

3 Pillars for Building a Green Hydrogen Industry for Decarbonization

ACP's proposed green hydrogen framework ensures clean production through time-matching, additionality, and regionality requirements that will reduce carbon emissions while allowing the industry to scale.

Background

To establish a domestic green hydrogen (H₂) economy and unlock the climate and job creation potential of this nascent clean energy source, it is necessary to make green hydrogen cost-competitive with more carbon-intensive forms of hydrogen production. The challenge is ensuring that green hydrogen production does not increase electricity demand from polluting sources, while also allowing enough flexibility for the industry to become cost-competitive and scale up.

The American Clean Power Association (ACP) believes there are three pillars that are fundamental to an emissions accounting system for grid-connected green hydrogen: 1.) temporality (time-matching), 2.) additionality, and 3.) regionality.

Time-Matching

The U.S. Treasury and other government entities have received divided comments on potential approaches to hydrogen tax credits in the IRA, with some advocating for annual clean energy procurement that matches an electrolyzer's demand, and others suggesting an hourly limitation.

ACP's framework phases in an hourly accounting system as the cost curve declines for green H₂ due to greater scale and maturity. Specifically, to provide needed short-term certainty for early green H₂ entrants into the market, the ACP framework enables investors to start the project development process under annual time-matching, so long as projects begin construction before January 1, 2029. The proposal transitions to hourly matching for projects commencing construction after December 31, 2028. The current safe harbor requirement for H₂ facilities requires a project to be placed in service within four years of when it begins construction. As a result, all new green H₂ facilities placed in service after 2032 would be under an hourly time-matching regime.

Additionality

Additionality is a key requirement to ensure that developers are offsetting the emissions of new load from grid-connected electrolyzers.

Under ACP's proposal, electrolyzers must procure "new" clean generation to match their load in order to offset emissions linked to new grid power consumption. Absent additionality requirements, electrolyzers could offset grid emissions from clean power already built to serve other purposes and, in turn, not truly offset the emissions of the new load from grid-connected electrolyzers.

Regionality

Regionality establishes a geographical boundary within which both the clean energy project powering the electrolyzer and the electrolyzer must be located. The boundary can range from "anywhere" (i.e., no restrictions), to the same grid, to the same RTO, to the same interconnection node.

Under ACP's proposal, regionality is met if: (1) the renewable energy facility is in the same area in which load is balanced as the H₂ facility (eg, an RTO/ISO); or (2) the renewable energy facility is located in a different balancing area as the green H₂ facility, but there is sufficient transmission delivery from the one area to the other.



[Read ACP's full Green Hydrogen Framework at cleanpower.org/facts/green-hydrogen](https://cleanpower.org/facts/green-hydrogen)