

Title (en)
THERMAL ENERGY STORAGE SYSTEM

Title (de)
WÄRMEENERGIESPEICHERSYSTEM

Title (fr)
SYSTÈME DE STOCKAGE D'ÉNERGIE THERMIQUE

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Application
EP 12849192 A 20121114

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Abstract (en)
[origin: US2013118170A1] A variety of energy storage and retrieval systems are described. Generally "hot" and "cold" thermal reservoirs are provided. The "hot" reservoir holds both liquid and saturated vapor phase working fluid. The "cold" reservoir holds working fluid at a lower temperature than the hot reservoir. A heat engine/heat pump unit: (a) extracts energy from vapor passing from the hot reservoir to the cold reservoir via expansion of the vapor in a manner that generates mechanical energy to facilitate retrieval of energy; and (b) compresses vapor passing from the cold reservoir to the hot reservoir to facilitate the storage of energy. In some embodiments, the heat engine/heat pump takes the form of a reversible positive displacement heat engine that can act as both an expander and a compressor. To facilitate the storage and retrieval of electrical energy, an electric motor/generator unit may be mechanically coupled to the heat engine/heat pump unit.

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