Pressinformation

BINE Informationsdienst

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Solar power also available at night

Storage system for solar thermal power plants further developed

If the superheated steam for the turbines is already generated in the collector, this is referred to as direct solar steam generation. If this is utilised, solar thermal power plants work particularly efficiently. Combined with a new storage solution, they can also deliver electricity at night and at times with low solar irradiation. The newly published BINE-Projektinfo brochure 11/2017, entitled “Night-time electricity from solar power plants”, presents the system consisting of latent heat and cascade storage units.

The cascade storage system consists of three tanks with different temperature levels (527 °C, 400 °C and 306 °C). This multi-stage solution enables the heat energy from the collector to be almost completely stored. The tanks absorb the heat in molten salts through temperature increases. The molten salts are located in insulated steel tanks. The latent heat storage unit forms the fourth part of the overall system. This is used when the injected steam has cooled down to such an extent that only the condensation energy can be decoupled.

The storage system is designed for use in all solar thermal power plants with direct steam generation: it is suitable for parabolic troughs, linear Fresnel collectors and tower receivers.

Researchers from the German Aerospace Centre have further developed the latent heat storage system based on nitrate salts together with its industrial partner Linde AG.

The BINE-Projektinfo brochure, which can be obtained free of charge from the BINE Information Service at FIZ Karlsruhe, is available online at www.bine.info or by calling +49 (0)228 -92379-0. The brochure cover and additional images can also be downloaded from this web portal in the press section.

Contact
Uwe Milles
presse@bine.info

BINE information service
Kaiserstraße 185-197
53113 Bonn
www.bine.info

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