FES FY 2011 Congressional Budget Request Rollout

Briefing to the Fusion Program Leaders

Presented by:

E.J. Synakowski

Associate Director
Fusion Energy Sciences
Office of Science, U.S. Department of Energy

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FY 2011 Congressional Request Overview for FES

- Provides $380M, a reduction of $46M
- Reduces ITER funding to $80M, down from $135M in FY 2010
- Supports most program areas at the FY 2010 level
- Provides increases for:
  - HEDLP (+6.5M)
  - Fusion Simulation Program (+$2M)
  - NSTX MIE Upgrade (+1.1M)
  - DIII-D and Alcator C-Mod Facility Operations (+2.3M DIII-D and +1.0M C-Mod)
  - Materials (+$.5M)

Fusion Energy Sciences FY 2011 Budget Request

Dollars in Millions

	FY 2009*	FY 2010*	FY 2011 Cong. Req.
Funding by Subcategory			
Science	163.5	182.1	186.0
Facility Operations	207.6	220.7	170.0
Enabling Research and Development	23.4	23.2	24.0
TOTAL	394.5	426.0	380.0
Funding by Facility			
DIII-D	62.2	65.0	66.4
C-Mod	24.7	26.5	27.5
NSTX**	44.9	46.2	47.3
Funding of Base and ITER			
Non-ITER	270.5	291.0	300.0
ITER	124.0	135.0	80.0

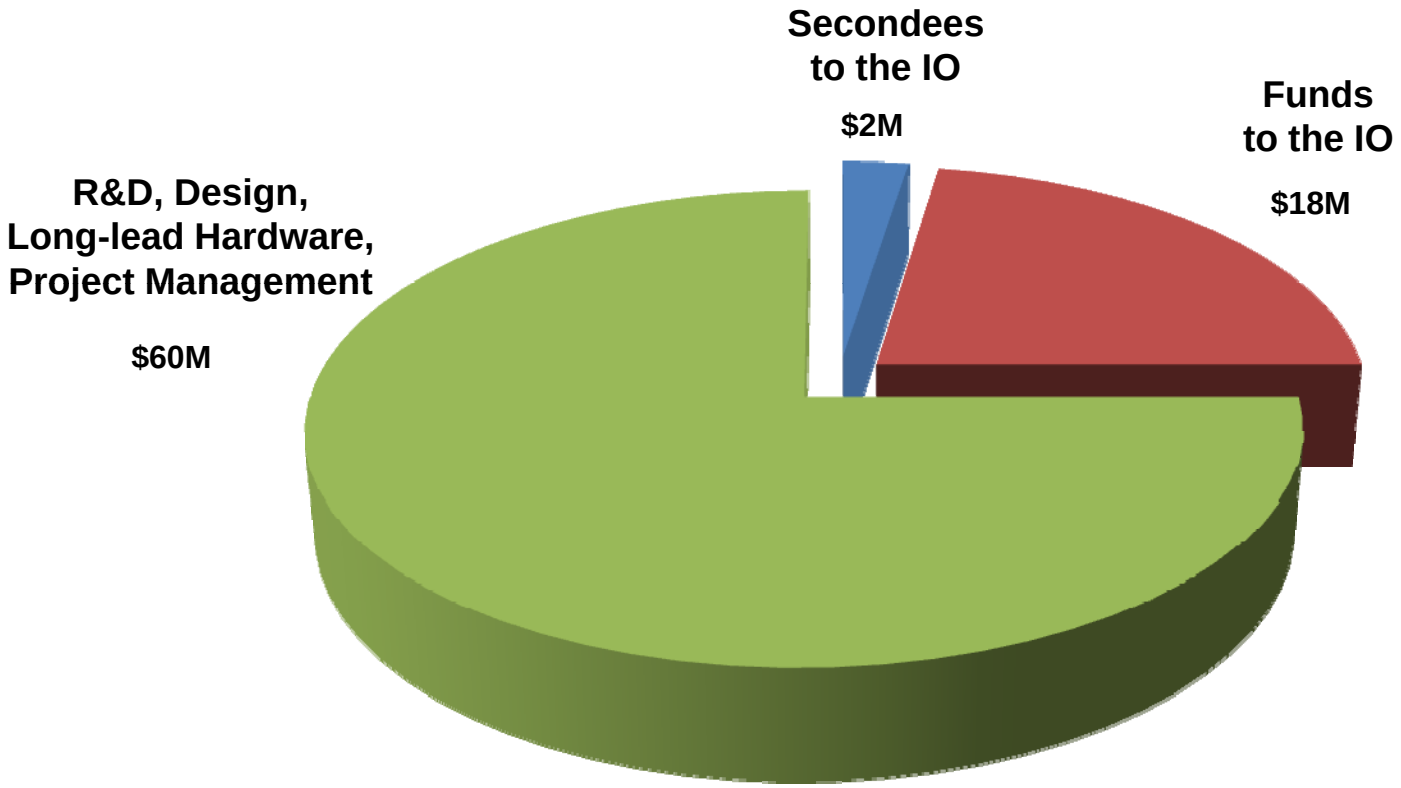
*Recovery Act Funding is not included.
**Includes NSTX MIE for upgrades.

Fusion Energy Sciences Budget by Institution

Dollars in Millions

Institution	FY 2009	FY 2010	FY 2011 Cong Req
General Atomics	54.8	56.7	57.6
Lawrence Berkeley National Laboratory	4.9	4.8	4.8
Lawrence Livermore National Laboratory	13.2	12.9	13.1
Los Alamos National Laboratory	4.6	5.1	5.5
Oak Ridge National Laboratory	18.1	16.6	17.4
ORNL/PPPL-ITER	124.0	135.0	80.0
Princeton Plasma Physics Laboratory	71.2	72.7	76.0
Massachusetts Institute of Technology	26.4	27.8	28.3

FY 2011 Congressional Funding for ITER is $80M



ITER Funding Situation and Impact

- The $80M request for the US ITER Project reflects the Administration's concern about resolving ITER's present difficulties.

- Since the formulation of this budget request, the ITER Council has made some progress in addressing these difficulties, and FES is optimistic that they can be resolved in time to positively influence the FY 2012 request.

- Concerning the FY 2011 reduction in funding ($55M) as compared to FY 2010, the US ITER Project would need to take a slower approach to industrial design and procurement of long-lead items in its two costliest systems – the Tokamak Cooling Water System, and the Central Solenoid Magnets and Structure. The emphasis would continue to be on value engineering and schedule/cost risk minimization. The US remains fully engaged with the IO and other Domestic Agencies in establishing an ITER baseline scope, schedule, and cost (for IO scope).

FY 2011: Fusion Program Budget Increases

- HEDLP/IFES (+6.5M)
  - prepare for new opportunities
  - encourage collaborations to engage in building a mature HEDP community
- Fusion Simulation Program (+$2.0M)
  - in mid-2011, the two-year planning study for the FSP initiated in FY 2009 will be completed and reviewed
  - increase in funding requested in FY 2011 marks the ramp-up of funding to begin the program

FY 2011: Fusion Program Budget Increases

- Increase facility operations funding to maintain operating weeks at DIII-D (+$2.3M) and C-Mod (+$1M)
- NSTX Upgrade MIE Project (+$1.1M)
  - Support is provided to begin the conceptual design work for a new centerstack magnet assembly and a second neutral beam line.
- Materials Research (+$0.5M)
  - A modest increase to address plasma facing materials challenges.

FY 2011 - In Summary

- ITER funding reduction with continued participation
- Most programs supported at FY'10 level
- Increases in several areas:
  - HEDLP
  - major facility operations
  - NSTX upgrade
  - materials

Fusion Energy Sciences
FY 2011 CONGRESSIONAL Budget
(Budget Authority in thousands)

	FY 2009	FY 2010	FY 2011
	Approp (Sept)	Approp (Dec)	CONG
Science			
DIII-D Research	25,740	27,504	26,604
C-Mod Research	9,002	9,045	9,045
International Research	5,487	4,935	4,935
Diagnostics	4,082	3,912	3,920
HBCU, Education, Outreach, Reserves, Other	5,810	12,781	9,277
SBIR/STTR	0	8,382	8,137
Subtotal Tokamak Research	**50,121**	**66,559**	**61,918**
NSTX Research	17,104	17,549	17,549
Experimental Plasma Research	16,975	16,765	16,765
High Energy Density Lab Plasmas	24,753	24,551	31,040
MST Research	6,852	6,915	6,915
Subtotal Alternates Research	**65,684**	**65,780**	**72,269**
Theory and Modeling	**24,014**	**24,348**	**24,348**
SciDAC	**7,163**	**7,212**	**7,212**
Fusion Simulation Program	**2,000**	**4,000**	**6,000**
General Plasma Science Research	**14,497**	**14,193**	**14,193**
Total, Science Research	**163,479**	**182,092**	**185,940**

	FY 2009	FY 2010	FY 2011
	Approp (Sept)	Approp (Dec)	CONG
Facilities Operations			
DIII-D Operations	36,456	37,480	39,751
C-Mod Operations	15,724	17,434	18,457
NSTX Operations	22,536	22,150	22,024
NSTX Upgrade	5,235	6,550	7,685
OTHER-Infrastructure	495	500	500
GPE	210	110	110
GPP	2,993	1,493	1,493
ITER MIE OPC	15,000	20,000	5,000
ITER MIE TEC	109,000	115,000	75,000
Total, Facility Operations	**207,649**	**220,717**	**170,020**
Enabling R&D			
Plasma Technology	14,471	13,651	13,651
Advanced Design Studies	4,102	4,323	4,660
Materials Research	4,817	5,217	5,729
Total, Enabling R&D	**23,390**	**23,191**	**24,040**
Total, Fusion Energy Sciences	**394,518**	**426,000**	**380,000**