



**CONGRESSIONAL BUDGET OFFICE
COST ESTIMATE**

December 18, 2017

H.R. 4377

Accelerating American Leadership in Science Act of 2017

*As ordered reported by the House Committee on Science, Space, and Technology
on November 15, 2017*

SUMMARY

H.R. 4377 would authorize the appropriation of funds to support construction of and upgrades to research equipment and facilities administered by the Department of Energy's (DOE's) Office of Science. CBO estimates that implementing H.R. 4377 would cost about \$1.5 billion over the 2018-2022 period, assuming appropriation of the authorized amounts.

Enacting H.R. 4377 would not affect direct spending or revenues; therefore, pay-as-you-go procedures do not apply.

CBO estimates that enacting H.R. 4377 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2028.

H.R. 4377 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA).

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary effect of H.R. 4377 is shown in the following table. The cost of this legislation falls within budget function 250 (general science, space, and technology).

	By Fiscal Year, in Millions of Dollars					2018- 2022
	2018	2019	2020	2021	2022	
INCREASES IN SPENDING SUBJECT TO APPROPRIATION						
Advanced Photon Source Upgrade						
Authorization Level	93	130	152	150	74	599
Estimated Outlays	51	99	137	148	108	543
Long-Baseline Neutrino Facility ^a						
Authorization Level	45	160	195	195	200	795
Estimated Outlays	25	102	162	190	198	676
Proton Power Upgrade						
Authorization Level	26	71	34	41	21	192
Estimated Outlays	14	47	44	43	29	176
Second Target Station						
Authorization Level	5	10	15	25	50	105
Estimated Outlays	3	7	12	20	37	79
Total						
Authorization Level	169	371	396	411	345	1,691
Estimated Outlays	93	255	354	400	372	1,474

Numbers may not add up to totals because of rounding.

- a. H.R. 4377 would authorize the appropriation of \$95 million in 2018 for construction of the Long-Baseline Neutrino Facility. On an annualized basis, Public Law 115-90 provided \$50 million in 2018 for that project. As a result, CBO estimates that H.R. 4377 would increase the amount authorized to be appropriated in 2018 by \$45 million, the difference between the authorized amount and the annualized appropriated amount.

BASIS OF ESTIMATE

DOE's Office of Science supports basic research in the physical sciences and operates a system of national scientific user facilities. The office received an appropriation of \$5.4 billion in 2017 and the same amount on an annualized basis for 2018; that amount includes funding for construction of and upgrades to equipment and research facilities. Under current law, no specific sums are authorized to be appropriated to DOE for those purposes after 2018.

H.R. 4377 would authorize appropriations totaling \$1.7 billion over the 2018-2022 period for the following specific projects:

- \$599 million for upgrades to the Advanced Photon Source;
- \$795 million for construction of the Long-Baseline Neutrino Facility;
- \$192 million for a proton power upgrade at the Spallation Neutron Source; and
- \$105 million for a second target station at the Spallation Neutron Source.

The bill also would authorize the appropriation of \$2 billion over the 2023-2028 period for those projects. Of that amount, \$1.4 billion would be for the construction of a second target station at the Spallation Neutron Source.

In 2017, DOE spent \$37 million for construction of the Long-Baseline Neutrino Facility. According to the agency, the upgrades to the Advanced Photon Source and Spallation Neutron Source are in the design phase. In recent years, the agency received appropriations of \$40 million a year for those projects.

Based on historical spending patterns, CBO estimates that if the authorized amounts are appropriated, implementing H.R. 4377 would cost \$1.5 billion over the 2018-2022 period and \$2.2 billion after 2022.

PAY-AS-YOU-GO CONSIDERATIONS: None.

INCREASE IN LONG-TERM DIRECT SPENDING AND DEFICITS

CBO estimates that enacting H.R. 4377 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2028.

MANDATES

H.R. 4377 contains no intergovernmental or private-sector mandates as defined in UMRA.

ESTIMATE PREPARED BY

Federal Costs: Janani Shankaran
Mandates: Jon Sperl

ESTIMATE APPROVED BY

H. Samuel Papenfuss
Deputy Assistant Director for Budget Analysis