search, development, and demonstration opportunities, challenges, and standards needed for integrating electric vehicles onto the electric grid.

(1) Report requirements

The report shall include—

(A) an evaluation of the use of electric vehicles to maintain the reliability of the electric grid, including—

(i) the use of electric vehicles for demand response, load shaping, emergency power, and frequency regulation; and

(ii) the potential for the reuse of spent electric vehicle batteries for stationary grid storage;

(B) the impact of grid integration on electric vehicles, including—

(i) the impact of bi-directional electricity flow on battery degradation; and

(ii) the implications of the use of electric vehicles for grid services on original equipment manufacturer warranties;

(C) the impacts to the electric grid of increased penetration of electric vehicles, including—

(i) the distribution grid infrastructure needed to support an increase in charging capacity;

(ii) strategies for integrating electric vehicles onto the distribution grid while limiting infrastructure upgrades;

(iii) the changes in electricity demand over a 24-hour cycle due to electric vehicle charging behavior;

(iv) the load increases expected from electrifying the transportation sector;

(v) the potential for customer incentives and other managed charging stations strategies to shift charging off-peak;

(vi) the technology needed to achieve bidirectional power flow on the distribution grid; and

(vii) the implementation of smart charging techniques;

(D) research on the standards needed to integrate electric vehicles with the grid, including communications systems, protocols, and charging stations, in collaboration with the National Institute for Standards and Technology;

(E) the cybersecurity challenges and needs associated with electrifying the transportation sector; and

(F) an assessment of the feasibility of adopting technologies developed under the program established under subsection (a) at Department facilities.

(2) Recommendations

As part of the Vehicles-to-Grid Integration Assessment Report, the Secretary shall develop a 10-year roadmap to guide the research, development, and demonstration program to integrate electric vehicles onto the electric grid.

(3) Consultation

In developing this report, the Secretary shall consult with relevant stakeholders, including—

(A) electric vehicle manufacturers;

(B) electric utilities;

(C) public utility commissions;

(D) vehicle battery manufacturers;

(E) electric vehicle supply equipment manufacturers;

(F) charging infrastructure manufacturers;

(G) the National Laboratories; and

(H) other Federal agencies, as the Secretary determines appropriate.

(4) Updates

The Secretary shall update the report required under this section every 3 years for the duration of the program under section [1] (a) and shall submit the updated report to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Energy and Natural Resources of the Senate.

(c) Program implementation

In carrying out the research, development, demonstration, and commercial application aims of section,[2] the Secretary shall—

(1) implement the recommendations set forth in the report in subsection (b); and

(2) coordinate across all relevant program offices at the Department to achieve the goals established in this section, including the Office of Electricity.

(d) Testing capabilities

The Secretary shall coordinate with the National Laboratories to develop testing capabilities for the evaluation, rapid prototyping, and optimization of technologies enabling integration of electric vehicles onto the electric grid.

(Pub. L. 110–140, title I, § 137, as added Pub. L. 116–260, div. Z, title VIII, § 8004(c), Dec. 27, 2020, 134 Stat. 2584.)

SUBCHAPTER II—ENERGY SECURITY THROUGH INCREASED PRODUCTION OF BIOFUELS

PART A—RENEWABLE FUEL STANDARD

§ 17021. Biomass-based diesel and biodiesel labeling

(a) In general

Each retail diesel fuel pump shall be labeled in a manner that informs consumers of the percent of biomass-based diesel or biodiesel that is contained in the biomass-based diesel blend or biodiesel blend that is offered for sale, as determined by the Federal Trade Commission.

(b) Labeling requirements

Not later than 180 days after December 19, 2007, the Federal Trade Commission shall promulgate biodiesel labeling requirements as follows:

(1) Biomass-based diesel blends or biodiesel blends that contain less than or equal to 5 percent biomass-based diesel or biodiesel by volume and that meet ASTM D975 diesel specifications shall not require any additional labels.

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[1] So in original. Probably should be ''subsection''.

[2] So in original. Probably should be ''of this section,''.

(2) Biomass-based diesel blends or biodiesel blends that contain more than 5 percent biomass-based diesel or biodiesel by volume but not more than 20 percent by volume shall be labeled ''contains biomass-based diesel or biodiesel in quantities between 5 percent and 20 percent''.

(3) Biomass-based diesel or biodiesel blends that contain more than 20 percent biomass based or biodiesel by volume shall be labeled ''contains more than 20 percent biomass-based diesel or biodiesel''.

(c) Definitions

In this section:

(1) ASTM

The term ''ASTM'' means the American Society of Testing and Materials.

(2) Biomass-based diesel

The term ''biomass-based diesel'' means biodiesel as defined in section 13220(f) of this title.

(3) Biodiesel

The term ''biodiesel'' means the monoalkyl esters of long chain fatty acids derived from plant or animal matter that meet—

(A) the registration requirements for fuels and fuel additives under this section; and

(B) the requirements of ASTM standard D6751.

(4) Biomass-based diesel and biodiesel blends

The terms ''biomass-based diesel blend'' and ''biodiesel blend'' means a blend of ''biomass-based diesel'' or ''biodiesel'' fuel that is blended with petroleum-based diesel fuel.

(Pub. L. 110–140, title II, §205, Dec. 19, 2007, 121 Stat. 1529.)

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110–140, set out as a note under section 1824 of Title 2, The Congress.

§ 17022. Grants for production of advanced biofuels

(a) In general

The Secretary of Energy shall establish a grant program to encourage the production of advanced biofuels.

(b) Requirements and priority

In making grants under this section, the Secretary—

(1) shall make awards to the proposals for advanced biofuels with the greatest reduction in lifecycle greenhouse gas emissions compared to the comparable motor vehicle fuel lifecycle emissions during calendar year 2005; and

(2) shall not make an award to a project that does not achieve at least an 80 percent reduction in such lifecycle greenhouse gas emissions.

(c) Authorization of appropriations

There is authorized to be appropriated to carry out this section $500,000,000 for the period of fiscal years 2008 through 2015, except that the amount authorized to be appropriated to carry out this section not appropriated as of October 2, 2013, shall be reduced by $6,000,000.

(Pub. L. 110–140, title II, §207, Dec. 19, 2007, 121 Stat. 1531; Pub. L. 113–40, §10(f), Oct. 2, 2013, 127 Stat. 546.)

Editorial Notes

AMENDMENTS

2013—Subsec. (c). Pub. L. 113–40 inserted '', except that the amount authorized to be appropriated to carry out this section not appropriated as of October 2, 2013, shall be reduced by $6,000,000'' before period at end.

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110–140, set out as a note under section 1824 of Title 2, The Congress.

PART B—BIOFUELS RESEARCH AND DEVELOPMENT

§ 17031. Biodiesel

(a) Biodiesel study

Not later than 180 days after December 19, 2007, the Secretary, in consultation with the Administrator of the Environmental Protection Agency, shall submit to Congress a report on any research and development challenges inherent in increasing the proportion of diesel fuel sold in the United States that is biodiesel.

(b) Material for the establishment of standards

The Director of the National Institute of Standards and Technology, in consultation with the Secretary, shall make publicly available the physical property data and characterization of biodiesel and other biofuels as appropriate.

(Pub. L. 110–140, title II, §221, Dec. 19, 2007, 121 Stat. 1533.)

Statutory Notes and Related Subsidiaries

EFFECTIVE DATE

Section effective on the date that is 1 day after Dec. 19, 2007, see section 1601 of Pub. L. 110–140, set out as a note under section 1824 of Title 2, The Congress.

§ 17032. Grants for biofuel production research and development in certain States

(a) In general

The Secretary shall provide grants to eligible entities for research, development, demonstration, and commercial application of biofuel production technologies in States with low rates of ethanol production, including low rates of production of cellulosic biomass ethanol, as determined by the Secretary.

(b) Eligibility

To be eligible to receive a grant under this section, an entity shall—

(1)(A) be an institution of higher education (as defined in section 15801 of this title), including tribally controlled colleges or universities, located in a State described in subsection (a); or