

U.S. Energy and Infrastructure Update

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U.S. Department of Energy and Treasury Department Advance Clean Hydrogen Incentives

The clean hydrogen sector in the U.S. is undergoing substantial transformation as a result of both the Section 45V clean hydrogen production tax credit and the clean hydrogen portion of the corresponding Section 48 investment tax credit (“**Clean Hydrogen Tax Credit**”) established under the [Inflation Reduction Act](#) of 2022 (“**IRA**”) and the [Regional Clean Hydrogen Hubs](#) (“**H2Hubs**”) initiative established under the Infrastructure Investment and Jobs Act. On December 22, 2023, the U.S. Treasury Department issued long-awaited proposed regulations (“**Proposed Regulations**”) detailing the implementation of the Clean Hydrogen Tax Credit. In addition, on October 13, 2023, the U.S. Department of Energy (“**DOE**”) announced seven regional hydrogen hub proposals selected under the H2Hubs initiative, to commence award negotiations with DOE for funding of up to US\$7bn in aggregate.

Clean Hydrogen Tax Credits

The Proposed Regulations for the Clean Hydrogen Tax Credit allow taxpayers to use certain “qualifying” Energy Attribute Certificates (“**EACs**”) to treat the source of electricity to power hydrogen production

facilities as coming from a specific source for purposes of establishing how “clean” the hydrogen production process is (and therefore, how many dollars in credits are earned). A qualifying EAC must provide information regarding the generating facility and technology as well as its feedstock, the amount of electricity, the commercial operation date of the facility, and the time during which the electricity was generated.

The Proposed Regulations adopt three strict requirements for hydrogen facilities to qualify for the Clean Hydrogen Tax Credit. These are generally referred to respectively as “additionality,” “temporal matching,” and “geographical” requirements. While some disagreement exists in the industry about whether the above requirements, which refer to ECAs, would be required for all hydrogen production projects, a conservative reading of the regulations would suggest that even a project that was co-located at the facility producing its power inputs would need to utilize ECAs compliant with the three requirements mentioned above in order to produce the data required in order to claim the Clean Hydrogen Tax Credit. Specifically, these requirements are as follows:



I) Additionality – Newly generated electricity must come from clean power generators with a commercial operation date no more than 36 months prior to the hydrogen production facility being placed in service. This requirement also applies to existing electricity-generating facilities that have increased production due to an uprate that occurred within the same 36-month window. The U.S. Treasury Department is also contemplating formulaic approaches to addressing incrementality, for example a safe harbor provision where 5% of the hourly generation from generators placed in service before 2023 would automatically meet the additionality requirement.

II) Temporal Matching – Electricity used to power the applicable hydrogen facility must be matched with the clean power generation on an annual basis, and beginning January 1, 2028, must be matched on an hourly basis.

III) Geographic Correlation – An EAC must be generated in the same “region” as the relevant hydrogen production facility in order to meet the deliverability requirement. The “regions” are identified in the National Transmission Needs Study released by the DOE on October 30, 2023.

In addition to the three criteria above, the Proposed Regulations also mandate the calculation of the lifecycle greenhouse gas (“GHG”) emissions rate for clean hydrogen production to determine the Clean Hydrogen Tax Credit. The GHG emissions are assessed on a “well-to-gate” basis using the Greenhouse Gases, Regulated Emissions and Energy Use in Transportation (“GREET”) model by Argonne National Laboratory, which considers emissions from the complete production cycle, including feedstock procurement and electricity use, through the point of production. The “45VH2-GREET” model will be available online for taxpayers, who can then determine their credit amount by selecting from one of eight production pathways. Taxpayers with technologies or feedstocks not covered by the model may request a provisional emissions rate from the Treasury.

Hydrogen Hubs

The seven regional hydrogen hubs selected as part of the H2Hubs initiative cover 16 states and involve hundreds of partners. The selected proposals are expected to attract more than \$40bn in private investments and collectively produce three million metric tons of clean hydrogen annually. The technologies to be used for hydrogen production include natural gas (with carbon capture and storage), electrolysis through renewable or nuclear energy and biomass gasification.

DOE’s Office of Clean Energy Demonstrations is in negotiations with the selected projects. Once a project finalizes a cooperative agreement with DOE, the relevant project will initiate a four-phase development plan to receive funding over a period of eight to 12 years. DOE has noted that it may also consider a second solicitation round for additional hubs.

On July 5, 2023, DOE also released a Notice of Intent and Request for Information (“RFI”) to advance the H2Hubs program with a \$1bn support mechanism to secure private investment in the early stages of the H2Hubs program and incentivize long-term offtake agreements by mitigating market risk through measures such as pay-for-difference contracts, fixed levels of support for projects, feasibility funding to support analysis by offtakers, and establishing a “market-maker” for clean hydrogen to provide a ready purchaser/seller for clean hydrogen.

On January 17, 2024, DOE announced the selection of a consortium to administer the demand side initiative and support the launch of the H2Hubs. The consortium – which consists of the EFI Foundation, S&P Global, and Intercontinental Exchange – is expected to work with DOE over the next six to nine months to design demand-side support measures to decrease the risk in hydrogen projects, increase market certainty, and lay a strong foundation to help accelerate the development of the clean hydrogen economy.

See our report, “[Getting Hy? The U.S.](#),” for more information on the hydrogen industry in the U.S.



U.S. Treasury Department and Internal Revenue Service Issue Additional Guidance Regarding Sustainable Aviation Fuel Credits

On December 15, 2023, the U.S. Department of the Treasury (“**Treasury Department**”) and the Internal Revenue Service (“**IRS**”) published [Notice 2024-6](#) (the “**Guidance**”) for the new Sustainable Aviation Fuel (“**SAF**”) tax credit established by the IRA, providing guidance on additional safe harbors for calculating the lifecycle greenhouse gas emissions reduction percentage using the Environmental Protection Agency’s (“**EPA**”) RFS program and related guidance and explaining that the Argonne-GREET model and other GREET-based models currently do not satisfy the applicable statutory requirements for the SAF credit.

Background

The IRA established the SAF tax credit under the Internal Revenue Code (the “**Code**”) which applies to the production of certain fuel mixtures containing SAF that is sold or used after December 31, 2022, and prior to January 1, 2025. The SAF credit is \$1.25 per gallon of SAF in a qualified mixture, which increases by \$0.01 per gallon for each percentage point by which the emissions reduction percentage of the SAF exceeds 50%, up to a maximum increase of \$0.50. The IRS issued an initial guidance on SAF credits on December 19, 2022, in [Notice 2023-6](#).

Summary

Under the Code, SAF must be certified in order to establish the requisite “lifecycle greenhouse emissions reduction percentage” of at least 50% to qualify for the tax credit. Section 40B(e) of the Code provides that this emissions reduction percentage may be calculated in accordance with (i) the most recent Carbon Offsetting and Reduction Scheme for International Aviation that has been adopted by the International Civil

Aviation Organization with the agreement of the United States, or (ii) any similar methodology that satisfies the criteria under Section 211(o)(1)(H) of the Clean Air Act, as in effect on August 16, 2022.

The Guidance provides a safe harbor for using the EPA’s Renewable Fuel Standard (“**RFS**”) program to calculate the emissions reduction percentage under Section 40B(e)(2) of the Code, specifically for the following:

- > synthetic SAF components that have generated biomass-based diesel (D-code 4) or advanced biofuel (D-code 5) renewable identification numbers (“**RINs**”), as confirmed by a quality assurance plan (“**QAP**”), will be assigned a 50% emissions reduction; and
- > synthetic SAF components that have generated valid cellulosic biofuel (D-code 3) or cellulosic diesel (D-code 7) RINs, as confirmed by a QAP, will be assigned a 60% emissions reduction.

Further, the IRS will recognize the emissions reduction percentage for SAF synthetic blending components used in jet fuel that have generated D-code 3, 4, 5, or 7 RINs (as noted above) and have been validated under a QAP, in line with the EPA’s [facility-specific pathways](#) under the RFS program. The Guidance also clarifies that it will not accept specific lifecycle analysis point estimates or rates of estimates published by and used by the EPA to support its determinations under the RFS program for purposes of determining emissions reduction percentages beyond 50% or 60%.



The Code further requires that for a producer or importer of SAF to be eligible for the SAF tax credit, it must provide certification from an unrelated party demonstrating compliance with certain requirements. The Guidance states that a SAF synthetic blending component producer will satisfy such requirements if such component has generated a RIN with an eligible D-code (i.e., 3, 4, 5, or 7), validated under a QAP (such RIN, a “**Q-RIN**”). To confirm compliance, registered producers must file a Certificate for SAF Synthetic Blending Component, in substantially the same form as [Appendix A to the notice](#), to document a valid Q-RIN for the particular volume of SAF.

Finally, as mentioned above, the Guidance clarifies that neither the 2010 version of the ANL-GREET model developed by Argonne National Laboratory, nor any other currently existing GREET-based models satisfy the applicable statutory criteria for the SAF credit, and notes that the U.S. Department of Energy is collaborating with other federal agencies to develop a GREET model that would meet such requirements. The IRS and Treasury Department expect the Section 40B(e)(2) compliant GREET model will be available in early 2024.





Continued Growth in Battery Manufacturing Incentives

Large-scale battery manufacturing plants, also known as “gigafactories,” are a critical component in the evolving U.S. energy transition landscape, particularly in the context of electric vehicle (“EV”) and energy storage solutions. The IRA, notably through its implementation of new Section 45X of the Code, offers substantial incentives to encourage the establishment or expansion of gigafactories within the U.S. This aligns with national policy goals of enhancing domestic manufacturing, reducing dependence on foreign supply chains, and promoting energy security.

The IRA’s Advanced Manufacturing Production Credit (“**Section 45X Credit**”) encourages domestic production of critical battery materials and provides a tax credit for domestically produced battery cells, domestically produced battery modules, and certain production costs pertaining to electrode active materials and critical minerals. Notably, in December 2023, the U.S. Treasury issued [proposed regulations](#) for the Section 45X Credit, offering clarity on eligibility, cost calculation, claiming procedures and related party sales for manufacturers of renewable energy project components and certain applicable critical minerals. These proposed regulations are expected to be finalized later in 2024.

To qualify for the Section 45X Credit, the essential criteria include:

- > **Specific Eligible Components** – The Code specifies five main categories for eligible components the production of which will qualify for the Section 45X Credit: solar energy parts, wind energy parts, inverters, certain battery components, and critical minerals, each of which are broken down into more detailed subcategories. Questions remain as to whether certain types of property will fall within those definitions. However, as a threshold matter, the Section 45X credit is only available with respect to the components specifically identified

in the statutory text. This list of eligible components is both long and specific, so the details here are important.

- > **Domestic Production** – Components must be manufactured in the U.S. or a U.S. territory. While production activities must occur within the United States, the constituent elements, materials, and subcomponents used in the production of an eligible component need not be domestically produced. Applicable proposed regulations have made clear that it is not enough to do “mere assembly,” “superficial modifications” or a “partial transformation” of materials into the product. There must be a “substantial transformation” of raw materials into a different product.
- > **Sales to Unrelated Parties** – The items must be sold to a party that is not related to the taxpayer. Relatedness is determined by the same rules used to define single employers in other tax situations. There is an exception for taxpayers who incorporate qualifying subcomponents into a larger eligible part, which is then sold to an unrelated party.
- > **Business Activity** – The manufacture and sale of these components must be part of the taxpayer’s regular business operations.
- > **Timing of Production and Sales** – Eligible components must be produced and sold after December 31, 2022. The tax credit begins to decrease annually by 25% for sales made after December 31, 2029, with the credit fully phased out for components sold after 2032, except for critical mineral production, credits with respect to which do not phase out.

Additionally, the Department of Transport and U.S. Treasury released amended [proposed regulations](#) relating to Section 30D of the Code. The initial regulatory updates were implemented to encourage domestic manufacturing of EV components. These regulations provide guidance to taxpayers to encourage compliance with the Foreign Entities of



Concern (“**FEOC**”) requirements precluding credits to projects where battery components or critical minerals of EVs are sourced from certain jurisdictions (i.e., People’s Republic of China, Russia, North Korea, and Iran). Along with providing clarity regarding the definition of FEOC, the amendments to the proposed regulations provide that a qualified manufacturer must conduct due diligence for all battery components and applicable critical minerals (and associated constituent materials) that are relevant to determining whether such components or minerals are FEOC-compliant.

The proposed regulations are expected to be finalized in 2024.

Other Sources of Financing

In addition to the IRA’s tax incentives, gigafactories also rely on other key sources of financing, including government grants, subsidized loans, commercial loans, and equity investments.

Government support is exemplified by Kore Power, which won a conditional commitment from the Department of Energy’s Advanced Technology Vehicles Manufacturing (“**ATVM**”) loan program for an \$850m loan to build its Arizona manufacturing facility in 2023. In 2022, the ATVM program awarded a US\$2.5bn loan to Ultium Cells (the battery joint venture of General Motors and LG Energy Solution) and a US\$102m loan to Syrah Technologies to produce graphite anode material for batteries. The Biden-Harris administration recently announced up to US\$3.5bn under the Bipartisan Infrastructure Law. The funding will incentivize domestic production of advanced batteries and battery materials by creating and expanding domestic facilities. This is the second phase of the DOE’s US\$6bn funding for battery material processing and manufacturing under the Bipartisan Infrastructure Law. Concept papers and full applications for funding are due in Q1 2024.

Commercial banks, often backed by multilateral development banks, also engage in financing gigafactories. For example, Northvolt, a Swedish battery manufacturer, recently announced that it has raised

US\$5bn through the largest-ever green loan in Europe, with proceeds from the financing aimed at expanding its Northern Sweden-based lithium-ion battery gigafactory and battery recycling facility. The green loan was provided by a consortium including 23 commercial banks, in addition to the European Investment Bank (“**EIB**”) and the Nordic Investment Bank (“**NIB**”), who are both supported by the European Commission’s InvestEU program, which mobilizes investment towards sustainable investment, innovation and job creation in Europe.

Equity investments, often backed by partnerships with major original equipment manufacturers (so-called “anchor”-OEMs), are also vital and can supplement government investment as a form of public-private partnership. For example, ONE Energy secured US\$300m in equity financing alongside US\$220m in state grants for development of its Michigan gigafactory. StarPlus Energy joint venture, Stellantis N.V. and Samsung SDI have announced they are investing over US\$3.2bn in a battery manufacturing facility in Kokomo, Indiana.

Conclusion

The IRA, along with the other incentives and sources of capital noted above, create an attractive landscape for developers of gigafactories in the U.S., and are already encouraging manufacturers to relocate substantial portions of their value chain to North America. This positions the U.S. as a key player in the global shift towards advanced battery technologies and is a crucial step towards achieving national policy goals surrounding sustainable energy independence.



FERC Blanket Authorizations for Investment Companies Under Review

On December 19, 2023, the Federal Energy Regulatory Commission (“FERC” or, the “Commission”) issued a Notice of Inquiry (“NOI”) seeking comments on whether – and, if so, how – the Commission should revise its policy on providing blanket authorizations for holding companies, including investment companies, under Section 203(a)(2) of the Federal Power Act (the “FPA”). The Commission also seeks comments on what constitutes “control” of a public utility and the factors that should be considered when evaluating such control as part of a request for blanket authorization.

FERC’s Blanket Authorization Policy

Under Section 203(a)(2) of the FPA, a holding company is required to secure FERC authorization prior to purchasing, acquiring, or taking “any security with a value in excess of US\$10m” of “a transmitting utility, an electric utility company, or a holding company in a holding company system that includes a transmitting utility, or an electric utility company.”¹

The Commission has previously established blanket authorizations in its regulations for certain types of transactions, such as foreign utility acquisitions by holding companies and certain investments in transmitting utilities and electric utility companies, and it has also issued individual blanket authorizations to companies under specified circumstances.

Recognizing that there have been considerable changes in the public utility, finance, and banking industries since the Commission’s expansion of its regulations to include blanket authorizations under Section 203(a)(2), FERC issued the NOI intended to explore whether changes to its current policy are needed to adjust to these changes. The NOI notes, in particular, greater consolidation of utility holding

companies, the growth of large index funds and asset managers, and the need for careful consideration in the context of the Commission’s blanket authorization policy.

FERC’s Current Inquiry

Through the NOI, FERC is requesting public comments on an aggregate of 17 questions, divided into three topics:

- > **Blanket Authorization Policy** – The Commission seeks comments on its current policy on blanket authorization, including whether: (i) it is sufficient to ensure that holding companies lack the ability to control the public utilities and holding companies whose securities they acquire; (ii) it is consistent with the public interest and not creating an adverse effect on competition or jurisdictional rates; and (iii) there are other measures that can be taken to oversee compliance of the terms of blanket authorizations.
- > **Large Investment Companies** – The Commission seeks comments on how it should consider the size of an investment company in evaluating a request for blanket authorization under Section 203(a)(2), as well as how it can: (i) effectively evaluate the influence and control exerted over public utilities; (ii) distinguish various types of investment vehicles; and (iii) understand potential impacts on public interest.
- > **Evaluation of Control Under Section 203 of the FPA** – The Commission seeks comments on the factors that the Commission should consider when evaluating control over public utilities as part of a request for blanket authorization, including the indicia of control that the Commission could look for as well as other corporate governance factors that should be considered when evaluating an investment company’s control over public utilities.

¹ 16 U.S.C. § 824(b)(a)(2).



The NOI does not itself represent a change in the current policy, but it indicates the Commission’s willingness to consider modifications to its existing policy on blanket authorizations in response to changes in the public utility, finance, and banking industries and policy changes ultimately adopted could subject certain activities of investment companies engaged in the public utility sector to increased regulatory scrutiny.

Initial comments for the NOI were due March 26, 2024, and the reply comments are due April 25, 2024.





New York Identifies Additional Public Policy Transmission Needs

On April 4, 2024, the New York Independent System Operator (“NYISO”) released a formal solicitation for transmission solutions to integrate at least 4.77 GW of new offshore wind output into New York City. Responses are due by June 3, 2024.

In 2019, New York State enacted the Climate Leadership and Community Protection Act (“CLCPA”), mandating the development of at least 9,000 MW of offshore wind energy by 2035. This legislation has become a driving force behind the state’s renewable energy initiatives, with a particular focus on offshore wind, and presents an opportunity for qualified transmission developers to propose transmission projects to help achieve this public policy transmission need.

Significant transmission investments are necessary to facilitate the integration of expanded offshore wind generation in New York State. To meet this need, the New York State Public Service Commission (“PSC”) and NYISO have initiated efforts to expand and upgrade New York’s transmission infrastructure. A key initiative in this regard was the Long Island Public Policy Transmission Need (“LI PPTN”) solicitation, initiated in 2020. The solicitation process for the LI PPTN was completed in mid-2023, with Propel NY’s Alternate Solution 5 selected as the preferred solution. This project, projected to be operational by 2030, is expected to facilitate the interconnection of at least 3,000 MW of future offshore wind. Additional information is available in our earlier publication, [Transmission Project Selected to Support New York’s Offshore Wind Goals](#).

On June 22, 2023, the PSC identified an additional public policy transmission need, the New York City Offshore Wind Public Policy

Transmission Need (“NYC PPTN”), to integrate at least 4.77 GW of new offshore wind power into New York City (Zone J), targeting an in-service date of January 1, 2033. In response, NYISO, in collaboration with the relevant utility, is preparing for an upcoming solicitation process to address the NYC PPTN. Throughout 2023, NYISO hosted technical conferences and information sessions to engage potential developers. NYISO released the formal solicitation for transmission solutions on April 4, 2024, with responses due by June 3, 2024, and it will evaluate proposals based on several criteria, including the necessity for comprehensive “end-to-end” solutions that incorporate both offshore and onshore components for effective power injection into New York City. NYISO’s aim is to complete the evaluation and selection of proposals by the third quarter of 2025.

New York’s approach to its Public Policy Transmission Needs is marked by a systematic and comprehensive process and involves soliciting proposals, conducting technical evaluations, and engaging stakeholders in a multi-step approach to identify and implement efficient transmission solutions. The progress and outcomes of this process, including with respect to the NYC PPTN, are expected to be instrumental in assessing New York’s ability to integrate renewable energy sources into its existing power grid.

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