

## U.S. Department of Energy Clean Hydrogen Production Standard (CHPS) [Draft Guidance](#)

Please provide comments to [Cleanh2standard@ee.doe.gov](mailto:Cleanh2standard@ee.doe.gov) by October 20, 2022

### **General Stakeholder Feedback**

The Clean Hydrogen Production Standard (CHPS) was developed to meet the requirements of the Infrastructure Investment and Jobs Act of 2021, also known as the Bipartisan Infrastructure Law (BIL), Section 40315, as well as Section 13204 of the 2022 Inflation Reduction Act (IRA). The CHPS is not a regulatory standard, and DOE may not necessarily require future funded activities to achieve the standard. However, hydrogen hubs funded in support of the BIL will be required to “demonstrably aid achievement” of the CHPS by mitigating emissions across the supply chain to the greatest extent possible (e.g., by employing high rates of carbon capture, using low-carbon electricity, or mitigating upstream methane emissions). Future DOE funding opportunity announcements will further describe merit review criteria that will be used in selection of successful projects subject to the CHPS.

The BIL defines “clean hydrogen” as having a carbon intensity equal to or less than 2 kg CO<sub>2</sub>e produced at the site of production per kg of H<sub>2</sub> produced. The IRA defines “qualified clean hydrogen” as hydrogen produced through a process that results in a lifecycle greenhouse gas emissions rate of not greater than 4 kg CO<sub>2</sub>e per kg of H<sub>2</sub> produced.

While we agree with the intention of defining the maximum amount of greenhouse gas emissions allowed, we believe that the methods utilized within the CHPS negatively impact the production of hydrogen through the utilization of electrolysis powered off of the grid. The use of electrolysis powered off of the grid allows for small scale generation of hydrogen (for example for hydrogen fueling infrastructure to power zero-emission fuel cell electric vehicles) in Justice 40 communities directly meeting the clean hydrogen definition within the BIL and, thereby, minimizing the environmental impact on those communities. However, since those communities typically do not have the open space required to install sufficient PV or wind power generation to direct feed these hydrogen generation sites, the existing power grid becomes the only viable alternative until such time as large-scale hydrogen hubs are commercially operating and able to drive the price of hydrogen down to the point where transporting hydrogen into the Justice 40 communities is economically viable.

While on-site hydrogen generation powered off of the grid meets the definition of clean hydrogen in the BIL, it currently does not meet the proposed definition within CHPS or IRA. The CHPS and IRA, however, only consider the current state of the power grid and do not factor in the legislatively mandated pathway to zero emissions that most utilities are currently under. For example, in Colorado, the state legislature passed House Bill 19-1261 Climate Action Plan to Reduce Pollution which calls for greenhouse gas emissions reductions of 26% by 2025, 50% by 2030 and 90% by 2050 from 2005 levels. In addition, Senate Bill 19-236 Sunset Public Utilities Commission directed large regulated utilities to reduce emissions by 80% from 2005 levels by 2030 and 100% by 2050. These requirements give projects that generate hydrogen through grid powered electrolysis a direct legislatively mandated pathway to reduced emissions over time.

As such, on-site hydrogen production powered off of the grid has, in most states, a defined pathway to reduced greenhouse gas emissions. Not allowing hydrogen generation companies to take that pathway into account negatively impacts the abilities of those entities to be economically viable and, therefore,

to bring zero emission projects at the site of the hydrogen generation into the impacted Justice 40 communities. To that end, we would recommend the following changes to CHPS:

- Projects that have a defined and legislatively mandated pathway to reduced emissions.
- Such projects must meet the requirement of having a carbon intensity equal to or less than 2 kg CO<sub>2</sub>e produced at the site of production per kg of H<sub>2</sub> produced.
- Such projects must be within defined Justice 40 communities.
- Such projects are evaluated based off of their projected lifecycle greenhouse gas emissions as of 2030. To the extent any portions of the lifecycle greenhouse gas emissions do not fall into a legislatively mandated pathway towards emissions, that portion would be evaluated based off of current emissions calculations.

This approach will allow small scale hydrogen generation within affected communities. Those communities will be able to equally participate in the benefits of transitioning their vehicles and neighborhoods to zero-emissions while ensuring a minimal direct emissions impact.

### **Item 3c Feedback**

Item 3c sets forth the following considerations: (1) should renewable energy credits, power purchase agreements, or other market structures be allowable in characterizing the intensity of electricity emissions for hydrogen production; (2) should any requirements be placed on these instruments if they are allowed to be accounted for as a source of clean electricity (e.g. restrictions on time of generation, time of use, or regional considerations); (3) what are the pros and cons of allowing different schemes; and how should these instruments be structured (e.g. time of generation, time of use, or regional considerations) if they are allowed for use?

1. We are requesting that the use of power purchase agreements (PPAs) and/or Renewable Energy Credits (RECs) be allowed in the determination of lifecycle greenhouse gas emissions for projects that have a defined and legislatively mandated pathway to reduced emissions.  
The usage of PPAs or RECs is similar to the carbon cap and trade concept, both place a cost on carbon emissions with the ultimate intention being to utilize those costs to incentivize further reductions or earlier reductions in carbon. For this reason, for projects that have a legislatively mandated pathway to reduced emissions, the usage of PPAs or RECs would be another mechanism for such projects to be able to account for the timing component of their pathway.
2. Utilities are already moving towards a time of use tariff rate structure to incentivize users to move their power requirements, to the extent possible, to times of peak supply or minimal demand. Adding a further use restriction on top of those evolving requirements is a double penalty and should be avoided.
3. As long as the utility has a legislatively mandated pathway to zero emissions, the utilization of PPAs or RECs in the calculation of the lifecycle greenhouse gas emissions will allow the earlier development of small-scale on-site hydrogen generation projects allowing communities to access those benefits sooner rather than being forced to wait for the longer time frame under which the utilities are targeting zero emissions. The PPA or REC is simply providing a timing component to initiate projects on an earlier time frame. As noted, we would only recommend

the utilization of PPAs or RECs in situations where the utility has a legislatively mandated pathway to zero emissions.

4. We are asking for PPAs or RECs to be allowed in the calculation of the lifecycle greenhouse gas rates. Since the Clean Hydrogen Production Credit under the IRA is set up under several tranches depicting a decreasing credit amount as the lifecycle greenhouse gas rate increases, the grantee must be able to document the calculated rate, inclusive of actual measured emissions and the credits due to a PPA or REC. The utilities can certify the amount of renewable energy purchased under the PPA or REC, such certification by the utility should be sufficient as long as their program is independently certified by an accepted third-party certification entity (e.g. Green-e Energy)