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using-home-and-commercial-salt-based-water-conditioners-for-power-production

Infinity Turbine LLC

Using Home and Commercial Salt Based Water Conditioners for Power Production

This webpage QR code

Structured Data

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Salt based water conditioners and water softeners can be used for small power production making home and commercial water processing a minitature power plant. Simultaneously produce soft water and power. For homes may only be less than a kilowatt per day, but for commercial buildings may be 175 kW or more per day. For large desalination plants, may amount to hundreds or thousands of kilowatts of power production per day.

PDF Version of the webpage (first pages)

https://infinityturbine.com/using-home-and-commercial-salt-based-water-conditioners-for-power-production-by-infinity-turbine.html

Simultaneously produce soft water and power from salt based water conditioners

Salt based water conditioners and water softeners can be used for small power production making home and commercial water processing a miniature power plant. Simultaneously produce soft water and power. For homes may only be less than a kilowatt per day, but for commercial buildings may be 175 kW or more per day. For large desalination plants, may amount to hundreds or thousands of kilowatts of power production per day.
The development of a particular mechanism for harvesting salinity-gradient power (SGP) known as reverse electrodialysis (RED).
We are currently developing this web page and application as of 3 October 20222.

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Desalination plants can now simultaneously produce power

For large desalination plants, power production may amount to hundreds or thousands of kilowatts of power production per day.

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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.

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Tax Credits

Home Based Flow Battery: 10-100 kW
$35 x 10 kW = $350
$35 x 100 kW = $3,500

Commercial Flow Battery: 4 MW
$35 x 4,000 kW = $140,000

Utility Scale Flow Battery Bank:
$35 x 4,000 kW x 100 = $14,000,000

Note: The credit would apply to components produced and sold after December 31, 2022, and would begin to phase out starting in 2030. Access: Electrochemical cell comprised of one or more positive electrodes and one or more negative electrodes, with an energy density of not less than 100 watt-hours per liter (.1 kW/L), and capable of storing at least 20 watt-hours of energy.