

Title (en)

Electro-thermal energy storage system and method for storing electro-thermal energy

Title (de)

Elektrothermisches Energiespeichersystem und Verfahren zur Speicherung elektrothermischer Energie

Title (fr)

Système de stockage d'énergie électrothermique et procédé pour stocker de l'énergie électrothermique

Publication

**EP 2698506 A1 20140219 (EN)**

Application

**EP 12180815 A 20120817**

Priority

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Abstract (en)

A system and method for electro-thermal energy storage wherein the system comprises: a hot thermal storage arrangement (1) comprising a hot storage heat exchanger (11); a cold thermal storage arrangement (2) comprising a cold storage heat exchanger (21); a thermodynamic cycle unit configured to transfer thermal energy from the cold storage arrangement to the hot storage arrangement in a charging mode, and to convert thermal energy from the hot storage arrangement into work and, preferably, subsequently into electric energy in a discharging mode, wherein the thermodynamic cycle unit comprises a fluid circuit for circulating a working fluid through the hot storage heat exchanger as well as through the cold storage heat exchanger, wherein the fluid circuit further comprises a pump (31) for maintaining a circulation of working fluid in the discharging mode and a first turbine (321) for expanding working fluid in the discharging mode; and wherein the thermodynamic cycle unit comprises a second turbine (322) for expanding working fluid in the discharging mode, said second turbine being connected in series with the first turbine so that working fluid may flow from the first to the second turbine in the discharging mode, and an intercooling heat exchanger (33) located in the fluid circuit between the first and the second turbine.

IPC 8 full level

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Citation (applicant)

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- EP 2157317 A2 20100224 - ABB RESEARCH LTD [CH]
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DOCDB simple family (application)

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