

Section 48E: Clean Electricity Investment Tax Credit

Section 48E of the Internal Revenue Code (I.R.C), or the clean electricity investment tax credit (ITC), provides a 6 percent tax credit based on qualified investment in certain qualified electricity generation or energy storage projects with a net greenhouse gas (GHG) emissions rate of no greater than zero.

Legislative History

The ITC was established by the Inflation Reduction Act and will be in effect at the start of 2025 to replace the old ITC for certain qualified energy projects (Section 48), which sunsets at the end of 2024.

Eligibility

The ITC can be claimed for qualified investments in electricity generating facilities that are placed in service after December 31, 2024 with a GHG emissions rate of no greater than zero. The GHG emissions rate is calculated as grams of CO₂ equivalent per kilowatt hour (kWh) of electricity produced and shall take into account lifecycle GHG emissions, as defined by section 211(o)(1)(H) of the Clean Air Act.¹ Any investment in energy storage with a capacity of not less than 5kWh can also qualify for 48E, regardless of GHG emissions. Facilities that claim other credits are not eligible for 48E.²

Credit Amount

The base credit amount is 6 percent of a qualified investment, which can be increased if certain construction requirements are met (up to +10%) or if the facility is located in an energy community (up to +10%). The credit is set to phase out over four years starting the latter of 2032 or the year in which GHG emissions from the U.S. electricity sector decrease by 75% compared to 2022 levels.

¹ Section 211(o)(1)(H) of the Clean Air Act accounts for “all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.”

² Section 45 (the old renewable energy PTC), 45J (advanced nuclear production tax credit), 45Q (carbon oxide sequestration tax credit), 45U (zero emission nuclear production tax credit), 48 (old ITC for certain energy facilities), 45Y (new clean electricity PTC), and 48A (advanced coal project credit).

	If Wage and Apprenticeship Requirements are Not Met	If Wage and Apprenticeship Requirements are Met
Facilities Placed in Service 2025-2032*	6%	30%
Facilities Placed in Service 2033	6%	30%
Facilities Placed in Service 2034	4.5%	22.5%
Facilities Placed in Service 2035	3%	15%
Facilities Placed in Service 2036	0%	0%

*Or the calendar year in which GHG emissions from electricity production in the U.S. is \leq 25% of the annual emissions from electricity in 2022, whichever is later

Taxpayer Costs

The Joint Committee on Taxation (JCT) estimates that the new 48E credit will cost taxpayers \$50.9 billion from FY2022 to FY2031.

Taxpayer Concerns

Section 48E Clean Electricity Investment Credit is designed to incentivize investment in zero-emission electricity, a critical effort to combat climate change. By reducing greenhouse gas emissions, these credits have the potential to save taxpayers from long-term climate liability costs. However, if not implemented properly, the 48E credit also has the potential to undermine the transition to a clean economy. Without stringent guidelines, there is a risk that these incentives could be misused, costing taxpayers potential tax revenue without providing real climate benefits.

- GHG-intensive energy sources that also create other environmental and fiscal liabilities must not be eligible:** Depending on how certain emissions are treated and the GHG baseline used, certain energy sources like biomass and biogas could qualify for 48E. However, biomass energy cannot be assumed to be carbon neutral. And in practice, subsidizing burning wood pellets for electricity generation has led to increased carbon emissions, negatively impacted air quality, and created other long-term liabilities. Other energy sources like biogas from livestock manure produce tremendous GHG emissions throughout its full lifecycle and cannot be cancelled out by methane capture.
- Double dipping 45Y and the 45V hydrogen production tax credit provides perverse incentives:** If determined to have a zero emissions rate for the purposes of 45Y or 48E, generating hydrogen from electricity could receive two tax credits, 45V and either 45Y or 48E. Furthermore, if the electrolyzer is directly connected with a clean generator and produced hydrogen is later used to produce electricity, the final production of electricity could receive three tax credits: the 45Y or 48E credit twice and the 45V hydrogen production tax credit once. But generating hydrogen from electricity and using that hydrogen to generate electricity is extremely inefficient and makes no economic sense absent of these tax incentives. But allowing double dipping of these credits will create the perverse incentive to set up electrolyzers only to double or triple these credits without providing real climate benefits. And if zero-emissions electricity being diverted to produce hydrogen and new electricity being added to the grid to fill the gap for consumer

demand is not zero-emissions, then hydrogen production is diverting resources away from one of the most effective emissions reduction measures—making our grid zero-emissions.

- **Book and Claim System Cannot be Used to Track Emissions Reduction:** The B&C system allows administrative record flow to be disconnected from the physical delivery of materials, fuels, and electricity. If certain fuel sources were to be treated as having zero or negative emissions, a power plant could purchase certificates or credits under the B&C system from a fuel producer that has “booked” a certain amount of negative emissions without physical use of such fuels while claiming zero GHG emissions. Currently, there is no established independent, reliable, and publicly accessible B&C registry that can ensure robust and accurate bookkeeping that can verify the emissions reduction claims made in corporate sustainability reports. Without a robust and universally recognized registry, there is a risk of double-counting, if tradeable credits and certificates were sold to multiple buyers, each claiming the associated tax credits.