# Highlights

* Numerical simulations analyze a CSP-TES system in Spain for decarbonization.
* CO2 removal and energy savings are significant with 4 solar dishes and a solid TES.
* High temperatures of up to 1200 ºC can be provided at the TES outlet in summer.
* An appropriate TES sizing is essential for a suitable energy utilization.
* A simple decission-making logic governs the TES actuation in real-time.