

118TH CONGRESS
2D SESSION

H. R. 7797

To direct the Secretary of Energy to establish a pilot program on ocean fertilization and restoration research and development, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 22, 2024

Mr. CARTER of Georgia introduced the following bill; which was referred to the Committee on Science, Space, and Technology

A BILL

To direct the Secretary of Energy to establish a pilot program on ocean fertilization and restoration research and development, and for other purposes.

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 “Ocean Restoration Re-
5 search and Development Act”.

6 **SEC. 2. FINDINGS; SENSE OF CONGRESS.**

7 (a) FINDINGS.—The Congress finds the following:

8 (1) Rising greenhouse gas concentrations has
9 been linked to a number of adverse environmental

1 conditions and threatens the health of the global en-
2 vironment.

3 (2) Emissions reductions and natural carbon
4 sequestration methods to stabilize and decrease glob-
5 al greenhouse gas concentrations should be pursued.

6 (3) The oceans have the capacity to hold 50
7 times more carbon than the terrestrial systems and
8 atmosphere.

9 (4) The National Academies has recognized the
10 potential benefits of methodologies that enhance
11 ocean-based carbon dioxide removal (marine CDR)
12 and called for more research to assess their potential
13 to mitigate the impacts of climate change.

14 (5) Ocean iron fertilization and other marine
15 CDR techniques hold great potential to efficiently
16 accelerate carbon dioxide removal from the atmos-
17 phere.

18 (6) Ocean iron fertilization and replenishment
19 mimics natural processes such as the influx of aeo-
20 lian dust and volcanic ash that provide iron supple-
21 ments to iron-limited open oceans.

22 (7) Ocean iron fertilization also stimulates
23 ocean productivity, phytoplankton growth, and fish
24 populations.

1 (8) Several national and international climate
2 strategies include specifications that methods to re-
3 store or enhance ocean photosynthesis are accepted
4 as valid and will produce measurable and significant
5 carbon capture and sequestration or storage referred
6 to as a form of blue carbon.

7 (b) SENSE OF CONGRESS.—It is the sense of the
8 Congress that conducting pilot projects for research and
9 development of ocean iron fertilization and other marine
10 CDR techniques is urgent and in the Nation’s vital inter-
11 est to better understand and advance climate restoration
12 and should be a priority for the Secretary.

13 **SEC. 3. OCEAN FERTILIZATION RESEARCH AND DEVELOP-**
14 **MENT PILOT PROGRAM.**

15 (a) ESTABLISHMENT.—The Secretary of Energy
16 shall establish a pilot program for the research and devel-
17 opment of ocean iron fertilization and other marine CDR
18 techniques that have the potential to achieve regional-to-
19 global scale carbon dioxide removal, ocean restoration, en-
20 hancement of fisheries, or conservation of marine mam-
21 mals.

22 (b) REQUIREMENTS.—The pilot program established
23 under subsection (a) shall include—

1 (1) an applied research and development incen-
2 tive program, including monitoring of effects on eco-
3 systems;

4 (2) demonstration projects, including commer-
5 cial scale by private industry;

6 (3) engineering, design, environmental and eco-
7 nomic analysis;

8 (4) an assessment of the efficacy of ocean iron
9 fertilization and other marine CDR replenishment
10 techniques to—

11 (A) absorb and sequester greenhouse gas-
12 ses and restore marine ecosystems;

13 (B) replicate those practices under varying
14 conditions; and

15 (C) assess secondary environmental im-
16 pacts and associated verification methodologies;
17 and

18 (5) a data management plan to include access
19 and archive functions to allow for interagency sci-
20 entific discovery.

21 (c) CONSULTATION.—In carrying out the pilot pro-
22 gram established under subsection (a), the Secretary shall
23 consult and collaborate with—

24 (1) the heads of other relevant Federal depart-
25 ments and agencies, including—

1 (A) the Administrator of the National Oce-
2 anic and Atmospheric Administration;

3 (B) the Secretary of the Treasury;

4 (C) the Administrator of the Environ-
5 mental Protection Agency;

6 (D) the Director of the Bureau of Ocean
7 Energy Management; and

8 (E) the Director of the National Science
9 Foundation;

10 (2) institutions of higher education;

11 (3) the National Oceanographic Partnership
12 Program; and

13 (4) representatives from other relevant private
14 and public sector organizations.

15 (d) PROGRAM GOALS AND OBJECTIVES.—In con-
16 sultation with the entities described in subsection (c), the
17 Secretary shall within 1 year of enactment of this Act de-
18 velop goals and objectives for the pilot program estab-
19 lished under subsection (a), taking into consideration—

20 (1) the acceleration of the development of ocean
21 iron fertilization technologies and other marine CDR
22 practices that have transformational ocean restora-
23 tion, carbon removal, and carbon storage character-
24 isties;

1 (2) the utilization of, to the maximum extent
2 practicable, environmental data collected by—

3 (A) the entities described in subsection (c);

4 (B) the Defense Advanced Research
5 Projects Agency through the Ocean of Things
6 program;

7 (C) the National Aeronautics and Space
8 Administration through the Plankton, Aerosol,
9 Cloud, ocean Ecosystem mission;

10 (D) NOAA's Joint Polar Satellite System
11 and Geostationary Operational Environmental
12 Satellites, and data available from the National
13 Centers for Environmental Information;

14 (E) the Integrated Ocean Observing Sys-
15 tem of the National Oceanic and Atmospheric
16 Administration; and

17 (F) the United States Navy, through the
18 Marine Mammal Program;

19 (3) support for sites for safe testing and dem-
20 onstration;

21 (4) the need to enter into cooperative agree-
22 ments to carry out and expedite meso-scale dem-
23 onstration projects;

24 (5) compliance with relevant international laws
25 and treaties, if applicable;

1 (6) any benefits or barriers to the commercial
2 deployment of any such technologies and practices;
3 and

4 (7) the need for adequate data sharing and
5 management protocols among all participants to en-
6 sure that the data and information collected from
7 the pilot project is available to the science commu-
8 nity and the public.

9 (e) ELIGIBLE ENTITIES.—In carrying out the pilot
10 program established under subsection (a), the Secretary
11 shall have the authority to contract with private or public
12 entities provided that—

13 (1) the entity has demonstrated experience with
14 ocean iron fertilization, other marine CDR tech-
15 niques, or expertise in oceanography;

16 (2) at least 51 percent of project costs are to
17 be provided by sources of funding other than Fed-
18 eral funds; and

19 (3) certain data collected from such projects is
20 made available to the Secretary to demonstrate effi-
21 cacy of ocean iron fertilization or other marine CDR
22 techniques, subject to the protection of all propri-
23 etary data.

24 (f) STATE AND TRIBAL INVOLVEMENT.—In consulta-
25 tion with the Secretary, States and Tribes may enter into

1 contracts with private and public entities to advance ocean
2 iron fertilization for carbon sequestration or fisheries res-
3 toration.

4 (g) PRIORITIES.—In carrying out the pilot program
5 established under subsection (a), the Secretary shall, to
6 the maximum extent practicable, prioritize activities
7 that—

8 (1) take place in pelagic waters;

9 (2) will not cause or accelerate harmful algal
10 blooms in coastal waters; and

11 (3) restores ocean primary productivity.

12 (h) REPORT TO CONGRESS.—Not later than 1 year
13 after the date of enactment of this Act, the Secretary shall
14 submit to Congress a report describing—

15 (1) the program goals and objectives adopted
16 under subsection (d);

17 (2) improving and enhancing techniques for
18 ocean iron fertilization and other marine CDR tech-
19 niques;

20 (3) any results, successes, and related co-bene-
21 fits to marine mammals and fisheries, and any di-
22 rect, indirect, and cumulative impacts to the envi-
23 ronment carrying out the pilot program established
24 under subsection (a);

1 (4) the potential to undertake large-scale
2 projects and utilize international waters for dem-
3 onstration projects;

4 (5) applicability of Research and Development
5 tax credits and other means to incentivize private in-
6 vestment;

7 (6) any policies or permitting recommendations
8 for work conducted in United States and inter-
9 national waters; and

10 (7) any other information the Secretary con-
11 siders relevant.

12 (i) SYMPOSIUM.—Not later than 2 years after the
13 date of enactment of this Act, the Secretary shall convene
14 a symposium, bringing together experts from academia,
15 industry and government to assess the status of deploy-
16 ment, best practices, innovation and technologies, and on-
17 going research and development related to iron fertiliza-
18 tion and other marine CDR techniques for ocean restora-
19 tion.

20 (j) WAIVER.—Notwithstanding any other provision of
21 law, the Secretary shall have the authority to waive any
22 other legal requirements the Secretary, in the Secretary's
23 sole discretion, determines necessary to ensure expeditious
24 development and implementation of the pilot projects
25 under this section. Any such decision by the Secretary

1 shall be effective upon being published in the Federal Reg-
2 ister.

3 (k) FEDERAL COURT REVIEW.—The district courts
4 of the United States shall have exclusive jurisdiction to
5 hear all causes or claims arising from any action under-
6 taken, or any decision made, by the Secretary pursuant
7 to subsection (j). A cause of action or claim may only be
8 brought alleging a violation of the Constitution of the
9 United States. The court shall not have jurisdiction to
10 hear any claim not specified in this subsection.

11 (l) AUTHORIZATION OF APPROPRIATIONS.—There
12 are authorized to be appropriated to carry out this section
13 \$33,000,000 for each of fiscal years 2025 through 2030.

14 (m) DEFINITIONS.—In this section:

15 (1) COASTAL WATERS.—The term “coastal
16 waters” means the land and sea areas bordering the
17 shoreline where hypoxic conditions exist or are likely
18 to occur due to excess nutrients.

19 (2) OCEAN RESTORATION.—The term “ocean
20 restoration” includes the research and development
21 of technologies and techniques that support the ad-
22 dition of trace elements or nutrients to the upper
23 layers of the ocean for the purpose of stimulating
24 phytoplankton activity.

1 (3) PELAGIC WATERS.—The term “pelagic
2 waters” means the part of the open sea or ocean
3 other than coastal waters.

4 (4) OCEAN IRON FERTILIZATION.—The term
5 “ocean iron fertilization” means introduction of low
6 concentrations of iron to high nutrient, low chloro-
7 phyll regions of the ocean surface to stimulate
8 phytoplankton production.

9 (5) MARINE CDR TECHNIQUES.—In addition to
10 ocean iron fertilization, other marine CDR tech-
11 niques include, but are not limited to, ocean alka-
12 linity enhancement, electrochemical approaches, and
13 kelp and seaweed cultivation.

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