

## From light bulbs to washing machines

By [STEVE WHITWORTH](#)

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The nation's new energy bill aims to help Americans see things in a new light and use less fuel to get where they're going.

President George W. Bush signed the Energy Independence and Security Act in December. The massive legislation deals with issues ranging from vehicle fuel economy and renewable fuel usage to energy efficiency and research on alternative energy sources.

Many environmental groups supported the bill's provisions, which they say will cut U.S. energy use 8 percent by 2030. Its new vehicle fuel economy standards are the first in 32 years, and it mandates a fourfold increase in the use of biofuels, such as ethanol.

Perhaps the most widespread change brought about by the bill will be the phasing out of incandescent light bulbs of the kind that have been used for more than 100 years, to be replaced by newer, more efficient bulbs. Another common household consequence of the bill will be the first limits ever placed on water usage by new models of washing machines and dishwashers.

But even with these changes, some critics say the bill comes up short of the goal of setting a comprehensive energy policy for the United States.

"Certainly, parts of the new federal energy bill are a step forward, particularly as it relates to the smart grid," said David Kolata, executive director of the Citizens Utility Board, the nonprofit, nonpartisan organization that represents the interests of residential-utility customers in Illinois. "The technology improvements to the electric grid greatly improve reliability and also allow for new energy-saving technology and features.

"But a lot more needs to be done," he said. "We need to have more investment in energy efficiency because that's the best way to keep prices down. 'Nega-watts' are much cheaper than megawatts; in other words, the cheapest watts are those that you don't have to use."

Even U.S. Rep. John Shimkus, R-Collinsville, who voted for the energy bill, expressed some reservations about it.

"This bill still does not take any steps to increase our domestic energy supply, but it does not harm supply, either," Shimkus said. "This bill increases our use of renewable fuels, particularly cellulosic ethanol; increases the mileage standards for vehicles; and improves energy efficiency for many federal buildings and for light bulbs."

Shimkus said the bill will boost the use of renewable fuels to 36 billion gallons per year by 2022. More than half of that will be cellulosic ethanol and other "advanced" biofuels. This expands the renewable fuel standard that Shimkus worked to include in the 2005 energy bill. These renewable fuels have half the greenhouse gas emissions of regular gasoline.

Shimkus also noted that the Corporate Average Fuel Economy (CAFE) standard will rise to

an average of 35 miles per gallon by 2020. Current standards are 27.5 mpg for cars and 22.2 mpg for light trucks and SUVs. Higher vehicle emission standards could reduce the nation's demand for oil by more than 1 million barrels per day, he said.

Improved light bulb efficiency could save 65 billion kilowatt-hours of electricity by 2015, Shimkus said.

"While this bill will help ease demand for energy, we must still work to expand supply in order to meet our growing future energy demand," he said.

Experts estimate that phasing out traditional incandescent light bulbs will allow U.S. utility customers to cut their light bulb electricity use by 60 percent by 2020. The light bulb standard alone is expected to reduce Americans' electric bills by up to \$18 billion a year. The bill also requires new dishwashers to cut water use by 28 percent and washing machines by about 40 percent, while improving energy efficiency.

"We certainly think phasing out low-efficiency light bulbs will help electricity prices, and that will save money," Kolata said.

For most consumers, the change to higher efficiency means buying compact fluorescent light bulbs, the coiled bulbs becoming more familiar to millions of Americans.

"The energy-saving compact fluorescent light bulbs are getting better," Kolata said. "In the last couple of years, there have been a lot of technology improvements. Most people now can't tell the difference in lighting quality.

"In my home, I replaced the old bulbs with CFLs (compact fluorescent lamp), and I'm saving quite a bit of money," he said. "I think in the long term, LED (light emitting diode lights) will be even more efficient. But right now, the cost of LEDs is pretty expensive."

For every CFL bulb that a homeowner uses, the consumer will save up to \$75 over the life of the bulb, compared to the "old school" incandescent bulbs, Kolata said. He said the Citizens Utility Board has a calculator on its Web site that allows individuals to estimate how much money they will save by switching to the CFL bulbs. To access the calculator, go to [www.citizensutilityboard.org](http://www.citizensutilityboard.org) and click on the "Get Green" page.

"You put in how many hours the bulb is used and what wattage, and it tells you what you will save," Kolata said. He noted that the CFL bulbs still cost more than conventional bulbs, but they last about seven to 10 times longer than incandescent bulbs, so the average CFL bulb can be expected to keep glowing for about 10 years.

CFL bulbs need to be recycled because of the materials they use, such as mercury. Kolata said CUB has information on its Web site about recycling centers that will take the CFL bulbs, and he encourages consumers to check with their local governments.

"Most towns are now in the process of expanding their recycling centers in response to the increasing popularity of CFLs," he said. "Right now in most places, you have to have a separate place to take CFLs. Our hope is that you'll eventually be able to recycle them in separate bags."

Unlike the 2005 version of the energy bill, which included a number of tax credits for homeowners to install energy-efficient appliances, windows, doors and other energy-saving measures, the new energy bill provides relatively few such incentives.

"There are still some of those, but in general, while tax incentives can be good policy, we just need to have a space program of energy these days," Kolata said. "We need to invest in research and development to find new technologies, to reduce the cost of producing solar and wind power. We need to reform our energy markets, so that energy efficiency can be properly compensated. That will lead to more investment.

"For too long, our markets have been dominated by the supply-siders, by the generators, and that created an unlevel playing field," he said. "We want to make sure the demand side can compete on equal terms, providing cost savings for consumers.

"We need to have a comprehensive energy policy in this country, and we really don't."

### **Summary of key items of the Energy Independence and Security Act:**

#### **VEHICLE FUEL ECONOMY:**

- Increases Corporate Average Fuel Economy, or CAFE, standards to 35 miles per gallon (15 km per liter) by 2020 - the first congressional increase in 32 years.
- Sets separate standards for cars and light trucks.
- Beginning in 2011 model year, National Highway Traffic Safety Administration annually increases nationwide CAFE standard. For 2021-2030 model years, car and light truck standards rise at a "maximum feasible rate" set by NHTSA.
- Automakers can trade fuel economy credits earned between the passenger car and light truck fleets when they exceed goals, and borrow against future gains for up to 3 years.
- Could lower U.S. crude oil usage by 2 million barrels per day - or 8 percent - by 2030, according to government estimates.
- Increased vehicle fuel efficiency will save American families \$700 to \$1,000 a year at the pump.

#### **RENEWABLE FUEL MANDATE:**

- Expands mandate for U.S.-grown biofuels, such as ethanol, to 36 billion gallons in 2022, versus current levels near 6.5 billion gallons. Near-term usage requirement goes to 9 billion gallons in 2008 and 15.2 billion gallons in 2011.
- Caps ethanol supply from corn at 15 billion gallons; the rest must come from non-food "cellulosic" sources, such as switchgrass and wood chips.
- Bans companies from restricting installation of ethanol pumps as part of franchise agreements.

#### **EFFICIENCY AND RESEARCH**

- Increases the efficiency of buildings, homes, appliances, and lighting, reducing heat-trapping carbon dioxide emissions 75 percent.
- Building, appliance, and lighting efficiency will save consumers \$400 billion through 2030.
- Phases out use of incandescent lightbulbs, cutting energy use from light bulbs by 60

percent by 2020.

- Requires dishwashers to cut water usage by 28 percent and clothes washers by 40 percent.
- Sets new incentives for developing energy from wind, solar, geothermal and other renewable sources.
- Funds new research into capturing carbon emissions from coal plants and sequestering them in underground reservoirs.