(b) Tokamak research and development

The Director shall support research and development activities and facility operations to optimize the tokamak approach to fusion energy.

(c) Inertial fusion energy research and development

The Director shall support research and development activities for inertial fusion for energy applications.

(d) Alternative and enabling concepts

The Director shall support research and development activities and facility operations at institutions of higher education, National Laboratories, and private facilities in the United States for a portfolio of alternative and enabling fusion energy concepts that may provide solutions to significant challenges to the establishment of a commercial magnetic fusion power plant, prioritized based on the ability of the United States to play a leadership role in the international fusion research community.

(e) Coordination with ARPA–E

The Director shall coordinate with the Director of the Advanced Research Projects Agency-Energy (referred to in this subsection as ''ARPA–E'') to—

(1) assess the potential for any fusion energy project supported by ARPA–E to represent a promising approach to a commercially viable fusion power plant;

(2) determine whether the results of any fusion energy project supported by ARPA–E merit the support of follow-on research activities carried out by the Office of Science; and

(3) avoid the unintentional duplication of activities.

(f) Omitted

(g) Identification of priorities

(1) Report

(A) In general

Not later than 2 years after September 28, 2018, the Secretary shall submit to Congress a report on the fusion energy research and development activities that the Department proposes to carry out over the 10-year period following the date of the report under not fewer than 3 realistic budget scenarios, including a scenario based on 3-percent annual growth in the non-ITER portion of the budget for fusion energy research and development activities.

(B) Inclusions

The report required under subparagraph (A) shall—

(i) identify specific areas of fusion energy research and enabling technology development in which the United States can and should establish or solidify a lead in the global fusion energy development effort;

(ii) identify priorities for initiation of facility construction and facility decommissioning under each of the three budget scenarios described in subparagraph (A); and

(iii) assess the ability of the fusion workforce of the United States to carry out the activities identified under clauses (i) and (ii), including the adequacy of programs at institutions of higher education in the United States to train the leaders and workers of the next generation of fusion energy researchers.

(2) Process

In order to develop the report required under paragraph (1)(A), the Secretary shall leverage best practices and lessons learned from the process used to develop the most recent report of the Particle Physics Project Prioritization Panel of the High Energy Physics Advisory Panel.

(3) Requirement

No member of the Fusion Energy Sciences Advisory Committee shall be excluded from participating in developing or voting on final approval of the report required under paragraph (1)(A).

(Pub. L. 115–246, title III, § 307, Sept. 28, 2018, 132 Stat. 3148.)

CODIFICATION

Section is comprised of section 307 of Pub. L. 115–246. Subsec. (f) of section 307 of Pub. L. 115–246 amended section 2053 of this title.

§ 18646. Isotope development and production for research applications

The Director—

(1) may carry out a program for the production of isotopes, including the development of techniques to produce isotopes, that the Secretary determines are needed for research, medical, industrial, or related purposes; and

(2) shall ensure that isotope production activities carried out under the program under this paragraph do not compete with private industry unless the Director determines that critical national interests require the involvement of the Federal Government.

(Pub. L. 115–246, title III, § 308(a), Sept. 28, 2018, 132 Stat. 3150.)

§ 18647. Science laboratories infrastructure program

(a) In general

The Director shall carry out a program to improve the safety, efficiency, and mission readiness of infrastructure at laboratories of the Office of Science.

(b) Inclusions

The program under subsection (a) shall include projects—

(1) to renovate or replace space that does not meet research needs;

(2) to replace facilities that are no longer cost effective to renovate or operate;

(3) to modernize utility systems to prevent failures and ensure efficiency;

(4) to remove excess facilities to allow safe and efficient operations; and

(5) to construct modern facilities to conduct advanced research in controlled environmental conditions.

(Pub. L. 115–246, title III, § 309, Sept. 28, 2018, 132 Stat. 3150.)