







Our Business is Water

Arvind Limited, a part of The \$1.3 billion Lalbhai Group was incorporated in 1931 and is in the businesses of Textiles – fabric & garment manufacturing, Branded apparel & Retail, Environment Solutions, Agriculture, Engineering and Real Estate.

Established in 2011, Arvind Envisol has witnessed strong pull from Indian and international market over last few years with **70% CAGR for last three years**

AEPL is a world class water management company providing end to end solutions for water treatment, industrial waste water treatment, sewage treatment, zero liquid discharge solutions at minimal costs.

Our Journey so far...



2011

2012

2013

2014

2015

2016

- Arvind Envisol, a 100% subsidiary of Arvind Limited got established
- Acquired global patent for break through Polymeric based evaporation technology
- Started components business – Acquired PAN India distribution rights for Hydranautics membranes
- Ventured into end-to end turnkey solutions for waste water recycling
- Bagged first international order in African continent for ZLD solution in textiles
- Bagged prestigious order of 11 MLD ZLD plant at Hawassa industrial park, Ethiopia
- Expanded presence in other countries including China
- Officially launched three business verticals – Projects / Services / Spares & Components
- In House R&D activities initiated for next-gen technological solutions



Growing at CAGR of 70% over the last three years



One stop solution provider for water treatment needs



100% external debt free company with excellent track record





100+
Million Litres
water and waste
water processed
per day



60+
Projects
executed till date



22
Registered
Patents across
the globe



END TO END
Offerings in the entire water chain

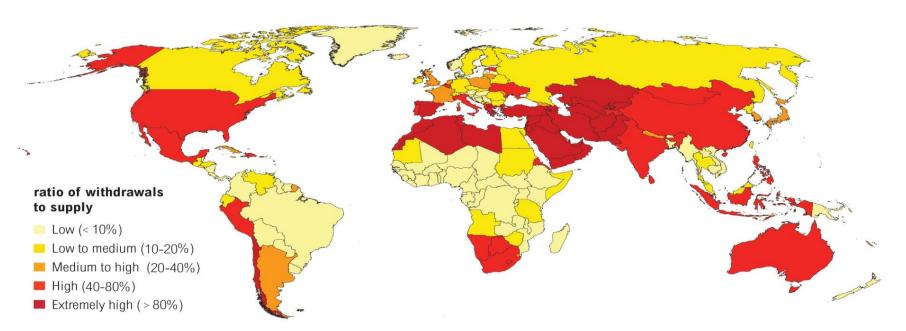


STRONG
Pre Qualification
References

Crisis Ioom large – Water stress expectancies by 2040







54%
Of India
Faces
High to

Extremely
High

Water Stress

NOTE: Projections are based on a business-as-usual scenario using SSP2 and RCP8.5.

For more: ow.ly/RiWop



"With 18% of world's population and only 4% of fresh water resources, India is poised to have severe water problems, if not managed properly"

Water Reuse and Recycling

Envisol

The key to sustainable water management

1

Out of 7 people do not have access to clean water

1

Out of 5 deaths under the age of 5 years world wide is due to a water related disease 1500

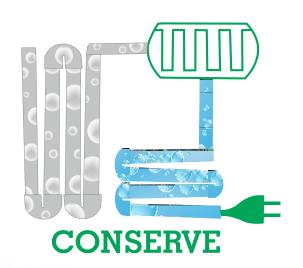
KM3 wastewater produced annually, which is six times more water than exists in all rivers of the world

2

Million Tons of sewage and other waste is discharged into world's water, the equivalent weight of the entire human population on this Earth







We are committed to solve the water woes by the best possible means, using the state of art technologies and customer centric approach, making world a better place to live in





Asset-efficient play across all verticals providing solid impetus for growth

Projects/EPC

- Water Treatment
- Industrial Effluent Treatment across sectors
- Sewage Treatment
- Desalination
- High purity water solutions
- De Mineralization
- Drinking water systems
- Special capabilities on water recycling and ZLD

Spares, Chemicals & Components

- Membranes –
 UF/NF/RO/MBR
- Pressure Tubes
- Dosing Systems & Pumps
- High pressure pumps
- Filter Press
- Ozonators
- FRP tanks
- RO chemical, color removal chemicals, polyelectrolytes

Services

- Operations & Maintenance
- · Retention based services
- Retrofitting
- Water Audits
- Water Testing
- Training and skill development

Industries Served



Textiles



Pharmaceutical



Food & Beverages



Chemicals



Oil & Gas



Semi Conductors



Automobiles

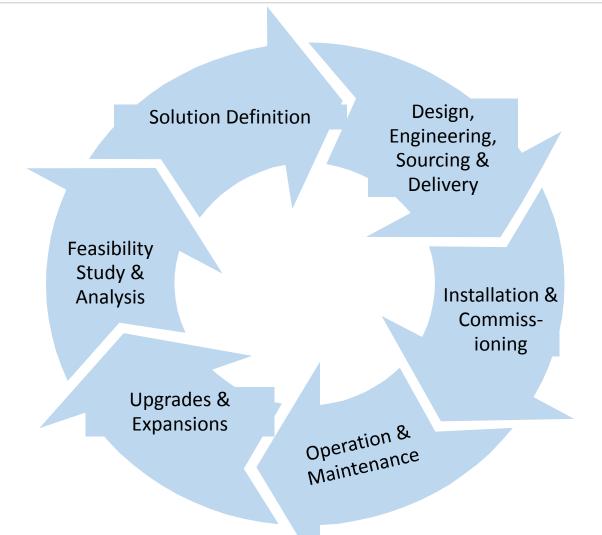
..& Other Industries





Turnkey EPC Projects – we enable sustainable operations





Sustainable Outcome



CUSTOMERS

Clean, efficient operations and high return on investment



SUPPLIERS

We build partnerships with our supplies on long term basis



EMPLOYEES

Meaningful and rewarding jobs



SOCIETY

Improved resource efficiency, clean environment, prosperity



SHAREHOLDERS

Investing in a responsible company



ECOLOGICAL FOOTPRINT

Technologies with low impact

Turnkey EPC Projects













Few Installations References





11 MLD Zero Liquid Discharge Plant at Hawassa Industrial Park, Ethiopia

Few Installations References







17 MLD ZLD plant at Arvind Limited, Santej

Few Installations References







10 MLD UF and RO at Jasol and Balotra, Rajasthan

Recommendations





CCECC ETHIOPIA CONSTRUCTION P.L.C.

Ref. No.: CCECC/ETHIO-HIP/ED/2016-048

Date: 30th September, 2016

Arvind Envisol Private Limited, Hawassa, Ethiopia

"TO WHOMSOEVER IT MAY CONCERN"

This is to certify that M/s. Arvind Envisol Private Ltd., India, has done the Design, Engineering, Construction, Supply, Installation, Testing and Commissioning, of our 11 MLD capacity Textile and Sewage Waste Water Treatment Plant for our Hawassa Industrial Park Project, Ethiopia based on recycling and Zero Liquid Discharge (ZLD) technology with its project value of \$ 11,160,000 (USD Eleven million and one sixty thousand dollars) including Erection & Commissioning.

The Sewage Treatment Plant of the aforesaid Zero Liquid Discharge System with processing capacity of 3000 m3/day was handed over to us on 30th September 2016, to our satisfaction.

Zhu Lei Project Manager CCECC Ethiopia Construction P.L.C.

BALOTRA WATER POLLUTION CONTROL TREATMENT & RESEARCH FOUNDATION TRUST

ROOPCHAND SALECHA Chairman

Mob.: +91-9414108111, +91-9772205771 e-mail: navkartex@gmail.com

No. CETP/2016/5748

JUGAL KISHORE SINGHAL Secretary

Mob.: +91-9414270879 +91-9672975776

Date: 2/6/2016

TO WHOM SOEVER IT MAY CONCERN

This is to certify that water treatment plant (RO Plant of capacity – 6MLD UF + 6 MLD RO) has been successfully designed. Supplied and installed by Arvind Envisol Pvt Ltd.

The system is also commissioned and working continuously since $\mathbf{1}^{\text{st}}$ May 2016.

The system is now under an O & M contract since 01st May, 2016 for two years with Arvind Envisol Pvt Ltd.

We are satisfied with their support, services and wish them success in their endeavors.

2 M-m

अध्यक्ष बालोतरा वाटर पोल्यूजन कन्ट्राल ट्रीटेमेस्ट एण्ड रिसर्च फाउण्डेणन ट्रस्ट बालोतरा जिला बाडमेर



TO WHOM SO EVER IT MAY CONCERN

This is to certify that M/s.Ipca Laboratory Ratlam had Awarded the Contract to M/s.Arvind Envisol PVT Ltd, Ahmedabad for Design, Engineering, Procurement, Supply, Testing, Installation & Commissioning of MVRE Plant. The Capacity of MVRE Plant is designed at 400 KLD as feed.

The Project has been recently installed and commissioned by M/s.Arvind Envisol PVT Ltd.

We are satisfied with their support Services and wish them success in their Endeavors.

Thanking You

Your faithfully

For PCA Laboratory

Manoj Kumar Mittal Vice President (Corp.) EHS

Technological Capabilities (1/3)



Primary treatment

To remove physical impurities like suspended solids, oil and colour



Clarifiers and Clarificoulators



Tube settlers/parallel plate separators



High rate solid contact clarifiers



Dissolved air floatation (DAF)



Electro Coagulation



Pipe floccuator

Secondary treatment (Biological Processes)

Degrading organic material present in waste water/reducing the BOD and COD



Activated Sludge Process (ASP)



Extended Aeration system (EAS)



Upflow Anaerobic sludge blanket reactor (UASB)



Sequential Batch Reactor (SBR)



Moving Bed Bio Reactor (MBBR)



Membrane Bio reactor (MBR)

Technological Capabilities (2/3)



Filtration system



Mircon Cartridge Filtration (MCF)



Micron Disc Filtration (MDF)



Activated carbon filter (ACF) and Media Filters



Ultra filtration (UF)

Membrane based TDS reduction



Nano filtration (NF)



Reverse Osmosis (RO) – disc



Reverse Osmosis (RO) – spiral



Forward Osmosis (FO) System

Advanced Oxidation



Ozonation



Envi_Oxy system

Technological Capabilities (3/3)



Evaporation Technologies



- Mechanical Vapor Recompression (MVR)
- Multi Effect Distillation (MED)



 Multi Effect Evaporators (MEE) and Crystallizers



Multi Stage Flash (MSF) Evaporators



Agitated Thin Film Dryer (ATFD)

Sludge Management Technologies



Sludge Digester



Incinerator



Screw Press



Centrifuge



Filter Press

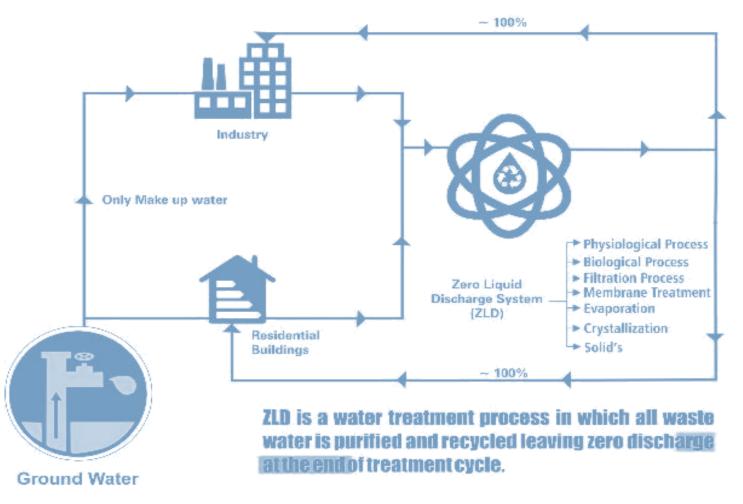


Belt Press

Zero Liquid Discharge



Envisol's heart drum to purify and recycle waste water through patented technologies





Evaporation is the most feasible technology that works on almost all dissolved substances



3 = high separation 2 = moderate 1 = low separation																
Note! pH may change rating considera	bly															
	Pollutant to remove															
Dissolved substances	Cations (e.g. heavy metals)	Monovalent ions	Multivalent ions	Complexed ions	Anions	Monovalent (e.g. chloride)	Multivalent (e.g. ${\rm SO_4}^{2-}$)	Ammonium	Organic compounds	Carbohydrates	Proteins	Alcohols	Solvents (e.g. hydrocarbons)	Pigments	Pesticides	COD in general
Technology																
Adsorption (e.g. activated carbon)		1	1	1		1	1	1				1	3	3	3	1
Ion exchange		3	3			3	3	2								
Chemical precipitation		1	2	3			2				2					1
Membrane technologies																
Ultrafiltration (UF)											2				1	1
Nanofiltration (NF)			2	3			2			2	3			2	3	2
Reverse osmosis (RO)		3	3	3		3	3	1		3	3	1		3	3	3
Electrodialysis		3	3	3		3	3	3								
Evaporation		3	3	3		3	3	2		3	3			3	3	3
Distillation								3				3	3			
Flotation		1	1	2			2				2			1		1
Air/steam stripping								3				2	3		2	
Electrical methods																
Electrolyse		3	3	3												
Electro coagulation		1	3	3			2				2			2		2
Biological treatment		1	1	2		1	1	2		3	3	3	1	2	1	2

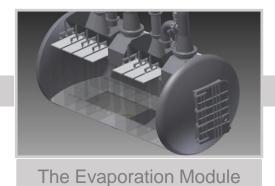
- Different
 technologies have
 to be combined to
 attain ZLD or meet
 the discharge limits
- We introduce to you our patented polymeric film based Evaporator which has the reputation to handle any type of effluent, avoids corrosion, has lower scaling potential and works at the *lowest operating* costs

Patented Technology – Polymeric MVRE



Patented heat transfer polymer element enables efficient heat transfer at lower temperatures Improves efficiency and uses MVRE for reduction of costs and maintenance



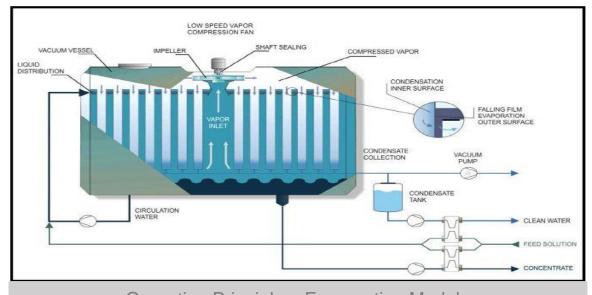


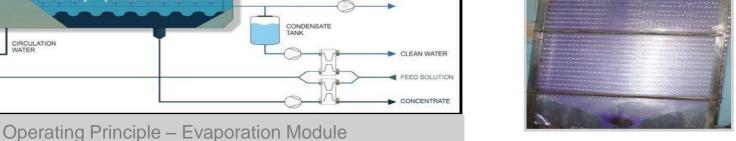


Cassette

Patented Polymer film







Significant advantages in operating costs can be achieved through Polymeric Film Evaporation Technology



Polymeric Heat Exchanger

Minimal Steam
Consumption- only for initial heating

Lower temperature differences

Higher surface area along with it being smooth and flexible

MOC - Polymer

Cleaning by water itself

Conventional heat exchanger

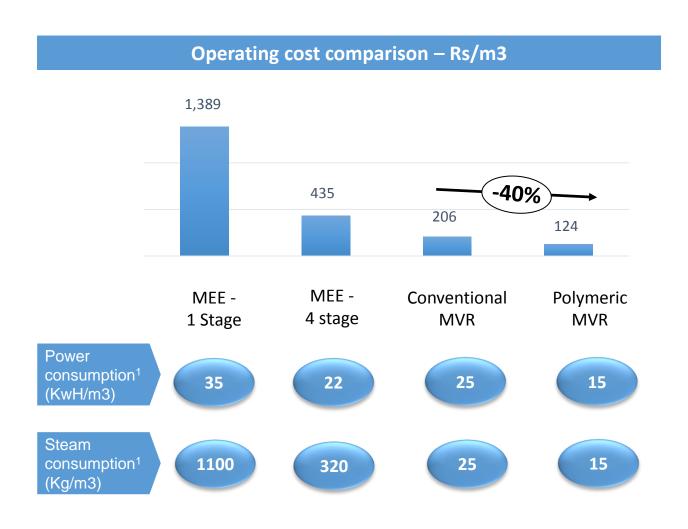
Higher steam consumption

Higher temperature difference

Lower surface area along with it being rough and rigid

MOC – Titanium or equivalent

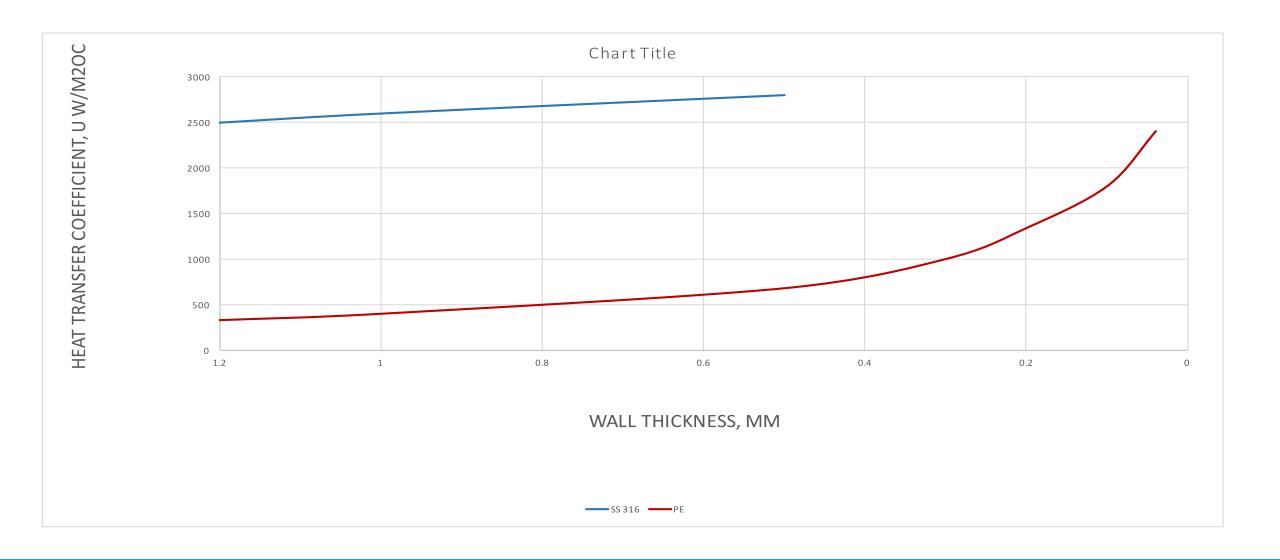
Cleaning by Chemicals





Overall heat transfer coefficient as function of wall thickness





Crystallizer Unit & Salt Recovery Application











Spares, Chemical and Components





Chemicals and polymers

- Anti-Scalants
- Cleaning Chemicals
- Preatreatment Chemicals
- · Odor Removal Chemicals



Pumps

- High pressure and low pressure
- Multi-stage and single stage
- Vertical and horizonal



Pressure Tubes

- ASME quality pressure tube available
- Internal diameter is mirror finished to a tolerance of ±0.02mm which facilitates easy loading and unloading of membranes.



Ion Exchange Resins

 Industrial ion exchange units are produced in sizes ranging from a few litres up to vessels holding several tonnes of resin.



Blowers

 Twin Lobe Air Blowers available for flow rates from 25 m3/hr to 10,000 m3/hr in single stage & up to any capacity in parallel configuration, for working pressures up to 1 Kg/cm2.



Filter Press

 Available in multiple sizes and grades for numerous applications

Spares, Chemical and Components





Spun & Wound Filter Cartridges

- Made of 100% polypropylene
- High strength and pressure resistance
- Full range of sizes from 10"to 60" length



Dosing Pumps

- Electronically operated mechanically actuated diaphragm
- Steady state accuracy + 5%
- MOC: ANSI 316, PP, PTFE



Cartridge Filter Housing

- Accommodates for 10", 20", 30", 40", 60" long cartridges
- Flow rate up to 2000 m3/hr



U.V Systems

Several applications including drinking water disinfection, drinking water purification, wastewater treatment, wastewater recycling, rainwater harvesting,



FRP Tanks

 Available in multiple sizes and grades for numerous applications



Ozonators

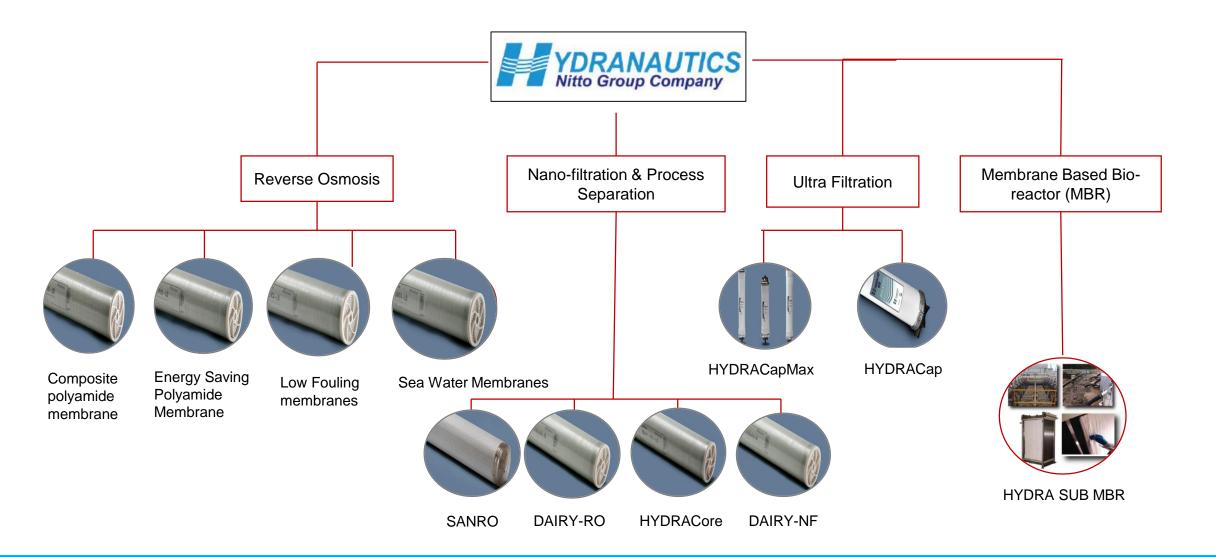
- High Voltage, High Frequency Corona discharge
- Long life Stainless Steel 316 electrode
- Patented Ozone block technology

Membranes - Authorized pan India sales & services partner



Hydranautics membranes, spares and other utility items

Membrane Technology







Valued Services, covering end to end spectrum in the water cycle





Operation & Maintenance

- Complete responsibility of operating and maintaining the customer's plant.
- Allows the customer to focus on their core activities.



Water Testing

- Envi Lab facility to test the customer's source water
- Effluent and report the required parameters.
- Spectrometer



Retention Based Services

 Annual onsite maintenance and checking of provided equipment based on contracts



Water Audit & Consulting

- Review of existing design parameters and quality of source
- Recommendation to enhance the performance and longevity of the existing plant.



Revamp and Retrofitting

 Upgradation, Modification or expansion of the existing WWTP & WTP



Training and Skill Development

- Envi Learn training packages
- Government approved training centers
- Studies cover both theoretical and practical knowledge applications

What makes Envisol a preferred partner?



- 1. One stop place for all type of water and waste treatment related customer requirements Projects, Spares, Services
- 2. Single window for best globally available technologies across entire water treatment spectrum (either through own patents or licensed partners)
- 3. An extensive technology portfolio along with in house R&D Center
- 4. Proven process know how and experience
- 5. Experience as a reclamation plant operator
- 6. Multinational experience, which ensures an understanding of different local needs
- 7. Strong team of over 400 people; Industry veterans, respected by customers, vendors and competitors

Some of ourr valued Customers





























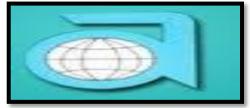




















Thankyou

Contact No: 1800 843 9988

Email id: customer.care@envisol.co.in