- ectrolyzers necessary to produce hydrogen;
- building and operating green hydrogen facilities; and
- generating the clean energy needed to produce green hydrogen.

AQP supports the establishment of tax incentives for the green hydrogen industry and seeks regulatory frameworks that country's climate goals.

Green hydrogen can be cost-competitive when accounting for the $3/kg production tax credit included in the Inflation Reduction Act.

for a tax credit of up to $1/kg, bringing the cost range to $1.0-$1.5/kg. This is the cost point that green hydrogen must match or surpass.

Today, Bloomberg New Energy Finance estimates the levelized cost of green hydrogen (LCOH) at over $4 per kilogram—well above the cost of gray hydrogen. The Inflation Reduction Act helps bridge this gap with a $3/kg production tax credit for the first ten years of production. The tax credit is critical to kickstart the green hydrogen industry and making sure companies can qualify cost-effectively is crucial.

ACP's compromise framework positions "first-mover" green hydrogen to be cost-effective in the early years of deployment.

At today's capital cost for a new electrolyzer, industry participants are confident that an initial annual time matching structure will allow them to achieve green hydrogen production at costs competitive with today's gray hydrogen market.

As the industry matures, achieving economies of scale and a robust supply chain, capital costs are expected to fall. This will enable a transition to a stricter clean energy accounting structure—i.e., hourly matching.

Under ACP's compromise position, green hydrogen facilities will need to procure clean energy from new or repowered clean power plants, thereby increasing demand for wind, solar, and battery storage. Allowing excessively congested clean power plants to also serve green hydrogen facilities helps these plants to continue to operate and means America gets the most out of its existing clean power resources.

The Department of Energy has laid out a clean hydrogen strategy and roadmap which envisions 10 million metric tons of clean hydrogen production by 2030. If the country achieves just 25% of this goal, it will lead to an estimated 15-20 GW of new clean power capacity. And this capacity is expected to be above and beyond what will be demanded by utilities and C&I customers—in other words, it will be built strictly due to demand from hydrogen producers.

requires procuring clean electricity at all hours of operation or operating electrolyzers at low-capacity factors. Green hydrogen projects would thus be forced to significantly over-procure renewables and/or storage to ensure production equipment will not be idled during periods of low resource availability. To provide needed short-term certainty for early green hydrogen movers, hydrogen facilities should be able to begin under an annual time-matching regime with a phase in of hourly time-matching toward the end of the decade when costs decline. This will allow early-mover green hydrogen facilities to get off the ground and help decrease emissions over the long term.

Estimates vary widely, which is to be expected for a nascent industry. The Department of Energy's U.S. National Clean Hydrogen Strategy and Roadmap cites an opportunity of 10 million metric tons (MMT) of clean hydrogen production by 2030 and 50 MMT by 2050. If green hydrogen captures half of this market, it implies 30-35 GW of electrolyzer capacity by 2030. Bloomberg New Energy Finance forecasts a similar amount of electrolyzer capacity at 30 GW by 2030. DNV, an international standards and accreditation firm, anticipates under 10 GW of electrolyzer capacity in the U.S. at the end of the decade. McKinsey & Company is tracking just 200 MMT of committed green hydrogen production, plus another 1.1 MMT in the planning stage. McKinsey's tracking implies ~10 GW of electrolyzer capacity by 2030.

Achieving even the most modest of these estimates will be a major accomplishment for the clean hydrogen industry. For perspective, if green hydrogen follows the growth curve of the solar industry from 2006-2015 (94% annual growth), there will be ~5 GW of electrolyzers in 2030. Surpassing 20 GW by 2030 will require a 150% annual growth rate.

While the outlook remains uncertain, there is consensus that green hydrogen must become cost competitive to grow.

Jobs and economic growth will stem from two sources as the green hydrogen sector grows. First, green hydrogen projects will create jobs as companies seek to develop, construct, and operate new facilities. Companies supporting electrolyzer supply chains will also create jobs as they manufacture parts and components for the industry.

Second, the clean power industry will see job creation and economic growth thanks to new demand for clean energy from these green hydrogen facilities. This means more electricians, wind turbine technicians, marine vessel operators, solar installers, and battery storage engineers—just to name a few.

Considering only the clean power economic impacts, ACP estimates green hydrogen demand for clean power will create 21,000 jobs by 2030 and drive more than $20 billion in economic output.[1]

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