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Clean Power Hydrogen PLC
18 December 2025

The information communicated within this announcement is deemed to constitute inside information as stipulated under the Market Abuse Regulations (EU) No. 596/2014 which is part of UK law by virtue of the European Union (withdrawal) Act 2018. Upon the publication of this announcement, this inside information is now considered to be in the public domain.

**18 December 2025**

**Clean Power Hydrogen plc**
**("CPH2", the "Company" or the "Group)**

**Significant Milestones Delivered**

CPH2, developer of the market disrupting and IP protected Membrane-Free Electrolyser ("**MFE**"), announces the successful completion of the Level 1 Factory Acceptance Test ("**FAT**") of its MFE220 1MW unit, with proven high purity hydrogen and oxygen output levels facilitating access to new markets including semiconductors, data centres and pharmaceuticals.

**Highlights**

- Major milestone delivered with the Company's next generation MFE220 1MW successfully completing its internal Level 1 Factory Acceptance Test. The intended customer, Lagan MEICA, formally witnessed and validated the process for internal testing.
- Building on this success the board has instructed the R&D and Engineering teams to commence the Front-End Engineering Design ("**FEED**") of a 5MW unit using the same proven and patented technology. The initial engineering assessment is that both the 5MW and existing 1MW unit can achieve class leading efficiency of 48kWh/kg.
- The Company's trial unit, installed by Lagan MEICA on behalf of Northern Ireland Water in Belfast was independently tested and proven to be producing hydrogen which exceeded 99.999mol% purity and oxygen at 99.7wt%. This is an oxygen purity level consistent with medical grades.
- A bottling trial of the same unit successfully compressed hydrogen into a multi-cylinder pack ("**MCP**"), via a third-party compressor, operated and tested as an integrated project.
- CPH2 continues to build its sales pipeline in the UK and internationally, with positive interest from credible customers in Germany, Austria and Ireland, building on firm orders in Ireland and New Zealand.

The Company's next generation MFE220 unit has achieved a significant milestone by passing the Factory Acceptance Test Level 1 and is now in transit to the Company's test site to undertake Levels 2 & 3. The MFE220 unit also successfully completed a bench test of the control system for the MFE process. The simulation demonstrated full, efficient operational and safety systems control.

The independent testing of the Company's trial unit in Belfast provides notable, verifiable data points for technology validation with the production of hydrogen which exceeded 99.999mol% purity and oxygen at 99.7wt%. These results mean that oxygen is being produced at medical grades and the Company is pleased that the test results match internal expectations for the technology.

With the bottling trial of the same unit successfully delivering compressed hydrogen into a MCP as part of an integrated project, the Company has achieved a further technical milestone that validates its future technology pathway as the trial unit and the MFE220 use the same patented technology. The combination of bottling and high purity oxygen and hydrogen outputs provide the opportunity for the Company to access new markets not previously served by traditional hydrogen technology solutions. Access to these new markets should accelerate sales pipeline build and deliver firm orders in robust and growing markets that benefit from a known demand for decentralised hydrogen, irrespective of government subsidy.

CPH2 will now focus its commercialisation phase into these identified, decentralised, 'behind the meter' market sectors that the unique combination of high purity hydrogen and oxygen output levels demonstrate a compelling business case for. The market sectors include Semiconductor production, Data Centre backup, Electricity grid support with wind and solar farm curtailment solutions, Life Sciences, pharmaceutical and medical applications, more energy efficient wastewater treatment, and biomass electricity plant enhancement. This is in addition to the traditional return-to-base mobility applications like buses, quarry vehicles, port, and airport handling machines.

With this key milestone completed and providing confidence in the MFE220 technology, the Board has instructed the Company's R&D and Engineering teams to begin the FEED processes for a 5MW scale unit. Whilst the focus will remain on delivering the successful on-site operation of the MFE220, the Board considers it prudent to begin planning for future scale and growing end use cases that could be achieved with the Company's technology. The initial engineering assessment is that both the 5MW and existing 1MW unit can achieve class leading efficiency of 48kWh/kg.

**Jon Duffy, CEO of CPH2, commented:**

*"The second half of 2025 has seen CPH2 drive it's commercialisation phase with technology wins enhancing our product market fit, culminating in the successful completion of the Level 1 Factory Acceptance Test of the next generation MFE220 1MW unit. This internal process was formally witnessed and validated by our customer Lagan MEICA.*

*Building on this success CPH2 has commenced FEED on a 5MW unit, with initial engineering assessment indicating*

*that both the 1MW and 5MW units will be capable of delivering class leading efficiency.*

*The high purity levels achieved for both hydrogen and oxygen opened-up new important growth markets for CPH2, which is significant as the broader hydrogen market continues to grow, as confirmed by the IEA report published in September 2025, despite several large scale multi-billion dollar centralised 'green' projects having been delayed. CPH2 is a decentralised solution, costing single digit millions, which operates behind the meter at a scale to match the known requirements of mission-critical applications in high growth markets.*

*The Company believes that its technology will be capable of delivering purity levels of hydrogen and oxygen offtake, combined with production efficiency across variable electricity loads that traditional electrolysers are not able to match. The potential of these advances to open up new end use market sectors is substantial.*

*The technology advances delivered throughout 2025 with the MFE solution are helping to grow our sales pipeline and open new markets globally that do not rely on government subsidies."*

**For more information, please contact:**


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**Overview of CPH2**
CPH2 is the holding company of Clean Power Hydrogen Group Limited which has almost a decade of dedicated research and product development experience. This experience has resulted in the creation of simple, safe and sustainable technology which is designed to deliver a modular solution to the hydrogen production market in a cost-effective, scalable, reliable and long-lasting manner. The Group's strategic objective is to deliver the lowest LCOH in the market in relation to the production of green hydrogen. CPH2 is listed on the AIM market and trades under the ticker LON:CPH2.



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