

Vinson&Elkins

Energy Series

Energy Transition

Renewable Reboot:
A Download on the Inflation
Reduction Act of 2022

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Energy Transition: Carbon Intensive → Carbon Neutral

- **To successfully transition, we need to:**
 - Significantly increase power production from green and carbon neutral sources
 - Recognize that carbon intensive power production and industry will continue but mitigate carbon emissions
 - Spur development and investment in facilities that produce our most abundant element—hydrogen—for power production, industrial applications, heavy transportation
 - Support continued power production by nuclear facilities

Background

Energy Transition: Carbon Intensive → Carbon Neutral

- **To successfully transition, we need to:**

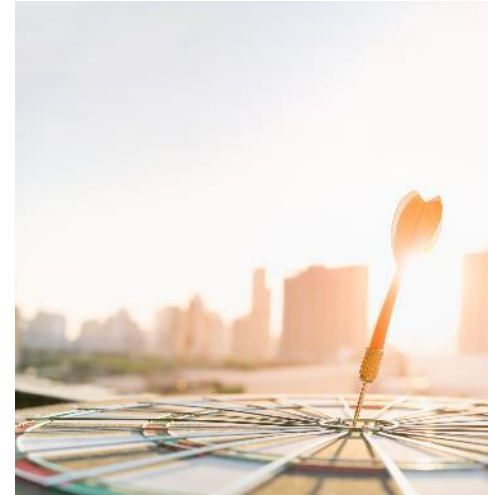
- Substantially increase the ability to store energy for grid stability and to manage intermittency
- Significantly increase the ability to transmit power from source to load centers
- Increase the domestic manufacturing capabilities for components of these facilities
- Spur investment in new technologies that can produce technology in a carbon neutral manner
- Continue to support growth of renewable fuels and clean fuel production
- Support EV and EV charging



Background

Energy Transition: Carbon Intensive → Carbon Neutral

- **To successfully transition, we need to:**
 - Eliminate barriers to access to capital
 - Permit monetization of credits
 - Clarify the law



Background

Energy Transition: Carbon Intensive → Carbon Neutral

- **During this energy transition, we need to recognize that:**
 - a transition of this magnitude takes time
 - fair employment and training is required
 - displaced workers need support, new opportunity
 - domestic manufacturing should be encouraged
 - security and reliability are essential



Role of the Tax Code

- **Congress has historically used the Tax Code to motivate behavior, attract investment, and support economic policy**
 - Traditionally, the primary method employed is to provide tax credits (a dollar-for-dollar reduction of tax liability) to favored taxpayers/technologies/industries
 - For renewables/green energy, credits have been styled as a production-based tax credit (the “production tax credit” or “PTC”) and investment-based tax credit (the “investment tax credit” or “ITC”)
 - PTC—promotes long term performance, subsidizes revenue
 - ITC—promotes investment by defraying high upfront cost
 - These two basic types of credits are the backbone of the proposed legislation

Background

Credit Monetization is Essential



- **Historically, have needed tax capacity or a tax equity investor to monetize credits**
- **The proposed legislation would permit the following:**
 - Direct pay
 - Credit transferability
 - Extension of carryback provisions

2. Overview of the Inflation Reduction Act of 2022

Overview

Inflation Reduction Act Climate and Energy Tax Proposals

• Revenue Raisers

- Corporate AMT:
 - Imposition of a 15% corporate AMT on C-corps with adjusted financial statement income in excess of \$1 Billion – General business credits can be used to offset
- Carried Interest:
 - Extends the holding period required for capital gains treatment on carried interest from 3 to 5+ years
- IRS tax enforcement



Inflation Reduction Act Climate and Energy Tax Proposals

- **Extension, expansion, and creation of credits:**

- PTC (45)
- ITC (48)
- Clean Energy Production Credit (45Y)
- Clean Electricity Investment Credit (48D)
- Zero Emission Nuclear Power Production Credit (45U)
- Carbon Capture Credit (45Q)
- Clean Hydrogen ITC or PTC (45V)
- Advanced Manufacturing Production Credit (45X)
- Advanced Energy Project Credit (48C)
- Clean Vehicle Credit (30D)
- Previously Owned Clean Vehicles Credit (25E)
- Qualified Commercial Clean Vehicles Credit (45W)
- Alternative Fuel Refueling Property Credit (30C)
- Biodiesel and Renewable Diesel (40A, 6426, and 6427)
- Alternative Fuels and Alternative Fuel Mixtures (6426)
- Second Generation Biofuel (40(b)(6)(J))
- Sustainable Aviation Fuel (40B)

- Clean Fuel Production Credit (45Z)
- Home Improvement Credit (25C)
- Residential Clean Energy Credit (25D)

- **Revised credit structure:**

- Prevailing wage and apprenticeship requirements
- Domestic content bonus
- Energy Community bonus
- Low-income community bonus
- Credit monetization flexibility

- **Does NOT include:**

- Expansion of qualifying income in 7704(d)(1)(E) to include renewables; or
- Expansion of the ITC to include transmission property

3. Credits and Structural Modifications

Beginning Construction Refresher (current law)

- **Under current law, the rate of tax credit you are eligible for depends on when you “began construction” on the facility eligible for the facility**
 - Construction begins when either:
 - “physical work of a significant nature” begins (the “Physical Work Test”); or
 - requires a taxpayer to begin physical work of a significant nature
 - a taxpayer meets a “five percent” safe harbor test (the “Five Percent Safe Harbor”)
 - requires a taxpayer to pay or incur five percent or more of the total cost of the facility
 - Both methods require continuous progress towards completion once construction has begun



Credit Structure

- **New Credit Structure**

- “Headline Credit” (e.g., 30% ITC)
 - Base credit (20% of the “headline credit”) – e.g., 6% ITC
 - Increased credit (80% of the “headline credit”) – e.g., 24% ITC
- Prevailing wage and apprenticeship requirements
 - Must be met to receive the full “headline credit”
 - Exception for:
 - Small projects and
 - Any project beginning construction within 60 days of the date the Secretary publishes guidance

- **Prevailing Wage and Apprenticeship Requirements**

- Taxpayer must ensure that any laborers and mechanics are paid prevailing wages:
 - During the construction of a project
 - For alteration and repair of a project (during the relevant credit period)
- Apprenticeship requirements require a taxpayer to ensure that no less than the applicable percentage of total labor hours for the construction of the project are performed by qualified apprentices
- Cure options in the event of failure to satisfy either requirement are available
- Query whether these requirements are optional?

Bonus Credits

- **Domestic Content – 10% Bonus**

- Taxpayer must certify that any of the following which is part of the facility was produced in the United States:
 - Steel;
 - Iron; or
 - Manufactured product
- Manufactured products are generally considered manufactured in the United States if the “adjusted percentage” of the total cost of the components of such product are mined, produced, or manufactured in the United States is 40%
 - 20% for offshore wind



Bonus Credits

- **Low-income Communities – 10% or 20% Bonus for Wind and Solar ITC**
 - Project must be less than 5MW
 - 10% bonus credit is available for projects located in:
 - a low-income community; or
 - on Indian land
 - 20% bonus is available for projects which are part of:
 - qualified low-income residential building project; or
 - qualified low-income economic benefit project
 - Secretary to establish a program to allocate amounts of environmental justice solar and wind capacity limitation to qualified solar and wind facilities
 - Annual capacity limitation of 1.8 gigawatts of DC capacity for 2023 and 2024 and zero thereafter
- **Energy Community – 10% Bonus**
 - Energy communities include:
 - a brownfield site;
 - a census tract or any directly adjoining tract in which:
 - a coal mine closed after December 31, 1999; or
 - a coal-fired electric power plant was retired after December 31, 2009; and
 - an area which has (or, at any time during the period beginning after December 31, 1999, had) significant employment related to the extraction, processing, transport, or storage of coal, oil, or natural gas

PTC Extensions and Expansion

- PTC extended to projects beginning construction before January 1, 2025
- **Assets:**
 - Wind;
 - Solar (reinstated);
 - Geothermal;
 - Biomass;
 - Landfill gas;
 - Trash;
 - Hydropower; and
 - Marine and hydrokinetic
- PTC for refined coal not extended
- Solar PTC added
- Domestic Content and Energy Community bonuses available
- PTCs generally only remain available to the owner of the underlying facility (i.e., no leases/inverted leases)



ITC Extensions and Expansion



- **ITC would generally be extended to projects beginning construction before January 1, 2025**
 - Extension for geothermal to January 1, 2035
- **Effective December 31, 2022, the definition of ITC eligible property is expanded to include:**
 - Standalone storage with capacity of at least 5 kWh;
 - Qualified biogas;
 - Microgrid controllers; and
 - Interconnection property (for small projects – 5MW AC)
- **Domestic Content, Energy Community, and Low-Income Community bonuses available**

New Tech Neutral Credits

- **Beginning in 2025, taxpayers with zero emissions facilities would have the option to choose between a new technology neutral PTC or ITC:**
 - **Clean Electricity Production Credit (45Y)**
 - **Clean Electricity Investment Tax Credit (48D):**
- **Tech neutral credits begin to phase out for qualified facilities beginning construction in the first calendar year after *the later of*:**
 - the calendar year in which annual greenhouse gas emissions from the production of electricity in the United States are equal to or less than 25% of the annual greenhouse gas emissions from the production of electricity in the United States for calendar year 2022; and
 - 2032

Carbon Capture Extension and Expansion

- **45Q extended to projects beginning construction before January 1, 2033 (from January 1, 2026)**
- **Lower capture requirements:**
 - Electric generating facility:
 - *Current law:* 500,000 metric tons of qualified carbon oxide during the taxable year
 - *IRA:*
 - 18,750 metric tons of qualified carbon oxide during the taxable year **and**
 - At least 75% of the baseline carbon oxide production
 - Other facilities:
 - *Current law:* 100,000 metric tons of qualified carbon oxide during the taxable year
 - *IRA:* 12,500 metric tons of qualified carbon oxide during the taxable year
 - Direct air capture facilities:
 - *Current Law:* 100,000 metric tons of qualified carbon oxide during the taxable year
 - *IRA:* 1,000 metric tons of qualified carbon oxide during the taxable year

Carbon Capture Extension and Expansion



- **45Q credit amount materially increased:**
 - Sequestration
 - *Current Law*: \$50 per metric ton
 - *IRA*: \$85 per metric ton “headline credit”
 - EOR or Utilization
 - *Current Law*: \$35 per metric ton
 - *IRA*: \$60 per metric ton “headline credit”
 - Direct Air Capture
 - *Current Law*: same as above based on use
 - *IRA*: \$180 for sequestration or \$130 per metric ton for EOR or utilization “headline credit”

New Energy Credits – Hydrogen and Nuclear PTCs

- **Clean Hydrogen PTC or ITC (45V)**

- 10-year PTC or ITC for the production of clean hydrogen produced after 2022
 - Facility must begin construction before 2033
- Headline PTC of the product of (x) \$3.00/kilogram (adjusted for inflation) and (y) multiplied by an applicable percentage
 - Percentage is 100% if the lifecycle greenhouse gas emissions rate is less than 0.45 kilograms of CO₂e per kilogram of hydrogen
 - Percentage adjusted downward as the lifecycle greenhouse gas emissions rate increases
- Headline ITC of 30%
 - Adjusted downward as the lifecycle greenhouse gas emissions rate increases

- **Zero Emission Nuclear Power Production Credit (45U)**

- PTC for the production of electricity from a nuclear facility which is PIS before the date of enactment
 - Electricity must be produced and sold to an unrelated person after 2023
 - Credit terminates for tax years beginning after 2032
- Headline credit of 1.5 cents per kWh (adjusted for inflation and reduced by 80% of the excess of gross receipts from electricity produced and sold over \$0.025 multiplied by the amount of electricity sold)

Other New or Expanded Credits – Manufacturing

- **Extension of Advanced Energy Project Credit (48C)**
 - 30% headline ITC for projects that equip or expand manufacturing facilities **expanded** to include facilities that manufacture energy storage systems and components, electric grid modernization equipment or components, electric and hybrid vehicles, property used to produce energy conservation technologies, and equipment which re-equips a manufacturing facility with equipment designed to reduce greenhouse emissions by at least 20%.
 - Taxpayers must apply for certification and total credits capped at \$10,000,000,000



Other New or Expanded Credits – Manufacturing

- **Advanced Manufacturing Production Credit (45X)**

- New credit for production of certain eligible components produced by the taxpayer in the United States and sold to unrelated person after December 31, 2022
- Full credit amount is available eligible components produced and sold before January 1, 2030
 - Components sold after 2029, credit reduced by 25% each year
 - Unavailable for components sold after 2032
 - Phase-out does not apply to production of critical minerals



Advanced Manufacturing Production Credit (45X)- Eligible Components

- **Solar energy components**

- Photovoltaic cell (thin film or crystalline)
- Photovoltaic wafer
- Solar grade polysilicon
- Polymetric backsheet
- Solar module (the connection and lamination of photovoltaic cells into an environmentally protected final assembly which is suitable to generate electricity when exposed to sunlight, and ready for installation without an additional manufacturing process).
- Torque tube
- Structural fastener

- **Wind energy component**

- Blade
- Nacelle
- Tower
- Offshore wind foundation
- Offshore wind vessels

- **Inverters**

- **Battery Components**

- Electrode active materials
- Battery cell
- Battery module

- **Applicable critical minerals (see next slide)***

Credit Modifications

Advanced Manufacturing Production Credit (45X)- Critical Minerals

- | | | |
|----------------|---------------|------------------|
| 1. Aluminum | 19. Niobium | 37. Praseodymium |
| 2. Antimony | 20. Tellurium | 38. Rhodium |
| 3. Barite | 21. Tin | 39. Rubidium |
| 4. Beryllium | 22. Tungsten | 40. Ruthenium |
| 5. Cerium | 23. Vanadium | 41. Samarium |
| 6. Cesium | 24. Yttrium | 42. Scandium |
| 7. Chromium | 25. Arsenic | 43. Tantalum |
| 8. Cobalt | 26. Bismuth | 44. Terbium |
| 9. Dysprosium | 27. Erbium. | 45. Thulium |
| 10. Fluorspar | 28. Gallium | 46. Titanium |
| 11. Gadolinium | 29. Hafnium | 47. Ytterbium |
| 12. Germanium | 30. Holmium | 48. Zinc |
| 13. Graphite | 31. Iridium | 49. Zirconium |
| 14. Indium | 32. Lanthanum | |
| 15. Lithium | 33. Lutetium | |
| 16. Maganese | 34. Magnesium | |
| 17. Neodymium | 35. Palladium | |
| 18. Nickel | 36. Platinum | |

Advanced Manufacturing Production Credit (45X) – Credit Amounts

- Thin film photovoltaic cell or a crystalline photovoltaic cell: \$0.04 / watt DC capacity
- Photovoltaic wafer: \$12 / square meter
- Solar grade polysilicon: \$3 / kg
- Solar module: \$0.07 / watt DC capacity
- Polymeric backsheet: \$0.40 / square meter
- Torque tube: \$0.87 / kg
- Longitudinal purlin: \$0.87 / kg
- Structural fastener: \$2.28 / kg
- Inverters:
 - Microinverters, with capacity of 650 W or less: \$0.11 / AC watt,
 - Residential inverters with 20 kW capacity or less: \$0.065 / AC watt,
 - Commercial inverters that range between 20 kW and 170 kW: \$0.02 / AC watt,
 - Utility-scale inverters with capacity between 170 kW and 1 MW: \$0.015 / AC watt
 - Central inverters greater than 1 MW in capacity: \$0.025 / AC watt
- Battery Cell: \$35 * kWh capacity
- Battery Modules: \$10 * * kWh capacity (\$45 if the battery module does not use battery cell)
- Critical Minerals: 10% of costs incurred with respect to production of such mineral

Electric Vehicles

- **Alternative Fuel Refueling Property Credit (30C)**
 - Extends the tax credit for alternative fuel refueling property (i.e., electric vehicle chargers) to property placed in service before December 31, 2032 and removes the per location limitation. Revised credit provides a 30% tax credit on alternative fuel refueling property up to \$100,000.
- **Clean Vehicle Credit (30D)**
 - The manufacturer's limitation is eliminated for vehicles sold after December 31, 2022.
- **Previously Owned Clean Vehicles Credit (25E)**
- **Qualified Commercial Clean Vehicles Credit (45W)**



Extensions, Modifications, and New Credits

- **Biodiesel and renewable diesel (40A, 6426, and 6427)**
 - Existing income and excise tax credits for biodiesel and biodiesel mixtures (including renewable diesel) would be extended at \$1.00 per gallon through the end of 2024.
- **Alternative fuels and alternative fuel mixtures (6426)**
 - Existing excise tax credits for alternative fuels and alternative fuel mixtures would be extended at \$0.50 per gallon through the end of 2024.
- **Second generation biofuel (40(b)(6)(J)(i))**
 - Existing incentives would be extended through the end of 2024.
- **Sustainable Aviation Fuel Credit (40B)**
 - Existing credit for aviation fuel produced from biodiesel would be replaced, effective from 2023 through the end of 2024, with a new credit for mixtures of sustainable aviation fuel and conventional aviation fuel
 - Taxpayer must certify a reduction of lifecycle greenhouse gas emissions of at least 50%
 - Base credit is \$1.25 per gallon, and increases up to a maximum of \$1.75 if greenhouse gas emissions are reduced below 50%
- **Clean Fuel Production Credit (45Z)**
 - New production tax credit for the production of low-emissions transmission fuel (other than hydrogen) produced at a qualified facility after December 31, 2024 and before December 31, 2027
 - Base credit of \$0.20/gallon (or \$0.35/gallon for aviation fuel), adjusted for inflation, multiplied by an applicable emissions factor
 - The increased credit rate is 5 times the base rate if prevailing wage and apprenticeship requirements are met

Residential Credit Extensions

- **Home Improvements (25C)**

- Credit for making certain improvements to their homes or installing appliances that are designed to boost energy efficiency (subject to a cap based on the type of property)
- IRA The Act would generally extend this residential credit through December 31, 2032

- **Residential Clean Energy (25D)**

- Credit for solar, small wind, fuel cell, geothermal, and biomass is extended through December 31, 2034
- Expanded to include standalone storage
- Credit begins phasing out in 2033



Direct Pay Election

- **Taxpayer treats tax credits generated by a renewable energy project as equivalent to a payment of tax on the taxpayer's filed tax return**
- **Availability**
 - Direct pay option for most credits only available for an “applicable entity”:
 - Tax-exempt entity;
 - State or local government;
 - Tennessee Valley Authority;
 - Indian Tribal Government; or
 - Alaska Native Corporation
 - Exception for first 5 years of the clean hydrogen credit, the first 5 years of the 45Q credit, or the section 45X advanced manufacturing credit

Direct Pay Election



- **Eligible Credits:**

- ITC (48);
- PTC (45) (for facilities PIS after 2022);
- Carbon capture credit (45Q) (for facilities PIS after 2022);
- Technology neutral ITC (48D) and PTC (48Y);
- Alternative fuel refueling property (30C);
- Zero-emissions nuclear power production credit (45U);
- Clean hydrogen credit (45V) (for facilities PIS after 2022*);
- Credit for qualified commercial vehicles (45W);
- Advanced manufacturing credit (45X);
- Clean fuel production credit (45Z); and
- Qualifying advanced energy projects (48C)

- **Election**

- Facility-by-facility basis
- Generally, made in the year the facility is PIS and applies for the entire credit period

Transferability

- **For tax years beginning after December 31, 2022, taxpayers may elect to transfer credits generated by a renewable energy project to an unrelated taxpayer**
- **Eligible Credits**
 - ITC (48);
 - PTC (45);
 - Carbon capture credit (45Q);
 - Technology neutral ITC (48D) and PTC (48Y);
 - Alternative fuel refueling property credit (30C);
 - Zero-emissions nuclear power production credit (45U);
 - Clean hydrogen credit (45V);
 - Advanced manufacturing credit (45X);
 - Clean fuel production credit (45Z); and
 - Qualifying advanced energy projects credit (48C).



Transferability

- **Election**

- All or any portion of the credit
- Multiple transferees
- Facility-by-facility basis
- Made each year in which the credit is available
- When applicable, made by the partnership and not on a partner-by-partner basis
- No secondary transfers
- No transfer of credits that have been carried back or forward



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