Breakthrough Energy

SUBMITTED ELECTRONICALLY

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Internal Revenue Service
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Room 5203
P.O. Box 7604, Ben Franklin Station
Washington, D.C. 20044

The Honorable Lily Batchelder
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Re: Notices 2022-47, 2022-48, 2022-49, 2022-50, 2022-51: Request for Comments on Implementing the Inflation Reduction Act's Clean Energy Tax Incentives

Dear Ms. Batchelder and Mr. Paul:

Thank you for the opportunity to provide input to the Department of the Treasury and the Internal Revenue Service regarding implementation of the historic Inflation Reduction Act (IRA).

Breakthrough Energy is a network of philanthropic programs, investment vehicles, and policy efforts founded by Bill Gates with the goal of accelerating the clean energy transition and reaching net-zero emissions by 2050. Our initiatives include the two-billion-dollar Breakthrough Energy Ventures fund, which helps build groundbreaking companies that can significantly reduce emissions across the economy, and the Breakthrough Energy Catalyst program investing in demonstration projects to get new clean energy technologies to scale. The Inflation Reduction Act's transformative clean energy tax credit framework could help catapult nascent technologies to market in the next decade and help reduce upwards of 40 percent of emissions by the end of the decade. Providing swift clarity and guidance on the scope and applicability of these new tax credits will be crucial to ensure the private sector can leverage incentives to build projects and unlock domestic clean energy industries.

Below please find our comments on questions pertaining to IRS' request for public input on implementing energy generation and storage, energy manufacturing, energy efficiency, and credit monetization and enhancement provisions in IRA.

Comments

We ask that the Department prioritize providing clarity on the new tax credits and monetization options for emerging technologies such as clean hydrogen, energy storage, advanced manufacturing, carbon removal, and sustainable aviation fuel. We also encourage clarity on specific provisions like direct pay, domestic content, prevailing wage requirements, qualifying partnership structures, and recapture requirements. As an organization experienced in working with startups developing nascent clean alternatives, we understand investors will be cautious in the early years about these unfamiliar areas of the new tax code, and about investing in emerging technologies generally. Thus, guidance in these areas on which taxpayers can rely is particularly crucial for projects to get started as soon as possible.

Section 45Y (Clean Electricity Production Credit) & 48E (Clean Electricity Investment Credit)

- **Treasury should not delay implementation guidance for the new tax credits in Sections 45Y and 48E that start in 2025.** Even though technologies potentially qualifying for them will not be placed in service for at least another two years, the development work is underway now. Companies need to understand the potential economics to commit to development budgets. Per the International Energy Agency, by midcentury half of emission reductions will come from technologies that are currently at the demonstration or prototype phase.[1] As such, it is crucial that the guidance be clear enough to tell which novel technologies that are undergoing R&D now but will be ready to enter the market later this decade the tax credits apply. These tax credits should be technology inclusive, and the Treasury and IRS should collaborate with the Department of Energy to establish greenhouse gas emissions rates for categories of facilities that determine eligible technologies.

Section 25C (Energy Efficient Home Improvement Credit)

- **Clarify that the 25C credit is applicable to all insulation projects and include all measures relevant to weatherization of a home**. Revisions made to the credit under IRA define "air sealing system" as an eligible energy efficiency measure pertaining to the building envelop component. For the purpose of eligibility, "building envelope" should also include ducts and duct sealing in both conditioned and unconditioned spaces. The Department of Energy currently includes duct sealing of this variety as a relevant measure to improve energy efficiency in buildings.[2]
- **Clarify that the $1200 maximum allowed credit for energy efficiency upgrades can be claimed by taxpayers in combination with the $2000 maximum allowed credit for heat pump installations**. The current IRA language is ambiguous as to whether a property owner is able to claim both credits if both upgrades are undertaken together. It is often the case that property owners who elect to install a heat pump also choose to perform weatherization upgrades to maximize the energy efficiency benefits gained from these upgrades. For example, pairing duct sealing upgrades with heat pump installations can help improve performance of the latter by reducing the amount of cool air escaping from the building.

Section 48(c)(6) (Energy Storage Technology) and 48C (Advanced Energy Project Credit)

- **Clarify that liquid desiccant, when directly connected to a heating, ventilation, or air conditioning system, is a qualifying form of "thermal energy storage property" and is eligible for an investment tax credit under section 48(c)(6)(C).** The Department of Energy defines "desiccant energy storage" as a type of thermal storage in the 2020 Energy Storage Grand Challenge Roadmap.[3]
- **(In response to Question 1c)** Treasury and the IRS should consult with the Secretary of Energy in determining what qualifies as "other advanced energy property designed to reduce

[1] https://www.iea.org/reports/net-zero-by-2050
[2] https://www.energy.gov/energysaver/minimizing-energy-losses-ducts
[3] https://www.energy.gov/sites/default/files/2020/12/f81/Energy%20Storage%20Grand%20Challenge%20Roadmap.pdf

greenhouse gas emissions" and should apply this provision broadly in a technology-inclusive manner so as to encourage the domestic manufacture and adoption of new, innovative technologies that reduce GHG emissions.

- **(In response to Question 2c) Treasury should provide guidance to define baseline criteria, boundary conditions and timeframe to determine achievement of the 20 percent threshold in section 48C(c)(1)(A)(ii):**
    - Baseline criteria: Treasury and IRS should seek to ensure real GHG reductions by basing the 20 percent threshold on emissions of the facility at its best (lowest emissions) performance, such as right after its commissioning or last retro-commissioning. If this data is unavailable for a facility, the baseline should be the actual emissions of the facility within a year of applying for the credit before the installation of eligible emissions reducing technology. The baseline should also be normalized by facility production volume.
        - To maximize emissions reductions and encourage the installation of more advanced technologies, facilities which are not at optimum design performance or whose emissions have increased over time due to poor maintenance should not have the advantage of measuring reduction against a higher emissions baseline due to their own underperformance.
    - Boundary conditions: At minimum, the emissions accounting should include scope 1 and 2 emissions. Treasury and the IRS should provide guidance on how to account for direct and indirect purchases of renewable and zero-carbon energy for the purposes of offsetting scope 2 emissions. [4]
    - Timeframe: The eligible facility should provide evidence of achievement of the 20 percent threshold within 1 year of placing the project in service. The unvested credit should be subject to recapture if the required minimum emissions reduction is not maintained for five years.
    - Additionally, Treasury and the IRS should not limit the criteria for achieving reductions to any single method or technology, so long as emissions reductions can be verified. A manufacturing or industrial facility should be allowed to use a combination of equipment or technologies to achieve the 20 percent reduction threshold.
- **(In response to Question 3)** Treasury and the IRS should consult with the Secretary of Energy in determining what qualifies as "any other industrial technology designed to reduce greenhouse gas emissions" and should apply this provision broadly in a technology-inclusive manner so as to encourage the domestic manufacture and adoption of new, innovative technologies that reduce industrial GHG emissions, particularly technologies that use new processes and feedstocks to drastically reduce non-energy-related emissions.
- Moreover, guidance should clarify that facilities currently producing industrial materials for use in the construction or alteration of buildings and infrastructure projects (such as concrete, steel, asphalt, and flat glass) that can be retrofitted to produce materials that have substantially lower levels of embodied greenhouse gas emissions are eligible facilities for the purposes of this credit. As cement is a critical and emissions-intensive component of concrete, guidance should indicate that cement facilities that are retrofitted to reduce emissions are also eligible to receive this credit.
    - Ensuring the eligibility of facilities that produce construction and building materials such as cement, concrete, steel, asphalt, and flat glass will maximize the impact of the IRA by aligning supply-push policies like this credit with demand-pull policies like the clean procurement funding allocated to GSA and FHWA for purchasing low embodied carbon materials.
- **(In response to Question 4/4a)** Treasury and the IRS should require companies to estimate and report facility-level emissions and lifecycle emissions using the best available data. To do

[4] Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

this, Treasury may consider leveraging EPA's Greenhouse Gas Reporting Program (GHGRP), an existing tool with significant reported emissions data. This data could be used to project likely future emissions, and the reporting structure itself may be helpful for estimating and verifying emissions from existing facilities. Treasury should use GHGRP data when available, but supplement as necessary and rely on actual monitoring and measurement data whenever possible. Treasury may also consider collaborating with EPA's Energy Star program to assess facility emissions performance and DOE's Industrial Assessment Centers to determine expected emissions reductions from eligible projects.

- **(In response to Question 4b)** Treasury and the IRS should require entities applying for this credit to submit ISO type III environmental product declarations (EPDs) associated with the eligible industrial facility to be retrofitted or equipped with emissions reducing technologies. The EPDs should be generated from product category rules (PCRs) that conform to the 2022 American Center for Life Cycle Assessment (ACLCA) PCR Guidance for the procurement use case, at minimum, and the data source use case, if feasible. Treasury should adopt policies in line with the recommendations from the Buy Clean Task Force and in coordination with the EPD assistance program and low-embodied carbon labeling for construction materials program at EPA funded through the IRA. The EPDs should also be made available in a public interagency EPD database. EPDs not conforming to the data source standard under the ACLCA guidance would have to be supplemented with other lifecycle assessment and emissions data (such as EPA's GHGRP and others referenced above) to determine project eligibility under the 20 percent reduction threshold.
- **(In response to Question5a)** Treasury and the IRS should disburse at least half of the total credit allocation to projects which re-equip industrial or manufacturing facilities with equipment designed to reduce greenhouse gas emissions. Treasury should select a diverse portfolio of projects that cover a range of sectors, technologies, geographies, and business sizes. For awarding these projects, Treasury should prioritize the following selection criteria:
    - Projects that would provide the greatest net impact in avoiding or reducing GHG emissions and air, water, and land pollutants
    - Investments that provide the greatest benefits to hard-hit communities, with a focus on low-income communities, communities of color, and communities facing deindustrialization, environmental injustice, or energy transition
    - Applicants that have demonstrated early and meaningful engagement with and active support from labor unions, community-based organizations, Tribes, disadvantaged communities, and other stakeholders impacted by a project

Section 45X (Advanced Manufacturing Production Tax Credit)

- **Clarify that a "battery module" for the purpose of section 45X includes modules that store electricity in the form of electrochemistry, heat, or thermochemistry, provided the battery module complies with all other statutory requirements.** While the definition of battery module derived from battery cells requires that the module be "configured electrically to create voltage or current", the definition of battery modules not derived from battery cells has no such requirement. Congress explicitly did not restrict the form of energy output solely to electricity. Moreover, 45X defines two categories of "battery module": a 'module…using battery cells' or alternatively, 'a module…with no battery cells'. The latter functionally covers other means for storing electricity. Further clarification on this matter is necessary to help prevent unequal access to this tax credit, which would result in significant market distortion.
- **Clarify that a "battery module" for the purpose of section 45X is agnostic to the form of energy output provided that the output energy is in a directly useful form and that the battery module complies with all other statutory requirements**. The absence of a specified form of energy output is notable due to the preceding alternate definition of "battery module" derived from battery cells. This alternate definition requires that the module be "configured electrically…to create voltage or current." The definition of battery modules not derived from battery cells has no such requirement (though clearly such a requirement could have been

added if that was the intention). Similarly, section 45Y(a)(1)(A) specifies the production of "kilowatt hours of electricity" [emphasis added] to qualify for the Clean Electricity Production Tax Credit. The qualifier "of electricity" would likewise have been added to the definition of battery module with no battery cells had Congress desired to restrict the form of energy output solely to electricity. The absence of this specification in the definition of a non-cell-based battery module suggests that Congress intended this definition to be agnostic to the form of energy output.

- **Clarify a taxpayer shall be treated as having "produced" a "battery module" once such taxpayer transforms a collection of otherwise ineligible components into a fully functioning module for energy storage and discharge.** An example is where electricity is used to pump high-pressure water underground for later discharge as electricity. The module is the tangible personal property and other tangible property used as an integral part of the unit to store and discharge the electricity.
- **With regard to how IRS should determine if a component is "integrated, incorporated, or assembled" into another eligible component for the purpose of section 45X qualification,** we propose this definition includes both battery modules that are shipped off a production floor in a manufacturing facility, and battery modules assembled from components at or near the point of use. This definition is particularly important because certain battery technologies, such as thermal or flow, may be assembled within a self-contained module at the site of use, rather than in a factory.

Credit Monetization

- **Clarify that section 6418(e)(1) allows tax credits in a year to be transferred through the time that the company files its tax return.** This will allow startups appropriate lead time to transfer credits generated towards the end of the calendar year. Without it, credits generated by startups in November or December risk becoming worthless if they miss the narrow transfer window.
- **Issue guidance as soon as possible regarding credit recapture events.** Perceived recapture or qualification risk by third-party buyers will impact credit market pricing and the cost of insurance products that may be required by certain buyers; the only question is to what extent. The recapture liability ought to be borne by the tax credit seller. It owns the project and is in a position to avoid recapture events over which the buyer has no control. New guidance that provides greater clarity around recapture and qualification risk can improve credit pricing and reduce transaction costs, which will mean more money going into the development and production of advanced energy technologies.
- **The excess payments penalty should have a reasonable cause exception.** Treasury and IRS should allow taxpayers to rely on guidance such as allowed section 6664(c) for reasonable cause. This would provide taxpayers certainty that if they rely on the advice of counsel or other professionals the penalty on an excessive payment would not apply. This clarity will reduce transaction costs, including insurance product pricing.
- **Issue guidance as soon as possible regarding direct payment information requests.** The IRA notes that the IRS may request further information before providing any direct payments, an open-ended uncertainty that could delay the receipt of payments. Understanding that appropriate oversight is also necessary for effective implementation, we encourage IRS to define a specific range of factors that could result in IRS requesting further information for a particular filing. Greater clarity would assist startups in providing the necessary information at the time of filing and reduce the likelihood of delayed receipt of payment.
- **Clarify that direct-pay elections and tax-credit sales may include tax credits acquired by election.** It is unclear under section 6417 whether a municipal utility that leases a new renewable energy power plant and is entitled to claim an investment credit because the lessor has made a pass-through election can apply for a direct payment. It is unclear whether section 6418 allows a sequestration party in a carbon capture transaction whose has been transferred section 45Q tax credits by election to sell the tax credits to another party.
- **Clarify that manufacturers should have flexibility to elect refunds of section 45X credits**

on a factory-by-factory basis – regardless of whether the factories are within a consolidated group. The statute is silent about whether a manufacturer owning more than one factory can elect refunds of tax credits on a factory-by-factory basis. This clarification will provide horizontal equity.

Domestic Content

- **Define "qualified facility" for purposes of the domestic content bonus ITC.** Under section 48, the domestic content requirement is provided by cross reference to the tests in section 45. The manufactured product minimum threshold in section 45, however, is based on costs of all manufactured products attributable to the "qualified facility." As "qualified facility" is not a defined term under section 48, we suggest the IRS clarify what costs should be used to determine eligibility for the domestic content ITC. Section 48 uses the term "energy project." For example, in the case of a battery storage technology, the term "energy project" should include the fully integrated and fully installed storage system, including piping, conduits, electrical cabling, switchgear, relays, power electronics, controls, and all other ancillary equipment.
- **Confirm the domestic content requirements do not require iron ore to be mined domestically as mining is not a manufacturing process.** This understanding, per tax committee staff, is that iron ore does not have to have been mined in the United States. The guidance should confirm this. Iron ores are mineral substances mined to undergo future manufacturing processes to yield metallic iron. Iron ores are clearly not yet, without further intervention, "iron." Further, mining is not a manufacturing process.
- **Confirm availability of exemptions and waivers to the domestic content requirement analogous to those provided for by the regulations under the Buy America Act.** Specifically, the guidance should clarify in what circumstances a taxpayer can waive into a domestic content bonus credit, and specifically when materials are considered not to be of "satisfactory quality." Guidance should also clarify that waivers can be claimed without the need for a private letter ruling.
- **Confirm that the origin of subcomponents is irrelevant for purposes of calculating the percentage of manufactured products that are US made.** A manufactured product should be considered U.S.-made if it was "manufactured" -- as opposed to merely assembled using foreign subcomponents -- in a U.S. factory.
- **Address treatment of costs of hybrid equipment in domestic content threshold calculations for co-located storage projects.** Co-located batteries typically share equipment with a corresponding solar or wind system (e.g., inverters, transformers, substations.) The guidance should treat the power plant and storage facility as separate "facilities" for purposes of the domestic content calculations. Shared equipment onsite that is co-owned by separate taxpayers should be allocated to the taxpayers based on ownership percentages. Where shared equipment is owned by only one of the facilities, it should be treated as part of that facility regardless of use under a lease or similar arrangement by the other facility.