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U.S. Department of Energy  
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Re: Comments on Supplemental Notice of Proposed Rulemaking, Section 45V Credit for Production of Clean Hydrogen; Section 48(a)(15) Election to Treat Clean Hydrogen Production Facilities as Energy Property, REG-117631-23, RIN 1545-BQ97

Q Hydrogen Commercialization LLC (“Q Hydrogen”) appreciates the opportunity to submit these comments on the Supplemental Notice of Proposed Rulemaking (“NPRM”) for Department of Energy’s forthcoming guidance on seeking an Emissions Rate for the Provisional Emissions Rate (“PER”) process under the Inflation Reduction Act’s (“IRA”) Hydrogen Production Tax Credit, Section 45V.<sup>1</sup> As Q Hydrogen has stated in previous comments, Section 45V was enacted to transform the United States into a global hub of clean hydrogen development and innovation. The PER process will be critical to that transformation, as it will unlock Section 45V for U.S. clean hydrogen innovators, like Q Hydrogen, to develop and commercialize new technologies to produce clean hydrogen to decarbonize the economy. It is critical that

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<sup>1</sup> Supplemental NPRM, 89 Fed. Reg. 25551 (Apr. 11, 2024).

Department of Energy issue guidance on the PER process as soon as possible and incorporate the following recommendations:

1. For an Emissions Value Request applicant who has progressed far beyond the need for an Association for Advanced Cost Engineering (“AAACE”) Class 3 Cost Estimate and has developed a commercial-scale unit that has been fully funded and constructed, as Q Hydrogen has achieved, Department of Energy should allow such an applicant to certify its status to show sufficient “project maturity” per the Section 45V proposed regulations.
2. Department of Energy’s Emissions Value Request process must include steps to ensure that proprietary and competitively sensitive information submitted for evaluation is **kept strictly confidential and is not publicly disclosed**. To that end, Department of Energy’s forthcoming guidance on the Emissions Value Request process should set out precisely the steps applicants must take to designate confidential information for protective treatment.
3. Department of Energy should, to the extent possible, provide guidance on expected timelines for processing Emissions Value Requests. Any transparency Department of Energy can provide regarding the timing of its review will greatly assist clean hydrogen developers in meeting their development goals and internal timelines, thereby adding further predictability to this process.

### **About Q Hydrogen**

Q Hydrogen’s innovative method for producing clean hydrogen fuel is over 25 years in the making. Q Hydrogen has developed proprietary technology that generates hydrogen from water within a turbine with unique design and metallurgy. Q Hydrogen has already completed a commercial-scale unit that has been fully funded and constructed and is advancing rapidly toward commercialization. Q Hydrogen has constructed a facility in Groveton, New Hampshire, where it will produce hydrogen for combustion in reciprocating engines to generate electricity. Q Hydrogen plans to utilize its commercial-scale production unit at the Groveton plant to generate clean hydrogen fuel.

Q Hydrogen has retained a well-known consultant to assist in assessing the lifecycle GHG emissions of Q Hydrogen’s production process. Q Hydrogen will be prepared to demonstrate to Department of Energy, via the Emissions Value Request process, that its clean hydrogen fuel satisfies Section 45V’s most stringent carbon intensity standards.

Q Hydrogen’s proprietary technology has the potential to address challenges associated with other, more conventional methods for producing clean hydrogen, such as electrolysis of water and steam methane reforming (“SMR”) with carbon capture. Q Hydrogen’s process uses far less electricity compared to conventional, energy-intensive electrolysis. In addition,

Q Hydrogen's process, unlike SMR, is methane free, and thus avoids upstream GHG emissions from methane leakage.

The Supplemental NPRM seeks comment on "whether alternative appropriate pathways to demonstrating project readiness exist" apart from an AACE Class 3 Cost Estimate. Such alternatives do exist, and Department of Energy must allow them, particularly for projects, like Q Hydrogen's project, that have advanced far beyond the stage at which a Class 3 Cost Estimate is necessary or appropriate. The Class 3 Cost Estimate referenced in the Supplemental NRPM states that, for such an estimate, "[t]ypically, engineering is from 10% to 40% complete." Q Hydrogen's commercial-scale unit, by contrast, is 100 percent complete. The Class 3 Cost Estimate also states that it is intended to show "defined site civil information such as site plan, existing site conditions, demolition drawings, utility plan, site electrical plans, room layouts, mechanical system layouts, and one-line electrical diagram." Yet Q Hydrogen has advanced far beyond the design stage for such components; it has already built them at its Groveton facility. Q Hydrogen has site control. Building construction has been completed. The facility meets all local code provisions. And the electrical and water systems have been installed. Finally, the Class 3 Cost Estimate also states that it is "typically prepared to support full project funding requests." Q Hydrogen's commercial-scale unit, however, is fully funded. Requiring Q Hydrogen to prepare a Class 3 Cost Estimate simply makes no practical sense given Q Hydrogen's advanced development status.

### **The Importance of the Provisional Emissions Rate Process**

The PER process will be critical for innovators, like Q Hydrogen, who are pursuing groundbreaking clean hydrogen production methods that do not fit within the eight proposed pathways in Department of Energy's 45VH2-GREET model. Department of Energy, and the other federal agencies implementing Section 45V, should not lose sight of its importance. In setting U.S. hydrogen policies, Department of Energy has accurately identified technological innovation as key to growing this country's clean hydrogen economy. As Department of Energy observed in its U.S. National Clean Hydrogen Strategy and Roadmap, "[h]arnessing the innovation and entrepreneurial spirit of Americans and world-class National Laboratories, industry, and academic facilities, in addition to ramping up deployments, can help drive down costs rapidly and achieve scale within a decade."<sup>2</sup> Indeed, the Roadmap includes among its Guiding Principles, "[c]atalyz[ing] innovation and investment," including by "building upon American ingenuity, talent, and initiative."<sup>3</sup> From that perspective, Q Hydrogen is precisely the kind of innovative clean hydrogen enterprise that Department of Energy's programs should support.

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<sup>2</sup> U.S. Department of Energy, U.S. National Clean Hydrogen Strategy and Roadmap, at 27 (June 2023), *available at* [https://www.hydrogen.energy.gov/docs/hydrogenprogramlibraries/pdfs/us-national-clean-hydrogen-strategy-roadmap.pdf?sfvrsn=c425b44f\\_5](https://www.hydrogen.energy.gov/docs/hydrogenprogramlibraries/pdfs/us-national-clean-hydrogen-strategy-roadmap.pdf?sfvrsn=c425b44f_5).

<sup>3</sup> *Id.* at 58.

Department of Energy has identified ambitious clean hydrogen opportunities, including the deployment of 10 million megatons (“MMT”) of clean hydrogen by 2030, 20 MMT by 2040, and 50 MMT by 2050, amounting to an approximately 10 percent economy-wide reduction in GHG emissions.<sup>4</sup> Yet recent reports suggest that the United States is challenged in achieving its ambitious clean hydrogen goals.<sup>5</sup> In EPA’s recently finalized GHG emissions standards for certain fossil fuel-fired power plants, EPA removed low-GHG hydrogen co-firing as a compliance option, citing low-GHG hydrogen’s uncertain supply availability at market-acceptable prices.<sup>6</sup> EPA’s findings highlight the need for Department of Energy to prioritize hydrogen innovation outside the conventional 45VH2-GREET pathways. Clean hydrogen innovators relying on the PER process will contribute the country’s decarbonization goals and put clean hydrogen more firmly on the path toward reducing both uncertainty and costs.

### **Specific Comments on the Supplemental NPRM**

Considering the above, Q Hydrogen urges Department of Energy to issue guidance and open the Emissions Value Request process as soon as possible, so that innovative hydrogen producers, like Q Hydrogen, can obtain an emissions rate to qualify under Section 45V. In doing so, Department of Energy should implement the following recommendations.

- 1. The Department of Energy should allow an applicant who has achieved fully funded commercial-scale completion of clean hydrogen technology to certify its significant progress to demonstrate sufficient indicators of “project maturity” to participate in the PER process.*

According to the Supplemental NPRM, Department of Energy has preliminarily determined that a FEED Study based on a Class 3 Cost Estimate “is necessary to sufficiently indicate commercial project maturity.”<sup>7</sup> Section 45V, however, defines “qualified clean hydrogen” with reference to varying levels of lifecycle GHG emissions reductions and states

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<sup>4</sup> U.S. Department of Energy, U.S. National Clean Hydrogen Strategy and Roadmap at a Glance (June 2023), available at [https://www.hydrogen.energy.gov/docs/hydrogenprogramlibraries/pdfs/clean-hydrogen-strategy-roadmap-at-a-glance72a84ff4e104d9e9371a16ed7203f82.pdf?sfvrsn=c9276e16\\_6](https://www.hydrogen.energy.gov/docs/hydrogenprogramlibraries/pdfs/clean-hydrogen-strategy-roadmap-at-a-glance72a84ff4e104d9e9371a16ed7203f82.pdf?sfvrsn=c9276e16_6).

<sup>5</sup> C. Robles et al., *DOE Advisory Panel Offers ‘Sobering’ View on Hydrogen*, E&E News (Apr. 24, 2024), <https://subscriber.politicopro.com/article/eenews/2024/04/24/doe-advisory-panel-offers-sobering-view-on-hydrogen-00153797>; see also P. Martin, *Clean Hydrogen Production Will Ramp Up by a Factor of 30 by 2030, But Governments Will Still Miss Their Targets*: BNEF, Hydrogeninsight (May 9, 2024), <https://www.hydrogeninsight.com/production/clean-hydrogen-production-will-ramp-up-by-a-factor-of-30-by-2030-but-governments-will-still-miss-their-targets-bnef/2-1-1641502>.

<sup>6</sup> U.S. EPA, Final Rule, New Source Performance Standards for Greenhouse Gas Emissions from New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions from Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule (Pre-publication Version), at 527-28 (Apr. 25, 2024), available at [https://www.epa.gov/system/files/documents/2024-04/eo-12866\\_111egu\\_2060-av09\\_nfrm\\_20240424\\_final.pdf](https://www.epa.gov/system/files/documents/2024-04/eo-12866_111egu_2060-av09_nfrm_20240424_final.pdf).

<sup>7</sup> Supplemental NPRM, 89 Fed. Reg. 25551, 25551 (Apr. 11, 2024).

nothing about submitting costs or demonstrating project progress.<sup>8</sup> Indeed, the specific provision on the PER process in Section 45V states only that “a taxpayer . . . may file a petition with the Secretary for determination of the lifecycle greenhouse gas emissions rate with respect to such hydrogen.”<sup>9</sup> That provision omits any reference to submitting FEED studies or cost estimates.

Q Hydrogen understands that Department of Energy is seeking to prioritize projects that have achieved certain milestones to ensure that the agency directs its resources appropriately. Yet a one-size-fits-all Class 3 Cost Estimate requirement is not necessarily consistent with that goal, and in certain cases, could frustrate it. Department of Energy should amend the Supplemental NPRM to allow companies that have completed fully funded, commercial-scale clean hydrogen technology to certify that they have done so to show sufficient indicators of project maturity for submitting an Emissions Value Request. Q Hydrogen stands ready to certify this level of technology completion, so that Department of Energy can begin its evaluation as soon as possible.

2. *The Department of Energy should give clear guidance regarding how applicants can ensure that their confidential commercial and competitively sensitive information, submitted in connection with the Emissions Value Request process, is protected from public disclosure.*

Because the Emissions Value Request process will be utilized by companies producing hydrogen in new and innovative ways, Department of Energy should implement procedures to protect proprietary and competitively sensitive information. Determining an emissions value may require Department of Energy to review highly proprietary and competitive information, so that the Department can confirm an accurate emissions assessment. Department of Energy already has regulatory frameworks in place to protect confidential commercial information from public disclosure in response to Freedom of Information Act (“FOIA”) requests.<sup>10</sup> Department of Energy should confirm in its forthcoming guidance on the Emissions Value Request process that similarly robust protections for confidential “commercial or financial information” are implemented.<sup>11</sup> The guidance should clearly set out the process for applicants to designate information as confidential to ensure it is afforded protections from public disclosure. This will be critical for companies like Q Hydrogen who must seek an emissions rate to qualify under Section 45V.

3. *The Department of Energy should provide additional guidance on the time it will take to complete the Emissions Value Request process.*

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<sup>8</sup> See 26 U.S.C. § 45V(b).

<sup>9</sup> *Id.* § 45V(c)(2)(C).

<sup>10</sup> See 5 U.S.C. § 552(b)(4) (exempting “trade secrets and commercial or financial information obtained from a person and privileged or confidential”); 10 CFR § 1004.11 (Department of Energy regulations regarding the handling of “information of a private business, foreign government, or an international organization).

<sup>11</sup> See *id.*

Time is of the essence for many project developers, including Q Hydrogen. Any additional clarity or transparency into the timing of Department of Energy's Emissions Value Request process will significantly benefit clean hydrogen developers who can use that information for their own planning purposes. Department of Energy should set out expected timelines for processing Emissions Value Requests, including for each step of the process, from accepting the request to deliberating on it and issuing a final decision.

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The PER process will play a key role in growing the United States' clean hydrogen economy. Q Hydrogen appreciates the attention to this process to date and urges Department of Energy to adopt Q Hydrogen's recommendations, issue further guidance, and open the Emissions Value Request process as soon as possible. Thank you for your attention to this matter.

Respectfully submitted,



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