

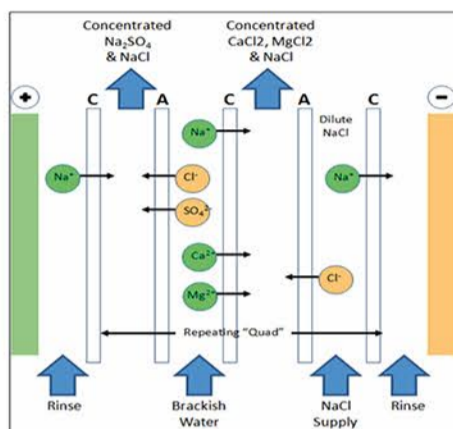
# ZELDA

Zero ● Liquid 💧 Discharge ➤ Desalination

## Electrodialysis Metathesis

### Principle

A direct electric potential is applied to the ends of the stack, resulting in a direct current that is carried by ions migrating through the membranes and solution compartments. The DC potential pushes ions through membranes from a lower-concentration to a more concentrated solution. A four-compartment electro-dialysis metathesis stack is used, in which there are two depleting streams and two concentrating streams. The two depleting streams are (1) e.g. RO/NF concentrate, typically rich in calcium, salts, and (2) sodium chloride (NaCl) feed. The two concentrating streams are (1) Mixed sodium salts, and (2) Mixed chloride salts.



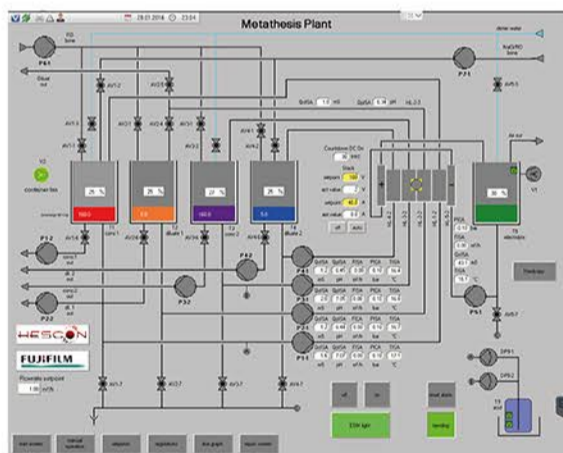
Source: <http://www.krugerusa.com>

### Advantages

- High water recovery > 80%
- High concentrations obtained of valuable salts (> 100 gr/L TDS)
- No scaling of multivalent ions
- Less waste costs (high concentration and low volume)

### From bench scale to pilot

After successful bench-scale tests this unique technology will be proven also on pilot scale treating 1 m<sup>3</sup>/h BWRO and SWRO brine.



### System

- Capacity 0.5-2.5 m<sup>3</sup>/h
- Fully automated batchwise system
- 5 µm pre-filtration
- Auto logging and remote control

### Stack

- 50 x 50 cm
- Ti/Pt electrodes
- 300 cellpairs, 105 m<sup>2</sup> membrane area
- 150 kg



[www.life-zelda.eu](http://www.life-zelda.eu)

FUJIFILM

ABENGOA WATER

