



## Unlocking the Power of Energy Efficiency in Buildings

Energy efficiency is the fastest, cheapest, and cleanest energy resource we have. Efficiency is not conservation or deprivation; it is getting what you want for less. Efficiency saves consumers and businesses money on their energy bills, reduces global warming pollution, and keeps American energy dollars here. America has the largest efficiency reserves in the world, and buildings are our largest source of efficiency that is just waiting to be tapped.

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### Building Efficiency Offers Energy Opportunities

In 2005, commercial and residential buildings accounted for about 40 percent of national energy consumption,<sup>1</sup> 70 percent of electricity consumption, and the largest share of global warming pollution in the United States.

International consulting firm McKinsey & Co. recently identified untapped, cost-effective efficiency improvements in the buildings sector that could save up to \$33 billion per year by 2030, concluding that taking advantage of energy efficiency in the buildings sector decreases costs and reduces global warming pollution.<sup>2</sup> Moreover, these savings can happen quickly: empirical data show that many of these savings are from improvements that have payback periods of three years or fewer.

Pursuing these efficiency improvements would significantly benefit our economy. Currently, the U.S. market for energy efficiency in buildings is estimated at \$236 billion in revenues

and has the potential to more than triple to \$756 billion in revenues by 2030.<sup>3</sup>

But inefficient regulatory systems and market barriers—such as lack of consumer knowledge and split incentives between landlords and tenants—have hindered technically feasible and cost-effective levels of energy efficiency. These failures, along with growth in devices outside the scope of current standards, have resulted in tripling of per-capita electricity consumption since 1973.<sup>4</sup>

### Efficiency Is Better and Faster Than Drilling or Building Power Plants

If the United States decided to retrofit every home by 2030 so that our average residential energy consumption was cut in half, we could:

#### Eliminate the need for new power plants.

Continuously retrofitting one-twentieth of all the homes in the country would avoid the need for 13 new medium-sized (300MW) power plants every single year. By 2030, almost 300 power plants would have been avoided that would have



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December 2008

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cost American homeowners billions in increased electricity rates. But with efficiency, monthly energy savings would be enough for homeowners to pay back the costs of their retrofits in a matter of years. Mining for efficiency in residential and commercial buildings is the obvious choice to meet our energy needs, before a new power plant lights the first bulb.

**Provide more energy than drilling in protected areas.** Buildings use substantial amounts of natural gas and fuel oil for heating. By squeezing oil out of our homes and offices instead of drilling in protected offshore areas and our last remaining wilderness regions, we can reduce our dependence on oil faster than if we resorted to drilling. The oil and gas available from retrofitting all of our homes would be available immediately, and we could save more by 2030 than we could drill for in the outer continental shelf (OCS).

We could save more barrels of oil by 2030 through retrofitting the 8 percent of American homes that use oil as a heat source than we could produce by opening the Outer Continental Shelf to drilling. Similarly, retrofitting all the natural gas using homes by 2030 would save 4.8 billion cubic feet of natural gas more per day than drilling in the OCS would produce. We can access tremendous domestic energy resources through efficiency

without needlessly risking our coastlines.

### Getting What We Want and Paying Less: We Need Efficiency Now

We can tap these vast efficiency resources in U.S. homes and buildings by enacting the following solutions.

- **Creating an ambitious, performance-based home retrofit program** that would provide a rebate for 40 to 60 percent of the costs of energy efficiency improvements made before this winter.
- **Extending federal tax incentives for energy efficient buildings, appliances, and equipment.** These incentives have either expired or will expire at the end of 2008.
- **Establishing targets for increasing the minimum efficiency levels** required by the residential and commercial model energy building codes by 30 percent by 2020 and 50 percent by 2030. If the targets are not achieved, then the Department of Energy would be required to issue mandatory code provisions achieving these savings.
- **Creating a program that supports the deployment of commercial and residential building energy labels** that provide information on how much energy the building consumes. The labels would be similar to the Home Energy Rating System (HERS) Index.
- **Requiring electric utilities to increase their end-use energy efficiency by 1 percent per year** and natural gas utilities to increase their end-use efficiency by an amount of similar aggressiveness and feasibility.
- **Setting aggressive energy standards for appliances and equipment** and creating new standards to cover products not within the scope of current standards.
- **Significantly increasing funding for research, development, and deployment** of energy-saving technologies.

America can stop repeating the mistakes of the past and start moving toward the clean energy economy today. Efficiency in our buildings is a smart first step in that new direction. Efficiency is the cheapest, fastest solution to our energy crisis. The biggest energy resource we have is as yet untapped—we can't afford to let it stay that way.

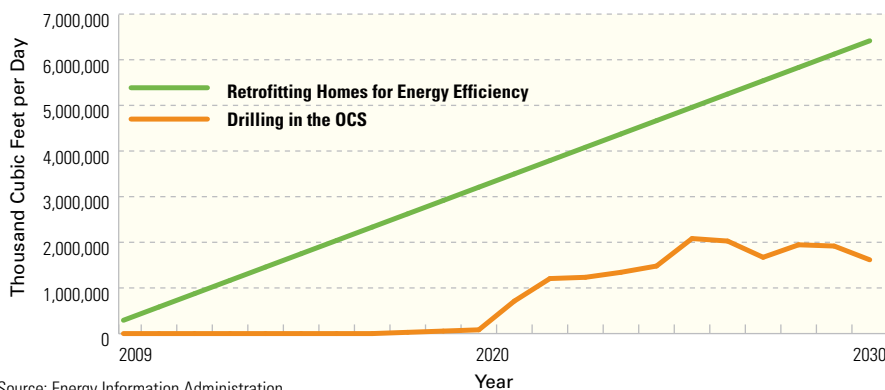
<sup>1</sup> EIA Energy Consumption by Sector. [http://www.eia.doe.gov/emeu/aer/pdf/pages/sec2\\_4.pdf](http://www.eia.doe.gov/emeu/aer/pdf/pages/sec2_4.pdf)

<sup>2</sup> McKinsey and Company (2007). Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost? 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](http://www.mckinsey.com/client-service/ccsi/greenhousegas.asp).

<sup>3</sup> Alliance to Save Energy. "Pathway to Energy Efficiency in the Americas." Presentation delivered June 1, 2007, OAS Private Sector Forum.

<sup>4</sup> U.S. efficiency market estimates from Renewable Energy and Energy Efficiency: Economic Drivers for the 21st Century; Roger Bezdek, Principal Investigator, Management Information Services, Inc. for the American Solar Energy Society; 2007. Global estimates based on roughly one-fifth projected U.S. share of global primary energy consumption from IEA's World Energy Outlook 2006.

**Natural Gas: Retrofit Savings vs. Drilling**



Source: Energy Information Administration.

