

116TH CONGRESS
1ST SESSION

H. R. 5519

To amend the America COMPETES Act to improve measurement and assessment capabilities for understanding proposed atmospheric interventions in Earth’s climate, including, as a priority, the effects of proposed interventions in the stratosphere and in cloud-aerosol processes.

IN THE HOUSE OF REPRESENTATIVES

DECEMBER 19, 2019

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

A BILL

To amend the America COMPETES Act to improve measurement and assessment capabilities for understanding proposed atmospheric interventions in Earth’s climate, including, as a priority, the effects of proposed interventions in the stratosphere and in cloud-aerosol processes.

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 “Atmospheric Climate
5 Intervention Research Act”.

6 **SEC. 2. FINDINGS.**

7 Congress finds the following:

1 (1) The National Oceanic and Atmospheric Ad-
2 ministration (referred to in this section as “NOAA”)
3 and its Office of Ocean and Atmospheric Research
4 undertakes research, including scientific research,
5 computer modeling and other forms of analysis, and
6 uses satellite, airborne, and ground-based systems to
7 monitor atmospheric chemistry and dynamics, in-
8 cluding radiative forcing gases and stratospheric
9 ozone as well as the chemical compounds and atmos-
10 pheric conditions that affect its concentration.

11 (2) The NOAA Earth System Research Labora-
12 tory, the NOAA Geophysical Fluid Dynamics Lab-
13 oratory, and the NOAA Air Resource Laboratory are
14 actively involved in observations, modeling, and mon-
15 itoring that enhance the scientific understanding of
16 atmospheric chemistry and dynamics, drivers of ra-
17 diative forcing of climate change in the atmosphere,
18 the health of the stratosphere, including ozone and
19 the processes affecting its concentration in the strat-
20 osphere, and cloud aerosol interactions and their cli-
21 mate effects.

22 (3) There are significant risks posed by the po-
23 tential introduction of material into the stratosphere
24 from natural events such as volcanic eruptions, in-
25 creased air and space traffic, and proposals to inject

1 material to temporarily reduce global radiative fore-
2 ing of climate that currently are the subject of a
3 forthcoming report by the National Academies of
4 Sciences.

5 (4) To monitor and assess these risks requires
6 significant improvements to observations of the
7 abundances and chemistry of the stratospheric gases
8 and particles and the reflectivity of the stratosphere
9 to establish the baseline state of the stratosphere
10 and its trend over time and to develop enhancements
11 to stratospheric models used for predicting climate
12 impacts of material introduced into the stratosphere
13 by natural or other means.

14 (5) Under the Weather Modification Reporting
15 Act of 1972 (15 U.S.C. 330 et seq.), NOAA is re-
16 sponsible for oversight of any activities undertaken
17 to modify weather, which includes research or test-
18 ing activities related to modifying the atmosphere to
19 affect local, regional, or global climate (defined as
20 atmospheric climate intervention under such Act).

21 (6) The Montreal Protocol, finalized in 1987,
22 and ratified by the United States in 1988, has prov-
23 en to be innovative and successful in protecting the
24 Earth's ozone layer, and is the only environmental
25 treaty to achieve universal ratification by all coun-

1 tries in the world. The United States has been a
2 leader within the Protocol throughout its existence.
3 Hence, the Protocol should remain the governing
4 global agreement to protect the stratospheric ozone
5 layer.

6 **SEC. 3. STRATOSPHERE AND CLIMATE INTERVENTION RE-**
7 **SEARCH PROGRAM.**

8 Section 4001 of the America COMPETES Act (33
9 U.S.C. 893) is amended—

10 (1) in subsection (a)—

11 (A) by striking “atmospheric research”
12 and inserting “atmospheric and climate inter-
13 vention research”; and

14 (B) by inserting “and observational, moni-
15 toring, forecasting,” after “advanced tech-
16 nologies”; and

17 (2) in subsection (b)—

18 (A) in the heading, by striking “and at-
19 mospheric” and inserting “, ATMOSPHERIC,
20 AND CLIMATE INTERVENTION”;

21 (B) in paragraph (2), by striking “and” at
22 the end;

23 (C) in paragraph (3), by striking the pe-
24 riod at the end and inserting a semicolon; and

25 (D) by adding at the end the following:

1 “(4) to improve measurement and assessment
2 capabilities for understanding proposed atmospheric
3 interventions in climate, including, as a priority, the
4 effects of proposed interventions in the stratosphere
5 and in cloud-aerosol processes;

6 “(5) within the Office of Ocean and Atmos-
7 pheric Research of the National Oceanic and Atmos-
8 pheric Administration, to undertake research, includ-
9 ing scientific research, and develop increased obser-
10 vations, improved models, new analyses, computing
11 and related technologies, and risk assessment to im-
12 prove understanding and prediction of—

13 “(A) the chemistry and dynamics of the
14 stratosphere;

15 “(B) Earth’s radiation budget; and

16 “(C) the impacts of changes in atmos-
17 pheric aerosol forcing on the Earth’s energy
18 balance and climate;

19 “(6) to expand the use of cloud computing,
20 space-based and ground-based remote sensing capa-
21 bilities, and other commercially available tech-
22 nologies to accelerate research; and

23 “(7) within the Office of Oceanic and Atmos-
24 pheric Research, to assess and advise the Secretary
25 with respect to reports submitted under the Weather

1 Modification Reporting Act of 1972 (15 U.S.C. 330
2 et seq.) relating to atmospheric climate intervention
3 experiments, and, as determined appropriate by the
4 Office, make available to the public findings and
5 data relating to such reports.”.

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