



CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

June 20, 2017

S. 512

Nuclear Energy Innovation and Modernization Act

As reported by the Senate Committee on Environment and Public Works on May 25, 2017

SUMMARY

S. 512 would direct the Nuclear Regulatory Commission (NRC)—which licenses and regulates the use of radioactive materials at civilian facilities such as nuclear reactors—to undertake certain activities related to establishing a regulatory framework for licensing nuclear reactors that use advanced technologies for either commercial or research-related purposes. The bill also would modify the NRC’s underlying authority to charge fees to entities that the agency regulates and would authorize the Department of Energy (DOE) to provide grants to developers of advanced nuclear technologies to help pay for the costs of developing and licensing such technologies. Finally, S. 512 would amend existing law regarding the disposition of excess uranium materials managed by DOE.

CBO estimates that implementing S. 512 would cost \$386 million over the 2018-2022 period, assuming appropriation of the necessary amounts. Pay-as-you-go procedures apply because enacting the bill would affect direct spending; however, CBO estimates that any such effects would be insignificant. Enacting S. 512 would not affect revenues.

CBO estimates that enacting S. 512 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2028.

S. 512 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary effect of S. 512 is shown in the following table. The costs of this legislation fall within budget function 270 (energy).

	By Fiscal Year, in Millions of Dollars						2017- 2022
	2017	2018	2019	2020	2021	2022	
INCREASES IN SPENDING SUBJECT TO APPROPRIATION^a							
Advanced Nuclear Energy Licensing							
Cost-Share Grants							
Estimated Authorization Level	0	87	88	90	92	93	450
Estimated Outlays	0	26	53	80	90	91	340
Accelerated NRC Activities							
Estimated Authorization Level	0	10	10	10	10	10	50
Estimated Outlays	0	7	9	10	10	10	46
Total Changes							
Estimated Authorization Level	0	97	98	100	102	103	500
Estimated Outlays	0	33	62	90	100	101	386

Note: NRC = Nuclear Regulatory Commission

a. CBO estimates that enacting the bill would have no significant effect on direct spending.

BASIS OF ESTIMATE

For this estimate, CBO assumes that S. 512 will be enacted near the start of fiscal year 2018 and that amounts estimated to be necessary will be provided at the start of each year. Estimated outlays are based on historical spending patterns for affected activities.

Advanced Nuclear Energy Licensing Cost-Share Grants

S. 512 would authorize DOE to provide grants to developers of advanced nuclear technologies to accelerate the development, licensing, and commercial deployment of those technologies. Such grants would be available for a range of costs related to those efforts, including fees charged by the NRC for licensing-related activities. Based on an analysis of information from DOE, CBO estimates that spending for such assistance under S. 512 would require appropriations totaling \$450 million over the 2018-2022 period. That estimate is in line with the total amount of funding provided by the Congress for a six-year effort, now largely completed, to support the development, certification, and licensing of small modular reactors (a type of advanced nuclear technology). Assuming appropriation of those amounts, CBO estimates that outlays would total \$340 million over the 2018-2022 period and \$110 million after 2022.

Accelerated NRC Activities

Funding for the NRC—which totals approximately \$1 billion in 2017—is provided in annual appropriation acts. Under current law, the agency is required to recover most of its funding through fees charged to licensees and applicants; CBO estimates that such fees, which are classified as discretionary offsetting collections, will total nearly \$900 million this year.

S. 512 would require the NRC to establish a regulatory framework for licensing advanced nuclear reactors, defined in the bill as reactors that involve significant technological improvements relative to those currently being constructed. The bill specifies that any funding provided to the NRC for activities related to developing that framework would be excluded from the portion of the agency’s budget that is offset by fees the NRC collects. Based on an analysis of information from the NRC about the anticipated costs of establishing the proposed licensing regime within the timeframe specified by the bill, CBO estimates that implementing S. 512 would cost \$46 million over the 2018-2022 period, mostly for salaries and expenses for technical experts required to develop the necessary analyses and regulations.

In addition, starting in 2020, the bill would modify the existing formula used to determine the amount of NRC fees. CBO expects that the proposed modifications to the formula used to set regulatory fees charged by the NRC could change the amount of such fees collected in future years. Under both current law and S. 512, the amount of such fees would depend on the level of funding provided for a range of specific NRC activities. Because CBO has no basis for predicting how much funding will be provided for such activities in future years, CBO cannot determine whether the resulting fees would be higher or lower under S. 512 than under current law.

PAY-AS-YOU-GO CONSIDERATIONS

S. 512 would amend existing law regarding the disposition of uranium materials managed by DOE. Under the bill, DOE would be required to develop plans for marketing those materials and to comply with annual limits on the volume of uranium materials placed into commercial markets. Specifically, the bill would cap sales and transfers at 2,100 metric tons per year through 2025 and at 2,700 metric tons starting in 2026. The bill also would expressly authorize DOE to market materials derived from depleted uranium, which is one of the by-products of the uranium enrichment process.

According to DOE, uranium sales and transfers averaged about 2,450 metric tons a year over the 2012-2015 period, but fell to 2,100 metric tons in 2016. Using information from studies done for the department on uranium markets, CBO estimates that the quantity of uranium that will be disposed over the 2018-2027 period under current law probably will

remain below 2,100 metric tons a year. Thus, CBO estimates that the caps on sales and transfers of uranium materials in S. 512 would have no significant effect on offsetting receipts from those activities over the 2018-2027 period. (Under current law, CBO estimates that the sales of those materials will total about \$800 million over the 2018-2027 period; however, CBO expects that only a portion of that value, or \$80 million, will be deposited in the Treasury as offsetting receipts because of uncertainty surrounding DOE's budgetary treatment of these transactions.)¹

INCREASE IN LONG-TERM DIRECT SPENDING AND DEFICITS

CBO estimates that enacting S. 512 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2028.

INTERGOVERNMENTAL AND PRIVATE-SECTOR IMPACT

S. 512 contains no intergovernmental or private-sector mandates as defined in UMRA and would impose no costs on state, local, or tribal governments.

PREVIOUS CBO ESTIMATE

On June 12, 2017, CBO transmitted a cost estimate for S. 97, the Nuclear Energy Innovation Capabilities Act of 2017, as ordered reported by the Senate Committee on Energy and Natural Resources on March 30, 2017. Both bills contain provisions that would authorize DOE to provide cost-share grants to support the expedited development, licensing, and commercial deployment of advanced nuclear technologies. Because those provisions are substantively the same and the estimated costs of implementing those provisions are the same in both bills. The estimated increase in spending subject to appropriation under S. 512 is greater than under S. 97 because the estimate for S. 512 includes additional costs for the NRC to meet new requirements specified by that bill.

1. DOE treats uranium sales to nonfederal entities as noncash transactions, effectively retaining and spending the proceeds from those sales. Since 2006, the Government Accountability Office (GAO) has repeatedly found that DOE's uranium transactions are "sales through an agent," not in-kind barter transactions. It also determined that DOE's failure to deposit the net value of the proceeds from its sale of uranium materials in the Treasury is a violation of the "miscellaneous receipts" statute, which requires federal agencies to deposit any money they receive in the Treasury unless the Congress has given them the authority to keep those funds. Because GAO opinions are considered an authoritative source of federal fiscal law, CBO expects that DOE's budgetary practices are likely to conform to GAO's guidance at some point in the future. Given the uncertainty surrounding the timing of this change in budgetary treatment, CBO projects future receipts from uranium sales on an expected value basis and assumes that the probability that DOE will record receipts in accordance with GAO's rulings will increase gradually under current law.

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