

WORLD'S LARGEST HIGH-TEMPERATURE ELECTROLYSIS MODULE DELIVERIES STARTED

As part of the *MultiPLHY* project, Sunfire is installing the world's first multi-megawatt high-temperature electrolyzer to produce green hydrogen at Neste's renewable products refinery in Rotterdam. The company has delivered the first two electrolysis modules – setting new technology standards in the market.

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To reach their ambitious sustainability targets, energy-intensive industries are implementing innovative cleantech solutions. Against this background, electrolysis for the production of green hydrogen is one of the most promising solutions to replace fossil fuels and reduce CO₂ emissions.

Neste – the world's leading producer of sustainable aviation fuel, renewable diesel and sustainable feedstock for plastics and other materials – aims to reach carbon neutral production by 2035. Renewable hydrogen and Power-to-X technologies are two of the company's key development areas. Neste is closely following the development of various electrolysis technologies and has recognized the future potential of high-temperature electrolysis solutions.

Therefore, in the scope of the EU-funded demonstration project *MultiPLHY*, a 2.6 MW high-temperature electrolyzer from Sunfire is going to be installed at Neste's renewable products refinery in Rotterdam (Netherlands). Made to produce green hydrogen from renewable energy and water, the electrolyzer is setting new technology standards. Construction works are already in full swing – now Sunfire, one of the leading electrolysis manufacturers, has delivered the first two modules as core component of its electrolysis system to Rotterdam.

In total, the company will install twelve electrolysis modules on site, adding up to the world's largest high-temperature electrolyzer installed in an industrial environment. It is based on Sunfire's innovative SOEC (solid oxide electrolysis cell) technology and operates at temperatures of 850 °C. By using industrial off-heat, the electrolyzer processes water steam to hydrogen at highest conversion efficiencies. As the steam reduces electricity demand, Sunfire's SOEC technology is the most efficient electrolysis solution on the market.

“Lately, we were able to demonstrate an electrical efficiency of 84 %_{el,LHV}. This was a [breakthrough-moment](#). We are excited to commission our SOEC electrolyzer on multi-megawatt scale soon,” says Sunfire CTO Christian von Olshausen. “We have tested the SOEC modules intensively to make sure they meet the highest quality standards. Now it is time to demonstrate our technology in an industrial refinery setting.”

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The high-temperature electrolyzer will be directly integrated into Neste's refinery processes and will become part of the renewable products production on site. After its commissioning, which is expected in early 2023, the electrolyzer will produce more than 60 kg green hydrogen per hour.

Sunfire-CEO Nils Aldag underlines the importance of large-scale electrolysis projects like *MultiPLHY*: "Net-zero cannot be reached alone – that's why we need pioneering partners to turn our vision of a world free from fossil fuels into reality. Our innovative electrolyzers help refineries like Neste to accelerate the green transition. *MultiPLHY* demonstrates that we are ready to deliver and implement electrolyzers in the multi-megawatt range."

Besides Neste and Sunfire, the *MultiPLHY* consortium also includes the French research center CEA, SMS-group company Paul Wurth and ENGIE.

More information about *MultiPLHY*: multiplhy-project.eu.



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About Sunfire

Sunfire GmbH is a global leader in the production of industrial electrolyzers based on pressurized alkaline and solid oxide (SOEC) technologies. With its electrolysis solutions, Sunfire is addressing a key challenge of today's energy system: providing renewable hydrogen and Syngas as climate-neutral substitutes for fossil energy. Sunfire's innovative and proven electrolysis technology enables the transformation of carbon-intensive industries that are currently dependent on fossil-based oil, gas, or coal. The company employs more than 400 people located in Germany and Switzerland.

For further information please visit www.sunfire.de/en/