Comments from the Business Council for Sustainable Energy
on the Design and Implementation of the
45V Hydrogen Production Tax Credit

December 8, 2022

The Business Council for Sustainable Energy (BCSE) appreciates the opportunity to provide comments to the Department of Treasury and the Internal Revenue Service (IRS) regarding the Hydrogen Production Tax Credits established under the Inflation Reduction Act of 2022 (IRA).

BCSE commends Congress and the Biden Administration for enactment of the Infrastructure Investment and Jobs Act (IIJA) and the IRA, as well as providing annual appropriations to support Hydrogen Hub development and the accelerated production and deployment of hydrogen resources.

In this submission, BCSE provides general views in response to request for general comments on the design and implementation of the 45V credit. For detailed responses, 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.

Hydrogen as a Decarbonization Solution

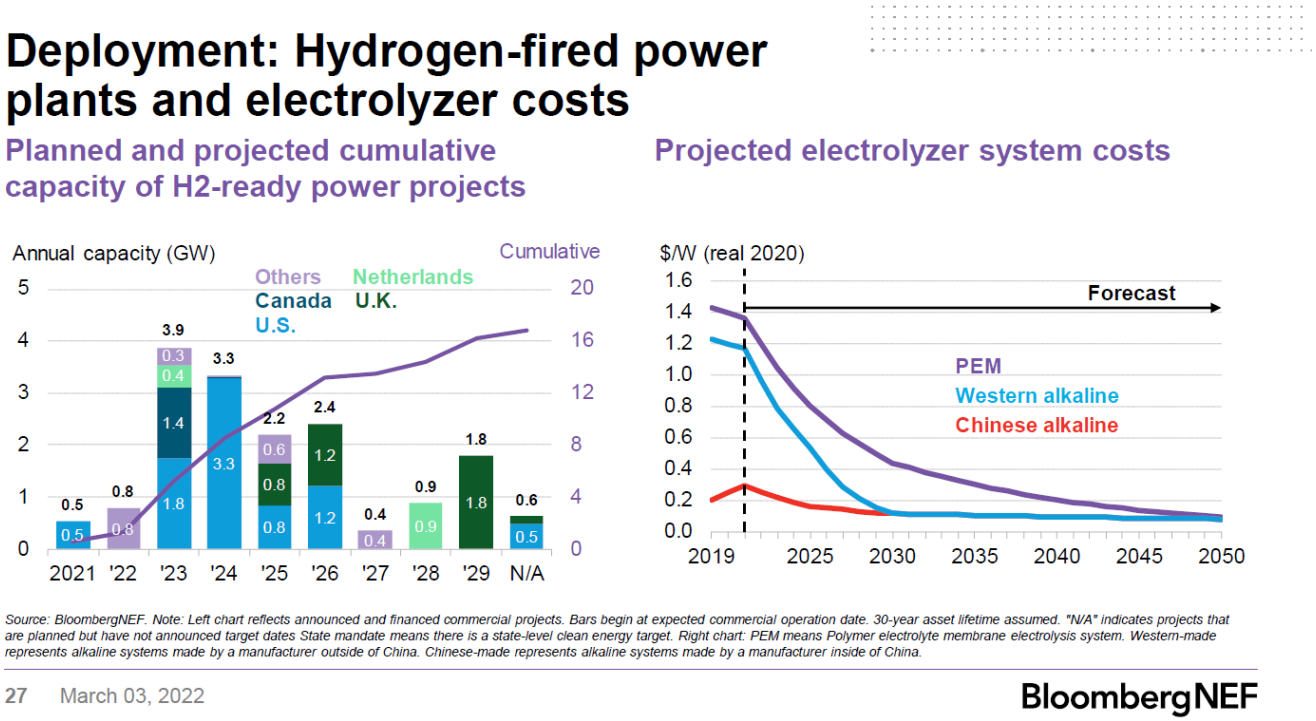
Hydrogen and related technologies, such as electrolyzers, fuel cells, and turbines, can play a key role in decarbonizing many sectors, including medium- and heavy-duty transportation, residential and commercial heating, power generation, and hard-to-decarbonize industries such as ammonia and steel.

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.

At the end 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



General Comments on the Design and Implementation of the 45V Clean Hydrogen Production Tax Credit

The IRA established the 45V credit for qualified clean hydrogen produced after 2022 at a qualified clean hydrogen production facility in the United States during the 10-year period beginning on the date the facility is originally placed in service. The 45V credit is calculated by multiplying the applicable amount by the kilograms of qualified clean hydrogen produced based on the lifecycle greenhouse gas emissions rate that results from the production of qualified clean hydrogen. Qualified clean hydrogen is defined in 45V to include hydrogen that is produced through a process that results in a lifecycle greenhouse gas emissions rate of not greater than 4 kilograms of carbon dioxide equivalent (CO2-e) per kilogram of hydrogen. The IRA also provides an election for a taxpayer to receive a direct payment or to transfer the credit.

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

BCSE offers the following general comments. Of note, as a diverse coalition, not all members take a position or endorse the recommendations included in this submission.

BCSE Supports Definition of Clean Hydrogen in 45V

BCSE supports the definition of clean hydrogen under 45V for life cycle greenhouse gas emissions of 4.0 kgCO2e/kgH2 or less 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 45V Implementation

BCSE recommends that the lifecycle boundary for 45V 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.

However, as was noted in the BCSE's comments to the U.S. Department of Energy (DOE) on the proposal on the Clean Hydrogen Production Standard (CHPS),[2] DOE, the Department of Treasury and IRS should clarify that any hydrogen transportation, storage and/or distribution occurring downstream of the hydrogen point of production should not be included. Hydrogen producers are likely to be a separate business entity from midstream hydrogen transporters, and as such, hydrogen production standards and tax credits should be solely applied to the producer of the hydrogen, not the transporter of the hydrogen.

BCSE Supports Alignment of Accounting for the 45V and CHPS

Alignment between the 45V tax credit and CHPS 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 the definition of clean hydrogen under 45V, with the incorporation of the clarification that is mentioned above.

Allow Environmental Instruments and Market Structures in Accounting for Hydrogen Production under 45V

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 under 45V crediting mechanisms. 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-

[2] See BCSE submission to DOE in response to CHPS RFI, November 2022: https://bcse.org/images/2022%20FPC/BCSE%20Comments%20on%20Guidance%20Document%20for%20CHPS%2011%2009%2022%20.pdf

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 request for general comments. Should you wish to discuss these comments further, please contact BCSE President Lisa Jacobson via email at ljacobson@bcse.org.