(1) to determine the achievement of technical milestones.

(4) Prohibition

No funds allocated to the program described in paragraph (1) may be obligated or expended for commercial application of energy technology.

(d) Mesoscale electrochemistry

(1) In general

The Secretary shall carry out under the Initiative a program to support research needed to reveal electrochemistry in confined mesoscale spaces, including scientific discoveries relevant to—

(A) bio-electrochemistry and electrochemical energy conversion and storage in confined spaces; and

(B) the dynamics of the phenomena described in subparagraph (A).

(2) Activities

As part of the program described in paragraph (1)—

(A) 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; and

(B) the Assistant Secretary for Energy Efficiency and Renewable Energy shall support translational research, development, and validation of physical concepts developed under the program.

(3) Standard of review

The Secretary shall review activities carried out under the program described in paragraph (1) to determine the achievement of technical milestones.

(4) Prohibition

No funds allocated to the program described in paragraph (1) may be obligated or expended for commercial application of energy technology.

(Pub. L. 109–58, title IX, § 975, Aug. 8, 2005, 119 Stat. 903; Pub. L. 115–246, title III, § 303(e)(1), Sept. 28, 2018, 132 Stat. 3143.)

Editorial Notes

AMENDMENTS

2018—Pub. L. 115–246 amended section generally. Prior to amendment, text read as follows: ''The Secretary shall conduct a program of fundamental research on solid state lighting in support of the Next Generation Lighting Initiative carried out under section 16192 of this title.''

§ 16316. Advanced scientific computing research and development program

(1) In general

The Secretary shall conduct an advanced scientific computing research and development program that includes activities related to applied mathematics and activities authorized by the American Super Computing Leadership Act of 2017 (15 U.S.C. 5541 et seq.).

(2) Goal

The Secretary shall carry out the program with the goal of supporting departmental missions, and providing the high-performance computational, networking, advanced visualization technologies, and workforce resources, that are required for world leadership in science.

(Pub. L. 109–58, title IX, § 976(a), Aug. 8, 2005, 119 Stat. 903; Pub. L. 115–246, title III, § 304(a)(1)(B), Sept. 28, 2018, 132 Stat. 3145.)

Editorial Notes

REFERENCES IN TEXT

The American Super Computing Leadership Act of 2017, referred to in par. (1), is Pub. L. 108–423, Nov. 30, 2004, 118 Stat. 2400, which is classified principally to subchapter III (§ 5541 et seq.) of chapter 81 of Title 15, Commerce and Trade. For complete classification of this Act to the Code, see Short Title note set out under section 5501 of Title 15 and Tables.

AMENDMENTS

2018—Par. (1). Pub. L. 115–246 substituted ''American Super Computing Leadership Act of 2017'' for ''Department of Energy High-End Computing Revitalization Act of 2004''.

§ 16317. Systems biology program

(a) Program

(1) Establishment

The Secretary shall establish a research, development, and demonstration program in microbial and plant systems biology, protein science, computational biology, and environmental science to support the energy, national security, and environmental missions of the Department.

(2) Grants

The program shall support individual researchers and multidisciplinary teams of researchers through competitive, merit-reviewed grants.

(3) Consultation

In carrying out the program, the Secretary shall consult with other Federal agencies that conduct genetic and protein research.

(b) Goals

The program shall have the goal of developing technologies and methods based on the biological functions of genomes, microbes, and plants that—

(1) can facilitate the production of fuels, including hydrogen in sustainable production systems that reduce greenhouse gas emissions;

(2) convert carbon dioxide to organic carbon;

(3) detoxify soils and water, including at facilities of the Department, contaminated with heavy metals and radiological materials;

(4) develop cellulosic and other feedstocks that are less resource and land intensive and that promote sustainable use of resources, including soil, water, energy, forests, and land, and ensure protection of air, water, and soil quality; and

(5) address other Department missions as identified by the Secretary.

(c) Plan

(1) Development of plan

Not later than 1 year after August 8, 2005, the Secretary shall prepare and transmit to