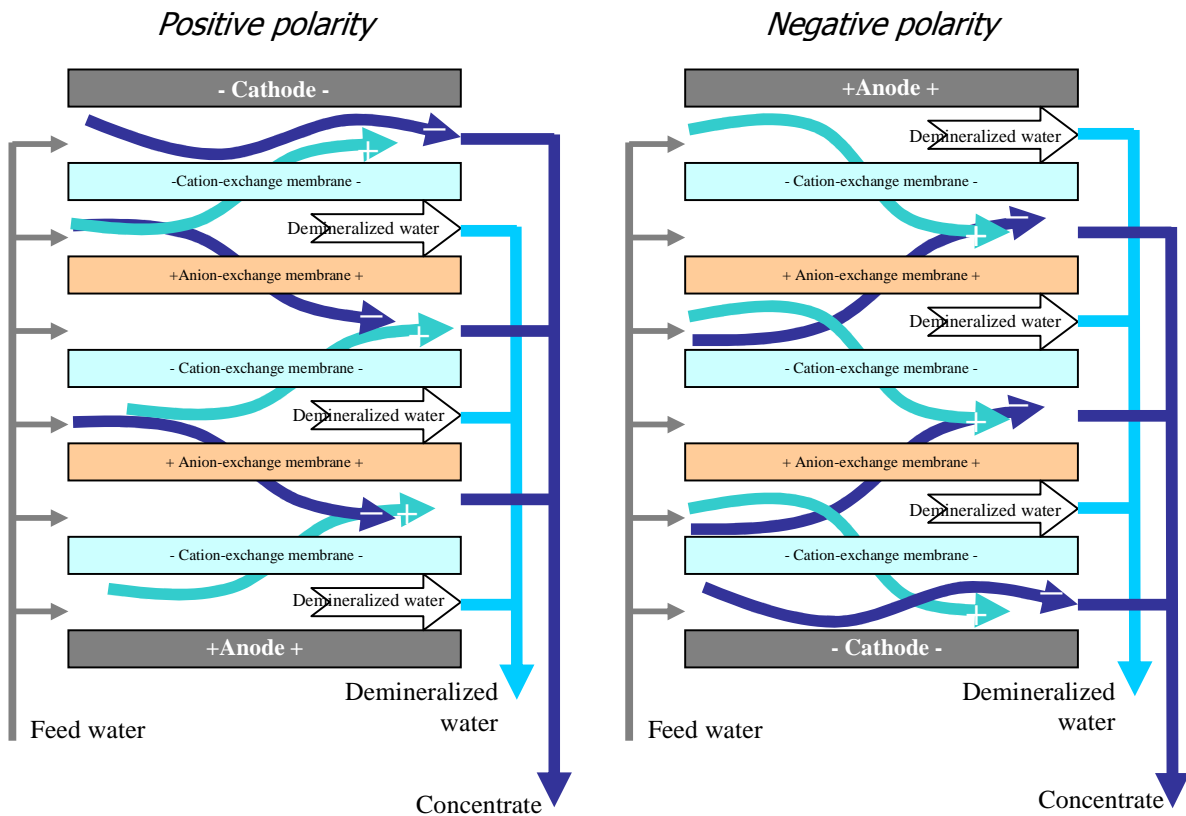


The Electrodialysis (ED) process transfers ionic species from the water being desalted through cation- and anion- exchange membranes to a concentrate wastewater stream. The driving force is direct current (DC) power. The anions can move freely through the nearest anion-exchange membrane, but blocked by the adjacent cation-exchange membrane. The cations move in the same way but in the opposite direction. The result is a low electrolyte concentration in one compartment and a high electrolyte concentration in an adjacent compartment. Therefore brackish water is fed into the dilution compartment inlet and potable water is obtained at its outlet.



Electrodialysis reversal (EDR) is the same process, with the exception that the polarity of the DC power is reversed 2 to 4 times per hour. When the polarity is reversed, the desalted stream and brine stream compartments are also reversed. This alternating exposure of membrane surface to the product and brine streams provides a self-cleaning capability that enables desalting of scaling or fouling waters, and recovery of up to 90-95% of feed water.