

Suspend the Rules and Pass the Bill, H.R. 5638, with an Amendment

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

114TH CONGRESS
2^D SESSION

H. R. 5638

To provide for the establishment at the Department of Energy of a Solar Fuels Basic Research Initiative.

IN THE HOUSE OF REPRESENTATIVES

JULY 6, 2016

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

A BILL

To provide for the establishment at the Department of Energy of a Solar Fuels Basic Research Initiative.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Solar Fuels Innovation
5 Act”.

1 **SEC. 2. SOLAR FUELS BASIC RESEARCH INITIATIVE.**

2 (a) AMENDMENT.—Section 973 of the Energy Policy
3 Act of 2005 (42 U.S.C. 16313) is amended to read as
4 follows:

5 **“SEC. 973. SOLAR FUELS BASIC RESEARCH INITIATIVE.**

6 “(a) INITIATIVE.—

7 “(1) IN GENERAL.—The Secretary shall carry
8 out a research initiative, to be known as the Solar
9 Fuels Basic Research Initiative, to expand theo-
10 retical and fundamental knowledge of photo-
11 chemistry, electrochemistry, biochemistry, and mate-
12 rials science useful for the practical development of
13 experimental systems to convert solar energy to
14 chemical energy.

15 “(2) LEVERAGING.—The Secretary shall lever-
16 age expertise and resources from the Basic Energy
17 Sciences Program and Biological and Environmental
18 Research Program within the Office of Science, and
19 the Office of Energy Efficiency and Renewable En-
20 ergy, as provided under subsections (b) and (c).

21 “(3) TEAMS.—The Secretary shall organize ac-
22 tivities under the Solar Fuels Basic Research Initia-
23 tive to include multidisciplinary teams leveraging ex-
24 pertise from the National Laboratories, universities,
25 and the private sector to the extent practicable.
26 These multidisciplinary teams shall pursue aggres-

1 sive, milestone-driven basic research goals. The Sec-
2 retary shall provide sufficient resources for those
3 teams to achieve those goals over a period of time
4 to be determined by the Secretary.

5 “(4) ADDITIONAL ACTIVITIES.—The Secretary
6 is authorized to organize additional activities under
7 this subsection through Energy Frontier Research
8 Centers, Energy Innovation Hubs, or other organiza-
9 tional structures.

10 “(b) ARTIFICIAL PHOTOSYNTHESIS.—

11 “(1) IN GENERAL.—The Secretary shall, as
12 part of the Solar Fuels Basic Research Initiative,
13 carry out a program to support research needed to
14 bridge scientific barriers and discover knowledge rel-
15 evant to artificial photosynthetic systems. In car-
16 rying out activities under this subsection, the Direc-
17 tor of the Office of Basic Energy Sciences shall sup-
18 port basic research to pursue distinct lines of sci-
19 entific inquiry, including photoinduced production of
20 hydrogen and oxygen from water, and the sustain-
21 able photoinduced reduction of carbon dioxide to fuel
22 products including hydrocarbons, alcohols, carbon
23 monoxide, and natural gas. The Assistant Secretary
24 for Energy Efficiency and Renewable Energy shall
25 support translational research, development, and val-

1 idation of physical concepts developed under this
2 subsection.

3 “(2) STANDARD OF REVIEW.—The Secretary
4 shall review the program activities under this sub-
5 section to determine the achievement of technical
6 milestones.

7 “(3) AUTHORIZATION OF APPROPRIATIONS.—

8 “(A) AUTHORIZATION.—Subject to sub-
9 section (d), there are authorized for carrying
10 out activities under this subsection for each of
11 fiscal years 2017 through 2020—

12 “(i) \$50,000,000 from funds within
13 the Basic Energy Sciences Program ac-
14 count; and

15 “(ii) \$25,000,000 from funds within
16 the Energy Efficiency and Renewable En-
17 ergy account.

18 “(B) PROHIBITION.—No funds authorized
19 under this subsection may be obligated or ex-
20 pended for commercial application of energy
21 technology.

22 “(c) BIOCHEMISTRY, REPLICATION OF NATURAL
23 PHOTOSYNTHESIS, AND RELATED PROCESSES.—

24 “(1) IN GENERAL.—The Secretary shall, as
25 part of the Solar Fuels Basic Research Initiative,

1 carry out a program to support research needed to
2 replicate natural photosynthetic processes by use of
3 artificial photosynthetic components and materials.
4 In carrying out activities under this subsection, the
5 Director of the Office of Basic Energy Sciences shall
6 support basic research to expand fundamental
7 knowledge to replicate natural synthesis processes,
8 including the photoinduced reduction of dinitrogen
9 to ammonia, absorption of carbon dioxide from am-
10 bient air, molecular-based charge separation and
11 storage, photoinitiated electron transfer, and catal-
12 ysis in biological or biomimetic systems. The Asso-
13 ciate Director of Biological and Environmental Re-
14 search shall support systems biology and genomics
15 approaches to understand genetic and physiological
16 pathways connected to photosynthetic mechanisms.
17 The Assistant Secretary for Energy Efficiency and
18 Renewable Energy shall support translational re-
19 search, development, and validation of physical con-
20 cepts developed under this subsection.

21 “(2) STANDARD OF REVIEW.—The Secretary
22 shall review the program activities under this sub-
23 section to determine the achievement of technical
24 milestones.

25 “(3) AUTHORIZATION OF APPROPRIATIONS.—

1 “(A) AUTHORIZATION.—Subject to sub-
2 section (d), there are authorized for carrying
3 out activities under this subsection for each of
4 fiscal years 2017 through 2020—

5 “(i) \$50,000,000 from funds within
6 the Basic Energy Sciences Program and
7 Biological and Environmental Research
8 Program accounts; and

9 “(ii) \$25,000,000 from funds within
10 the Energy Efficiency and Renewable En-
11 ergy account.

12 “(B) PROHIBITION.—No funds authorized
13 under this subsection may be obligated or ex-
14 pended for commercial application of energy
15 technology.

16 “(d) FUNDING.—No additional funds are authorized
17 to be appropriated under this section. This section shall
18 be carried out using funds otherwise authorized by law.”.

19 (b) TABLE OF CONTENTS AMENDMENT.—The item
20 relating to section 973 in the table of contents of such
21 Act is amended to read as follows:

 “Sec. 973. Solar Fuels Basic Research Initiative.”.