

Table II-11. Department of Energy R&D

Table II-11. R&D in the Department of Energy
(budget authority in millions of dollars)

	FY 2003 Actual	FY 2004 Estimate	FY 2005 Budget	Change FY 04-05	
				Amount	Percent
Summary of DOE R&D (see notes at end of table):					
1. Energy Supply	479	519	454	-65	-12.6%
2. Science 1/	3,073	3,186	3,172	-14	-0.4%
3. Fossil Energy	416	465	441	-24	-5.1%
4. Energy Conservation	421	419	345	-74	-17.7%
5. Atomic Energy Defense	4,049	4,244	4,333	89	2.1%
6. Clean Coal Technology 2/	-47	-98	-140	-42	-42.9%
7. Radioactive Waste Mngmt.	62	69	275	206	298.6%
Total DOE R&D	8,454	8,804	8,880	76	0.9%
Detail of DOE R&D:					
1. Energy Supply (does not include non-R&D components)					
Renewable Energy Resources	269	320	282	-38	-11.9%
Electricity Transm. & Dist. 3/	80	69	76	6	8.9%
Nuclear Energy	130	130	96	-34	-25.9%
Total Energy Supply R&D	479	519	454	-65	-12.6%
2. Science (does not include non-R&D components) 1/					
High-Energy Physics (HEP)					
Proton Accelerator-Based	384	391	412	22	5.5%
Electron Accelerator-Based	138	146	151	5	3.6%
Non-Accelerator Physics	44	49	43	-6	-13.1%
Theoretical Physics	45	48	50	2	4.2%
Advanced Tech. R&D	71	88	81	-7	-7.8%
Construction	20	12	1	-12	-94.0%
Total HEP	702	734	737	4	0.5%
Nuclear Physics					
Medium-Energy Nuclear Phys.	116	123	126	2	1.9%
Heavy Ion Nuclear Phys.	160	167	174	7	4.1%
Low Energy Nuclear Phys.	68	71	73	1	2.0%
Nuclear Theory	27	28	29	1	3.2%
Total Nuclear Physics	371	390	401	11	2.9%
Fusion Energy Sciences					
Science	136	151	151	0	0.1%
Facility Operations	66	85	85	1	1.1%
Technology	38	27	28	0	1.6%
Total Fusion	241	263	264	2	0.6%
Basic Energy Sciences (BES)					
Materials Sciences	534	572	603	31	5.4%
Chem. Scis., Geoscis., Energy	212	220	228	9	4.0%

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Table II-11 (continued). R&D in the Department of Energy
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	FY 2003	FY 2004	FY 2005	Change FY 04-05	
	Actual	Estimate	Budget	Amount	Percent
Construction	256	219	232	13	6.0%
-Spallation Neutron Source 4/	291	227	129	-98	-43.2%
Adjustment	0	-2	0	2	-100.0%
Total BES	1,002	1,008	1,064	55	5.5%
Advanced Scientific Computing Research (ASCR)					
Math., Info. and Compu. Sci.	160	199	204	5	2.5%
Laboratory Technology Res.	3	3	0	-3	-100.0%
Total ASCR	163	202	204	2	1.0%
Biological and Environmental Research (BER) 1/					
Life Sciences	182	205	204	-1	-0.3%
Climate Change Research	122	142	143	1	0.6%
Environmental Remediation	101	108	106	-3	-2.6%
Medical Apps./ Measure. 1/	89	136	44	-92	-67.7%
Construction	0	0	5	5	--
Total BER	494	590	502	-88	-14.9%
Energy Research Analyses	0	0	0	0	--
Small Bus. Innov. Research	100	0	0	0	--
Total Science R&D	3,073	3,186	3,172	-14	-0.4%
3. Fossil Energy R&D	416	465	441	-24	-5.1%
4. Energy Conservation	421	419	345	-74	-17.7%
5. Atomic Energy Defense Activities (does not include non-R&D components)					
National Nuclear Security Administration (NNSA)					
Weapons Activities					
Stockpile R&D	313	467	433	-34	-7.3%
Science Campaigns	257	255	270	14	5.5%
Adv. Simulation & Computing	704	704	751	46	6.6%
Inertial Confinement Fusion	507	504	467	-38	-7.4%
- National Ignition Facility	245	214	150	-64	-29.9%
All Other Weapons R&D	1,239	1,253	1,341	88	7.0%
Total Weapons Acts. R&D	3,019	3,184	3,261	77	2.4%

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Table II-11. Department of Energy R&D

Table II-11 (continued). R&D in the Department of Energy
(budget authority in millions of dollars)

	FY 2003	FY 2004	FY 2005	Change FY 04-05	
	Actual	Estimate	Budget	Amount	Percent
Nonproliferation & Verification	254	234	218	-16	-6.8%
Naval Reactors	678	738	769	31	4.2%
Total NNSA R&D	3,951	4,156	4,248	92	2.2%
Other AEDA R&D	27	28	29	1	3.6%
Environmental Management	71	60	56	-4	-6.7%
Total Atomic Defense R&D	4,049	4,244	4,333	89	2.1%
6. Clean Coal Technology 2/	-47	-98	-140	-42	42.9%
7. Radioactive Waste Mngmt.	62	69	275	206	298.6%
Total DOE R&D	8,454	8,804	8,880	76	0.9%
Conduct of R&D	7,299	7,691	7,882	191	2.5%
R&D Facilities	1,155	1,113	998	-115	-10.3%
DOE R&D by Function:					
Defense	4,049	4,244	4,333	89	2.1%
General Science	3,073	3,186	3,172	-14	-0.4%
Energy	1,332	1,374	1,375	1	0.1%

Source: DOE budget justification, OMB data for R&D, and agency supporting documents.
Some data adjusted by AAAS based on DOE agency budget documents.

1/ FY 2004 excludes \$50 million appropriation in BER for Coralville demonstration project.

2/ Negative budget authority because of rescissions and deferrals of previously appropriated funds. Coal research is now funded in the Fossil Energy program.

3/ New account. AAAS estimates of R&D.

4/ Development and construction costs. Development costs are in Materials Sciences.

Please see Chapter 9 for a discussion of DOE R&D.

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Table II-11. Department of Energy R&D

Department of Energy Budget (discretionary budget authority in millions of dollars)

	FY 2003 Actual	FY 2004 Estimate	FY 2005 Budget	Change FY 04-05	
				Amount	Percent
DOE Defense Programs:					
National Nuclear Security Administration (NNSA):					
Weapons Activities	5,961	6,234	6,568	335	5.4%
Other Nuclear Security Acts.	2,256	2,433	2,480	48	2.0%
Total NNSA	8,217	8,666	9,049	382	4.4%
Defense Site Accel. Comp.	5,496	5,577	5,971	394	7.1%
Defense Env. Services	1,106	997	982	-15	-1.5%
Other Defense Activities	950	1,058	795	-263	-24.9%
Total DOE Defense	15,770	16,298	16,797	499	3.1%
Science	3,322	3,500	3,432	-68	-2.0%
Energy Supply	730	789	835	47	5.9%
Fossil Energy	611	673	636	-37	-5.5%
Energy Conservation	880	878	876	-2	-0.2%
Other Programs (net)	733	817	1,427	610	74.7%
Non-defense Environmental Mgmt	318	469	443	-26	-5.5%
Power Marketing Administrations	202	213	210	-3	-1.2%
Departmental Administration & IG	127	133	164	31	23.4%
Total DOE Budget	22,693	23,769	24,820	1,051	4.4%

Source: Department of Energy budget justification.

DOE appropriations only (discretionary), excluding offsets.

Includes R&D and non-R&D components.

All figures are rounded to the nearest million. Changes calculated from unrounded figures.

Please see Chapter 9 for a discussion of DOE R&D.