



## WHY EWP vs RO

I am seeking to introduce a new water purification technology. It's a form of capacitive deionization called EWP (Electronic Water Purification). The time has come for a change.

We have been active building small systems from 100 lph to 400 lph in over 70 countries. In the last 10 years we have made the equivalent of 5,000 small systems. Now we have developed a new economical product for tds reduction for feed TDS concentrations 5,000 ppm maximum and 100 lph to 400 lph of product water.

### Economic Comparison of EWP vs. RO

<b>Feed Water Concentration</b>	<b>1,000</b>	<b>ppm</b>
<b>flow product water</b>	<b>0.1</b>	<b>m3/h</b>
<b>flow product water</b>	<b>0.44</b>	<b>gpm</b>

<b>capex</b>		\$ 1,500	\$ 750
<b>cost of Solar/wind</b>			
<b>power</b>	kwh/m3	1	3
<b>recovery</b>		75%	75%
<b>amortization</b>	5	yrs	
<b>cost water</b>	5	per 1000 gal	
<b>cost electricity</b>	0.2	per kwh	

<b>cost of ownership</b>		
	<b>ewp</b>	<b>UF/RO</b>
<b>capex annual</b>	\$300	\$150
<b>opex membrane replacement</b>	3 yr. warranty	\$150
<b>maintenance replace membrane every 3 yrs.</b>	\$0	\$150
<b>chemicals</b>	\$10	\$57
<b>water wastage</b>	\$289	\$289
<b>electricity</b>	\$175	\$526
<b>total opex</b>	\$474	\$1,172

**cost of ownership per m3**                      **\$0.87**                      **\$1.51**

<b>EWP is</b>	<b>42%</b>	<b>less than RO</b>
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These new products that are being launched from a JV in India based on our USA technology transfer. Products will be distributed around the world for small systems 100 to 400 lph product water. 5000 ppm max. 100% made in India. has onboard citric acid micro dosing.

### Some of the Benefits of EWP vs. RO

- Low Capex
- Low power use 75 watts per 100 LPH
- Solar power kit; has a battery to run for 8 hours more
- Low water waste
- Small footprint
- Neutral pH
- No chemicals
- No membranes to replace
- No maintenance; automatic cleaning onboard
- Limited pretreatment
- Greater profit margins; not competing against other RO
- More removal of harmful primary pollutants such as fluoride, arsenic and nitrates than are RO (see test report)
- 6 log kill and filter of microbes per stage.
- Chlorine damages the RO membranes resulting in replacements; but not with EWP

All these benefits offer an advantage compared to RO? Come aboard as a dealer

#### Applications

Drinking Water  
Waste Water Recycle  
softening  
brackish water

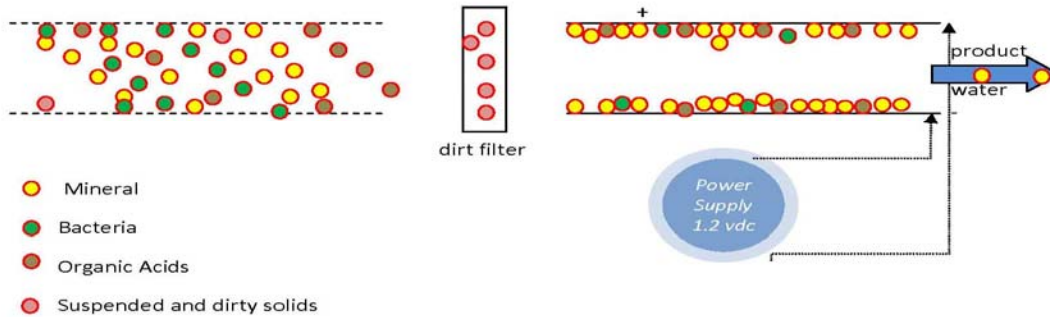
#### Markets

Schools  
small manufacturing  
warehouses  
Agriculture irrigations

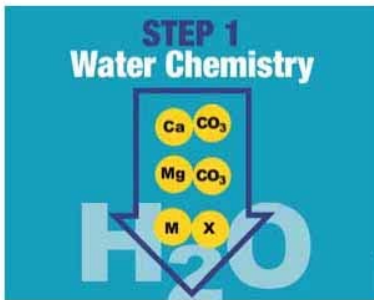
Coffee Shops  
hospitals and healthcare  
restaurants  
car washes

Below is a brief review of the CDI technology.

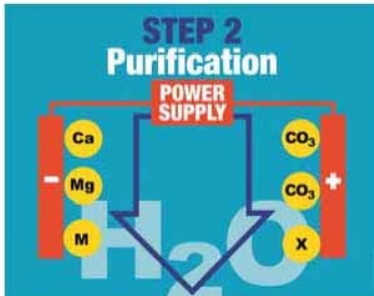
**CDI take the minerals and bad stuff out of the water**



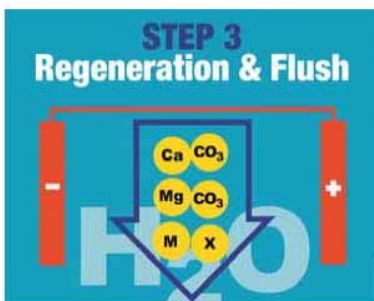
For the last 50 years, membranes and ion exchange have been used to lower TDS from water and wastewater, none of which is economical, practical or efficient as CDI. Today none of these traditional technologies give you as a manufacturer or distributor a clear advantage over you're your competition, as you are all selling mirror image models of the same technology. CDI now gives you a clear advantage and will be the next TDS reduction technology challenging RO or other membrane or ion exchange technologies. Your choice is to come on board with us and be the first in your trading area, or allow someone else to embrace this technology in your trading area and take sales away from you..



80% of the Hardness other minerals, primary pollutants such as arsenic, fluorides, nitrates, heavy metals are dissolved in the water, invisible to the human eye.....is reduced



There are plates call electrodes made of activated carbon' A dc voltage applied. Nanothin materials + electronics form the heart of our technology. This attracts the undesirable substances and bacteria to the surface of the electrode, thus removed from the water— leaving a purified and bacteria free water.



There is a regeneration step that removes all the undesirable ions from the electrodes and is discharged into waste water. the process starts again with step 1.

In many parts of the world safe fresh water is not available to support the population, or that water will be the major economic, environmental, and political issue in the next century yet. If water quality and scarcity hasn't hit your geographic area: it will; just wait. This entire field is characterized by mature technology with manufacturers that refuse to embrace a disruptive technology. So the product cycles are measured in decades by the consumer. But a new technology has been developed such as the Electronic Water Purifier (EWP) over the last 20 years that has low operating costs, low rejection waste water, low capital, no chemicals, small footprint and is now from POU to in large commercial sizes. This technology will challenge traditional technologies in water purification.

Capacitive Deionization (CDI) has brought in a total turnaround in the efficiency of water treatment, with simple electrostatic process of water purification.

The Ion Bearing water is passed through oppositely charged electrodes, the negatively charged ions would be arrested on the Anode by simple electrostatic attraction and Positively Charged .Ions would be arrested on the Cathode by simple Electrostatic Attraction. The Charged Electrodes would attract the ions onto themselves but allow water to flow through, thereby reducing the ion concentration of the water.

Thus in layman language we can say, arrest the Ions while letting the purified water flow through the device. The outflow has lower Ion concentration than the Inflow, meaning water is purified Directly by Ion Removal.