

**AMENDMENT TO H.R. 1806
OFFERED BY MR. GRAYSON OF FLORIDA**

On page 121, after line 14, insert the following:

(c) TOKAMAK RESEARCH AND DEVELOPMENT.—

(1) IN GENERAL.—As part of the program described in subsection (a), the Director shall support research and development activities and facility operations to optimize the tokamak approach to fusion energy.

(2) ITER.—

(A) REPORT.—Not later than 1 year after the date of enactment of this Act, the Secretary shall submit to Congress a report providing an assessment of—

(i) the most recent schedule for ITER that has been approved by the ITER Council; and

(ii) progress of the ITER Council and the ITER Director General toward implementation of the recommendations of the Third Biennial International Organization Management Assessment Report.

(B) FAIRNESS IN COMPETITION FOR SOLICITATIONS FOR INTERNATIONAL PROJECT ACTIVITIES.—Section 33 of the Atomic Energy Act of 1954 (42 U.S.C. 2053) is amended by adding at the end the following: “For purposes of this section, with respect to international research projects, the term ‘private facilities or laboratories’ shall refer to facilities or laboratories located in the United States.”.

(C) SENSE OF CONGRESS.—It is the sense of Congress that the United States should support a robust, diverse fusion program. It is further the sense of Congress that developing the scientific basis for fusion, providing research results key to the success of ITER, and training the next generation of fusion scientists are of critical importance to the United States and should in no way be diminished by participation of the United States in the ITER project.

(d) INERTIAL FUSION ENERGY RESEARCH AND DEVELOPMENT PROGRAM.—

The Secretary shall carry out a program of research and technology development in inertial fusion for energy applications, including ion beam, laser, and pulsed power fusion systems.

(e) ALTERNATIVE AND ENABLING CONCEPTS.—

(1) IN GENERAL.—As part of the program described in (a), the Director shall support research and development activities and facility operations at U.S. universities, national laboratories, and private facilities 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. Fusion energy concepts and activities explored under this paragraph may include—

(A) high magnetic field approaches facilitated by high temperature superconductors;

(B) advanced stellarator concepts;

(C) non-tokamak confinement configurations operating at low magnetic fields;

(D) magnetized target fusion energy concepts;

(E) liquid metals to address issues associated with fusion plasma interactions with the inner wall of the encasing device;

(F) immersion blankets for heat management and fuel breeding;

(G) advanced scientific computing activities; and

(H) other promising fusion energy concepts identified by the Director.

(2) COORDINATION WITH ARPA-E.—The Under Secretary and the Director shall coordinate with the Director of the Advanced Research Projects Agency–Energy (in this paragraph referred to as “ARPA-E”) to—

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

(B) 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

(C) avoid unintentional duplication of activities.

(f) **GENERAL PLASMA SCIENCE AND APPLICATIONS.**—Not later than 2 years after the enactment of this Act, the Secretary shall provide to Congress an assessment of opportunities in which the United States can provide world-leading contributions to advancing plasma science and non-fusion energy applications, and identify opportunities for partnering with other Federal agencies both within and outside of the Department of Energy.

(g) **IDENTIFICATION OF PRIORITIES.**—

(1) **REPORT.**—Not later than 2 years after the date of enactment of this Act, the Secretary shall transmit to Congress a report on the Department’s proposed fusion energy research and development activities over the following 10 years under at least 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. The report shall—

(A) 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;

(B) identify priorities for initiation of facility construction and facility decommissioning under each of those scenarios;

(C) assess the ability of the United States fusion workforce to carry out the activities identified in subparagraphs (A) through (C), including the adequacy of college and university programs 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), 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. 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).