

**Business Council for Sustainable Energy (BCSE) Comments in Response
to the U.S. Department of Energy Draft Guidance Document for the
Clean Hydrogen Production Standard (CHPS)**

November 9, 2022

The Business Council for Sustainable Energy (BCSE) appreciates the opportunity to respond to the U.S. Department of Energy’s (DOE) request for stakeholder comments on its proposed Draft Guidance Document for the Clean Hydrogen Production Standard (CHPS).

Through this request, DOE seeks comments on its proposal to implement the provisions of Section 40315 of the Infrastructure Investment and Jobs Act (IIJA) by adopting a CHPS that: (1) incorporates the definition of “clean hydrogen” provided in statute, and (2) supports diverse feedstocks and allows for consideration of technological and economic feasibility of achieving overall emissions reductions by establishing a lifecycle greenhouse gas emissions target for clean hydrogen production.

BCSE commends Congress and the Biden Administration for enactment of IIJA and supports its significant funding for Hydrogen Hub development and the accelerated deployment of hydrogen resources.

In this submission, BCSE provides general views on the draft guidance, but for detailed responses on the proposal, BCSE would like to acknowledge the submissions made by the Fuel Cell and Hydrogen Energy Association, GTI Energy, Bloom Energy, and Plug Power, among others. BCSE encourages the thoughtful consideration of the issues and recommendations included in these submissions.

About the BCSE

The BCSE, founded in 1992, is a clean energy trade association, spanning a broad spectrum of industry sectors, including energy efficiency, energy storage, natural gas, renewable energy, sustainable transportation and emerging decarbonization technologies. BCSE also has an independent small- and medium-size businesses initiative under its banner, the Clean Energy Business Network (CEBN). Together, the BCSE and CEBN represent the full range of the clean energy economy, from Fortune 100 companies to small businesses working in all 50 states supporting over 3 million U.S. jobs. As a diverse set of members, please note that not all members take a position or endorse the recommendations in this submission.

Hydrogen as a Decarbonization Solution

IIJA authorizes appropriations of \$8 billion for the five-year period encompassing fiscal years 2022 through 2026 for the development of regional clean hydrogen hubs that demonstrate the production, processing, delivery, storage, and end-use of clean hydrogen.

Hydrogen and related technologies, such as electrolyzers, fuel cells, and turbines, can play a key role in decarbonizing many sectors, including medium- and heavy-duty transportation, residential and commercial heating, power generation, and hard-to-decarbonize industries such as ammonia and steel.

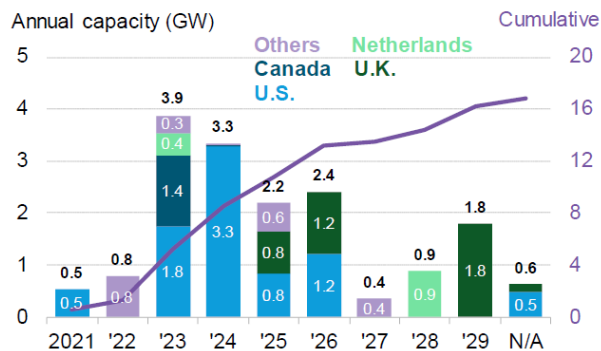
According to the [2022 Sustainable Energy in America Factbook](#), published by BloombergNEF in partnership with the BCSE, the U.S. is a global leader with over 8GW of announced hydrogen-compatible power turbines, mostly at brownfield sites. State-level clean energy targets are clear drivers with nine of 10 planned projects due to provide electricity in states with clean energy mandates. Two-thirds of these projects have hydrogen-natural gas blend targets. Half expect to run on 100% H2 by 2045.

As of 2021, the U.S. produced 15-16 million metric tons of hydrogen, of which 65% is through dedicated plants. The vast majority of this is from unabated natural gas. However, the U.S. is seeing activity to develop cleaner hydrogen sources. Further, U.S. investment in the hydrogen sector doubled between 2020 and 2021, with \$100 million invested in 2020 to \$200 million invested in 2022.¹

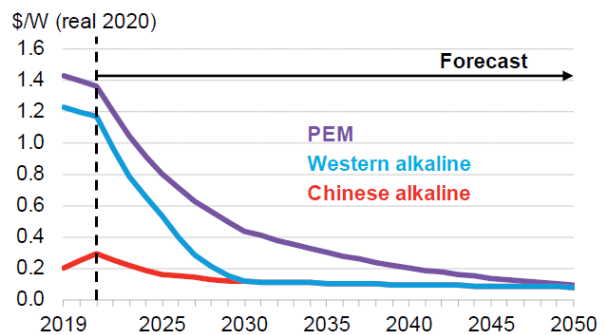
Figure 1: From the 2022 Sustainable Energy in America Factbook, published March 3, 2022

Deployment: Hydrogen-fired power plants and electrolyzer costs

Planned and projected cumulative capacity of H2-ready power projects



Projected electrolyzer system costs



Source: BloombergNEF. Note: Left chart reflects announced and financed commercial projects. Bars begin at expected commercial operation date. 30-year asset lifetime assumed. "N/A" indicates projects that are planned but have not announced target dates. State mandate means there is a state-level clean energy target. Right chart: PEM means Polymer electrolyte membrane electrolysis system. Western-made represents alkaline systems made by a manufacturer outside of China. Chinese-made represents alkaline systems made by a manufacturer inside of China.

¹ 2022 Sustainable Energy in America Factbook, produced by the Business Council for Sustainable Energy and BloombergNEF, March 3, 2022, www.bcse.org/factbook

General Views on the Draft Guidance for the Establishment of CHPS

Related to the Draft Guidance on CHPS, BCSE offers the following perspectives. Of note, as a diverse coalition, not all members take a position or endorse the recommendations included in this submission.

BCSE Supports DOE's Proposed CHPS Standard

BCSE supports DOE's proposed initial target for life cycle greenhouse gas emissions of 4.0 kgCO₂e/kgH₂ to encourage low-carbon hydrogen production from diverse feedstocks and using state-of-the-art technologies that are expected to be deployable at scale today.

Lifecycle Boundary for CHPS

BCSE recommends that the lifecycle boundary of CHPS be set using the "well-to-gate" approach, *i.e.*, to include upstream emissions associated with hydrogen production through the point of hydrogen production, as well as downstream emissions associated with the transport and sequestration of CO₂.

Specifically, with respect to footnote 11, BCSE notes that the first sentence could be misinterpreted to suggest that any hydrogen transportation, storage and/or distribution occurring downstream of the hydrogen point of production is included. BCSE does not support this view and requests that this be clarified in final guidance.

BCSE Supports Alignment of the CHPS with the Production Tax Credit for Clean Hydrogen

Alignment between CHPS for IIJA programs and the Clean Hydrogen Production Tax credit is needed to provide market certainty and transparency to accelerate investment and deployment of hydrogen resources. BCSE encourages DOE's CHPS to be consistent with Section 13204 of the Inflation Reduction Act (IRA) production tax credit (the 45V Credit) for "qualified clean hydrogen," following the boundaries mentioned above.

Guidance on Emissions Estimates

BCSE recommends that CHPS allow for the use individualized and regional use of emissions estimates, but this should not be a requirement. Understanding this, to the greatest extent possible, hydrogen-facility specific information should be utilized.

Allow Environmental Instruments and Market Structures in Accounting for Hydrogen Production

Renewable energy credits (RECs), power purchase agreements, environmental attributes, and other market structures should be allowed to be a source of clean energy and renewable natural gas. BCSE recommends that the guidance allow market structures to "characterize[e] the intensity of electricity emissions for hydrogen production," and that it be broadened to recognize the ability to use market structures for the purchase of other clean energy

sources like biogas and renewable natural gas. Further, for maximum efficiency, market-based structures should not include geographic or real-time requirements or limit eligibility of clean energy sources to those that are co-located with hydrogen production.

Thank you for the opportunity to share the Council's views on this RFI. Should you wish to discuss these comments further, please contact BCSE President Lisa Jacobson via email at ljacobson@bcse.org.