

118TH CONGRESS
1ST SESSION

S. 1548

To require the Secretary of Energy to establish a program to encourage deployment of electric school buses and vehicle-to-grid technologies and applications, and for other purposes.

IN THE SENATE OF THE UNITED STATES

MAY 10, 2023

Mr. HICKENLOOPER (for himself, Mr. BENNET, Ms. SMITH, Mr. KING, Mr. HEINRICH, and Ms. KLOBUCHAR) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

A BILL

To require the Secretary of Energy to establish a program to encourage deployment of electric school buses and vehicle-to-grid technologies and applications, 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 “Bus Integration Dedi-
5 cated to Improving Resilience, Eliminating Congestion,
6 and Triggering Innovation Over Numerous Applications
7 and Localities Act” or the “BIDIRECTIONAL Act”.

1 **SEC. 2. PROGRAM TO ENCOURAGE DEPLOYMENT OF ELEC-**
2 **TRIC SCHOOL BUSES AND VEHICLE-TO-EV-**
3 **ERYTHING TECHNOLOGIES AND APPLICA-**
4 **TIONS.**

5 (a) DEFINITIONS.—In this section:

6 (1) ELECTRIC SCHOOL BUS.—The term “elec-
7 tric school bus” means a school bus that is pro-
8 pelled—

9 (A) to a significant extent, as determined
10 by the Secretary, by an electric motor that—

11 (i) draws electricity from a battery;

12 and

13 (ii) is capable of being recharged from
14 an external source of electricity; and

15 (B) by any necessary components or equip-
16 ment required to facilitate electric-powered
17 school bus operations.

18 (2) ELIGIBLE ENTITY.—The term “eligible enti-
19 ty” means—

20 (A) any person (including any company or
21 other entity) or State, local, or Tribal entity
22 that sells electric energy, including—

23 (i) an electric utility, including—

24 (I) a local distribution company
25 or utility; and

26 (II) an electric cooperative;

- 1 (ii) a municipality; and
- 2 (iii) a retail marketer of electricity;
- 3 (B) a State public utilities commission;
- 4 (C) a third-party energy efficiency program
- 5 administrator;
- 6 (D) a school bus manufacturer;
- 7 (E) a public or private school district;
- 8 (F) a supplier of charging infrastructure;
- 9 (G) a developer, provider, owner, or oper-
- 10 ator of solar, wind, or other renewable or dis-
- 11 tributed energy resources;
- 12 (H) a third-party school bus fleet or charg-
- 13 ing operator;
- 14 (I) any other entity, including a partner-
- 15 ship, that the Secretary determines to be appro-
- 16 priate; and
- 17 (J) any partnership or consortium of enti-
- 18 ties described in any of subparagraphs (A)
- 19 through (I).

20 (3) INDIAN TRIBE.—The term “Indian Tribe”

21 has the meaning given the term in section 4 of the

22 Indian Self-Determination and Education Assistance

23 Act (25 U.S.C. 5304).

24 (4) NATIONAL LABORATORY.—The term “Na-

25 tional Laboratory” has the meaning given the term

1 in section 2 of the Energy Policy Act of 2005 (42
2 U.S.C. 15801).

3 (5) PROGRAM.—The term “Program” means
4 the program established under subsection (b)(1).

5 (6) PROJECT PARTNER.—The term “project
6 partner”, with respect to a project for which a grant
7 is sought or provided under the Program, means an
8 eligible entity that is a member of a partnership or
9 consortium described in paragraph (2)(J) with re-
10 spect to that project.

11 (7) REGIONAL TRANSMISSION ORGANIZATION.—
12 The term “Regional Transmission Organization”
13 has the meaning given the term in section 3 of the
14 Federal Power Act (16 U.S.C. 796).

15 (8) SECRETARY.—The term “Secretary” means
16 the Secretary of Energy.

17 (b) PROGRAM.—

18 (1) ESTABLISHMENT.—Not later than 1 year
19 after the date of enactment of this Act, the Sec-
20 retary shall establish a program to encourage the de-
21 ployment of vehicle-to-grid and vehicle-to-everything
22 technologies and applications, as described in para-
23 graph (2), including, at a minimum, a vehicle capa-
24 ble of discharging at least 10 kilowatts of power to
25 bidirectional electric vehicle supply equipment that

1 provides alternating current power to an electrical
2 circuit, by providing grants to eligible entities for
3 projects that include the use of not fewer than 1
4 electric school bus with bidirectional energy flow ca-
5 pabilities for an application described in that para-
6 graph.

7 (2) APPLICATION DESCRIBED.—An application
8 referred to in paragraph (1) is—

9 (A) a vehicle-to-grid application, such as—

10 (i) provision of a distribution-level
11 service or participation in a distribution-
12 level program;

13 (ii) provision of wholesale market
14 services, such as capacity, energy, and an-
15 cillary services;

16 (iii) provision of microgrid services; or

17 (iv) aggregations of vehicle-to-grid ap-
18 plications that provide distribution-level
19 service, wholesale market services, or
20 microgrid services;

21 (B) a vehicle-to-building application; or

22 (C) any other resilience or other applica-
23 tion, as determined to be appropriate by the
24 Secretary.

25 (3) PRIORITY AND DIVERSITY OF PROJECTS.—

1 (A) PRIORITY.—In providing grants under
2 the Program, the Secretary shall give priority
3 to projects that, in the determination of the
4 Secretary, are likely to be economically self-sus-
5 taining and replicable once established.

6 (B) REQUIREMENT.—The Secretary, to the
7 maximum extent practicable in accordance with
8 the priority required to be established under
9 subparagraph (A), shall provide grants under
10 the Program for projects across differing situa-
11 tions, including in a region that is experiencing
12 congestion, shortages, transmission system con-
13 straints, or distribution system constraints that
14 cause the cost of electricity to increase for con-
15 sumers.

16 (4) APPLYING FOR ASSISTANCE.—

17 (A) IN GENERAL.—An eligible entity desir-
18 ing a grant under the Program shall submit to
19 the Secretary an application at such time, in
20 such manner, and containing such information
21 as the Secretary may require, subject to this
22 paragraph.

23 (B) REQUIREMENTS.—

24 (i) IN GENERAL.—An application sub-
25 mitted under subparagraph (A) shall dem-

1 onstrate how the assistance requested
2 under the Program would help the 1 or
3 more eligible entities submitting the appli-
4 cation to participate in economically justifi-
5 able opportunities that recognize
6 bidirectional electric vehicle charging as a
7 relevant technology, including existing elec-
8 tric utility or Regional Transmission Orga-
9 nization tariffs, programs, initiatives, poli-
10 cies, arrangements, or other opportunities
11 that recognize bidirectional electric vehicle
12 charging as a relevant technology.

13 (ii) INTERCONNECTION RULES.—An
14 application submitted under subparagraph
15 (A) shall include a certification that any
16 project described in the application and
17 proposed to be carried out using a grant
18 provided under the Program will comply
19 with all applicable interconnection rules.

20 (5) USE OF FUNDS.—

21 (A) IN GENERAL.—Amounts provided to
22 an eligible entity pursuant to a grant under the
23 Program may be used for—

24 (i) acquiring and installing
25 bidirectional charging stations and inter-

1 connection upgrades necessary for
2 bidirectional energy flow;

3 (ii) retrofitting buildings, parking fa-
4 cilities, and school buses for bidirectional
5 charging;

6 (iii) acquiring and installing any nec-
7 essary metering and telemetry equipment
8 or systems;

9 (iv) acquiring technical assistance
10 from the Department of Energy, National
11 Laboratories, or other parties with relevant
12 expertise for any participating project
13 partners; and

14 (v) any application directly related to
15 establishing, sustaining, and optimizing
16 bidirectional energy flow, as the Secretary
17 determines to be appropriate.

18 (B) REQUIREMENT.—Amounts provided to
19 an eligible entity pursuant to a grant under the
20 Program shall be used in a manner that cor-
21 responds specifically to the incremental addi-
22 tional cost of implementing 1 or more applica-
23 tions described in paragraph (2) as compared to
24 the costs associated with the acquisition, dem-

1 onstration, or use of a typical electric school
2 bus, as determined by the Secretary.

3 (C) COMMUNITY OUTREACH.—

4 (i) IN GENERAL.—Subject to clause
5 (ii), an eligible entity receiving a grant
6 under the Program shall use not less than
7 1 percent of the amounts received for out-
8 reach that is directed at the communities
9 and bus users receiving or benefitting from
10 those amounts, for the purpose of increas-
11 ing awareness of the benefits of grid-inte-
12 grated school buses and how grid-inte-
13 grated school buses will be used.

14 (ii) WAIVER.—The Secretary may
15 waive the requirement described in clause
16 (i) if the Secretary determines that the
17 outreach described in that clause is unnec-
18 essary or would be of minimal benefit to
19 the overall goal of sustained technological
20 deployment.

21 (6) MATCHING REQUIREMENT.—An eligible en-
22 tity receiving a grant under the Program shall en-
23 sure that amounts derived from non-Federal sources
24 are provided for the projects funded by the grant in

1 a total amount that is equal to, or greater than, the
2 amount of the grant.

3 (7) OUTREACH TO POTENTIALLY INTERESTED
4 ENTITIES.—Of the total amount appropriated to
5 carry out the Program, the Secretary shall use not
6 less than 1 percent for outreach to potentially inter-
7 ested eligible entities, including eligible entities par-
8 ticipating in, or with a demonstrated interest in, the
9 clean school bus program established under section
10 741 of the Energy Policy Act of 2005 (42 U.S.C.
11 16091).

12 (8) SCHOOL DISTRICT COMPENSATION.—An eli-
13 gible entity receiving a grant under the Program
14 shall demonstrate to the Secretary that any school
15 district participating in the applicable project is ap-
16 propriately compensated for that participation in a
17 manner approved by the Secretary, which may in-
18 clude—

19 (A) the provision of direct financial com-
20 pensation to the school district;

21 (B) the provision or acquisition of electric
22 school buses for the school district; or

23 (C) savings resulting from the implementa-
24 tion of an application described in paragraph
25 (2).

1 (9) ANNUAL SUBMISSION OF DATA.—An eligible
2 entity receiving a grant under the Program shall an-
3 nually submit to the Secretary data from vehicles,
4 chargers, and associated grid infrastructure nec-
5 essary to determine operational and economic im-
6 pacts, and additional data as determined to be nec-
7 essary by the Secretary.

8 (10) COMPATIBILITY WITH EPA CLEAN SCHOOL
9 BUS PROGRAM.—Notwithstanding any other provi-
10 sion of law, the Secretary may provide a grant under
11 the Program for applicable projects, programs, or
12 activities for which amounts are provided under the
13 clean school bus program established under section
14 741 of the Energy Policy Act of 2005 (42 U.S.C.
15 16091), and to eligible entities receiving amounts
16 under that program, subject to all applicable re-
17 quirements of this section.

18 (c) REPORT TO CONGRESS.—Not later than 1 year
19 after the date of enactment of this Act, the Secretary shall
20 submit to Congress a report summarizing any existing
21 pilot programs, including State-funded and locally funded
22 pilot programs, involving the use of school buses for the
23 applications described in subsection (b)(2), including—

1 (1) any best practices, challenges, lessons
2 learned, and promising future directions discernable
3 from those pilot programs and applications;

4 (2) any challenges, opportunities, and strategies
5 unique to the implementation of those applications
6 in rural areas;

7 (3) any challenges to the commercial viability of
8 those applications posed by State, Federal, or other
9 regulatory barriers; and

10 (4)(A) any challenges to the economic viability
11 of projects involving those applications; and

12 (B) any opportunities and strategies to make
13 projects involving those applications economically
14 viable.

15 (d) **AUTHORIZATION OF APPROPRIATIONS.**—There is
16 authorized to be appropriated to the Secretary to carry
17 out this section \$500,000,000 for the period of fiscal years
18 2024 through 2028.

19 **SEC. 3. CONSIDERATION OF MEASURES TO PROMOTE VEHI-**
20 **CLE-TO-GRID INTEGRATION.**

21 (a) **IN GENERAL.**—Section 111(d) of the Public Util-
22 ity Regulatory Policies Act of 1978 (16 U.S.C. 2621(d))
23 is amended by adding at the end the following:

24 “(22) **VEHICLE-TO-GRID INTEGRATION.**—

1 “(A) IN GENERAL.—Each State shall con-
2 sider—

3 “(i) measures to promote vehicle-to-
4 grid integration, including—

5 “(I) the establishment of rates,
6 tariffs, measures, and standards that
7 enable electric vehicles and electric ve-
8 hicle charging infrastructure—

9 “(aa) to receive interconnec-
10 tion service as described in sub-
11 paragraph (B); and

12 “(bb) to export power from
13 the vehicle battery to the dis-
14 tribution system or the bulk
15 power system;

16 “(II) the establishment of rates,
17 tariffs, measures, and standards that
18 enable electric vehicle charging station
19 site hosts, charging station owners,
20 aggregators, owners of electric vehicle
21 fleets or individual fleet vehicles, or
22 drivers of private light-duty electric
23 vehicles to receive compensation for
24 electricity exported from the vehicle

1 battery to the distribution system or
2 the bulk power system; and

3 “(III) the establishment of rates,
4 tariffs, measures, and standards that
5 enable aggregation of electric vehicles
6 for the purpose of participating in ac-
7 tive load management programs, in-
8 cluding customer demand-response
9 programs and customer energy stor-
10 age programs, and providing ancillary
11 services that recognize the value that
12 flexible electric vehicle charging can
13 provide to the distribution system or
14 the bulk power system; and

15 “(ii) the impacts of the rates, tariffs,
16 measures, and standards described in sub-
17 clauses (I) through (III) of clause (i), or
18 similar rates, tariffs, measures, and stand-
19 ards, on all classes and types of vehicles,
20 including, at a minimum, light-, medium-,
21 and heavy-duty vehicles.

22 “(B) INTERCONNECTION SERVICE DE-
23 SCRIBED.—The interconnection service referred
24 to in subparagraph (A)(i)(I)(aa) is interconnec-
25 tion service that is offered based on—

1 “(i) the standards described in para-
2 graph (15) (or successor standards); or

3 “(ii) as necessary and reasonable,
4 standards that—

5 “(I) are defined in electric vehi-
6 cle-to-grid communications interfaces,
7 protocols, or standards;

8 “(II) are widely adopted; and

9 “(III) to ensure the reliability
10 and safety of the electric system,
11 are—

12 “(aa) consistent (or adjusted
13 to be consistent) with the stand-
14 ards described in clause (i); and

15 “(bb) integrated, able to be
16 integrated, or adjusted in a man-
17 ner that facilitates integration
18 with the standards described in
19 that clause.”.

20 (b) COMPLIANCE.—

21 (1) TIME LIMITATION.—Section 112(b) of the
22 Public Utility Regulatory Policies Act of 1978 (16
23 U.S.C. 2622(b)) is amended by adding at the end
24 the following:

1 “(9)(A) Not later than 1 year after the date of
2 enactment of this paragraph, each State regulatory
3 authority (with respect to each electric utility for
4 which the State has ratemaking authority) and each
5 nonregulated electric utility shall commence consid-
6 eration under section 111, or set a hearing date for
7 consideration, with respect to the standard estab-
8 lished by paragraph (22) of section 111(d).

9 “(B) Not later than 2 years after the date of
10 enactment of this paragraph, each State regulatory
11 authority (with respect to each electric utility for
12 which the State has ratemaking authority), and each
13 nonregulated electric utility shall complete the con-
14 sideration and make the determination under section
15 111 with respect to the standard established by
16 paragraph (22) of section 111(d).”.

17 (2) FAILURE TO COMPLY.—Section 112(c) of
18 the Public Utility Regulatory Policies Act of 1978
19 (16 U.S.C. 2622(c)) is amended by adding at the
20 end the following: “In the case of the standard es-
21 tablished by paragraph (22) of section 111(d), the
22 reference contained in this subsection to the date of
23 enactment of this Act shall be deemed to be a ref-
24 erence to the date of enactment of that paragraph
25 (22).”.

1 (3) PRIOR STATE ACTIONS.—

2 (A) IN GENERAL.—Section 112 of the
3 Public Utility Regulatory Policies Act of 1978
4 (16 U.S.C. 2622) is amended—

5 (i) in subsection (d)—

6 (I) by redesignating paragraphs
7 (1) through (3) as subparagraphs (A)
8 through (C), respectively, and indent-
9 ing appropriately; and

10 (II) in the matter preceding sub-
11 paragraph (A) (as so redesignated),
12 by striking “Subsections” and insert-
13 ing the following:

14 “(1) IN GENERAL.—Subsections”;

15 (ii) in subsection (e)—

16 (I) by redesignating paragraphs
17 (1) through (3) as subparagraphs (A)
18 through (C), respectively, and indent-
19 ing appropriately; and

20 (II) by striking the subsection
21 designation and heading and all that
22 follows through “Subsections” in the
23 matter preceding subparagraph (A)
24 (as so redesignated) and inserting the
25 following:

1 “(2) TIME-BASED METERING AND COMMUNICA-
2 TIONS.—Subsections”;

3 (iii) in subsection (f)—

4 (I) by redesignating paragraphs
5 (1) through (3) as subparagraphs (A)
6 through (C), respectively, and indent-
7 ing appropriately; and

8 (II) by striking the subsection
9 designation and heading and all that
10 follows through “Subsections” in the
11 matter preceding subparagraph (A)
12 (as so redesignated) and inserting the
13 following:

14 “(3) INTERCONNECTION.—Subsections”;

15 (iv) in subsection (g)—

16 (I) by redesignating paragraphs
17 (1) through (3) as subparagraphs (A)
18 through (C), respectively, and indent-
19 ing appropriately; and

20 (II) by striking the subsection
21 designation and heading and all that
22 follows through “Subsections” in the
23 matter preceding subparagraph (A)
24 (as so redesignated) and inserting the
25 following:

1 “(4) DEMAND-RESPONSE PRACTICES.—Sub-
2 sections”;

3 (v) in subsection (h)—

4 (I) by redesignating paragraphs
5 (1) through (3) as subparagraphs (A)
6 through (C), respectively, and indent-
7 ing appropriately; and

8 (II) by striking the subsection
9 designation and heading and all that
10 follows through “Subsections” in the
11 matter preceding subparagraph (A)
12 (as so redesignated) and inserting the
13 following:

14 “(5) ELECTRIC VEHICLE CHARGING PRO-
15 GRAMS.—Subsections”; and

16 (vi) in subsection (d) (as so amended)
17 by adding at the end the following:

18 “(6) VEHICLE-TO-GRID INTEGRATION.—Sub-
19 sections (b) and (c) shall not apply to the standard
20 established by paragraph (22) of section 111(d) in
21 the case of any electric utility in a State if, before
22 the date of enactment of this subsection—

23 “(A) the State has implemented for the
24 electric utility the standard (or a comparable
25 standard);

1 “(B) the State regulatory authority for the
2 State or the relevant nonregulated electric util-
3 ity has conducted a proceeding to consider im-
4 plementation of the standard (or a comparable
5 standard) for the electric utility; or

6 “(C) the State legislature has voted on the
7 implementation of the standard (or a com-
8 parable standard) for the electric utility during
9 the 3-year period ending on that date of enact-
10 ment.”.

11 (B) CROSS-REFERENCE.—Section 124 of
12 the Public Utility Regulatory Policies Act of
13 1978 (16 U.S.C. 2634) is amended by adding
14 at the end the following: “In the case of the
15 standard established by paragraph (22) of sec-
16 tion 111(d), the reference contained in this sec-
17 tion to the date of enactment of this Act shall
18 be deemed to be a reference to the date of en-
19 actment of that paragraph (22).”.

○