"Energy Sector Innovation Credit Act of 2021"

Section-by-Section

Sec. 1. Short title. This section cites this Act as the "Energy Sector Innovation Credit Act of 2021."

Sec. 2. Findings. This section details findings in this Act.

Sec. 3. Investment Credit for Emerging Energy Technology.

This section establishes a new investment tax credit (ITC) for qualified emerging energy property, which includes: (1) qualified production facilities (as defined in Section 45U(d)), (2) carbon capture equipment (retrofits that meet the capture requirements in Section 45Q(d)(2) or direct air capture) and (3) energy storage technologies.

The applicable percentage for a qualified production facilities' ITC is:

- 40 percent if a technologies' market penetration level (MPL) is between zero and 0.75 percent of total domestic power electricity production (tier 1);
- 30 percent if MPL is between 0.75 and 1.5 percent of total domestic power electricity production (tier 2);
- 20 percent if MPL is between 1.5 and 2.25 percent of total domestic power electricity production (tier 3); and
- 10 percent if MPL is between 2.25 and 3.0 percent of total domestic power electricity production (tier 4).

For carbon capture equipment, the MPL is based on annual carbon emissions captured by such equipment divided by total U.S. greenhouse gas emissions (according to the most recent data provided by the Environmental Protection Agency). For energy storage technologies, the MPL is based on total nameplate capacity of the energy storage technology divided by total domestic electricity production nameplate capacity.

The Secretary of Energy, in consultation with the Secretary of the Treasury, will issue a report on the MPL and applicable tier for qualified production facilities (as defined in 45U(d)) and subcategories within qualifying carbon capture equipment and energy storage technologies. The subcategories for carbon capture equipment include:

- direct air capture, which must capture not less than 5,000 metric tons of qualified carbon oxide annually;
- carbon capture retrofits to existing electric generating facilitates;
- carbon capture retrofits to existing manufacturing or industrial facilities that produce ammonia, helium, or ethanol or process natural gas; and
- carbon capture retrofits to existing manufacturing or industrial facilities that are not defined in the previous bullet.

The subcategories for energy storage technologies include:

- lithium-ion based technologies;
- pumped hydropower technologies;
- short-duration storage technologies, as determined by the Secretary of Energy; and
- long-duration storage technologies, as determined by the Secretary of Energy.

The Secretary of Energy, in consultation with the Secretary of the Treasury, will determine annually the MPL and tier for each energy production technology (as defined in 45U(d)(2)(A)), subcategory of carbon capture equipment and subcategory of energy storage technology, as part of an annual report described in section 45U(b)(2)(D)(i).

A facilities' tier is determined when the facility begins construction (as defined in 45U(e)).

Technologies with a MPL of at least 3 percent are not eligible for the emerging energy technology credit. Once a technology has achieved a certain MPL, it cannot backslide to a lower tier standing.

Qualified production facilities do not include facilities claiming credits for electricity produced under section 45 or 45J, carbon capture facilities having claimed section 45Q, facilities having claimed tax credits under section 48, 48A, 48B, 48C, or 48D (as added by this bill) or 45V (as added by this bill).

Transfer of credit rules as outlined in subsection (d)(2) of section 48D shall apply for purposes of this section.

Sec. 4. Production Credit for Emerging Energy Technology.

The applicable percentage for a qualified production facilities' production tax credit (PTC) can be applied to either the:

- annual gross receipts from the sale of electricity generated at the qualified production facility; or
- 150 percent of the national average wholesale price of a kilowatt-hour of electricity multiplied by the number of kilowatt hours produced and sold.

The applicable percentage for a qualified production facilities' PTC is:

- 60 percent if the energy production technologies' (as defined in 45U(d)(2)(A)) MPL is between zero and 0.75 percent of total domestic power electricity production (tier 1);
- 45 percent if MPL is between 0.75 and 1.5 percent (tier 2);
- 30 percent if MPL is between 1.5 and 2.25 percent (tier 3); and
- 15 percent if MPL is between 2.25 and 3.0 percent (tier 4).

A qualified production facilities' MPL is based on the sum of all annual electricity production from such energy production technology divided by total domestic power sector electricity production.

Eligible energy production technologies include:

- Traditional nuclear fission;
- Light water reactor-based advanced nuclear fission;
- Non-light water reactor-based advanced nuclear fission;
- Nuclear fusion;
- Concentrating solar thermal power;
- Silicon photovoltaic;
- Cadmium telluride and copper indium gallium selenide solar;
- Emerging photovoltaics;
- Enhanced geothermal;
- Hydrothermal;

- Marine energy;
- Fixed bottom offshore wind;
- Floating offshore wind;
- Traditional onshore wind;
- New onshore wind;
- Coal;
- Natural gas;
- Petroleum;
- Open-loop biomass;
- Closed-loop biomass; and
- Hydropower.

A facilities' tier is determined when the facility begins construction (as defined in 45U(e)). Annually, the Secretary of Energy, in consultation with the Secretary of the Treasury, will issue an estimate of each energy production technologies' MPL and a national average wholesale electricity price in December, with a final report issued in February (as described in section 45U(b)(2)(D)(i)). The corresponding final report issued in February of such year determines the MPL of the qualified production facility, which determines the applicable percentage of the PTC. The final report issued in February is based on the preceding calendar year's electricity production data. Wholesale price data is based on data from two years prior.

Technologies with a MPL of at least 3 percent are not eligible for the production credit for emerging energy technology. Once a technology has achieved a certain MPL, it cannot backslide to a lower tier standing.

The credit period for this section is ten years.

Qualified production facilities do not include facilities claiming credits for electricity produced under section 45 or 45J, carbon capture facilities having claimed section 45Q, facilities having claimed tax credits under section 48, 48A, 48B, 48C, or 48D (as added by this bill) or 45V (as added by this bill).

Transfer of credit rules similar to the rules of subsection (d)(2) of section 48D shall apply for purposes of this section.

Sec. 5. Clean Hydrogen Production Credit.

The amount of credit for a qualified production facilities' clean hydrogen production tax credit (PTC) is the product of the applicable percentage and:

- 250 percent the national average wholesale price of a kilogram of hydrogen multiplied by the amount of clean hydrogen produced at such a facility.

The applicable percentage for a qualified hydrogen production facilities' PTC is:

- 60 percent if the qualified production method (as defined in 45V(d)(3)) MPL is between zero and 0.75 percent of total domestic power electricity production (tier 1);
- 45 percent if MPL is between 0.75 and 1.5 percent (tier 2);
- 30 percent if MPL is between 1.5 and 2.25 percent (tier 3); and
- 15 percent if MPL is between 2.25 and 3.0 percent (tier 4).

A qualified hydrogen production facilities' MPL is based the total energy content of all clean

hydrogen produced using a qualified production method divided by total domestic power sector electricity production.

Clean hydrogen means:

- hydrogen production with a greenhouse gas emissions rate that is greater than zero but not greater than 2,500g CO2-e (as defined in section 45U(d)(5)) per kilogram of hydrogen produced; and
- hydrogen production with a greenhouse gas emission rate that is equal to or less than zero.

For hydrogen production with an emissions rate of zero or less than zero, the credit amount is doubled.

For the purposes of determining the applicable tier standing of a clean hydrogen production method, electrolysis is determined separately from all other production methods in the annual reports (as described in 45U(b)(2)(D)(i)(II)) issued by the Secretary of Energy.

Emissions from a clean hydrogen production method are based on a lifecycle analysis, excluding any upstream or downstream emissions. If such method uses electricity generated from a source that emits greenhouse gases during production, any such emissions which are released into the atmosphere during such production shall be included for purposes of determining the rate of the greenhouse gas emissions. Hydrogen produced from electricity using nuclear power or renewable energy sources is deemed to be equal to or less than zero.

A facilities' tier is determined when the facility begins construction (as defined in 45U(e)). Annually, the Secretary of Energy, in consultation with the Secretary of the Treasury, will issue an estimate of each qualified clean hydrogen production's MPL and average wholesale hydrogen prices in December, with a final report issued in February. The final report issued in February, which is based on the preceding year's total hydrogen production data, will determine the tier standing of a clean hydrogen production method. Wholesale price data is based on data from two years prior.

The credit period for this section is ten years.

Qualified hydrogen production facilities do not include facilities producing electricity having claimed credits for electricity produced under section 45, 45J, or 45U (as added by this bill) or facilities having claimed tax credits under section 48, 48A, 48B, 48C, or 48D (as added by this bill).

Transfer of credit rules similar to the rules of subsection (d)(2) of section 48D shall apply for purposes of this section.

Sec. 6. Report on Additional Energy Production Technology.

Not later than 1 year after the date of enactment of this Act, and every 5 years thereafter, the Secretary of Energy shall submit a report to the Committee on Ways and Means of the House of Representatives and the Committee on Finance of the Senate which:

- identifies new and emerging energy production technologies which have less than 3 percent MPL;
- includes legislative language to carry out the recommendations for new energy

production technologies that may be eligible for these credits in the future; and
- considers petitions and comments submitted under subsection (b) as part of the report process.

It is the Sense of Congress that not 90 days after this report, Congress should consider a bill to add any technology used for the production of electricity which is included in such report to the list of individual energy production technologies under section 45U(d)(2).