Molten Salt Systems Engineering for industrial clients

Currently, Thermal Energy Storage (TES) plays a crucial role in the transition to sustainable and efficient energy sources. This technology enables 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 is a leader in the development of TES systems using molten salt tanks. Our services range from conceptual engineering to detailed engineering, ensuring an optimal, efficient, and robust design of TES systems, making a difference in the transition to cleaner and renewable energy.

The operation of this technology is based on the capture, storage, and release of heat, using molten salts as the energy transfer medium.

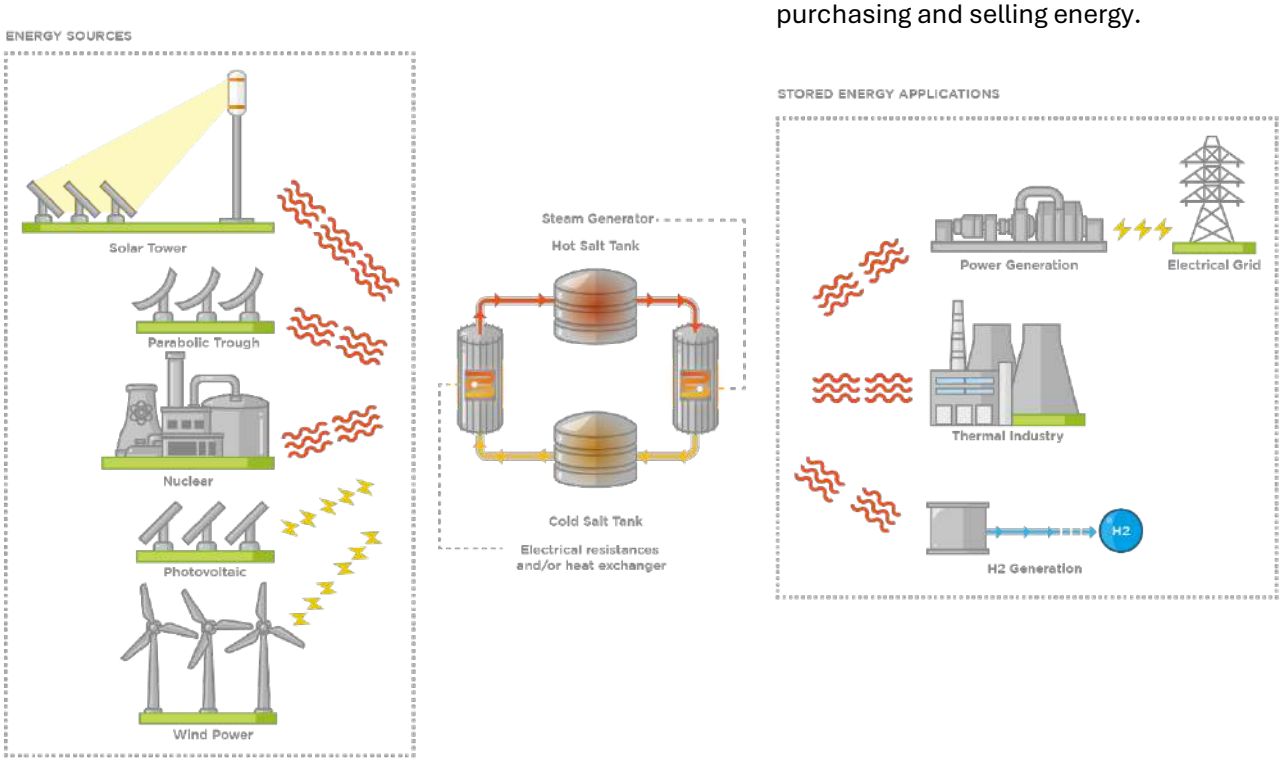
The molten salts stored in the cold tank are heated in a heat exchanger or an electric salt heater, depending on the energy source. The energy source can be renewable (primarily solar thermal, photovoltaic, and wind) or surplus energy from the electrical grid.

Once heated, the salts are stored in the hot tank. When demand requires, the thermal energy stored in the hot salts is released. For this purpose, the salts are circulated from the hot tank to the corresponding heat exchanger, in order to transfer the heat from the salts to the required application or process.

The primary applications of stored thermal energy are heat for industrial processes (e.g., chemical, food, pharmaceutical, ceramic, textile industries, etc.) and the generation of electrical energy in a steam cycle.

The main advantages of these systems are:

- The ability to store excess energy generated in plants or industries using renewable energy sources.
- The possibility of charging the system during off-peak hours when energy prices are low and discharging it during peak hours when energy prices are high.
- Increased annual operating hours of the plant.
- Improved system stability against fluctuations in energy sources or demand.
- Addressing the main challenges of renewable energies and promoting industrial decarbonization.
- Enabling total independence from the electrical grid and energy price fluctuations, both in purchasing and selling energy.



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