Thermal Energy Storage Solutions

Currently, Thermal Energy Storage (TES) plays a crucial role in the transition to sustainable and efficient energy sources. This technology allows for the capture and conservation of heat generated primarily from renewable sources for later use during periods of high energy demand.

Thermal storage not only contributes to grid stabilization by providing continuous energy but also optimizes the efficiency of generation systems, thus reducing dependence on non-renewable sources.

RPOW leads the way in developing innovative thermal energy storage solutions. Our services range from conceptual engineering to detailed engineering, ensuring the efficient and sustainable creation of products that make a difference in the transition to cleaner and renewable energy. Additionally, RPow has experience in the development of protected patents for these thermal energy storage products.

The TES solutions designed by RPOW consist of active thermal energy storage (e.g., molten salts at high temperatures) or passive thermal energy storage (e.g., solids at high temperatures).

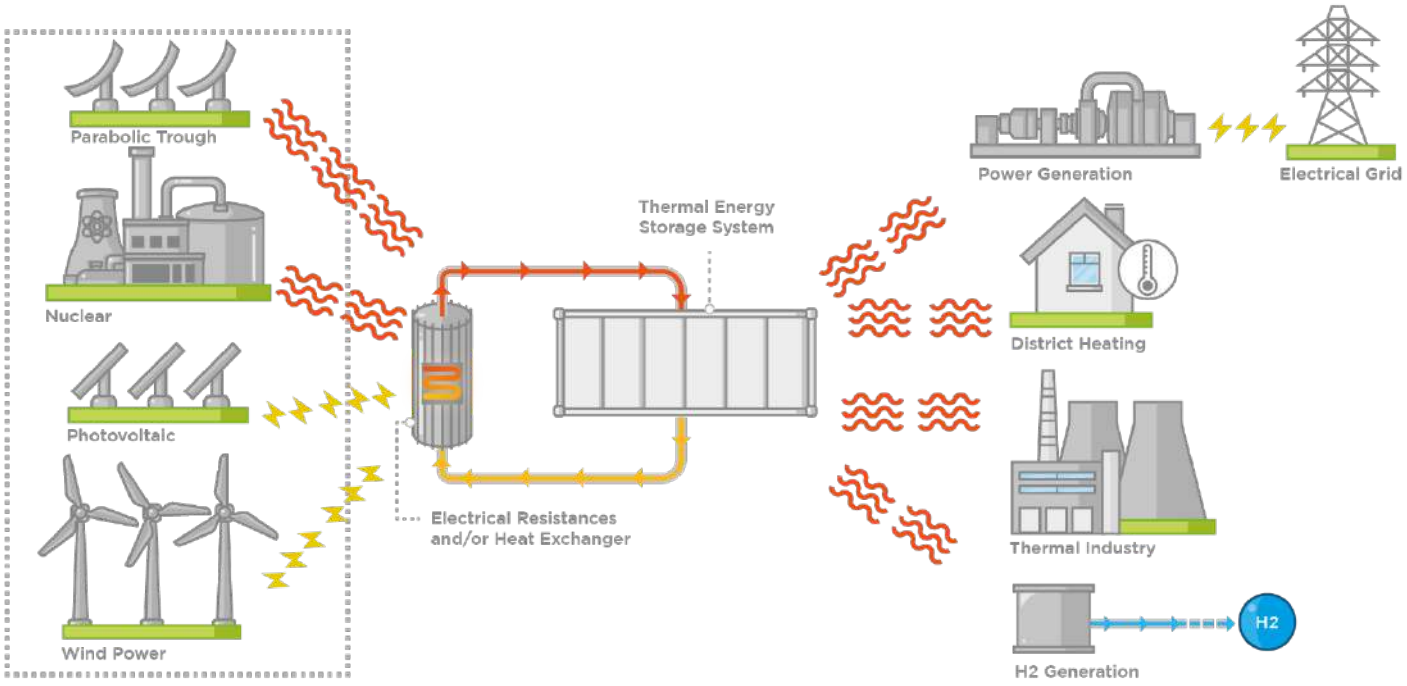
The energy charging or storage process of these technologies is based on heating a thermal energy storage material (TES material). Once heated, this material is thermally insulated from the environment to maintain its elevated temperature for as long as possible.

The energy source for heating the TES material can come from various origins: renewable (primarily solar thermal, photovoltaic, and wind), waste heat (e.g., cogeneration), surplus energy from the electrical grid, etc.

On the other hand, when demand requires it, the process of discharging the stored energy is carried out by transferring heat between the TES material and the process fluid or material that needs to be heated.

The main applications of stored thermal energy are:

- Heat for industrial processes. E.g., chemical, food, pharmaceutical, ceramic, textile industries, etc.
- Generation of electrical energy in a steam cycle.
- Heating, both in the residential and commercial sectors.
- Domestic hot water.



+34 954 088 937
rpow@rpow.es

Spain
Av. de Innovación 0, Edificio Renta Sevilla, Office 1C, 41020. Seville. SPAIN.

USA
1000 N. Post Oak Rd., Suite 220. Houston TX 77055, USA.

United Arab Emirates
M08- Al Raffa, Al Raffa Area, Dubai. Dubai, UAE