NORTH COUNTRY COLOCATION SERVICES
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February 25, 2024

SUBMITTED ELECTRONICALLY

Internal Revenue Service
Office of Associate Chief Counsel
(Passthroughs & Special Industries)
CC:PA:LPD:PR
Room 5203
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Washington, D.C. 20044

The Honorable Lily L. Batchelder
Assistant Secretary for Tax Policy
Department of the Treasury
1500 Pennsylvania Ave., NW
Washington, D.C. 20220

Mr. William M. Paul
Principal Deputy Chief Counsel and Deputy Chief Counsel (Technical)
Internal Revenue Service
1111 Constitution Ave., NW
Washington, D.C. 20224

Re: Request for Comments on Section 48(a)(15) Election to Treat Clean Hydrogen Production Facilities as Energy Property

Submitted electronically via www.regulations.gov

Dear Office of Associate Chief Counsel (Passthroughs and Special Industries), Assistant Secretary Batchelder, and Mr. Paul:

Introduction

North Country Colocation Services ("NCCS") appreciates the opportunity to provide the Department of the Treasury ("Treasury") and the Internal Revenue Service ("IRS") comments regarding the implementation of the clean hydrogen production credit under the new Section 45V of the Internal Revenue Code ("45V" or "45V Credit"), as added to the Internal Revenue Code by Section 13204 of Public Law 117-169, 136 Stat. 1818 (August 16, 2022), commonly referred to as the Inflation Reduction Act of 2022 ("IRA"). NCCS's comments focus on ensuring that implementation of 45V will achieve its stated goals, aligns with the realities of how our nation's electric grid operates, and recognizes that certain regions may already be able to scale clean hydrogen production using existing clean-energy resources.

NCCS is responding to requests for comments on the Notice of Proposed Rulemaking (NOPR). Our comments are specifically applicable and in response to questions contained in Section V.C.2 broadly, and more specifically, V.C.2.a.ii of the NOPR.

NCCS, a wholly owned subsidiary of North Country Data Center Corp. ("NCDC"), currently operates a successful data center business at a large plant formerly operated by Alcoa Corp. in Massena, NY (the "NCCS Site"). NCCS is evaluating the potential to develop a qualified clean hydrogen production facility at the NCCS Site in Massena, NY (the "Project"), which would rapidly advance the objectives of 45V. The 45V Credit is a critical consideration for the Project, without which clean hydrogen production at the NCCS Site will simply not be financially viable.

Unfortunately, the ambitious target of producing 10 million tons per year of clean hydrogen by 2030[1] embedded in the IRA is already in jeopardy, as current levels of clean hydrogen production are negligible. If the U.S. is to achieve its stated 2030 clean hydrogen goal, the current rulemaking process for 45V must leverage existing clean-energy resources and ensure incentives are aligned with the realities of how the nation's power grid operates. To that end, NCCS proposes including appropriate grid-powered clean hydrogen production projects as eligible for the 45V Credit.

Through its 45V Credit, the IRA seeks to create the conditions required for the formation of new clean hydrogen industry that will significantly contribute to the decarbonization of the U.S. economy. To do so, Treasury must look to grid-powered, "shovel-ready" clean hydrogen projects that can jumpstart a clean hydrogen ecosystem and lay the groundwork for subsequent projects. Fortunately, certain existing grid-powered clean energy sites provide such a platform and are ready now to host clean hydrogen production facilities, which would rapidly increase clean hydrogen production and position the nation to achieve the 2030 clean hydrogen goals. In order to unlock this opportunity, these sites and facilities must qualify under the 45V Credit.

Therefore, for the reasons set forth below, NCCS recommends including certain grid-powered projects as eligible producers of "qualified clean hydrogen" for the 45V Credit.

The NCCS/NCDC Clean Hydrogen Production Opportunity

Extensive analysis and discussions with various stakeholders and experts over seven months have confirmed that the NCCS Site is one of the preeminent sites in the U.S. for clean hydrogen development. With close proximity and a direct connection to the St. Lawrence Hydroelectric Facility operated by New York Power Authority ("NYPA"), among other regional clean energy sources, the NCCS Site has a plentiful and consistent supply of clean, affordable power, a key ingredient to clean hydrogen development. Current NCCS operations use approximately 160 MW of power, and the New York Independent System Operator, Inc. ("NYISO") has granted NCDC approval to increase its load up to 435 MW, which would allow sufficient scale for a meaningful clean hydrogen production facility.

The NCCS Site fulfills other important operational and IRA requirements. For example, NCCS has ready access to a robust water supply to effectively produce clean hydrogen using electrolysis, as the NCCS Site has an existing water flow permit for 3.5M gallons/day and capability for additional water capacity from its waterfront along the St. Lawrence River. The NCCS Site also fulfills a critical economic goal cited by the Biden Administration in that it is located in a "disadvantaged community."[2] The NCCS Site, operating as a qualified clean hydrogen production facility, will also positively impact employment in the region with the creation of many direct and indirect jobs.

[1] US DOE Hydrogen and Fuel Cell Remarks – March 16 2023.

[2] https://screeningtool.geoplatform.gov/en/#10.56/44.9471/-74.8105

Further, the NCCS Site includes nearly 1,000 acres of developable land in an industrial zone, which provides significant optionality in terms of use cases for the clean hydrogen project and overall development. For example, NCCS is in discussions with multiple off-takers, some of which are interested in the Project for the ability to also build a co-located green steel production facility on the NCCS Site's additional greenfield land and use the NCCS hydrogen for the green steel processes. Other potential off-takers include commercial trucking operators and refuelers.

The NCCS Site also has an existing on-site CSX rail spur, access to local highway infrastructure, and a wharf for barges along the St. Lawrence River. The presence of these multiple transport options from one site is unique and advantageous, particularly given the known challenges of transporting hydrogen.

In sum, the NCCS Site provides the key attributes required to support a large and successful clean hydrogen project, given the mix of favorable conditions that exist at the NCCS Site and the readily available access to power and water. In this regard, the development of the NCCS Site as a clean hydrogen production site is potentially years ahead of other such sites and can be an early foundational success for the creation of a national clean hydrogen ecosystem. However, for the Project to move forward, it is essential that, with the grid-connected renewable power supply delivered to the NCCS Site, it qualifies under the 45V Credit.

Clean Hydrogen Production Requires Access to Grid Power

Solar and wind renewable energy facilities are essential elements of achieving the country's future clean energy goals, but these two power sources constitute only 3.4% and 10.2%, respectively, of the country's electricity generation as of 2022.[3] As a result, these two sources are insufficient to support a rapid rollout of clean hydrogen development, certainly within the timeframes set forth by the Department of Energy ("DOE"). Until this level of renewable generation increases sufficiently to meet the goals for clean hydrogen production, it is imperative to use existing clean energy resources and grid-supplied power as part of the foundation for the clean hydrogen build-out, concurrent with solar and wind sourced production.

To highlight the drawbacks of relying solely upon solar and wind renewable energy to launch the clean hydrogen production rollout in the U.S., consider this typical timing constraint: when factoring in permitting and construction timelines, new solar and wind generation requires 3 to 4 years to come online. In addition to the reality of this timing, greenfield projects may still fail to produce hydrogen at a cost that is competitive to displace incumbent "gray" hydrogen, even taking into account the 45V Credit.[4]

Additionally, solar and wind also cannot sustain around-the-clock output levels needed for many clean hydrogen use cases, which may include a co-located or attached manufacturing facility. For example, the steel and iron sector alone accounts for approximately 2.4% of our nation's emissions,[5] and the industry is considered "hard-to-abate" due to its need for high temperature fuels that – to date – consist of coking coal or natural gas. Steel plants need consistently provided fuel to maintain these high temperatures for efficient conversion of iron into steel. Intermittent, single-source hydrogen production using only solar or wind cannot provide this necessary consistency.[6]

For these reasons, among others, Treasury should look to grid-powered, near shovel-ready clean hydrogen projects that can jumpstart a clean hydrogen ecosystem and lay the groundwork for subsequent projects

[3] EIA - U.S. utility-scale electricity generation by source, amount, and share of total in 2022: https://www.eia.gov/tools/faqs/faq.php?id=427&t=8

[4] Rhodium Group – Scaling Green Hydrogen in a post-IRA World.

[5] EPA - Greenhouse Gas Reporting Program Metals: https://www.epa.gov/ghgreporting/ghgrp-metals

[6] Nationally, average capacity factors for land-based wind and solar generation are 40% and 20%, respectively. *See* https://www.nrel.gov/analysis/tech-cap-factor.html.

across the U.S. Clean hydrogen production using grid-supplied power is clearly consistent with the requirements of 45V, so long as the emissions associated with that power supply can be documented. Excluding the use of grid power in the production of clean hydrogen will substantially reduce the potential for clean hydrogen production across the U.S.

Another reason that grid-supplied clean hydrogen projects should be considered eligible for the 45V Credit is that access to grid power is a common feature of the nation's industrial sites. While many of the nation's industrial facilities have substantial on-site generation, these sites are also grid-connected, as their industrial processes often necessitate a higher level of availability than their on-site generating units can provide. Further, industrial sites often call on grid power as such sources can be both clean and extremely cost-effective during certain time periods. Similarly, clean hydrogen production will require access to clean grid power to permit high utilization levels of the electrolyzer.[7]

Not only is grid power in general an important part of the solution, but hydroelectric power specifically is critical because it is clean, consistent, and reliable power. A review performed by the National Renewable Energy Laboratory ("NREL"), found that hydropower has lower lifecycle emissions than wind, solar, and other storage technologies.[8] This is true not just in certain regions of New York State such as the NCCS Site, but also in the Pacific Northwest, for example. Therefore, in the context of hydrogen production as an industrial process, it is crucial that the 45V Credit permit qualified hydrogen production to utilize grid-supplied energy, including hydroelectric power.

Certain Grid Zones Already Meet Section 45V's Lifecycle Emissions Standards and Should be Incentivized for Development of Clean Hydrogen Facilities Now

Currently, there exist specific grid zones within certain regional transmission organizations/independent system operators ("RTOs/ISOs") and utility balancing authorities that have very high concentrations of zero-carbon generation that can be used to meet the requirements of 45V. Leveraging these ultra clean-energy zones via this rule-making process would jump start clean hydrogen production and ensure that a hydrogen ecosystem develops that can support further clean energy deployments across the U.S. over the medium- and long-term.

Specifically, with the seven-year 2030 timeline in mind, Treasury should consider implementing a regulatory structure wherein these areas with pre-existing high concentrations of zero-carbon generation are designated as "Ultra-Clean Energy Zones" ("UCEZs"), targeting them for clean hydrogen production given their surplus of clean energy generation. Such UCEZs would be defined as either RTO/ISO zones or utility balancing authorities outside of RTO/ISO markets with net positive exports of clean energy on an annual basis as of the date the IRA became law. In other words, a UCEZ would be characterized as a zone where there is more zero-carbon energy produced than consumed.

For example, the NCCS Site is located within the NYISO's Zone D in which over 99% of the power generated in the zone in 2022 was renewable hydro-electric and wind resources.[9] Further, Zone D over-generated for its own zonal load by 53%.[10] Hydrogen produced with this power mix would already satisfy the 0.45 kilograms of CO2e per kilogram of hydrogen threshold as set forth in 45V. This is an example of why Zone D and similarly situated zones across the country should be designated as UCEZs and utilized to

[7] High electrolyzer capacity utilization is a key determinant of clean hydrogen production profitability.
[8] *See* National Renewal Energy Laboratory, Life Cycle Greenhouse Gas Emissions from Electricity Generation: Update (September 2021) at Table 1. https://www.nrel.gov/docs/fy21osti/80580.pdf
[9] https://www.nyiso.com/documents/20142/2226333/2023-Gold-Book-Public.pdf/
[10] Ibid.

capitalize on installed clean power capacity, at least in the near-term while the overall grid becomes increasingly clean.

A National Clean Energy Registry System to Track Clean Energy

In order to uniformly implement 45V Credits using a UCEZ construct, there would be a need to document the generation and consumption of the clean energy used for clean hydrogen production, which could be accomplished by creating a "National Clean Energy Registry" (the "Registry"). The Registry would provide a "book-and-claim" system to verify that clean energy was used in the production of clean hydrogen. This system would provide the necessary consistency at a national level to implement 45V, regardless of the structure of any state-level renewable portfolio standards. Under this system, RTO/ISOs in the organized markets and balancing authorities in the non-RTO/ISO markets would provide the requisite data to Treasury, and this data would then be validated by an independent third-party. The Registry would document, for example, the carbon emission of UCEZs and validate that energy generated and used for hydrogen production in the UCEZ qualified for 45V.

Summary

With its unique blend of existing, plentiful, clean power, extensive land, access to large volumes of water, and multiple transport options, the NCCS Site is an example of an extremely compelling location for clean hydrogen production in the U.S. The fact that this location has these attractive attributes and has already received some of the essential regulatory approvals significantly increases the likelihood that the NCCS Site would be able to be developed and operated as a qualified clean hydrogen production site in the near term.

However, to make this Project and others like it a reality, the 45V rulemaking process must acknowledge that grid power is essential to the buildout of the U.S. clean hydrogen ecosystem, at a minimum in this nascent stage. While the country's overall electric grid is not yet sufficiently supplied by renewable energy generation sources to meet the 45V standards for clean hydrogen nor will it be in the near term, certain zones or regions within the grid certainly are, such as the NYISO's Zone D. These areas should be designated as UCEZs and clean hydrogen projects located within these zones should be eligible for the 45V Credit while the overall grid becomes increasingly clean. By implementing this zonal approach along with the Registry construct, the 45V rulemaking process can be used to effectively spearhead the clean hydrogen buildout in U.S. in a thoughtful and practical way that leverages near-term opportunities for success and is consistent with the IRA's text and goals.

Sincerely,

DocuSigned by:
Ashton Soniat
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Ashton Soniat
Chairman