

Press Release

Berlin, March 31, 2022

Siemens Energy to start production of hydrogen electrolyzers in Berlin

- Industrial-scale production of electrolyzers for green hydrogen
- In 2023 start of the first Gigawatt production at the multi-Gigawatt factory

Siemens Energy will locate the industrial production of electrolysis modules in Berlin and is thus taking the centerpiece of its hydrogen technology to the capital. Start of production at the location Huttenstrasse in Berlin's Moabit locality is scheduled for 2023. At this site the complete infrastructure of an existing production hall can be used. New production lines for the electrolyzers are being set up on 2,000 square meters at a cost of around 30 million euros. Today, the site mainly manufactures gas turbines, which are among the most powerful and efficient in the world. These can already be operated with up to 50 percent hydrogen, and by 2030 complete hydrogen operation should be possible. Siemens Energy is now pooling its expertise in both these areas in Berlin to ensure a reliable and successful energy transition to a new energy mix. This also includes the business field of energy transmission: At the Siemens Energy Switchgear Plant Berlin innovative high voltage products are manufactured, ensuring that electricity reaches consumers reliably.

Christian Bruch, President and CEO of Siemens Energy, comments: "With the new production facility for hydrogen electrolyzers, we are reinforcing our claim to play an active role in shaping the energy transition. To this end, we are pooling our knowledge in the field of various energy technologies in Berlin. For us, hydrogen is an important component of the future energy world. For this to be economically viable, the manufacturing costs for electrolyzers must be significantly reduced. With our new production facility, we are helping to make hydrogen competitive sooner."

At the Berlin location, the individual electrolyzer cells will be manufactured and combined to form functional modules, or "stacks." Depending on the required capacity, these will then be assembled into larger process-based units. In Germany, this last stage will take place at Mülheim, which is closely associated with the new Berlin plant and complements it perfectly. The critical element is that production is being switched over to mass production: Reasonably priced and affordable

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electrolyzers are the prerequisite for being able to cover growing demand and the future costs of hydrogen.

For this purpose, Siemens Energy is relying on PEM (Proton Exchange Membrane) electrolysis, in which water is separated into hydrogen and oxygen using a proton-permeable membrane and electricity from renewable sources. The key aspects of this process are its high level of efficiency, high product gas quality, and reliable operation with no chemicals or impurities. The latest and most powerful PEM electrolyzer product line from Siemens Energy is optimized for applications up to the high hundreds of megawatts, enabling systems of this size to generate several metric tons of green hydrogen every hour. The electricity used in electrolyzer manufacture will be sourced entirely from renewables.

Hydrogen as a key element in decarbonization

Green hydrogen – in other words, hydrogen generated using renewable energy – is a key element in the replacement of fossil fuels with renewables. Hydrogen can serve as a storage medium and also as a raw material for further applications, including synthetic fuels. But hydrogen molecules can also be used directly as an energy source to generate electricity and heat, which have previously depended on gas. In combination with a massive expansion of renewables, this is a way to ensure the success of the energy transition. The pathways for producing green hydrogen and its derived products are known; the task now is to scale production to industrial volumes. Powerful electrolyzers of the type to be manufactured soon in Berlin will form the centerpiece of hydrogen technology.

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Siemens Energy is one of the world's leading energy technology companies. The company works with its customers and partners on energy systems for the future, thus supporting the transition to a more sustainable world. With its portfolio of products, solutions and services, Siemens Energy covers almost the entire energy value chain – from power generation and transmission to storage. The portfolio includes conventional and renewable energy technology, such as gas and steam turbines, hybrid power plants operated with hydrogen, and power generators and transformers. More than 50 percent of the portfolio has already been decarbonized. A majority stake in the listed company Siemens Gamesa Renewable Energy (SGRE) makes Siemens Energy a global market leader for renewable energies. An estimated one-sixth of the electricity generated worldwide is based on technologies from Siemens Energy. Siemens Energy employs around 91,000 people worldwide in more than 90 countries and generated revenue of €28.5 billion in fiscal year 2021.

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