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IN FOCUS

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The Section 45Z Clean Fuel Production Credit

P.L. 117-169, commonly known as the Inflation Reduction Act (IRA), created the clean fuel production credit (CFPC) for qualifying transportation fuel produced after 2024 and sold on or before December 31, 2027. Some also refer to the CPFC as the 45Z credit after its applicable Internal Revenue Code (IRC) section.

The CFPC, in effect, consolidates and replaces several fuel-related credits currently scheduled to expire at the end of 2024, including credits for the production of biodiesel, agri-biodiesel, renewable diesel, second-generation biofuel, sustainable aviation fuel, alternative fuels, and alternative fuels mixtures. In contrast to these expiring provisions, which subsidize specific types of low-GHG emission fuels, the CFPC is technology neutral and is intended to subsidize the production of any transportation fuel with zero or low greenhouse gas (GHG) emissions.

This *In Focus* provides an overview of the eligibility requirements, credit amounts, and budgetary cost of the CFPC. Guidance on implementing the CFPC is required no later than January 1, 2025, and the Department of the Treasury and Internal Revenue Service (IRS) issued a request for comment on November 3, 2022. The IRS requested that comments be submitted by December 3, 2022. However, the agency clarified that it would consider comments submitted beyond that date "if such consideration will not delay the issuance of guidance."

Credit Requirements and Restrictions

The following criteria must be satisfied for credit eligibility:

- Producers must be registered with the IRS.
- All production facilities used to claim the credit must be located in the United States or its possessions (i.e., Puerto Rico, Guam, the U.S. Virgin Islands, and other territories).
- To be considered "clean," fuel produced at such facilities must emit no more than 50 kilograms of CO_2 (or CO_2 equivalent) per 1 million British Thermal Units (mmBTU).
- To meet the credit's definition of "transportation fuel," fuel must be deemed "suitable for use as a fuel in a highway vehicle or aircraft."
- All fuel qualifying for the credit must be sold to "unrelated persons" as defined in Section 52(b) of the IRC.

The CFPC is eligible for *elective pay* and *transferability*. Elective pay allows certain organizations—generally nonprofits, states, localities, and other tax-exempt entities—to receive tax credits as direct payments even if they do not owe federal taxes. Transferability allows entities which are not eligible for elective pay to sell/transfer their credits to other entities; this could prove advantageous for organizations whose tax credits exceed their tax liabilities. Payments received for the sale of tax credits are excluded from income, and hence not subject to taxation, but purchases of credits cannot be deducted from income.

Firms cannot use the same production facility to claim both the CFPC and the Section 45V clean hydrogen production credit, the Section 48 investment credit for a specified clean hydrogen production facility, or the Section 45Q credit for carbon oxide sequestration.

Maximum Credit Values

The CFPC is structured on a sliding scale so that producers become eligible for larger credits as the GHG emissions of the fuels they produce approach zero. For producers meeting prevailing wage and registered apprenticeship requirements, the maximum credit is $1.00 per gallon of nonaviation fuel and $1.75 per gallon of aviation fuel. To satisfy the wage requirements, laborers and mechanics constructing, altering, or repairing a facility must be paid wages at or above the "prevailing wage" (as determined by the Secretary of Labor) of workers performing similar work in the same locality. The apprenticeship requirements stipulate that registered apprentices must provide at least 12.5% or 15% of the total labor hours associated with constructing, altering, or repairing any facilities claimed under the CFPC. (However, under the "good faith effort exception," firms are deemed to have met the apprenticeship requirements if they request apprentices from a registered apprenticeship program and either do not receive a response within five business days or are denied for reasons other than their refusal to comply with the requirements.) For producers not meeting prevailing wage and registered apprenticeship requirements, the maximum credit is 20 cents per gallon of nonaviation fuel and 35 cents per gallon of aviation fuel.

The maximum credit values are adjusted annually for inflation using the Gross Domestic Product (GDP) implicit price deflator.

Credit Phaseout

Producers of fuels with low but nonzero GHG emissions may still receive a credit depending on the given fuel's GHG emissions rate.

To determine the size of each producer's credit, the maximum credit value is multiplied by an *emissions factor* that is a function of the fuel's "carbon dioxide equivalent"

(CO_2e) per mmBTU. For greenhouse gases other than CO_2, the *carbon dioxide equivalent* is the quantity of CO_2 that would produce the same amount of global warming as the given non-CO_2 GHG. Specifically, the emissions factor is determined as:

Emissions Factor = [(50 kg. of CO_2e per mmBTU) – (Fuel kg. of CO_2e per mmBTU)] / [50 kg. of CO_2e per mmBTU].

As an example, the emissions factor for fuel emitting 40 kilograms of carbon dioxide equivalent per mmBTU would be:

Emissions Factor = [50 – 40] / [50] = 0.2

Table 1 displays the credits available to producers at various assumed CO_2e emissions rates, depending on the type of fuel produced (aviation or nonaviation) and whether the producer meets prevailing wage and apprenticeship requirements.

Table 1. Estimated §45Z Clean Fuel Production Credit Values

Estimated credit per ton of fuel produced, by fuel type and compliance with wage and apprenticeship requirements, at assumed CO_2e emissions rates

Assumed kilograms of CO_2e per mmBTU	Emissions Factor	Does not meet W&A reqs	Meets W&A reqs
Nonaviation Fuels			
0 kg. / mmBTU	1.0	$0.20	$1.00
10 kg. / mmBTU	0.8	$0.16	$0.80
25 kg. / mmBTU	0.5	$0.10	$0.50
40 kg. / mmBTU	0.2	$0.04	$0.20
50 kg. / mmBTU	0.0	$0.00	$0.00
Aviation Fuels:			
0 kg. / mmBTU	1.0	$0.35	$1.75
10 kg. / mmBTU	0.8	$0.28	$1.40
25 kg. / mmBTU	0.5	$0.18[a]	$0.88[a]
40 kg. / mmBTU	0.2	$0.07	$0.35
50 kg. / mmBTU	0.0	$0.00	$0.00

Source: Calculations by CRS based on IRC §45Z.
Notes: "W&A" stands for "wage and apprenticeship." "CO_2e" stands for "carbon dioxide equivalent."
a. Value has been rounded to the nearest cent.

Budgetary Costs and Credit Transition

As noted earlier, the CFPC will, in effect, consolidate a number of clean-fuel tax credits that are set to expire after 2024 into a single credit. As a replacement for these credits, P.L. 117-169 will allow producers to begin claiming the CFPC starting in 2025, with the stipulation that all fuel claimed under the credit must be sold no later than December 31, 2027. The Joint Committee on Taxation's cost estimate of P.L. 117-169 projects that the CFPC will cost $2.9 billion between FY2025 and FY2028. Under current law, the CFPC will not incur any additional budgetary costs after FY2028.

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