

Challenge 2: Siemens ENERGY – Identifying solutions for reliable energy supply for steam production

About the Company

Siemens Energy AG's Division for Industrial Steam Turbines and Generators is headquartered in Görlitz. Siemens Energy manufactures industrial steam turbines at four main sites worldwide, which are delivered as generator turbine sets or mechanical drives. Controlled from Görlitz, more than 4,200 employees work on development, production, project management and sales, mainly at the sites in Brno, Czech Republic, Vadodara, India, and Jundai, Brazil. Siemens Energy's knowledge, many years of experience in various industrial sectors and close networking of its globally positioned division make it the Market and technology leader in the field of industrial power plants. The integration of the core product into industrial processes, especially in steam and heating processes, is a clear core competence and is the focus of the expertise.

Transformation Processes in the Industry

The transformation processes in Siemens Energy are fostering a more sustainable business. Therefore, emissions during the operation of our products but especially also during the production shall be reduced. We want to decarbonize our factory by utilizing environmentally friendly technologies to cover our energy demands in the heat, electricity but also testing applications.

Challenges in these Transformation Processes

The main challenge is to identify finding approaches and solutions to ensure a reliable energy supply, especially for steam production. The steam should be generated by renewable energies. The technologies should be able to be integrated into our current steam supply.

We are analyzing potential technologies and possibilities for a combination of some technologies, to use for example sector coupling. The used technologies to solve the challenge shall be defined until 2025 and should have reached a Technology Readiness Level of 6 or higher.

First Processes to Be Addressed

In the first step, we want to apply the proposed or identified technology in our steam turbine testing center at our site in Goerlitz (Saxony, Germany).

The following technical parameters should be reached:

- temperature level of 200°C-400°C
- thermal power of 10-50 MWth (or higher)
- pressure level of 15-30 bara (or higher)
- Use only renewable energy sources
- In the best case no carbon dioxide emissions
- low operating and investment costs

Targeted benefits

Benefits will be, to improve our sustainability, to open up new markets for us and our partners, in the best case to get some economic advantages and to increase our energy efficiency. Therefore, we need partners and technology providers with the same mindset: Decarbonize the industrial sector to fight climate change and improve energy efficiency to reduce energy consumption and carbon dioxide emissions worldwide.

It would be very helpful if we could visit a demonstration plant. If you have built a demonstrator with a thermal output of 100kW or higher and you are searching for an industrial customer to build up a demonstrator at a higher power level (>1MWth), please feel free to contact us.

Responsible Person

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