



Green Hydrogen Production

Your partner for sustainable hydrogen generation



Our PEM electrolyzers ensure gas products of superior quality.

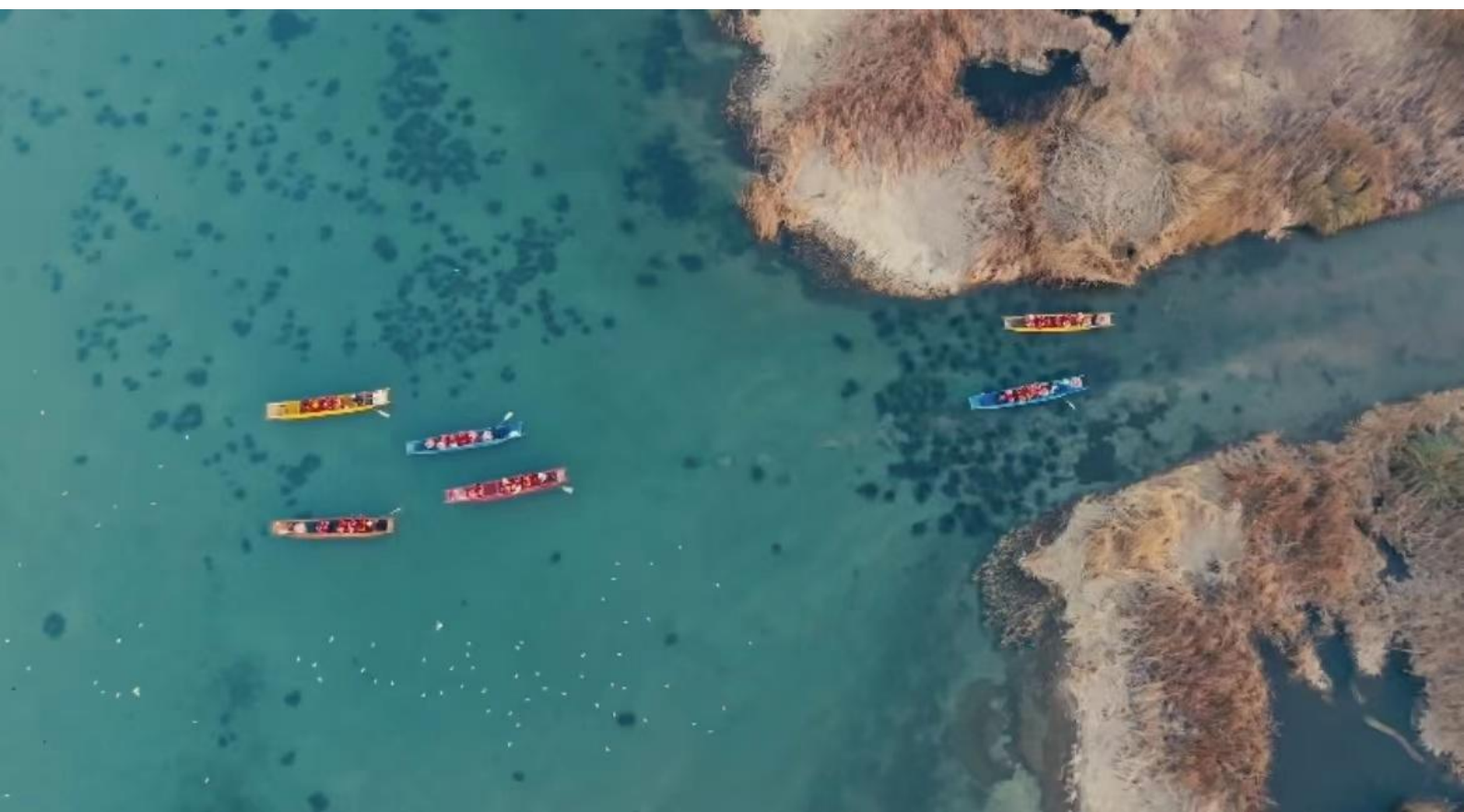
It is easy to operate and requires low maintenance. Using a modular design strategy that splits the electrolysis system into skids, we are able to optimize costs, reduce installation costs, and make the electrolysis system transportable.

Benefits of green hydrogen

Green hydrogen is a versatile energy carrier that can be applied to decarbonize a wide range of sectors. It can be used directly or in the form of its derivatives like e-methanol, e-ammonia, or e-fuels to replace fossil fuels, coal or gas.



Only around 40% of global carbon dioxide (CO₂) emissions originate from power generation which can be decarbonized via electrification. The other 60% of CO₂ emissions originate from industry, mobility, buildings and others. These can be decarbonized via sector coupling, using green hydrogen and its derivatives to make renewable energy available to those sectors.



As the global demand for power increases, energy resources, power grids and the environment face a variety of challenges often resulting in high levels of pollution, greenhouse gas emissions and elevated indirect costs on society. There has been a shift to deploy renewable technology to meet diverse industry demands- providing sustainable green energy.



Unlike traditional grid power, renewable energy is often unavailable or unpredictable, causing periods of supply and demand mismatch. In addition, costs of wind and solar are approaching grid parity, spurring further penetration of renewables onto an already aging infrastructure. This drives the need for high-capacity energy storage solutions.



Hydrogen generated using PEM electrolysis technology is key to fully leveraging renewable energy.

As an energy carrier, hydrogen provides daily to seasonal storage, creating a reliable source of dispatchable green energy for society's current and future needs. With the response time of a battery and the storage capacity of pumped hydro, PEM electrolysis provides the interface to turn excess energy from variable wind and solar power into hydrogen, which can be converted back into electricity when needed or used as a high value chemical feedstock to support a variety of industrial applications.



Combining grid intelligence with renewable resources, hydrogen-based solutions provide a dependable, environmentally conscious, low-cost energy supply to support:

- Power production
- Energy storage
- Power-to-gas
- Hydrogen fueling/mobility
- Grid and micro-grid balancing and load shifting

For our electrolyzer system, we focus on PEM technology taking its name from the proton exchange membrane.

The membrane's special property is that it is permeable to protons but not to gases such as hydrogen or oxygen. As a result, in an electrolytic process the membrane takes on, among other things, the function of a separator that prevents the product gases from mixing.



Catalyst coated membrane technology for PEM electrolysis
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