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HIGH TEMPERATURE THERMAL ENERGY STORAGE AND HEAT RECOVERY

M. Linder

Institute of Engineering Thermodynamics, German Aerospace Center, Germany

Marc.Linder@dlr.de

ABSTRACT

The transformation of Germany's energy system strives for an extended use of renewable energy and significantly improved energy efficiency to cut down primary energy consumption by 50 % in 2050 based on 1990 values. Since thermal energy is deployed in almost all sectors of energy conversion and energy supply, thermal energy storage as cross-sectional technology can play an important role for a continued rise in energy efficiency. The department of Thermal Process Technology at the German Aerospace Center focusses with around 50 scientist on the development and application of high temperature thermal energy storages. Besides Concentrating Solar Power plants, main application areas are industrial waste heat recovery, flexibilization of conventional power plants, "Power-To-Heat" solutions as well as automotive thermal management. The presentation will focus on the different technologies addressed within the department, outline main operational aspects and give an overview on recent developments and projects.