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2022 IRA Tax Credits: The Dawn of Green Hydrogen

Making Dollars and Sense Out of the IRA Tax Credits for Clean Energy

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Agenda

- » Overview
- » Production Tax Credits (PTC)
- » Investment Tax Credits (ITC)
- » Example

Taxes! What Good Are They?

Purposes of Tax

- » Fund the government
- » Discourage actions
- » Encourage actions

Important Acronyms

- » IRA: Inflation Reduction Act (*August 16, 2022*)
- » IRC: Internal Revenue Code
- » IRS: Internal Revenue Service
- » ITC: Investment Tax Credit
- » PTC: Production Tax Credit

Clean Energy Tax Credits

Clean Energy Tax Credits in IRA

- » Some modified
- » Some new
- » Promote clean energy development
- » Goal: decarbonization
- » \$100s billion in credits / \$trillions of investment

Clean Energy and Carbon Management Tax Credits

	Tax Code	Tax Credit
45 PTC	45Q	Carbon capture and sequestration
	45V	Clean H2 production
	45X	Advanced manufacturing production
	45Y	Clean electricity production
	45 Z	Clean transportation and fuel production
48 ITC	48C	Advanced energy project
	48E	Clean electricity investment

PTC: 45Q – Carbon Capture and Sequestration

- » Extends construction start to 12/31/2032
- » Lowers minimum metric ton (MT) captured threshold
- » Increases tax credit, per MT
 - » \$60/MT: captured and reused
 - » \$85/MT: captured and geologic stored
 - » \$130/MT: direct air captured and reused
 - » \$180/MT: direct air captured and geologic stored
- » Can't "stack" with 45V or 48C

PTC: 45Y – Clean Electricity Production

- » Extends renewable production credit to 2024
- » Technology neutral
- » Requires 0 or negative GHG emission
- » 1.5 cents per kilowatt hour (kwhr)
- » Can't "stack" with 48E for clean energy projects

PTC: 45V – Clean Hydrogen Production

- » New 10-year incentive production tax credit
- » Construction starts by 2033
- » Technology neutral
- » Can't "stack" with 48E or 45Q (CCS) tax credits

PTC: 45V – Clean Hydrogen Production

Tier	Carbon Intensity Range (kg CO ₂ /kg H ₂)	Tax Credit (\$/kg H ₂)
1	0 – 0.45	3
2	0.45 – 1.5	1
3	1.5 – 2.5	0.75

PTC: 45X – Advanced Manufacturing Production

- » Promotes U.S. clean energy technology production
- » Credit amount is specific to component type
- » Effective through 2032

ITC: 48E – Energy Production Investment

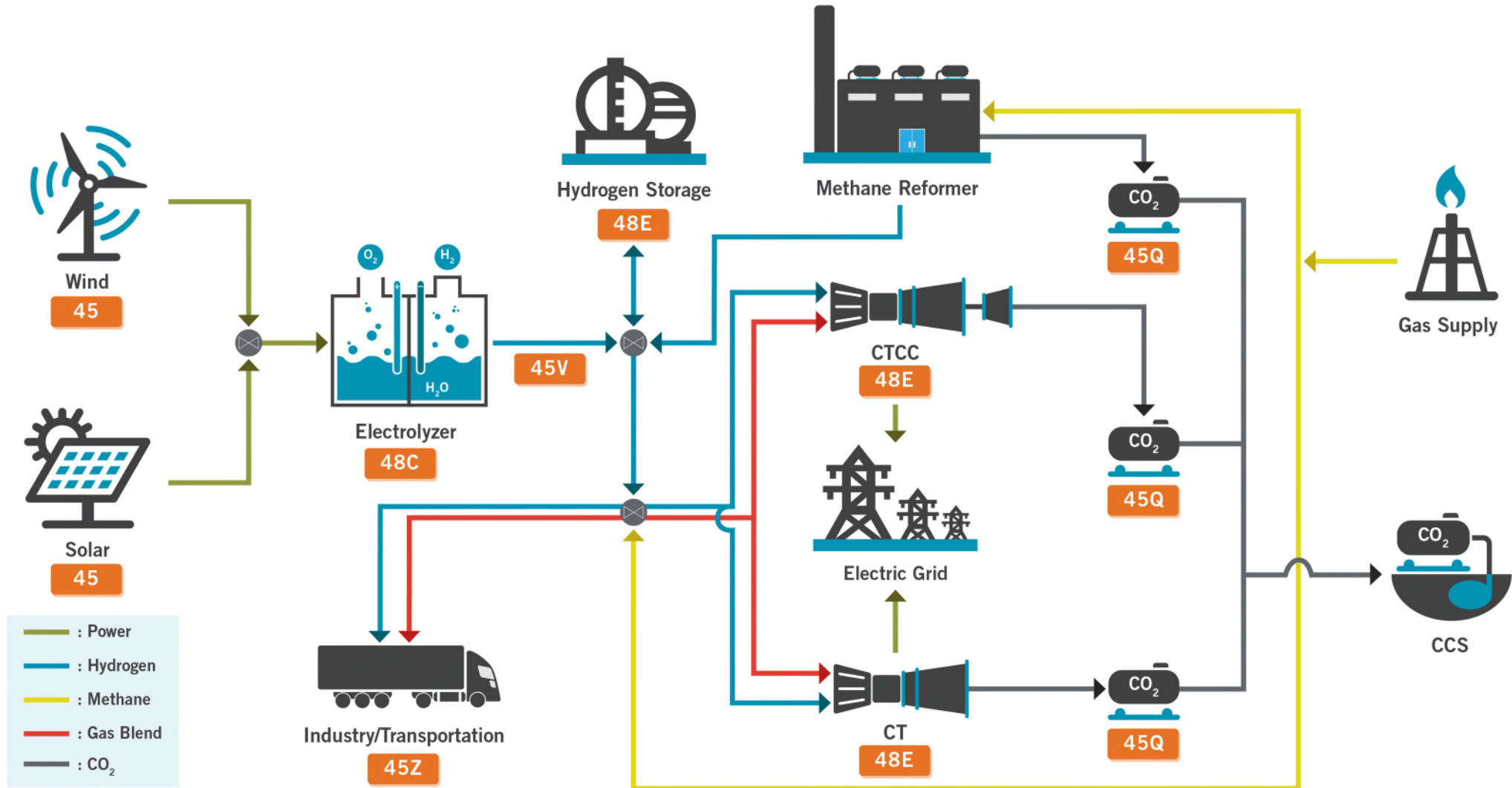
- » Extends investment credit to 2024
- » Technology neutral
- » Requires 0 or negative GHG emission
- » 6% base credit
 - » Up to 30% with 5x bonus
 - » 10% bonus for specific requirements
- » Can't "stack" with 45 PTC

ITC: 48C – Advanced Energy Production Investment

- » Promotes advanced energy production
 - » Energy production: sun, wind, water, geothermal, etc.
 - » Energy storage
 - » Carbon capture and storage
 - » Electrolyzers, etc.
- » \$10B available through applications (5/31/2023)
- » 6% base credit
 - » Up to 30% with 5x bonus
- » Can't "stack" with 48, 48E, 45Q, 45V

What It Looks Like

Green Hydrogen and IRA Tax Credits



Thank You



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