Press release

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MAN Energy Solutions and H-TEC SYSTEMS in cooperation with Helen Oy to execute Helsinki Hydrogen Plant

With its first hydrogen project of three PEM electrolyzers Helen Oy will increase its expertise to meet the needs of large-scale hydrogen production

Helen Oy, one of Finland's largest energy companies, is joining forces with MAN Energy Solutions and PEM electrolysis specialist, H-TEC SYSTEMS, to build a 3-megawatt production plant for green hydrogen, which will be located in the vicinity of Helsinki's district heating network and the Vuosaari Harbour. With this pilot plant, Helen will increase its expertise to meet the needs of large-scale hydrogen production and enhance the flexibility to the entire energy system.

MAN Energy Solutions will be responsible as EPC (engineering, procurement and construction) for the hydrogen section of plant and the delivery of hydrogen related equipment, its installation as well as commissioning. The remaining part will be done in co-operation with Helen and Helen's engineering partner.

Sari Mannonen, Senior Vice President New business & Hydrogen at Helen Oy, said: "The 3H2 project is the first of its kind in the world by combining four different sectors, electricity, heating, transportation and hydrogen as well as flexibility between them. Our whole hydrogen team at Helen is very excited and proud of the cooperation with MAN Energy Solutions that is well known of its world class expertise in the industry."

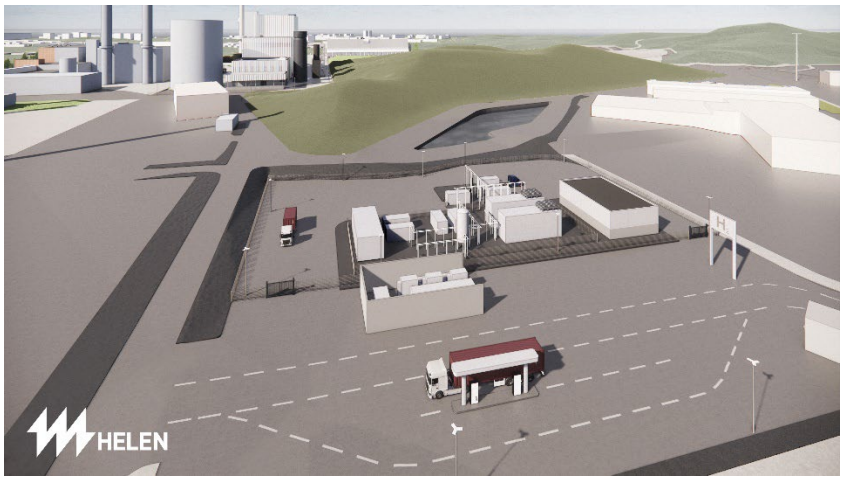
H-TEC SYSTEMS, a leading supplier of PEM electrolysis technologies and subsidiary of MAN Energy Solutions (from 30th September 2024 on, H-TEC SYSTEMS will operate under the name Quest One), will supply 3 × ME450 PEM electrolyzers as the centerpiece of the plant; these will produce up to 1,350 kilograms of green hydrogen per day from green electricity generated by Helen's renewable energy source portfolio. Helen Oy is planning to deliver the hydrogen to a nearby hydrogen refueling station via pipeline and distribute it to industrial customers or other refueling stations using containers. The waste heat generated in the production process will be utilised in Helen's district heating network.

Alexander Stöckler, Head of Sales, Tendering & Project Management, Power Segment at MAN Energy Solutions, said: "Green hydrogen is undoubtedly the key element for a climate-neutral future and the global economy will require it in large quantities. It is therefore most important that energy suppliers like Helen Oy lead the way by building plants and gaining valuable operational experience with hydrogen technology. We urgently need industrial production plants to achieve economies of scale, reduce costs and meet the huge future demand for hydrogen both efficiently and economically."

PEM electrolysis: ideal for green hydrogen

At the core of the plant are the three PEM (Proton Exchange Membrane) electrolyzers from H-TEC SYSTEMS. Through the PEM process, water is split into hydrogen and oxygen with the help of an electric current that is passed through a special membrane. Due to its high dynamics, PEM electrolysis is ideally suited for coupling with fluctuating renewable-electricity sources – such as wind and solar – and has clear advantages over alkaline electrolysis. PEM electrolysis also requires less electricity per kilogram of hydrogen produced, does not use any aggressive chemicals, and produces high-purity hydrogen that is suitable for direct use.

Robin von Plettenberg, CEO of H-TEC SYSTEMS, said: “By combining H-TEC SYSTEMS’ expertise in the field of PEM electrolysis with MAN Energy Solutions' broad experience in plant engineering, we can offer our customers a first-class package for the production of green hydrogen. We are very pleased that Helen Oy has placed its trust in our joint capabilities and is taking this important step into the future of hydrogen with us. With this plant in the vicinity of the Vuosaari Harbour, our electrolyzers will produce green hydrogen in all Scandinavian countries and Finland. In this way, we are well on the way to laying an important foundation for a climate-neutral energy supply.”



Helen Oy is joining forces with MAN Energy Solutions and PEM electrolysis specialist, H-TEC SYSTEMS, to build a 3-megawatt production plant for green hydrogen in the vicinity of the Vuosaari Harbour in Helsinki, Finland (© Helen Oy)

H-TEC SYSTEMS will supply three ME450 PEM electrolysers for a 3-megawatt hydrogen production plant for Finnish energy company Helen Oy (©H-TEC SYSTEMS)

MAN Energy Solutions enables its customers to achieve sustainable value creation in the transition towards a carbon neutral future. Addressing tomorrow's challenges within the marine, energy and industrial sectors, we improve efficiency and performance at a systemic level. Leading the way in advanced engineering for more than 250 years, we provide a unique portfolio of technologies. Headquartered in Germany, MAN Energy Solutions employs some 14,000 people at over 120 sites globally. Our after-sales brand, MAN PrimeServ, offers a vast network of service centres to our customers all over the world.