American Council for an Energy-Efficient Economy
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DOE Energy Efficiency R&D and Technology Deployment Programs: Critically Needed, Sound Investments in the Nation's Energy Future

One of a Series of ACEEE Fact Sheets

Context

The United States spent over $600 billion on energy last year, with U.S. oil imports climbing to approximately $120 billion—nearly $440 of imported oil for every American. These amounts would have been even higher if not for past investments in energy efficiency R&D and deployment programs—and continued progress is critical for sustaining and increasing these benefits.

DOE Energy Efficiency R&D Program Accomplishments

DOE's Energy Efficiency programs continue to make important contributions toward increasing the efficiency of buildings, appliances, vehicles and industries across the United States.

- DOE recently documented that twenty of its most successful energy efficiency projects have, over the past twenty years, saved the nation 5.5 quadrillion BTUs of energy, worth about $30 billion in avoided energy costs. The cost to taxpayers for those activities over the past decade was $712 million, less than three percent of the savings, and the savings are increasing every year.

- Last year, U.S. automakers participating in the Partnership for a New Generation of Vehicles unveiled three prototype full-size passenger cars that achieved 70 to 80 miles per gallon. The incremental cost of producing high-mileage alternatives has been dramatically reduced, prompting U.S. automakers to announce that fuel-efficient hybrid electric vehicles will soon be available in showrooms.

- DOE's industry program actively tracks adoption and utilization of new technologies it has funded over the years, documenting its contribution to the development of over 45 commercially available technologies. These technologies, as well as some of their technical assistance activities, have reduced industrial energy use by over 1.6 quadrillion BTUs through 1999, representing production cost savings of $6.5 billion.

- Federal energy efficiency R&D has consistently demonstrated high value by attracting strong, broadly-based cooperation with the states and industry partners. The 120 Federal programs in industrial efficiency, for example, support approximately 500 R&D and deployment projects, involving over 2,000 partners. These projects involve substantial cost sharing with industry.

- DOE building code development, adoption, and support activities saved about 0.5 quadrillion BTUs of energy or $3.5 billion in energy costs cumulatively through 2000.

- DOE's Federal Energy Management Program (FEMP) has helped to reduce energy use in Federal buildings by 19% per square foot of floor area, cutting Federal energy expenditures by over $6 billion.

Industry Cannot be Relied Upon for 100 Percent of These Energy Investments

Private industry investments do not directly address national energy security, system reliability, environmental and economic goals—for a variety of reasons:

- Industry may be too fragmented in a particular sector to fund significant R&D (e.g., in the building sector); deployment time-frames may be too long; or investment risk may be too great for any one business
- A critical mass of expertise may not exist in an industry for a particular technology.
- The projected return for a particular application may be lower than for other non-energy investments.
- Competitive and financial market pressures make it increasingly difficult for the private sector to take full responsibility for long-term R&D.

What Should be Done?

Unfortunately, the Bush administration has proposed to cut energy efficiency R&D and technology deployment programs (apart from grants to low-income households for home weatherization) by 180 million (29%) in FY2002. The budget request would cut buildings R&D, the Federal Energy Management Program, and industrial programs by about 50%.

- If allowed to stand, these cuts will increase consumers' energy bills, hurt U.S. economic growth, increase the likelihood of power shortages, put upward pressure on energy prices, increase oil imports, and increase air pollution. Deep cuts in DOE's energy efficiency programs also would harm public-private partnerships that have been built up over many years and harm the energy efficiency R&D and deployment "infrastructure" that exists at the national labs, state energy offices, and elsewhere.
- In 1997 the President's Committee of Advisors on Science and Technology (PCAST), a panel that consisted mainly of distinguished academics and private sector executives, conducted a detailed review of DOE's energy efficiency R&D programs. Based on this review, PCAST concluded that "R&D investments in energy efficiency are the most cost-effective way to simultaneously reduce the risks of climate change, oil import interruption, and local air pollution, and to improve the productivity of the economy."
- PCAST recommended that the DOE energy efficiency budget should be doubled between FY1998 and FY2003, and estimated that this investment could produce a 40 to 1 return for the nation including reductions in fuel costs of $15-30 billion by 2005 and $30-45 billion by 2010.
- Based on the PCAST recommendation, ACEEE recommends a $170 million (20%) increase in DOE's FY2002 budget relative to FY2001, spread across DOE's energy efficiency R&D and deployment programs. In light of the serious energy problems our nation is facing, we should expand, not cut, energy efficiency R&D and deployment programs.

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