Green Hydrogen

45V Guidance: Implications for the Future of the Green Hydrogen Industry

U.S. Treasury's proposed 45V guidance stifles the economics, adoption, and deployment of green hydrogen. The green hydrogen industry needs a longer glide path to implement the hourly time-matching requirement, along with flexibility for first-mover projects to be exempted from the more granular time-matching requirements for the life of the tax credit.

Recent Wood Mackenzie analysis shows the following:

Emissions

UST's proposed requirements **increase carbon intensity by 46%**. In comparison, ACP's proposal for more flexible time matching requirements would deliver **double green hydrogen** production at **one-third the carbon intensity**.

Details: This higher green hydrogen production comes with lower long-term carbon intensity—23% less carbon intense in 2032, dropping to 34% less in 2035. This is due, in part, to the fact that greater green hydrogen deployment captures more market share from blue hydrogen, helping to drive down carbon intensity.

- Development activity already reflects market concerns about Treasury's proposed approach. **Higher cost expectations are preventing green hydrogen projects from maturing through the development process.**

  As a result, focus is shifting to blue hydrogen facilities—in fact, 95% of low carbon hydrogen projects likely to reach financial investment decision in the next two years are expected to be blue hydrogen projects.

Cost

UST's proposed requirements **raise cost of green hydrogen by 22-31%** compared to ACP's proposal for more flexible time matching requirements.

Scalability

UST's proposed requirements **stifle green hydrogen production by 53%** compared to ACP's proposal for more flexible time matching requirements.

Details: The study finds that ACP's more flexible rule for time matching is estimated to result in 2.3 million tons per annum (mtpa) of green hydrogen production in 2032 versus just 0.9 mtpa under Treasury's approach. This gap widens to 2.8 mtpa by 2035 as ACP's alternative proposal builds momentum for the green hydrogen industry.

- In total, ACP's proposal leads to 5.3 million tons more green hydrogen production by 2035 and places the industry closer to the tipping point required to enable long-term growth.

Moving Forward

How Treasury's guidance with respect to the time-matching requirement is finalized will determine whether a U.S. green hydrogen industry moves forward in the next decade. Green hydrogen is essential to decarbonization and, as the data shows, the current Treasury proposal will not achieve the economic or environmental goals of building out a green hydrogen industry articulated by Congress in the passage of the Section 45V tax credit.

Read the full analysis at cleanpower.org/resources/45v-implications-on-green-hydrogen-industry