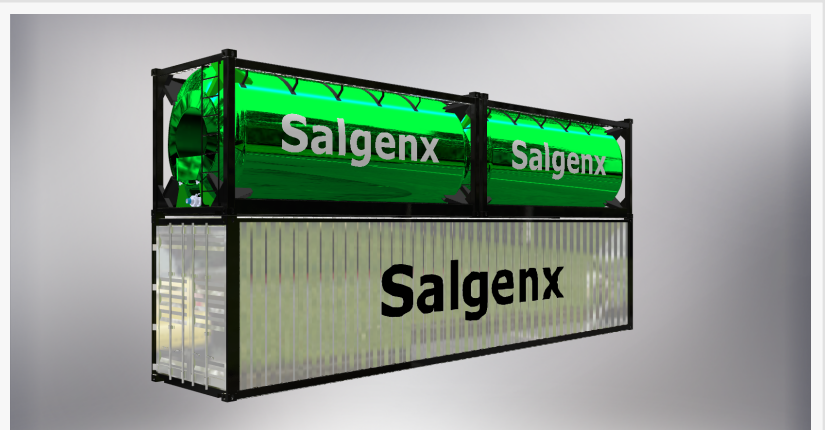


# Salgenx Transforms Oil Wells into Grid Scale Saltwater Energy Storage Systems Using Solar PV

*Salgenx Explores Use of Existing and Abandoned Oil Wells as Grid-Scale Saltwater Flow Batteries Using Solar PV*

MADISON, WI, UNITED STATES, March 24, 2025 /EINPresswire.com/ -- Salgenx, a leader in saltwater energy storage technology, has announced a groundbreaking approach to large-scale renewable energy storage by repurposing existing and abandoned oil wells as reservoirs for its membrane-free chlorine flow battery system. This innovative use of infrastructure promises to reduce storage costs, extend asset life, and offer a sustainable pathway for transitioning legacy fossil fuel sites into valuable grid assets.



Salgenx S3000 3,000 kWh Grid Scale Battery Using Saltwater

Oil wells across North America, particularly in regions like Texas, New Mexico, and Oklahoma, often contain significant volumes of brine—a saltwater byproduct of oil extraction. Rather than treat this fluid as waste, Salgenx proposes using it as the working electrolyte in its chlorine-based redox flow battery system. The electrochemical process is managed externally via modular shipping container units, which house solar-powered electrolysis and battery conversion systems.

By using the brine already present in oil wells, the reservoir becomes the battery. This approach combines low-cost materials, existing infrastructure, and renewable energy inputs to deliver scalable, sustainable storage where the grid needs it most.

The system works in two cycles: during daylight hours, solar photovoltaic panels charge the battery via electrolysis of sodium chloride. At night, the reverse reaction is triggered, converting the stored chlorine back to chloride while generating electricity for the grid.

Unlike conventional flow batteries, the Salgenx design is membrane-free, thanks to phase

separation between the electrolyte carrier fluids. This simplifies the system and reduces costs of the battery to an estimated \$100 per kWh — well below traditional technologies.

In addition, many of these wells have hot producer water, which can be used to produce power using Organic Rankine Cycle (ORC). These [geothermal](#) oil fields can produce power while simultaneously pumping the brine as well as storing the power in a grid scale battery. Unlike solar PV, the heated brine can be used to produce power 24/7.

Key advantages include:

- Use of existing or abandoned infrastructure, avoiding the need for new land development
- Safe, closed-loop chemical system using proven redox flow chemistry
- High efficiency (91% round-trip) and high energy density (120 Wh/L)
- Modular and scalable deployment in standard shipping containers
- Environmental remediation potential by giving new life to oilfield assets
- Use of existing geothermal hot producer water to make and store energy

About Salgenx

Salgenx is an industry leader in next-generation energy storage solutions, focusing on grid-scale batteries, renewable energy integration, and thermal management technologies. By leveraging the power of saltwater and innovative turbine systems, Salgenx is driving the transition toward a more resilient, efficient, and sustainable energy infrastructure.

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