

# Calendar No. 137

112TH CONGRESS  
1ST SESSION

# S. 512

[Report No. 112-57]

To amend the Energy Policy Act of 2005 to require the Secretary of Energy to carry out programs to develop and demonstrate 2 small modular nuclear reactor designs, and for other purposes.

---

## IN THE SENATE OF THE UNITED STATES

MARCH 8, 2011

Mr. BINGAMAN (for himself, Ms. MURKOWSKI, Mr. UDALL of Colorado, Mr. PRYOR, Ms. LANDRIEU, Mr. CRAPO, Mr. RISCH, and Mr. BLUNT) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

AUGUST 30 (legislative day, AUGUST 2), 2011

Reported under authority of the order of the Senate of August 2, 2011, by Mr. BINGAMAN, with an amendment and an amendment to the title

[Strike out all after the enacting clause and insert the part printed in *italie*]

---

## A BILL

To amend the Energy Policy Act of 2005 to require the Secretary of Energy to carry out programs to develop and demonstrate 2 small modular nuclear reactor designs, 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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Nuclear Power 2021  
3 Act”.

4 **SEC. 2. NUCLEAR POWER 2021 INITIATIVE.**

5 Section 952 of the Energy Policy Act of 2005 (42  
6 U.S.C. 16272) is amended by adding at the end the fol-  
7 lowing:

8 “(f) **NUCLEAR POWER 2021 INITIATIVE.**—

9 “(1) **DEFINITIONS.**—In this subsection:

10 “(A) **COMBINED LICENSE.**—The term  
11 ‘combined license’ has the meaning given the  
12 term in section 52.1 of title 10, Code of Federal  
13 Regulations (or a successor regulation).

14 “(B) **DESIGN CERTIFICATION.**—The term  
15 ‘design certification’ has the meaning given the  
16 term in section 52.1 of title 10, Code of Federal  
17 Regulations (or a successor regulation).

18 “(C) **SMALL MODULAR REACTOR.**—The  
19 term ‘small modular reactor’ means a nuclear  
20 reactor—

21 “(i) with a rated capacity of less than  
22 300 electrical megawatts; and

23 “(ii) that can be constructed and op-  
24 erated in combination with similar reactors  
25 at a single site.

1           “(2) DUTY OF SECRETARY.—The Secretary  
2 shall carry out, through cooperative agreements with  
3 private sector partners—

4           “(A) a program—

5           “(i) to develop a standard design for  
6 each of 2 small modular reactors, at least  
7 1 of which has a rated capacity of not  
8 more than 50 electrical megawatts; and

9           “(ii) to obtain a design certification  
10 from the Nuclear Regulatory Commission  
11 for each of the 2 standard designs by Jan-  
12 uary 1, 2018; and

13           “(B) a program to demonstrate the licens-  
14 ing of small modular reactors by—

15           “(i) developing applications for a com-  
16 bined license for each of the designs cer-  
17 tified pursuant to subparagraph (A); and

18           “(ii) obtaining a combined license  
19 from the Nuclear Regulatory Commission  
20 for each of the designs by January 1,  
21 2021.

22           “(3) MERIT REVIEW OF PROPOSALS.—The Sec-  
23 retary shall select proposals for cooperative agree-  
24 ments under this subsection—

1           “(A) on the basis of an impartial review of  
2           the scientific and technical merit of the pro-  
3           posals; and

4           “(B) through the use of competitive proce-  
5           dures.

6           “(4) TECHNICAL CONSIDERATIONS.—In evalu-  
7           ating proposals, the Secretary shall take into ac-  
8           count the efficiency, cost, safety, and proliferation  
9           resistance of competing reactor designs.

10          “(5) COST-SHARE REQUIREMENTS.—

11           “(A) DESIGN DEVELOPMENT.—Notwith-  
12           standing section 988, the Secretary shall re-  
13           quire that not less than 50 percent of the cost  
14           of the development of each small modular reac-  
15           tor design under paragraph (2)(A) be provided  
16           by a non-Federal source.

17           “(B) LICENSING DEMONSTRATION.—Not-  
18           withstanding section 988, the Secretary shall  
19           require that not less than 75 percent of the cost  
20           of the licensing demonstration of each small  
21           modular reactor design under paragraph (2)(B)  
22           be provided by a non-Federal source.

23           “(C) CALCULATION OF AMOUNT.—Non-  
24           Federal contributions under this subsection

1           shall be calculated in accordance with section  
2           ~~988(d).~~”.

3 **SECTION 1. SHORT TITLE.**

4           *This Act may be cited as the “Nuclear Power 2021*  
5 *Act”.*

6 **SEC. 2. NUCLEAR POWER 2021 INITIATIVE.**

7           *Section 952 of the Energy Policy Act of 2005 (42*  
8 *U.S.C. 16272) is amended by striking subsection (c) and*  
9 *inserting the following:*

10           “(c) *NUCLEAR POWER 2021 INITIATIVE.*—

11                   “(1) *DEFINITIONS.*—*In this subsection:*

12                           “(A) *COMBINED LICENSE.*—*The term ‘com-*  
13 *combined license’ has the meaning given the term in*  
14 *section 52.1 of title 10, Code of Federal Regula-*  
15 *tions (or a successor regulation).*

16                           “(B) *DESIGN CERTIFICATION.*—*The term*  
17 *‘design certification’ has the meaning given the*  
18 *term in section 52.1 of title 10, Code of Federal*  
19 *Regulations (or a successor regulation).*

20                           “(C) *EARLY SITE PERMIT.*—*The term ‘early*  
21 *site permit’ has the meaning given the term in*  
22 *section 52.1 of title 10, Code of Federal Regula-*  
23 *tions (or a successor regulation).*

1           “(D) *SMALL MODULAR REACTOR.*—*The*  
2           *term ‘small modular reactor’ means a nuclear*  
3           *reactor—*

4                     “(i) *with a rated capacity of less than*  
5                     *300 electrical megawatts; and*

6                     “(ii) *that can be constructed and oper-*  
7                     *ated in combination with similar reactors*  
8                     *at a single site.*

9           “(2) *DUTY OF SECRETARY.*—*The Secretary shall*  
10           *carry out, through cooperative agreements with pri-*  
11           *vate sector partners—*

12                   “(A) *a program—*

13                             “(i) *to develop a standard design for*  
14                             *not less than 2 small modular reactors, at*  
15                             *least 1 of which has a rated capacity of not*  
16                             *more than 50 electrical megawatts; and*

17                             “(ii) *to obtain a design certification*  
18                             *from the Nuclear Regulatory Commission*  
19                             *for each of the standard designs by January*  
20                             *1, 2018;*

21                   “(B) *a program to demonstrate the licens-*  
22                   *ing of small modular reactors by—*

23                             “(i) *developing applications for a com-*  
24                             *bined license for each of the designs certified*  
25                             *pursuant to subparagraph (A); and*

1                   “(ii) obtaining a combined license  
2                   from the Nuclear Regulatory Commission  
3                   for each of the designs by January 1, 2021;  
4                   and

5                   “(C) a program to obtain an early site per-  
6                   mit for 1 or more small modular reactors.

7                   “(3) *MERIT REVIEW OF PROPOSALS.*—The Sec-  
8                   retary shall select proposals for cooperative agree-  
9                   ments under this subsection—

10                   “(A) on the basis of an impartial review of  
11                   the scientific and technical merit of the pro-  
12                   posals; and

13                   “(B) through the use of competitive proce-  
14                   dures.

15                   “(4) *TECHNICAL CONSIDERATIONS.*—In evalu-  
16                   ating proposals, the Secretary shall take into account  
17                   the efficiency, cost, safety, and proliferation resistance  
18                   of competing reactor designs.

19                   “(5) *COST-SHARE REQUIREMENTS.*—

20                   “(A) *DESIGN DEVELOPMENT.*—Notwith-  
21                   standing section 988, the Secretary shall require  
22                   that not less than 50 percent of the cost of the  
23                   development of each small modular reactor de-  
24                   sign under paragraph (2)(A), and each early site

1            *permit under paragraph (2)(C), be provided by*  
2            *a non-Federal source.*

3            “(B) *LICENSING DEMONSTRATION.—Not-*  
4            *withstanding section 988, the Secretary shall re-*  
5            *quire that not less than 75 percent of the cost of*  
6            *the licensing demonstration of each small mod-*  
7            *ular reactor design under paragraph (2)(B) be*  
8            *provided by a non-Federal source.*

9            “(C) *CALCULATION OF AMOUNT.—Non-Fed-*  
10           *eral contributions under this subsection shall be*  
11           *calculated in accordance with section 988(d).”.*

Amend the title so as to read as follows: “To amend the Energy Policy Act of 2005 to require the Secretary of Energy to carry out programs to develop and demonstrate small modular nuclear reactor designs, and for other purposes.”





Calendar No. 137

112<sup>TH</sup> CONGRESS  
1<sup>ST</sup> Session

**S. 512**

[Report No. 112-57]

---

---

**A BILL**

To amend the Energy Policy Act of 2005 to require the Secretary of Energy to carry out programs to develop and demonstrate 2 small modular nuclear reactor designs, and for other purposes.

---

---

August 30 (legislative day, August 2), 2011

Reported with an amendment and an amendment to the title