Title (en)

METHOD AND DEVICE FOR THE UTILIZATION OF SUPERCRITICAL SUBSURFACE STEAM IN COMBINATION WITH SUPERCRITICAL THERMAL AND HYDRAULIC POWER STATIONS

Title (de)

VERFAHREN UND VORRICHTUNG ZUR NUTZUNG VON SC-GEOSTEAM IN KOMBINATION MIT SC-WÄRME- UND DRUCKWASSER-KRAFTWERKE

Title (fr)

PROCÉDÉ ET DISPOSITIF POUR L'UTILISATION DE VAPEUR SOUTERRAINE SUPERCRITIQUE (SC) EN COMBINAISON AVEC DES CENTRALES THERMIQUES ET HYDRAULIQUES SUPERCRITIQUES

Publication

EP 2010831 A1 20090107 (DE)

Application

EP 07724577 A 20070425

Priority

- EP 2007003647 W 20070425
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Abstract (en)

[origin: WO2007122003A1] Disclosed are a method and a device for utilizing supercritical subsurface steam as combined supercritical thermal and hydraulic power stations at an efficiency of 50 percent, using molten bath superdeep drilling technology, a hydrofrac process, and the special properties of the supercritical subsurface steam, such as the drastic increase in the thermal capacity, reduced viscosity, and inorganic solubility. The multifunctional use of said technologies and physical properties of supercritical subsurface steam in the inventive method allows a supercritical subsurface boiler to be tapped rapidly and at a low cost at a great depth while making it possible to produce electricity, power, process steam, and heat almost anywhere at one tenth of the cost of conventional fuel technologies and comparable expenses. The supercritical process steam obtained from a closed forced subsurface-nature circuit is used in supercritical power stations featuring state-of-the-art steam turbine technology while the remaining pressure in the subsurface fluid is used for directly generating power and/or electricity after dissipating heat via hydraulic turbines.

IPC 8 full level

F24J 3/08 (2006.01); **E21B 7/15** (2006.01); **E21B 43/17** (2006.01)

CPC (source: EP US)

E21B 7/15 (2013.01 - EP US); **E21B 43/17** (2013.01 - EP US); **E21B 43/24** (2013.01 - EP US); **F01K 27/005** (2013.01 - EP US); **F24T 10/20** (2018.04 - EP US); Y02E 10/10 (2013.01 - EP US)

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See references of WO 2007122003A1

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