

Title (en)

POWER HEAT POWER STORAGE DEVICE AND METHOD FOR CONTROLLING THE LOAD OF THE SAME

Title (de)

STROM-WÄRME-STROM-SPEICHERVORRICHTUNG UND VERFAHREN ZUR LASTREGELUNG DERSELBEN

Title (fr)

DISPOSITIF DE STOCKAGE DE COURANT-CHALEUR-COURANT ET SON PROCEDE DE COMPENSATION DE CHARGE

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Application

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Abstract (en)

[origin: WO2017081186A1] The invention relates to a pumped-heat electricity storage device (1) comprising a charging circuit (100) and a discharging circuit (200) for conveying a working gas (A), wherein the charging circuit (100) and the discharging circuit (200) comprise a common regenerator (120), which is switchably connected either to the charging circuit (100) or to the discharging circuit (200) in a fluid-conducting manner in order to form a closed circuit and in order to supply the working gas (A) to the regenerator (120), wherein the charging circuit (100) comprises a first turbocompressor (110) and a first turboexpander (140), wherein the first turbocompressor (110) is driven by the first turboexpander (140) and by an electric motor (170), wherein the discharging circuit (200) comprises a second turboexpander (250) and a second turbo compressor (210), wherein the second turboexpander (250) drives the second turbocompressor (210) and a generator (290), and comprising a control device (500) and a density-changing device (300), which make it possible to controllably change the pressure of the working gas (A) in the charging circuit (100) and/or in the discharging circuit (200) in order to control the power that can be taken in by the first turbocompressor (110) or the power that can be output by the second turboexpander (250).

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