



**ENVT EK**  
Green Engineering

**WASTE WATER RECOVERY  
FOR REUSE**



# ENVTEK

## Green Engineering

ENVTEK specializes in Industrial wastewater treatment solutions for post ETP treated water.

Our field of expertise allows us to be strategically positioned to work closely with end users (Manufacturing units) as well as OEMs (Turn-key systems integrator).

Our prestigious clientele is a testimony of our standards & their repeated trust in our execution is a result of expertise & reliability that we at ENVTEK strive to cultivate in every aspect throughout our firm.

# Industrial Wastewater Recovery

Why should you re-use the wastewater generated from the manufacturing process



Quantifiable benefits of recovering industrial wastewater

## Significant capital gains in the form of:

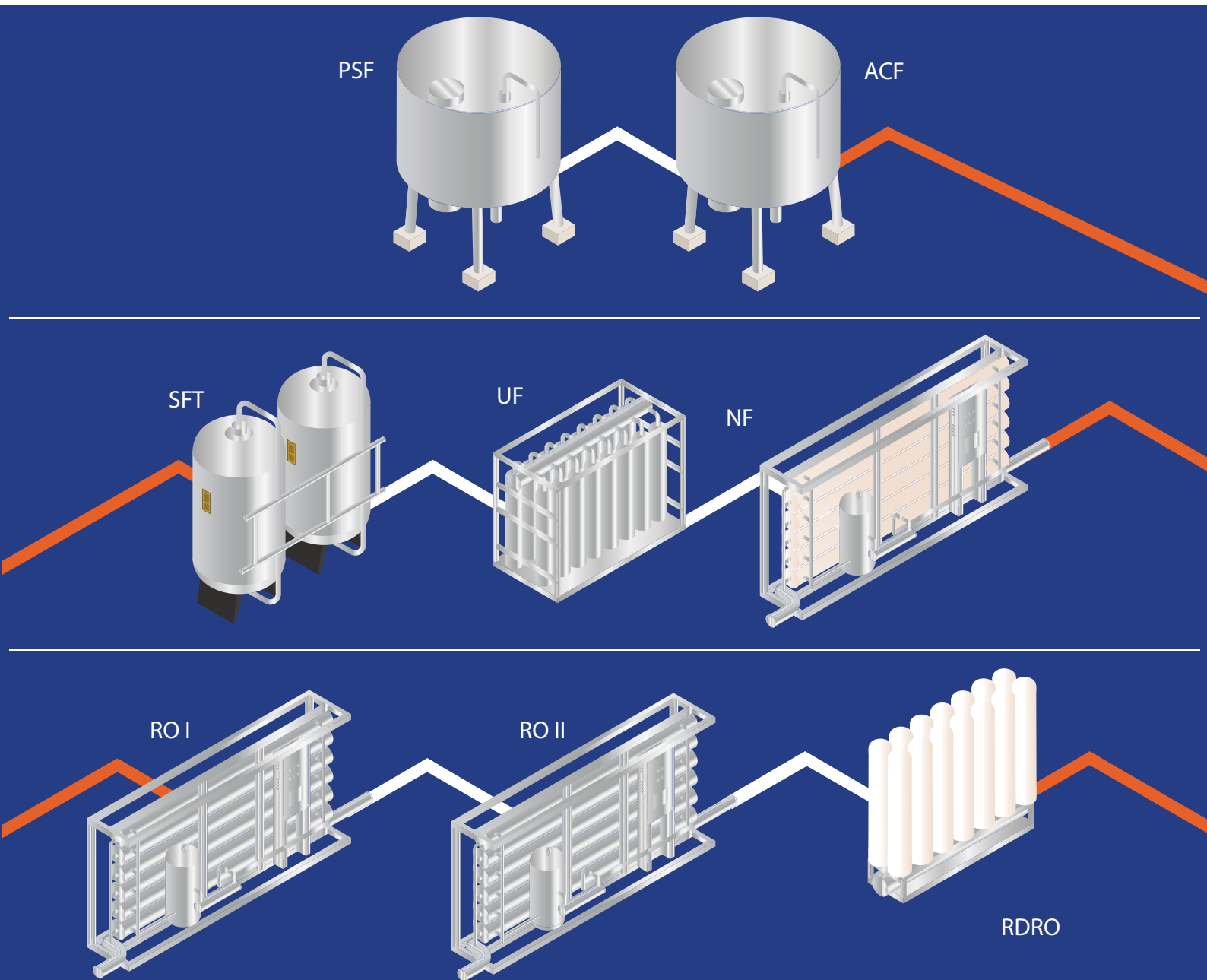
- Heavy reduction in volume of raw water consumption for Production & Utility processes.
- Reduction in the capex & opex for evaporating the last bit of concentrated effluent.
- Achieve superior energy efficiency for the entire manufacturing unit.

## Significant environmental & social benefits:

- When adopted geographically, this practice can considerably reduce a particular region's water footprint.
- Water is a direct focus for 2 out of 17 Sustainable development goals of WHO.
- When combined with Anaerobic digestion, the sludge generated can be used to create bio-gas which can be used to generate clean green electricity.

# Wastewater Recovery Systems

We focus on critical filtration aspect where we collect the waste-waters from utility equipment such as Cooling towers, Boiler blow-downs, ETP treated water & treat it with adequate physio-chemical solutions before feeding it to our stream of solution which typically includes PSF – ACF – UF – NF – RO-I – RO-II which results in the recovery of upto 95% of wastewater which can be reused in the production process while the rejected/contaminated 5% is fed to the MEE (Multi Effect Evaporator) or MVR (Mechanical Vapor Recompression) for further concentration & crystallization of the effluent.





# Pre-Filtration

- PSF Eliminates Suspended Solids & Turbidity from Canals, Rivers, ETP, STP waters.
- Capacity ranges from 1m<sup>3</sup>/hr up-to 250 m<sup>3</sup>/hr
- Automated with pressure drop sensors & Backwash mechanism.
- ACF reduces Chlorine, Odour, Colour, COD/BOD
- Capacity ranges from 1m<sup>3</sup>/hr up-to 250m<sup>3</sup>/hr
- Automated for Backwash based on – Pressure drop via differential pressure switch; flow reduction via flow sensors & timers
- Softeners & DM plants are primarily associated with reduction of cation & anionic contamination



Pressure sand filters (PSF) + Activated Carbon Filters (ACF)  
+ Softeners & De-mineralisers

# Critical Filtration

## Ultra Filtration:

- Ultimate reduction in TSS, Turbidity, Silt density index, Colloidal Silica, Pathogens, bacteria, viruses & overall microbial content.
- Filtration of pre-treated water up-to 0.02 – 0.04 microns – critical for performance of next stage i.e. Membrane Filtration.
- Capacity ranges from 1m<sup>3</sup>/hr up-to 100m<sup>3</sup>/hr
- Automated for Chemically enhanced back-wash & Auto dosing based on chemical composition of in-feed waters.

## Nano Filtration:

- Highly effective in treating high COD/BOD waters
- Highly effective on Di-valent elements.
- Functioning principle is similar to RO, but since its pore sizes are slightly larger, this system allows a larger overflow of certain elements.
- This makes it a perfect choice for selective recovery options.
- Capacities range from 1m<sup>3</sup>/hr up-to 10m<sup>3</sup>/hr
- Automated with self-actuating valves corresponding to a vast choice of on-line sensors.



Ultra-Filtration



Nano-Filtration

# Membrane Separation

## Key operating parameters



Spiral membrane Reverse Osmosis system

### Eliminates:

TDS & recovers upto 95% of wastewater post prefiltration.

### Applications:

Re-use recovered wastewater in the production process or onsite utilities such as boilers or cooling towers.



Round Disk Reverse Osmosis (RDRO) system

### Eliminates:

Extremely high concentration of COD & TDS

### Applications:

Industrial wastewater with extremely contaminated water.



# Operational support & services

Automation + Remote monitoring = Operational excellence



Standardisation

DQ, IQ, OQ, PQ, P&ID and isometric drawings, along with user manual & appropriate vendor certification with color coded tagging allows our clients to undergo an easy validation experience



Max efficiency

Cloud computing is a New-gen solution that can enable remote monitoring & complex custom automation which will definitely result in predictable & reduced downtimes



Preventive maintenance contracts

Ensure your WTP is functioning at maximum potential by scheduling periodical services which aim to optimize the productivity of your WTP while gradually but surely reducing the operational cost of running the entire system.



# Industries we cater to



## Pharmaceutical Formulations, Parenterals & API

- Purified Water Generation, Storage & Distribution
- WFI Generation, Storage & Distribution
- Upto 93% wastewater recovery of high COD effluent



## Chrome Plating

- Optimised energy DI / DM water systems for < 1ms/cm plating bath
- Post ETP Wastewater recovery systems upto 93% for re-use in production & utility applications
- Detailed on-line remote monitoring systems for energy savings on utility equipment.



## Pulp & paper manufacturers

- Optimum energy Reverse Osmosis systems for Boiler systems
- Wastewater recovery systems for COD / BOD effluent
- Detailed on-line remote monitoring systems for energy savings on utility equipment.



## Textile & Polyester yarn manufacturers

- Raw water purification for manufacturing process
- Post ETP - High COD/Silica wastewater recovery upto 93% for re-use
- Detailed on-line remote monitoring systems for energy savings on utility equipment.



### Food & beverage production processing units

- Fruit juice processing unit
- Comprehensive & automated CIP / SIP solutions
- Membrane filtration systems for Maximum production levels at minimum energy consumption
- Condensate polisher unit for maximum re-use in boilers, cooling towers, rinsing activities etc.



### Dairy Processing Unit

- Membrane filtration systems for Protein concentration/standardisation
- Membrane filtration systems for Lactose production
- > 90% wastewater recovery systems for extreme cases of BOD, COD, TSS & TDS levels
- Condensate polisher unit for maximum re-use in boilers, cooling towers, rinsing activities etc.



### Hotels & Resorts

- Clarification, filtration & desalination of raw/sea water for optimised use throughout the property: Swimming pool, Sanitary areas, Water for cooking, Laundry process, Irrigation & speciality activities such as ice sculpting etc.
- Wastewater recovery process provides >90% recovery rates which means there will be a drastic reduction in operating costs of heavy duty equipment to purify the raw/sea. This recovered wastewater can be used in boilers & cooling towers or HVAC systems.



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