

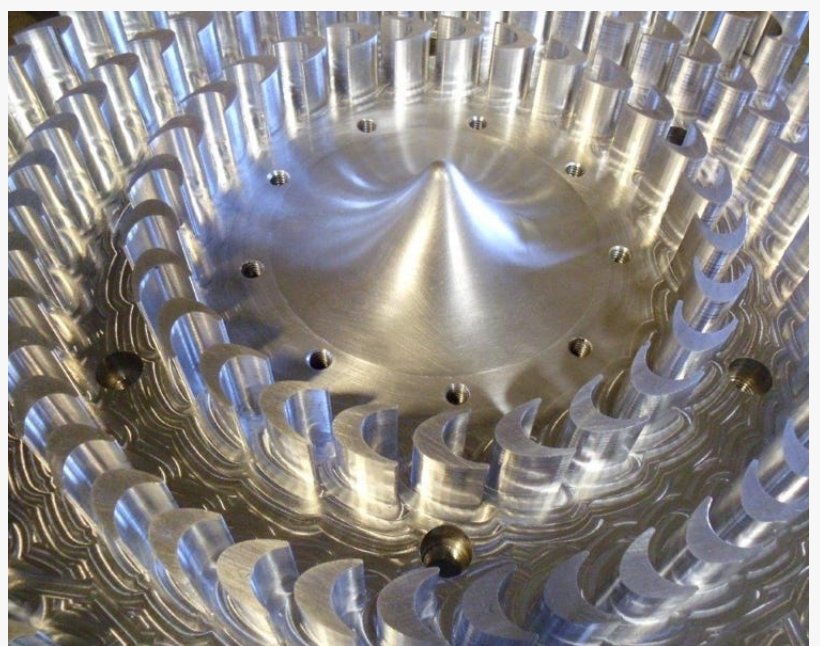
Salgenx Unveils Revolutionary 3000 kWh Saltwater Battery System with Integrated Hydrogen Power Generation

Salgenx unveils 3000 kWh saltwater battery with in-situ hydrogen production for sustainable, cost-effective, and simultaneous power generation while charging.

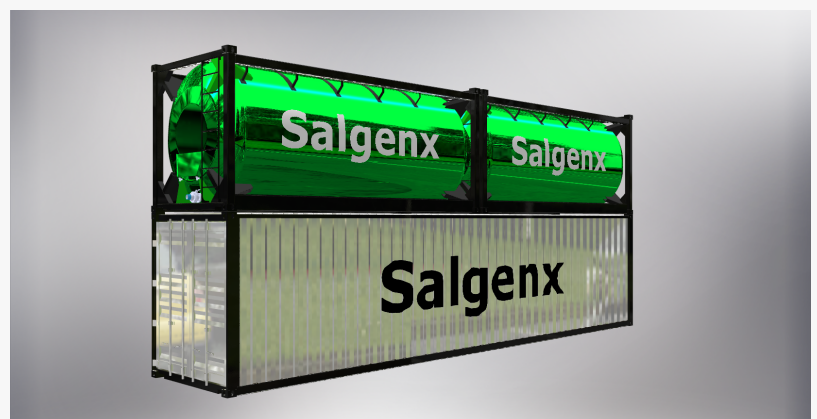
MADISON, WISCONSIN, USA, July 28, 2024 /EINPresswire.com/ -- [Salgenx](https://www.salgenx.com), a leader in innovative energy storage solutions, is proud to announce the launch of its groundbreaking 3000 kWh saltwater battery system. This revolutionary technology not only stores substantial amounts of energy but also produces hydrogen as a byproduct, which can be utilized in a microturbine to generate additional power. This dual-functionality sets a new standard in the energy storage industry, combining efficiency, sustainability, and versatility.

Unmatched Energy Storage Capabilities Using Seawater

The Salgenx saltwater battery system is designed to store 3000 kWh of energy, making it an ideal solution for grid-scale energy storage. By utilizing readily available and inexpensive materials such as sodium chloride (common table salt), water, and zinc chloride, Salgenx offers a sustainable and cost-effective alternative to traditional lithium-ion batteries.



Radial Outflow Turbine by Infinity Turbine for Using Hydrogen and Waste Heat to Power



Salgenx S3000 Salt Water Battery Energy System

Innovative Hydrogen Production

During the electrochemical reactions within the battery, hydrogen gas is generated as a byproduct. Salgenx harnesses the natural pressure of the hydrogen to fill containment balloons, ensuring safe and efficient storage of the gas. This hydrogen can then be burned in a microturbine, fuel cell, or engine to generate additional electricity, significantly enhancing the overall efficiency and utility of the system.

Microturbine Value Added Heat

The product of hydrogen combustion is heat and water vapor. The heat can be used in many applications, include a adsorption chiller to make air conditioning. Combined Heat and Power (CHP) Systems such as this, make the entire system more efficient. Cavgenx uses a heat pump to harvest that heat to make additional power or cooling.

Fresh Water Production

The system uses seawater and produces fresh water vapor, which can be re-condensed and reused. For a 3000 kWh saltwater battery system, approximately 723 kg (or liters, since the density of water is approximately 1 kg/L) of water can be collected after the hydrogen produced is burned in a microturbine and efficiently condensed. This estimation assumes a high-efficiency condensation system capable of capturing 90 percent of the produced water vapor. Leaking hydrogen gas can contribute to the greenhouse gas problem, so it is recommended to use as it is produced, instead of storing under high pressure which can result in leaks.

Net Lift Force from Produced Hydrogen Gas

Where the hydrogen can be used in lift operations (airship or lift bags for construction or logging), the amount of hydrogen which is produced per charge is 992 cubic meters, which would provide a net lift of approximately 1,125 kilograms or 2,480 pounds.

Maximizing Efficiency with Microturbine Integration

Salgenx's innovative approach leverages the hydrogen produced by the saltwater battery system to power a microturbine. With a heat rate of 14,000 BTU per kilowatt of power generated, the microturbine efficiently converts the stored hydrogen into additional electrical power. A single 3000 kWh battery system can produce approximately 89.29 kg of hydrogen, equivalent to about 992.12 cubic meters, which can generate approximately 904.31 kW of power when utilized in a microturbine.

Sustainable and Cost-Effective Solution

- Readily Available Materials: The Salgenx system uses common and inexpensive materials such

as sodium chloride and zinc, avoiding the high costs and environmental concerns associated with lithium and cobalt.

- Environmental Impact: The use of biodegradable cellulose (wood) membranes further enhances the sustainability of the system.
- Salgenx also offers an alternative saltwater flow battery which does not require a membrane which is a closed-loop system, but does not produce hydrogen gas (nor requires additional seawater for each charge cycle).

Enhanced Energy Storage and Versatility

- High Capacity: The system provides significant energy for grid stabilization and renewable energy integration.
- Hydrogen Production: The dual functionality of storing energy and producing hydrogen maximizes the system's efficiency.
- Safety and Efficiency: The natural pressure of the hydrogen can be used to fill balloons for safe storage, while microturbine integration adds versatility, making it suitable for various applications, from grid support to remote power generation.

High Coefficient of Performance (COP)

A term typically used in the heat pump industry can now be applied to this type of battery. If the round trip efficiency of this battery is around 90 percent, and you get an extra 30 percent power generation during charging by the utilization of the hydrogen, then the COP is 1.2 compared to most batteries where at best, the COP is .91

About Salgenx (a division of [Infinity Turbine](#) LLC)

Salgenx is a pioneering company dedicated to developing advanced energy storage solutions that are sustainable, efficient, and cost-effective. With a focus on innovation and environmental responsibility, Salgenx is committed to leading the way in the energy storage industry and contributing to a cleaner, more sustainable future. Saltwater batteries provide a safe, non-toxic, and cost-effective alternative to traditional lithium-based energy storage systems. Committed to advancing green technology, Salgenx continues to explore and develop cutting-edge renewable materials and methods to meet the growing global demand for renewable energy storage.

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