

## Frequently Asked Questions

### **1. How does winning this award reflect H2B2's commitment to renewable hydrogen solutions?**

The award showcases H2B2's dedication to advancing renewable hydrogen technology. Winning the 2024 CHP Project of the Year Award, H2B2 demonstrates its success in aligning with its mission to expand access to renewable hydrogen. The SoHyCal project embodies H2B2's strategic vision of integrating renewable hydrogen into both mobility and industrial applications. The award confirms H2B2's successful approach to expanding hydrogen technology into various market segments, demonstrating its capability to address diverse energy needs.

### **2. What is the impact of SoHyCal on the advancement of electrolyzer technology?**

SoHyCal is setting a new benchmark by operating North America's largest off-grid renewable hydrogen production plant, powered entirely by renewable energy and significantly contributing to methane emission reduction. The project demonstrates the ability of PEM electrolyzers to scale from 3 MW to 9 MW, demonstrating advancements in efficiently handling large-scale hydrogen production. It also emphasizes the seamless integration of renewable energy sources with electrolyzers, pushing the boundaries of current technology. The project establishes a model for future initiatives by demonstrating the compatibility between renewables and PEM electrolyzers.

### **3. What specific electrolyzer innovations are being developed through the SoHyCal project?**

The SoHyCal project drives innovation through its scalable 3 MW PEM electrolyzer system, which is planned to expand to 9 MW. This showcases improvements in handling higher capacities and increasing operational efficiency. Additionally, the project integrates biogas and solar power (planned for 2025) as energy sources, introducing novel methods to merge renewable energy with electrolyzer technology. This off-grid approach enhances sustainability and efficiency without requiring connection to the electrical grid.

### **4. How does the SoHyCal project contribute to the transition to renewable energy and the reduction of carbon emissions?**

SoHyCal accelerates the transition to renewable energy by producing 100% renewable hydrogen. This hydrogen is generated from PV (expected by 2025) and biogas, which not only produces energy with zero carbon emissions but also reduces methane emissions. The result is a power source with negative carbon intensity, significantly benefiting greenhouse gas emission reduction. Furthermore, the plant's production of up to 3 tons of renewable hydrogen daily is enough to fuel approximately 210,000 cars or 30,000 city buses annually, replacing fossil fuels and lowering carbon emissions. Currently, SoHyCal dispenses fuel for heavy-duty vehicles (both buses and trucks) and loads tube trailers up to 500 bars. By 2025, these capabilities will be enhanced with a hydrogen refueling station serving both light and heavy-duty vehicles (350 and 700 bar). The project aligns with California's clean energy goals and supports local economic growth, contributing to the broader objective of reducing carbon footprints and promoting sustainable energy practices.

**5. How do you see the future of electrolyzer technology in the context of the growing demand for renewable hydrogen?**

The future of electrolyzer technology is highly promising, with the growing demand for renewable hydrogen driving continuous advancements. H2B2 anticipates further improvements in electrolyzer efficiency, cost-effectiveness, and scalability to meet increasing global hydrogen needs. As hydrogen production scales up, the integration of electrolyzers with diverse renewable energy sources, such as biogas, solar, and wind, will become increasingly common. SoHyCal's approach of combining biogas and solar power exemplifies how electrolyzer technology can adapt to various energy sources and applications, paving the way for future innovations and widespread adoption in the renewable energy sector. H2B2 is at the forefront of electrolyzer technologies, with PEM as our current commercial offering. We are also developing AEM and SOEC electrolyzers, which, alongside advancements in PEM electrolyzers, will enable H2B2 to offer a comprehensive range of products tailored to different industries and applications, all focused on producing renewable hydrogen.

**6. How does winning this award reflect 2G Energy's commitment to renewable hydrogen projects?**

Winning the 2024 CHP (Combined Heat and Power) Project of the Year Award from the Combined Heat and Power Alliance reflects 2G Energy's commitment to renewable hydrogen projects by showcasing the company's innovation and leadership in sustainable energy solutions. CHP technology is known for its efficiency in generating electricity and heat from a single fuel source, and 2G Energy has been at the forefront of adapting renewable gas technology for hydrogen use. The recognition underscores 2G Energy's broader commitment to sustainability, innovation, and the decarbonization of the energy sector through renewable hydrogen initiatives.

**7. What is the relationship between biogas and renewable hydrogen production?**

Biogas-fueled CHP (Combined Heat and Power) systems significantly impact renewable hydrogen production, serving as an efficient bridge between current renewable energy technologies and the future hydrogen economy. Biogas, produced from organic waste through anaerobic digestion, is a renewable resource. When used in CHP systems, biogas efficiently generates both electricity and heat and can also power electrolysis systems that produce renewable hydrogen, creating a circular energy loop where waste is transformed into energy and clean fuels. Biogas-fueled CHP systems can offer grid stability by providing consistent electricity and heat, which can also stabilize renewable hydrogen production. These systems can operate as backup power sources or supplement intermittent renewable energy sources like solar and wind, ensuring hydrogen electrolysis can run consistently.

**8. How does 2G Energy fit into the biogas and hydrogen energy landscape?**

2G Energy plays a crucial role in the biogas and hydrogen energy landscape by offering advanced CHP systems that operate efficiently on renewable gases like biogas and hydrogen. 2G is renowned for its expertise in biogas-powered CHP systems from 50 kW – 2.5 MW. Recognizing the shift toward a hydrogen economy, 2G Energy has successfully developed hydrogen-fueled CHP systems. These units that range from 115 kW – 750 kW, can operate either entirely on hydrogen or as hybrid systems using a mixture of hydrogen and other fuels like biogas or natural gas. 2G Energy is well-positioned

to bridge the current biogas-focused energy systems with the future hydrogen economy, aligning with the broader transition toward renewable hydrogen.

**9. How can a project similar to the SoHyCal project contribute to the transition to renewable energy and the reduction of carbon emissions?**

Using biogas as a fuel source for CHP systems reduces carbon emissions compared to fossil fuels. Since biogas is a low-carbon or carbon-neutral fuel, utilizing it in hydrogen production makes the process more sustainable and supports overall decarbonization goals. Biogas-fueled CHP systems can be implemented on a smaller, decentralized scale (e.g., at farms, wastewater plants, or landfills). This enables localized hydrogen production, reducing the need for hydrogen transportation infrastructure and supporting distributed energy generation.

**10. How do you see the future of renewable-powered electrolyzers in the context of the growing demand for green/renewable power production?**

As the demand for green hydrogen grows in sectors such as industry, transport, and heavy-duty applications, renewable-powered electrolyzers will become a central technology for scaling up production. In the future, there is likely to be a more integrated energy system where power, heat, and hydrogen production are coupled. Renewable-powered electrolyzers will act as a bridge between the electricity and gas networks, enabling sector coupling and creating synergies with CHP systems to deliver power and the necessary heat to different sectors such as manufacturing and district heating. By integrating biogas-fueled CHP systems into renewable hydrogen projects, 2G Energy is dedicated to advancing cleaner, more sustainable energy alternatives. The award highlights their ability to deliver high-efficiency, low-emission energy solutions, which are critical in transitioning to renewable hydrogen. It also signifies that their technology is recognized for its environmental impact and potential to drive the hydrogen economy forward. Together, they offer a highly efficient, flexible, and scalable solution for decarbonization across multiple sectors.