

## The concept known as thermal storage conserves energy by

Thermochemical material (TCM) storage stores the heat in a reversible endothermal or exothermal chemical reaction. This has a high volumetric energy density. The last two types of storage do not only have a larger volumetric storage capacity than sensible heat storage, the efficiency of them is also higher.

Thermal energy storage is a key function enabling energy conservation across all major thermal energy sources, although each thermal energy source has its own unique context. Nuclear fusion reaction occurring at the core of sun continuously releases tremendous amount of solar radiation towards earth.

Thermal energy storage processes involve the storage of energy in one or more forms of internal, kinetic, potential and chemical; transformation between these energy forms; and transfer of energy. Thermodynamics is a science that deals with storage

Thermal energy storage (TES) is the storage of thermal energy for later reuse. Employing widely different technologies, it allows surplus thermal energy to be stored for hours, days, or months. Scale both of storage and use vary from small to large - from individual processes to district, town, or region.

Thermal energy storage (TES) systems store heat or cold for later use and are classified into sensible heat storage, latent heat storage, and thermochemical heat storage. Sensible heat storage systems raise the temperature of a material to store heat.

Thermal energy storage can be described by properties like storage capacity, power, efficiency and the storage period. Thermal energy can be stored as sensible heat or cold, just by heating up or cooling down the storage medium, or as latent heat, by adding a phase change to the temperature change.

Thermal energy can also be held in latent-heat storage or thermochemical storage systems. This chapter describes the characteristics of these three technologies in detail. The term "thermal-energy storage" also includes heat and cold storage. Heat storage is the reverse of cold storage.

Thermal energy storage (TES) is a technology that stocks thermal energy by heating or cooling a storage medium so that the stored energy can be used at a later time for heating and cooling applications and power generation.

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