

High-Temperature Resistant Mobile Energy Storage Container for Tunnels in Santo Domingo





Overview

Does subsurface temperature affect thermal energy storage performance of underground tunnels?

The findings indicate a positive influence of subsurface temperature rises on the thermal energy storage performance of underground tunnels. Meanwhile, the findings indicate a generally detrimental role played by convection heat transfer for the performance of such systems.

What is high-temperature energy storage?

In high-temperature TES, energy is stored at temperatures ranging from 100°C to above 500°C. High-temperature technologies can be used for short- or long-term storage, similar to low-temperature technologies, and they can also be categorised as sensible, latent and thermochemical storage of heat and cooling (Table 6.4).

What are the development directions for mobile energy storage technologies?

Development directions in mobile energy storage technologies are envisioned. Carbon neutrality calls for renewable energies, and the efficient use of renewable energies requires energy storage mediums that enable the storage of excess energy and reuse after spatiotemporal reallocation.

How efficient are energy tunnels for energy storage?

The rationale behind this work is that Rotta Loria recently highlighted promising storage efficiencies of up to 70% for energy tunnels characterized by favourable subsurface conditions for storage applications (i.e., lacking convection heat transfer).



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