

Senate Boosts DOE R&D in Defense, Energy, and Science

(This analysis is part of a series of AAAS R&D Funding Updates on the FY 2001 congressional appropriations process. This analysis includes information on R&D in Senate appropriations for DOE. The complete series of AAAS R&D Funding Updates, including continually updated analyses of R&D by agency in FY 2001 appropriations, is available on the AAAS R&D Web Site (<http://www.aaas.org/spp/R&D>) in the “FY 2001 R&D” or the “What’s New” sections.)

On July 18, the Senate Appropriations Committee approved a draft FY 2001 Energy-Water appropriations bill, which funds most of the Department of Energy (DOE). [The full Senate approved the bill on September 7.] The House approved its version of the bill on June 27. In June, both the House and Senate gave final approval to separate versions of the FY 2001 Interior appropriations bill, which funds the remainder of DOE. [Together, the two Senate bills would provide **\$7.7 billion for DOE’s R&D programs, \$551 million or 7.7 percent more than FY 2000 with increases for R&D in DOE’s three mission areas of energy, science, and defense** (see Table). The Senate appropriation would be \$29 million more than the request.] The House would increase funding for DOE’s defense R&D programs, but would make steep cuts to DOE’s energy-related nondefense R&D and would hold science programs even with this year. (For details of House appropriations for DOE, please see the June 21 AAAS R&D Funding Update.)

The total FY 2001 DOE budget would be \$19.0 billion in the Senate bill, an increase of 8.0 percent that nearly matches the request for \$19.1 billion. The House would provide only \$18.2 billion. The entire Senate increase, however, would go to DOE’s defense activities, which would climb \$1.4 billion or 11.9 percent to \$13.4 billion (see Table). DOE’s nondefense programs would be flat overall compared to FY 2000, but R&D programs would fare relatively well and win increases. [**Total DOE R&D would be \$7.7 billion in the Senate plan, a 7.7 percent increase over FY 2000. The total would be divided into a larger increase to \$3.7 billion for defense R&D (up 11.1 percent), and smaller increases for science R&D (up 4.5 percent to \$2.8 billion) and energy R&D (up 5.5 percent to \$1.2 billion).**]

The request of \$7.6 billion for DOE’s R&D (up 7.3 percent over FY 2000) made DOE a high priority in the Clinton Administration’s effort to present a balanced federal research portfolio by requesting large increases for key R&D programs funding non-life sciences disciplines. DOE, as a major sponsor of the physical sciences and computing sciences, benefited from this effort. The request included a 12.6 percent increase for science R&D programs and a 7.4 percent increase for energy R&D programs, but both the House and Senate appropriations would fall far short, though the Senate levels are closer to the request.

On the defense side, FY 2001 would be the first full year of operation for the **National Nuclear Security Administration (NNSA)**, which was created last year by Congress in response to national security concerns and allegations of espionage at DOE weapons laboratories. NNSA began operations on March 1, and is designed to be a semi-autonomous agency within DOE with its own command structure separate from the rest of DOE. NNSA is responsible for \$5.7 billion, or roughly a third, of the total DOE budget in FY 2000, and the request for FY 2001 was \$6.2 billion, an increase of more than 8 percent. The House would provide nearly the same amount as the request, but the Senate would go far higher with an appropriation of \$6.5 billion, 14.1 percent more than FY 2000.

NNSA funds almost half of DOE’s total R&D, \$3.1 billion out of a \$7.1 billion portfolio in FY 2000. Maintaining the U.S. nuclear weapons stockpile is one of DOE’s major defense responsibilities, and since the U.S. banned nuclear testing DOE has relied on science to ensure the continuing reliability and safety of U.S. nuclear weapons. DOE’s major R&D program in that effort is in Weapons Activities. **The Senate would**

provide \$2.4 billion for Weapons Activities R&D in FY 2001, an 11.0 percent increase over FY 2000. This program funds most of the R&D at the three weapons labs (Los Alamos and Sandia in New Mexico, Lawrence Livermore in California) which are responsible for the nation's nuclear weapons stockpile and which are at the heart of the DOE security controversy, including the most recent controversy over misplaced nuclear secrets at Los Alamos. Senator Pete Domenici (R-NM) is the chairman of the Energy-Water Appropriations Subcommittee in the Senate, and has long supported this program because of its crucial role in funding the two weapons labs in New Mexico. Within the account, the **National Ignition Facility** would receive the originally requested \$74 million in both the House and Senate plans, despite recent reports that the project's total cost has ballooned significantly and that its completion date has been pushed back by several years. [After the release of the original budget request in February, DOE revised its request to \$135 million to accommodate the increased cost estimates but the Senate Appropriations Committee and later the full Senate rejected a proposed amendment to boost funding to the higher level.]

In the **Science** account, the Senate would provide \$2.8 billion for R&D, an increase of 4.5 percent overall compared to a requested 12.6 percent increase. Within the overall increase, however, funding for several programs would fall. **Fusion Energy Sciences** would receive \$224 million for R&D, down \$21 million or 8.4 percent from FY 2000. Both the **High Energy Physics** (down 3.8 percent to \$667 million) and **Nuclear Physics** (down 1.0 percent to \$344 million) programs would also decline in funding. The **Advanced Scientific Computing Research** (ASCR) would increase by 9.5 percent to \$140 million, but this would be far below the \$182 million that DOE requested to expand the agency's participation in the multi-agency IT R&D initiative. Most of the overall increase would go to the **Basic Energy Sciences** program, specifically for the **Spallation Neutron Source (SNS)**. The Senate would provide \$241 million for SNS construction and development, nearly double the \$130 million FY 2000 funding level. This would be less than the \$281 million request but far above the \$130 million House funding level. The **Biological and Environmental Research** (BER) program, which funds DOE's contribution to the Human Genome Project, would increase 2.6 percent to \$444 million, \$40 million more than the House appropriation.

The Senate Energy-Water and Interior bills would be relatively favorable to DOE's energy R&D programs. [**Solar and Renewable Energy** R&D would increase substantially by 33.8 percent or \$92 million to \$364 million, although the Clinton Administration requested even more.] While **Fossil Energy** R&D would decline 5.6 percent to \$309 million, **Energy Conservation** R&D would stay even with FY 2000 at \$431 million. The Senate appropriation would be far more generous than the House, which voted to reduce the program by 24.8 percent down to \$324 million, \$107 million below the Senate level. The program was originally slated for a small increase, but an amendment on the House floor eliminated the entire \$127 million appropriation for the Partnership for the Next Generation of Vehicles (PNGV), a cooperative R&D program with the major U.S. automakers to develop more fuel-efficient vehicles.

The House Energy-Water bill was approved by the full House on June 27. [The Senate approved its Energy-Water bill on September 7, and a final conference version is expected to be released the week of September 18.] Both the House and Senate approved separate versions of the Interior bill in June, and the bill now awaits a House-Senate conference, which is unlikely to take place until September. Final funding levels for DOE are likely to be closer to the Senate levels than the House levels, and may even edge above the Senate levels toward the President's request as Congress tries to craft compromise bills that can win the President's signature.

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**Table. Department of Energy
Senate Action on R&D in the FY 2001 Budget
(budget authority in millions of dollars)**

	FY 2000 Estimate	FY 2001 Request	FY 2001 House	Action by Senate		
				FY 2001 Senate	Chg. from FY 2000 Amount	Percent
DOE Appropriations Containing R&D:						
1. Energy Supply R&D	364	468	395	463	99	27.1%
2. Fossil Energy R&D	328	293	265	309	-18	-5.6%
3. Energy Conservation	431	465	324	431	0	0.0%
4. Science	2,638	2,969	2,670	2,757	119	4.5%
5. Atomic Energy Defense Activities	3,301	3,405	3,459	3,668	367	11.1%
6. Clean Coal Technology ¹	0	0	0	0	0	--
7. Radioactive Waste Management	55	40	55	40	-15	-28.0%
Total DOE R&D	7,117	7,639	7,168	7,668	551	7.7%
Detail of selected appropriations:						
1. Energy Supply R&D						
Solar and Renewables	272	376	315	364	92	33.8%
Nuclear Energy	92	92	80	99	7	7.3%
TOTAL Energy Supply	364	468	395	463	99	27.1%
4. Science						
High Energy Physics	693	704	704	667	-26	-3.8%
Nuclear Physics	348	364	364	344	-3	-1.0%
Fusion Energy Sciences	245	244	247	224	-21	-8.4%
Basic Energy Sciences	772	1,008	791	915	143	18.5%
(Spallation Neutron Source)	130	281	118	241	111	85.4%
Adv. Scientific Computing Res.	128	182	137	140	12	9.5%
Biological and Environmental Res.	433	444	404	444	11	2.6%
Energy Research Analyses	1	1	1	1	0	0.9%
Multiprogram Lab Support	19	22	22	22	3	15.5%
	2,638	2,969	2,670	2,757	119	4.5%
5. Atomic Energy Defense Activities						
National Nuclear Security Administration (NNSA)						
Naval Reactors	655	656	656	673	19	2.9%
Weapons Activities	2,201	2,273	2,293	2,442	241	11.0%
Stockpile R&D	236	243	243	268	32	13.7%
ASCI	100	121	457	121	21	21.1%
Defense Appl. And Modeling	228	249	249	249	21	9.4%
ICF Ignition and High Yield	397	477	291	477	80	20.1%
Nat'l Ignition Facility Construction	247	74	74	74	-173	-70.0%
All Other Weapons Acts. R&D	993	1,108	979	1,252	259	26.1%
Nonproliferation & Verification R&D	183	191	182	216	33	17.8%
Fissile Materials Disposition	63	71	71	71	9	13.7%
Total NNSA R&D	3,101	3,191	3,203	3,402	301	9.7%

(continued)

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Environmental Management	167	182	225	235	68	40.5%
Nuclear Safeguards & Security	27	26	26	26	-2	-5.5%
Intelligence	5	5	5	5	0	0.0%
TOTAL Atomic Defense R&D	3,301	3,405	3,459	3,668	367	11.1%

DOE R&D by Budget Function:

Defense	3,301	3,405	3,459	3,668	367	11.1%
General Science	2,638	2,969	2,670	2,757	119	4.5%
Energy	1,178	1,265	1,039	1,243	65	5.5%

AAAS estimates based on FY 2001 appropriations bills. Includes conduct of R&D and R&D facilities.

FY 2000 and FY 2001 request figures based on OMB R&D data and supplemental agency budget data.

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

¹ Negative for some years because of deferrals of previously appropriated funds. Table does not reflect

FY 2000 deferral of \$156 million in previously appropriated funds.

July 25, 2000 (revised September 18) - Senate-approved funding levels.

House figures represent House-approved funding levels.

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

	FY 2000 Estimate	FY 2001 Request	FY 2001 House	Action by Senate		
				FY 2001 Senate	Chg. from FY 2000 Amount	Percent
Weapons Activities (NNSA)	4,321	4,594	4,586	4,883	562	13.0%
Other NNSA Activities	1,375	1,584	1,539	1,614	239	17.3%
Total NNSA	5,696	6,178	6,125	6,497	801	14.1%
Defense Environmental Restoration	4,466	4,552	4,523	4,636	170	3.8%
Nuclear Waste and Other Defense	1,827	2,196	2,134	2,278	451	24.7%
Total DOE defense	11,988	12,926	12,781	13,410	1,422	11.9%
Science	2,815	3,151	2,831	2,870	56	2.0%
Energy Supply	643	765	616	692	49	7.6%
Fossil Energy	404	376	365	401	-3	-0.6%
Energy Conservation	759	851	648	764	5	0.7%
Other Energy Programs	298	472	361	198	-100	-33.5%
Nondefense Environmental Mngmt.	307	286	281	309	2	0.6%
Power Marketing Administrations	230	200	196	200	-31	-13.4%
Departmental Administration	110	118	74	110	1	0.8%
Total DOE Budget	17,553	19,142	18,153	18,954	1,401	8.0%

Source: Department of Energy budget justification and FY 2001 appropriations bills.

DOE appropriations only (does not include offsets and other mandatory).

Excludes FY 2001 deferral of \$156 million in previously appropriated funds in Clean Coal Technology and other deferrals.

July 25, 2000 (revised September 18) - Senate-approved funding levels.

House figures represent House-approved funding levels.