



UTILITY-SCALE CLEAN HYDROGEN: ECONOMY AND FLEXIBILITY BUILT IN

Whether your company sees hydrogen as the fuel of the future or depends on it daily in an industrial setting, you must be confident that it will be available when you need it, and that its production will be cost-effective. Generating hydrogen on-site provides an alternative to expensive long-term agreements with merchant gas companies, but getting to MW scale is often expensive — and often not possible without multiple units.

At Next Hydrogen, we specifically designed our water electrolyzers to generate MW-scale clean hydrogen faster than traditional water electrolyzers, and at a lower cost. How? By introducing the first significant advance in alkaline electrolyser cell design in decades.

Our new, innovative cell module lets you exploit low-cost sources of energy, including

renewables, while capturing the entire output range, even when it's intermittent. We also created an “overdrive” mode that lets you double capacity within a short timeframe, using considerably smaller or fewer units than you would with a traditional solution. And Next Hydrogen electrolyzers are compact and portable, with a small footprint, so there's no need to invest in a build-out.

THE TECHNOLOGY

We rethought conventional wisdom about cell module design and created our electrolyzers specifically to capture the entire range of input power — which is often intermittent — that comes from renewable sources. We also designed them to produce more hydrogen when the cost of electricity is lowest, which saves you from having to purchase additional

electrolyzers to meet demand. Single units can generate up to 2.5 MW; multiple units can generate up to hundreds of MW.

Here's what makes this possible:

- Each half cell can accommodate a wide range of fluid (liquid and gas) flows.
- We've eliminated common flow manifolds and external piping in order to enable high fluid flow rates.
- We created an “overdrive” mode that, when activated, can produce hydrogen at twice the nominal rate.
- The electrolyzers come in pre-assembled, drop-in formats for easy, rapid installation even at utility scale.

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CLEANTECH APPLICATIONS

Next Hydrogen water electrolyzers enable you to exploit intermittently available renewable sources of energy and capture the entire power input range. Here's an example of how much you could save using a Next Hydrogen electrolyser powered by wind:

	Typical Water Electrolyser	Next Hydrogen Electrolyser	Typical Water Electrolyser	Next Hydrogen Electrolyser
Electricity Source	Wind			
Availability of Input Power	33.3%			
Cost of Input Power	\$0.06/kWh	\$0.06/kWh	\$0.02/kWh	\$0.02/kWh
Input Range	0–100%	0–200%	0–100%	0–200%
Cost Savings	–	42%	–	54%

INDUSTRIAL APPLICATIONS

With a Next Hydrogen electrolyser, you can generate your own large-scale supply of hydrogen on site and at a much lower cost than with a traditional electrolyser. Here's an example of how much you could save:

	Trucked-in Hydrogen	Typical Water Electrolyser	Next Hydrogen Electrolyser
Feedstocks	Natural Gas	Water & Electricity	Water & Electricity
Average Cost of Input Power	N/A	\$0.1/kWh	\$0.05/kWh
Operating Time	Periodic delivery	Always On	Flexible (50% on-time)
Operating Capacity	N/A	100%	200%
Cost Savings	–	–	Up to 45%
Risk of Interrupted Supply	Higher	Lower	Lower
Carbon Footprint	High	Potentially Low	Potentially Low

ABOUT NEXT HYDROGEN

We founded Next Hydrogen because we saw an opportunity to help companies generate clean hydrogen economically. Today we see the potential for hydrogen to improve the environmental footprint of industrial processes, transportation systems, and energy systems. Next Hydrogen water electrolyzers will help us get there.

GET IN TOUCH WITH US

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