

S. 1127, LEGEND Act of 2021

As reported by the Senate Committee on Commerce, Science, and Transportation on December 17, 2021

By Fiscal Year, Millions of Dollars	2022	2022-2027	2022-2032
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	0	0
Spending Subject to Appropriation (Outlays)	0	102	not estimated
Statutory pay-as-you-go procedures apply?	No	Mandate Effects	
Increases on-budget deficits in any of the four consecutive 10-year periods beginning in 2033?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No

S. 1127 would direct the National Oceanic and Atmospheric Administration (NOAA) to publish its weather-forecasting models and associated government-owned data in an open-source format on the Internet. The bill would authorize NOAA to establish a program to plan, procure, and support the necessary infrastructure for the publicly accessible models. The bill also would require NOAA to periodically review any improvements made to those open-source models by people outside the government and update its models accordingly. Finally, NOAA would need to report to the Congress on the bill's implementation.

Under current law, NOAA provides public access to some of its operational and research models. The agency would need additional resources to provide access to permanent archives and open-source data for all such models, which currently use many petabytes of data (a petabyte is one million gigabytes).

The bill would authorize the appropriation of \$2 million a year over the 2022-2026 period. Using information from NOAA about the number of models and related data that would need to be made public under the bill and the cost to convert those data into an open-source format, CBO expects that it would cost significantly more than \$10 million to implement the bill.

CBO estimates NOAA would require \$111 million over the 2022-2027 period to hire 45 additional employees and acquire additional equipment and services, including substantial increases in server capacity and other data storage tools. Using historical spending patterns



for similar activities, CBO estimates implementing S. 1127 would cost \$102 million over the 2022-2027 period, assuming appropriation of the authorized and estimated amounts. CBO expects that NOAA would be unable to fully comply with the requirements of S. 1127 if only the \$10 million authorized to be appropriated in the bill was provided to the agency. The costs of the legislation, detailed in Table 1, fall within budget function 300 (natural resources and environment).

Table 1.
Estimated Increases in Spending Subject to Appropriation Under S. 1127

	By Fiscal Year, Millions of Dollars						2022-2027
	2022	2023	2024	2025	2026	2027	
Estimated Authorization	2	16	29	31	33	0	111
Estimated Outlays	0	6	18	26	31	21	102

The bill would specifically authorize the appropriation of \$2 million annually over the 2022-2026 period for the National Oceanic and Atmospheric Administration (NOAA) to carry out the bill's requirements. Using information from the agency, CBO estimates that an additional \$101 million would be required over that same period for NOAA to fully implement those requirements. The amounts in this table reflect the levels CBO estimates would be necessary to fully implement the requirements of S. 1127.

The CBO staff contact for this estimate is Robert Reese. The estimate was reviewed by H. Samuel Papenfuss, Deputy Director of Budget Analysis.