



The Bush Administration's Climate Change Strategy: An Overview of DOE's Role

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The Commitment

“I reaffirm America’s commitment to the United Nations Framework Convention and its central goal, to stabilize atmospheric greenhouse gas concentrations at a level that will prevent dangerous human interference with the climate.”



President George W. Bush
February 14, 2002

Bush Administration Approach: Long Term Outlook

Interagency Working Group and Cabinet Level Committee on Climate Change S&T Integration

Pursue a Sensible, Integrated Policy

Climate Change Science Program

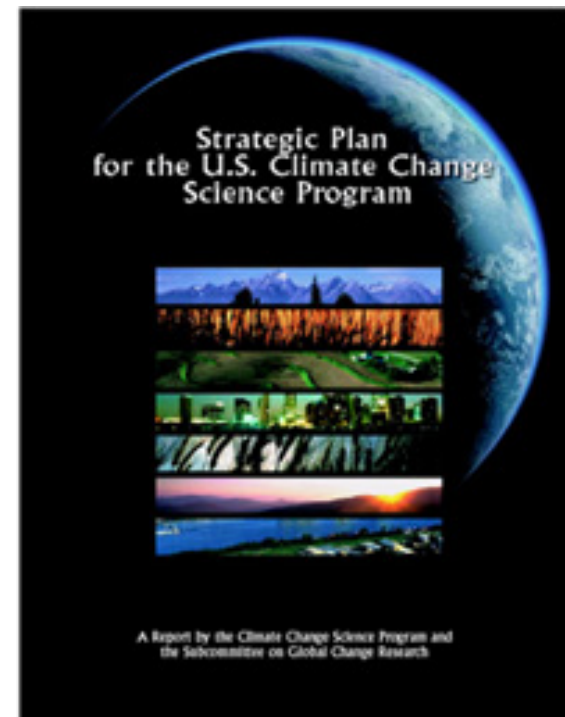
- Reduce Scientific Uncertainty
- Illuminate Risks/Benefits
- Guide and Pace Strategy
- About \$2 billion funding

Climate Change Technology Program

- Advance Technology Options
- Improve Performance/Reduce Costs
- About \$3 billion in funding

Climate Science: An Ambitious Plan

- **CCSP organized around 5 goals:**
 - Improve understanding of climate history & variability
 - Improve ability to quantify factors affecting climate
 - Reduce uncertainties in climate projections
 - Improve understanding of climate sensitivity to human-induced changes
 - Explore options to manage risks



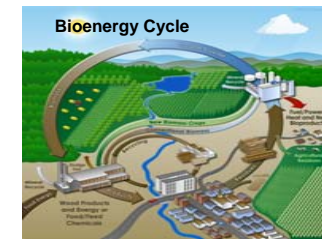
Technology: Program Goals

- CCTP organized around 6 goals:
 - Reduce emissions from energy end use & infrastructure
 - Reduce emissions from energy supply
 - Advance CO₂ capture & sequestration
 - Reduce emissions from non-CO₂ gases
 - Enhancing measurement & monitoring
 - Bolstering basic science



Key Technologies: Energy Efficiency & Renewable Energy

- EE and RE two biggest CCTP investment areas.
- Technologies include solar, wind, geothermal, bioenergy, and CHP.
- FY 2006 budget request includes \$1.2 billion for EE and RE RD&D and deployment.
- Another \$4.1 billion in investment tax incentives proposed through 2009.
- Increased fuel economy standards for light trucks and SUVs from 20.7 to 22.2 mpg by 2007.



Key Technologies: Major Initiatives

- **FreedomCAR/Hydrogen Fuel Initiative:** \$1.7 billion over five years develop hydrogen vehicles & infrastructure.
- **Carbon Sequestration:** over 60 R&D projects investigating all aspects of CO₂ sequestration.
- **FutureGen:** 10-year, \$1 billion public-private partnership to build world's first emissions-free coal-fired power plant .
- **Generation IV Nuclear:** R&D into reactor designs that are safe, economical, secure, and proliferation resistant
- **Fusion:** long-term exploration of fusion as a commercially viable power source.

Innovative International Partnerships



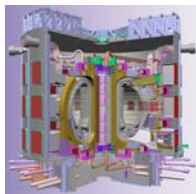
- **Carbon Sequestration Leadership Forum:** 17 members; focused on development of sequestration.



- **International Partnership for the Hydrogen Economy:** 16 members; organizes, coordinates, and leverages hydrogen RD&D programs.



- **Generation IV International Forum:** 10 members; devoted to R&D of next generation of nuclear systems.



- **ITER:** 6 members; project to develop fusion as a commercial energy source.

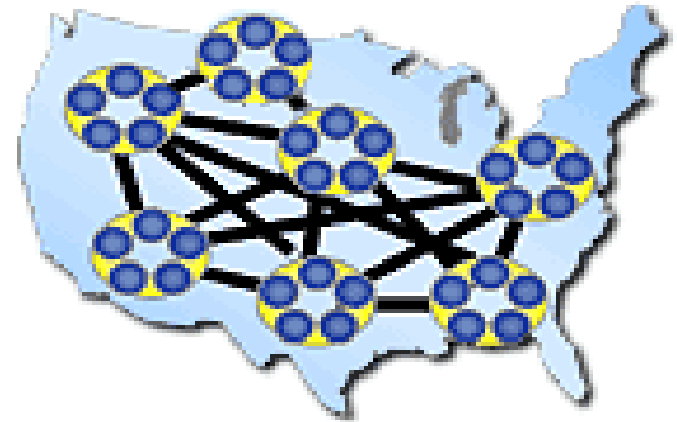


- **Methane to Markets:** 14 members; recovery and use of methane from landfills, mines, oil & gas systems.

- **Climate Change Bilateral Agreements:** 14 partners; account for 70% of global GHG emissions.

Carbon Sequestration Regional Partnerships

- **7 Regional Partnerships**
- Validating and demonstrating sequestration technologies
- Studying sequestration approaches best suited for specific regions
- Studying regulatory and infrastructure requirements



\$100 Million over 4 years

Near-Term Goal: Reduce GHG Emissions Intensity

- On February 14, 2002, President Bush set a goal to reduce U.S. GHG emissions intensity—i.e., GHG per unit of GDP—18% by 2012.
- Equivalent to about 500 million metric tons of cumulative carbon equivalent reductions from 2002 – 2012.
- Policy actions:
 - Voluntary Programs
 - Climate VISION
 - Climate Leaders
 - SmartWay Transport
 - 1605(b)
 - Tax incentives/deployment partnerships
 - CAFE Increase for Light Trucks
 - USDA Incentives for Sequestration
 - Tropical Forest Conservation

DOE Voluntary Programs: Climate VISION

- Climate VISION— Voluntary Innovative Sector Initiatives: Opportunities Now—launched as a Presidential Initiative in February 2003.
- Current 13 partners account for $\approx 90\%$ of U.S. industrial emissions.
- 4 federal agencies participate: DOE, USDA, DOT, and EPA.



Climate VISION Partners



Alliance of Automobile
Manufacturers



Association of American
Railroads



Aluminum Association



The Business Roundtable



American Chemistry
Council



International Magnesium
Association



American Forest & Paper
Association



National Mining Association



American Iron & Steel
Institute



Portland Cement
Association



Power Partners



American Petroleum
Institute



Semiconductor Industry
Association

Climate VISION Elements

- Calculate, inventory, and report GHG emissions reduction, avoidance, and sequestration.
- Implement cost-effective technologies to reduce energy usage and GHG emissions.
- Speed R&D and commercial adoption of advanced technologies.
- Develop strategies to reduce GHG emissions in other economic sectors, such as buildings and transportation.

Power Partners MOU

- **DOE & Power Partners signed a MOU in Dec. 2004.**
- **Power Partners include APPA, EEI, EPSA, LPPC, NRECA, NEI, and TVA.**
- **The MOU:**
 - establishes voluntary framework for reducing GHG emissions intensity of the power sector;
 - establishes goals for the public-private partnership;
 - sets out general principles;
 - proposes actions to further the partnership's objectives; and
 - establishes a process for identifying high-priority areas for the RDD&D of technologies.

Climate VISION Deployment Initiatives

- Encouraging actions to achieve additional emissions intensity reductions in non-industrial sectors:
 - new & existing homes
 - commercial buildings
 - coal gasification
 - distributed generation
 - nuclear uprates
 - biorefining
- Exploring risk-targeted incentives to tip private investment decisions and accelerate commercial use of advanced technologies.
- Risk-sharing approach is efficient, inexpensive, flexible, and can be targeted to co-manage key business risks.

DOE/NARUC: Partners on Clean Coal

- In 2001, DOE and NARUC entered into Partnership for Advanced Clean Coal Technology.
- Organized 15 National and Regional Forums focusing on clean coal deployment issues.
- Educated over 1,200 State officials on the importance of clean coal technologies.
- Recent interest in IGCC issues, including project financing, incentives, policy, and regulation.

Climate VISION Clean Coal Initiative



- Roundtable hosted at EEI in July 2004; co-sponsored by DOE, EEI, EPRI, CURC, and NARUC.
- Framed the risks and challenges for commercial IGCC, examined case studies, and gleaned private sector investment perspectives.
- Business case analysis of policy tools and incentives that could be targeted on key risks for early commercial IGCC plants taking into account state/regional differences.

Business Case for IGCC Power Plants

1. Develop government-industry partnership on commercial deployment of IGCC.
2. Analyze basis for a suite of policy tools and incentives targeted on key risks for early commercial IGCC plants taking into account regional differences.
3. Update assessment of business risks to inform analysis and targeting of potential incentives.
4. Evaluate how to optimize incentives for improving overall performance in the coal fleet: number of plants; plants per federal dollar; which incentives.
5. Quantify potential cost to federal government of incentives to minimize budget impact.

Potential Incentives for Early Deployment

1. Policy incentives could include, for example:

- Environmental regulations, permitting, and compliance mechanisms

2. Potential government financial incentives include:

- Co-funding (e.g., grants)
- State PUC rate basing, dispatch preference, assurance of financial returns, “rate stabilization” measures
- Investment or production tax credits
- Accelerated depreciation (possibly only for “first movers”)
- Credit instruments (i.e., direct loans, loan guarantees, lines of credit) negotiated for each project
- Emissions trading

Residential Market Challenge

- Homes account for $\approx 12\%$ of US energy use and 37% electricity use.
- Expanding market penetration of energy efficient homes has challenged the industry & government.
- Energy efficiency offers major near-term opportunity to further energy security, climate change, and natural gas objectives.
- At core of problem: Complex and lengthy transaction chain; no one link able to transform market.

DOE/State Energy Efficient Homes Pilots



- DOE is exploring with 3 states on pilot strategies to transform EE housing market (new & existing homes).
 - **New York:** Energy Star Plus homes, partner with Fannie Mae EEM Program, expand capacity for builder and energy rater training.
 - **Texas:** Impact two major metro markets with training, quality control, energy ratings, and rate incentive.
 - **California:** Partner with state solar initiative, community-wide efficiency gains.

1605(b) Voluntary Greenhouse Gas Reporting System

- Created by Energy Policy Act of 1992 and managed by EIA.
- Records results of voluntary measures to reduce, avoid, or sequester GHG emissions.
- Currently about 220 U.S. companies and other organizations file GHG reports.
- February 2002: President Bush directed revisions to improve “accuracy, reliability, and verifiability” of data.



1605(b) Revisions

- Revised General and Technical Guidelines are to be released this spring.
- New reporting guidelines stress the importance of entity-wide emissions reductions.
- 60-day comment period and public workshops planned to solicit comments.
- Basic design of the program in the General Guidelines is unlikely to change substantially from initial proposal.
- Revised program planned to be in place by end of 2005.

Summary: The Path Forward Involves ...

- **Progress in Climate Change Science:** to reduce uncertainty, illuminate risks and benefits, inform policy.
- **Progress in Climate Change Technology:** to create better, cheaper mitigation options.
- **Near-Term Actions:** voluntary agreements augmented by incentives to slow GHG emissions and accelerate technology deployment..
- **Expanded Opportunities for Cooperation Among:**
 - Business
 - Industry
 - States
 - NGOs