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Press

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Siemens accelerates hydrogen ramp-up with generative artificial intelligence

- **New AI tools help design, engineer and automate hydrogen plants**
- **Available for download on Siemens Xcelerator marketplace from the end of 2024**
- **Hydrogen key customer showcase on Siemens booth at Achema trade fair**

Green hydrogen is critical to achieving sustainability targets in the industrial sector. To accelerate the hydrogen ramp-up, the technology company Siemens will be supporting companies in the hydrogen industry with software tools based on generative artificial intelligence. Especially in hydrogen production, these new solutions are intended to help significantly simplify the design, engineering and automation of hydrogen production plants, enabling a quicker scale-up of hydrogen production.

Faster design with Hydrogen Plant Configurator

The new Hydrogen Plant Configurator is an intelligent chatbot based on generative artificial intelligence which enables users to create plant designs for hydrogen production. In an iterative process, the configurator is fed with the desired design characteristics of a production plant. The AI then creates seamless block flow diagrams up to precise layouts of the system units and connections. In addition, the AI can predict plant-specific key figures such as possible power consumption, heat generation and a comprehensive list of the most important components. The data generated in this way represents the basic concept of a plant. It can then be transferred to engineering and simulation software such as Siemens' Comos and gProms, for example, to automatically create the piping and instrumentation diagrams.

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"Green hydrogen is crucial for the decarbonization of industry. It will be a scarce commodity for the foreseeable future. This makes it even more important to accelerate the ramp-up of production capacities", says Axel Lorenz, CEO Process Automation at Siemens. "Generative artificial intelligence can provide support in the crucial phases of hydrogen production to save considerable time and costs. With the Hydrogen Plant Configurator, it is easier than ever to plan and operate a more sustainable hydrogen plant and thus lay the foundation for efficient production."

Faster engineering with Comos AI

Siemens is also launching an AI-based tool for the project planning phase of hydrogen plants. The Comos AI engineering assistant can create equipment specifications and diagrams based on natural language descriptions and automatically completes or corrects models and drawings. The assistant can also provide support during cross-domain phases in engineering or cross-product workflows by converting models, drawings, and information structures, for example for simulation software such as Simit from Siemens. In addition, users can use Comos AI to retrieve information from engineering-relevant products – via their own prompt or suggested by the assistant. In this way, the assistant provides answers to documentation, specifications, or technical details. By entering images, scans, or PDFs, it can also proactively deliver relevant resources and transform them into precise diagrams and models.

AI upgrade for the distributed control system

To simplify the automation of processes in hydrogen plants, Siemens is launching an innovative module for the Simatic PCS neo distributed control system: SFC Generation. The module is integrated into the process control system and can create so-called sequential function charts (SFCs) using generative artificial intelligence. These charts provide a visual representation of process logic and allow users to easily manage complex workflows. This is possible based on specific prompts or by copying a prose process description into the module's chat window.

The Hydrogen Plant Configurator will be available on the Siemens Xcelerator Marketplace from the end of calendar year 2024, while Comos AI and SFC Generation are expected to be available from the beginning of 2025. Siemens will be presenting the new AI tools for the first time at this year's Achema trade fair in Frankfurt from June 10 to 14, 2024 (Hall 11).

Siemens' tools based on generative artificial intelligence accelerate hydrogen production

For more information, please visit: www.siemens.com/hydrogen

Learn more about Siemens presence at this year’s Achema trade fair: https://www.siemens.com/global/en/company/fairs-events/fairs/achema.html

This press release can be found at: https://sie.ag/2JSD2

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In fiscal 2023, which ended on September 30, 2023, the Siemens Group generated revenue of €77.8 billion and net income of €8.5 billion. As of September 30, 2023, the company employed around 320,000 people worldwide.
Further information is available on the Internet at www.siemens.com.