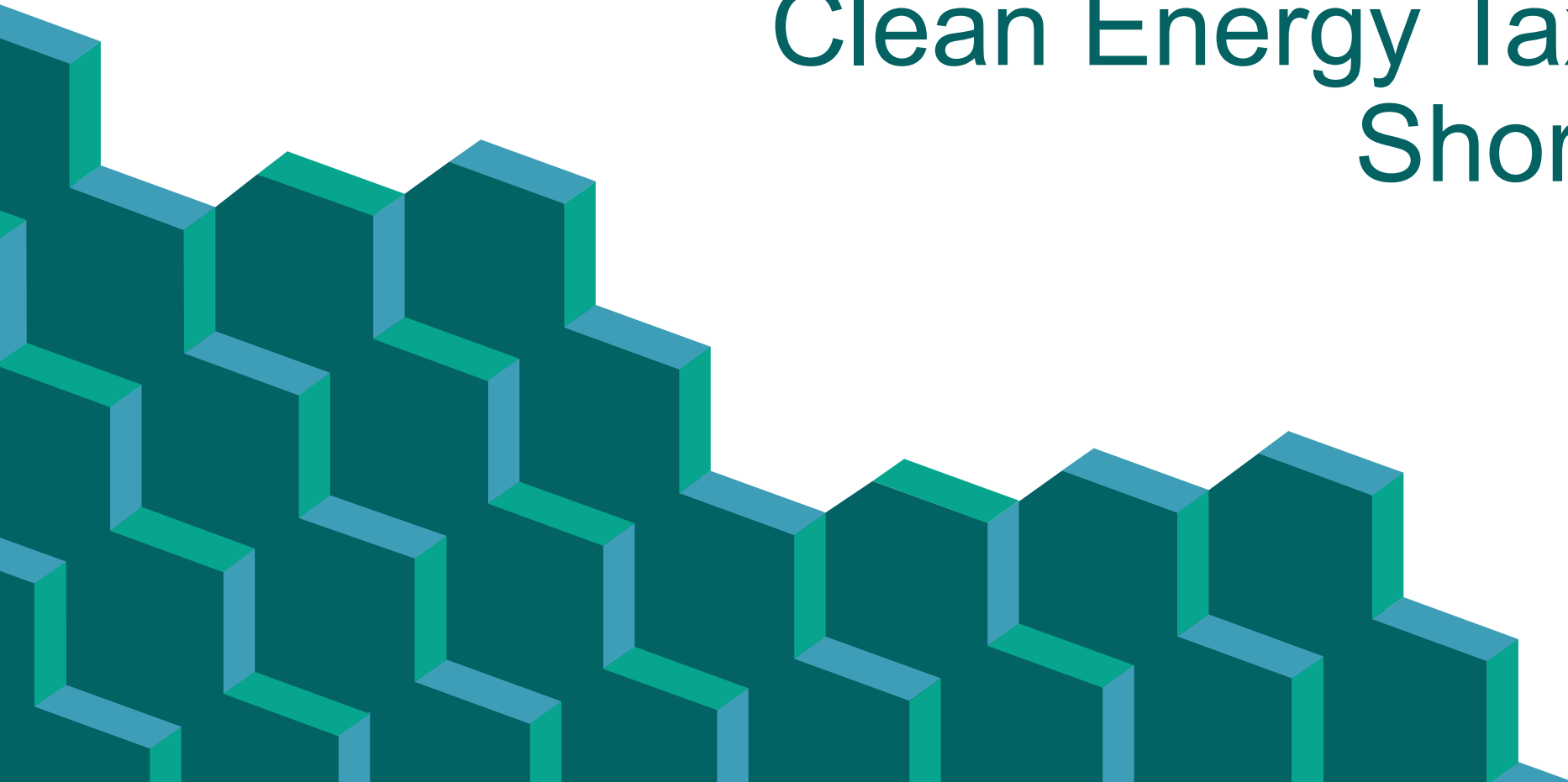


NTA 116<sup>TH</sup> ANNUAL CONFERENCE ON TAXATION

# Clean Energy Tax Credits Short Course



# Agenda

- History of clean energy and technology credits
- Overview of IRA
- Major upcoming regulatory decisions
- Potential research & careers

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# Agenda

- **History of clean energy and technology credits**
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# History of Clean Energy and Technology Credits

- Impetus
  - Domestic energy supply (including fossil, fuels, etc.)
  - More recently - Climate change
- Iterative approach
- Short-term policy with extenders
- Tech-specific

# Agenda

- History of clean energy and technology credits
- **Overview of IRA**
  - **Stated goals**
  - Categories of incentives
  - Emissions and energy impacts
  - Summary of the credits
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## Stated Goals of the IRA

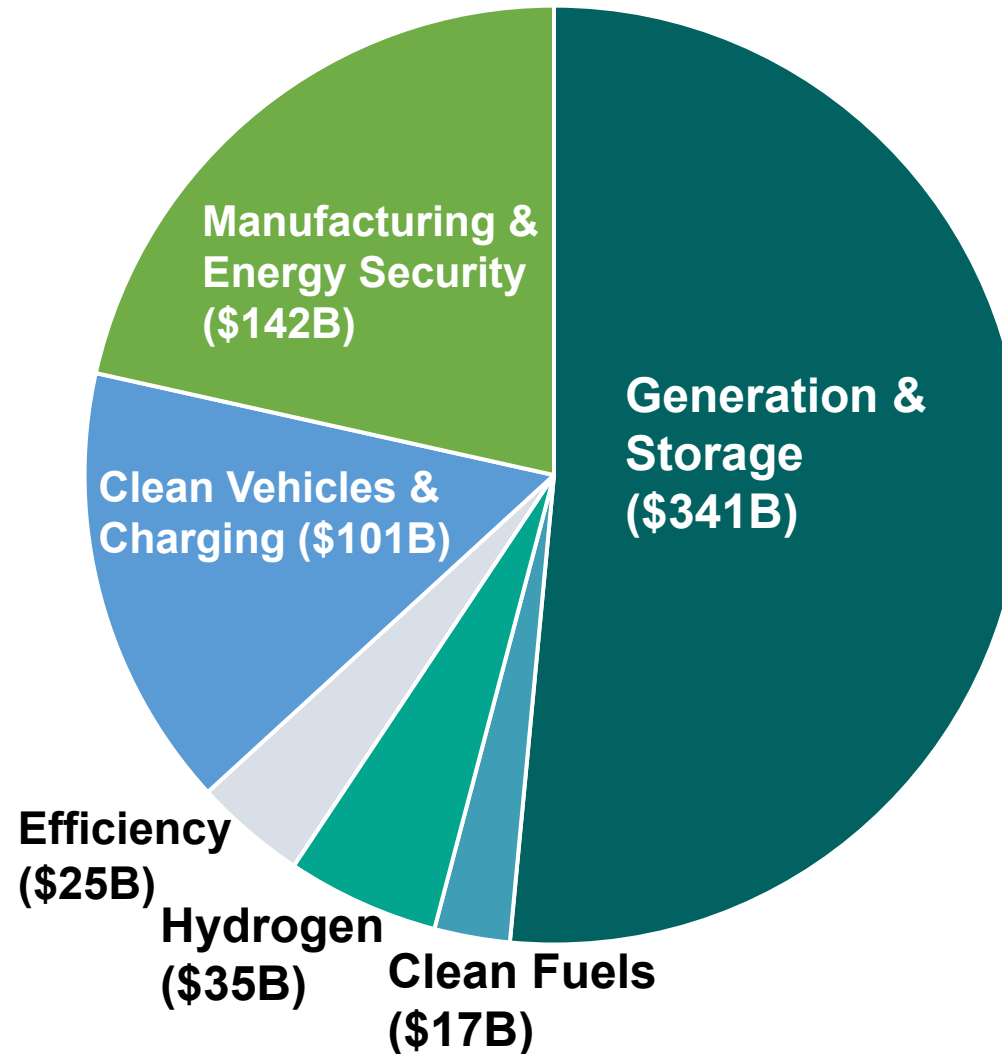
- Emissions - Put US on course for Administration's target of a 50-52% reduction in net emissions below 2005 levels by 2030
- Just Transition - Promote equity through improved access, and investments in historically underserved (EJ/frontline) communities and energy communities,
- Labor - Create good-paying, high-quality jobs
- Build domestic supply chains for clean energy materials to improve energy security and strengthen the US manufacturing base

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# Categories of Incentives in the IRA

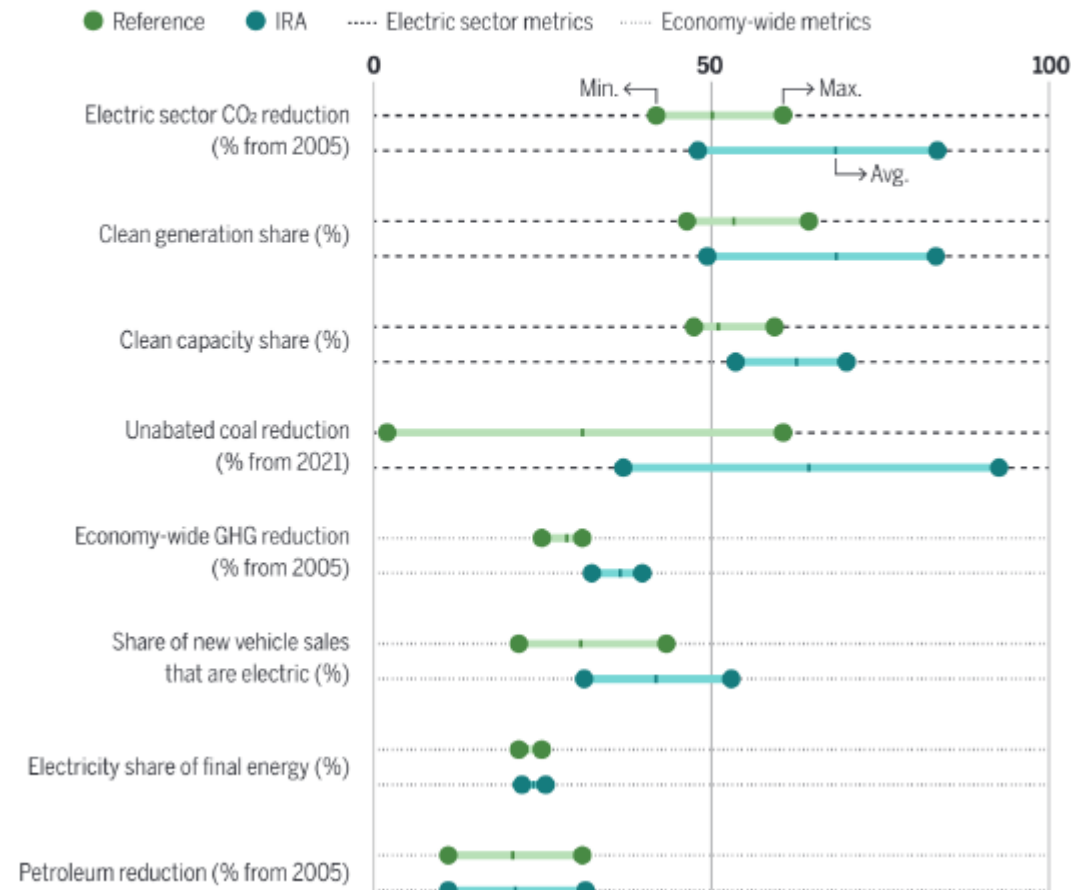


Source: <https://www.taxnotes.com/tax-notes-today-federal/energy-taxation/jct-estimates-impact-repealing-ira-energy-tax-provisions/2023/06/02/7gtlx>

# Emissions and Energy Impacts

## Key Inflation Reduction Act (IRA) indicators across models

Indicators reflect values estimated for the year 2030. Clean generation and capacity shares include renewables, nuclear, and carbon capture and storage-equipped generation. Electric vehicle sales include battery or plug-in hybrid electric vehicles. Model-specific values for these metrics are provided in table S6.



Source:  
<https://www.science.org/doi/10.1126/science.adg3781>

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    - **Base credits**
    - Bonus credits
    - Monetization
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## Generation & Storage – Investment Tax Credit

- ITC = 30% of the basis in energy property assuming prevailing wage & apprenticeship requirements met
- Before 2025, covers specific technologies (solar, wind, etc.)
- Beginning in 2025, net-zero emission facilities only
- Qualifying basis (generally, FMV) in tangible property up to point of interconnection
- Coordination rules with other IRA credits

# Generation & Storage – Residential Clean Energy Credit

- 22-30% of the clean energy expenditures
  - Solar
  - Fuel cell
  - Small wind
  - Geothermal heat pumps
  - Battery storage

## Generation & Storage – Production Tax Credit

- 2.75¢/kWh if wage and apprenticeship requirements met
- Before 2025, covers specific technologies (solar, wind, etc.)
- Beginning in 2025, net-zero emission facilities only
- Must be sold to an unrelated party, except for electricity used to produce clean hydrogen

# ITC/PTC Bonus Credits

- Wage & apprenticeship (5X)
- Energy Communities (+ 10%)
- Domestic Content (+ 10%)
- Low-income communities bonus (allocated +10-20% solar/wind ITC only)
- Bonuses are richer for ITC

	ITC	PTC*
Potential Total	60-70%	3.30¢
EJ Bonus	+10-20%	N/A
Energy Communities	+10%	+0.275¢
Domestic Content	+10%	+0.275¢
Wage & Apprenticeship	30%	2.75¢ (per kWh)

\* Values adjusted for 2023 inflation factor

**Discuss:**  
Why would you prefer ITC  
vs. PTC?



## Clean Fuels

- IRA extends biodiesel and other alternative fuel credits for 2023/2024 and creates new sustainable aviation fuel credit
- Tech neutral starting in 2025
- Amount depends on emissions rate and wage & apprenticeship
  - \$0.20 - \$1.00 per gallon for transportation fuel
  - \$0.35 - \$1.75 per gallon for aviation fuel

# Clean Hydrogen

- Up to \$3/kg produced for sale or use
  - **\$3/kg** –  $X < 0.45$  kg CO<sub>2</sub>e/kg H<sub>2</sub>
  - **\$1/kg** –  $0.45 \text{ kg CO}_2\text{e/kg H}_2 \leq X < 1.5$  kg CO<sub>2</sub>e/kg H<sub>2</sub>
  - **\$0.75/kg** –  $1.5 \text{ kg CO}_2\text{e/kg H}_2 \leq X < 2.5$  kg CO<sub>2</sub>e/kg H<sub>2</sub>
  - **\$0.6/kg** –  $2.5 \text{ kg CO}_2\text{e/kg H}_2 \leq X < 4$  kg CO<sub>2</sub>e/kg H<sub>2</sub>
- Can elect ITC instead
- Key upcoming regulatory decision - guidance forthcoming on determining emissions rates

# Clean Hydrogen – Selected Colors

- SMR (most common)
  - Gray
  - Blue
- Electrolysis
  - Green
  - Pink
- More – white, black, turquoise, etc.

# New Consumer EVs & Charging

- New Consumer EVs
  - Up to \$7,500
  - Subject to assembly and new geographic sourcing requirements (battery components, critical minerals, final assembly) and MSRP and AGI limits
  - Dealer transfer
- Charging
  - 30% of cost (assuming prevailing wage & apprenticeship met), up to \$100,000
  - Subject to geographic limitations

# Used Consumer EVs & Commercial EVs

- Used Consumer EVs
  - Up to \$4,000
  - Subject to AGI and price limits
  - Dealer transfer
- Commercial EVs
  - \$7,500 for small vehicles, \$40,000 for large vehicles
  - Mobile Machinery
  - No domestic requirements
  - Leases

# Emerging Technologies

- Enhanced 45Q credit for carbon capture
- New Advanced Manufacturing Production Credit for components produced and sold
- New Clean Hydrogen Credit (in lieu of clean fuels credit)
- All three credits eligible for **direct pay for *any* entity** (not just applicable entities)

# Energy Efficiency

- Energy Efficient Home Improvement Credit (25C)
  - Up to 30% of the cost of qualified clean energy efficiency improvements (windows, doors, heat pumps, biomass stoves, etc.)
- New Energy Efficient Home Credit (45L)
  - New credit for contractors building qualified new energy efficient homes
- Enhanced Efficient Commercial Buildings Deduction (179D)
  - Increase in per square foot deduction amount for energy efficient upgrades
  - Allows deduction for retrofits

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## Bonus Credits

- Wage & apprenticeship
- Energy communities and low-income communities
- Domestic content

## Wage and Apprenticeship Incentives

- Increased baseline ITC/PTC by factor of 5 if certain wage and apprenticeship requirements are met
- Increased credit amount for other credits where wage and labor requirements met (e.g., hydrogen, clean fuels, charging infrastructure, etc.)
- All non-exempted projects expected to satisfy these requirements

# Low-Income Communities Bonus Credit and Energy Communities Bonus Credit

- Low-Income Communities
  - Allocated – 1.8GWs/year
  - 10-20% bonus for solar/wind ITC projects related to low-income communities
- Energy Communities
  - 10% bonus for ITC/PTC projects placed in “energy communities”
  - Mainly Brownfield sites and communities closely associated with historic fossil employment

# Domestic Content Bonus

- 10% bonus credit for ITC/PTC
- Phaseout for elective pay
- Requirements
  - All steel or iron made in the US
  - 40% of the total costs of all manufactured products attributable to products made in the US

# Agenda

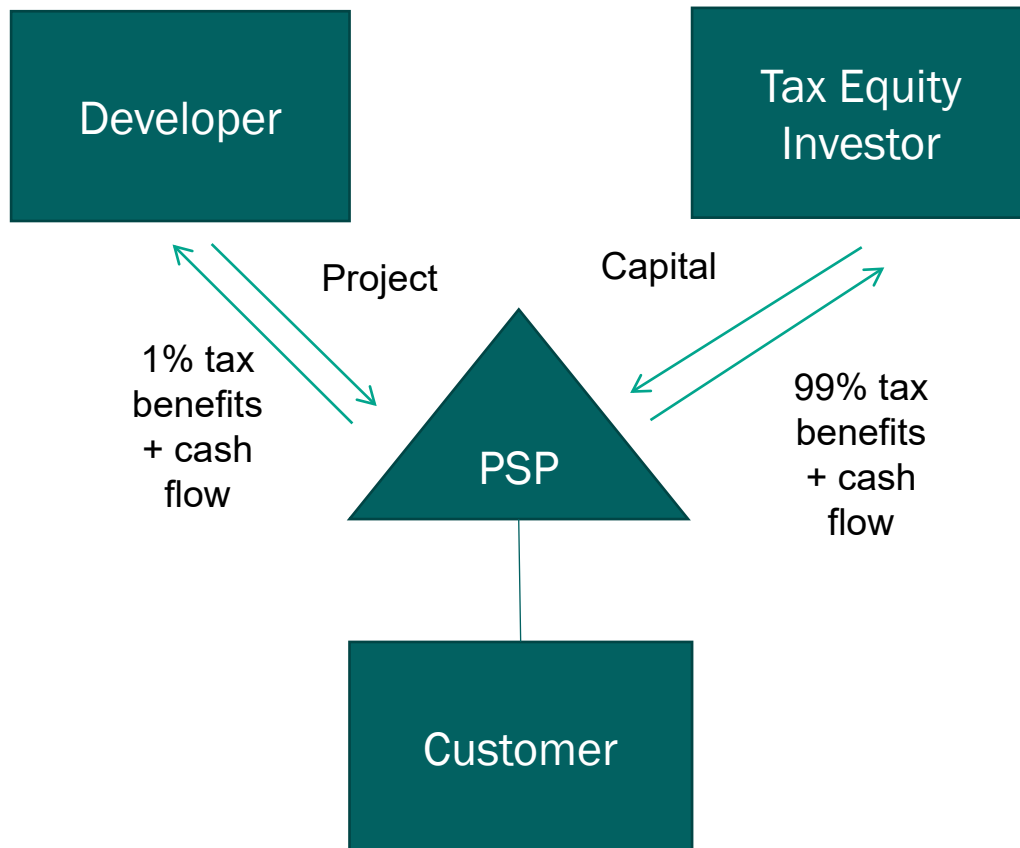
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# Monetization Mechanisms

- Elective Pay (a.k.a. Direct Pay)
- Transferability

# Tax Equity Partnerships

## Pre-Flip

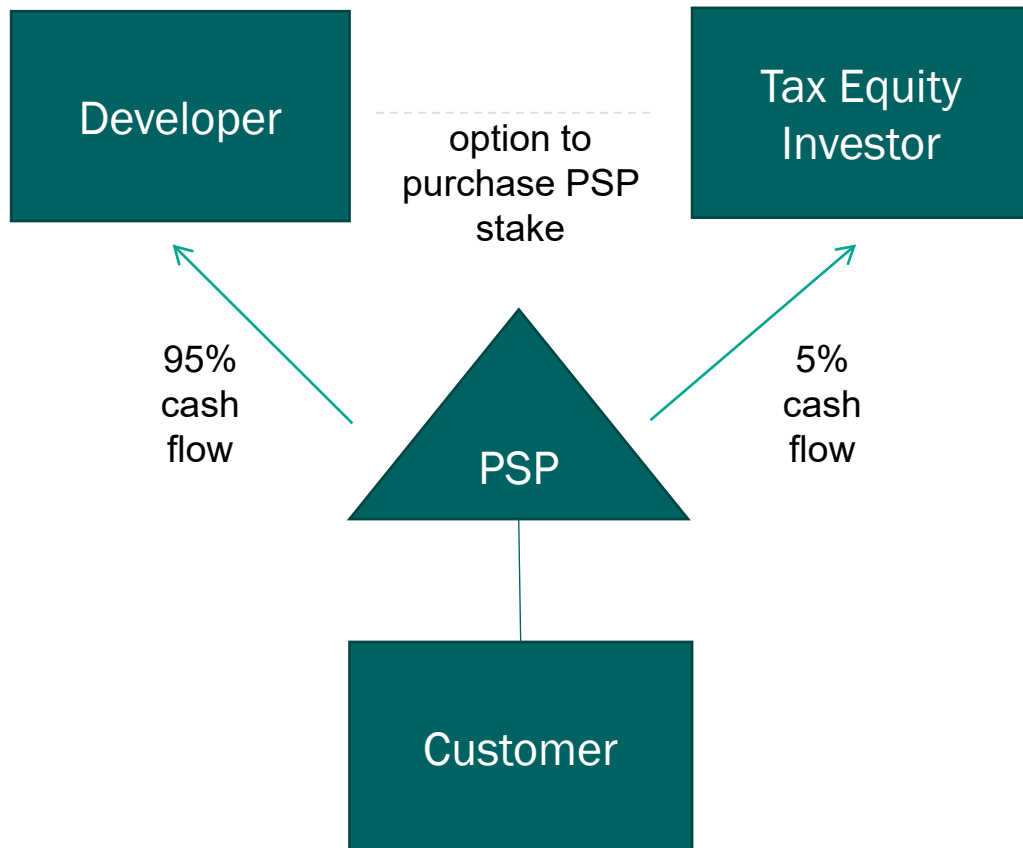


## Partnership “flips”

- Common structure for financing clean energy projects while monetizing depreciation tax benefits – 80% of solar deals
- Key mechanism: uneven distribution of tax benefits and cash until investor has reached certain yield (usually when all benefits utilized)
- After investor has reached their agreed-upon yield, majority allocation of benefits is “flipped” back to the developer
- Investor must not be a lender or mere purchaser of tax credits

# Tax Equity Partnerships

## Post-Flip



## Partnership “flips” cont’d

- After investor has reached their yield, the benefits of the partnership are “flipped” back to the sponsor, with the tax equity investor retaining a minimal (usually 5%) interest
- Developer often has option to purchase
- Other important points:
  - Limited pool of equity investors with enough capacity given high transaction costs - \$20B
  - Favors large developers and projects; leaves out small projects
  - Tax equity investment highly susceptible to macro factors

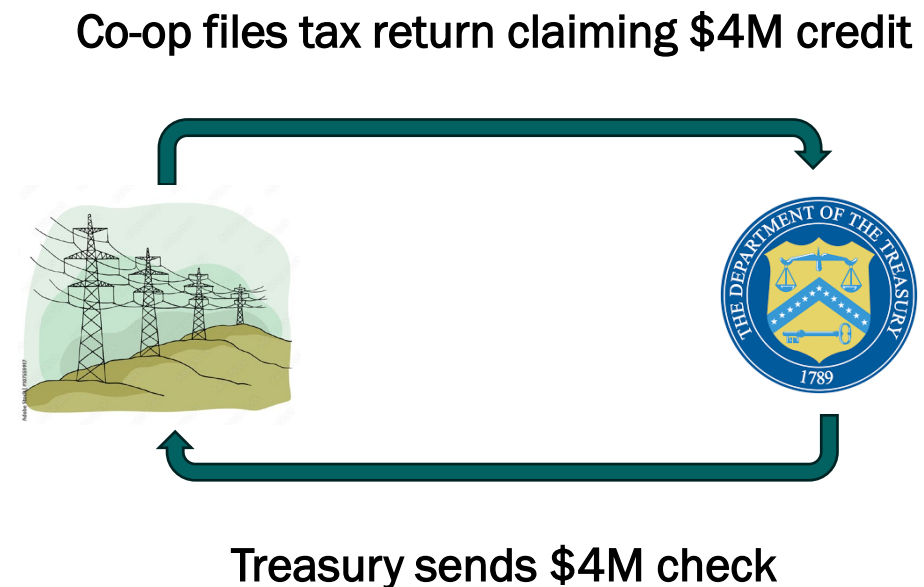


## Elective Pay – Section 6417

- “Applicable entities” may claim direct pay (cash from IRS) for all IRA credits regardless of whether they owe any tax
  - Direct pay narrowed since BBB, which would have provided universal direct pay
- Applicable entities include state and local governments, territory governments, section 501 tax-exempts, rural co-ops
  - Still impactful considering co-ops and public power serve 25% of US
- Any taxpayer may claim direct pay for 45V (clean hydrogen), 45Q (carbon capture), or 45X (clean energy components)

## Elective Pay Example

- Rural electric co-op invests \$10 million in solar array and meets wage, labor, and domestic content requirements of ITC.
- **Co-op has never been subject to tax and has never filed tax return.**
- Co-op places solar array into service claiming \$4 million ITC  $((30\% + 10\%) \times \$10M)$

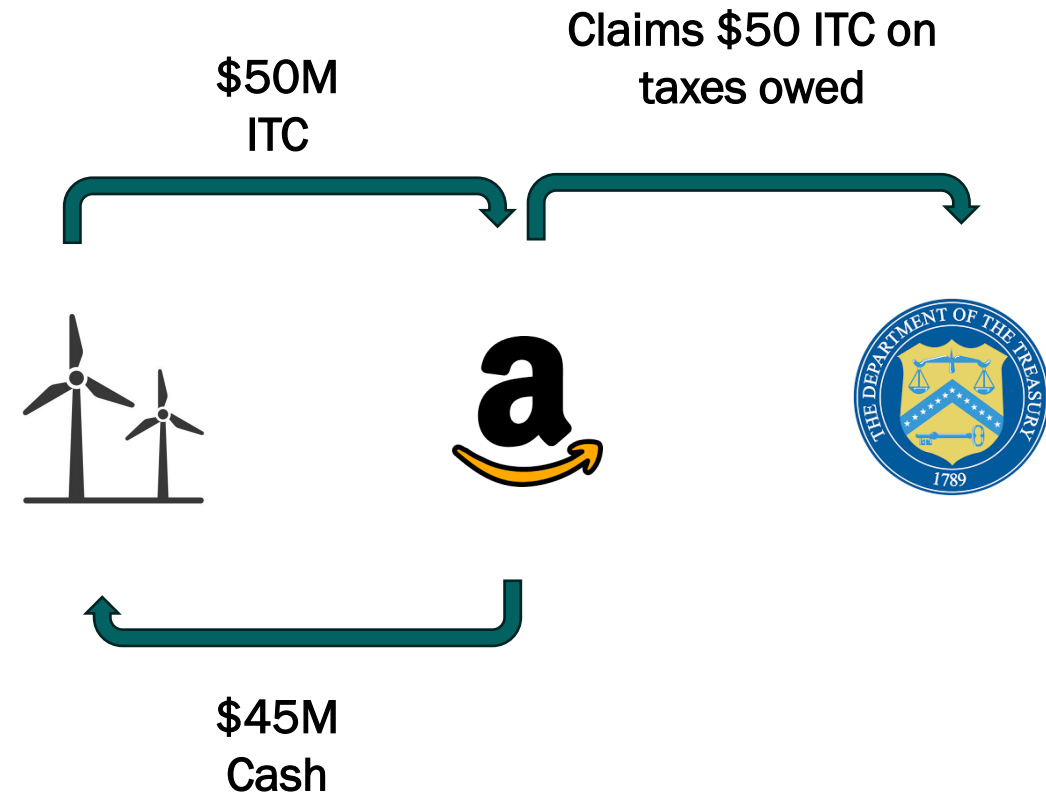


## Transferability – Section 6418

- Entities may elect to sell their IRA tax credit to another for cash only
- Payment not deductible or recognized as income
- Credits will likely be sold at discount
  - Currently seeing 10% discounts for utility scale
  - 20-30% discounts for smaller projects
- Proposed guidance does not permit applicable entities to purchase credits and significantly limits individuals and closely held C corps from purchasing credits

# Transferability Example

- Developer generates \$50M ITC.
- Developer does not have any taxable income in the year the project is placed into service
- Developer sells credit to another taxpayer for \$45M.
- Taxpayer claims credit on return and reduces taxes owed by \$50M.
- Taxpayer benefits + \$5M



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# Tax Capacity

- Upcoming decisions impacting monetization options:
  - “Chaining”: Should Treasury allow applicable entities to purchase credits and claim direct pay?
  - Passive Activity Limitations: Should Treasury apply passive activity rules to credit purchasers?
  - Partnerships seeking direct pay
- Size of transferability markets and credit pricing will depend on these decisions

# Tax Capacity – Size of Transferability Markets

## Potential Expansion Options

### Proposed Regulations

- Large Corps
- Partnerships
- Individuals & small corps w/ passive income

- Large Corps
- Partnerships
- +Small Corps
- + Certain applicable entities (governments, green banks, etc.)
- +All Individuals

## Emissions Determinations – Clean Hydrogen

- Credit based on the “lifecycle greenhouse gas emissions rate”
- Statute defines lifecycle GHG by referencing Clean Air Act
- Requires use of GREET or “successor model”
- Forthcoming guidance will decide on 3 pillars
  - Additionality
  - Time-matching
  - Deliverability
- Will likely impact emissions determinations for clean fuels



# Emissions Determinations – ITC/PTC & Clean Fuels

- Eligibility for tech-neutral ITC/PTC conditioned on facility GHG rate being “not greater than zero”
- No specific methodology for determining emissions referenced
- Treasury will need to adopt methodology and publish table with emissions rates for various facilities

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## Potential Research

- Tax capacity
- Tax credit incidence
- Emissions accounting
- Inducement effects?
- Legislative process implications
  - Agency expertise
  - Lobbying
- Data access
- Tracking impact of the law on emissions and non-emissions goals

## Careers

- Modeling
  - E.g., Joint Committee on Taxation, Treasury, environmental NGOs
- Credit transfer exchanges
- Tax insurance
- Project finance
- Public interest tax expertise
- Policy

# Q&A and Discussion



Thank you!

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