National Climate Change Technology Initiative Priorities – FY 2007 Request

Funding ($ millions)

Activity	Agency	2007 Budget ($millions)	Explanation / Justification
Hydrogen Storage	DOE	34.6	Addresses key challenge to advancing a hydrogen-based transportation system, which could substitute for oil and dramatically reduce greenhouse gas (GHG) emissions. A major technological breakthrough is needed to be able to store enough hydrogen on board a fuel cell vehicle to provide a driving range comparable to today's vehicles.
Low Wind Speed Technology	DOE	19.1	Currently, wind power is only cost competitive in areas of high-wind speeds, which are relatively sparse and not near major load centers. Improving technologies to make wind power competitive in low-wind speed areas could expand this GHG-free power producer and displace (or reduce future need for) coal- and gas-fired electricity generation. Includes R&D on deepwater off-shore systems.
Solid State Lighting	DOE	19.3	Such lighting has the potential to double the efficiency of conventional lighting. Deployment could reduce GHG emissions and slow the growth of future base load electricity generation capacity, which will largely use coal.
Cellulosic Biomass (Biochemical Platform R&D)	DOE	32.8	The research focuses on converting complex cellulosic carbohydrates of biomass into simple sugars. Ultimately, this could lead to use of "waste" biomass to produce power, chemicals, and fuel, such as ethanol. Cellulosic biofuels can displaces fossil fuel products and have the potential to be nearly "carbon neutral" by cyclically capturing and releasing carbon dioxide, the main GHG, to the atmosphere.
Transportation Fuel Cell Systems	DOE	7.5	This activity works to incorporate fuel cells into vehicles – converting hydrogen into electricity and water vapor --directly displacing the burning of fossil fuels in vehicles.
Sequestration	DOE	78.2	The continued use of fossil fuels, particularly coal, to generate electricity may be important to maintain both a diversified fuel mix and ensure adequate energy supplies at a reasonable price. A successful carbon sequestration research and development effort could allow the continued use of economical fossil fuels, while also limiting GHG emissions to the atmosphere.

Integrated Gasification Combined Cycle (IGCC)	DOE	55.6	Instead of burning coal, IGCC technology gasifies coal in such a way so as to enable the more efficient conversion of coal and other carbon-based feedstocks into electricity and other useful products, providing the potential for over 50 percent reduction in CO2 emissions, compared to today's more conventional combustion technologies. It also facilitates capture and sequestration processes.
Nuclear Hydrogen Initiative	DOE	18.7	This program aims to develop technologies that will apply heat available from advanced nuclear energy systems, in combination with power production, to produce hydrogen at a cost that is competitive with other alternative transportation fuels. Although but one of many hydrogen production methods, nuclear energy provides an emissions-free way to produce large amounts of hydrogen.
Advanced Fuel Cycle/Advanced Burner Reactor	DOE	25.0	Advances in nuclear fuel recycling can make nuclear power, which eits no GHG emissions, more attractive. The Advanced Burner Reactor (ABR) is a component of a multifaceted research program aimed at recycling spent nuclear fuel; reducing waste; promoting non-proliferation; and enabling the expansion of nuclear power – a GHG-free energy source. With ABR technology, the only waste to be placed in a repository is of a less challenging content, absent long-lived radioactive isotopes and other transuranics. One Yucca Mountain size repository would be able to accommodate the waste from many reactor-years of operation — a content that would fill as many as 21 equal repositories taking all that spent fuel directly.
Methane Partnership Initiatives	EPA	13.0	Includes EPA's domestic partnership programs with industry, as well as the international Methane to Markets Partnership. These programs encourage development and deployment of technologies to reduce methane emissions and make a substantial contribution to achievement of the President's GHG-intensity reduction goal.
Climate Leaders	EPA	2.0	Climate Leaders is set of flagship voluntary industry-government partnerships that encourage private entities to develop and implement long-term, comprehensive climate strategies, and set GHG emission reduction goals.
CCTP Program Support	DOE	1.0	The U.S. Climate Change Technology Program (CCTP) is the multi-agency planning and coordination activity, led by DOE, that carries out the President's climate change technology initiative and implements relevant climate change provisions of the Energy Policy Act of 2005. It is important to the support of the larger CCTP portfolio.
Total		**306.8**	