

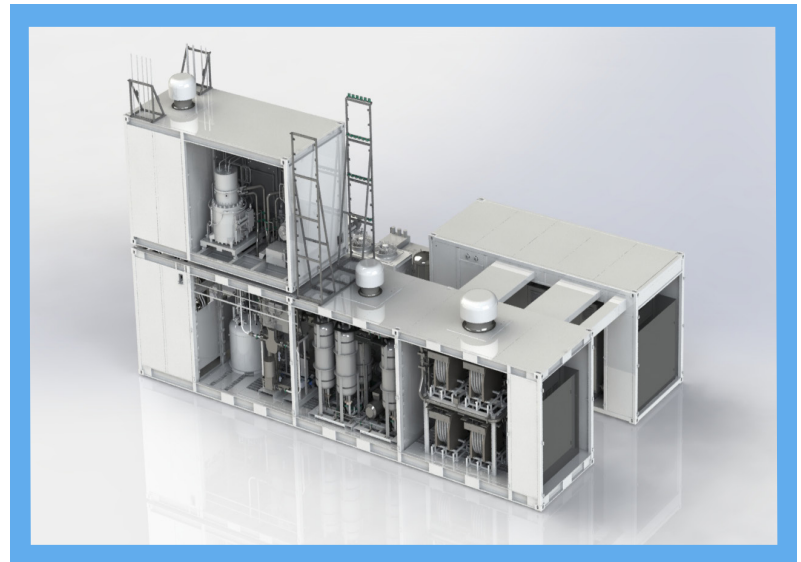
CPH2's disruptive **Membrane-Free Electrolyser (MFE)** technology combines a membrane-free stack with cryogenic separation to deliver pure hydrogen and pure oxygen as separate gases. This approach to hydrogen generation is unique and patented.

The system is responsive to fluctuating power supply because of its simplicity. The stack is made from readily available materials without using Platinum Group Metals (PGMs) as membranes or catalysts. Our conscious decision to avoid PGMs and membranes in our stack reduces our reliance on this exotic material, streamlines our supply chain, reduces our carbon footprint, and extends the stack's operational lifetime by eliminating a potential failure mechanism and providing longevity. Our electrolysis process requires a lower concentration of alkaline electrolyte.

This pioneering technology has generated significant interest in the wastewater treatment and heavy transport sectors, as well as for domestic heat (gas grid), power to buildings, and fuel-cell transport, including trains, buses, ships, and aviation.

From a 1MW system to a multi-MW system, the **MFE** is designed for scalability and engineered to meet diverse demands.

MODEL	MFE
Hydrogen Production [kg/day]	Up to 450
Oxygen Production [kg/day]	Up to 3,600
Gas Purity Hydrogen [%]	Up to 99.999
Gas Purity Oxygen [%]	Up to 99.8



Benefits of the CPH2 Membrane-Free Electrolyser include:

- No membrane to degrade or fail, improving reliability
- Responsive to fluctuating power supply
- Reduced stack complexity, making maintenance easier
- Minimal wastewater in the process, reducing OPEX
- Additionally, oxygen is a saleable by-product, which further reduces OPEX

Clean Power Hydrogen Group Ltd (CPH2) reserves the right to revise this documentation and to make changes in content from time to time without obligation on the part of CPH2 to provide notification of such revision or change. May 2024 CB/TS 320-052024-2

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OUR PURPOSE AND VISION

To be the leading developer and manufacturer of green hydrogen technologies. To reduce the creation of harmful emissions by participating in the growth of the hydrogen economy. We are passionate about hydrogen and clean energy for a sustainable world. For now, for our children and future generations.

THE COMPANY

In December 2012, Dr Nigel Williamson and Joe Scott had the vision to help clean up the environment using water electrolysis to produce hydrogen without costly Platinum Group Metals. Over four years, they developed the unique Membrane-Free Electrolyser (MFE) and, in 2016, established the Clean Power Hydrogen Group Limited, bringing together knowledge and technical excellence from the cryogenics and hydrogen sectors.

Following rapid growth, the company relocated in 2021 to a 29,000sq ft R&D and production facility in Doncaster, a short distance from the original building where it opened its first premises in 2018.

In February 2022, CPH2 plc was admitted to the London Stock Exchange (LSE) Alternative Investment Market and awarded the LSE Green Economy Mark, which recognises London-listed companies that derive more than 50% of their revenues from products and services that contribute to environmental objectives.

Our core values include passion, innovation, openness, and genuineness. Our mission is to provide the most effective solution for producing green hydrogen. We have received 22 patents in the UK, Europe, India, and the USA, which reflects our fearless approach to pushing the boundaries of science. Our disruptive clean technology represents a pivotal shift in how the global economy will attain its goals of eliminating carbon emissions.



Simple

The **MFE** stack is designed with a simple configuration, making it simple to build and maintain. Achieving it was challenging and required considerable engineering effort and a decade of research and product development.



Safe

We strive to develop best practices for safe hydrogen production through collaboration with industry stakeholders, regulators, and notified bodies. We aim to ensure the highest levels of operational safety in the design and manufacture of our electrolysers.



Sustainable

Our decision to avoid Platinum Group Metals reduces reliance on depleting resources. It streamlines our supply chain and reduces our carbon footprint.

CPH2 is proud to be at the core of the green hydrogen industry

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