

Title (en)

System and method for energy storage using circulating fluidized bed combustors

Title (de)

System und Verfahren zur Energiespeicherung mittels zirkulierender Wirbelschichtbrenner

Title (fr)

Système et procédé de stockage d'énergie à l'aide de chambres de combustion à lit fluidisé circulant

Publication

EP 2762781 B1 20150902 (EN)

Application

EP 13382033 A 20130201

Priority

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Abstract (en)

[origin: EP2762781A1] This invention relates to a system and a method for large scale energy storage in power generation systems using circulating fluidized bed combustors wherein the system can be further interconnected with another reactor that captures CO₂ with CaO, thereby enhancing the energy storage density in the system by using the enthalpy of the reversible reaction of CO₂ with CaO, wherein the system and the method of this invention are characterized by a large flexibility between periods of maximum power output and complementary periods of low power output, wherein at maximum power output, a circulation of solids from a high temperature silo to a low temperature silo is established through the system of the invention and at minimum power output, part of the thermal energy released in the circulating fluidized bed combustor is used to heat up solids from the low temperature silo and store them in the high temperature silo.

IPC 8 full level

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CPC (source: EP)

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Cited by

CN108106476A; CN108291714A; ES2595443A1; EP3037724A1; CN107787430A; US11047568B2; US11060719B2; WO2016202641A1; WO2017001710A1; US10927432B2; US11187406B2; US11414725B2; WO2021151758A1; EP3359878B1; EP4015063A1; WO2022129296A1

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