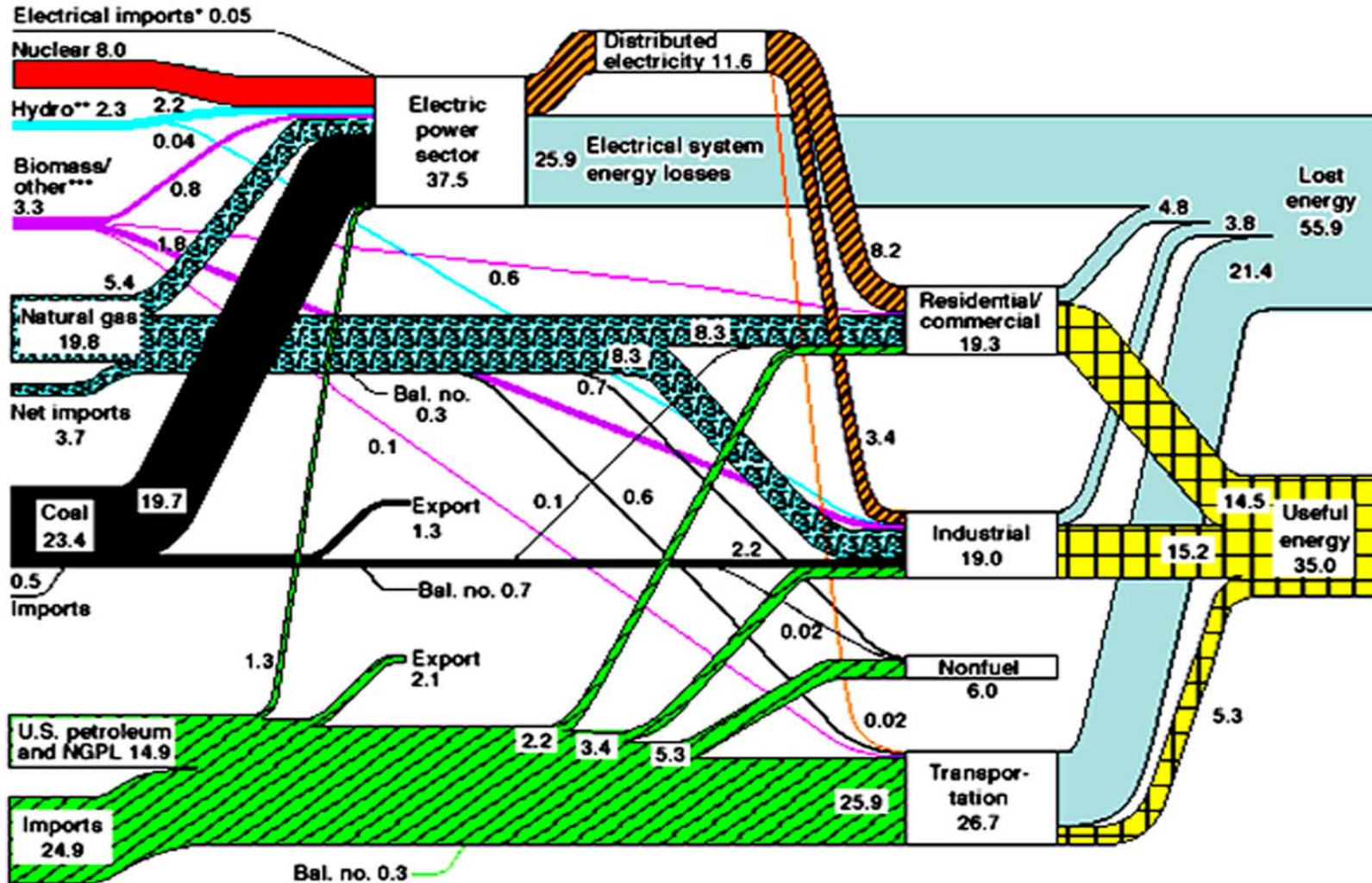


Country Report: Renewable Energy in the United States



Dr. Robert K. Dixon
Energy Efficiency and Renewable Energy
U.S. Department of Energy

U.S. Energy Flow Trends – 2001 Net Primary Resource Consumption



Source: Production and end-use data from Energy Information Administration, *Annual Energy Review 2001*

*Net fossil-fuel electrical imports

**includes 0.2 quads of imported hydro

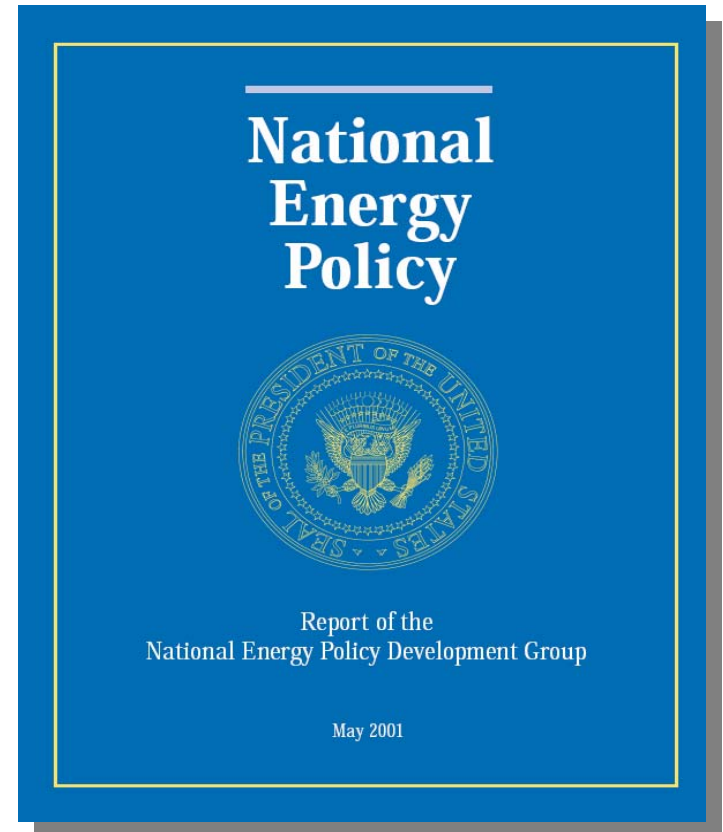
***Biomass/other includes wood, waste, alcohol, geothermal, solar, and wind.

August 2003
Lawrence Livermore
National Laboratory
<http://eed.llnl.gov/flow>



National Energy Policy

- Aggressively reduce demand through energy efficiency
- Increase energy supply
- Enhance diversity of energy sources
- Dramatically upgrade national energy infrastructure
- Build on record of environmental protection
- Create a new vision for our energy future



Office of Energy Efficiency and Renewable Energy



EERE addresses the Nation's energy challenges in three fundamental ways:

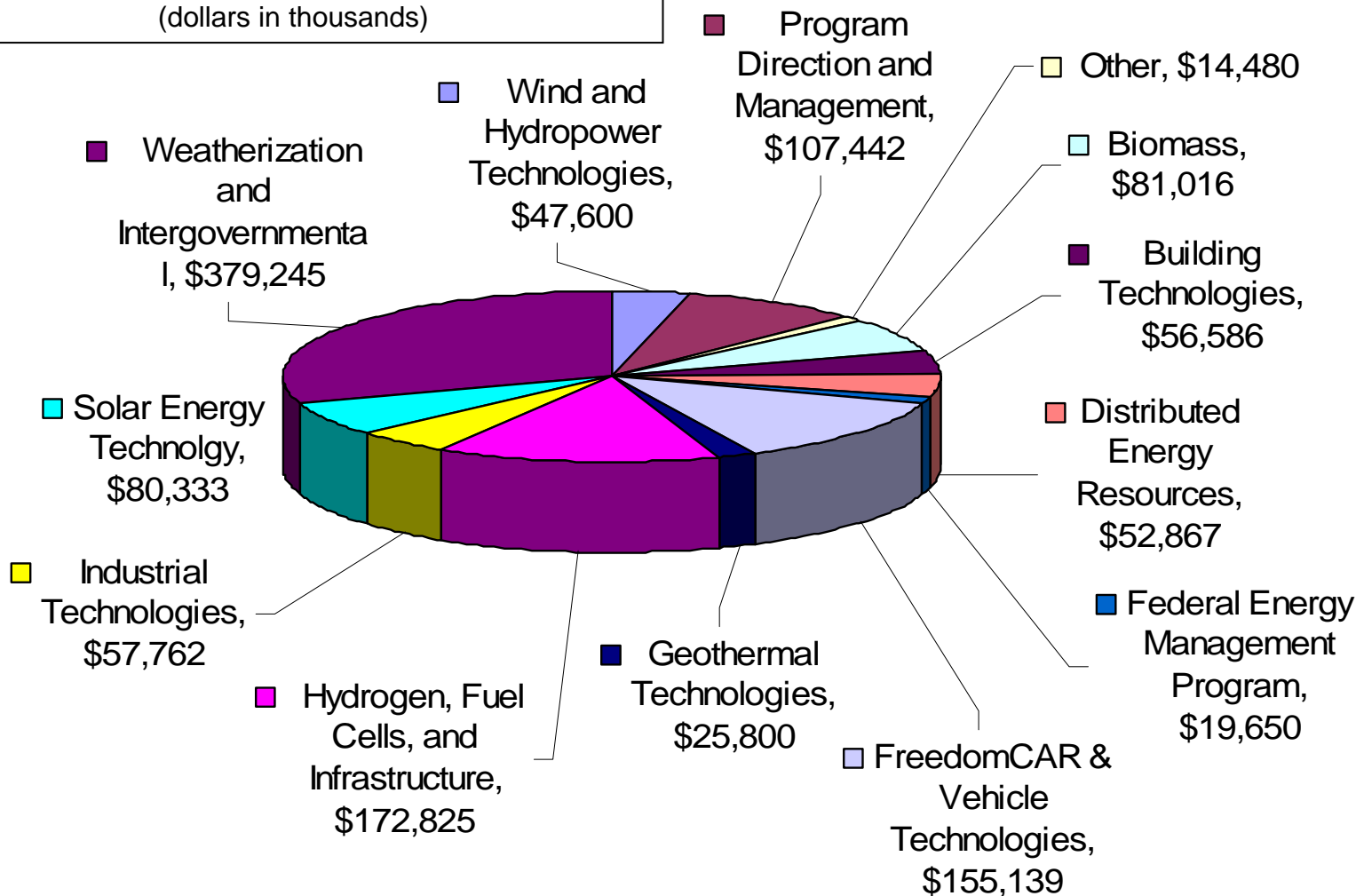
- Promoting energy efficiency and productivity;
- Bringing clean, reliable, and affordable energy technologies to the marketplace; and
- Making a difference in the everyday lives of Americans by enhancing their energy choices and their quality of life.



EERE FY 2005 Budget Request

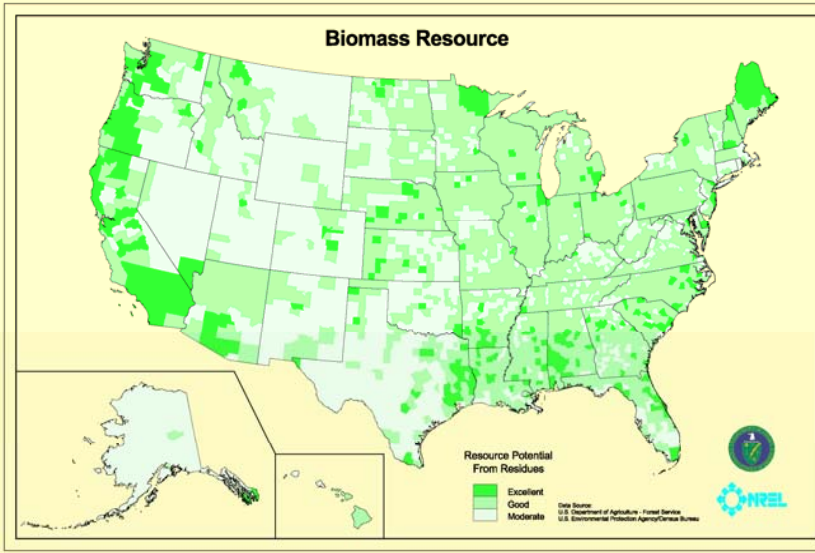
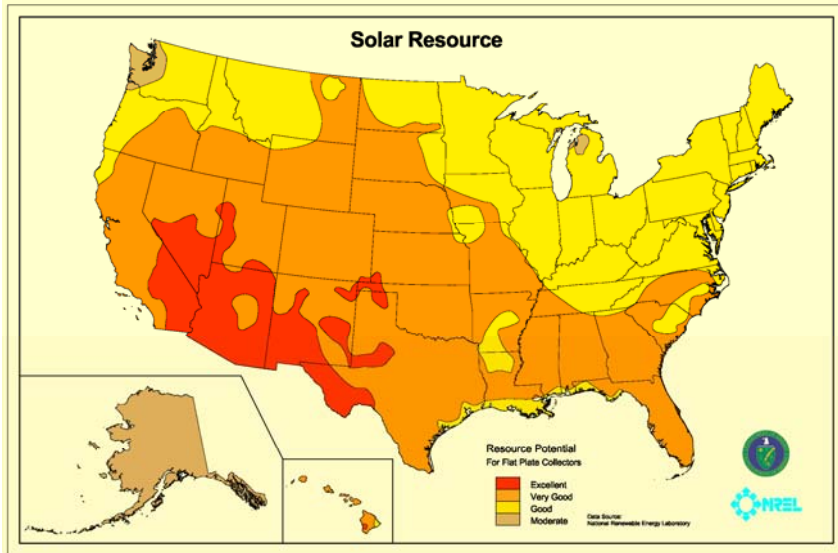
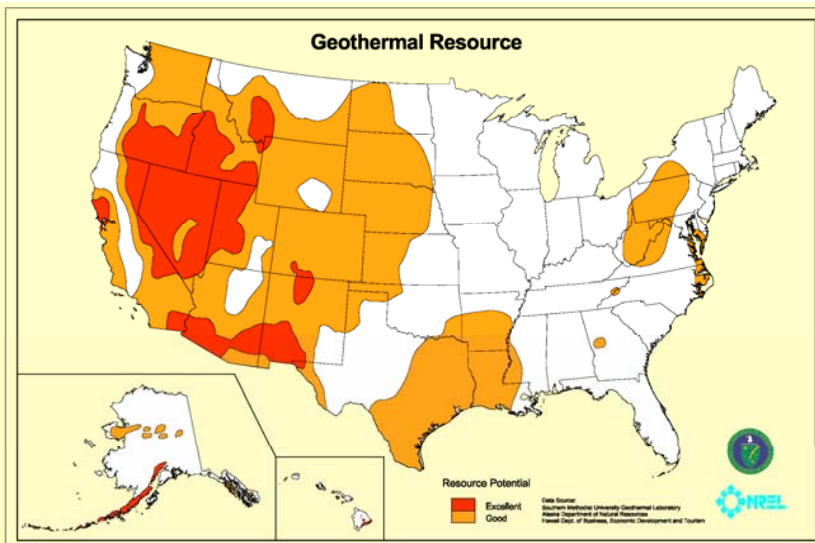
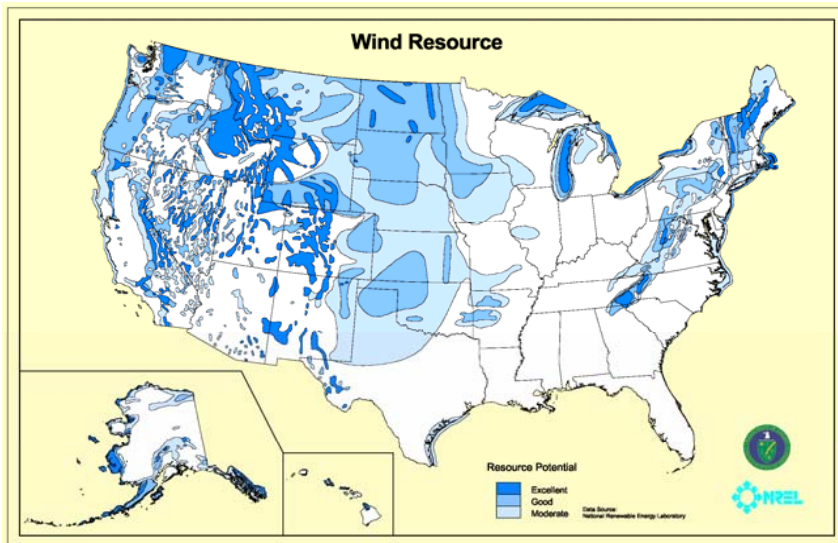
FY 2005 Request Totals: \$1,250,745

(dollars in thousands)

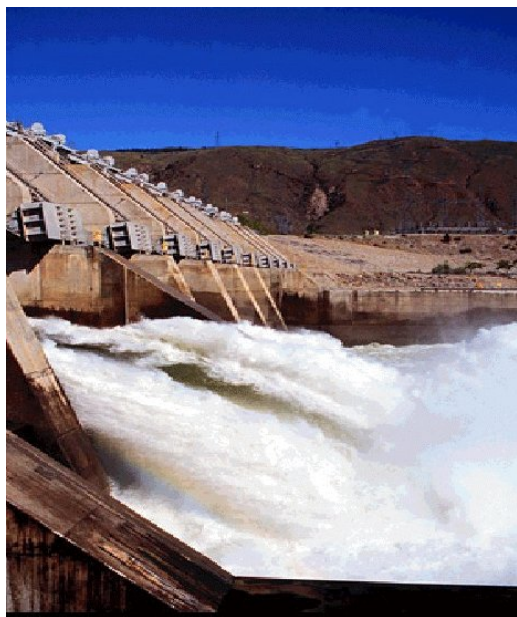




U.S. Renewable Energy Resources



Wind and Hydropower Technologies Program



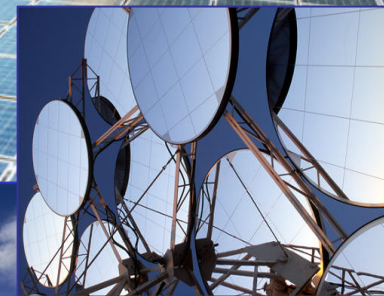
Conducting research and development to enhance the level of technology development and deployment of the Nation's fastest growing and the most widely used renewable energy resources





Solar Energy Technology Program

Developing photovoltaic, concentrating solar power, and solar heating technologies to harness America's most abundant domestic energy resource more efficiently, reliably, and affordably





Geothermal Technologies Program

- Developing techniques for expanding the Nation's inventory of geothermal resources
- Improving the U.S.'s ability to utilize these resources by making geothermal technologies cleaner, more efficient, and lower in cost





Biomass Program

Fostering research and development on advanced technologies to transform our abundant biomass resources into clean, affordable, and domestically-produced **biofuels**, **biopower**, and high-value **bioproducts** for improving the economic development and enhancing the energy supply options of the U.S.



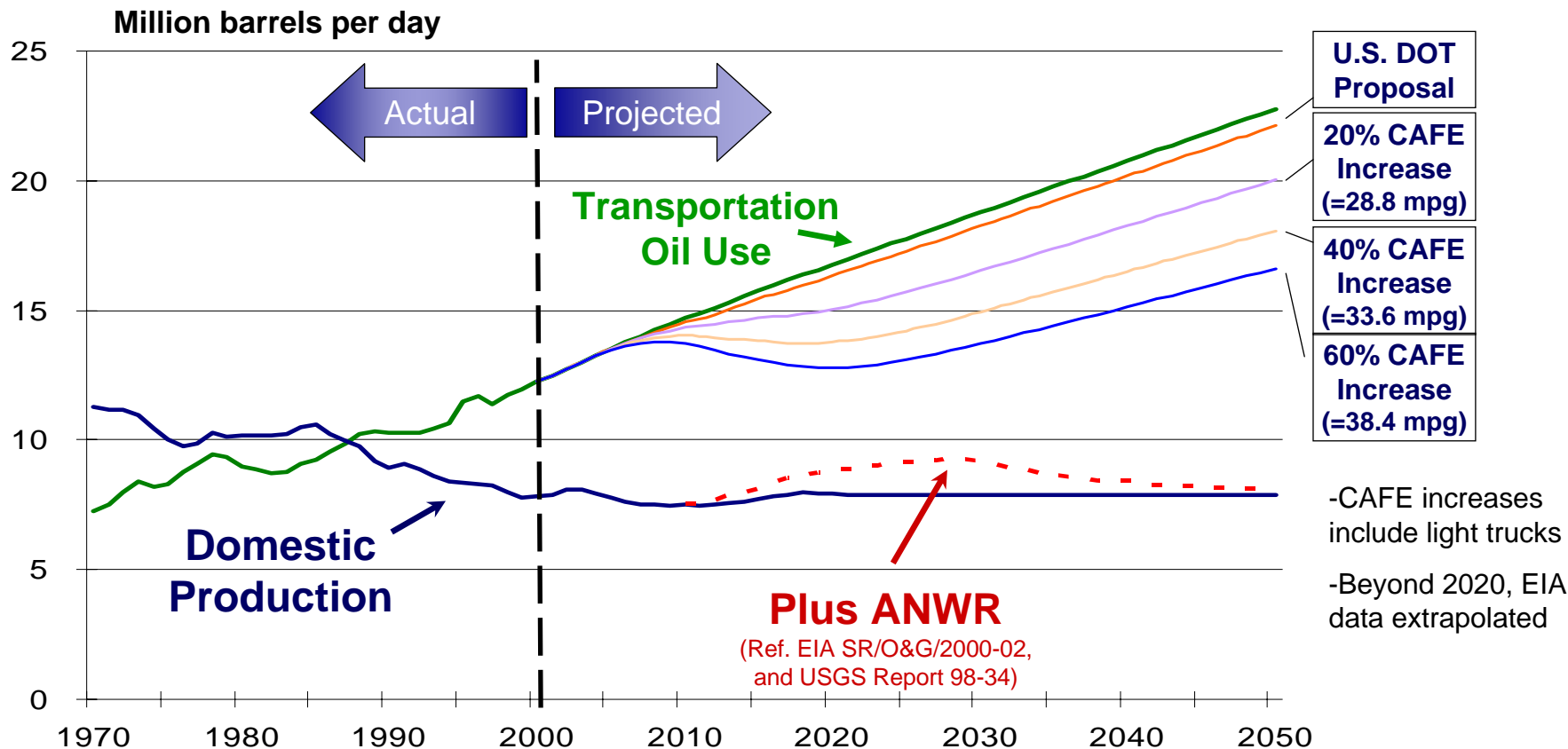
Renewable Energy Deployment Activities of Federal and State Governments



- Renewable Portfolio Standards
- Renewable Energy Funds
- Market-Based Incentives
- Voluntary Green Power Markets



A Bold New Approach is Required



Even an *immediate* 60 percent increase in CAFE standards *and* new production from a 10 billion barrel (recoverable) oil field in ANWR will not close the gap between transportation demand and domestic production.

President Bush Launches the Hydrogen Fuel Initiative



"Tonight I am proposing \$1.2 billion in research funding so that America can lead the world in developing clean, hydrogen-powered automobiles.

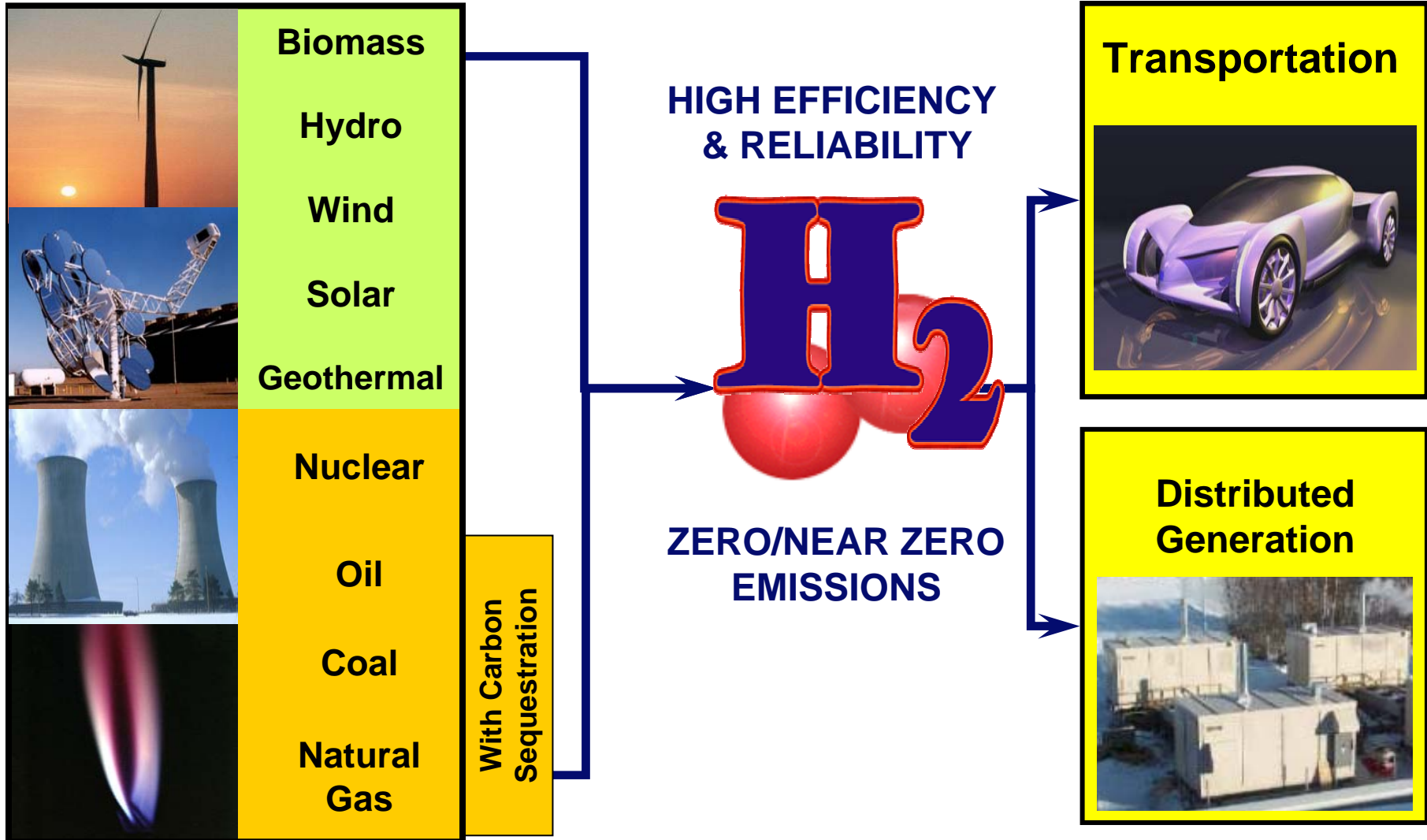
"A simple chemical reaction between hydrogen and oxygen generates energy, which can be used to power a car producing only water, not exhaust fumes. With a new national commitment, our scientists and engineers will overcome obstacles to taking these cars from laboratory to showroom so that the first car driven by a child born today could be powered by hydrogen, and pollution-free.

"Join me in this important innovation to make our air significantly cleaner, and our country much less dependent on foreign sources of energy."

President George W. Bush
2003 State of the Union Address
January 28, 2003



Why Hydrogen? It's abundant, clean, efficient, and can be derived from diverse domestic resources.



President's Hydrogen Fuel Initiative Complements FreedomCAR



On January 9, 2002, Energy Secretary Abraham announced the FreedomCAR Partnership

FreedomCAR (Cooperative Automotive Research) is a partnership between DOE and the U.S. Council for Automotive Research, a cooperative endeavor among DaimlerChrysler, Ford, and GM to conduct pre-competitive, high-risk, high-payoff research into advanced automotive technologies.

By catalyzing the simultaneous development of both the hydrogen-fueled vehicles through FreedomCAR, and the necessary hydrogen production and refueling infrastructure through the President's Hydrogen Initiative, government leadership will help advance commercialization of hydrogen fuel cell vehicles and infrastructure by 15 years, from approximately 2030 to 2015.



Why EERE R&D?

Expected FY 2004 Portfolio Return on Investment:*

- Save consumers more than **\$25 billion a year** in energy costs by 2010.
- Contribute over **70 million metric tons** of carbon and carbon equivalent greenhouse gas reductions to the President's 2012 NCCTI goal.
- Improve energy security by reducing oil consumption over **350,000 barrels per day** in 2010 and four times that amount in 2020.

According to a 2001 National Academy of Sciences (National Research Council) study, a selected \$1.6 billion of EERE programs returned \$30 billion on the investment, roughly a **\$20 return for every public dollar invested.**

Office of Energy Efficiency and Renewable Energy



www.eere.energy.gov



**Bringing you a prosperous future where energy
is clean, abundant, reliable, and affordable**