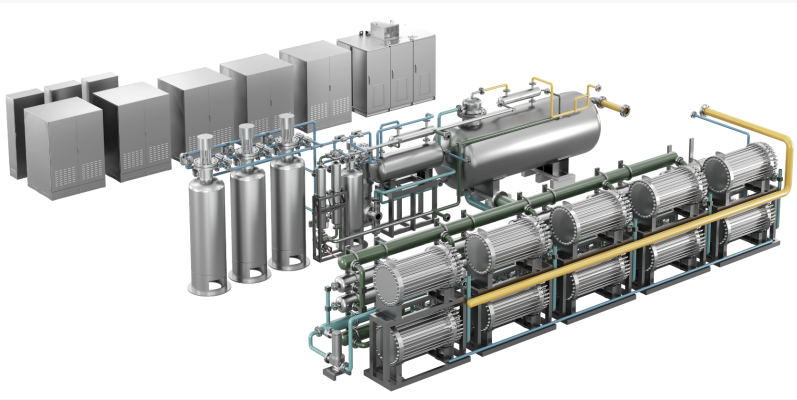
Horizon announces world’s first 5MW AEM Electrolyser Targeting Large Green Hydrogen Projects

SINGAPORE, December 4, 2024 /EINPresswire.com/ -- Horizon Fuel Cell Group has hit another milestone, with the launch of its 5MW AEM electrolyser system designed to drive down the cost of green hydrogen.



Horizon 5MW AEM Electrolyser For Lower Cost Green Hydrogen

Delivering both capital cost reduction and higher efficiency, while retaining the operating flexibility relative to PEM electrolysers, these new electrolysers improve the viability of large-scale green hydrogen demand cases, such as green steel, green ammonia, eSAF and green methanol in the decarbonisation of energy, heavy transport and industrial processes.

To support global decarbonisation on a genuinely competitive basis with fossil fuel alternatives, the cost of green hydrogen must be significantly reduced. Horizon's new 5MW AEM building blocks combine just 10 electrolyser stacks to convert low-cost renewable energy into green hydrogen at scale, with a dramatically simpler architecture than some other AEM solutions, yielding long term operational benefits.

Key Features of Horizon’s 5MW AEM System:

• Strong dynamic response capability: nimble in responding to renewable energy power sources with input range of 5-120% of rated power
• DC power consumption of 3.6 to 4.3 kWh/Nm³ with Hydrogen purity of 99.999%
• Hydrogen production flexibility: can automatically adjust operation based on hydrogen flow requirements
• Well suited to large green hydrogen projects: the 5MW modular units are cost-effective building blocks
• Rapid path to scale: takes advantage of existing capabilities to offer high-throughput production

AEM (Anion Exchange Membrane) technology is widely recognized as highly promising for green hydrogen production. The anion exchange membrane is a critical component influencing the performance, lifespan, efficiency and cost of AEM electrolysers, and is currently the main technological limitation for large-scale commercialisation of AEM based solutions. Following Horizon's track record of innovation in materials and electrochemistry, several breakthrough advancements have been made in membranes, catalysts, electrodes, and electrolyser stacks, which contribute to strong potential for the mass deployment of next generation AEM electrolysis solutions, which also leverages Horizon's substantial operations experience.

Horizon is exploring numerous partnership opportunities around the world for assembly of these crucial elements of the green hydrogen supply chain, and has already announced the first such collaboration, targeting the promising Indian market.

About Horizon Fuel Cell Technologies: www.horizonfuelcell.com

With over two decades of material and application innovation, and large-scale delivery experience in fuel cells and hydrogen production, Horizon has become a world-leading developer of key technologies across the hydrogen value chain, including MEA and bipolar plates, with an annual capacity exceeding 1.2GW of core materials. Horizon is well-positioned to offer modular, turnkey solutions and professional services for green hydrogen projects through electrolyser subsidiary HET Hydrogen Pte Ltd.

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