



Efficiency versus Conservation

The basic difference between efficiency and conservation is that conservation depends on human behavior (turning out the lights by hand, combining car trips), while efficiency is inherent in materials, equipment and systems (installing light sensors, building cars with better mpg).

Energy efficiency and conservation are highly effective in both the short term and the long term. Unlike most forms of power generation, which take time to come on line, conservation measures can be adopted immediately just by changing habits and daily practices. (California cut electricity use by 11 percent in response to its power crunch.) Efficiency can be "installed" by the use of new equipment, and it is also an effective long-term strategy, because once efficient equipment and systems are in place, they continue to pay back year after year.

Between 1970 and 1999, the amount of energy needed to produce a dollar of American GDP - America's "energy intensity" -- fell 42 percent. Federal Research "DOE's efficiency and renewables portfolio is exactly the kind of forward-looking, targeted, high-tech, high-risk, catalytic research that has produced enormous national gains in aerospace, biotechnology and computers. It has paid for itself hundreds of times over." (Jessica Mathews, Washington Post, July 15, 1996)

A \$ 3 million R&D expenditure on energy-efficient windows has saved consumers billions of dollars already, with \$ 17 billion in saved energy expected by 2015. Similar advances spurred by federal research and standard setting have produced huge savings -- measured both in dollars and in reduced emissions -- from electronic ballasts for fluorescent lights, refrigerators that use as much electricity as a light bulb, and software for energy-smart building design, to name a few.

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