

2006 State of the Union Address: The Advanced Energy Initiative

"Keeping America competitive requires affordable energy, and here we have a serious problem. America is addicted to oil, which is often imported from unstable parts of the world. The best way to break this addiction is through technology. Since 2001, we have spent nearly \$10 billion to develop cleaner, cheaper, and more reliable alternative energy sources – and we are on the threshold of incredible advances.

So tonight, I announce the Advanced Energy Initiative -- a 22-percent increase in clean-energy research -- at the Department of Energy, to push for breakthroughs in two vital areas. To change how we power our homes and offices, we will invest more in zero-emission coal-fired plants, revolutionary solar and wind technologies, and clean, safe nuclear energy. (Applause.)



We must also change how we power our automobiles. We will increase our research in better batteries for hybrid and electric cars, and in pollution-free cars that run on hydrogen. We'll also fund additional research in cutting-edge methods of producing ethanol, not just from corn, but from wood chips and stalks, or switch grass. Our goal is to make this new kind of ethanol practical and competitive within six years. (Applause.)

Breakthroughs on this and other new technologies will help us reach another great goal: to replace more than 75 percent of our oil imports from the Middle East by 2025. (Applause.) By applying the talent and technology of America, this country can dramatically improve our environment, move beyond a petroleum-based economy, and make our dependence on Middle Eastern oil a thing of the past. (Applause.)"

President George W. Bush, January 31, 2006

The President's Advanced Energy Initiative included the following letter to the American people, and policy points concerning Cellulosic Ethanol as follows:

PRESIDENT'S LETTER

My fellow Americans,

Keeping America competitive requires reliable, affordable, and clean supplies of energy. Over the past five years, my Administration has taken steps to increase the domestic supply of energy, including alternative and renewable sources. We have also worked to improve energy efficiency and to make our energy infrastructure more secure and reliable. We implemented a new National Energy Policy, and last summer I signed into law the Energy Policy Act of 2005, the first comprehensive energy bill in more than a decade.



America's energy challenges require continued action. For the sake of our economic and national security, we must reduce our dependence on foreign sources of energy – including on the natural gas that is a source of electricity for many American homes and the crude oil that supplies gasoline for our cars. To achieve this objective, we will take advantage of technology. My *Advanced Energy Initiative* provides for a 22-percent increase in funding for clean-energy technology research at the Department of Energy. To change how we power our homes and offices, we will invest more in zero-emission coal-fired plants, revolutionary solar and wind technologies, and clean, safe nuclear energy. To change how we power our automobiles, we will increase our research in better batteries for hybrid and electric cars and in pollution-free cars that run on hydrogen. We will also fund additional research in cutting-edge methods of producing ethanol, not just from corn, but from wood chips, stalks, or **switch grass**.

Applying the talent and innovative spirit of our citizens, we will foster economic growth, protect and improve our environment, move beyond a petroleum-based economy, and make our dependence on foreign sources of energy a thing of the past.

GEORGE W. BUSH
THE WHITE HOUSE
February 20, 2006

The President's Energy Vision: Changing the Way we Fuel Our Vehicles

Cellulosic Ethanol

Transportation fuels derived from biomass can be produced either by the conversion of sugar or starch crops to ethanol, or by conversion of soybean or other plant oils to produce biodiesel. These clean-burning fuels are currently mixed with gasoline or diesel fuel in small amounts (up to 10% for ethanol and up to 20% for biodiesel) and used in conventional vehicles to help reduce petroleum demand.

The 3.4 billion gallons of ethanol blended into gasoline in 2004 amounted to about 2% by volume of all gasoline sold in the United States. Greater quantities of ethanol are expected to be used as a motor fuel in the future, in part due to two federal policies: an excise tax exemption of \$0.51 per gallon of ethanol used as motor fuel, and a new requirement for at least 7.5 billion gallons of renewable fuel to be used in gasoline by 2012 (included in the recently passed Energy Policy Act).



Virtually all domestically produced ethanol currently comes from corn. However, corn and other starches and sugars are only a small fraction of biomass that can be used to make ethanol. A recent DOE/USDA study suggests that, with aggressive technology developments, biofuels could supply some 60 billion gallons per year – 30% of current U.S. gasoline consumption – in an environmentally responsible manner without affecting future food production.

To achieve greater use of “homegrown” renewable fuels, we will need advanced technologies that will allow competitively priced ethanol to be made from cellulosic biomass, such as agricultural and forestry residues, material in municipal solid waste, trees, and grasses. Advanced technology can break those cellulosic materials down into their component sugars and then ferment them to make fuel ethanol.

To help reduce the costs of producing these advanced biofuels, and ready these technologies for commercialization, the President's 2007 Budget increases DOE's biomass research funding by 65%, to a total of \$150 million. The President's goal is to make cellulosic ethanol cost-competitive with corn-based ethanol by 2012, enabling greater use of this alternative fuel to help reduce future U.S. oil consumption.