Title (en)

DEVICE FOR STORING RENEWABLE ENERGY IN THE FORM OF HEAT AND METHOD FOR REGENERATION BY TRIGENERATION

Title (de)

VORRICHTUNG ZUM SPEICHERN ERNEUERBARER ENERGIE IN FORM VON WÄRME UND VERFAHREN ZUR REGENERATION DURCH TRIGENERATION

Title (fr)

DISPOSITIF DE STOCKAGE DES ENERGIES RENOUVELABLES SOUS LA FORME DE CHALEUR ET LE PROCEDE DE RESTITUTION EN TRI GENERATION

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Application

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Priority

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Abstract (en)

[origin: WO2013014178A1] The invention relates to a device for storing renewable energy in the form of heat, in a specific volume of high thermal inertia stone, i.e. steatite, and to a method for regenerating steam energy by trigeneration heat transfer. Said device consists of a dual-function heat-storing steam generator (6) comprising a plurality of briquettes of stone having high thermal inertia (7) in which heating resistors (8) are accommodated and supplied with power (2). A common storage vessel for heat-transport fluids (5) containing steatite, used to store the sensible heat from the heat-transport fluid from solar panels (3). A common cooling/water- supply manifold (14) enables the nozzles (15) for the controlled spraying of water to be cooled, which supply the heat-storing steam generator with service fluid (23) and by means of the transfer of heat generated by the steam. At 4 bars, the service steam passes through a primary circuit (CP1) to the turbine, and beyond the latter, the secondary circuit (CS2) is activated so as to direct said steam (24) into the heat exchanger expansion tank (43), in order to then be transported via the pipe (47) to the turbines. Three sub-circuits (53, 57, 70) are coupled together, two of said sub-circuits forming a second heat exchanger (53, 57) enabling the water to be reheated for heating, sanitation, and adsorption air-conditioning purposes. The invention is used for storing renewable energy in the form of heat and for regeneration by trigeneration.

IPC 8 full level

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Citation (search report)

See references of WO 2013014178A1

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