



Saltgenx Thermal Battery

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<https://infinityturbine.com/saltgenx-thermal-battery.html>

Discover how the Saltgenx sand battery technology revolutionizes energy storage and utilization, offering sustainable solutions for desalination, construction, water treatment, and power generation using heat from renewable sources. Used in tandem with Salgenx, it can be an effective desalination solution.



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Pioneering Renewable Energy Storage: Saltgenx Sand Battery Revolution

In the quest for sustainable and renewable energy solutions, Saltgenx, a division of Infinity Turbine, is making significant strides with an innovative approach to energy storage and utilization. The development of a sand battery represents a groundbreaking leap in thermal (heat) storage technology, leveraging the abundant and eco-friendly material of sand to store heat generated from various sources, including solar thermal energy, renewable sources, waste heat, or flare gas from oil fields.

How It Works

At the heart of Saltgenx's technology is an insulated tank filled with sand. This tank acts as a repository for heat, which is captured from different heat sources and then stored in the sand. The fundamental principle behind this is quite straightforward yet profoundly effective: sand's inherent ability to retain heat for extended periods makes it an ideal medium for thermal storage.

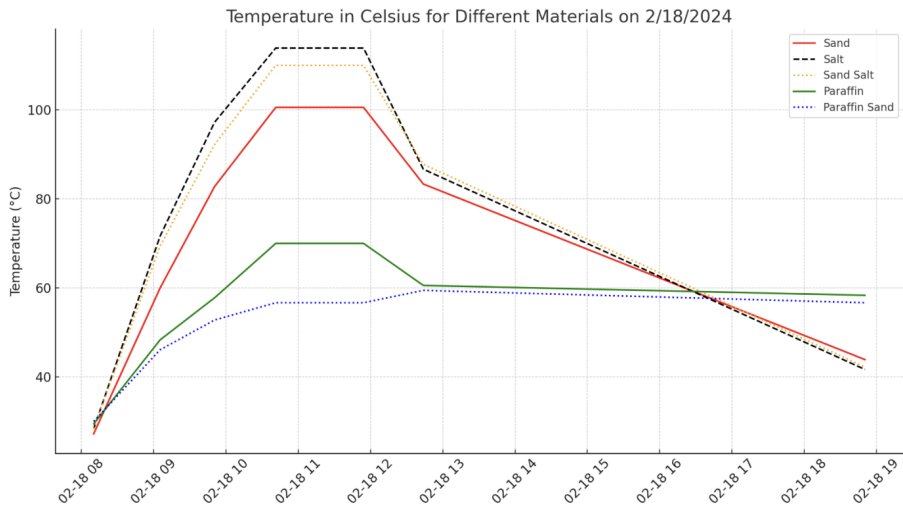
Multifaceted Applications

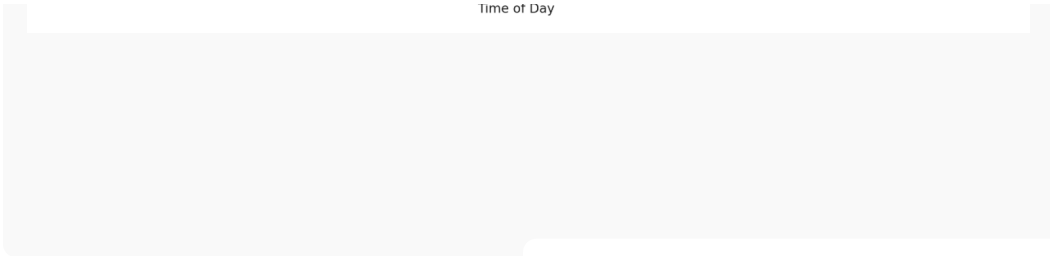
The applications of Saltgenx's sand battery technology are as diverse as they are revolutionary, ranging from desalination to power generation. Here's a closer look at these innovative uses:

- 1. Desalination:** In regions where fresh water is scarce, Saltgenx's sand battery offers a sustainable solution by using stored heat to vaporize saltwater. The process involves spraying saltwater onto the hot sand, where it vaporizes. The vapor is then condensed into fresh water, with the incoming saltwater cooling the exiting vapor through a heat exchanger. This method promises an efficient and renewable way to produce fresh water.
- 2. Graphene Sand for Construction:** The sand battery technology also paves the way for advancements in construction materials. By heating sand with simple sugar or other carbonaceous materials and activated carbon (charcoal) to around 700°C, graphene-coated sand can be produced. This graphene sand can then be mixed with cement to create a stronger, more durable form of concrete suitable for construction and 3D printing. Saltgenx is also developing a continuous kiln process for this purpose, which could revolutionize the construction industry by providing a stronger, more sustainable alternative to traditional materials.
- 3. Producer Water Treatment:** The oil and gas industry often deals with producer water, a byproduct of drilling operations. Saltgenx's sand battery can utilize flare gas—a waste product often burned off due to lack of storage or pipeline access—to heat sand and evaporate this water. The condensed water is purified, while contaminants are trapped in the sand, which can then be safely disposed of. This process not only recycles waste heat but also addresses the environmental issue of water contamination.
- 4. ORC Power Generation:** Another application of the stored heat in the sand battery is in generating power through the Organic Rankine Cycle (ORC). By circulating thermal oil through a simple pipe heat exchanger within the heated sand, the thermal oil becomes a heat source for powering an ORC turbine generator. This method can produce electrical power, hydraulic power, or other mechanical outputs, offering a renewable way to generate power from stored heat.

A Sustainable Future

Saltgenx's sand battery technology stands as a testament to the potential of innovative thinking in addressing some of the most pressing environmental and energy challenges of our time. By harnessing the power of sand to store and utilize heat from renewable and waste sources, Saltgenx is not only contributing to the global energy transition but also paving the way for new methods of water purification, construction, and power generation. As this technology continues to develop and find new applications, it holds the promise of a more sustainable and energy-efficient world.





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