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cogeneration- battery-using- salgenx-saltwater- flow-redox- technology by

Infinity Turbine
LLC

Cogeneration Battery Using Salgenx
Saltwater Flow Redox Technology



This webpage QR code

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One of the benefits of a flow battery using salt water is that you can also use it simultaneously for thermal storage. Using a high efficiency heat pump you can store hot water or cold water which triples the cost benefits of the battery. A true cogeneration battery is now available.

PDF Version of the webpage (first pages)

<https://infinityturbine.com/cogeneration-battery-using-salgenx-saltwater-flow-redox-technology-by-infinity-turbine.html>

Cogeneration Battery

Considered a hybrid between a standard flow battery and a thermal storage device, the battery provides simultaneous heat or cold liquid storage as well as electrical energy storage.

The Cogen Battery has a variety of applications which include:

- storage of thermal energy (heating or cooling) from unused thermal resources
- storage of electrical power for backup power and grid strength
- utility grid power rate mining opportunities to store off-peak low cost power for later use during demand (on-peak) hours
- storage of thermal energy for Organic Rankine Cycle (ORC) power production while simultaneously storing the electrical output from the turbine generator
- using off-peak low cost power to make heating and cooling for later use
- reducing peak demand utility rates by peak energy shaving

What is Brine

What is brine?

In general, brine is any solution with an extremely high concentration of salts, such as sodium chloride, which can occur either naturally (as with seawater, deep-water ocean pools, salt lakes, producer water from oil and gas drilling) or as a byproduct of industry. These byproducts, or brine waste streams, are typically highly concentrated salt solutions that, in some cases, contain more than twice the amount of concentrated salts than natural brine solutions.

Brine waste streams can also be highly concentrated with total dissolved solids (TDS), such as waste streams in many chemical manufacturing processes, and they can be some of the most challenging to treat or discharge because their composition and purification requirements are dynamic and complex.

Some examples of brine waste created as a byproduct of industry include:

- cooling tower and boiler effluent
- reverse osmosis (RO) and ion exchange waste/reject streams
- produced water from extracting oil and natural gas
- chlor-alkali and chemical plant waste
- acid rock and mine drainage
- food preservation and manufacturing waste streams
- desalination waste from potable water creation
- irrigation runoff

Our novel solution is treating this solution considered and expensive headache, into a battery technology system.

Elon Musk and Tesla even think that recovery of lithium from brine is worth patenting. However, they are not the first to do so. (1962 Lithium from Brine Patent)

Battery Technology: With the advent of the new USA tax credits for producing and selling batteries (\$35/kW) we are focussing on a simple flow battery using shipping containers as the modular electrolyte storage units with tax credits up to \$140,000 per system. We are focussing on the salt battery. This battery can be used for both thermal and electrical storage applications. We call it the Cogeneration Battery or Cogen Battery.

We are also looking into converting salt based water conditioners to simultaneously produce power.
