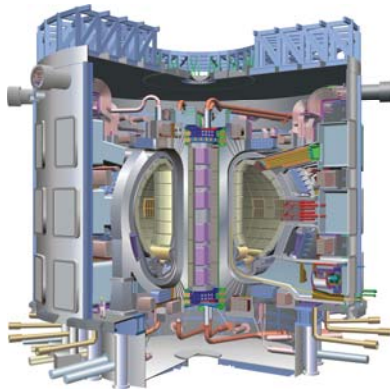




# The FY 2009 Budget Request: A New Era for Science

## The International ITER Fusion Project (\$214.5M)

*Will demonstrate feasibility of fusion power – the only realistic option to meet the world's growing needs for abundant, economical and clean energy.*



- ITER puts us on a R&D and demonstration timeline for commercialization of abundant, economical and clean fusion energy by mid-century.
- ITER will, for the first time, demonstrate the technical and scientific feasibility of a sustained, magnetically confined fusion burning plasma.
- First-of-a-kind international partnership consisting of the U.S., China, the European Union, India, Japan, Korea and Russia.

- The U.S. will provide in-kind components, personnel and cash to support our 9.1% share of the overall construction of the ITER project.
- U.S. procurement, fabrication, and delivery of medium-and high-technology components and U.S. share of the common costs at the ITER site are fully supported



# Fusion Energy Sciences (FES)

(FY 2009=\$493.1M)

- The U.S. Contributions to ITER.** The U.S. ITER Major Item of Equipment (MIE) project is in survival mode in FY 2008 because only \$10.6M of the \$160.0M requested was appropriated. Funds requested for FY 2009 will be used to resume the full range of U.S. participation in ITER. The focus will be on completing the ITER design, re-starting pre-fabrication R&D and initiating long-lead procurements for U.S. in-kind hardware, supporting the U.S. ITER Project Office, providing U.S. secondees to the international ITER Organization (IO), and providing 2008 and 2009 cash contributions to the IO per the terms of the ITER Joint Implementing Agreement. Some work planned originally for FY 2009 will be delayed into FY 2010 and beyond. (FY 2007=\$60.0M; FY 2008=\$10.6M; **FY 2009 = \$214.5M**)
- Operation and research on major facilities.** DIII-D, Alcator C-Mod, and NSTX will focus on key issues for ITER: confinement, stability, plasma boundary, and wave-plasma interaction. In addition, DIII-D will develop the physics basis for steady-state, high performance operation for next generation facilities; Alcator C-Mod will study operation with all metal walls; and NSTX will investigate operation with a liquid metal divertor plate and explore the unique physics of the spherical torus. (FY 2007=\$112.5M; FY 2008=\$125.6M; **FY 2009=\$116.7M**)
- Fabrication of the National Compact Stellarator Experiment.** Continues but is under review due to cost and schedule overruns arising from system complexity. Pending a final decision in FY2008, the budget assumes a rebaselining. (FY 2007=\$15.8M; FY 2008=\$15.9M; **FY 2009=\$19.6M**)
- Fusion Simulation Project (FSP).** Will take advantage of improvements in computational capabilities to develop a world leading predictive capability that can be applied to fusion plasmas. (FY 2007=\$0M; FY 2008=\$0M; **FY 2009=\$2.0M**)
- Other core research areas.** Theory and modeling, enabling technologies, diagnostics, experimental plasma research, high energy density physics, international research, and general plasma science, will continue to develop the knowledge base needed for an economically and environmentally attractive fusion energy source. (FY 2007=\$123.4M; FY 2008=\$134.4M; **FY 2009=\$140.3M**)

