AMENDMENT TO

COMMITTEE PRINT OF H.R. 5374

OFFERED BY Mr. Lucas

Page 1, in the Table of Contents, rename section 10 as “Organization and administration of programs”.

Page 1, line 8, strike “612(1)” and insert “612”.

Page 1, line 9, strike “17191(1)” and insert “17191”.

Page 1, line 9, insert “— (1) in paragraph (1),” after “amended”.

Page 2, after line 11, insert the following:

(2) by adding after paragraph (1) the following:

“(2) ELIGIBLE ENTITY.—The term ‘eligible entity’ means any of the following entities:

“(A) An institution of higher education.
“(B) A National laboratory.
“(C) A Federal research agency.
“(D) A State research agency.
“(E) A nonprofit research organization.
“(F) An industrial entity.
“(G) A consortium of 2 or more entities described in subparagraphs (A) through (F).”;
and

(3) by redesignating paragraphs (2) through (7) as paragraphs (3) through (8), respectively.

Page 4, line 12, add “, including induced seismicity,” after “environmental impacts”.

Page 4, line 16, add “water use and” after “including”.

Page 5, line 22, add “surface technologies, and well construction” after “drilling”.

Page 5, strike line 23 and all that follows through page 6, line 17 and insert the following new subsection:

“(e) COPRODUCTION OF GEOTHERMAL ENERGY AND MINERALS PRODUCTION RESEARCH AND DEVELOPMENT INITIATIVE.—

“(1) IN GENERAL.—The Secretary shall carry out a research and development initiative under which the Secretary shall award grants to demonstrate the coproduction of critical minerals from geothermal resources.

“(2) REQUIREMENTS.—An award made under paragraph (1) shall—
“(A) improve the cost effectiveness of removing minerals from geothermal brines as part of the coproduction process;

“(B) increase recovery rates of the targeted mineral commodity;

“(C) decrease water use and other environmental impacts, as determined by the Secretary; and

“(D) demonstrate a path to commercial viability.”

Page 6, after line 17, insert the following new subsections:

“(f) FLEXIBLE OPERATIONS.—The Secretary shall support a research initiative on flexible operation of geothermal power plants.

“(g) HYBRID ENERGY SYSTEMS.—The Secretary shall identify opportunities for joint research, development, and demonstration programs between geothermal systems and other energy generation or storage systems.

Page 7, line 8, add “institutions of higher education, and the national laboratories,” after “industry partners,.”

Page 7, line 14, insert the following new paragraph (and redesignate subsequent paragraphs accordingly):

...
“(2) drilled, non-stimulated (e.g. closed-loop) reservoir technologies;”.

Page 7, line 17, add “and understanding of the surface area and volume of fractures” after “modeling”.

Page 8, line 6, strike “operated by public or academic entities”.

Page 8, line 16, add “nonstimulation techniques,” after “stimulations,”.

Page 8, line 23, add “, including coordination between FORGE sites” after “technology”.

Page 9, after line 11, insert the following (and redesignate subsequent paragraphs accordingly):

“(3) EXISTING FORGE SITES.—A FORGE site already in existence on the date of enactment of this Act may continue to receive support.”.

Page 9, line 12, strike “3” and insert “4”.

Page 9, line 13, strike “11” and insert “12”.

Page 9, line 18, strike “2020” and insert “2021”.

Page 9, line 19, strike “2021” and insert “2022”.

Page 9, line 20, strike “2022” and insert “2023”.

Page 9, line 21, strike “2023” and insert “2024”.
Page 9, line 23, strike “2024” and insert “2025”.

Page 10, strike lines 3 through page 11, line 15 and insert the following:

“(d) ENHANCED GEOTHERMAL SYSTEMS DEMONSTRATIONS.—

“(1) IN GENERAL.—Beginning on the date of enactment of the ‘Advanced Geothermal Research and Development Act of 2019’, the Secretary, in collaboration with industry partners, institutions of higher education, and the national laboratories, shall support an initiative for demonstration of enhanced geothermal systems for power production or direct use.

“(2) PROJECTS.—

“(A) IN GENERAL.—Under the initiative described in paragraph (1), demonstration projects shall be carried out in locations that are commercially viable for enhanced geothermal systems development, while also considering environmental impacts to the maximum extent practicable, as determined by the Secretary.

“(B) REQUIREMENTS.—Demonstration projects under subparagraph (A) shall—

“(i) collectively demonstrate—
“(I) different geologic settings, such as hot sedimentary aquifers, layered geologic systems, supercritical systems, and basement rock systems; and

“(II) a variety of development techniques, including open hole and cased hole completions, differing well orientations, and stimulation and non-stimulation mechanisms; and

“(ii) to the extent practicable, use existing sites where subsurface characterization or geothermal energy integration analysis has been conducted.

“(C) EASTERN DEMONSTRATION.—Not fewer than 1 of the demonstration projects carried out under subparagraph (A) shall be located an area east of the Mississippi that is suitable for enhanced geothermal demonstration for power, heat, or a combination of power and heat.”.

Page 12, line 8, add “understanding of related earth sciences,” before “components”.

Page 12, line 20, add “and cooling” after “heating”.
Page 13, line 7, strike “ground” and insert “geology, groundwater,”.

Page 14, lines 20 through 22, strike “water sources at a temperature of less than 150 degrees Celsius” and insert “low temperature groundwater”.

Page 17, line 6, add “fluid and” before “heat flow”.

Page 17, line 7, add “geomechanics, geochemistry,” before “seismicity”.

Page 18, line 19, strike “REPORTING REQUIREMENTS” and insert “ORGANIZATION AND ADMINISTRATION OF PROGRAMS”.

Page 18, line 23, strike “REPORTS” and insert “ORGANIZATION AND ADMINISTRATION OF PROGRAMS”.

Page 18, line 24, insert the following (and redesignate subsequent subsections accordingly):

1 “(a) EDUCATION AND OUTREACH.—In carrying out the activities described in this subtitle, the Secretary shall support education and outreach activities to disseminate information on geothermal energy technologies and the geothermal energy workforce, including activities at the Frontier Observatory for Research in Geothermal Energy site(s).
“(b) TECHNICAL ASSISTANCE.—In carrying out this subtitle, the Secretary shall also conduct technical assistance and analysis activities with eligible entities for the purpose of supporting the commercial application of advances in geothermal energy systems development and operations, which may include activities that support expanding access to advanced geothermal energy technologies for rural, Tribal, and low-income communities.”.

Page 20, strike lines 9 through 13, and insert the following:

“(1) $121,375,000 for fiscal year 2021;
(2) $132,750,000 for fiscal year 2022;
(3) $144,125,000 for fiscal year 2023;
(4) $150,500,000 for fiscal year 2024; and
(5) $151,875,000 for fiscal year 2025.”.

Page 21, line 10, strike “11” and insert “12”.

Page 21, line 13, strike “2020 through 2024” and insert “2021 through 2025”.