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Unpacking the Technology Neutral/Zero Emissions Clean Electricity Tax Credits

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45Y & 48E CLEAN ELECTRICITY CREDITS

- The Inflation Reduction Act includes a new approach to incentivizing the production of clean electricity
- Technology neutral, net zero emissions
 - Section 45Y clean electricity production tax credit
 - Section 48E clean electricity investment tax credit
- As long as the production of electricity results in net zero emissions, any technology can potentially be eligible for the credits
- Section 48E also includes an ITC for energy storage
- Consistent with IRA tax credits, you cannot double dip on credits if you take 45Y or 48E

45Y & 48E CLEAN ELECTRICITY CREDITS

- Replace credits that were based on particular types of facilities and technologies
 - Section 45 PTC for electricity produced from certain renewable sources and Section 48 energy ITC
- Because 45Y and 48E are only for the production of clean electricity (and energy storage ITC), many 48 technologies will no longer be eligible for a tax credit if they are not net zero emissions
- PTC applies to energy produced and either sold to an unrelated party, or sold, consumed, or stored by the taxpayer if the facility is equipped with a metering device owned by a third party, during the year
- ITC applies to a facility used to generate electricity

THE THEORY AND COMPROMISE

The Theory: “It is past time to replace today’s crazy quilt of more than 40 energy tax incentives with a modern, technology-neutral approach.” (Finance Committee Chairman Ron Wyden)

The Two Approaches: The Finance Committee bill replaced the entire set of credits with new credits for zero-emissions electricity and fuel, effective immediately. The Ways and Means Committee bill, in contrast, extended and expanded the section 40, 45, and 48 credits.

The Compromise: Existing system through 2024, tech neutral thereafter.

45Y & 48E CLEAN ELECTRICITY CREDITS

- Importantly, the credits distinguish between electricity produced from gasification and combustion and non-C&G inputs
- Electricity produced with combustion and gasification in the input chain is subject to a life cycle analysis to determine net greenhouse gas emissions, consistent with the Clean Air Act
- LCA is not required for non-C&G technologies
- Carbon capture can be used to reach net zero emissions
- The Secretary is required to annually publish a table with emissions rates

45Y & 48E CLEAN ELECTRICITY CREDITS

- If a facility exceeds zero emissions by 10 grams/CO₂e/kWh or more during the first 5 years of operation, the ITC must be recaptured
- There is not a similar tolerance in the 45Y PTC. Eligibility in each year depends on whether a technology is rated as zero emissions by the Secretary (or per a PER).

45Y & 48E CLEAN ELECTRICITY CREDITS

- The base rate of the PTC is .3 cents per kWh produced
- If prevailing wage and apprenticeship requirements are met, the rate is 5X, or 1.5 cents per kWh
- The rates are adjusted for inflation each year; the rate for 2024 was just released today and is .6 cents per kWh, or 3 cents if PWA rules are met
- The base rate of the ITC is 6% of the cost of qualifying property; the rate is 5X, or 30%, if PWA rules are met
- Bonus credits for domestic content, energy communities, and low-income communities also apply

45Y & 48E CLEAN ELECTRICITY CREDITS

- The credits apply to facilities placed in service after 12/31/24
- The PTC is for a 10-year period from the year the facility is placed in service
- If construction began before 1/1/25, taxpayers who are eligible for both the old 45/48 credits and the new 45Y/48E credits can choose which they want to claim
- The credits are eligible for direct pay and transferability
- Expansions of facilities that result in increased capacity may be treated as newly placed in service
- The heat output of CHP may be converted from BTUs to kWhs to determine the PTC

45Y & 48E PROPOSED REGULATIONS

- Treasury/IRS published proposed regulations on Sections 45Y and 48E on June 3, 2024
- Comments are due no later than August 2, 2024
- For many purposes, the regs include policies that were included in prior 45 and 48 guidance, including the concepts of functionally interdependent and an integral component. These terms are important for purposes of determining what is a unit of energy property.

IMPACT OF *LOPER BRIGHT* AND CRA?

- Final regulations will almost certainly be within the Congressional Review Act window in case one party sweeps control of DC in November
- The recent *Loper Bright* decision overturning the Chevron deference could have an impact as Treasury evaluates comments and finalizes the rules

45Y & 48E PROPOSED REGULATIONS

- Include a list of “categorically non-C&G” facilities that are deemed to be zero emissions
- Taxpayers can rely on this list until Treasury starts issuing annual tables after the regs are finalized
- Taxpayers can request a PER from the DOE for pathways that are not covered in the annual list
- Clarify that electricity generated using C or G *at any stage* in the production of electricity must undergo a life cycle analysis to determine the emissions rate
- Open the door to using EACs or book and claim to establish net zero emissions
- Clarify the source of energy being stored doesn't have to be zero emissions

DEEMED ZERO EMISSIONS

- Wind
- Solar
- Hydropower
- Geothermal
- Nuclear (both fission and fusion)
- Marine/kinetic
- Waste to heat if the original electricity was generated from a deemed zero emissions technology
- Certain emissions are disregarded for purposes of getting on this list, e.g., naturally occurring emissions
- Treasury will publish a list of emissions rates annually

DEEMED ZERO EMISSIONS QUESTIONS

- Treasury posed questions about this list
 - Should flash geothermal be taken off?
 - Should other technologies be added?
- Hydrogen
 - Not on the “safe” list
 - If C&G are part of the energy chain, will need to undergo LCA
 - Appears only co-located wind and solar can meet zero emissions
- Combined Heat & Power
 - Should CHP be added if it is powered by technologies on the list, similar to waste to energy property?

DEEMED ZERO EMISSIONS

- GHG emissions “in the production of electricity” mean emissions that directly occur from the process that transforms the input energy source into electricity
- In determining the safe harbor list for non-C&G facilities, Treasury excluded certain emissions, like naturally occurring emissions
- The LCA for C&G generally ranges from feedstock to meter, consistent with the CAA; it is to be based on a future anticipated baseline of technology and policy
- Certain emissions, like those related to construction of a facility, are not counted for either C&G or non-C&G

DEEMED ZERO EMISSIONS

- The scope of emissions to be taken into account for C&G is *much* broader than for non-C&G, reflecting the policy focus of the IRA to move away from fossil fuels
- Taxpayers may rely on the rates in the annual table as of the date that construction begins on a facility

45Y & 48E PROPOSED REGULATIONS

- The regs rely on nameplate capacity to determine additional capacity
- Additional capacity requires the addition of a new unit or component
- Regs clarify that nuclear facilities that have been out of operation for at least one calendar year, without a valid operating license, and that receive a new license, may be treated as having additional capacity
- The 80/20 rules apply in applicable circumstances
- Power conditioning equipment and transfer equipment are integral parts of a facility

45Y & 48E PROPOSED REGULATIONS

- The rules clarify that taxpayers may make an election to treat their share of an energy property as a separately-owned property under section 761(a) – similar to the rules under direct pay and transferability
- The rules for energy storage and thermal storage are similar to those in the Section 48 proposed rules

45Y & 48E: TREASURY HAS QUESTIONS

- Treasury posed dozens of questions in the preamble for stakeholders to consider in providing comments
- Adding and subtracting from the safe harbor list
- *Many* questions regarding biomass and RNG – T/IRS still seem to be struggling with these technologies, as they are with 45V
 - How should “avoided emissions” be handled?
 - Potential use of energy attribute certificates (EACs) and book & claim to substantiate zero emissions supply chain
 - Questions seem to lean toward requiring “first productive use”
- How should the efficiency level of CHP property be determined if input is non-C&G?

45Y & 48E: TREASURY HAS QUESTIONS

- Additional input on the definition of combustion and gasification
- For the LCA, Treasury wonders about the impact of spatial and temporal factors, and the categorization of products as co-products, byproducts, and waste products
- Recordkeeping requirements
- Carbon capture compliance
- Should flash geothermal be included within scope on the list of “categorically non-C&G” facilities?
- EACs and Book & Claim: Are these appropriate mechanisms to offset C&G emissions to achieve zero emissions?

STAKEHOLDERS HAVE QUESTIONS, TOO

- Combined Heat and Power
 - If C&G in the supply chain, appears CHP won't meet zero emissions, unless offset
 - How to measure energy efficiency for a non-C&G energy source, including nuclear
 - Conversion from BTU to kWh formula
- Energy Storage
 - Energy storage does not require zero emissions input
 - If producing both electricity and heat, and if energy source is C&G, is energy storage an alternative?
 - Energy storage statutorily requires *conversion* to electricity, but doesn't require that all stored energy is used for electricity
 - All or nothing? Certain percentage? Or is any electricity sufficient?

STAKEHOLDERS HAVE QUESTIONS, TOO

- How to calculate additional capacity
 - Regulations use nameplate capacity only
 - Should other methods be allowed?
 - If repairs result in additional capacity, should that count?
 - Is it necessary to meet both the additional capacity rule and the 80/20 rule?
- Life cycle analysis
 - Should there be a prescribed model, like the GREET model for hydrogen or sustainable aviation fuel?
- Will Sections 45 and 48 be extended?

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