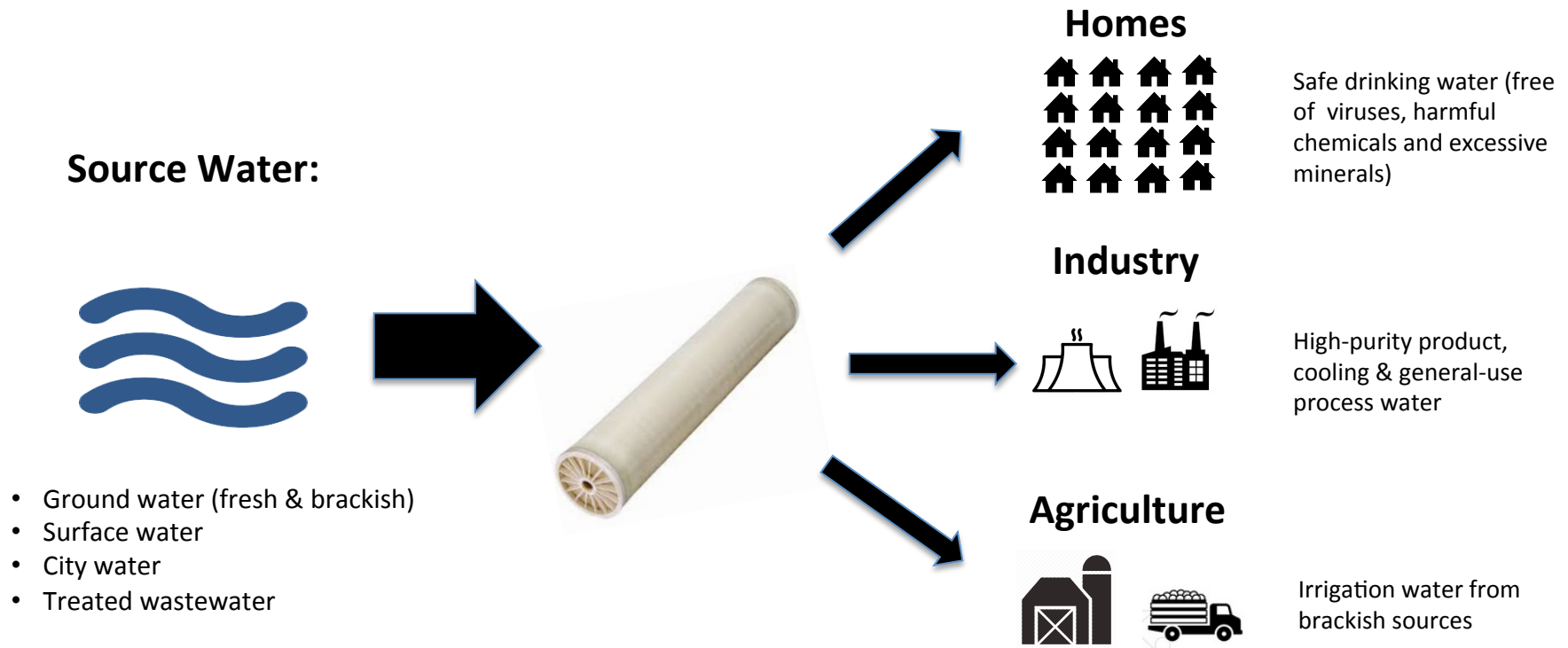


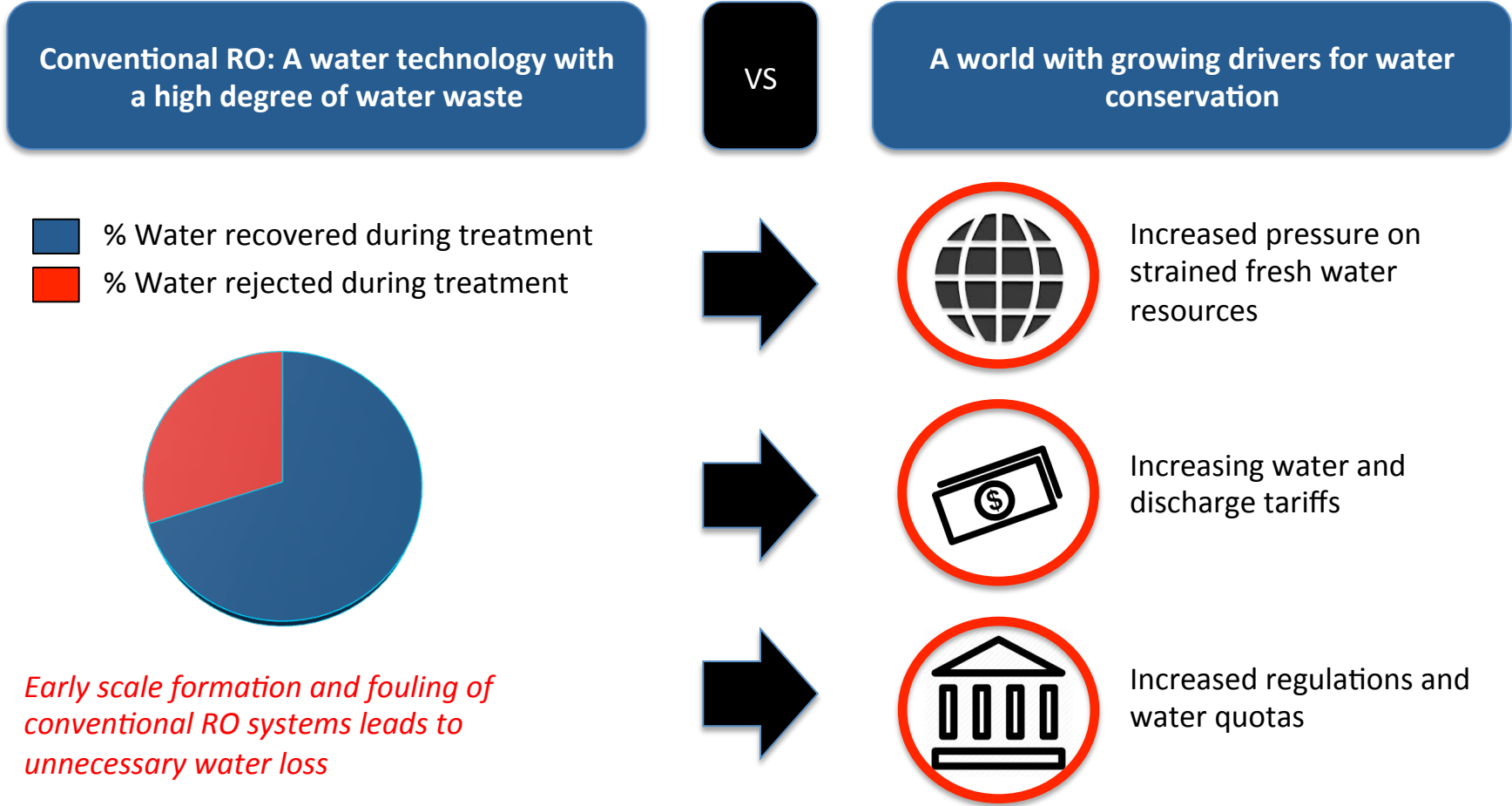
# High-recovery Reverse Osmosis - $HR_2O$ - from AWS

**Removing the waste from water treatment**

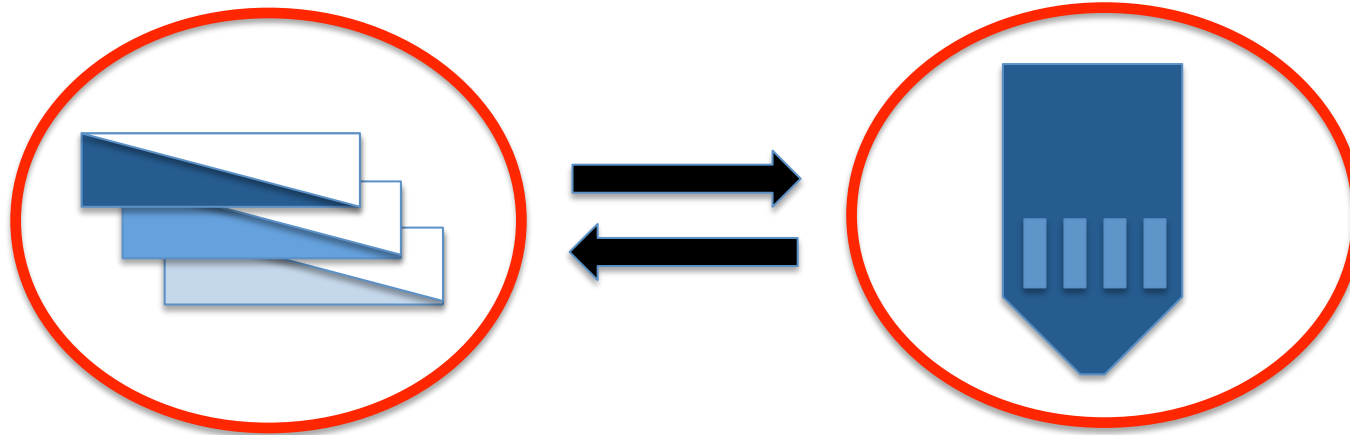
## Reverse Osmosis (RO) has become a centerpiece technology for the production of high quality water for both communities and industry



However the water loss associated with conventional RO is incongruent with the realities of the current water crisis



Traditional high recovery solutions have been seen to be either ineffective or cost prohibitive







Complex membrane solutions offering a low overall increase in recovery and requiring costly and complex chemical treatments

Thermal evaporation steps with extreme costs in terms of CAPEX, OPEX and extensive maintenance requirements

With its **AR-RO** technology AWS brings about a profound step change in the development of low-cost high-recovery water treatment solutions

**AR-RO**: *Advanced Regenerative Reverse Osmosis*

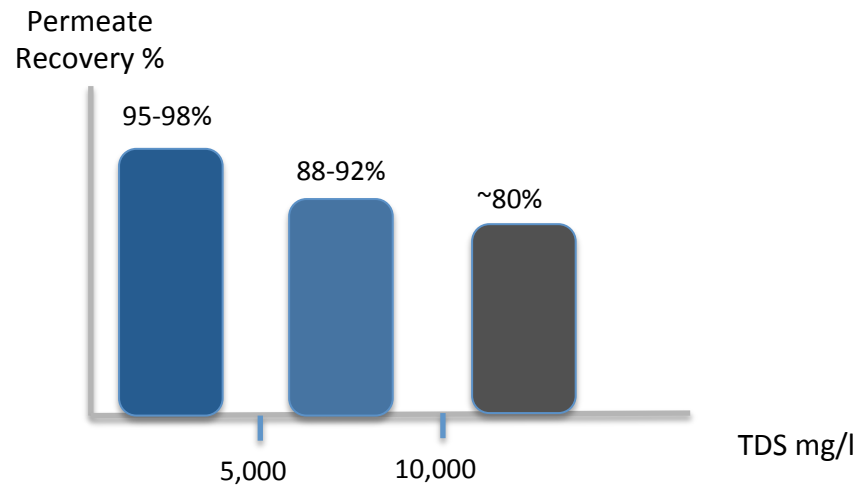
**...high purity water treatment without the inherent waste of conventional RO technology**

 <p>Water recovery of &gt;95%</p>	 <p>Low energy – high recovery</p>
 <p>Extended cleaning cycles &amp; membrane life</p>	 <p>Low to no chemical consumption</p>

A dynamic technology offering high recovery solutions for a wide range of feed water types

**Total Dissolved Solids (TDS)**

AR-RO system performance



**Silica**

Not limited by Silica

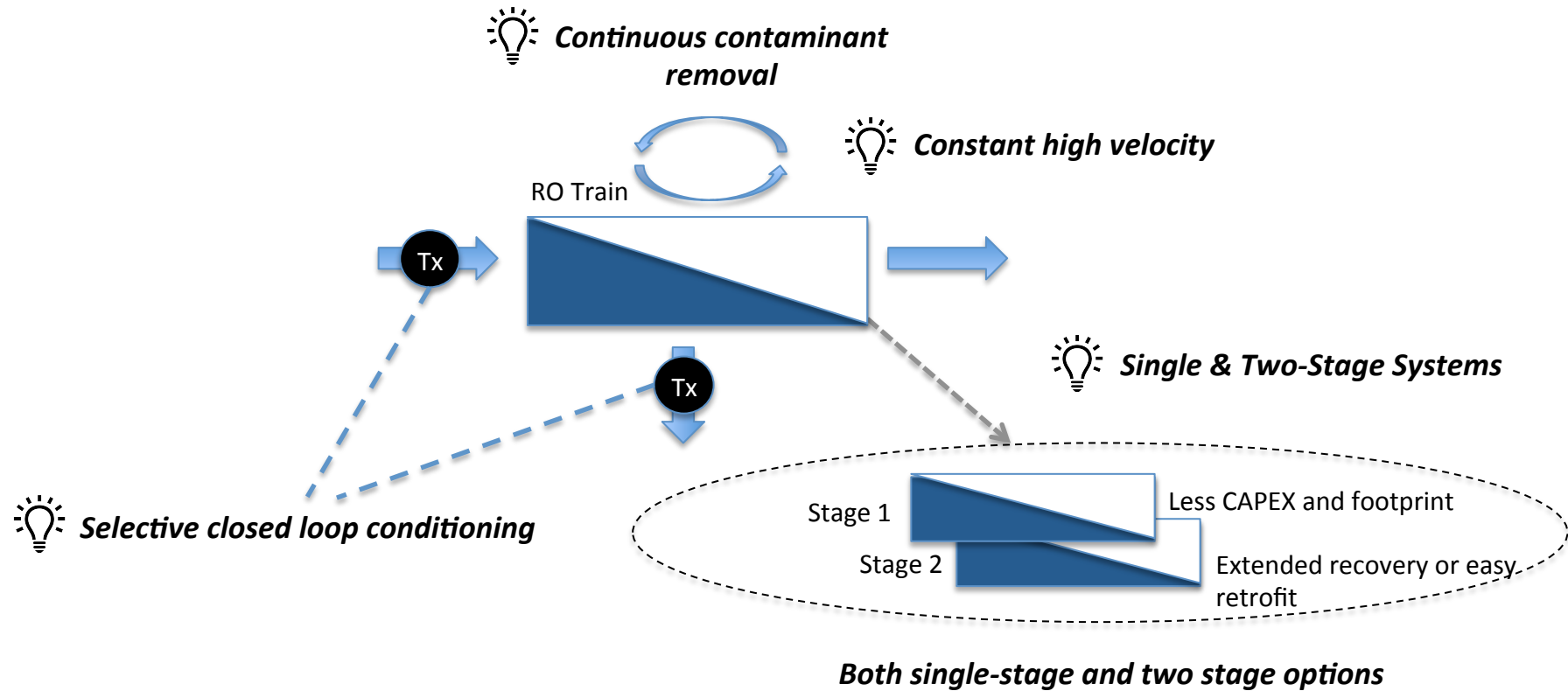
**Hardness**

Not limited by Hardness

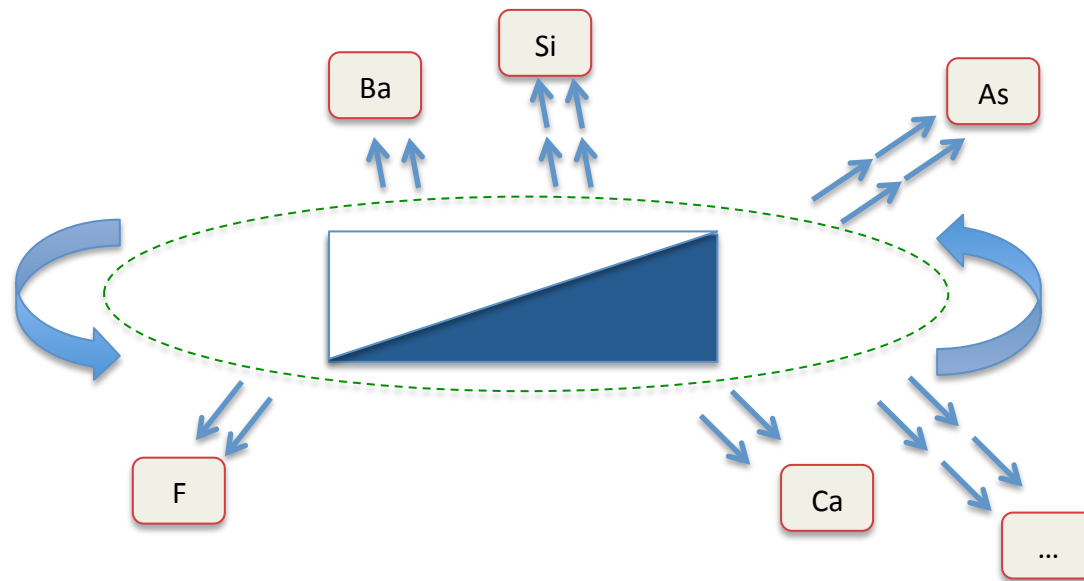
**Other Contaminants**

Not limited by Heavy Metals, Organics or Bio-Foulants

Novel **AR-RO** technology allows for best-in-class Minimum Liquid Discharge (MLD) at the lowest capital and operating costs



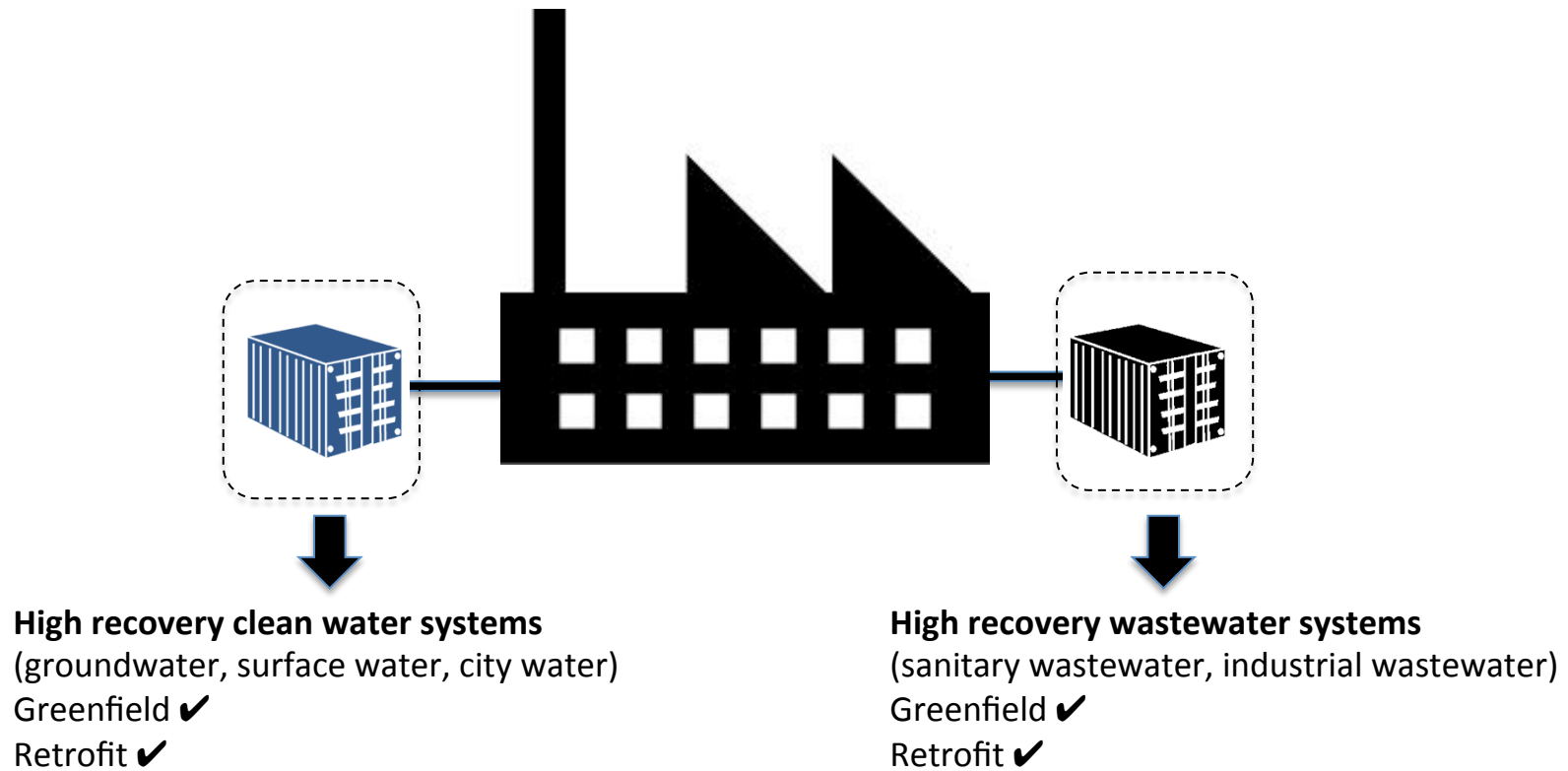
Reach the full osmotic potential of your system through the continuous removal of contaminants via the proprietary **AR-RO** process



- Increased membrane life
- Extended cleaning cycles

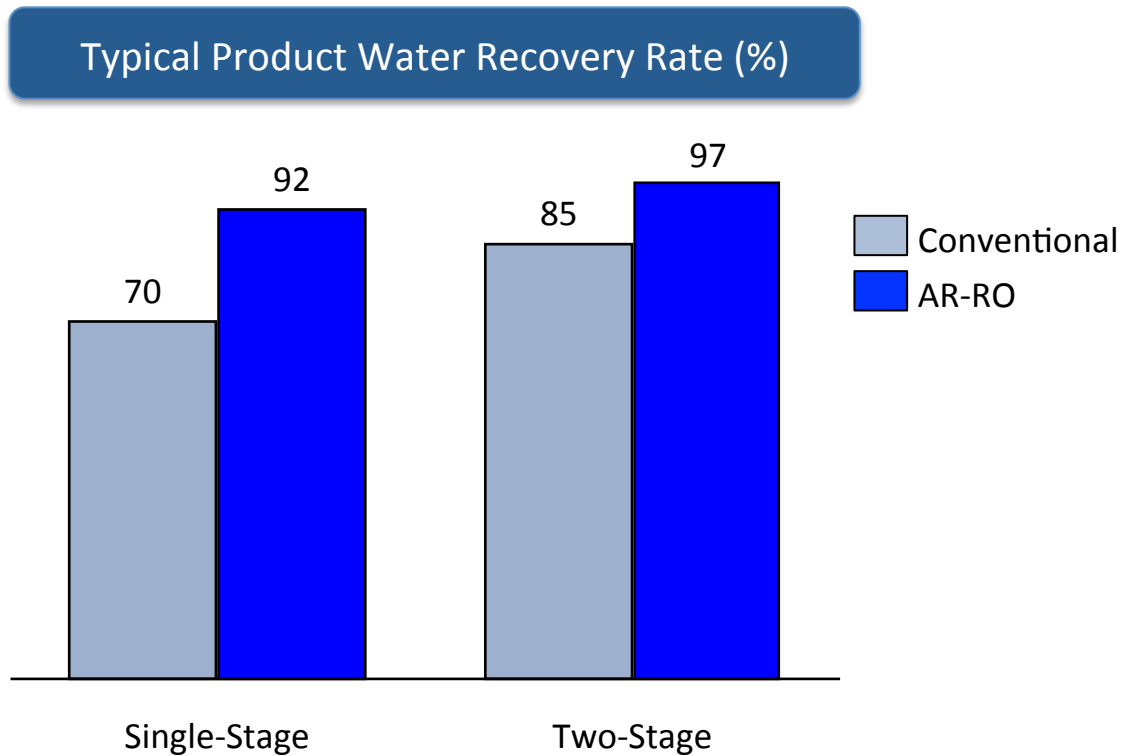


## High recovery solutions for both beginning and end of pipe applications



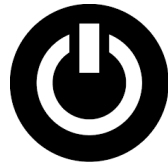
**Flexible polishing steps to tailor permeate to any target application**

Leveraging both single-stage and two-stage configurations in order to minimize CAPEX while maximizing recovery



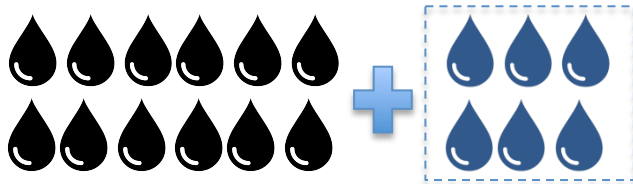
Delivering a clear business case to lower OPEX and increase production while reducing the environmental footprint of the facility

### Reduced Operating Costs



- Reduce freshwater withdrawal
- Reduce disposal costs
  - General brine disposal
  - Smaller disposal well volumes
- Reduce compliancy costs
- Lower ZLD OPEX

### Increased Production Efficiency



- Increase water yields
- Maximize water utilization (quotas)
- Increase spectrum of re-use
- Increase production of existing wells
- Reduce well excavation costs

## AR-RO: A track record of delivering CAPEX & OPEX savings



### Leading Canadian Nuclear Power Plant

**Application:**

Implement ZLD treatment of radioactive wastewater without thermal evaporators

**Impact:**

- AR-RO system recovery: 98-99%
- CAPEX savings for client of +\$10M



### A Top 5 international FMCG – Health & Beauty Products

**Application:**

Recovery of RO concentrate from existing on-site RO system

**Impact:**

- AR-RO system recovery: 95%
- 14M Gallons of water saved per year
- 1.5 year payback