



HYDROGEN FUEL INITIATIVE

Research and Development Funding in the President's 2008 Budget

Through a focused research program, the Hydrogen Fuel Initiative (HFI) is advancing the fundamental scientific underpinning of efforts to develop practical and cost-effective technologies for producing, distributing, and using hydrogen to power automobiles. Widespread use of hydrogen fuel-cell vehicles would make the United States much less dependent on foreign sources of energy, a major long-term goal of this Administration. The 2008 Budget for HFI is \$309 million, which completes President Bush's five-year, \$1.2 billion commitment to hydrogen R&D announced in his 2003 State of the Union address.

By spurring increased hydrogen technology development efforts among private-sector, state and international stakeholders, the HFI has contributed to significant technological advances. For example, since 2003, the projected cost of fuel cells (based on recent innovations) has been reduced by about two-thirds, the estimated cost of hydrogen produced from natural gas has been cut by about 40 percent, and the demonstrated capacity (by weight) of hydrogen storage materials has increased by 150 percent. The Initiative funds research into hydrogen production and distribution from solar and wind energy, biomass, coal, and nuclear energy. In 2008, fundamental and applied research will continue to address key hurdles to achieving the hydrogen economy, including the capacity of hydrogen storage systems; the cost, performance, and durability of fuel cells; and the cost, safety, and infrastructure requirements of hydrogen production.

The 2008 Budget for HFI includes \$23 million in funding for the Nuclear Hydrogen Initiative, which seeks to develop and demonstrate nuclear-based hydrogen production systems. The HFI also provides \$60 million for DoE's Office of Science to advance the basic scientific foundation in novel materials, membranes, catalysts, and biological processes, which could enable breakthroughs in hydrogen production, hydrogen storage, and fuel cells. The HFI complements the Administration's FreedomCAR initiative, which focuses on automotive technologies such as power electronics, batteries, and lightweight materials used for hybrid-electric and plug-in hybrid vehicles and for fuel cell vehicles. The Interagency Working Group on Hydrogen and Fuel Cells (www.hydrogen.gov) under the National Science and Technology Council leads coordination among nine agencies in hydrogen-related manufacturing and innovation, safety, codes and standards, and fundamental research.

Hydrogen Fuel Initiative (dollars in millions)

	2006 Enacted	2007 Request	2008 Budget	2008- 2007 (\$)	2008- 2007 (%)	2004-2008 Total*
<u>Department of Energy</u>						
Hydrogen production, storage, and infrastructure	80	114	132	18	16%	501
Fuel Cells	75	82	81	-1	-1%	377
Hydrogen from Coal	22	24	13	-11	-47%	80
Nuclear Hydrogen Initiative	25	19	23	4	21%	81
Science (basic research)	33	50	60	10	19%	171
<u>Department of Transportation</u>						
RITA and NHTSA (standards/safety)	1	1	1	0	0%	5
Total	236	289	309	20	7%	1,215

* The five-year total shown here includes enacted funding levels for 2004-2006 and proposed funding for 2007-2008