HORIZON INVENTION SERVING THE HYDROGEN INDUSTRY PRE-DATED SIMILAR ELECTRIC HYDROGEN PATENT APPLICATION BY 16 YEARS

Third Party Observation submitted to World Intellectual Property Organization (WIPO) relating to 2023 claims disclosed in Horizon 2007 patent filing

SINGAPORE, October 25, 2023 /EINPresswire.com/ -- Horizon Fuel Cell group is best known for successful commercialisation of numerous Proton Exchange Membrane (PEM) fuel cell platforms over the last two decades. Recently, however, Horizon unveiled 1 and 5MW PEM electrolyser modules to be offered through a new Singapore-based subsidiary.

The MW-scale electrolysers designed by the Horizon team build on 20 years of technology development in core PEM material, equipment and process knowhow, for which the company has been granted over 230 patents.

While certain things may be “new” to some, they are often old hat to those with deep knowhow in a specific domain. That may be the case in this scenario, with Horizon making significant disclosures in a patent application in 2007 relating to a multi-layer membrane electrode structure, which has anti-crossover functional regions to achieve high power density for fuel cells and electrolysers (US Patent Application 2007/0275291 A1). Such invention has the potential to reduce electrolyser stack costs by up to 70%, critical to achieve DOE’s $1-$2/kg green hydrogen cost targets for widespread commercialisation. Horizon decided in 2007 to allow the entire hydrogen industry the freedom to practice its invention, for the purpose of accelerating the world’s energy transition.

Horizon has submitted a Third Party Observation to the World Intellectual Property Organization in relation PCT Publication Number WO 2023/172626 A1, published in September 2023. The claims of invention, relating to the use of gas recombination layers to reduce hydrogen crossover, were made by Electric Hydrogen Co. of Massachusetts, a hydrogen startup in the United States.

With a strong pedigree in both PEM technology development and over 1.2GW of membrane electrode assembly (MEA) capacity to feed electrolyser production, Horizon is well positioned to enter the rapidly developing market for electrolyser equipment, and will announce the details of

the company’s new electrolyser subsidiary in conjunction with the commissioning of the first 1MW system, expected during the fourth quarter of 2023.

Green hydrogen needs to be produced at an unprecedented scale in the race to decarbonize fertilizers, transport and heavy industries such as steel production, as highlighted in US President Biden’s recent announcement in relation to $7 billion in funding for green hydrogen hubs across the US.

Project developers around the world have been increasingly frustrated by very long lead-times for high performance electrolyser equipment, and the new subsidiary of Horizon will have the experience and installed manufacturing capacity to deliver on ambitious green hydrogen project requirements around the globe, with less than 10 months of lead-time anticipated.

About Horizon:
Horizon is a leading developer of key technologies across the hydrogen value chain, with more than 1.2GW per year of Membrane Electrode Assembly (MEA) manufacturing capacity at two locations, serving the downstream market opportunity for both fuel cells and electrolysers.

About the US Hydrogen Hub program:
See the official press release from the White House here: White House Press Release on Hydrogen Hubs 13 Oct 2023.

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