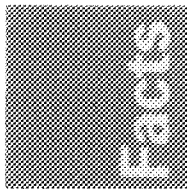
2. Mainly relatively mature renewables (e.g., wind), forestry, and industrial efficiency to be unlocked by a **federal emissions cap** that puts a price on global warming pollution

3. Mainly emerging renewables and carbon capture to be unlocked by **innovation policy**, e.g., R&D and commercialization incentives

1. Dollars per ton of cuts in emissions of CO₂e (CO₂ plus other greenhouse gases)

2. Billions of tons CO₂e per year, in 2050

Note: The scenario above is based on NRDC analysis, including extrapolations from 2030 cost estimates done by McKinsey & Company. For information about our methodology, visit <http://www.nrdc.org/global-warming/blueprint/methodology.asp>



The New Energy Economy: Putting America on the path to solving global warming

Six Big Opportunities to Transform the U.S. Energy Sector

Reducing global warming pollution 80 percent by mid-century will require the United States to substantially transform its energy sector. NRDC looked at more than a dozen strategies to reduce global warming pollution on both the demand side and the supply side of the equation and pinpointed six major energy sector opportunities that will put America on the path to solving global warming.⁴

Policy Recommendations for Curbing Global Warming

To move markets to deploy these solutions within the United States, we need comprehensive and effective policy action. Three essential steps will put us on a path to curbing global warming:

1. Overcome barriers to investment in energy efficiency. Relying on price signals alone to drive investment is not enough; state and federal policies are also needed to promote building and transportation efficiency at lowest cost, for example by reforming perverse regulations and allowing energy efficiency to compete on a level playing field against electricity and gas supply.

2. Enact mandatory limits on global warming pollution to stimulate investment. A mandatory cap will guarantee that we meet emissions targets and a well-designed program can reduce energy bills for consumers and businesses.

3. Promote emerging low-carbon solutions. The government must adopt performance standards and other policies to promote “learning by doing” and rapid development and deployment of emerging technologies such as low-carbon fuels, renewable electricity, and carbon capture and disposal.

We must also simultaneously move to adopt a strict international system to control global warming pollution. The cost of inaction—to our health, our environment, and our economy—is a price that we cannot afford to pay. We must act now, and act decisively, to prevent the dangerous impacts of global warming and to drive investment in the next generation of buildings, vehicles, fuels and power production.

Six Energy Sector Opportunities for Solving Global Warming

	CO ₂ emissions avoided in 2050	Percent of 2050 pollution reduction target
1. Building and appliance efficiency to provide the same comfort and services with less energy.	1.7 billion tons	16%
2. Vehicle efficiency & smart growth communities help cars go farther on less fuel and reduce vehicle travel.	1.4 billion tons	13%
3. Industrial efficiency such as combined heat and power reduce industrial energy use.	1.2 billion tons	11%
4. Renewable electricity from sources such as wind power and solar power has the potential to supply 40 percent of our energy needs.	1.4 billion tons	13%
5. Low-carbon transportation fuels such as biofuels made from switchgrass can replace imported oil.	1.1 billion tons	11%
6. Carbon capture and disposal of CO ₂ stores emissions from coal-fired power plants in geologic structures deep in the Earth, where it is gradually absorbed.	1.1 billion tons	11%
	TOTAL: 7.9 billion tons of pollution avoided.	TOTAL: 75% of the 10.6 billion tons of needed emissions reductions from business-as-usual forecast.

Supply Opportunities

1 World Energy Outlook 2006, International Energy Agency.

2 *Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost* (December, 2007) sponsored by DTE Energy, Environmental Defense, Honeywell, National Grid, NRDC, PG&E, and Shell and available for download at www.mckinsey.com/client-service/ccsi/greenhousegas.asp

3 IPCC, Synthesis Report, Fourth Assessment, p. 1.

4 These measures achieve three-quarters of the reductions needed by 2050. The remainder would come from non-CO₂ gases, forestry measures, and innovations to address thousands of smaller sources.