Suspend the Rules and Pass the Bill, H.R. 5640, with An Amendment

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

114TH CONGRESS
2D SESSION

H. R. 5640

To provide for the establishment at the Department of Energy of an Electricity Storage Basic Research Initiative.

IN THE HOUSE OF REPRESENTATIVES

JULY 6, 2016

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

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A BILL

To provide for the establishment at the Department of Energy of an Electricity Storage Basic Research Initiative.

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 ''Electricity Storage Innovation Act''.

SEC. 2. ELECTRICITY STORAGE BASIC RESEARCH INITIATIVE.

(a) AMENDMENT.—Section 975 of the Energy Policy Act of 2005 (42 U.S.C. 16315) is amended to read as follows:

"SEC. 975. ELECTRICITY STORAGE BASIC RESEARCH INITIATIVE.

''(a) INITIATIVE.—

''(1) IN GENERAL.—The Secretary shall carry out a research initiative, to be known as the Electricity Storage Basic Research Initiative, to expand theoretical and fundamental knowledge to control, store, and convert electrical energy to chemical energy and the inverse. This initiative shall support scientific inquiry into the practical understanding of chemical and physical processes that occur within systems involving crystalline and amorphous solids, polymers, and organic and aqueous liquids.

''(2) LEVERAGING.—The Secretary shall leverage expertise and resources from the Basic Energy Sciences Program, Advanced Scientific Computing Research Program, and Biological and Environmental Research Program within the Office of Science, and the Office of Energy Efficiency and Renewable Energy, as provided under subsections (b), (c), and (d).

''(3) TEAMS.—The Secretary shall organize activities under the Electricity Storage Basic Research Initiative to include multidisciplinary teams leveraging expertise from the National Laboratories, universities, and the private sector to the extent practicable. These multidisciplinary teams shall pursue aggressive, milestone-driven basic research goals. The Secretary shall provide sufficient resources for those teams to achieve those goals over a period of time to be determined by the Secretary.

''(4) ADDITIONAL ACTIVITIES.—The Secretary is authorized to organize additional activities under this subsection through Energy Frontier Research Centers, Energy Innovation Hubs, or other organizational structures.

''(b) MULTIVALENT SYSTEMS.—

''(1) IN GENERAL.—The Secretary shall, as part of the Electricity Storage Basic Research Initiative, carry out a program to support research needed to bridge scientific barriers and discover knowledge relevant to multivalent ion materials in electric energy storage systems. In carrying out activities under this subsection, the Director of the Office of Basic Energy Sciences shall investigate electrochemical properties and the dynamics of mate-

rials, including charge transfer phenomena and mass transport in materials. The Assistant Secretary for Energy Efficiency and Renewable Energy shall support translational research, development, and validation of physical concepts developed under this subsection.

''(2) STANDARD OF REVIEW.—The Secretary shall review the program activities under this subsection to determine the achievement of technical milestones.

''(3) AUTHORIZATION OF APPROPRIATIONS.—

''(A) AUTHORIZATION.—Subject to subsection (e), there are authorized for carrying out activities under this subsection for each of fiscal years 2017 through 2020—

''(i) $50,000,000 from funds within the Basic Energy Sciences Program account; and

''(ii) $25,000,000 from funds within the Energy Efficiency and Renewable Energy account.

''(B) PROHIBITION.—No funds authorized under this subsection may be obligated or expended for commercial application of energy technology.

''(c) ELECTROCHEMISTRY MODELING AND SIMULATION.—

''(1) IN GENERAL.—The Secretary shall, as part of the Electricity Storage Basic Research Initiative, carry out a program to support research to model and simulate organic electrolytes, including their static and dynamic electrochemical behavior and phenomena at the molecular and atomic level in monovalent and multivalent systems. In carrying out activities under this subsection, the Director of the Office of Basic Energy Sciences shall, in coordination with the Associate Director of Advanced Scientific Computing Research, support the development of high performance computational tools through a joint development process to maximize the effectiveness of current and projected high performance computing systems. The Assistant Secretary for Energy Efficiency and Renewable Energy shall support translational research, development, and validation of physical concepts developed under this subsection.

''(2) STANDARD OF REVIEW.—The Secretary shall review the program activities under this subsection to determine the achievement of technical milestones.

''(3) AUTHORIZATION OF APPROPRIATIONS.—

''(A) AUTHORIZATION.—Subject to subsection (e), there are authorized for carrying out activities under this subsection for each of fiscal years 2017 through 2020—

''(i) $30,000,000 from funds within the Basic Energy Sciences Program and Advanced Scientific Computing Research Program accounts; and

''(ii) $15,000,000 from funds within the Energy Efficiency and Renewable Energy account.

''(B) PROHIBITION.—No funds authorized under this subsection may be obligated or expended for commercial application of energy technology.

''(d) MESOSCALE ELECTROCHEMISTRY.—

''(1) IN GENERAL.—The Secretary shall, as part of the Electricity Storage Basic Research Initiative, carry out a program to support research needed to reveal electrochemistry in confined mesoscale spaces, including scientific discoveries relevant to bio-electrochemistry and electrochemical energy conversion and storage in confined spaces and the dynamics of these phenomena. In carrying out

activities under this subsection, the Director of the Office of Basic Energy Sciences and the Associate Director of Biological and Environmental Research shall investigate phenomena of mesoscale electrochemical confinement for the purpose of replicating and controlling new electrochemical behavior. The Assistant Secretary for Energy Efficiency and Renewable Energy shall support translational research, development, and validation of physical concepts developed under this subsection.

''(2) STANDARD OF REVIEW.—The Secretary shall review the program activities under this subsection to determine the achievement of technical milestones.

''(3) AUTHORIZATION OF APPROPRIATIONS.—

''(A) AUTHORIZATION.—Subject to subsection (e), there are authorized for carrying out activities under this subsection for each of fiscal years 2017 through 2020—

''(i) $20,000,000 from funds within the Basic Energy Sciences Program and the Biological and Environmental Research Program accounts; and

''(ii) $10,000,000 from funds within the Energy Efficiency and Renewable Energy account.

''(B) PROHIBITION.—No funds authorized under this subsection may be obligated or expended for commercial application of energy technology.

''(e) FUNDING.—No additional funds are authorized to be appropriated under this section. This section shall be carried out using funds otherwise authorized by law.''.

(b) TABLE OF CONTENTS AMENDMENT.—The item relating to section 975 in the table of contents of such Act is amended to read as follows:

''Sec. 975. Electricity Storage Basic Research Initiative.''.