

Preliminary design of energy storage solution





Overview

Are particle-based energy storage systems economically competitive?

A particle-based TES system is projected to have promising cost and performance characteristics to meet the future growing energy storage needs. This paper introduces the system and components required for particle TES to become technically and economically competitive.

Can a particle-based energy storage system provide grid-scale energy storage capacity?

Thermal energy storage (TES) has unique advantages in scale and siting flexibility to provide grid-scale storage capacity. A particle-based TES system is projected to have promising cost and performance characteristics to meet the future growing energy storage needs.

Can thermal energy storage support renewable power integration?

Grid-scale energy storage is critical to the growing renewable power integration. Thermal energy storage (TES) can provide long duration, grid-scale energy storage. TES using solid particles can be a feasible storage method to support various power cycles. A containment design method is presented for the particle-based TES.

What is Blymyer energy storage?

Blymyer has completed design for energy storage projects with a total capacity of 4500 MWh. Experienced at all levels of BESS design, our engineers excel at both custom solutions and connecting multiple large-scale rechargeable lithium-ion battery stationary energy storage units, responding to project, site, and client requirements.

Is particle-TES a viable storage method for a generation 3 CSP system?

Conclusions Low cost, stable solid particles as storage media can operate at higher temperatures with a much lower cost than conventional molten-salt



TES. By using inexpensive particles and containment, particle-TES can be a feasible storage method for a Generation 3 CSP system.

What is a particle-based thermal energy system (TES)?

The particle-based TES has the ability to drive various thermal power cycles including conventional steam-Rankine, air Brayton turbine with combined-cycle ability, or the emerging supercritical carbon dioxide Brayton power cycle.



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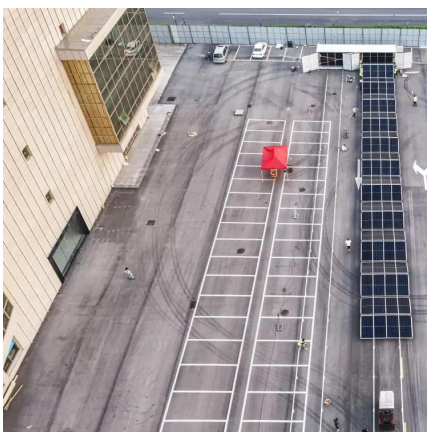
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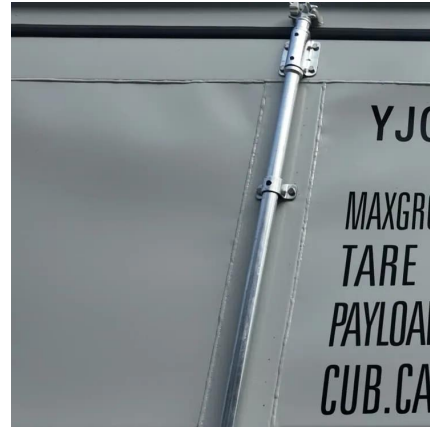
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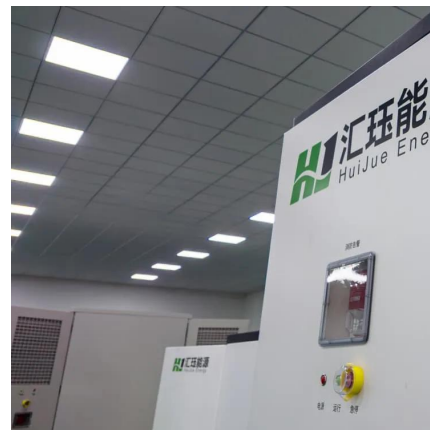
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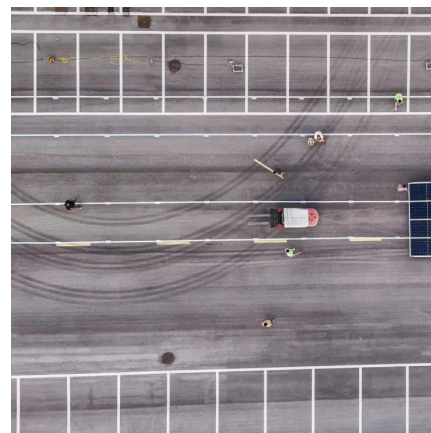
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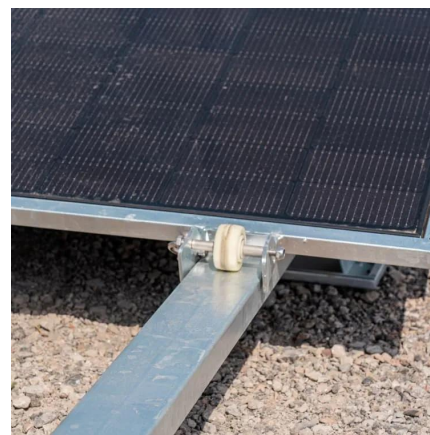
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