Suspend the Rules and Pass the Bill, H.R. 4376, with an Amendment

(The amendment strikes all after the enacting clause and inserts a new text)

115TH CONGRESS
2D SESSION

H. R. 4376

To direct the Secretary of Energy to carry out certain upgrades to research equipment and the construction of a research user facility, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

NOVEMBER 13, 2017

Mr. KNIGHT (for himself, Mr. LIPINSKI, Mr. SMITH of Texas, Mr. WEBER of Texas, and Mr. HULTGREN) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

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A BILL

To direct the Secretary of Energy to carry out certain upgrades to research equipment and the construction of a research user facility, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Department of Energy Research Infrastructure Act of 2018''.

SEC. 2. ADVANCED LIGHT SOURCE UPGRADE.

(a) IN GENERAL.—The Secretary of Energy shall provide for the upgrade to the Advanced Light Source described in the publication approved by the Basic Energy Sciences Advisory Committee on June 9, 2016, titled ''Report on Facility Upgrades'', including the development of a multi-bend achromat lattice to produce a high flux of coherent x-rays within the soft x-ray energy region.

(b) DEFINITIONS.—In this section:

(1) FLUX.—The term ''flux'' means the rate of flow of photons.

(2) SOFT X-RAY.—The term ''soft x-ray'' means a photon with energy in the range from 50 to 2,000 electron volts.

(c) START OF OPERATIONS.—The Secretary shall, to the maximum extent practicable, ensure that the start of full operations of the upgrade under this section occurs before December 31, 2026.

(d) FUNDING.—There are authorized to be appropriated to the Secretary for the Office of Science to carry out to completion the upgrade under this section—

(1) $20,000,000 for fiscal year 2018;

(2) $50,000,000 for fiscal year 2019;

(3) $80,000,000 for fiscal year 2020;

(4) $80,000,000 for fiscal year 2021;

(5) $52,000,000 for fiscal year 2022;

(6) $22,000,000 for fiscal year 2023; and

(7) $6,000,000 for fiscal year 2024.

SEC. 3. LINAC COHERENT LIGHT SOURCE II HIGH ENERGY UPGRADE.

(a) IN GENERAL.—The Secretary of Energy shall provide for the upgrade to the Linac Coherent Light Source II facility described in the publication approved by the Basic Energy Sciences Advisory Committee on June 9, 2016, titled ''Report on Facility Upgrades'', including the development of experimental capabilities for high energy x-rays to reveal fundamental scientific discoveries. The Secretary shall ensure the upgrade under this section enables the production and use of high energy, ultra-short pulse x-rays delivered at a high repetition rate.

(b) DEFINITIONS.—In this section:

(1) HIGH ENERGY X-RAY.—The term a ''high energy x-ray'' means a photon with an energy at or exceeding 12 kiloelectron volts.

(2) HIGH REPETITION RATE.—The term ''high repetition rate'' means the delivery of x-ray pulses up to one million pulses per second.

(3) ULTRA-SHORT PULSE X-RAYS.—The term ''ultra-short pulse x-rays'' means x-ray bursts capable of durations of less than one hundred femtoseconds.

(c) START OF OPERATIONS.—The Secretary shall, to the maximum extent practicable, ensure that the start of full operations of the upgrade under this section occurs before December 31, 2025.

(d) FUNDING.—There are authorized to be appropriated to the Secretary for the Office of Science to carry out to completion the upgrade under this section—

(1) $20,000,000 for fiscal year 2018;

(2) $55,000,000 for fiscal year 2019;

(3) $80,000,000 for fiscal year 2020;

(4) $80,000,000 for fiscal year 2021;

(5) $54,000,000 for fiscal year 2022; and

(6) $31,000,000 for fiscal year 2023.

SEC. 4. FACILITY FOR RARE ISOTOPE BEAMS.

(a) IN GENERAL.—The Secretary of Energy shall provide for a Facility for Rare Isotope Beams to advance the understanding of rare nuclear isotopes and the evolution of the cosmos.

(b) FACILITY CAPABILITIES.—In carrying out subsection (a), the Secretary shall ensure that the user facility will provide, at a minimum, the following:

(1) A rare isotope beam facility capable of 400 kW of beam power.

(2) Scientific instruments, which may include a gamma-ray energy tracking array, a particle spec-

trometer with high rigidity, and a beta-decay detection system.

(c) START OF OPERATIONS.—The Secretary shall, to the maximum extent practicable, ensure that the start of full operations of the facility under this section occurs before June 30, 2022, with early operation in 2018.

(d) FUNDING.—There are authorized to be appropriated to the Secretary for the Office of Science to carry out to completion the construction of the facility under this section—

(1) $101,200,000 for fiscal year 2018;

(2) $86,000,000 for fiscal year 2019;

(3) $64,000,000 for fiscal year 2020;

(4) $36,300,000 for fiscal year 2021;

(5) $24,000,000 for fiscal year 2022;

(6) $15,000,000 for fiscal year 2023; and

(7) $15,000,000 for fiscal year 2024.

SEC. 5. SPENDING LIMITATION.

No additional funds are authorized to be appropriated to carry out this Act and the amendments made by this Act, and this Act and such amendments shall be carried out using amounts otherwise available for such purpose.