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117TH CONGRESS
1ST SESSION

H. R. 2777

To direct the Secretary of Energy to establish and support advanced recycling research and development programs, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

APRIL 22, 2021

Mr. GONZALEZ of Ohio (for himself, Ms. STEVENS, and Mr. LUCAS) 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 establish and support advanced recycling research and development programs, 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; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''Advanced Recycling Research and Development Act of 2021''.

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

SEC. 2. DEFINITIONS.

In this Act:

(1) DEPARTMENT.—The term ''Department'' means the Department of Energy.

(2) NATIONAL LABORATORY.—The term ''National Laboratory'' has the meaning given that term in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801).

(3) SECRETARY.—The term ''Secretary'' means the Secretary of Energy.

(4) RECYCLABLE PLASTIC.—The term ''recyclable plastic'' means plastic that is designed to be readily, economically, and efficiently recyclable or otherwise recoverable for beneficial use.

(5) CRITICAL MATERIAL.—The term ''critical material'' has the meaning given such term in section 7002 of Division Z of the Consolidated Appropriations Act, 2021 (Public Law 116–260).

(6) COMPOSITE.—The term ''composite'' means plastic reinforced with fiber or particulate secondary material like bio-derived fibers, carbon fibers, glass or any other solid material.

SEC. 3. OPTIMIZED PLASTICS RECYCLING RESEARCH AND DEVELOPMENT PROGRAM.

(a) IN GENERAL.—The Secretary shall carry out a research, development, and demonstration program to accelerate innovation in energy-efficient recyclable plastics, next-generation plastics, and composites recycling and upcycling strategies and technologies, in order to increase the economic value of plastics supply streams and to reduce the environmental impact of global plastics consumption.

(b) EXECUTION.—In carrying out the program under this section, the Secretary shall—

(1) develop novel collection and sorting technologies to prevent plastics and composites, including waterborne plastics, from entering landfills and the marine environment;

(2) develop biological, chemical, and hybrid biochemical technologies and methods for deconstructing plastic and composite waste into useful chemical and material streams;

(3) develop technologies to upcycle waste, including chemical, material, and gaseous streams, into higher-value products;

(4) develop new economically recyclable-by-design plastics and composites that can be scaled for domestic manufacturability and recovery;

(5) develop new energy-efficient advanced manufacturing techniques for reclaimed plastics and composites; and

(6) develop new data collection methods and practices in collaboration with relevant Federal agencies and the National Laboratories.

(c) LEVERAGING.—In carrying out the program under this section, the Secretary shall leverage resources and expertise from—

(1) the Basic Energy Sciences Program and the Biological and Environmental Research Program of the Office of Science; and

(2) the Office of Energy Efficiency and Renewable Energy.

(d) STANDARD OF REVIEW.—The Secretary shall periodically review activities carried out under the program under this section to determine the achievement of technical milestones as determined by the Secretary.

(e) FUNDING.—From within funds authorized to be appropriated—

(1) to the Department's Office of Science, there shall be made available to the Secretary to carry out the program under this section $15,000,000 for each of fiscal years 2022 through 2026; and

(2) to the Department's Office of Energy Efficiency and Renewable Energy, there shall be made available to the Secretary to carry out the program under this section $25,000,000 for each of fiscal years 2022 through 2026.

SEC. 4. LITHIUM-BASED BATTERY RECYCLING RESEARCH AND DEVELOPMENT PROGRAM.

(a) IN GENERAL.—The Secretary shall carry out a research, development, and demonstration program to support the development of—

(1) advanced materials for batteries with considerations given to resource availability and environmentally benign disposal and recycling; and

(2) innovative technologies to reclaim and recycle critical materials from advanced and lithium-based battery technologies used in consumer electronics, defense, stationary storage, and transportation applications.

(b) EXECUTION.—In carrying out the program under this section, the Secretary shall—

(1) promote the discovery of new domestically sourced raw materials for batteries that can degrade without causing damage to the environment;

(2) develop innovative and cost-effective technologies and processes for the collection, storage,

and transportation of discarded lithium-based batteries that prioritize the use of domestic mining resources; and

(3) research and develop cost-effective recycling processes to recover critical materials from discarded lithium-based batteries and enable their reintroduction in new lithium-based cell technologies and increase availability of domestically sourced raw materials for batteries and for use in other relevant industries.

(c) LEVERAGING.—In carrying out the program under this section, the Secretary shall leverage resources and expertise from—

(1) the Basic Energy Sciences Program of the Office of Science;

(2) the Office of Energy Efficiency and Renewable Energy, including current lithium-based battery recycling activities supported by the Vehicle Technologies Office within the Office of Energy Efficiency and Renewable Energy;

(3) the Office of Fossil Energy; and

(4) the Office of Technology Transitions.

(d) STANDARD OF REVIEW.—The Secretary shall periodically review activities carried out under the program

under this section to determine the achievement of technical milestones as determined by the Secretary.

(e) FUNDING.—From within funds authorized to be appropriated—

(1) to the Department's Office of Science, there shall be made available to the Secretary to carry out the activities under this section $10,000,000 for each of fiscal years 2022 through 2026;

(2) to the Department's Office of Energy Efficiency and Renewable Energy, there shall be made available to the Secretary to carry out the activities under this section $10,000,000 for each of fiscal years 2022 through 2026; and

(3) to the Department's Office of Fossil Energy, there shall be made available to the Secretary to carry out the activities under this section $5,000,000 for each of fiscal years 2022 through 2026.

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