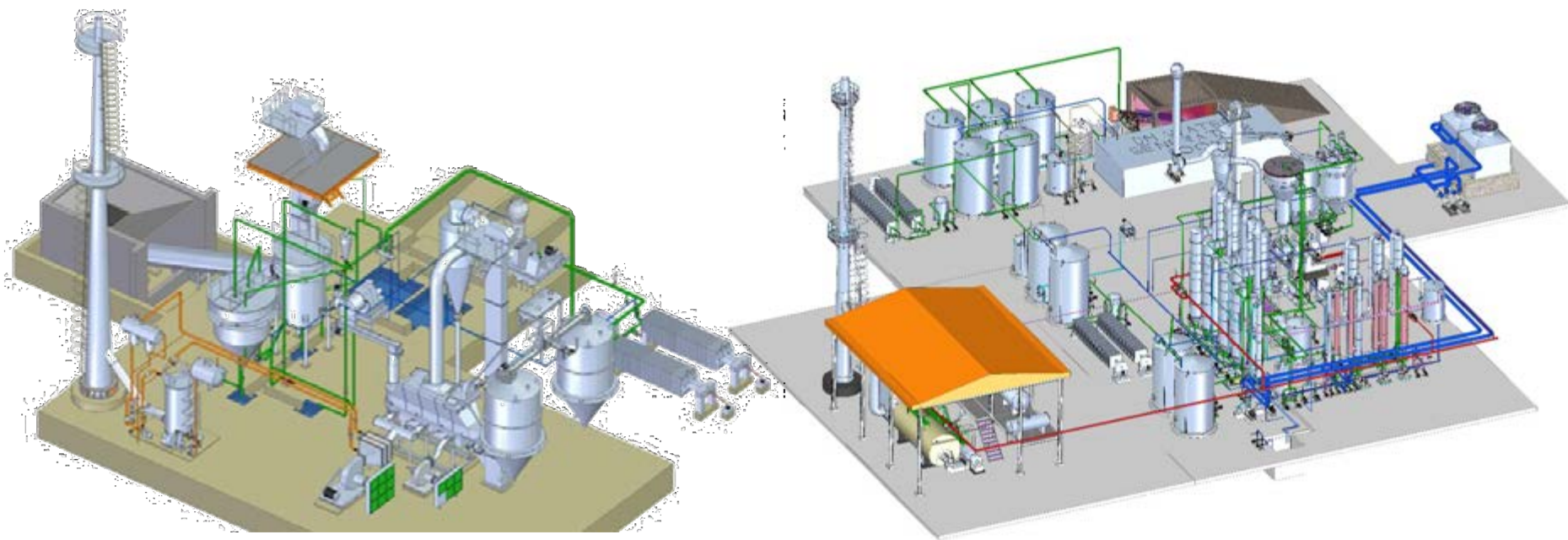


SALT PROCESSING TECHNOLOGIES



SALT PROCESSING



“Sodium Chloride commonly known as Salt is one of the most abundant minerals on earth”

SOURCE OF CRUDE SALT



1. Sea Salt



2. Rock Salt

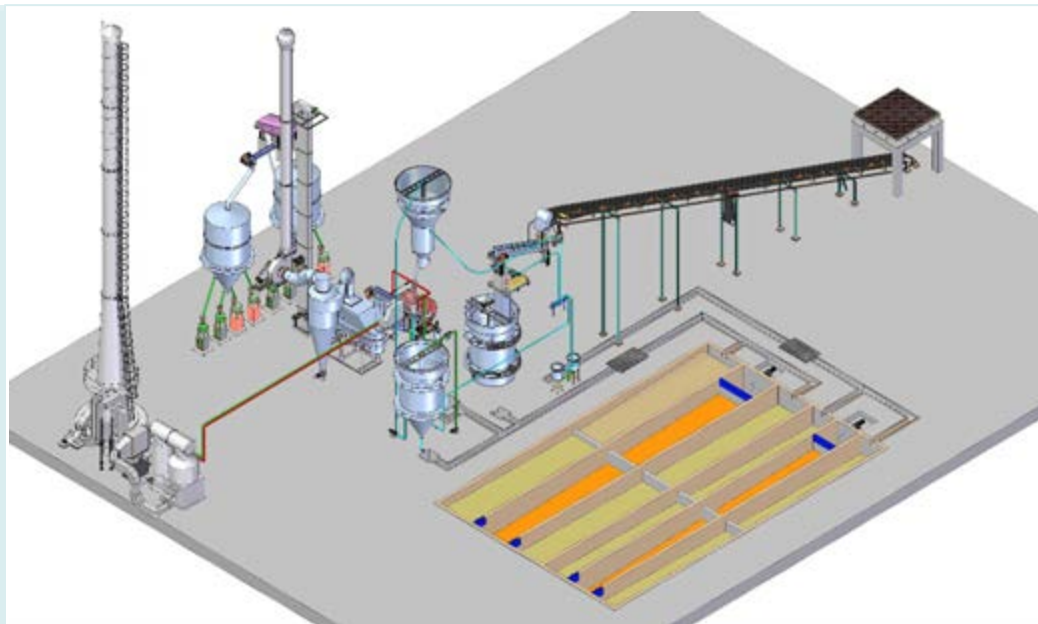


3. Lake Salt

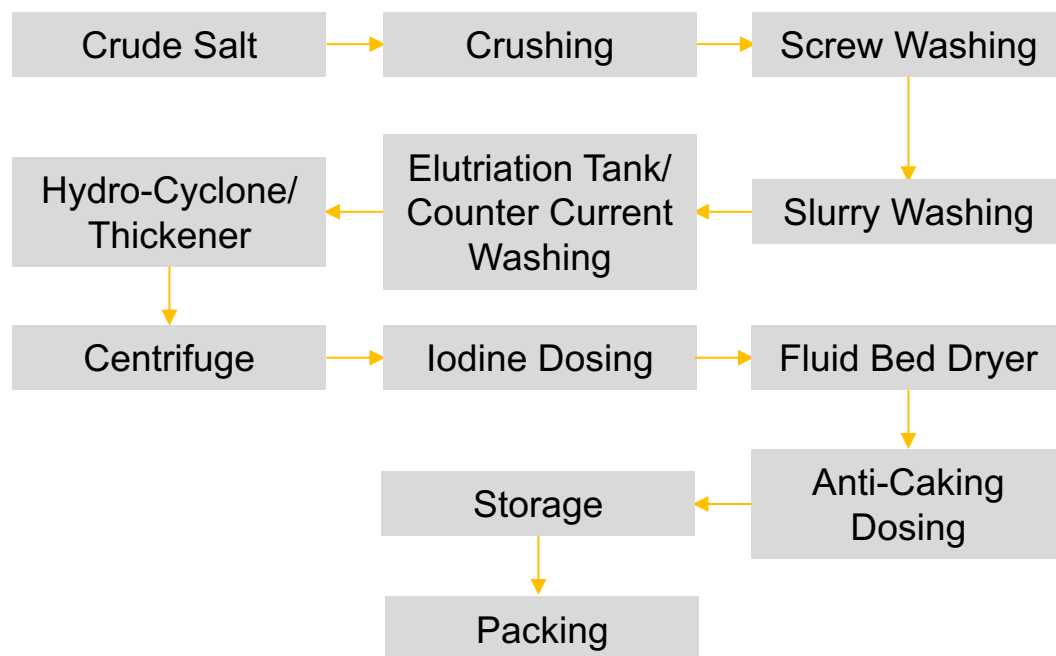
SALT PROCESSING TECHNOLOGIES

Mechanical Salt Refinery System

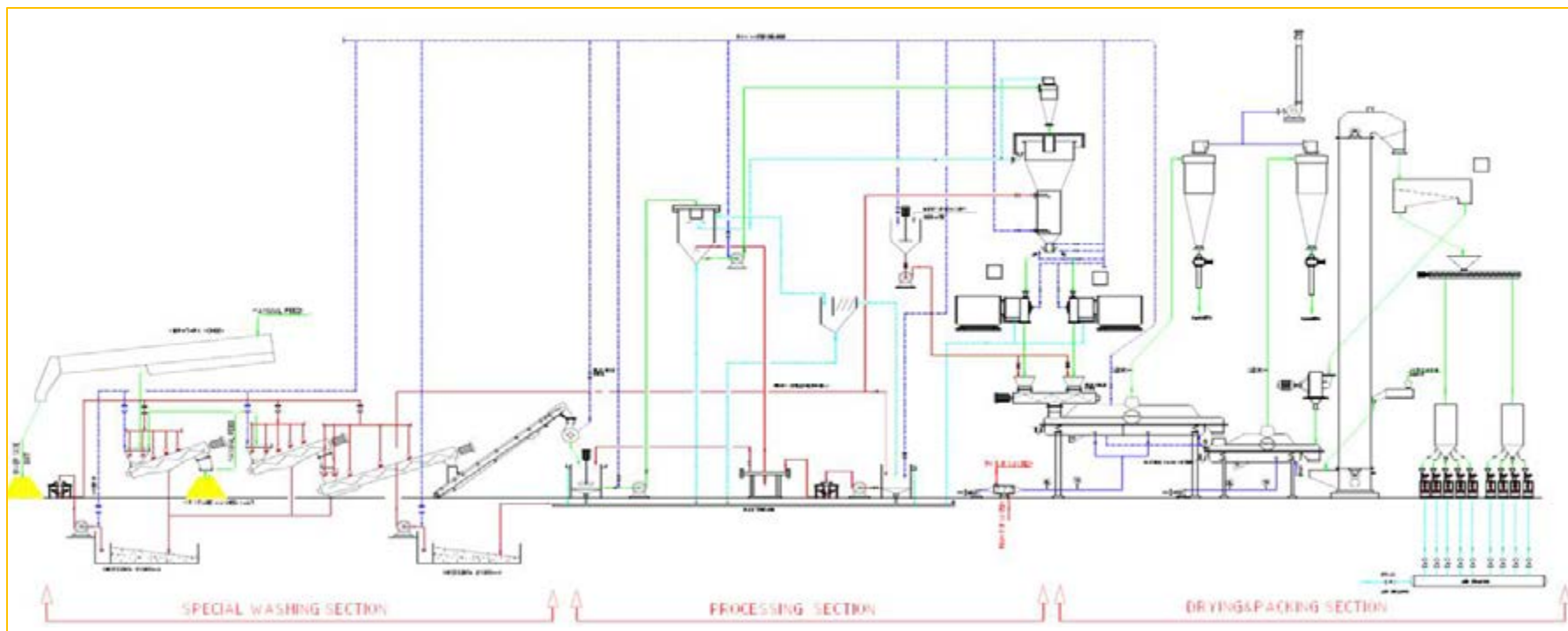
In mechanical salt refinery the raw salt is washed by means of saturated brine for removal of soluble impurities like sand, Earth and Gypsum etc.



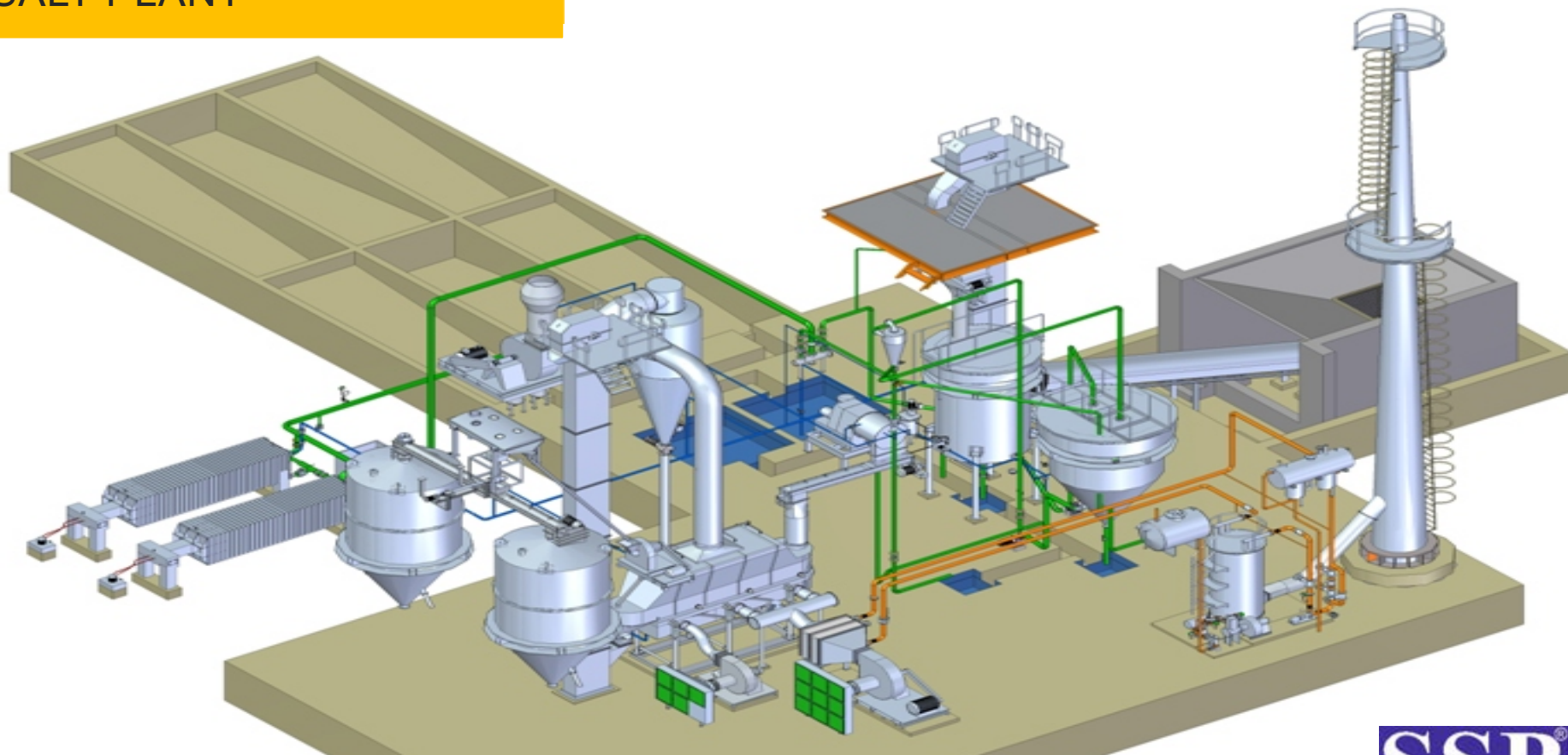
PROCESS FLOW FOR MECHANICAL SALT REFINERY



CASE STUDY: SALT WITH 35% INSOLUBLE



3D VIEW OF MECHANICAL SALT PLANT



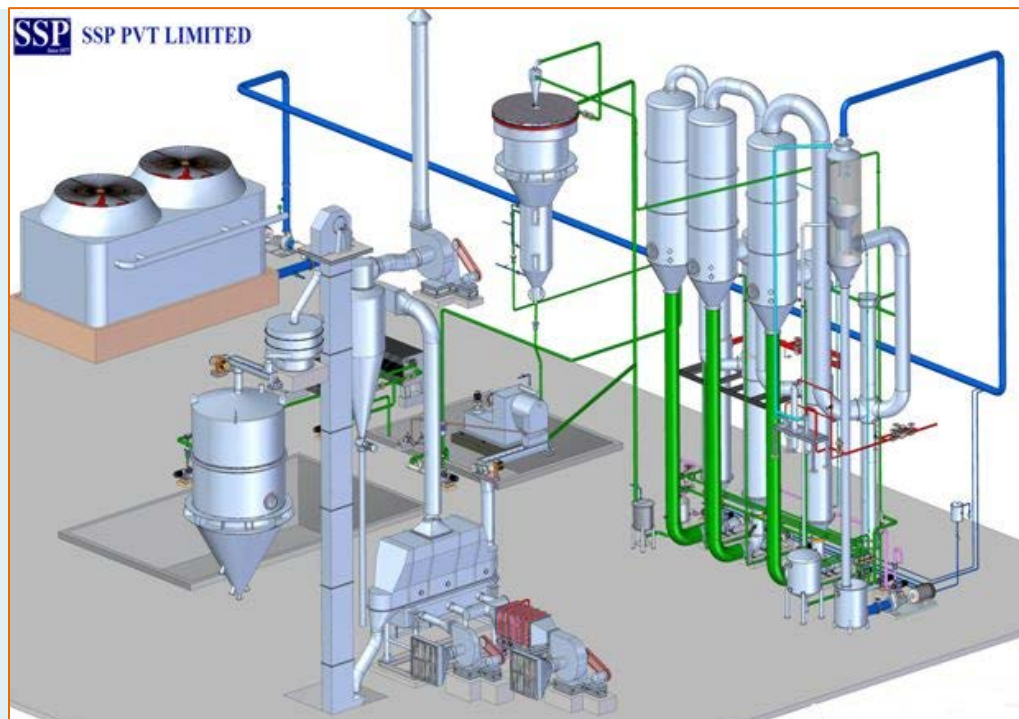
MECHANICAL SALT
REFINERY PLANTS



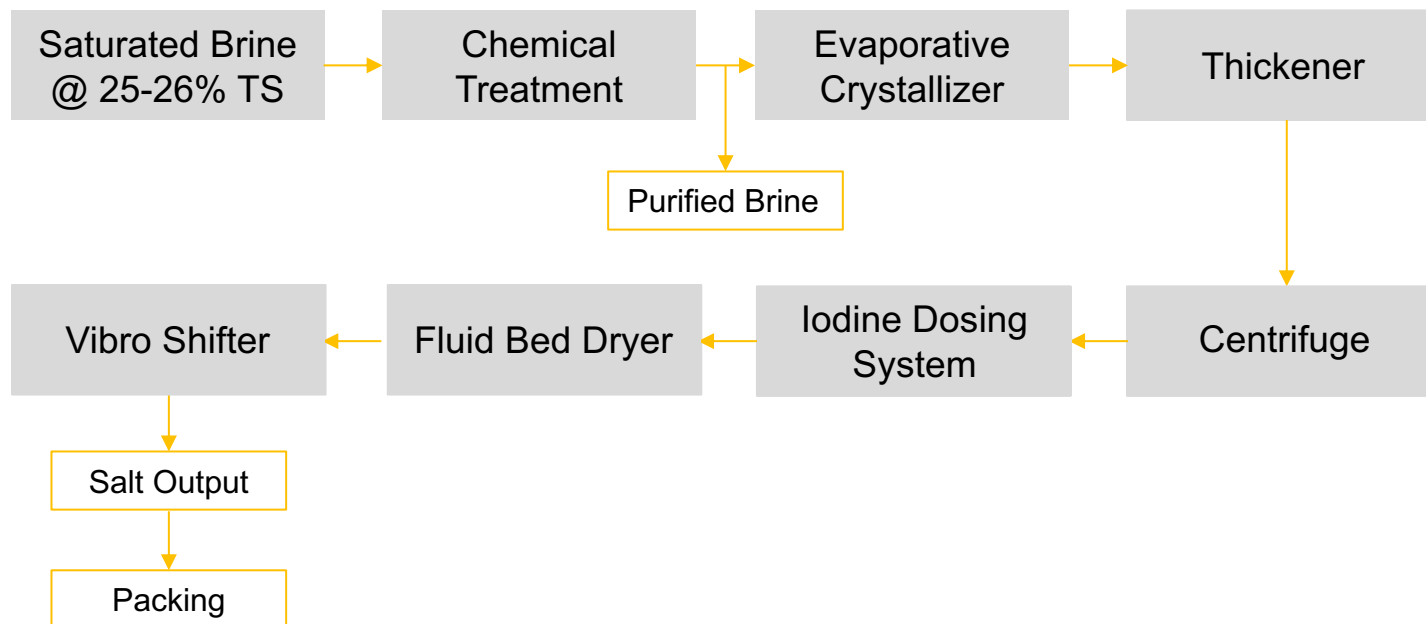
SALT PROCESSING TECHNOLOGIES

Vacuum Salt Refinery System

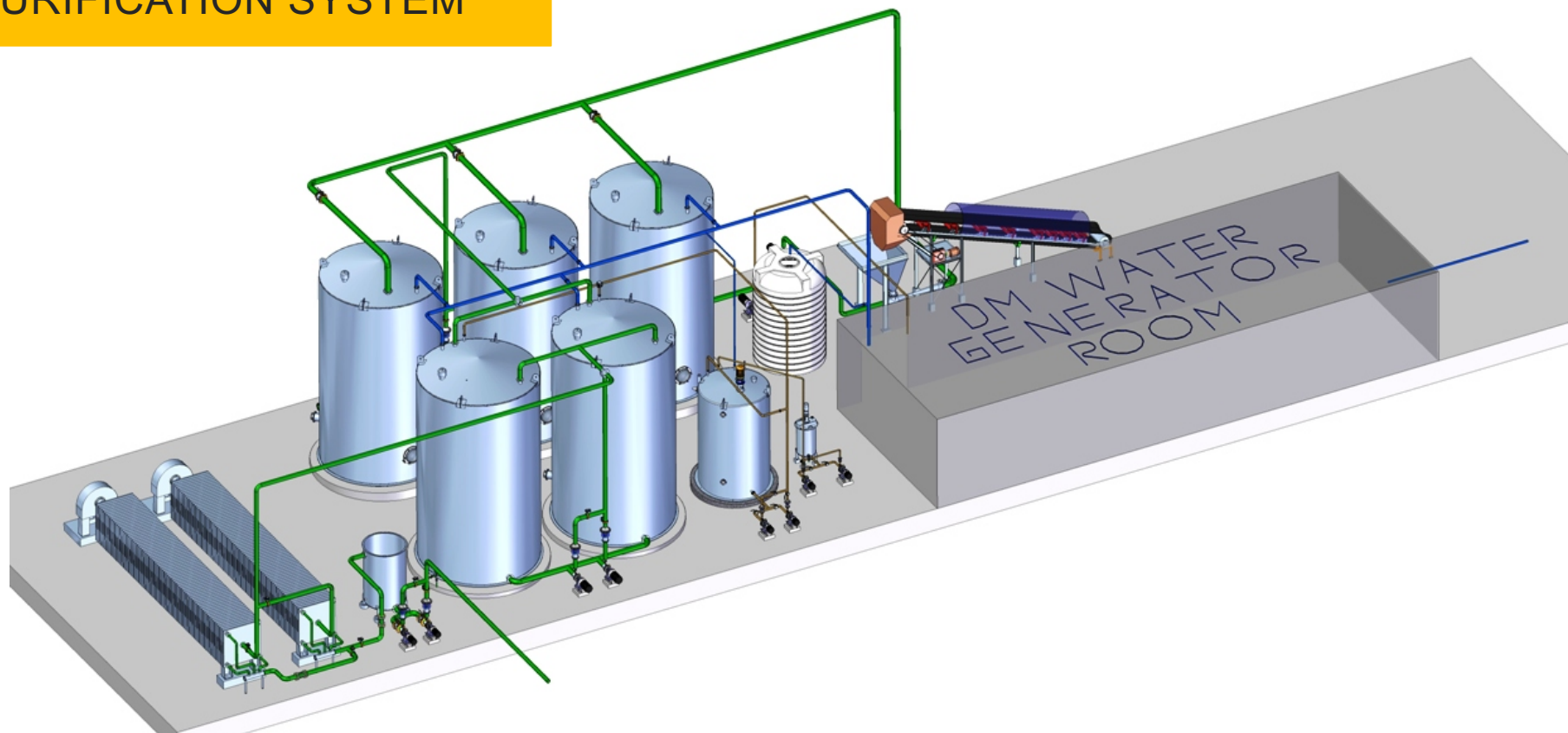
- In vacuum Salt refinery the salt is dissolved in water to make saturated brine solution.
- This brine is treated with chemicals to precipitate out calcium and magnesium salts as impurities.
- This treated brine is fed to an evaporative crystallizer to produce vacuum salt



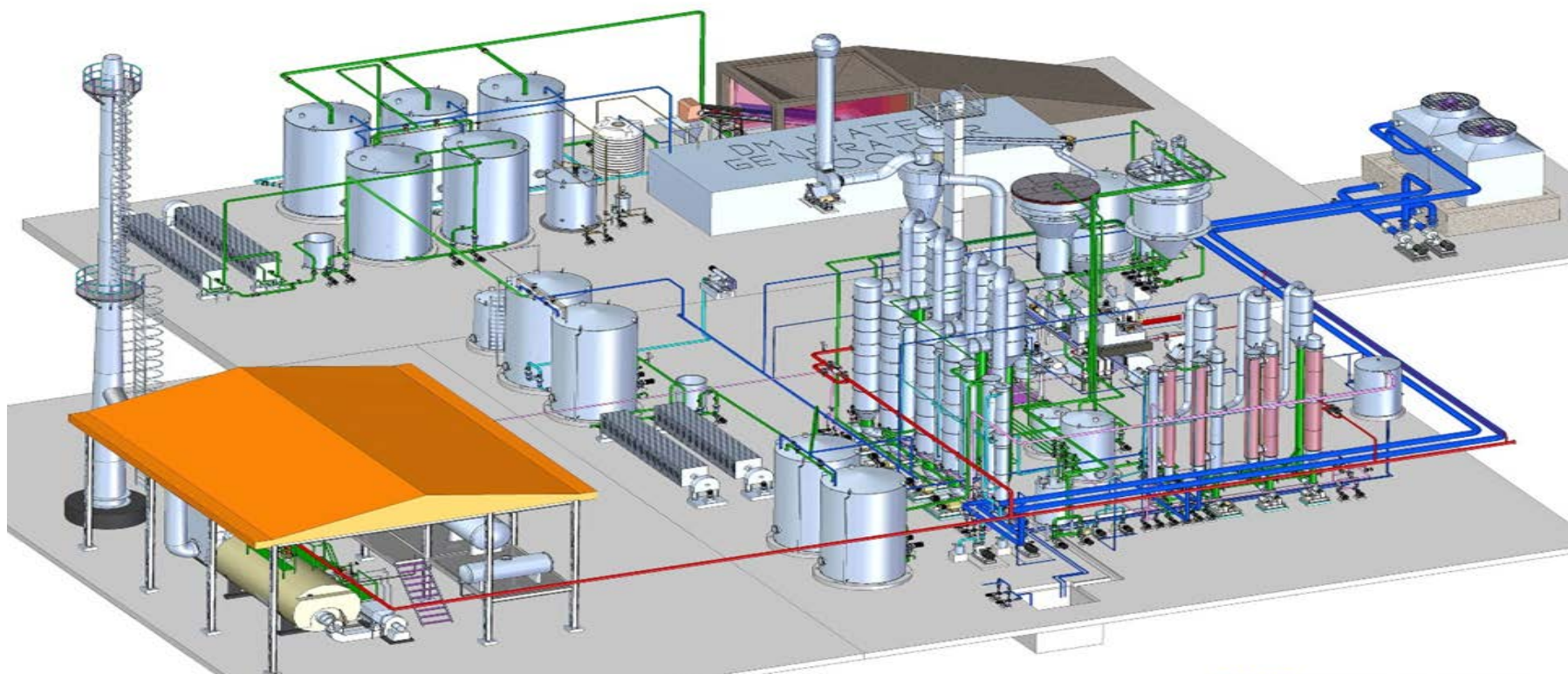
PROCESS FLOW – VACUUM SALT REFINERY



BRINE PREPARATION & PURIFICATION SYSTEM



VACUUM SALT REFINERY SYSTEM



PHOTOGRAPHS



FRACTIONAL CRYSTALLIZATION

Fractional Crystallization is carried out for crystallization of different inorganic salts in the same solution, e.g. a salt lake water containing Na_2SO_4 , NaCl and MgSO_4 , MgCl_2 & KCl can be separated by Fractional Crystallization via following steps:

Step One: By means of cooling crystallization at -20°C , the Na_2SO_4 crystallized out.

Step Two: The mother liquor containing NaCl , MgSO_4 , MgCl_2 and KCl can be fed to an evaporative crystallizer to takeout NaCl Salt.

Step Three: The mother liquor containing MgSO_4 , MgCl_2 and KCl can be crystallized in a cooling crystallizer at -10°C to crystalize MgSO_4 .

Step Four: Active research is going on to separate MgCl_2 and KCl .

OPPORTUNITIES

- Desalination plant reject can be processed economically to generate water and salt by use of 7 stages evaporator for concentration upto 25-26% followed by 4 effect evaporative crystallizer. MVR system can also be used to minimize thermal energy.

150,000 kg/hr of RO rejects can produce 130,000 ltr of water and 10 TPH salt.

- Yield per acreage of salt from solar ponds can be increased by installation of vacuum crystallizers using 20⁰ Be brine.



THANK YOU

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