**Office of Science and Technology Policy**
**Executive Office of the President**
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# ADVANCED ENERGY INITIATIVE

## *Research and Development in the President's 2009 Budget*

President Bush announced the Advanced Energy Initiative (AEI) in his 2006 State of the Union address to accelerate the technical and cost viability of alternative energy technologies that can change the way we power our vehicles (thereby reducing our dependence on foreign oil) and our homes and businesses (reducing emissions of greenhouse gases and other pollutants). The FY 2009 Budget includes $3.17 billion for the AEI, a 25% increase over the enacted 2008 level and $1.4 billion more than the 2006 investment. Examples of technologies that can help change the way we power our homes and businesses include nuclear power (advanced by the Global Nuclear Energy Partnership: GNEP), clean coal (advanced by the FutureGen program), solar, and wind. Examples of technologies that can help reduce our dependence on oil include plug-in hybrid vehicles, hydrogen-powered fuel cells, and biofuels, including "cellulosic" ethanol derived from agricultural waste, forest residues and dedicated energy crops such as switchgrass. An important component of the AEI is critical basic research that should help overcome major technical barriers to the expanded use of technologies such as solar energy, cellulosic ethanol, energy storage, hydrogen fuel cells, and fusion energy (including support for the ITER project).

| Program (funding in millions) | 2006 Enacted | 2008 Enacted | 2009 Budget | 2009 - 2006($) | 2009-2006(%) | 2009-2008($) | 2009-2008(%) |
|---|---|---|---|---|---|---|---|
| **Energy Efficiency and Renewable Energy (EERE) R&D Programs** | | | | | | | |
| Hydrogen and Fuel Cell Technology | 155 | 211 | 146 | -9 | -6% | -65 | -31% |
| Vehicle Technology | 182 | 213 | 221 | 39 | 21% | 8 | 4% |
| Biomass | 91 | 198 | 225 | 134 | 147% | 27 | 14% |
| Solar | 83 | 168 | 156 | 73 | 88% | -12 | -7% |
| Wind | 39 | 50 | 53 | 14 | 36% | 3 | 6% |
| Geothermal | 23 | 20 | 30 | 7 | 30% | 10 | 51% |
| Program Management (pro-rata) | 58 | 61 | 106 | 48 | 83% | 44 | 72% |
| **Subtotal, EERE R&D** | **631** | **922** | **936** | **305** | **48%** | **15** | **2%** |
| **Fossil Energy (FE) R&D Programs** | | | | | | | |
| Coal Research Initiative | 314 | 464 | 588 | 274 | 87% | 123 | 27% |
| FutureGen (non-add) | 18 | 74 | 156 | 138 | 767% | 82 | 110% |
| Power Generation/Stationary Fuel Cells | 62 | 55 | 60 | -2 | -3% | 5 | 8% |
| Program Management (pro-rata) | 86 | 98 | 100 | 14 | 16% | 1 | 1% |
| **Subtotal, FE R&D** | **462** | **618** | **747** | **285** | **62%** | **129** | **21%** |
| **Nuclear Energy (NE) R&D Programs** | | | | | | | |
| AFCI / GNEP | 79 | 179 | 302 | 223 | 282% | 123 | 69% |
| Generation IV | 54 | 115 | 70 | 16 | 30% | -45 | -39% |
| Nuclear Power 2010 | 65 | 134 | 242 | 177 | 272% | 108 | 81% |
| Nuclear Hydrogen Initiative | 25 | 10 | 17 | -8 | -32% | 7 | 70% |
| Program Management (pro-rata) | 28 | 59 | 66 | 38 | 136% | 7 | 12% |
| **Subtotal, NE R&D** | **251** | **497** | **697** | **446** | **178%** | **200** | **40%** |
| **Science Basic Research Programs** | | | | | | | |
| ITER Fusion Project | 25 | 11 | 215 | 190 | 760% | 204 | 1,855% |
| Fusion Energy (not including ITER) | 263 | 276 | 278 | 15 | 6% | 2 | 1% |
| Solar | 28 | 37 | 69 | 41 | 146% | 34 | 97% |
| Biomass / Bioenergy | 28 | 113 | 118 | 90 | 321% | 5 | 4% |
| Hydrogen | 58 | 52 | 75 | 17 | 29% | 24 | 47% |
| Program Management (pro-rata) | 19 | 22 | 32 | 13 | 68% | 11 | 50% |
| **Subtotal, Science Basic Research** | **421** | **508** | **788** | **367** | **87%** | 279 | 55% |
| **Total, Advanced Energy Initiative** | **1,765** | **2,545** | **3,168** | **1,405** | **80%** | **624** | **25%** |