
Press Release

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MAN Energy Solutions Delivers Molten-Salt Circuit for Solar-Research Facility

German Aerospace Center researches molten-salt technology for solar-thermal power plants

The German Aerospace Center (*Deutsches Zentrum für Luft- und Raumfahrt*, DLR) has commissioned MAN Energy Solutions to build a molten-salt circuit for its solar-research facility in Jülich, Germany. The plant will help to further improve the process of generating and storing solar energy at very high temperatures.

The DLR has already conducted research in Jülich for ten years on Concentrated Solar Power (CSP) and runs Germany's only solar tower for this purpose. A second solar tower has now been built in which MAN Energy Solutions, among others, will install the molten-salt circuit.

Molten-salt storage and the energy transition

Norbert Anger, Site Manager of MAN Energy Solutions in Deggendorf, said: "Already today, renewable sources supply almost 50% of the German electricity mix with this set to rise to at least 65% by 2030. Storage solutions will therefore play an increasingly central role in ensuring a reliable and efficient energy-supply. Molten-salt circuits already have large storage capacities and can store energy, for example from renewable-energy sources, for a particularly long time and at low cost".

Molten-Salt Energy Storage (MAN MOSAS) uses salt as a storage medium. For this purpose, the salt is first heated to a temperature of, typically, 565°C and then fed into a hot storage tank. The thermal energy can be stored in the tank for several days and – if required at a later date – can be converted back into electricity, for example by means of a steam turbine. During this process, the salt is cooled to around 290°C and is then available for further storage processes in the cold storage tank.

"We analyze how liquid salts behave at even higher temperatures. Our goal is to raise the salt temperature to 600°C. In doing so, we are striving to further increase efficiency and also reduce the cost of electricity production," said Miriam Ebert, Project Manager at the German Aerospace Center's Institute for Solar Research. "On a small scale, the molten-salt circuit in our pilot plant works almost like a larger, solar-thermal power plant. This means that our findings can be scaled up to an industrial level."

20 years of cooperation

MAN Energy Solutions and DLR have worked together on various contracts since 2001, including engine test stands for Ariane rocket engines at the Lampoldshausen site. For two years now, the DLR and MAN have been jointly involved in the German Federal Ministry of Economics and Energy's 'HPMS II' research project. MAN has already begun developing and manufacturing the solar receiver required for this project.

Based on decades of experience in engineering and the production of molten-salt-cooled reactor systems for the chemical industry at the MAN site in Deggendorf – along with successful cooperation in joint research projects – MAN Energy Solutions won the new order in a Europe-wide tender. The company has now assumed responsibility for the detailed engineering of the molten-salt circuit, its manufacture and installation, as well as its commissioning. The aim is to commercialize molten-salt technology as an important part of the energy transition.



The German Aerospace Center has commissioned MAN Energy Solutions to build a molten-salt circuit for its solar-research facility (pictured) in Jülich, Germany.

MAN Energy Solutions enables its customers to achieve sustainable value creation in the transition towards a carbon neutral future. Addressing tomorrow's challenges within the marine, energy and industrial sectors, we improve efficiency and performance at a systemic level. Leading the way in advanced engineering for more than 250 years, we provide a unique portfolio of technologies.



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