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(Original Signature of Member)

116TH CONGRESS
1ST SESSION

H. R. _____

To require the Secretary of Defense to enhance the readiness of the Department of Defense to challenges relating to climate change and to improve the energy and resource efficiency of the Department, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Ms. ESCOBAR introduced the following bill; which was referred to the Committee on _____

A BILL

To require the Secretary of Defense to enhance the readiness of the Department of Defense to challenges relating to climate change and to improve the energy and resource efficiency of the Department, 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 “Department of Defense
5 Climate Resiliency and Readiness Act”.

1 **SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) CLIMATE CHANGE.—The term “climate
4 change” means a change of climate that is—

5 (A) attributed directly or indirectly to
6 human activity that alters the composition of
7 the global atmosphere; and

8 (B) in addition to natural climate varia-
9 bility observed over comparable time periods.

10 (2) CONGRESSIONAL DEFENSE COMMITTEES.—

11 The term “congressional defense committees” has
12 the meaning given that term in section 101(a)(16)
13 of title 10, United States Code.

14 (3) NET ZERO ENERGY.—The term “net zero
15 energy” means, with respect to each installation of
16 the Department of Defense, a reduction in overall
17 energy use, maximization of energy efficiency, and
18 implementation and use of energy recovery and co-
19 generation capabilities at each installation, and an
20 offset of the remaining demand for energy with pro-
21 duction of energy from onsite renewable energy
22 sources at such installation, such that such installa-
23 tion produces as much energy as it uses over the
24 course of a year.

25 (4) RESILIENCY.—The term “resiliency”
26 means, with respect to each installation of the De-

1 partment of Defense, an anticipation, preparation
2 for, and adaptation of each installation to utility dis-
3 ruptions and changing environmental conditions, and
4 the achievement and maintenance by such installa-
5 tion of the capability to withstand, respond to, and
6 recover rapidly from utility disruptions while ensur-
7 ing the sustainment of mission-critical operations.

8 (5) NON-OPERATIONAL SOURCES.—The term
9 “non-operational sources”—

10 (A) means fixed installations, enduring lo-
11 cations, and non-tactical vehicles of the Depart-
12 ment of Defense; and

13 (B) does not include sources in connection
14 with the training, moving, and sustaining of the
15 Armed Forces and weapons platforms for mili-
16 tary operations and training, including tactical
17 power systems and generators at non-enduring
18 locations of the Department of Defense.

19 (6) RENEWABLE ENERGY SOURCE.—The term
20 “renewable energy source” has the meaning given
21 that term in section 2924(6) of title 10, United
22 States Code.

23 (7) UNITED STATES.—The term “United
24 States” means the several States, the District of Co-

1 lumbia, and any territory or possession of the
2 United States.

3 **SEC. 3. NET ZERO ENERGY BY NON-OPERATIONAL**
4 **SOURCES OF THE DEPARTMENT OF DE-**
5 **FENSE.**

6 (a) IN GENERAL.—The Department of Defense shall
7 achieve aggregate net zero energy in use of energy by non-
8 operational sources by not later than December 31, 2029.

9 (b) STRATEGY.—

10 (1) IN GENERAL.—Not later than one year
11 after the date of the enactment of this Act, the Sec-
12 retary of Defense shall submit to Congress a report
13 setting forth the strategy of the Department of De-
14 fense to achieve the requirement under subsection
15 (a).

16 (2) ELEMENTS.—The report required by para-
17 graph (1) shall set forth the following:

18 (A) The strategy of the Department of De-
19 fense to achieve the requirement under sub-
20 section (a) for all installations under the juris-
21 diction of the Department (other than the mili-
22 tary departments).

23 (B) The strategy of each military depart-
24 ment to achieve the requirement under sub-

1 section (a) for all installations under the juris-
2 diction of such department.

3 (C) An assessment of the manner in which
4 the achievement by the Department of Defense
5 of the requirement under subsection (a) will en-
6 hance the readiness of the Armed Forces to ad-
7 dress threats posed by Russia, China, Iran,
8 North Korea, and violent extremism.

9 (3) BIENNIAL UPDATE.—Not later than two
10 years after the submittal of the report required by
11 paragraph (1), and every two years thereafter
12 through December 31, 2029, the Secretary shall
13 submit to Congress a report setting forth the fol-
14 lowing:

15 (A) A current assessment of the progress
16 of the Department of Defense in implementing
17 the strategy described in paragraph (1), set
18 forth by military department, Defense Agency,
19 and other component or element of the Depart-
20 ment.

21 (B) Any updates to the strategy.

22 (4) CONSULTATION.—The Secretary shall con-
23 sult with the National Academy of Sciences and a
24 federally funded research and development center in

1 developing the report required by paragraph (1) and
2 any update to that report under paragraph (3).

3 (c) WAIVER.—

4 (1) IN GENERAL.—The Secretary of Defense
5 may waive the requirement in subsection (a) if the
6 Secretary—

7 (A) determines that achievement of such
8 requirement would adversely affect operational
9 safety, force protection, or the national security
10 interests of the United States; and

11 (B) submits to the congressional defense
12 committees a written notification of the waiver,
13 together with a justification for the waiver.

14 (2) PERIOD.—The period of any waiver under
15 paragraph (1) may not exceed 30 days.

16 (3) RENEWAL.—Any waiver under this sub-
17 section may be renewed one or more times, in the
18 manner provided for the initial such waiver under
19 paragraph (1) and for the period provided for in
20 paragraph (2).

21 **SEC. 4. CLIMATE-CONSCIOUS BUDGETING OF DEPARTMENT**
22 **OF DEFENSE.**

23 (a) IN GENERAL.—The Secretary of Defense shall in-
24 clude in the annual budget submission of the President
25 under section 1105(a) of title 31, United States Code—

1 (1) a dedicated budget line item for adaptation
2 to, and mitigation of, climate-related risks to mili-
3 tary networks, systems, installations, facilities, and
4 other assets and capabilities of the Department of
5 Defense; and

6 (2) an estimate of the anticipated adverse im-
7 pacts to the readiness of the Department and the fi-
8 nancial costs to the Department during the year cov-
9 ered by the budget of the loss of, or damage to, mili-
10 tary networks, systems, installations, facilities, and
11 other assets and capabilities of the Department, in-
12 cluding loss of or obstructed access to training
13 ranges, as a result of climate change.

14 (b) DISAGGREGATION OF IMPACTS AND COSTS.—The
15 estimate under subsection (a)(2) shall set forth the ad-
16 verse readiness impacts and financial costs under that
17 subsection by military department, Defense Agency, and
18 other component or element of the Department.

1 **SEC. 5. INCLUSION IN ANNUAL ENERGY MANAGEMENT AND**
2 **RESILIENCE REPORT OF DEPARTMENT OF**
3 **DEFENSE OF LIST OF MILITARY INSTALLA-**
4 **TIONS THAT EMIT THE MOST CARBON AND**
5 **ESTIMATE OF ENERGY CONSUMPTION BY DE-**
6 **PARTMENT.**

7 (a) IN GENERAL.—For every fiscal year beginning
8 after the date of the enactment of this Act, the Secretary
9 of Defense shall include in the Annual Energy Manage-
10 ment and Resilience Report for that fiscal year—

11 (1) a list of the ten installations within each
12 military department that emit the most carbon;

13 (2) an estimate of all energy consumption by
14 the Department of Defense, including greenhouse
15 gas emissions; and

16 (3) an assessment of greenhouse gas emissions
17 at all installations of the Department, disaggregated
18 by operational and non-operational sources.

19 (b) METRICS.—In determining energy consumption
20 and greenhouse gas emissions under paragraphs (2) and
21 (3) of subsection (a), the Secretary shall use metrics es-
22 tablished by the Under Secretary of Defense for Acquisi-
23 tion and Sustainment, in consultation with the National
24 Academy of Sciences and a federally funded research and
25 development center.

1 **SEC. 6. CLIMATE-CONSCIOUS CONTRACTING OF DEPART-**
2 **MENT OF DEFENSE.**

3 (a) IN GENERAL.—Chapter 137 of title 10, United
4 States Code, is amended by adding at the end the fol-
5 lowing new section:

6 **“§ 2339b. Requirements relating to energy consump-**
7 **tion and climate change**

8 “(a) PROJECTED ENERGY CONSUMPTION.—Each
9 Department of Defense contract for the procurement of
10 property or services entered into on or after October 1,
11 2019, shall include a written estimate by the Department
12 of the total projected energy consumption of all work to
13 be performed under the contract, and a statement of
14 whether the contract will include investments by the con-
15 tractor or the Department in renewable energy or energy-
16 efficient sources.

17 “(b) POLICY ON CONSIDERATION OF CERTAIN FAC-
18 TORS IN DETERMINATIONS TO AWARD CONTRACTS.—In
19 making any determination to enter into a contract de-
20 scribed in subsection (a), the Secretary of Defense shall
21 take into account—

22 “(1) whether the contractor verifiably produces
23 as much renewable energy as the total energy it con-
24 sumes; and

25 “(2) whether there is any order against the con-
26 tractor by the Environmental Protection Agency, the

1 Department of Justice, or a State attorney general
2 to pay a fine or take remedial action for a violation
3 of an environmental law or regulation of the United
4 States.

5 “(c) DISCLOSURE OF CLIMATE-RELATED RISKS.—
6 Each prospective contractor with the Department of De-
7 fense shall, as a prerequisite of bidding for a contract with
8 the Department, submit a detailed statement to the De-
9 partment that includes information regarding—

10 “(1) the identification of, the evaluation of po-
11 tential financial impacts of, and any risk-manage-
12 ment strategies relating to—

13 “(A) physical risks posed to the contractor
14 by climate change; and

15 “(B) transition risks posed to the con-
16 tractor by climate change; and

17 “(2) a description of any established corporate
18 governance processes and structures to identify, as-
19 sess, and manage climate-related risks.

20 “(d) ASSESSMENT OF FEES TO COMBAT CLIMATE
21 CHANGE.—(1) Each Department of Defense contract for
22 the procurement of property or services entered into on
23 or after October 1, 2019, shall include a requirement that
24 the contractor pay to the Department of Defense a fee
25 equal to one percent of the value of the contract in the

1 case of a contractor that is not, at the time of the Depart-
2 ment's solicitation of the contract, verifiably producing as
3 much renewable energy as the total energy it consumes.

4 “(2) Any contractor required to pay a fee under para-
5 graph (1) with respect to a contract may not offset the
6 cost of such fee by increasing the amount of the proposal
7 for such contract.

8 “(e) WAIVER.—(1) The Secretary of Defense may
9 waive the requirements in subsections (a) and (b) if the
10 Secretary—

11 “(A)(i) determines that such requirements
12 would adversely affect operational safety, force pro-
13 tection, or the national security interests of the
14 United States; or

15 “(ii) with respect to particular property or serv-
16 ices, determines that—

17 “(I) market conditions for the property or
18 services have adversely affected (or will in the
19 near future adversely affect) the acquisition of
20 the property or services by the Department of
21 Defense; and

22 “(II) the waiver will expedite or facilitate
23 the acquisition of the property or services; and

1 “(B) submits to the congressional defense com-
2 mittees a written notification of the waiver, together
3 with a justification for the waiver.

4 “(2) The period of any waiver under paragraph (1)
5 may not exceed 30 days.

6 “(3) Any waiver under this subsection may be re-
7 newed one or more times, in the manner provided for the
8 initial such waiver under paragraph (1) and for the period
9 provided for in paragraph (2).”.

10 (b) CLERICAL AMENDMENT.—The table of sections
11 at the beginning of chapter 137 of title 10, United States
12 Code, is amended by inserting after the item relating to
13 section 2339a the following new item:

 “2339b. Requirements relating to energy consumption and climate change.”.

14 (c) ENERGY AND CLIMATE RESILIENCY FUND.—

15 (1) IN GENERAL.—There is established in the
16 Treasury of the United States a fund, to be known
17 as the “Energy and Climate Resiliency Fund” (in
18 this subsection referred to as the “Fund”), to be ad-
19 ministered by the Secretary of Defense.

20 (2) USE OF AMOUNTS.—Amounts deposited in
21 the Fund shall be used only for climate-related im-
22 provements that contribute to the continued oper-
23 ational viability and the resiliency of the networks,
24 systems, installations, facilities, and other assets and
25 capabilities of the Department of Defense.

1 (3) DEPOSIT AND AVAILABILITY OF
2 AMOUNTS.—Notwithstanding section 3302 of title
3 31, United States Code, fees collected under section
4 2339b(b) of title 10, United States Code, as added
5 by subsection (a)—

6 (A) shall be deposited into the Fund to
7 carry out the activities described in paragraph
8 (2);

9 (B) to the extent and in the amounts pro-
10 vided in advance in appropriations Acts, shall
11 be available to the Secretary of Defense; and

12 (C) shall remain available until expended.

13 (4) CLIMATE-RELATED IMPROVEMENTS DE-
14 FINED.—In this subsection, the term “climate-re-
15 lated improvements” means efforts by the Depart-
16 ment of Defense to prepare for, or mitigate the ef-
17 fects of, the following:

18 (A) Extreme weather.

19 (B) Rising sea tides.

20 (C) Increased flooding.

21 (D) Drought.

22 (E) Desertification.

23 (F) Wildfires.

24 (G) Thawing permafrost.

1 (H) Such other conditions as the Secretary
2 determines necessary.

3 **SEC. 7. DEVELOPMENT OF CLIMATE VULNERABILITY AND**
4 **RISK ASSESSMENT TOOL.**

5 (a) IN GENERAL.—Not later than 180 days after the
6 date of the enactment of this Act, the Secretary of Defense
7 shall develop a climate vulnerability and risk assessment
8 tool to assist the military departments in measuring how
9 the risks associated with climate change impact networks,
10 systems, installations, facilities, and other assets, as well
11 as the operational plans and capabilities of the Depart-
12 ment of Defense.

13 (b) CONSULTATION.—In developing the tool under
14 subsection (a), the Secretary shall consult with Adminis-
15 trator of the Environmental Protection Agency, the Sec-
16 retary of Energy, the Administrator of the National Oce-
17 anic and Atmospheric Administration, the Administrator
18 of the Federal Emergency Management Agency, the Com-
19 mander of the Army Corps of Engineers, the Adminis-
20 trator of the National Aeronautics and Space Administra-
21 tion, a Federally funded research and development center,
22 and the heads of such other relevant Federal agencies as
23 the Secretary of Defense determines appropriate.

24 (c) PREVAILING SCIENTIFIC CONSENSUS.—Before
25 completing development of the tool under subsection (a),

1 the Secretary shall obtain from the National Academy of
2 Sciences and a Federally funded research and development
3 center with which the Secretary has consulted under sub-
4 section (b) a certification in writing that the tool contains
5 a methodology that adequately incorporates the prevailing
6 scientific consensus on climate change.

7 (d) REPORT.—

8 (1) IN GENERAL.—Not later than 180 days
9 after the date of the enactment of this Act, the Sec-
10 retary shall submit to the congressional defense com-
11 mittees a report describing the tool developed under
12 subsection (a).

13 (2) CLASSIFIED ANNEX.—The report under
14 paragraph (1) shall be submitted in unclassified
15 form but may contain a classified annex if necessary.

16 (3) PUBLICATION.—Upon submittal of the re-
17 port under paragraph (1), the Secretary shall pub-
18 lish the unclassified portion of the report on an
19 Internet website of the Department that is available
20 to the public.

21 (e) UPDATES TO TOOL.—

22 (1) IN GENERAL.—After submittal of the report
23 under subsection (d), the Secretary of Defense shall
24 update the climate vulnerability and risk assessment
25 tool developed under subsection (a) as the Secretary

1 considers necessary and appropriate, in consultation
2 with the individuals and entities described in sub-
3 section (b) and consistent with the prevailing sci-
4 entific consensus as required under subsection (c).

5 (2) REPORT AND PUBLICATION.—Upon com-
6 pleting an update to the tool under paragraph (1),
7 the Secretary shall—

8 (A) submit to the congressional defense
9 committees a report describing such update;
10 and

11 (B) publish the unclassified version such
12 report on an Internet website of the Depart-
13 ment that is available to the public.

14 **SEC. 8. ANNUAL REPORT ON EFFECTS OF CLIMATE**
15 **CHANGE ON DEPARTMENT OF DEFENSE.**

16 (a) IN GENERAL.—Not later than 180 days after the
17 date of the enactment of this Act, and annually thereafter,
18 the Secretary of Defense shall submit to the congressional
19 defense committees a report on vulnerabilities to military
20 installations and combatant commander requirements re-
21 sulting from climate change that builds upon the report
22 submitted under section 335(c) of the National Defense
23 Authorization Act for Fiscal Year 2018 (Public Law 115–
24 91; 131 Stat. 1358).

1 (b) USE OF CLIMATE VULNERABILITY AND RISK AS-
2 SESSMENT TOOL.—In preparing the report required by
3 subsection (a), the Secretary shall use the climate vulner-
4 ability and risk assessment tool developed under section
5 7.

6 (c) ELEMENTS.—The report required by subsection
7 (a) shall include the following:

8 (1) An explanation of the underlying method-
9 ology behind the climate vulnerability analysis con-
10 ducted in preparing the report under section 335(c)
11 of the National Defense Authorization Act for Fiscal
12 Year 2018.

13 (2) An assessment of how climate change af-
14 fects low-lying military installations, military instal-
15 lations of the Navy and the Marine Corps, and mili-
16 tary installations outside the United States.

17 (3) An assessment of how climate change af-
18 fects access of members of the Armed Forces to
19 training ranges.

20 (4) With respect to a military installation in a
21 country outside the United States, an assessment of
22 the collaboration between the Department of De-
23 fense and the military or civilian agencies of the gov-
24 ernment of that country or nongovernmental organi-

1 zations operating in that country to adapt to risks
2 from climate change.

3 (5) An assessment of how climate change af-
4 fects housing safety and food security on military in-
5 stallations.

6 (6) An assessment of the strategic benefits de-
7 rived from isolating infrastructure of the Depart-
8 ment of Defense in the United States from the na-
9 tional electric grid and the use of energy-efficient,
10 distributed, and smart power grids by the Armed
11 Forces in the United States and overseas to ensure
12 affordable access to electricity.

13 (7) A list of the ten military installations within
14 each military department that are most vulnerable to
15 climate change based on the effects of the following:

16 (A) Geographic location.

17 (B) Extreme weather.

18 (C) Rising sea tides.

19 (D) Increased flooding.

20 (E) Drought.

21 (F) Desertification.

22 (G) Wildfires.

23 (H) Thawing permafrost.

24 (I) Such other categories as the Secretary
25 determines necessary.

1 (8) A climate vulnerability score, determined by
2 the Secretary, for each military installation of the
3 Department.

4 (9) An overview of mitigations, in addition to
5 current efforts undertaken by the Department, that
6 may be necessary to ensure the continued oper-
7 ational viability and to increase the resiliency of the
8 vulnerable military installations identified under
9 paragraph (7), and the estimated costs of those miti-
10 gations.

11 (10) An assessment of how adapting to climate
12 change impacts the readiness of the Armed Forces
13 to address the threats posed by Russia, China, Iran,
14 North Korea, and violent extremism.

15 (d) CONSULTATION.—In developing each report
16 under subsection (a), the Secretary of Defense shall con-
17 sult with the Administrator of the Environmental Protec-
18 tion Agency, the Secretary of Energy, the Administrator
19 of the National Oceanic and Atmospheric Administration,
20 the Administrator of the Federal Emergency Management
21 Agency, the Commander of the Army Corps of Engineers,
22 the Administrator of the National Aeronautics and Space
23 Administration, a federally funded research and develop-
24 ment center, and the heads of such other relevant Federal

1 agencies as the Secretary of Defense determines appro-
2 priate.

3 (e) FORM OF REPORT.—The report required by sub-
4 section (a) shall be submitted in unclassified form but may
5 contain a classified annex if necessary.

6 (f) PUBLICATION.—Upon submittal of the report re-
7 quired by subsection (a), the Secretary of Defense shall
8 publish the unclassified portion of the report on an Inter-
9 net website of the Department of Defense that is available
10 to the public.

11 **SEC. 9. INCORPORATION OF CLIMATE RESILIENCY INTO**
12 **EXISTING STRATEGIES OF THE DEPARTMENT**
13 **OF DEFENSE.**

14 (a) CONSIDERATION OF RISKS OF CLIMATE CHANGE
15 IN MAKING STRATEGIC DECISIONS RELATING TO MILI-
16 TARY INSTALLATIONS.—The Secretary of each military
17 department, with respect to any installation under the ju-
18 risdiction of that Secretary, and the Secretary of Defense,
19 with respect to any installation of the Department of De-
20 fense that is not under the jurisdiction of the Secretary
21 of a military department, shall consider the risks associ-
22 ated with climate change when making any strategic deci-
23 sion relating to such installation, including where to locate
24 such installation and where to position equipment, infra-
25 structure, and other military assets.

1 (b) CODIFICATION OF DIRECTIVE ON CLIMATE
2 CHANGE.—

3 (1) IN GENERAL.—Directive 4715.21 of the De-
4 partment of Defense, dated January 14, 2016, and
5 entitled “Climate Change Adaptation and Resil-
6 ience”, shall remain in effect.

7 (2) REPORTS ON IMPLEMENTATION OF DIREC-
8 TIVE.—Each posture statement submitted to Con-
9 gress by the Secretary of a military department, the
10 Chairman of the Joint Chiefs of Staff, or the com-
11 mander of a combatant command shall include a de-
12 scription of the implementation and discharge by
13 such official of the Directive referred to in para-
14 graph (1), including the personnel assigned to imple-
15 ment and discharge the Directive and the progress
16 achieved in such implementation and discharge.

17 (c) INCORPORATION OF CLIMATE CHANGE INTO CER-
18 TAIN DEFENSE STRATEGIES.—

19 (1) IN GENERAL.—The Secretary of Defense, in
20 coordination with the heads of other elements of the
21 intelligence community, the Administrator of the
22 Environmental Protection Agency, the Secretary of
23 Energy, the Administrator of the National Oceanic
24 and Atmospheric Administration, the Administrator
25 of the Federal Emergency Management Agency, the

1 Commander of the Army Corps of Engineers, the
2 Administrator of the National Aeronautics and
3 Space Administration, and the heads of such other
4 relevant Federal agencies as the Secretary of De-
5 fense determines appropriate, shall incorporate cli-
6 mate change into the National Defense Strategy, the
7 National Military Strategy, and operational plans of
8 the Department of Defense.

9 (2) INTELLIGENCE COMMUNITY DEFINED.—In
10 this subsection, the term “intelligence community”
11 has the meaning given that term in section 3 of the
12 National Security Act of 1947 (50 U.S.C. 3003).

13 (d) IMPLEMENTATION AND DISCHARGE OF REQUIRE-
14 MENTS.—

15 (1) CROSS-FUNCTIONAL TEAM ON INCORPORA-
16 TION OF CLIMATE RESILIENCY INTO DEFENSE
17 STRATEGIES.—Among the cross-functional teams es-
18 tablished by the Secretary of Defense pursuant to
19 subsection (c) of section 911 of the National De-
20 fense Authorization Act for Fiscal Year 2017 (Pub-
21 lic Law 114–328; 130 Stat. 2345; 10 U.S.C. 111
22 note) in support of the organizational strategy for
23 the Department of Defense required by subsection
24 (a) of that section, the Secretary shall establish a

1 cross-functional team on the implementation and
2 discharge of the requirements under this section.

3 (2) ESTABLISHMENT AND ACTIVITIES.—The
4 cross-functional team required by paragraph (1)
5 shall be established in accordance with subsection (c)
6 of section 911 of the National Defense Authorization
7 Act for Fiscal Year 2017, and shall be governed in
8 its activities in accordance with the provisions of
9 such subsection (c).

10 (3) DEADLINE FOR ESTABLISHMENT.—The
11 cross-functional team required by paragraph (1)
12 shall be established by not later than 90 days after
13 the date of the enactment of this Act.

14 **SEC. 10. RESEARCH, DEVELOPMENT, AND DEMONSTRATION**
15 **PROGRAM ON ENERGY STORAGE, HYBRID**
16 **MICROGRID, AND ENERGY RESILIENCY.**

17 (a) PROGRAM REQUIRED.—The Secretary of De-
18 fense, in consultation with the Secretary of Energy, shall
19 conduct a program of research, development, and dem-
20 onstration of hybrid microgrid systems and electric grid
21 energy storage.

22 (b) MULTIDISCIPLINARY TEAMS.—

23 (1) IN GENERAL.—In carrying out the program
24 under subsection (a), the Secretary of Defense shall
25 organize activities among multidisciplinary teams to

1 leverage, to the maximum extent practicable, exper-
2 tise from the Department of Energy, the National
3 Laboratories, institutions of higher education, and
4 the private sector.

5 (2) GOALS.—The multidisciplinary teams orga-
6 nized under paragraph (1) shall pursue aggressive,
7 milestone-driven, and basic research, development,
8 and demonstration goals to carry out the program
9 under subsection (a).

10 (3) RESOURCES.—The Secretary of Defense
11 shall provide sufficient resources to the multidisci-
12 plinary teams organized under paragraph (1) to
13 achieve the goals described in paragraph (2) over a
14 10-year period.

15 (c) AREAS OF FOCUS.—The program under sub-
16 section (a) shall focus on—

17 (1) addressing electrical power intermittency;

18 (2) integrating renewable energy sources into
19 microgrid systems, hybrid microgrid systems, energy
20 storage, grid security, and local generation of zero-
21 carbon fuels;

22 (3) the inspection and structural health moni-
23 toring of critical energy infrastructure;

- 1 (4) materials, electric thermal,
2 electromechanical, and electrochemical systems re-
3 search;
- 4 (5) power conversion technologies research;
- 5 (6) developing and using fuel-efficient engines;
- 6 (7) additive manufacturing;
- 7 (8) developing—
- 8 (A) empirical and science-based industry
9 standards to compare the storage capacity,
10 cycle length and capabilities, and reliability of
11 different types of electricity storage; and
- 12 (B) validation and testing techniques;
- 13 (9) other fundamental and applied research
14 critical to widespread deployment of electricity stor-
15 age;
- 16 (10) device development that builds on results
17 from research described in paragraphs (4), (5), and
18 (9), including combinations of power electronics, ad-
19 vanced optimizing controls, and energy storage as a
20 general purpose element of the electric grid;
- 21 (11) micro-scale testing and analysis of storage
22 devices, including test-beds and field trials;
- 23 (12) microgrid systems and hybrid microgrid
24 systems to increase the resilience of critical infra-
25 structure of the Department of Defense;

1 (13) the potential for energy storage and re-
2 newable resources, including wind, solar, and hydro-
3 power, to be integrated into microgrid systems or
4 hybrid microgrid system of installations of the De-
5 partment of Defense;

6 (14) the capacity of the workforce of the De-
7 partment of Defense to operate, maintain, and re-
8 pair a microgrid system or hybrid microgrid system;

9 (15) opportunities to develop the capacity to op-
10 erate, maintain, and repair a hybrid microgrid sys-
11 tem;

12 (16) leveraging existing capacity within local or
13 regional research organizations, such as organiza-
14 tions based at institutions of higher education, to
15 support development of hybrid microgrid systems,
16 including by testing novel components and systems
17 prior to field deployment;

18 (17) electricity storage device safety and reli-
19 ability, including potential failure modes, mitigation
20 measures, and operational guidelines;

21 (18) standards for performance, control inter-
22 face, grid interconnection, and interoperability of
23 electricity storage devices;

1 (19) maintaining a public database of energy
2 storage projects, policies, codes, standards, and reg-
3 ulations; and

4 (20) such other criteria as the Secretary of De-
5 fense, in consultation with the Secretary of Energy,
6 determines appropriate.

7 (d) COLLABORATION.—The program under sub-
8 section (a) shall be carried out in collaboration with rel-
9 evant stakeholders, including, as appropriate—

10 (1) States;

11 (2) Indian tribes;

12 (3) regional entities and regulators;

13 (4) units of local government;

14 (5) institutions of higher education, including
15 historically Black colleges or universities and other
16 minority-serving institutions; and

17 (6) private sector entities.

18 (e) REPORT.—

19 (1) IN GENERAL.—Not later than 180 days
20 after the date of enactment of this Act, and annually
21 thereafter until 2031, the Secretary of Defense shall
22 submit to the congressional defense committees a re-
23 port on the efforts to implement the program under
24 subsection (a), including any strategy developed to
25 implement such program.

1 (2) CLASSIFIED ANNEX.—The report under
2 paragraph (1) shall be submitted in unclassified
3 form but may contain a classified annex if necessary.

4 (3) PUBLICATION.—Upon submittal of the re-
5 port under paragraph (1), the Secretary shall pub-
6 lish the unclassified portion of the report on an
7 Internet website of the Department that is available
8 to the public.

9 (f) ASSISTANCE TO STATES.—The Secretary of De-
10 fense may provide technical and financial assistance to
11 States, Indian tribes, units of local government, institu-
12 tions of higher education, or private sector entities to par-
13 ticipate in or use research, development, or demonstration
14 of technology developed under this section.

15 (g) AUTHORIZATION OF APPROPRIATIONS.—There is
16 authorized to be appropriated to the Secretary of Defense
17 to carry out this section the following:

18 (1) For fiscal year 2020, \$10,000,000.

19 (2) For fiscal year 2021, \$25,000,000.

20 (3) For fiscal year 2022, \$50,000,000.

21 (4) For fiscal year 2023, \$75,000,000.

22 (5) For fiscal year 2024, \$125,000,000.

23 (6) For fiscal year 2025, \$200,000,000.

24 (7) For each of fiscal years 2026 through 2030,
25 \$250,000,000.

1 (h) NO EFFECT ON OTHER PROVISIONS OF LAW.—
2 Nothing in this section authorizes regulatory actions that
3 would duplicate or conflict with regulatory requirements,
4 mandatory standards, or related processes under section
5 215 of the Federal Power Act (16 U.S.C. 824o).

6 (i) USE OF FUNDS.—To the maximum extent prac-
7 ticable, in carrying out this section, the Secretary of De-
8 fense shall ensure that the use of funds to carry out this
9 section is coordinated with the Secretary of Energy and
10 among different offices within the Grid Modernization Ini-
11 tiative of the Department of Energy and other programs
12 conducting energy storage research.

13 (j) DEFINITIONS.—In this section:

14 (1) HISTORICALLY BLACK COLLEGE OR UNI-
15 VERSITY.—The term “historically Black college or
16 university” has the meaning given the term “part B
17 institution” in section 322(2) of the Higher Edu-
18 cation Act of 1965 (20 U.S.C. 1061(2)).

19 (2) HYBRID MICROGRID SYSTEM.—The term
20 “hybrid microgrid system” means a stand-alone elec-
21 trical system that—

22 (A) is comprised of conventional generation
23 and at least one alternative energy resource;
24 and

25 (B) may use grid-scale energy storage.

1 (3) MICROGRID SYSTEM.—The term “microgrid
2 system” means a standalone electrical system that
3 uses grid-scale energy storage.

4 (4) NATIONAL LABORATORY.—The term “Na-
5 tional Laboratory” has the meaning given that term
6 in section 2 of the Energy Policy Act of 2005 (42
7 U.S.C. 15801).

8 **SEC. 11. CONDITIONS ON BASE REALIGNMENT AND CLO-**
9 **SURE ACTIVITIES FUNDED THROUGH BASE**
10 **CLOSURE ACCOUNT OF DEPARTMENT OF DE-**
11 **FENSE.**

12 (a) CONSIDERATION OF FACTORS REQUIRED.—With
13 respect to any Base Realignment and Closure round begun
14 by the Department of Defense after the date of the enact-
15 ment of this Act, the Department shall consider current
16 and potential vulnerabilities to installations and operations
17 of the Department of Defense resulting from climate
18 change and the resiliency of installations of the Depart-
19 ment as described in section 2(3)(B).

20 (b) BASE REALIGNMENT AND CLOSURE ROUND DE-
21 FINED.—In this section, the term “Base Realignment and
22 Closure round” means base realignment and closure ac-
23 tivities, including real property acquisition and military
24 construction projects, as authorized by the Defense Base
25 Closure and Realignment Act of 1990 (part A of title

1 XXIX of Public Law 101–510; 10 U.S.C. 2687 note) and
2 funded through the Department of Defense Base Closure
3 Account established by section 2906 of such Act (as
4 amended by section 2711 of the Military Construction Au-
5 thorization Act for Fiscal Year 2013 (division B of Public
6 Law 112–239; 126 Stat. 2140)).

7 **SEC. 12. ASSISTANT SECRETARY OF DEFENSE AND OF THE**
8 **MILITARY DEPARTMENTS FOR ENERGY AND**
9 **CLIMATE RESILIENCY.**

10 (a) ASSISTANT SECRETARY OF DEFENSE FOR EN-
11 ERGY AND CLIMATE RESILIENCY.—

12 (1) IN GENERAL.—Section 138 of title 10,
13 United States Code, is amended—

14 (A) in subsection (a)(1), by striking “13”
15 and inserting “14”; and

16 (B) in subsection (b), by adding at the end
17 the following new paragraph:

18 “(5) One of the Assistant Secretaries is the Assistant
19 Secretary of Defense for Energy and Climate Resiliency.
20 The principal duty of the Assistant Secretary shall be the
21 overall supervision of energy and climate resiliency mat-
22 ters of the Department of Defense.”.

23 (2) DUTIES.—Not later than 90 days after the
24 date of the enactment of this Act, the Secretary of
25 Defense shall prescribe the duties of the Assistant

1 Secretary of Defense for Energy and Climate Resil-
2 iency under section 138(b)(5) of title 10, United
3 States Code (as added by paragraph (1)). In pre-
4 scribing such duties, the Secretary shall—

5 (A) specify the duties currently performed
6 by the Assistant Secretary of Defense for In-
7 stallations, Energy, and the Environment that
8 shall be performed instead by the Assistant Sec-
9 retary of Defense for Energy and Climate Resil-
10 iency; and

11 (B) specify the duties and responsibilities
12 of the Assistant Secretary of Defense for En-
13 ergy and Climate Resiliency for oversight of the
14 implementation of the requirements of this Act
15 by the Department of Defense.

16 (b) ASSISTANT SECRETARIES OF THE MILITARY DE-
17 PARTMENTS.—

18 (1) DEPARTMENT OF THE ARMY.—Section
19 7016 of such title is amended—

20 (A) in subsection (a), by striking “five”
21 and inserting “six”; and

22 (B) in subsection (b), by adding at the end
23 the following new paragraph:

24 “(6) One of the Assistant Secretaries shall be the As-
25 sistant Secretary of the Army for Energy and Climate Re-

1 siliency. The principal duty of the Assistant Secretary
2 shall be the overall supervision of energy and climate resil-
3 iency mattes of the Department of the Army.”.

4 (2) DEPARTMENT OF THE NAVY.—Section 8016
5 of such title is amended—

6 (A) in subsection (a), by striking “four”
7 and inserting “five”; and

8 (B) in subsection (b), by adding at the end
9 the following new paragraph:

10 “(5) One of the Assistant Secretaries shall be the As-
11 sistant Secretary of the Navy for Energy and Climate Re-
12 siliency. The principal duty of the Assistant Secretary
13 shall be the overall supervision of energy and climate resil-
14 iency matters of the Department of the Navy.”.

15 (3) DEPARTMENT OF THE AIR FORCE.—Section
16 9016 of such title is amended—

17 (A) in subsection (a), by striking “four”
18 and inserting “five”; and

19 (B) in subsection (b), by adding at the end
20 the following new paragraph:

21 “(5) One of the Assistant Secretaries shall be the As-
22 sistant Secretary of the Air Force for Energy and Climate
23 Resiliency. The principal duty of the Assistant Secretary
24 shall be the overall supervision of energy and climate resil-
25 iency matters of the Department of the Air Force.”.

1 (4) DUTIES.—Not later than 90 days after the
2 date of the enactment of this Act, each Secretary of
3 a military department shall prescribe the duties of
4 the Assistant Secretary of such military department
5 for energy and climate resiliency under the applica-
6 ble amendments made by this subsection. In pre-
7 scribing such duties, such Secretary shall—

8 (A) specify the duties currently performed
9 by the Assistant Secretary of such military de-
10 partment for installations, energy, and the envi-
11 ronment that shall be performed instead by the
12 Assistant Secretary of such military department
13 for energy and climate resiliency; and

14 (B) specify the duties and responsibilities
15 of the Assistant Secretary of such military de-
16 partment for energy and climate resiliency for
17 oversight of the implementation of the require-
18 ments of this Act by such military department.

19 (c) EXECUTIVE SCHEDULE MATTERS.—Section 5315
20 of title 5, United States Code, is amended by striking the
21 items relating to the Assistant Secretaries of Air Force,
22 the Assistant Secretaries of the Army, and the Assistant
23 Secretaries of the Navy and inserting the following new
24 items:

25 “Assistant Secretaries of the Air Force (5).

1 “Assistant Secretaries of the Army (6).

2 “Assistant Secretaries of the Navy (5).”.

3 (d) ADDITIONAL POSITIONS OF RESPONSIBILITY FOR
4 ENERGY AND CLIMATE RESILIENCY.—

5 (1) IN GENERAL.—Not later than 90 days after
6 the date of the enactment of this Act, each officer
7 specified in paragraph (2)) shall establish within the
8 command under the jurisdiction of such officer a po-
9 sition of responsibility for oversight of the implemen-
10 tation of the requirements of this Act by such com-
11 mand. Any individual assigned to such a position
12 shall be an officer of the Armed Forces on active
13 duty in a general or flag officer grade.

14 (2) OFFICERS.—The officers specified in this
15 paragraph are the following:

16 (A) The Chairman of the Joint Chiefs of
17 Staff.

18 (B) The commander of each combatant
19 command.