TAXPAYERS for COMMON SENSE

FACT SHEET

Section 45V: Credit for Production of Clean Hydrogen

Section 45V introduces a new 10-year production tax credit for hydrogen, offering a four-tier incentive of up to $3 per kilogram based on the carbon emissions intensity. Hydrogen (H2) is a clean fuel that produces only water when consumed in a fuel cell. It can be produced from various energy sources, including natural gas, coal, biomass, and renewable energy like wind and solar. These sources result in different levels of greenhouse gas intensity for hydrogen production. Currently, most hydrogen is produced by steam reforming natural gas, a process that releases carbon dioxide. Proponents of hydrogen often advocate for carbon capture and storage (CCS) technologies to trap and store the CO2 byproduct during hydrogen production.

Legislative History

Section 13204 of the Inflation Reduction Act created a new section 45V of the Internal Revenue Code for the production of clean hydrogen.

Eligibility

Qualified clean hydrogen is defined as hydrogen with a lifecycle greenhouse gas (GHG) emissions rate not exceeding 4 kilograms of CO2e per kilogram of hydrogen. The lifecycle GHG emissions include only those through the point of production, as determined by the latest Greenhouse gases, Regulated Emissions, and Energy Use in Transportation (GREET) model developed by Argonne National Laboratory under the Department of Energy. Qualified clean hydrogen must also be produced in the U.S. for sale or use, with production and use verified by an unrelated party. To be eligible for the 45V tax credit, a facility must begin construction before January 1, 2033, and produce qualified clean hydrogen. A facility can claim the 45V credit for 10 years. However, if a facility is eligible for both 45Q and 45V, it can only claim one credit in the same calendar year.

Credit Amount

	Credit Amount per Kg of Hydrogen (Adj. for inflation annually)	
Lifecycle GHG emissions rate	Prevailing Wage & Apprenticeship requirements not met	Prevailing Wage & Apprenticeship requirements met
>=2.5 and <=4 kg of CO2e per kg of H2	$0.12	$0.60
>=1.5 and <2.5 kg of CO2e per kg of H2	$0.15	$0.75
>=0.45 and <1.5 kg of CO2e per kg of H2	$0.20	$1.00
<0.45 kg of CO2e per kg of H2	$0.60	$3.00

Taxpayer Costs

The Joint Committee on Taxation estimates that the new 45V credit will cost taxpayers $13.2 billion from FY2022 to FY2031.

Taxpayer Concerns

- **Production from GHG-Intensive Sources:** Effective implementation of the 45V credit requires stringent verification from the IRS to confirm the GHG emissions rate of hydrogen produced. If hydrogen production relies on the existing grid or adds additional natural gas or coal facilities, the incentive may not achieve its intended purpose of reducing greenhouse gas emissions.
- **Crowding Out More Cost-Effective Sources:** Hydrogen production, transport, and storage are still in early stages and are expensive compared to other climate mitigation strategies. Since most hydrogen produced today uses natural gas and requires CCS equipment to reduce its carbon intensity, there is skepticism regarding the cost-effectiveness of the 45V tax credit.