

“(i) \$1.25, plus

“(ii) the applicable supplementary amount with respect to such sustainable aviation fuel.

“(2) DEFINITIONS.—Any term used in this subsection which is also used in section 40B shall have the meaning given such term by section 40B.

“(3) REGISTRATION REQUIREMENT.—For purposes of this subsection, rules similar to the rules of section 40B(f) shall apply.”

(2) CONFORMING AMENDMENTS.—

(A) Section 6426 is amended—

(i) in subsection (a)(1), by striking “and (e)” and inserting “(e), and (k)”, and

(ii) in subsection (h), by striking “under section 40 or 40A” and inserting “under section 40, 40A, or 40B”.

(B) Section 6427(e) is amended—

(i) in the heading, by striking “OR ALTERNATIVE FUEL” and inserting, “ALTERNATIVE FUEL, OR SUSTAINABLE AVIATION FUEL”,

(ii) in paragraph (1), by inserting “or the sustainable aviation fuel mixture credit” after “alternative fuel mixture credit”, and

(iii) in paragraph (6)—

(I) in subparagraph (C), by striking “and” at the end,

(II) in subparagraph (D), by striking the period at the end and inserting “, and”, and

(III) by adding at the end the following new subparagraph:

“(E) any qualified mixture of sustainable aviation fuel (as defined in section 6426(k)(3)) sold or used after December 31, 2024.”

(C) Section 4101(a)(1) is amended by inserting “every person producing or importing sustainable aviation fuel (as defined in section 40B),” before “and every person producing second generation biofuel”.

(D) The table of sections for subpart D of subchapter A of chapter 1 is amended by inserting after the item relating to section 40A the following new item:

“Sec. 40B. Sustainable aviation fuel credit.”

(e) AMOUNT OF CREDIT INCLUDED IN GROSS INCOME.—Section 87 is amended by striking “and” in paragraph (1), by striking the period at the end of paragraph (2) and inserting “, and”, and by adding at the end the following new paragraph:

“(3) the sustainable aviation fuel credit determined with respect to the taxpayer for the taxable year under section 40B(a).”

(f) EFFECTIVE DATE.—The amendments made by this section shall apply to fuel sold or used after December 31, 2022.

SEC. 13204. CLEAN HYDROGEN.

(a) CREDIT FOR PRODUCTION OF CLEAN HYDROGEN.—

(1) IN GENERAL.—Subpart D of part IV of subchapter A of chapter 1, as amended by the preceding provisions of this Act, is amended by adding at the end the following new section:

“SEC. 45V. CREDIT FOR PRODUCTION OF CLEAN HYDROGEN.

“(a) AMOUNT OF CREDIT.—For purposes of section 38, the clean hydrogen production credit for any taxable year is an amount equal to the product of—

“(1) the kilograms of qualified clean hydrogen produced by the taxpayer during such taxable year at a qualified clean hydrogen production facility during the 10-year period beginning on the date such facility was originally placed in service, multiplied by

“(2) the applicable amount (as determined under subsection (b)) with respect to such hydrogen.

“(b) APPLICABLE AMOUNT.—

“(1) IN GENERAL.—For purposes of subsection (a)(2), the applicable amount shall be an amount equal to the applicable percentage of \$0.60. If any amount as determined under the preceding sentence is not a multiple of 0.1 cent, such amount shall be rounded to the nearest multiple of 0.1 cent.

“(2) APPLICABLE PERCENTAGE.—For purposes of paragraph (1), the applicable percentage shall be determined as follows:

“(A) In the case of any qualified clean hydrogen which is produced through a process that results in a lifecycle greenhouse gas emissions rate of—

“(i) not greater than 4 kilograms of CO₂e per kilogram of hydrogen, and

“(ii) not less than 2.5 kilograms of CO₂e per kilogram of hydrogen,

the applicable percentage shall be 20 percent.

“(B) In the case of any qualified clean hydrogen which is produced through a process that results in a lifecycle greenhouse gas emissions rate of—

“(i) less than 2.5 kilograms of CO₂e per kilogram of hydrogen, and

“(ii) not less than 1.5 kilograms of CO₂e per kilogram of hydrogen,

the applicable percentage shall be 25 percent.

“(C) In the case of any qualified clean hydrogen which is produced through a process that results in a lifecycle greenhouse gas emissions rate of—

“(i) less than 1.5 kilograms of CO₂e per kilogram of hydrogen, and

“(ii) not less than 0.45 kilograms of CO₂e per kilogram of hydrogen,

the applicable percentage shall be 33.4 percent.

“(D) In the case of any qualified clean hydrogen which is produced through a process that results in a lifecycle greenhouse gas emissions rate of less than 0.45 kilograms of CO₂e per kilogram of hydrogen, the applicable percentage shall be 100 percent.

“(3) INFLATION ADJUSTMENT.—The \$0.60 amount in paragraph (1) shall be adjusted by multiplying such amount by the inflation adjustment factor (as determined under section 45(e)(2), determined by substituting ‘2022’ for ‘1992’ in subparagraph (B) thereof) for the calendar year in which the qualified clean hydrogen is produced. If any amount as increased under the preceding sentence is not a multiple of 0.1 cent, such amount shall be rounded to the nearest multiple of 0.1 cent.

“(c) DEFINITIONS.—For purposes of this section—

“(1) LIFECYCLE GREENHOUSE GAS EMISSIONS.—

“(A) IN GENERAL.—Subject to subparagraph (B), the term ‘lifecycle greenhouse gas emissions’ has the same meaning given such term under subparagraph (H) of section 211(o)(1) of the Clean Air Act (42 U.S.C. 7545(o)(1)), as in effect on the date of enactment of this section.

“(B) GREET MODEL.—The term ‘lifecycle greenhouse gas emissions’ shall only include emissions through the point of production (well-to-gate), as determined under the most recent Greenhouse gases, Regulated Emissions, and Energy use in Transportation model (commonly referred to as the ‘GREET model’) developed by Argonne National Laboratory, or a successor model (as determined by the Secretary).

“(2) QUALIFIED CLEAN HYDROGEN.—

“(A) IN GENERAL.—The term ‘qualified clean hydrogen’ means hydrogen which is produced through a process that results in a lifecycle greenhouse gas emissions rate of not greater than 4 kilograms of CO₂e per kilogram of hydrogen.

“(B) ADDITIONAL REQUIREMENTS.—Such term shall not include any hydrogen unless—

“(i) such hydrogen is produced—

“(I) in the United States (as defined in section 638(1)) or a possession of the United States (as defined in section 638(2)),

“(II) in the ordinary course of a trade or business of the taxpayer, and

“(III) for sale or use, and

“(ii) the production and sale or use of such hydrogen is verified by an unrelated party.

“(C) PROVISIONAL EMISSIONS RATE.—In the case of any hydrogen for which a lifecycle greenhouse gas emissions rate has not been determined for purposes of this section, a taxpayer producing such hydrogen may file a petition with the Secretary for determination of the lifecycle greenhouse gas emissions rate with respect to such hydrogen.

“(3) QUALIFIED CLEAN HYDROGEN PRODUCTION FACILITY.—The term ‘qualified clean hydrogen production facility’ means a facility—

“(A) owned by the taxpayer,

“(B) which produces qualified clean hydrogen, and

“(C) the construction of which begins before January 1, 2033.

“(d) SPECIAL RULES.—

“(1) TREATMENT OF FACILITIES OWNED BY MORE THAN 1 TAXPAYER.—Rules similar to the rules section 45(e)(3) shall apply for purposes of this section.

“(2) COORDINATION WITH CREDIT FOR CARBON OXIDE SEQUESTRATION.—No credit shall be allowed under this section with respect to any qualified clean hydrogen produced at a facility which includes carbon capture equipment for which a credit is allowed to any taxpayer under section 45Q for the taxable year or any prior taxable year.

“(e) INCREASED CREDIT AMOUNT FOR QUALIFIED CLEAN HYDROGEN PRODUCTION FACILITIES.—

“(1) IN GENERAL.—In the case of any qualified clean hydrogen production facility which satisfies the requirements

of paragraph (2), the amount of the credit determined under subsection (a) with respect to qualified clean hydrogen described in subsection (b)(2) shall be equal to such amount (determined without regard to this sentence) multiplied by 5.

“(2) REQUIREMENTS.—A facility meets the requirements of this paragraph if it is one of the following:

“(A) A facility—

“(i) the construction of which begins prior to the date that is 60 days after the Secretary publishes guidance with respect to the requirements of paragraphs (3)(A) and (4), and

“(ii) which meets the requirements of paragraph (3)(A) with respect to alteration or repair of such facility which occurs after such date.

“(B) A facility which satisfies the requirements of paragraphs (3)(A) and (4).

“(3) PREVAILING WAGE REQUIREMENTS.—

“(A) IN GENERAL.—The requirements described in this subparagraph with respect to any qualified clean hydrogen production facility are that the taxpayer shall ensure that any laborers and mechanics employed by the taxpayer or any contractor or subcontractor in—

“(i) the construction of such facility, and

“(ii) with respect to any taxable year, for any portion of such taxable year which is within the period described in subsection (a)(2), the alteration or repair of such facility,

shall be paid wages at rates not less than the prevailing rates for construction, alteration, or repair of a similar character in the locality in which such facility is located as most recently determined by the Secretary of Labor, in accordance with subchapter IV of chapter 31 of title 40, United States Code. For purposes of determining an increased credit amount under paragraph (1) for a taxable year, the requirement under clause (ii) of this subparagraph is applied to such taxable year in which the alteration or repair of qualified facility occurs.

“(B) CORRECTION AND PENALTY RELATED TO FAILURE TO SATISFY WAGE REQUIREMENTS.—Rules similar to the rules of section 45(b)(7)(B) shall apply.

“(4) APPRENTICESHIP REQUIREMENTS.—Rules similar to the rules of section 45(b)(8) shall apply.

“(5) REGULATIONS AND GUIDANCE.—The Secretary shall issue such regulations or other guidance as the Secretary determines necessary to carry out the purposes of this subsection, including regulations or other guidance which provides for requirements for recordkeeping or information reporting for purposes of administering the requirements of this subsection.

“(f) REGULATIONS.—Not later than 1 year after the date of enactment of this section, the Secretary shall issue regulations or other guidance to carry out the purposes of this section, including regulations or other guidance for determining lifecycle greenhouse gas emissions.”

(2) CREDIT REDUCED FOR TAX-EXEMPT BONDS.—Section 45V(d), as added by this section, is amended by adding at the end the following new paragraph:

“(3) CREDIT REDUCED FOR TAX-EXEMPT BONDS.—Rules similar to the rule under section 45(b)(3) shall apply for purposes of this section.”

(3) MODIFICATION OF EXISTING FACILITIES.—Section 45V(d), as added and amended by the preceding provisions of this section, is amended by adding at the end the following new paragraph:

“(4) MODIFICATION OF EXISTING FACILITIES.—For purposes of subsection (a)(1), in the case of any facility which—

“(A) was originally placed in service before January 1, 2023, and, prior to the modification described in subparagraph (B), did not produce qualified clean hydrogen, and

“(B) after the date such facility was originally placed in service—

“(i) is modified to produce qualified clean hydrogen,

and
“(ii) amounts paid or incurred with respect to such modification are properly chargeable to capital account of the taxpayer,

such facility shall be deemed to have been originally placed in service as of the date that the property required to complete the modification described in subparagraph (B) is placed in service.”

(4) CONFORMING AMENDMENTS.—

(A) Section 38(b), as amended by the preceding provisions of this Act, is amended—

(i) in paragraph (34), by striking “plus” at the end,

(ii) in paragraph (35), by striking the period at the end and inserting “, plus”, and

(iii) by adding at the end the following new paragraph:

“(36) the clean hydrogen production credit determined under section 45V(a).”

(B) The table of sections for subpart D of part IV of subchapter A of chapter 1, as amended by the preceding provisions of this Act, is amended by adding at the end the following new item:

“Sec. 45V. Credit for production of clean hydrogen.”

(5) EFFECTIVE DATES.—

(A) IN GENERAL.—The amendments made by paragraphs (1) and (4) of this subsection shall apply to hydrogen produced after December 31, 2022.

(B) CREDIT REDUCED FOR TAX-EXEMPT BONDS.—The amendment made by paragraph (2) shall apply to facilities the construction of which begins after the date of enactment of this Act.

(C) MODIFICATION OF EXISTING FACILITIES.—The amendment made by paragraph (3) shall apply to modifications made after December 31, 2022.

(b) CREDIT FOR ELECTRICITY PRODUCED FROM RENEWABLE RESOURCES ALLOWED IF ELECTRICITY IS USED TO PRODUCE CLEAN HYDROGEN.—

(1) IN GENERAL.—Section 45(e), as amended by the preceding provisions of this Act, is amended by adding at the end the following new paragraph:

“(13) SPECIAL RULE FOR ELECTRICITY USED AT A QUALIFIED CLEAN HYDROGEN PRODUCTION FACILITY.—Electricity produced by the taxpayer shall be treated as sold by such taxpayer to an unrelated person during the taxable year if—

“(A) such electricity is used during such taxable year by the taxpayer or a person related to the taxpayer at a qualified clean hydrogen production facility (as defined in section 45V(c)(3)) to produce qualified clean hydrogen (as defined in section 45V(c)(2)), and

“(B) such use and production is verified (in such form or manner as the Secretary may prescribe) by an unrelated third party.”.

(2) SIMILAR RULE FOR ZERO-EMISSION NUCLEAR POWER PRODUCTION CREDIT.—Subsection (c)(2) of section 45U, as added by section 13105 of this Act, is amended by striking “and (5)” and inserting “(5), and (13)”.

(3) EFFECTIVE DATE.—The amendments made by this subsection shall apply to electricity produced after December 31, 2022.

(c) ELECTION TO TREAT CLEAN HYDROGEN PRODUCTION FACILITIES AS ENERGY PROPERTY.—

(1) IN GENERAL.—Section 48(a), as amended by the preceding provisions of this Act, is amended—

(A) by redesignating paragraph (15) as paragraph (16), and

(B) by inserting after paragraph (14) the following new paragraph:

“(15) ELECTION TO TREAT CLEAN HYDROGEN PRODUCTION FACILITIES AS ENERGY PROPERTY.—

“(A) IN GENERAL.—In the case of any qualified property (as defined in paragraph (5)(D)) which is part of a specified clean hydrogen production facility—

“(i) such property shall be treated as energy property for purposes of this section, and

“(ii) the energy percentage with respect to such property is—

“(I) in the case of a facility which is designed and reasonably expected to produce qualified clean hydrogen which is described in a subparagraph (A) of section 45V(b)(2), 1.2 percent,

“(II) in the case of a facility which is designed and reasonably expected to produce qualified clean hydrogen which is described in a subparagraph (B) of such section, 1.5 percent,

“(III) in the case of a facility which is designed and reasonably expected to produce qualified clean hydrogen which is described in a subparagraph (C) of such section, 2 percent, and

“(IV) in the case of a facility which is designed and reasonably expected to produce qualified clean hydrogen which is described in subparagraph (D) of such section, 6 percent.

“(B) DENIAL OF PRODUCTION CREDIT.—No credit shall be allowed under section 45V or section 45Q for any taxable year with respect to any specified clean hydrogen production facility or any carbon capture equipment included at such facility.

“(C) SPECIFIED CLEAN HYDROGEN PRODUCTION FACILITY.—For purposes of this paragraph, the term ‘specified clean hydrogen production facility’ means any qualified clean hydrogen production facility (as defined in section 45V(c)(3))—

“(i) which is placed in service after December 31, 2022,

“(ii) with respect to which—

“(I) no credit has been allowed under section 45V or 45Q, and

“(II) the taxpayer makes an irrevocable election to have this paragraph apply, and

“(iii) for which an unrelated third party has verified (in such form or manner as the Secretary may prescribe) that such facility produces hydrogen through a process which results in lifecycle greenhouse gas emissions which are consistent with the hydrogen that such facility was designed and expected to produce under subparagraph (A)(ii).

“(D) QUALIFIED CLEAN HYDROGEN.—For purposes of this paragraph, the term ‘qualified clean hydrogen’ has the meaning given such term by section 45V(c)(2).

“(E) REGULATIONS.—The Secretary shall issue such regulations or other guidance as the Secretary determines necessary to carry out the purposes of this section, including regulations or other guidance which recaptures so much of any credit allowed under this section as exceeds the amount of the credit which would have been allowed if the expected production were consistent with the actual verified production (or all of the credit so allowed in the absence of such verification).”.

(2) CONFORMING AMENDMENT.—Paragraph (9)(A)(i) of section 48(a), as added by section 13102, is amended by inserting “and paragraph (15)” after “paragraphs (1) through (8)”.

(3) EFFECTIVE DATE.—The amendments made by this subsection shall apply to property placed in service after December 31, 2022, and, for any property the construction of which begins prior to January 1, 2023, only to the extent of the basis thereof attributable to the construction, reconstruction, or erection after December 31, 2022.

(d) TERMINATION OF EXCISE TAX CREDIT FOR HYDROGEN.—

(1) IN GENERAL.—Section 6426(d)(2) is amended by striking subparagraph (D) and by redesignating subparagraphs (E), (F), and (G) as subparagraphs (D), (E), and (F), respectively.

(2) CONFORMING AMENDMENT.—Section 6426(e)(2) is amended by striking “(F)” and inserting “(E)”.

(3) EFFECTIVE DATE.—The amendments made by this subsection shall apply to fuel sold or used after December 31, 2022.

PART 3—CLEAN ENERGY AND EFFICIENCY INCENTIVES FOR INDIVIDUALS

SEC. 13301. EXTENSION, INCREASE, AND MODIFICATIONS OF NONBUSINESS ENERGY PROPERTY CREDIT.

(a) EXTENSION OF CREDIT.—Section 25C(g)(2) is amended by striking “December 31, 2021” and inserting “December 31, 2032”.

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IRA 'clean' hydrogen six pages.