Office of Science and Technology Policy
Executive Office of the President
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HYDROGEN FUEL INITIATIVE

Research and Development Funding in the President's 2007 Budget

The Hydrogen Fuel Initiative (HFI) seeks to scientifically support industry 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. The 2007 Budget for HFI is $289 million, $53 million (23 percent) greater than the FY 2006 level. The Initiative remains on track to meet President Bush's five-year, $1.2 billion commitment to hydrogen research and development announced in his 2003 State of the Union address.

Program	2005 Enacted	2006 Enacted	2007 Budget	Dollar change	Percent change
Department of Energy					
Hydrogen production storage, and infrastructure	94	80	114	34	42%
Fuel Cells	75	75	82	6	8%
Hydrogen from Coal	17	22	24	2	9%
Nuclear Hydrogen Initiative	9	25	19	-6	-24%
Science (basic research)	29	33	50	18	54%
Department of Transportation					
RITA and NHTSA (standards/safety)	1	1	1	0	1%
Total	**225**	**236**	**289**	**53**	**23%**

The HFI focuses on development of technologies for the production, storage and delivery of hydrogen, and fuel cell technologies. Specifically, it supports research on safe and effective hydrogen storage systems; affordable hydrogen fuel cells for consumer automobiles; and hydrogen production and distribution from renewable energy, coal, nuclear energy, and biomass. The HFI complements the Administration's FreedomCAR initiative, which focuses on developing other advanced automotive technologies (e.g., power electronics, batteries, lightweight materials) used in hydrogen-powered fuel cell vehicles and gasoline-electric hybrid vehicles. The initiatives are coordinated with the domestic auto industry and major energy companies through the FreedomCAR and Fuel Partnership. The OSTP-led Hydrogen R&D Interagency Task Force serves as the mechanism for collaboration among the eight federal agencies that fund hydrogen-related research and development.

By spurring increased hydrogen technology development efforts among private-sector, state and international stakeholders, the HFI has already contributed to significant technological advances. For example, in 2005, the cost of a fuel cell system was more than 50 percent lower than in 2002. Costs still need to be reduced by a factor of four, however, for fuel cells to compete with internal combustion engines.

The 2007 Budget for HFI includes $19 million in funding for the Nuclear Hydrogen Initiative, a sustained level of effort after accounting for earmarking. This initiative will conduct R&D on enabling technologies, demonstrate nuclear-based hydrogen production technologies, and study potential hydrogen production schemes to support the President's vision for a future hydrogen economy.

The 2007 Budget includes $50 million, a 54% increase, to support innovative basic research in DoE's Office of Science (SC) to establish the scientific basis that underpins the physical, chemical, and biological processes governing the interaction of hydrogen with materials. SC will support fundamental research that provides the foundation for the innovative design of materials and processes. High-priority research directions are the focus of the following activities: (1) novel materials for hydrogen storage; (2) membranes for separation, purification, and ion transport; (3) design of catalysts at the nanoscale; (4) solar hydrogen production; and (5) bio-inspired materials and processes.