

At a Glance

H.R. 8665, Supercritical Geothermal Research and Development Act

As ordered reported by the House Committee on Science, Space, and Technology on June 13, 2024

By Fiscal Year, Millions of Dollars	2024	2024-2029	2024-2034
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	72	not estimated

Increases <i>net direct spending</i> in any of the four consecutive 10-year periods beginning in 2035?	No	Statutory pay-as-you-go procedures apply?	No
Mandate Effects			
Increases <i>on-budget deficits</i> in any of the four consecutive 10-year periods beginning in 2035?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No

The bill would

- Require the Department of Energy (DOE) to establish a program to research, develop, and demonstrate supercritical geothermal systems
- Require the U.S. Geological Survey (USGS) to regularly assess geothermal resources
- Require DOE to report to the Congress and collaborate with other agencies on geothermal activities

Estimated budgetary effects would mainly stem from

- Authorizing appropriations for DOE to conduct activities related to supercritical geothermal systems
- Requiring the USGS to complete the geothermal assessments

Detailed estimate begins on the next page.



Bill Summary

H.R. 8665 would require the Department of Energy (DOE) and the U.S. Geological Survey (USGS) to conduct various activities related to supercritical geothermal systems.

Supercritical geothermal systems generally require deeper drilling and can generate more energy than conventional geothermal systems.

Estimated Federal Cost

The estimated budgetary effect of H.R. 8665 is shown in Table 1. The costs of the legislation fall within budget functions 270 (energy) and 300 (natural resources and environment).

Table 1.
Estimated Increases in Spending Subject to Appropriation Under H.R. 8665

	By Fiscal Year, Millions of Dollars						2024-2029
	2024	2025	2026	2027	2028	2029	
RD&D Program							
Authorization	0	0	5	5	5	5	20
Estimated Outlays	0	0	1	2	3	4	10
Geothermal Assessment							
Estimated Authorization	0	13	13	13	14	14	67
Estimated Outlays	0	9	12	13	13	14	61
Other Activities							
Estimated Authorization	0	1	*	*	*	*	1
Estimated Outlays	0	1	*	*	*	*	1
Total Increases							
Estimated Authorization	0	14	18	18	19	19	88
Estimated Outlays	0	10	13	15	16	18	72

RD&D = Research, Development, and Demonstration; * = between zero and \$500,000.

Basis of Estimate

For this estimate, CBO assumes that H.R. 8665 will be enacted near the beginning of fiscal year 2025 and that the specified and estimated amounts will be appropriated each year.

In total, CBO estimates that implementing H.R. 8665 would cost \$72 million over the 2024-2029 period.

Research, Development, and Demonstration Program

The bill would authorize the appropriation of \$5 million annually over the 2026-2030 period for DOE to establish a program to research, develop, and demonstrate (RD&D) supercritical geothermal systems. Under the program, DOE would expand department-sponsored RD&D activities, award grants to universities and private entities, and establish a center of excellence for advanced geothermal technologies.



Based on historical spending patterns for similar activities, CBO estimates that implementing the RD&D program would cost \$10 million over the 2024-2029 period and \$15 million after 2029.

Geothermal Assessment

H.R. 8665 would require the USGS to assess geothermal resources every four years and to complete the first assessment within 180 days of enactment.

Under current law, the USGS plans to complete a new national geothermal resource assessment by 2035. Using information from the USGS, CBO estimates that completing the update on that timeline will require about \$2 million annually through 2035. Under the bill, CBO expects the agency could not complete a full update in 180 days but could do so within four years and every four years thereafter. To complete the update in that timeframe, CBO expects the USGS would need about 15 full-time employees, at an average cost of \$180,000 per person, and additional funds to carry out field work, acquire data and decision support tools, hire contractors and other personnel, and facilitate cooperative agreements with state and local governments. On that basis and accounting for anticipated inflation, CBO estimates that implementing those assessments would cost the USGS \$61 million over the 2024-2029 period.

Other Activities

The bill also would require DOE to report to the Congress every two years on geothermal activities and to formalize a process with the USGS and other agencies to collect and share data on geothermal technologies.

Based on the costs of similar activities, CBO estimates that implementing those requirements would cost \$1 million over the 2024-2029 period.

Pay-As-You-Go Considerations

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

Increase in Long-Term Net Direct Spending and Deficits

CBO estimates that enacting H.R. 8665 would not increase net direct spending or deficits in any of the four consecutive 10-year periods beginning in 2035.

Mandates

The bill contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act.



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A handwritten signature in black ink, appearing to read "Phillip L. Swagel". The signature is fluid and cursive, with a long, sweeping tail.

Phillip L. Swagel

Director, Congressional Budget Office