About Us

Envisol
A part of Arvind Limited
Our Business is Water

Arvind Limited, a part of the $1.7 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.

AEL is a world class water management company providing end to end solutions for water treatment, industrial waste water treatment, sewage treatment, desalination and Zero Liquid Discharge (ZLD) solutions at minimal costs.

100+ Million Litres water and waste water processed per day

150+ Projects executed till date

38 Registered Patents across the globe

END TO END Offerings in the entire water chain

STRONG Pre Qualification References
Our Vision
Provide sustainable environment solutions

To become the most preferred organization for all stakeholders by providing the best sustainable solutions in the field of water and wastewater treatment and zero liquid discharge, making world a better place to live in.

Provide leading edge technology and value-added convergent solutions.

Develop and deliver the best, cost effective and reliable solutions maximising value for our customers.

Invest, collaborate and partner to develop new ideas and technologies that will enhance the future.

Provide best working environment to our employees and vendor partners. Cultivate a high performance people culture.

Create wealth for our shareholders.
Envisol has a global footprint with a modern supply chain and offices spread across 6 continents.
In order to cater to different need segments, Envisol has organized itself into 3 verticals.

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<th>Infra Practice</th>
<th>Design, Service &amp; Support (DSS) Practice</th>
<th>Knowledge Practice</th>
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<td>• Projects on EPC as well as on BOOT basis</td>
<td>• Offerings to clients and partner OEMs through in-house brand</td>
<td>• Niche services offered to customers / Analytics</td>
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<td>• Sectors include:</td>
<td>• Products and services include:</td>
<td>• Services include:</td>
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<td>• Municipal</td>
<td>• Components</td>
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<td>• Desalination</td>
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<td>• Drinking water</td>
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<td>• Hi-purity water</td>
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Textiles  Pharma  F&B  Chemicals  Oil & Gas  Automobiles  ..& Other Industries
The three verticals offer solutions across water, waste water, solid waste and emission problems employing clean energy.
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
Technological Capabilities (1/3)

Primary treatment
To remove physical impurities like suspended solids, oil and colour

- Clarifiers and Clariflocculators
- Tube settlers/parallel plate separators
- High rate solid contact clarifiers

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)
- Dissolved air floatation (DAF)
- Electro Coagulation
- Pipe flocculator
- 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) – spiral
- Reverse Osmosis (RO) – disc

Advanced Oxidation
- Ozonation
- Envi_Oxy system
Technological Capabilities (3/3)

Evaporation Technologies

- Mechanical Vapor Recompression (MVR)
- Multi Effect Distillation (MED)
- Agitated Thin Film Dryer (ATFD)
- Multi Effect Evaporators (MEE) and Crystallizers

Sludge Management Technologies

- Sludge Digester
- Incinerator
- Screw Press
- Centrifuge
- Filter Press
- Belt Press

Multi Stage Flash (MSF) Evaporators

Envisol
POWERED BY Arvind
Installation Reference

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

CCECC ETHIOPIA CONSTRUCTION P.L.C.

Ref. No.: CCECC/ETHIO-HIPIED/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 $11,180,000 (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.
Zero Liquid Discharge

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

ZLD is a water treatment process in which all waste water is purified and recycled leaving zero discharge at the end of treatment cycle.
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.

MVR Fan - Heart of the system

Cassette

The Evaporation Module

Operating Principle – Evaporation Module

Patented Polymer film
Significant advantages in operating costs can be achieved through Polymeric Film Evaporation Technology.

**Operating cost comparison – Rs/m3**

<table>
<thead>
<tr>
<th></th>
<th>Power consumption(^1) (KWH/m3)</th>
<th>Steam consumption(^1) (Kg/m3)</th>
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</thead>
<tbody>
<tr>
<td>MEE - 1 Stage</td>
<td>35</td>
<td>1100</td>
</tr>
<tr>
<td>MEE - 4 stage</td>
<td>22</td>
<td>320</td>
</tr>
<tr>
<td>Conventional MVR</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Polymeric MVR</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

**Polymer 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
Crystallizer Unit & Salt Recovery Application
KaiGO
Design, Service & Support (DSS) Practice
Why “KaiGO”

Making ‘ZLD/ETP’ affordable

ZLD and effluent treatment technologies have been historically very expensive since all know-how and technologies are imported. KaiGO aims to break the shackles by localization of technologies, making it more affordable and worthwhile for Indian industries to invest in.

Agile supply chain, shorter lead times

Time is money, a fact Indian industries are acutely aware of on account of high cost of capital, time taken for compliances etc. A by-product of localization is that we give upto 50% shorter lead times.

Genuine service, no lock-in

With single window resolution and localized manufacturing, no longer do you need to fire fight separately for different components. We are democratic and confident in our product designs and service. Our standard products will not lock you into unreasonable maintenance contracts. If you are not happy with our service, you can easily migrate to any other provider.
KaiGO has a diverse and rapidly expanding range of products

**Membranes and Filters**
- RO, NF & UF Membrane
- MBR
- MCF

**Pressure tubes and tanks**
- Pressure tubes
- FRP Tanks

**Pumps and valves**
- HPP
- Dosing pump
- Valves
- Multiport valve

**DAF and media**
- Dissolved air flotation
- MBBR

**Screens and Press**
- Filter press
- Belt press and thickeners

**Mixers and aerators**
- Jet mixers
- Diffusers
- Ozonator
- Blower

**Chemicals and Resins**
- Chemicals
- Resins

**Instruments**
- Flowmeters
Overview of selected products in Arvind KaiGO

RO, UF and NF Membranes
KaiGO is an authorized distributor for Hydranautics membranes. It is highly energy saving and low fouling on account of its composite polyamide membrane.

MBR (Membrane Bio Reactor)
KaiMBR is a combination of membrane processes like UF with the ASP process. It has a small footprint, easy retrofit and enables upgrade.

Pressure tubes
KaiTUBE FRP pressure vessels are membrane housings for industrial and commercial water treatment applications such as desalination and reverse osmosis (RO).

FRP tanks
KaiTANKs, used to hold filter media, are manufactured with high quality FRP resin, suitable for drinking water, light in weight and 100% hydro tested with certificate.

Motorized Dosing pump
KaiDOSE motorized dosing pumps are suitable for larger volume dosing application. Mechanical, hydraulic & plunger options available.

High pressure pump
KaiPUMP can be used for both positive and negative displacement application. USPs include pump casing thickness of 1.5 mm, top and bottom casings of SS304, cartridge & split type mechanical seal etc.
Overview of selected products in Arvind KaiGO

**Electronic dosing pump**
KaiDOSE is a positive displacement pump. It pumps a very precise flow rate of a chemical into a tank. USPs – Air relief valve, solid PTFE diaphragm, Double NRV check valves, min SPM of 120

**Valves**
KaiVALVES control the flow and pressure within a system or process. Available from 1” to 40” in size and 150# to 2500# Class. Types available Gate/ Glove/ Check/ Butterfly/ Ball/ NRV/ Diaphragm

**MBBR**
KaiMBBR has 3 variants – PVA, Biochip and PU media, with surface areas ranging from 3000 m2/m3 to 47000 m2/m3. Reduces tank footprint, life > 5 years, highly resistant to wear and tear.

**Filter press**
KaiPRESS is specially designed to de-water sludge. It has various plate MOCs (PP/CI/SS), range of sizes, option for manual/hydraulic operation.

**Belt press and thickeners**
KaiBELT is rapidly turning out to be a good alternative to the manual Filter press. Fully automatic with option for thickener, it gives up to 30% solid consistency at outlet.

**ETP and RO Chemicals**
KaiCHEM offers several chemicals for water treatment
- Color removing chemicals
- Coagulants
- Polyelectrolytes
- RO antiscalants, cleaning and biocides
KaiGO offers precise and dependable Operations and Maintenance services

- **Highly Trained people**
- **Expert support**
- **Spares and consumables covered**

**Your plant**

- **Preventive maintenance**
- **Coverage of all legal and IR requirements**
- **Daily adherence to input and output values**

1. Zero downtime
2. Reduced Opex
3. Long life of capital equipment
4. Keep updated with latest technology
5. Compliance to safety norms
6. No budgetary risk
Engage
Service practice
Envisol can be your thought partner to keep you updated with the best water practices the world over

**Water audit and consulting**
- Project management consulting and assessment
- Review of existing design parameters and quality of source
- Recommendation to enhance the performance and longevity of the existing plant.
- Regular scorecard to accredit compliance to best practices

**Water testing**
- Envi – Lab facility to test the customer’s source water
- Effluent and report the required parameters.
- Spectrometer

**Training, R&D and skill development**
- Training packages and courses
- Government approved training centers
- Studies cover both theoretical and practical knowledge applications
- R&D facilities to help you design new offerings
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 our valued Customers
Thank you!

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