P201 Back Pocket Insight: Inflation Reduction Act (IRA) Summary

Section *IRA § number*	**Description**	**Credit Value** (in 2022$, inflation-adjusted)
45, 45Y *§13101, 13701*	Clean Electricity Production Credit	Existing credits for renewables extended to 2025; From 2025, ~$26/MWh for all zero-GHG technologies
45U *§13105*	Existing Nuclear Production Credit	~$15/MWh (varies based on electricity revenues)

This provision extends the existing Section 45 wind production credit to 2024, extends eligibility of the existing credit to solar and geothermal. The new Section 45Y creates a new technology-neutral production credit starting in 2025 for any new technology with zero GHG emissions intensity. New renewables, nuclear, and potentially hydrogen could be eligible for the 45Y credit, depending on guidance to be issued later regarding emissions intensity accounting using ANL's GREET model. Credits are valued at around $26/MWh in current year dollars, with adjustments for inflation in future years, provided bonus criteria for prevailing wage and apprenticeship are met. Base credit value is 80% lower (i.e. ~$5/MWh) if labor bonus criteria are not met. Additional bonus credits are available for meeting domestic content criteria (10%) and siting within designated energy communities (10%). Credits apply for projects started through 2032 and continue for **10 years from project start**, with eligibility extended beyond 2032 if electric generation emissions remain above 25% of 2022 levels.

The new section 45U creates an analogous production credit for existing nuclear that applies through 2032, with a value centered around $15/MWh that varies depending on electricity revenue (and is 80% lower if labor bonus criteria are not met). Existing nuclear is also eligible for incentives under the Civil Nuclear Credit Program.

48, 48E *§13102, 13103, 13702*	Clean Electricity Investment Credit	30% for solar, storage, and other technologies

This provision extends existing Section 48 solar investment credit to 2024. The new Section 48E further extends the investment credit to any new technology with zero GHG emissions intensity, including storage, with no restrictions regarding co-location with solar. The credit is 30% of initial project costs, and is 80% lower (i.e., 6%) without labor bonus criteria. Bonuses for domestic content (10%) and energy communities (10%) are available as additive percentage point increases to the investment credit. A separate low-income community bonus is available (§13103) for qualified solar projects of up to an additional 20% (with a limit of 1.8 GW per year, only available in 2023 and 2024). 48E investment credits may not be combined with 45Y production credits.

Bonus Criteria

Labor bonus (all credits)
- Labor is paid prevailing wages during construction and repair
- 15% of labor hours performed by qualified apprentices

Domestic content bonus (45Y, 48E)
- 40% (55% after 2025) of total cost of manufactured products produced in U.S.
- Iron/steel produced in U.S. if not part of a manufactured product

Energy communities bonus (45Y, 48E)
- Brownfield site
- > 0.17% direct employment or > 25% local tax revenues from fossil fuels and above-average unemployment rate
- Census tract with closed coal mine or retired coal plant since 2000

Low-income community bonus (48E)
- Low-income or tribal lands qualify for 10%
- Low-income building projects qualify for 20%
- < 5 MW capacity, must include storage

45Q *§13104*	Captured CO_2 Credit	\$85/tCO_2 (storage), \$60/tCO_2 (utilization), \$180 and \$130/tCO_2 for direct air capture

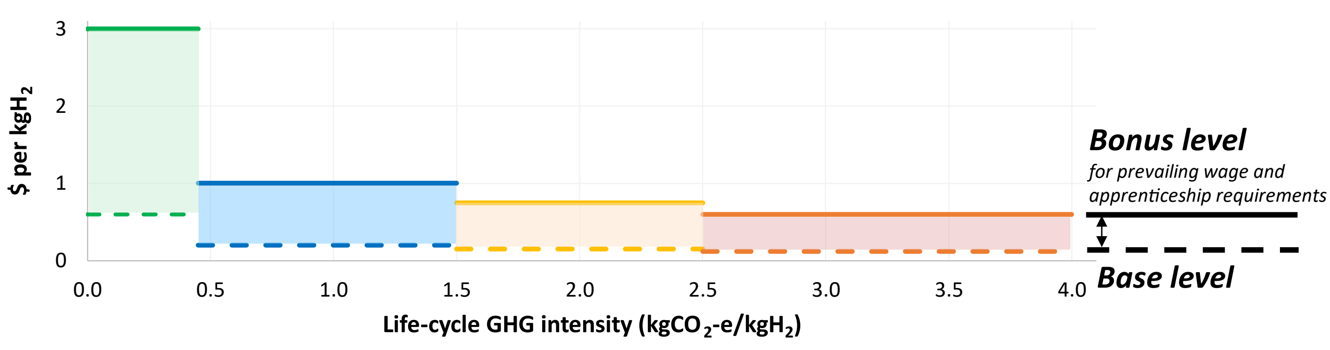
This provision increases existing 45Q credits for captured CO_2, provided labor bonus criteria are met (80% lower if not). Incentives for CO_2 storage are higher than for CO_2 utilization, and higher for direct air capture than for point source capture. Credits apply for projects started through 2032 and continue for **12 years from project start**. 45Q captured CO_2 credits may not be combined with 45Y or 45V production credits.

40, 45Z *§13201, 13202, 13203, 13704*	Clean Fuels Production Credit	\$1/gal, \$1.25-\$1.75/gal for sustainable aviation fuel, or higher depending on GHG intensity

This provision extends existing Section 40 production credits for biofuels of \$1/gallon to 2024 and creates a new sustainable aviation fuel (SAF) credit in 2023 and 2024 for valued at \$1.25-\$1.75/gallon. The new Section 45Z creates a production credit starting in 2025 for domestic production of all non-petroleum fuels with life-cycle GHG emissions below 50 kgCO_2-e/mmbtu, as measured by ANL's GREET model. The credit value is \$1/gallon (\$1.75/gallon for aviation fuels), provided labor bonus criteria are met (80% lower if not). The credit can be increased in proportion to lower emissions intensity. Existing and SAF credits apply only in 2023 and 2024. The 45Z credit is only available **through 2027**. 45Z clean fuel credits cannot be combined with 45Q captured CO_2 or 45V clean hydrogen credits.

45V *§13204*	Clean Hydrogen Production Credit	\$0.60 - \$3/kg, depending on GHG intensity

This provision creates a new Section 45V production credit for hydrogen based on the life-cycle GHG intensity of production, as measured by ANL's GREET model. The credit is valued at \$0.60/kg for life-cycle intensity of 2.5-4 kgCO_2-e/kgH_2 up to \$3/kg for intensity below 0.45 kgCO_2-e/kgH_2 (80% lower without labor bonus criteria; see figure below). Accounting for upstream methane emissions from natural gas likely implies that only electrolysis from zero-carbon generation could qualify for highest subsidy tier. Credits apply for projects started through 2032 and continue for **10 years from project start**. 45V clean hydrogen production credits **can be combined** with 45Y clean electricity production and 48E clean electricity investment credits.



Notes

This summary focuses on tax incentives in the Inflation Reduction Act (IRA) Subtitle D (Energy Security), Parts 1, 2, and 7 targeting the electricity and fuels sectors (see full text beginning at page 1906). The IRA also includes many other tax incentives for efficiency and electrification investments in buildings (25C, 25D, 179D, 45L), alternative vehicles (30D, 25E, 45W, 30C), and advanced manufacturing (48C, 45X). In addition, the IRA includes funding for rebate programs, loan guarantees, as well as direct pay and other options to monetize credits. EPRI has conducted modeling and analysis of the potential impact of many of these provisions. Please contact John Bistline jbistline@epri.com or Geoff Blanford gblanford@epri.com for more information.