

117TH CONGRESS  
2D SESSION

# H. R. 8611

To require the President develop a national strategy for utilizing microreactors to assist with natural disaster response efforts, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

JULY 29, 2022

Mr. DONALDS (for himself, Mr. MICHAEL F. DOYLE of Pennsylvania, and Mr. FLEISCHMANN) introduced the following bill; which was referred to the Committee on Transportation and Infrastructure, and in addition to the Committees on Energy and Commerce, and Armed Services, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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## A BILL

To require the President develop a national strategy for utilizing microreactors to assist with natural disaster response efforts, 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 “National Strategy to  
5 Utilize Microreactors for Natural Disaster Response Ef-  
6 forts Act”.

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

2 (a) FINDINGS.—Congress finds that—

3 (1) natural disasters often cause loss of life,  
4 human suffering, loss of income, and property loss  
5 and damage;

6 (2) natural disasters often disrupt the normal  
7 functioning of governments and communities and  
8 adversely affect individuals and families with great  
9 severity; and

10 (3) special measures, designed to assist with  
11 and supplement natural disaster response efforts,  
12 such as replacing the wide utilization of diesel gen-  
13 erators with microreactors when responding to the  
14 impacts of a natural disaster, are necessary and  
15 worthwhile for the wellbeing of the United States.

16 (b) SENSE OF CONGRESS.—It is the sense of Con-  
17 gress that Congress should support the utilization of nu-  
18 clear energy, with a priority for nuclear energy generated  
19 by microreactors, during natural disaster response efforts  
20 because of the following considerations:

21 (1) Nuclear energy generated by a microreactor  
22 provides a safe form of consistent and reliable elec-  
23 tricity that is generally sought when responding to  
24 the impacts of natural disasters.

25 (2) Nuclear energy that is generated by micro-  
26 reactors—

1           (A) is the cleanest, rapidly deployable  
2           source of energy available that can provide un-  
3           interrupted power to assist with natural dis-  
4           aster response efforts; and

5           (B) can be used to augment diesel-gen-  
6           erated power during national disaster response  
7           efforts.

8           (3) The generation of electricity from micro-  
9           reactors emits fewer greenhouse gas emissions than  
10          the generation of electricity from other sources of  
11          electricity.

12          (4) Microreactors can be easily transported and  
13          carried by aircraft, semi-trucks, or shipping vessels  
14          to timely provide electricity upon demand to an area  
15          that is impacted by a natural disaster.

16          (5) Microreactors can be operated autono-  
17          mously, which avoids the need for on-site operators  
18          in an area that is impacted by a natural disaster.

19          (6) Microreactors can be operated for several  
20          years without being refueled, which avoids logistical  
21          challenges associated with refueling other power  
22          sources, including diesel generators, in an area that  
23          is impacted by a natural disaster.

24          (7) With approval by the Nuclear Regulatory  
25          Commission, microreactors can be—

1 (A) mass produced in factories around the  
2 United States; and

3 (B) mass deployed to assist with natural  
4 disaster response efforts.

5 (8) Nuclear energy generated by a microreactor  
6 can be used to help restore electrical grids by pro-  
7 viding temporary power and spot generation for crit-  
8 ical electricity generating facilities while grid repairs  
9 take place.

10 (9) Microreactors can—

11 (A) power lifesaving and life-sustaining fa-  
12 cilities, such as hospitals;

13 (B) power mass transit systems and water  
14 quality treatment plants;

15 (C) power large pumps that are often used  
16 to remove water from an impacted area; and

17 (D) support the operation of local, State,  
18 and Federal facilities in the event that a nat-  
19 ural disaster severely impacts such facilities and  
20 results in the loss of electricity for such facili-  
21 ties.

22 (10) After providing electricity to an area that  
23 is impacted by a natural disaster, microreactors can  
24 be easily transported out of the area to other loca-  
25 tions where they are needed or to standby storage

1 locations until deployment to assist with future nat-  
2 ural disaster response efforts.

3 **SEC. 3. DEVELOPMENT OF NATIONAL STRATEGY.**

4 (a) IN GENERAL.—The President shall, in consulta-  
5 tion with the Administrator of the Federal Emergency  
6 Management Agency, the Secretary of Energy, the Chief  
7 of the National Guard Bureau, the Assistant Secretary of  
8 the Office of Nuclear Energy of the Department of En-  
9 ergy, the Under Secretary of Defense for Research and  
10 Engineering, the Chairman of the Nuclear Regulatory  
11 Commission, and the Deputy Assistant Secretary for the  
12 Office of Reactor Fleet and Advanced Reactor Deployment  
13 of the Department of Energy, develop a national strategy  
14 to utilize microreactors to assist with natural disaster re-  
15 sponse efforts.

16 (b) SUBMISSION TO CONGRESS.—Not later than 1  
17 year after the date of enactment of this Act, and every  
18 2 years thereafter, the President shall submit to the ap-  
19 propriate congressional committees a comprehensive na-  
20 tional strategy developed under subsection (a).

21 (c) CONTENTS OF NATIONAL STRATEGY.—A national  
22 strategy developed under subsection (a) shall include the  
23 following:

24 (1) EVALUATION OF EXISTING DIESEL DEPLOY-  
25 MENT EFFORTS.—An assessment of the effectiveness

1 of utilizing diesel generators to assist with natural  
2 disaster response efforts, which such assessment  
3 shall include—

4 (A) information on the current use of die-  
5 sel generators to assist with natural disaster re-  
6 sponse efforts, including—

7 (i) the prevalence of deploying diesel  
8 generators around the United States as the  
9 sole power source to assist with natural  
10 disaster response efforts;

11 (ii) the average number of diesel gen-  
12 erators deployed in natural disaster re-  
13 sponse efforts based on the type of natural  
14 disaster, the severity of the natural dis-  
15 aster, and the location of the natural dis-  
16 aster;

17 (iii) where Federal, State, and local  
18 governments store diesel generators;

19 (iv) how diesel generators are trans-  
20 ported to areas affected by a natural dis-  
21 aster;

22 (v) any logistical concerns with refuel-  
23 ing diesel generators over an extended pe-  
24 riod of time;

1 (vi) the potential to utilize accessory  
2 equipment that is traditionally connected  
3 to diesel generators to help provide elec-  
4 tricity to the area in need; and

5 (vii) any other information that is  
6 necessary to understand the role of diesel  
7 generators used to assist with natural dis-  
8 aster response efforts;

9 (B) how the effect on the environment of  
10 utilizing diesel generators to assist with natural  
11 disaster response efforts compares to the esti-  
12 mated effect on the environment of utilizing  
13 microreactors to assist with the same natural  
14 disaster response efforts; and

15 (C) the concerns to public safety when de-  
16 ploying diesel generators in natural disaster re-  
17 sponse efforts.

18 (2) GOALS, OBJECTIVES, AND PRIORITIES.—A  
19 comprehensive, research-based, and long-term dis-  
20 cussion of goals, objectives, and priorities for uti-  
21 lizing microreactors instead of diesel generators to  
22 assist with natural disaster response efforts.

23 (3) DEPARTMENT OF DEFENSE ANALYSIS.—An  
24 analysis of—

1 (A) how the efforts of the Department of  
2 Defense to develop microreactor technology for  
3 operational uses could be used to inform the de-  
4 velopment of microreactors to assist with nat-  
5 ural disaster response efforts, including any  
6 recommendations and additional direction that  
7 may be necessary for such expedited deploy-  
8 ment;

9 (B) how the Department of Defense can  
10 most effectively translate and implement the  
11 lessons learned from its operations in the field  
12 to assist with natural disaster response efforts,  
13 including how operations in the field related to  
14 microreactors can be used to answer broad  
15 questions for the nuclear industry and for fu-  
16 ture issues relating to fuel reliability, energy  
17 supply chain issues, reducing diesel convoy cau-  
18 salities, and supporting other global humani-  
19 tarian needs; and

20 (C) whether a demonstration program for  
21 microreactors is needed prior to deploying  
22 microreactors for natural disaster response ef-  
23 forts, based on the analysis provided by sub-  
24 paragraphs (A) and (B).



1           (4) RECOMMENDATIONS FOR THE NUCLEAR  
2 REGULATORY COMMISSION.—Recommendations on  
3 how the Nuclear Regulatory Commission may expedite—  
4

5           (A) the approval of designs for microreactors;  
6 and

7           (B) issuing licenses for the utilization,  
8 transportation, and operation of microreactors  
9 in rapid deployment scenarios, such as natural  
10 disaster response efforts.

11          (5) UTILIZING FEASIBILITY STUDIES.—An  
12 analysis of available academic literature and studies,  
13 including site feasibility studies, to identify high risk  
14 areas that are prone to natural disasters that should  
15 be prioritized during emergency planning.

16          (6) STRATEGIC CONSIDERATIONS WHEN DE-  
17 PLOYING MICROREACTORS.—An assessment of various  
18 strategic considerations to improve the efficiency,  
19 timeliness, and cost-effectiveness of deploying  
20 microreactors to assist with natural disaster response  
21 efforts, including—

22           (A) whether the Department of Defense,  
23 the Federal Emergency Management Agency,  
24 or any other government entity should build,  
25 own, or operate microreactors that are used to

1 assist with natural disaster response efforts, in-  
2 cluding whether it would be viable to lease  
3 microreactors from private industry and wheth-  
4 er it would be viable to facilitate public-private  
5 partnerships to find cost effective options to  
6 utilize microreactors for natural disaster re-  
7 sponse efforts;

8 (B) the recommended number of individ-  
9 uals charged with the usage, maintenance, and  
10 upkeep of the microreactors, including the rec-  
11 ommended qualifications, training requirements,  
12 availability requirements, and oversight respon-  
13 sibility of such individuals;

14 (C) the number of microreactors needed,  
15 initially and in the long-term, to effectively re-  
16 spond to a natural disaster based on past nat-  
17 ural disaster trends and the specific geographic  
18 location of the area;

19 (D) where microreactors used to assist  
20 with natural disaster response efforts would be  
21 stored, including information on—

22 (i) how different microreactor storage  
23 locations may affect swift and economically  
24 feasible natural disaster response efforts;

1 (ii) the feasibility of utilizing already-  
2 built facilities instead of constructing new  
3 microreactor storage facilities;

4 (iii) the cost of constructing new  
5 microreactor storage facilities;

6 (iv) how to properly store the micro-  
7 reactor when not being utilized for natural  
8 disaster response efforts; and

9 (v) potential storage locations, such  
10 as—

11 (I) the Strategic Alliance for  
12 FLEX Emergency Response locations  
13 in Memphis, Tennessee and Phoenix,  
14 Arizona; and

15 (II) Department of Defense  
16 bases;

17 (E) how to maintain a microreactor and  
18 replace, store, and dispose of fuel used by a  
19 microreactor, including whether public-private  
20 partnerships may be used to assist with such  
21 maintenance, replacement, storage, and dis-  
22 posal;

23 (F) when a diesel generator will suffice in  
24 the event of a natural disaster of limited pro-  
25 portions, in comparison to utilizing microreac-

1           tors to assist with natural disaster response ef-  
2           forts;

3           (G) which States and territories and pos-  
4           sessions of the United States that are prone to  
5           natural disasters, such as hurricanes, should be  
6           prioritized when initially selecting locations to  
7           deploy microreactors to assist with natural dis-  
8           aster response efforts;

9           (H) the methods, capabilities, and costs as-  
10          sociated with transporting microreactors to  
11          areas that were or may be impacted by natural  
12          disasters;

13          (I) any other strategic considerations that  
14          should be taken into account before deploying  
15          microreactors to assist with natural disaster re-  
16          sponse efforts;

17          (J) how to integrate microreactors into ex-  
18          isting electrical grids in emergency situations,  
19          including how grid connection points, microgrid  
20          limits, site load limits, existing infrastructure,  
21          and the standard process for grid interconnec-  
22          tions may impact the integration of microreac-  
23          tors into existing electrical grid;

24          (K) whether microreactors will be suscep-  
25          tible to cyberattacks, including whether autono-

1 mous control will impact the microreactor's  
2 cyberattack susceptibility and what systems or  
3 microreactor designs would be ideal for com-  
4 bating such cyberattacks during a natural dis-  
5 aster response effort; and

6 (L) how other uses of microreactors, such  
7 as utilizing microreactors for various mining ef-  
8 forts, could impact the other considerations in  
9 this subsection.

10 (7) DEPLOYMENT CHALLENGES AND BAR-  
11 RIERS.—An assessment of—

12 (A) the challenges and barriers to deploy-  
13 ing microreactors to assist with natural disaster  
14 response efforts; and

15 (B) solutions to address each such chal-  
16 lenge and barrier.

17 (8) REVIEW OF AND RECOMMENDATIONS FOR  
18 LEGISLATION.—

19 (A) REVIEW.—A review of existing law  
20 that can be used to ease the burden of utilizing  
21 microreactors to assist with natural disaster re-  
22 sponse efforts, including the Robert T. Stafford  
23 Disaster Relief and Emergency Assistance Act  
24 (42 U.S.C. 5121 et seq.), the Energy Policy Act  
25 of 2005 (42 U.S.C. 15801 et seq.), the Atomic

1 Energy Act of 1954 (42 U.S.C. 2011 et seq.),  
2 the Nuclear Energy Innovation and Moderniza-  
3 tion Act (42 U.S.C. 2215 note), and any other  
4 relevant law.

5 (B) RECOMMENDATIONS.—Recommendations  
6 for legislation to—

7 (i) assist with—

8 (I) deploying microreactors to as-  
9 sist with natural disaster response ef-  
10 forts;

11 (II) the maintenance and upkeep  
12 of such microreactors; and

13 (III) the initial and long-term  
14 storage of such microreactors; and

15 (ii) pay for the activities described in  
16 subclauses (I) through (III) of clause (i).

17 (9) PARTNERSHIPS TO ENHANCE NATURAL DIS-  
18 ASTER RESPONSE EFFORTS.—An assessment  
19 about—

20 (A) the current status of any collaboration  
21 between the National Guard, Federal Emer-  
22 gency Management Agency, and the Army  
23 Corps of Engineers during natural disaster re-  
24 sponse efforts;

1 (B) the specific roles of each entity speci-  
2 fied in subparagraph (A) (disaggregated, in the  
3 case of the National Guard, by State and by  
4 military department) during a natural disaster  
5 response effort, and their respective roles when  
6 participating in natural disaster response ef-  
7 forts;

8 (C) the current emergency responsibilities  
9 of the Department of Energy and the Nuclear  
10 Regulatory Commission that relate to deploying  
11 microreactors during natural disaster response  
12 efforts;

13 (D) the potential opportunity to set up an  
14 annual listening group session or consortium to  
15 provide all the necessary information needed to  
16 deploy microreactors to assist with natural dis-  
17 aster response efforts and to ensure a smooth  
18 transition from the use of diesel generators to  
19 the use of microreactors to assist with natural  
20 disaster response efforts;

21 (E) how the Emergency Management As-  
22 sistance Compact, consented to by Congress in  
23 the joint resolution entitled “Joint resolution  
24 granting the consent of Congress to the Emer-  
25 gency Management Assistance Compact” (Pub-

1           lic Law 104–321), can be utilized to allow  
2           States to allocate their unused microreactors to  
3           other States that are in need of microreactors  
4           to assist with natural disaster response efforts;  
5           and

6                   (F) how to improve the collaboration be-  
7           tween Federal, State, and local government en-  
8           tities and private entities when deploying micro-  
9           reactors to assist with natural disaster response  
10          efforts.

11          (10) UTILIZING MICROREACTORS TO CHARGE  
12          ELECTRIC VEHICLES.—Recommendations on how to  
13          utilize microreactors as charging stations for electric  
14          vehicles in the event of a mass evacuation resulting  
15          from a natural disaster, including recommendations  
16          on—

17                   (A) how to deploy microreactors to charge  
18          electric vehicles before an evacuation;

19                   (B) the primary transportation corridors  
20          that would be used for such a mass evacuation;

21                   (C) how many microreactors would be  
22          needed to charge electric vehicles during such a  
23          mass evacuation, based on the size and popu-  
24          lation of the State in which the mass evacuation  
25          occurs;



1 (D) the best placement of microreactors  
2 throughout the primary transportation corridors  
3 to ensure a smooth electric vehicle charging  
4 process and subsequent evacuation;

5 (E) any potential public-private partner-  
6 ships that would be useful in utilizing micro-  
7 reactors to charge electric vehicles during a  
8 mass evacuation, including an estimate of the  
9 costs that would be associated with establishing  
10 these partnerships;

11 (F) how to—

12 (i) transport microreactors to mass  
13 evacuation locations along primary trans-  
14 portation corridors for purposes of charg-  
15 ing electric vehicles; and

16 (ii) pay for such transportation; and

17 (G) any other topic related to subpara-  
18 graphs (A) through (F).

19 (11) DEPLOYING MICROREACTORS TO UNITED  
20 STATES TERRITORIES AND POSSESSIONS.—Rec-  
21 ommendations on deploying microreactors to terri-  
22 tories and possessions of the United States to assist  
23 with natural disaster response efforts.

24 (12) USING MILITARY EQUIPMENT WITH NU-  
25 CLEAR CAPABILITIES.—Recommendations on how to,

1 in the event of a natural disaster and when the de-  
2 ployment of a microreactor is not timely or ideal for  
3 the circumstance, deploy military equipment of the  
4 United States with nuclear capabilities, such as nu-  
5 clear aircraft carriers and nuclear submarines, to  
6 provide temporary electricity to an area severely im-  
7 pacted by a natural disaster.

8 (13) BUDGET PRIORITIES.—A multiyear budget  
9 plan that identifies the necessary resources to suc-  
10 cessfully carry out the recommendations and imple-  
11 ment any lessons learned from the assessments and  
12 other analysis under this subsection.

13 (14) TECHNOLOGY ENHANCEMENTS.—An anal-  
14 ysis of current and developing ways to leverage exist-  
15 ing and innovative technology to improve the effec-  
16 tiveness of efforts to deploy microreactors to assist  
17 with natural disaster response efforts.

18 (15) USING INNOVATIVE TOOLS TO PREDICT  
19 NATURAL DISASTERS.—A description of how to uti-  
20 lize innovative technology, such as artificial intel-  
21 ligence and predictive meteorological tools, to pre-  
22 pare for the utilization of microreactors before a  
23 natural disaster.

24 **SEC. 4. DEFINITIONS.**

25 In this Act—

1           (1) APPROPRIATE CONGRESSIONAL COMMIT-  
2           TEES.—The term “appropriate congressional com-  
3           mittees” means—

4                   (A) the Committee on Energy and Com-  
5                   merce, the Committee on Armed Services, the  
6                   Committee on Oversight and Reform, and the  
7                   Committee on Science, Space, and Technology  
8                   of the House of Representatives; and

9                   (B) the Committee on Energy and Natural  
10                  Resources, the Committee on Armed Services,  
11                  the Committee on Environment and Public  
12                  Works, and the Committee on Commerce,  
13                  Science, and Transportation of the Senate.

14           (2) LOCAL GOVERNMENT.—The term “local  
15           government” has the meaning given such term in  
16           section 102 of the Robert T. Stafford Disaster Relief  
17           and Emergency Assistance Act (42 U.S.C. 5122).

18           (3) MICROREACTOR.—The term “microreactor”  
19           means a nuclear reactor, including a portable nu-  
20           clear reactor, that has an electricity generating ca-  
21           pacity of not more than 20 megawatts of thermal  
22           energy.

23           (4) NATURAL DISASTER.—The term “natural  
24           disaster” has the meaning given the term “Major  
25           disaster” in section 102 of the Robert T. Stafford

1 Disaster Relief and Emergency Assistance Act (42  
2 U.S.C. 5122), except that the term “natural dis-  
3 aster” does not include a wildfire.

4 (5) NATURAL DISASTER RESPONSE EFFORT.—  
5 The term “natural disaster response effort” means  
6 a circumstance in which a State or local government  
7 requests assistance under the Robert T. Stafford  
8 Disaster Relief and Emergency Assistance Act (42  
9 U.S.C. 5121 et seq.), including assistance to address  
10 the loss of primary electrical capacity as a result of  
11 a natural disaster.

12 (6) STATE.—The term “State” means a State  
13 of the United States and the District of Columbia.

○