Hydrogen energy storage berlin

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Waste Water recycled to hydrogen. ... Neuste Beiträge. Never curtail ...

Unlike the electricity grid, hydrogen can also be stored in the gas grid or in salt ...

for the energy transition. If Berlin puts its mind to it, ... Hydrogen refuse collection ...

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

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.

Siemens Energy will locate the industrial production of electrolysis modules in Berlin. Robots will help automate production.

"What a week," says 47-year-old engineer Axel von Levetzow, Head of Manufacturing at the Siemens Energy Gigawatt Electrolyzer Factory in Berlin, a joint venture between Siemens Energy and Air Liquide. It"s late September, and von Levetzow and colleagues have been busy installing new machinery and steadily increasing production. At the same time they"ve been presenting their plans for electrolyzer production to industrialists, entrepreneurs and politicians - including energy ministers from all over the world.

Interest is high because the factory, complete with robots, automation and digitalization, is a centerpiece for climate action and the world"s ambition to reach net zero emissions with a renewable hydrogen economy. Starting this November, the factory begins its gigawatt-scale production of electrolyzer stacks, starting with 1 gigawatt in the first year, moving to 2 gigawatts by 2024 and reaching 3 gigawatts as soon as 2025.

"Before, customers would say, "We need energy," and we built power plants for them," says von Levetzow. "Now we can even deliver everything they need for a complete green hydrogen strategy."

Worldwide the new gigawatt electrolyzer plant in Berlin is the first to be highly automated with robotics and digitalization.

In the factory hall, von Levetzow stops before a chart showing energy production and consumption in the different industrial sectors. A huge part of that chart, power generation, can be decarbonized via direct electrification, he explains. The real challenge has been to decarbonize hard-to-abate sectors like the chemical or steel industry, refineries, mobility, shipping and aviation. "The production of green hydrogen is how we make renewable energy available to all sectors of the economy."

For the production of renewable hydrogen electrolysis stacks, Siemens Energy joined forces with Air Liquide. The joint venture partnership with a company that knows the needs of companies working with industrial gases well, produces synergy for both partners. "In order to quickly ramp up production and reach a scaling effect, we have to convince the market. And that can only be done with a strong partner like Air Liquide with their mastery of hydrogen along the whole value-chain," says von Levetzow.