



## Integrated Turnkey Solutions for Infrastructure Growth

Water Supply Schemes & Distribution Systems  
Sewage Treatment & Disposal Systems  
Sea Water Intake & Desalination  
Pumping Stations & Pipeline Projects  
Waste-to-Energy Projects  
Industrial Utility Complexes  
O&M Services





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# Turnkey Projects for Industrial & Municipal



From total water to entire environment solutions, for every sector - industrial, institutional, infrastructure, municipal and household, urban and rural. And now embarking on turnkey projects for industrial and municipal infrastructure....

While strengthening our dominance in total water management Ion Exchange (India) Ltd., and joint venture Ion Exchange Waterleau Ltd., now provide integrated environment management that spans water, liquid and gaseous effluents, solid waste and recovery of energy from waste.

And, recently established subsidiary Ion Exchange Infrastructure Ltd. offers specialist design, engineering and construction services for large infrastructural and environment projects.

Together, bringing full spectrum capability for undertaking turnkey contracts on EPC and BOO/T basis, for industrial, municipal and infrastructure development projects.

This issue spotlights recent contracts for industrial and municipal infrastructure.

Turnkey Projects on EPC & BOO/T
Water Supply Schemes & Distribution Systems
Sewage Treatment & Disposal Systems
Waste Water Recycle
Sea Water Intake & Desalination
Pumping Stations & Pipeline Projects
Solid Waste Management
Waste-to-Energy Projects
Industrial Utility Complexes
O&M Services

# Infrastructure



## Forging Ahead at JSW Steel

Complete water systems package for JSW Steel Ltd.'s long product mill to manufacture bar rods and wire rods at Toranagallu, near Bellary, Karnataka.

JSW Steel is a part of the JSW (O.P. Jindal)

Group with revenues of around

US\$ 4 billion from diversified interests in steel, energy, minerals and mining, infrastructure & logistics, cement & IT.



Overall View of Utility Water System during construction





**Overhead Tank**

Since 2005, Ion Exchange India has been managing the water systems at JSW Steel's integrated steel plant at Toranagallu. Based on the excellent performance of our team in effectively and efficiently managing the complete water systems for the steel complex, JSW Steel has awarded us a series of contracts for various water and waste water treatment plants for their various projects – blast furnace, CRM, coke oven etc.

As part of its plans to expand capacity to 7 MTPA and thereafter to 10 MTPA, JSW Steel is installing a 1.6 MTPA long product mill to manufacture bar and wire rods. This mill, like all other steel mills, needed a complete water cooling and conveyance system comprising cooling towers, pumps, blowers, filters etc. – requirements that our subsidiary Ion Exchange Infrastructure is eminently equipped to handle,

given their experience and capability in construction of large projects. Ion Exchange Infrastructure with the help of their steel specialist designed a water systems package and was awarded the contract by JSW Steel, based on their comfort level with the design and our proven past performance.

**A Complete Package**

- Indirect cooling water systems of the reheating furnaces
- Indirect cooling water systems of the bar rod mill and wire rod mill
- Direct cooling water systems of the bar rod mill and wire rod mill

Each of these water systems incorporates complete pumping systems, piping, cooling towers and side stream filters for cooling towers, and also includes all related instrumentation, automation, electricals etc. Additionally, the direct cooling water system comprises a series of vertical high rate pressure filters for mill scale filtration. The contract includes the complete design of the civil structures for the complex along with sizing of critical process civil structures like the scale pit etc.

Subsequently, we have been awarded the turnkey contract along with 10-year O&M of the waste water recycling system at JSW Steel.



**Furnace Skid CT**



**Settling Tank**



**Direct Cooling Water CT**



**Underground Piping**



**Indirect Cooling Water Pump House**

# Revving Up for General Motors India



Central Utility Complex



Utility Piping



Water Treatment



Effluent Treatment Plant



Compressors



Hot Water Generators



LPG Storage



Motor Control Centre

General Motors India Pvt. Ltd. is a wholly owned subsidiary of General Motors Corporation (GM), the world's largest auto maker headquartered in Detroit, USA with over 130 car and truck manufacturing facilities spread over 33 countries. The annual global industry sales leader for 76 years, GM today employs about 284,000 people around the world, with global sales of US \$180 billion. In 2006, 9.1 million GM cars and trucks were sold globally under well known brands such as Buick, Cadillac, Chevrolet, GMC, GM Daewoo, Holden, HUMMER, Opel, Pontiac, Saab, Saturn and Vauxhall.

GM has one plant in India, in Halol, Gujarat, and the second project at Talegaon was planned considering the huge growing market for automobiles in India. Through their worldwide facilities group, GM was scouting for an organisation to undertake the design and construction of the complete utility complex for the Talegaon car plant. Ion Exchange Infrastructure, with its project management

**Complete central utility complex (CUC) for the 1,40,000 vehicle manufacturing plant of General Motors India Pvt. Ltd. at Talegaon, Pune, Maharashtra**

expertise and extensive domain knowledge in water and waste water treatment as well as in piping, electricals, instrumentation etc. successfully won GM's confidence in our capability to undertake the entire central utility complex. Working closely with the customer and various package

suppliers, the complete utility package was designed and offered to General Motors.

After review and discussions with the worldwide facilities group and the General Motors India project team, the contract was awarded to Ion Exchange Infrastructure for the turnkey design, engineering, procurement and construction of the central utility complex.

Following its commissioning, the Ion Exchange team has moved

in to operate and maintain the complex for General Motors India.

The central utility complex produces and delivers all required utilities like compressed air, potable water, process water, hot water, etc. to the paint shop. The waste water from the car



Top officials of General Motors, Mr. Robert Moran (Asia Pacific Manufacturing Head) and Mr. Philip Kinlie at General Motors India's Central Utility Complex for the inauguration of the water treatment plant and compressed air system.



plant is collected at the central utility complex, treated in the waste water treatment plant and delivered to the site sanitary sewer.

The water treatment plant and all accessories are designed and supplied by Ion Exchange India, and the 600 m<sup>3</sup>/day effluent treatment plant and all accessories by our joint

venture Ion Exchange Waterleau.

On-site and classroom training covering process, technological, operation and maintenance aspects of the plant were imparted to the client's personnel. All the systems were integrated into the central utility complex building which also houses the laboratory, office complexes etc. The systems provided are fully automatic with state-of-art instrumentation and automation. The complete electrical work, piping, pipe racks, storage tanks & building construction were undertaken by Ion Exchange Infrastructure.

The various systems constructed by Ion Exchange Infrastructure include:

- Raw water treatment for MIDC-supplied fresh water
- Process water treatment to produce demineralised water for the paint shop
- Potable water treatment for the plant's drinking water
- Waste water treatment plant to treat waste water from various shops within the car plant including oily waste water from phosphate stages, the ELPO waste water and general waste water
- Compressor to generate compressed air at required flow and pressure for the complete car plant
- Hot water generator along with chimney and other accessories to deliver hot water at required temperature for the paint shop
- Welder water treatment and cooling package for the body shop
- DG set for power backup
- LPG storage yard with bullets and necessary safety infrastructure
- Fire fighting systems

## Urban Infrastructure Project at Rampur

**Project for laying deep sewer network for Zone II of Rampur City, Uttar Pradesh, for the Regional Centre of Science and Environment**

Ion Exchange received the contract for laying 54 kms of deep sewer network for Zone II of Rampur, from The Regional Centre of Science and Environment. Tetrtech India, subsidiary of US MNC Tetrtech, was the project monitoring consultants for this contract. The work involved laying a sewer network of RCC piping ranging from 150 mm to 1000 mm dia. in very narrow stretches of the city at depths extending from 1.5 to 8 m. The project was executed by Ion Exchange Infrastructure and supervised by C&DS (Uttar Pradesh Jal Nigam).

Since some of the stretches were so narrow that normal excavation was not possible, about 1 km of sewer network was executed using trenchless technology. Laying around 700 m of sewer piping in a day at peak work progress, the complete network of 54 kms was completed within nine months, including the monsoon period.



# Major Engineering Contracts

## Steel Solutions Surge Supreme

### JSW Steel Recycles Cooling Tower Blowdown

**A milestone contract for us – the first water recycling plant for an integrated steel plant in India**

JSW Steel made use of fresh water from the Tungabhadra River for their operations at Toranagallu, Bellary in Karnataka. Keen on reducing fresh water intake, as a first step JSW decided to treat the cooling tower blowdown from three units viz. the hot strip mill, basic oxygen furnace (BOF) and cold rolling mill (CRM); this water was not being treated and was used mostly for low-end applications such as pellet plant and slag quenching.

Ion Exchange India was awarded the contract for treating 125 m<sup>3</sup>/h cooling tower blowdown which will give 105 m<sup>3</sup>/h reverse osmosis (RO) permeate of excellent quality, with TDS < 250 ppm. The process comprises physico-chemical treatment with high rate solids contact clarification, sand and carbon filtration, ultra filtration and two-stage RO. The treated water will be used for high-end applications like the process requirements of the CRM. The RO reject will be used for slag quenching.

The contract is on EPC plus O&M model as, apart from constructing the plant, the scope includes 10-year complete O&M services – inclusive of manpower, maintenance and supply of all spares, chemicals and consumables.

Once this plant is operational, JSW plans to recycle about 400 m<sup>3</sup>/h more waste water from various other sources to further reduce fresh water consumption.



Diffused air floatation



Aeration Tanks

Ion Exchange Waterleau successfully completed and handed over the Phase-I, of the 2200 m<sup>3</sup>/day effluent treatment plant for JSW Steel's CRM unit at Bellary. In the Phase II effluent treatment plant, under commissioning, the complex effluents from various CRM operations containing very high oil and grease, organics and heavy metals in highly acidic and alkaline streams are treated in a specifically designed system to achieve safe disposal standards in line with pollution control board requirements. This contract followed Ion Exchange India's success in treating CRM effluent earlier for Tata Steel.





## Essar Contract for Effluent Treatment

Essar Steel Ltd. awarded Ion Exchange Waterleau the contract for effluent treatment plant for its CRM unit at Hazira. The treatment scheme involves customised, segregated treatment of various streams to treat very high oil and grease, organics, heavy metals in highly acidic and alkaline streams to achieve safe disposal standards in line with requirements of the pollution control board; the plant is PLC operated, with SCADA monitoring. With this, the steel sector has underscored its confidence in Ion Exchange Waterleau's expertise in the field.



Water treatment plant (high rate solids contact clarifier, ultra filtration, reverse osmosis and demineralisation) commissioned at BMM Ispat, Hospet, Karnataka.

## Auto Success

**Ion Exchange Waterleau was awarded turnkey execution of 960 m<sup>3</sup>/day effluent treatment plant for Maruti Suzuki's greenfield project at Manesar, Haryana**



Right from inception Ion Exchange India has been the preferred vendor of Maruti Suzuki, with contracts for water, effluent and sewage treatment and effluent recycling entrusted to us as per Maruti's expansion programme. Understandably, way back in 1997, we were the obvious choice for the first ever effluent recycling based on reverse osmosis in the automobile sector.

So, no surprise then that the turnkey concept-to-commissioning contract for effluent treatment plant was awarded to Ion Exchange Waterleau, for Maruti Suzuki's 300,000 cars/year expansion project at Manesar, Haryana. Effluents from all the operations are treated in a 960 m<sup>3</sup>/day centralised effluent treatment plant comprising dissolved air floatation followed by aerobic bio-degradation and regenerative filtration. The treated output will be reused for auxiliary applications and gardening.

## Flying High

From L&T, Chennai, Tamil Nadu, an order for three multigrade filters and a softener for the International Airport at Hyderabad.



A 23 m<sup>3</sup>/day new generation packaged sewage treatment plant for Bangalore International Airport.





## Their Choice of Brew



When Heineken, the world's leading beer manufacturer, decided to put up a greenfield project in India - Asia Pacific Pearl Pvt. Ltd. at Hyderabad, to produce their world famous brands, Ion Exchange was the obvious choice for water and waste water management, particularly as breweries produce complex effluents high on organics.

Based on global domain expertise of many years in treating brewery effluent, Ion Exchange Waterleau was awarded the order for a 1000 m<sup>3</sup>/day effluent treatment plant. The state-of-the-art, PLC operated plant comprises a LUCAS anaerobic system (UASB), which converts 2000 kgs/day of COD into the valuable by-product of biogas, followed by a LUCAS secondary aerobic system based on cyclic activated sequencing batch reactor (SBR) treatment process. The LUCAS SBR treatment process offers the advantages of a compact, modular, easy to operate-and-expand system with less maintenance compared with conventional systems, due to the absence of a secondary clarifier mechanism and sludge recirculation pumps.

To conserve water, it was decided to recycle the treated effluent for use in utility and auxiliary applications. The recycle system added on comprises a high rate solids contact clarifier for silica removal, regenerative filtration followed by ultra filtration and reverse osmosis. Biogas, as an energy source, and water from the effluent recycling plant are the net resource gains. The water treatment and management system was supplied by Ion Exchange India thus completing total water management solutions for the brewery.

Ion Exchange Waterleau's first export order, from Asia Pacific Brewery, Sri Lanka, is for augmentation of the existing 250 m<sup>3</sup>/day effluent treatment



plant to 500 m<sup>3</sup>/day by inclusion of LUCAS anaerobic system (UASB) followed by upgradation of the existing aerobic biological system.

## Restoring Clear Waters



The eutrophication of the large 50 hectare Hebbal lake at Bangalore was adversely affecting realty value in the vicinity and had also become a prime impediment to the development of a high end complex in the area by East India Hotels (Oberoi chain), Delhi.



LUCAS technology offered by Ion Exchange Waterleau is the ideal solution for nutrient removal to abate eutrophication of water bodies. Together with East India Hotels, Ion Exchange Waterleau took up this lake cleaning and restoration project.

Ion Exchange Waterleau installed a state-of-the-art 4 MLD capacity sewage

reclamation plant based on its proprietary technology of cyclic activated sequencing batch reactor

process with co-current removal of nutrients - the culprits behind the eutrophication. The cyclic sequencing batch reactor (SBR) technology of Ion Exchange Waterleau is ideal for sewage and industrial effluent reclamation as it offers very compact modular solutions (requiring just 25 per cent area of conventional systems) that are also very user friendly with PLC operations. Ion Exchange Waterleau will also undertake the responsibility of operating and maintaining the system.

The treated sewage, free from organics and nutrients, will be used to replenish water losses from this large water body. The restored lake has not only added to the aesthetics and value of the area but will be developed as a recreational tourist attraction to generate revenue.



# Water Power

Ion Exchange is presently engaged in providing water systems for several power projects of the National Thermal Power Corporation (NTPC) and Reliance (ADA) groups.

The **Indira Gandhi Super Thermal Power Project (IGSTPP)** is a prestigious 3x500 MW project linked to the Commonwealth Games scheduled in 2010. This project is being set up at Jhajjar, in Haryana by the Aravali Power Co. (P) Ltd., a venture jointly promoted by NTPC along with the governments of Delhi and Haryana. Ion Exchange India has been awarded the contract for the demineralisation plant, the core and qualitative requirement for any thermal power plant.

**Reliance (ADA) Group, the leading promoters of power projects in the private sector, are currently at an advanced stage of executing two projects in Uttar Pradesh – at Rosa (near Shahjahanpur) and at Parichha (near Jhansi).**

**Rosa Power Supply Company Limited (RPSCL)**, a fully owned subsidiary of Reliance Energy, is developing a 600 (2x300) MW coal-fired power project, Rosa Phase I, at Rosa village in Shahjahanpur. The complete water system that includes 2 x 1675 m<sup>3</sup>/h pretreatment, 2 x 80 m<sup>3</sup>/h demineralisation plant and the cooling water treatment system is being designed, engineered and built by us. The drinking water reverse osmosis system too for the Rosa township has been awarded to us.



Reliance Energy Ltd. is the EPC contractor for the 2x250 MW **Parichha Thermal Power Station** for Uttar Pradesh Rajya Vidyut Utpadan Nigam. For this project as well, our 44 years of expertise in total water management

provided them the confidence to entrust us with the design, engineering and construction of the complete water system including 2 x 1260 m<sup>3</sup>/h pretreatment, 2 x 85 m<sup>3</sup>/h demineralisation plant and cooling water treatment system.

While civil construction portion in both contracts is retained by Reliance, the civil design and engineering is being provided by Ion Exchange India.



Against international competitive bidding, we were awarded the design, engineering, supply, erection and commissioning of a 7 MLD sea water reverse osmosis (SWRO) plant for the 4 x 330 MW **Mundra Thermal Power Project of Adani Power Ltd.** at Mundra, Gujarat. The scheme consists of a flash mixer, flocculation tank, lamella clarifier, gravity filter, pressure filters, cartridge filter, high pressure pump with pressure exchanger and RO modules with four skids. The scope includes process and mechanical equipment along with a high tension electrical system of 6.6 KV HT switchgear, transformer, all electrical work and PLC based control system. The contract also includes detailed civil design of the RO plant.

From **Tata Projects** for Mahgenco, Bhusaval a 2 x 1600 m<sup>3</sup>/h pretreatment plant, 3 x 100 m<sup>3</sup>/h demineralisation plant, 14 x 250 m<sup>3</sup>/h softening plant and 1000 m<sup>3</sup>/h effluent treatment plant.

Order from **BHEL**, New Delhi for an 870 m<sup>3</sup>/h pretreatment plant for the cooling water system & 135 m<sup>3</sup>/h pretreatment for demineralisation plant. And from **BHEL**, Bhopal, contract for retrofitting water treatment plant at Ukai Thermal Power Station, for Gujarat State Electricity Corporation Ltd.

From **Barauni Thermal Power Station**, contract for supply of all material/ equipment and services required for restoration of the water treatment plant at Barauni Thermal Power Station, Bihar.

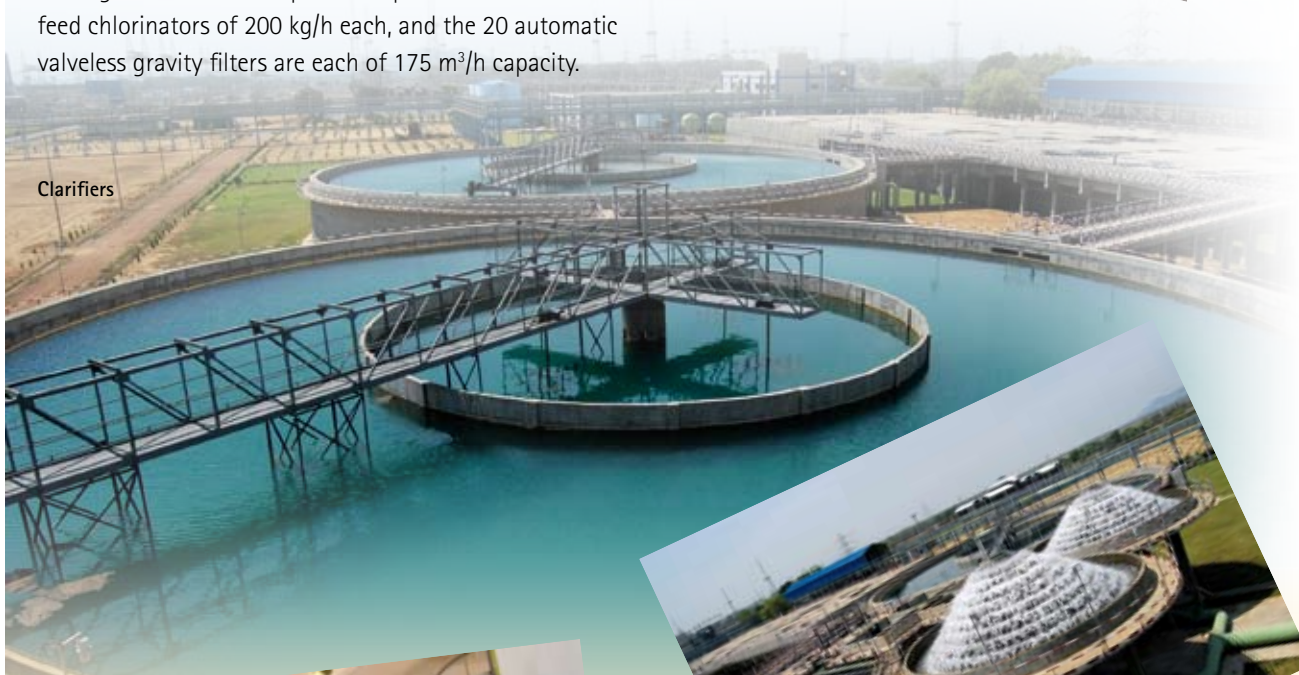


## Water Management at O.P. Jindal Thermal Power Project, Chhattisgarh

Successfully commissioned, plant comprising pretreatment, demineralisation with ultra filtration, side stream filtration and chlorination with accessories and auxiliary packages for the 1000 MW (4x250 MW) O.P. Jindal Thermal Power Project at Tamnar, District Raigarh, Chhattisgarh. The pretreatment plant consists of three clarifiers, each of 1750 m<sup>3</sup>/h capacity; demineralisation plant consists of a 3 x 100 m<sup>3</sup>/h chain, ultra filtration along with accessories and auxiliaries, cooling water treatment plant comprises six vacuum feed chlorinators of 200 kg/h each, and the 20 automatic valveless gravity filters are each of 175 m<sup>3</sup>/h capacity.



Auto Valveless Gravity Filters



Clarifiers



Cascade Aeration



Demineralisation Plant



Control Centre

## Cementing Ties



### SWRO Plant for Gujarat Anjan Cement

An order from Gujarat Anjan Cement Ltd., Kutch, for a 6 MLD sea water reverse osmosis (SWRO) plant. The treatment scheme consists of a flash mixer, flocculation tank, lamella clarifier, gravity filter, pressure filters, cartridge filter, and high pressure pump with turbo and RO modules with three skids of 85 m<sup>3</sup>/h each.

### Zero Discharge at Ambuja Cement

Ambuja Cement (HOLICIM), Ropar, Punjab awarded us the contract for a zero discharge plant – our first complete zero discharge project where the entire recycling system as well as the evaporator equipment are being supplied by us. And it is also the first integrated zero discharge project for a cement plant in India; it will recover over 93 per cent of the waste water for reuse and the balance 7 per cent will be evaporated leaving no liquid waste for discharge.

The plant will treat 500 m<sup>3</sup>/day of waste water comprising cooling tower blowdown, softener regeneration waste and DM plant regeneration waste using clarification, ultra filtration and two-stage reverse osmosis. The reject from the second RO plant will be taken to an evaporator. The recycled treated water will have TDS < 200 ppm.



Water treatment plant for Chettinad Cement Corporation, Puliur, Tamil Nadu. The scheme includes pressure sand filtration, ultra filtration, reverse osmosis, degassification and demineralisation.

## Purity in Every Drop



A high purity generation and distribution system using PVDF pipes from Moser Baer, Noida, Uttar Pradesh; it produces water with resistivity of 18 megaohm.

A high purity water system comprising clarifier, ultra filtration and two-stage reverse osmosis, followed by hot sanitisable electro-deionisation, for Hindustan Lever, Kandla SEZ, Gujarat.



# In the News



## Waste to Energy at TNPL

Public sector unit Tamil Nadu Newsprint and Papers Limited (TNPL) manufactures high quality newsprint at its plant in Karur, Tamil Nadu. It has a full scale effluent treatment plant to treat the waste water generated from various sources within the mill premises.

Bagasse, the raw material used here for producing paper pulp, is stored in huge piles and water is sprinkled over it, to avoid dry bagasse fines being carried away by the wind. The leachate from these piles, called bagasse wash water, contains



High Rate Solids Contact Clarifier

high concentrations of sugar based organics. TNPL wanted to produce methane rich biogas from this waste water to



Upflow Anaerobic Sludge Blanket (UASB)

supplement its energy requirement by using biogas as an alternate energy source, and the contract was awarded to Ion Exchange Waterleau after a competitive techno-commercial tender process.

In this waste-to-energy plant, raw bagasse wash water is treated in a high rate solids contact clarifier to remove suspended solids to the maximum extent (to avoid choking of the anaerobic reactor) and then passed through an upflow anaerobic sludge blanket (UASB) reactor for biogas generation and reduction in organic pollutants in the effluent. UASB treated effluent flows to the existing effluent treatment plant for further downstream treatment.



2 x 80 m<sup>3</sup>/h ultrafiltration and reverse osmosis plants to treat river water at Tamil Nadu Newsprint and Papers Ltd., Karur, Tamil Nadu.

## International Contracts

Contract for 5000 m<sup>3</sup>/day water treatment plant and 300 m<sup>3</sup>/day demineralisation plant consisting of a high rate solids contact clarifier and auto filtration units from the largest **paper mill in Saudi Arabia**, awarded against international and local competition.

From **Unger Steel Me. Fze.** through Ibtikariar Architectural/Engineering Consultants, a 1500 m<sup>3</sup>/day membrane bio-reactor.

For the the **LULU Island Development Project**, membrane bio-reactor of capacity 3 x 800 m<sup>3</sup>/day. Ion Exchange also won the 5-year contract for O&M and supply of spares and consumables for this project.

At **Asia Pacific Lanka Breweries Limited**, Sri Lanka - first international installation of iron removal filter (22 m<sup>3</sup>/h) and an ultra filtration system (20 m<sup>3</sup>/h).

30 m<sup>3</sup>/h pretreatment plant includes high rate solids contact clarifier, primary sand filter and activated carbon filter and a demineralisation plant of 15 m<sup>3</sup>/h, at **West Kenya Sugar Limited**, Kenya ordered through National Heavy Engineering Cooperative Limited.

Fluidised media reactor at **Gulf Petrochemicals Services & Trading LLC**, Oman.



Pretreatment, demineralisation and waste water treatment package supplied to EPC Tepat Teknik Sdn. Bhd. (MMC Group) with Mitsubishi Corporation and Mitsubishi Heavy Industries, Yokohama as consortium partners. Commissioned and handed over to Sepangar Bay 100 MW gas fired power plant at Kota Kinabalu, Sabah, Malaysia.

## Nuclear Feat



**W**e have successfully designed, supplied, commissioned and handed over a 170 m<sup>3</sup>/h uranium recovery plant to Uranium Corporation of India Limited (UCIL). This is for its prestigious 3000 MT

per day capacity project for uranium ore mining and processing at Turamdih, Jharkhand.



**P**restigious boron enrichment plant handed over to Heavy Water Board, Manuguru. Contract included related instrumentation and electricals, as well as PLC. The process of enrichment of boron (B10) from



naturally occurring boric acid is based on isotopic exchange between borate ions on an anion exchanger and boric acid in solution in contact with resin.





Auto demineralisation plant at ST-CMS, Neyveli, Tamil Nadu



Integrated water and waste water management for Rohm and Haas' Chennai facility, at Tamil Nadu. Water treatment scheme includes high rate solids contact clarifier, multigrade filter, UV steriliser, reverse osmosis and degasser, while that of the waste water treatment plant consists of biological section, multigrade filter, ultra filtration and two stage reverse osmosis.

## An Expanding Overseas Presence

### GCC Operations Launched in Sharjah's Hamariya Free Zone



Under the patronage of His Highness Sheikh Majid Bin Saeed Al Nuaimi, Chairman of Ajman Ruler's Court and in the presence of His Excellency Dr. Rasheed Al Leem, Director General of Al Hamariya Free Zone, Mr. Rajesh Sharma, our Vice Chairman & Managing Director, announced the launch of our operations in the GCC countries, at a gala dinner held at Le Meridien, Dubai.



The GCC operations, headquartered in the Hamariya Free Zone, Sharjah, will be the hub to cater to the entire

Middle East and Africa, offering total environment solutions for industry as well as ZeroB water purification processes for homes. Our offices in UAE, Oman and Saudi Arabia are well positioned to cater to needs of the customers in these regions. Already, several reverse osmosis systems have been assembled and despatched from the Hamariya facility.

## Ion Exchange Goes West

Our subsidiary company Ion Exchange LLC, headquartered in California, USA with an office in Ontario, Canada will cater to the North American market for distribution and sales of our ion exchange resins for water and speciality applications, and water treatment equipment.

# International Tie-Ups

## With Triogen of UK

Ion Exchange India has entered into a representative agreement with Triogen (Degremont Technologies), based in Glasgow, UK. Triogen is one of the world's leading design and manufacturing companies specialising in UV systems for leisure and industrial applications. Their wide range includes low and medium pressure UV systems for applications ranging from general water disinfection and drinking water disinfection to high purity water disinfection, TOC reduction and deozoneation.



The full range of industrial applications.

- Drinking water disinfection
- Process general purpose water disinfection
- Water feature and fountain disinfection
- Waste water disinfection
- High purity water deozoneation
- General purpose deozoneation
- High purity water disinfection
- High purity water TOC reduction
- General purpose TOC reduction
- Aquarium and sea water disinfection

Triogen products will be marketed, sold and serviced in the Indian sub-continent by us with support from Triogen UK.

## ...And Ozonia of Switzerland

Ion Exchange India has entered into a representative agreement with Ozonia for their complete range of ozonators for the industrial segment. Ozonia, headquartered in Switzerland, is a world leader and innovator in ozone generator technology, and their developments in this field include the self centred AT dielectric segment technology that has allowed increased



purity applications which generate ozone from pure water. The Ozonia range also comprises containerised ozone generator systems capable of generating over 250 kg/h.

The application areas for these systems are primarily in the area of waste water reuse and process water treatment. The Membrel range will be exclusively used for disinfection of high purity water loops (pharma and electronics).



ozone concentration with greater energy efficiency. Ozonia's worldwide ozone production capacity exceeds 15000 kg/h since 1991.

Ozonia's range of products varies from small lab units generating 4 gm/h to large XF units generating over 97 kg/h from a single unit. Ozonia's product range also includes innovative Membrel ozonators for high

These systems would be sold and serviced by Ion Exchange in the Indian subcontinent with technical support from Ozonia Switzerland.





## O&M on the Rise

Ion Exchange has the largest service infrastructure in the water treatment industry in Asia. This large network of more than 1200 trained service and plant management personnel operates, maintains and provides services for water, waste water and other utilities in various industries including thermal and nuclear power, refineries, petrochemical, automobile etc.



Operating RO plant at O&M site



24x7 service support at O&M site



Inspection team conducts O&M audit of plant

## Total O&M of Tertiary Effluent Facilities for CPCL

Considering our expertise in operating/maintaining more than 2,000 water systems, cooling tower systems and other utilities for industrial customers in India, Chennai Petroleum Corporation Ltd. (CPCL), following a process of competitive bidding, awarded Ion Exchange the complete O&M of all the waste water treatment and recycling facilities. The contract includes

comprehensive O&M services for all the tertiary effluent treatment systems supplied by us as well as by our competitors. The plants being operated and maintained by Ion Exchange in the complex include

- Sewage Recovery Plant, 11 MLD
- Zero Discharge Plant, 4.8 MLD
- Reject Handling Plant, 1 MLD
- Pilot Plant, 1 MLD

This complex network of various plants treating sewage from Chennai city and recycling process effluents are operated by a team of over 100 professionals from Ion Exchange headed by an overall

plant manager, assisted by different sectional heads. This O&M contract is for the single largest advanced recycling facilities being operated in the country and is responsible for producing almost 14 million litres of recycled water every day (14 MLD).



## For Sea Water Desalination Plant at GMDC



**G**ujarat Mineral Development Corporation (GMDC) had a multi-effect distillation plant for desalination of sea water at their facility in the remote coastal area of Bhuj. The contract for O&M for this desalination plant, constructed using MED technology, was awarded to Ion Exchange mid-2007. The plant generates treated water for use in all processes and for drinking. The MED plant was operating at 60 per cent of rated capacity at the time of our taking over the O&M; it has now been ramped up to the designed capacity after taking over its operation and proper monitoring, and taking care of all necessary maintenance activities.

## O&M for JSW

**A**part from the contract for treating 125 m<sup>3</sup>/h waste water and operating and maintaining the plant for a 10-year period, JSW Steel has also awarded the O&M contract for the water and waste water treatment plants constructed by us at their CRM complex in Bellary. This contract involves 24x7 maintenance of all systems including the 2x35 m<sup>3</sup>/h demineralisation plant and the two effluent treatment plants, with an aggregate capacity of 2200 m<sup>3</sup>/day. The effluent treatment plants will treat waste water generated in the CRM complex and make it suitable for discharge.

## For Bottling Plants at IRCTC

**T**he O&M of the complete bottling plants of Indian Railways Catering and Tourism Corporation Ltd. (IRCTC) are being managed by Ion Exchange since 2002 at the Nangloi facility near Delhi, and since 2004 at Danapur near Patna. Each plant currently produces over 66,000 bottles/day of the hugely popular bottled water brand 'Railneer'. Our O&M scope includes the state-of-art water treatment plant, the bottle blowing and bottle filling machine, conveyors, capping, labeling, packaging, etc. The O&M team also manages all the required utilities and sub-systems required for operation including chillers, compressors, chemical and microbial



laboratory etc. The plants produce water of the highest quality meeting the stringent standards of regulations in India and worldwide. Currently the IRCTC plant at Nangloi near Delhi is being expanded by Ion Exchange and the expanded facility will increase production from the current 66,000 bottles to 1,02,000 bottles/day.

## Value Adding Services

**I**on Exchange Services launched first-of-its-kind services that offer customers tremendous value and convenience:

**Containerised Water Treatment Units:** mobile water treatment vans to cater to emergency requirements for treated water, providing quick and reliable solutions at site.

**Remote Monitoring System:** continuously monitors and acquires data from the instruments fitted onto the reverse osmosis plant and transmits this to their web server through the internet.



# Chlorine Phase-Out



For many years the use of chlorine has been considered effective in water purification, although some bacteria had developed resistance to it. However, over time, this view has changed because of the heavy downside, and its use is being phased out world over.

Chlorine, while killing or inactivating pathogens in water, reacts with natural organic matter to produce various by-products such as bromate, chlorite, haloacetic acid and trihalomethanes which are considered toxic, carcinogenic and likely to trigger cardiovascular diseases. A study conducted by the Medical College of Wisconsin, USA clearly associates cancer with chlorinated water. "The cancer risk among people drinking chlorinated water is 93 per cent higher than among those whose water does not contain chlorine," says the US Council of Environmental Quality. Moreover, production of chlorine is energy intensive and wasteful while its storage, transportation and handling can be a potential safety hazard as chlorine is a hazardous substance.

The trend against use of chlorine is not restricted to drinking water purification. Even industries such as food & beverages, pharmaceutical, chemical, and breweries are moving away from chlorine as the conventional disinfectant to state-of-the-art treatment such as ozonation, ultra violet (UV) sterilisation and chlorine dioxide (ClO<sub>2</sub>) generators.

Apart from its ability to kill micro-organisms, ozone has many distinct advantages over chlorine – the principal ones being that there is no production of haloform and no secondary byproducts, besides removal of unpleasant taste and smell. Ozone treatment of swimming pool water is widely accepted and has proven to provide a water quality that cannot be achieved with traditional chlorine treatment. The high oxidation potential of ozone, considerably higher than chlorine, has also prompted many industries to use ozone equipment in their manufacturing facilities. The major applications of ozone treatment are

in municipal water and waste water treatment, industrial process water treatment, waste water treatment and water disinfection for residential needs, hotels and clubs.

One of the most common economical and environment friendly water disinfection systems is ultra violet (UV) treatment. Strategic placement of properly designed and sized UV water treatment equipment may solve, prevent and minimise microbiological, organic, and TOC problems in many industries such as packaged water, food processing, pharmaceutical, semiconductor, power etc. In short, UV offers protection without the use of chemicals and, with recent developments in high energy UV technology, higher quality standards are achievable in a more simplified, efficient and cost-effective manner.

The latest trend is to use chlorine dioxide which is more effective in removing odour and taste and very effective against many difficult micro-organisms with no significant formation of trihalomethanes. In short, ClO<sub>2</sub> is a superior disinfectant to chlorine and is an extremely effective and selective oxidiser for textiles and wood pulp. ClO<sub>2</sub> is now coming into much more general use as a disinfectant deodoriser, steriliser and cleaning agent in many industrial applications such as food and beverages, dairy, process/cooling/waste water treatment, apart from drinking water and swimming pool applications.

## Conclusion

Although chlorine is the cheapest disinfectant and still being used in most countries, free chlorine, if not removed or controlled, can lead to serious health hazards. Leading market research and environment protection agencies have predicted the increased use of alternative techniques such as ozone, chlorine dioxide (ClO<sub>2</sub>), and for smaller communities and point-of-use, UV. These will soon become far more popular with both domestic and industrial customers; many believe it would be desirable if chlorination of water is entirely phased out because of the known health and environmental risks.

## ZERO B<sup>TM</sup> Water Vending Stations

The ZeroB Water Vending Station is a fully automated water dispensing machine. The multi-stage purification process assures fresh, pure and safe quality of water that meets USEPA standards. The micro-processor based system dispenses water accurately in 150 ml, 200 ml and 1000 ml quantities, without any wastage. Its built-in chiller and heater dispenses chilled and hot water as required, with a facility for dispensing room temperature water. An important benefit is reduction of 'plastic' pollution as

Four ZeroB water vending stations were installed at the International Flower Festival held at Gangtok.



it eliminates requirement of plastic bottles.

The ZeroB Water Vending Station is ideal for high traffic areas such as bus stands, railway stations, tourist spots, pilgrimage centres, super malls,

residential complexes, commercial establishments, factories, offices, hotels and hospitals. A countrywide ZeroB service network ensures prompt, efficient service.

ZeroB Water Vending Stations are successfully running at a number of railway platforms across India such as Ambala (Punjab) Kanpur (U.P.) Bangalore City (Karnataka) Chennai Central (Tamil Nadu) Kachiguda (A.P.) Vizag (A.P.)



## INDION<sup>®</sup> CHLOGEN

INDION CHLOGEN chlorine dioxide generator is a very reliable and cost effective solution in disinfection technology combining high performance, simplicity of use and low maintenance. It produces chlorine dioxide safely and efficiently. Chlorine dioxide can be produced by using chlorinated water and acid methods. The simple design reduces operational difficulties, which results in lower operating cost and easy operator control.



INDION CHLOGEN is ideal for drinking water treatment, cooling water treatment, process water treatment, swimming pool applications and waste water treatment. It finds application in almost every industry such as dairy, beverage, pulp and paper, food and vegetable processing, poultry, chemical, power, textile, hotels as well as in hospitals etc.

### The Chlorine Dioxide Advantage

- Kills viruses, bacteria, giardia, cryptosporidium, botulism, e.coli and cholera
- Very effective in removing odour and taste caused by high organic loading, phenols, humic acid or sulfides
- No significant formation of trihalomethanes (THMs)
- Does not react with bromides to form bromine or bromate (a known carcinogen) or promotes the formation of other brominated hydrocarbons
- Approved for drinking water treatment by Environmental Protection Agency
- Oxidises iron, manganese and sulfides
- Does not react with ammonia and is only slightly reactive with primary amines
- Long shelf life in water
- Less corrosive

Moreover, chlorine dioxide is an effective bio-dispersant; unlike traditional oxidising biocides which do not penetrate the biofilm and leave underlying bacteria unaffected, chlorine dioxide can penetrate the slime layer, as it is a true gas.



**ZERO B**  
PURE WATER SOLUTIONS

## Suraksha Plus

This non-electric storage water purifier with a 4-stage purification process is specifically designed for homes without regular tap water supply or which cannot afford electric water purifiers and find boiling water expensive due to



rising fuel prices. Moreover, ZeroB Suraksha Plus comes with a unique technology that dispenses magnetised water which is therapeutic. The double capacity purification cartridge purifies 3000 litres of water, and is designed to also fit into any other storage purifier.

## Unique Sugar Condensate Treatment

We have developed a new technology for recovery and reuse of sugar condensate generated from sugar mills – the first time a treatment process is available to remove organic contaminants from sugar condensate. The treated condensate can be used for boilers and as make-up for cooling towers.

Given the increasing water scarcity, this is a breakthrough technology for the sugar industry, as it effectively conserves fresh water resources through reuse of treated condensate. India has

around 500 sugar mills, with 18 million tonnes of annual sugar production. Normally, sugar mills have a crushing capacity of 2,500 to 10,000 tonnes per day, generating 70 per cent of sugar condensate. Thus, a sugar mill with sugarcane crushing capacity 5000 tonnes/day, produces 3500 tonnes condensate per day. Adoption of our sugar condensate treatment technology will enable sugar mills to significantly reduce their dependency on fresh water from rivers, dams, etc.

With this development, Ion Exchange can offer the sugar sector an even broader spectrum of solutions, adding to its extensive range of water and waste water treatment and speciality process chemicals.

## Novel Process for Purification of Caustic in Bottling Plants

It is the customary procedure in bottling plants to recycle glass bottles to refill products such as beer and soft drinks. The used glass bottles are collected from different places and brought to the factory where they are sterilised using 2 per cent hot caustic soda solution. The solution is used for 10 to 15 days till it is contaminated with iron, suspended solids, colour bodies and carbonates. It is then neutralised with an equal amount of acid and disposed off as per the norms set by the pollution control board.

We have now developed a process based on ion exchange resins for removal of the above impurities. As the same caustic soda can be used continuously there is no need to use fresh caustic; moreover, no waste water is generated. Thus our caustic soda purification process, which has been patented, enables substantial savings, giving a payback period of just 1½ years.



# INDION® EcoServe

Efficient, Economical and Eco-friendly

The recently launched INDION EcoServe is a state-of-the-art system designed to treat and recycle vehicle wash effluent. Ideal for service stations, bus depots, automobile manufacturers, metro yards etc., INDION EcoServe



conserves large volumes of fresh water saving up to 80 per cent water costs while enabling compliance with environmental



discharge regulations for vehicle wash waste streams.

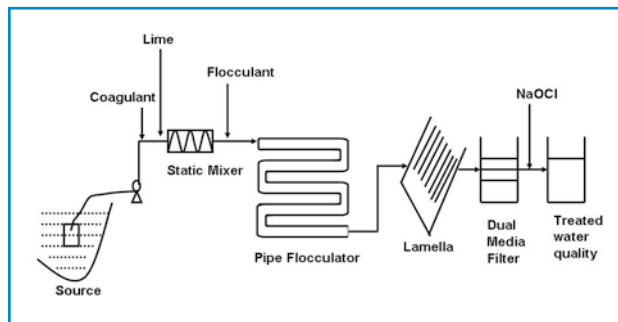
Vehicle wash effluent contains large amount of petroleum hydrocarbons (oil, grease, fuels), heavy metals, cleaning fluids and detergent, besides high levels of COD and BOD. Moreover, vehicle wash facilities use vast volumes of water which is then sent to drain, thus wasting an increasingly scarce and valuable resource.

INDION EcoServe removes free floating and emulsified oil, grease and suspended particles – organic and inorganic, as well as colour and odour, thereby making the water fit for reuse for vehicle washing. The compact, skid mounted system is totally automated using intelligent control for precise measuring and monitoring which reduces maintenance.

# INDION® Lampak

Making available clean and safe drinking water is an urgent, primary concern, particularly in India's rural areas where it is estimated that a staggering 90 million people in villages do not have access to safe drinking water supplies. The INDION Lampak unit produces safe drinking water from surface water like ponds, lakes, rivers and canals. It is best suited for community requirements and is ideal for small villages and housing colonies, as well as military establishments and resorts/motels.

Designed to treat raw water having total suspended solids (TSS) as high as 500 mg/l, a single module of INDION Lampak can produce 25 m<sup>3</sup>/h flow of drinking water, which is the typical demand for community use.



The compact, packaged system incorporates mixing, flocculation, clarification and filtration in a single unit. Fewer moving parts makes it easy to install, operate and maintain – it does not have a rotating mechanism for flash mixing, flocculation and sludge removal nor does it require

separate backwash water storage tank. It can easily be operated by villagers after adequate training.

As it is containerised, it is easy to transport and move to different locations as and when required. Furthermore, it does not depend on availability

of electricity, but can be equipped to work on a diesel generator. The unit can thus be operated in areas where electricity is not available, including remote villages.



## INDION® Ultra High Rate Clarifier

The innovative INDION Ultra High Rate Clarifier is a compact, efficient and low cost unit for clarification of surface and waste water. Its design combines the technologies of the solids contact clarifier and the lamella clarifier, offering the advantages of both, with enhanced performance at significantly increased rise rates compared to conventional clarifiers. Reaction, flocculation, separation, sludge removal and clarification occur in a single treatment basin. The square design allows construction of multiple units with significant reduction in civil costs; it allows for common wall construction with other units, thus making for very compact layouts. The clarifier can be assembled on site with great ease and in a very short time.



The INDION Ultra High Rate Clarifier handles high inlet suspended solids load up to 3000 ppm, while giving consistent treated water quality of <20 ppm. Fluctuations in flow and feed suspended solids do not affect performance and sludge concentrations of upto 4-5 per cent are achieved.

## INDCHLOR®

The INDCHLOR unit is an integrated oxidant generator which produces oxidants from salt water feed. INDCHLOR can produce a maximum of 0.8 kg/day mixed

oxidants; designed for continuous operation, it can produce treated water at all times except during cleaning and maintenance. INDCHLOR is ideal for drinking water treatment



apart from swimming pool treatment and applications in industrial process and cooling water treatment.

Features include:

- Electronically controlled safety interlock allows the system to operate safely.
- Simple, cost effective method of generation.
- An integrated monitoring system ensures efficiency.
- Alert alarm signals unwanted conditions

Stringent quality assurance procedures (QAP) ensures the product quality

## INDION® ISR Receives Patent

Our INDION iron specific resin (ISR) was awarded a 20-year patent. This is a special media designed to provide excellent catalytic properties to remove dissolved iron from ground water.



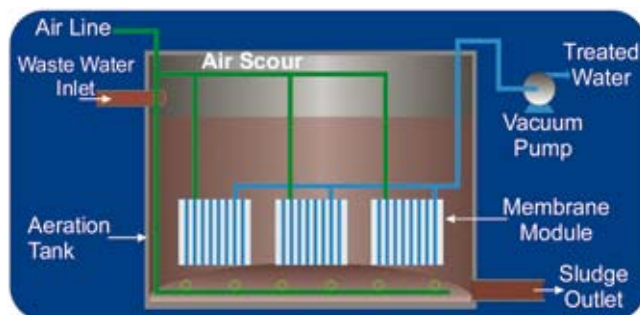
# Membrane Bio-Reactor

The introduction of membranes into waste water and sewage treatment has eliminated the need for secondary clarification after aeration as well as for tertiary treatment. Membranes are immersed in the aeration tank itself and treated water is drawn out through the membranes directly; hence separation of mixed liquor suspended solids (MLSS) in the secondary clarifier and maintaining MLSS in the region of 4000 ppm (to prevent sludge settling issues in the secondary clarifier) etc. do not matter as MLSS separation is now done by the membranes. The membranes are normally constructed of PVDF and are kept clean by the scouring action of air on the membrane surface. Since the MLSS in the aeration tank does not have to be maintained at 4000 ppm it can be taken up to 15–20,000 ppm, resulting in significant reduction in the size of the whole plant.

## Q. What is the Membrane Bio-Reactor and why is it becoming so popular?

The Membrane Bio-Reactor (MBR) is one of the most significant developments in waste water treatment using membrane technology, and becoming increasingly popular.

The technology uses ultra filtration membranes (or micro filtration) to provide a physical barrier for separation of water from MLSS leading to various advantages such as compact foot print, excellent treated water quality, ease of



operation etc. Stringent environmental regulations, depleting raw water sources, need for recovery and reuse combined with lack of space availability are also contributing to the widespread acceptability of this technology.

## Q. Where can the MBR be used?

The MBR is currently the most suited and best available technology for waste water treatment either for new plants, retrofitting existing plants for capacity enhancement or for achieving better treated water quality and for recycling effluents.

## Q. What are the typical characteristics of MBR treated water compared to conventional systems?

Since the MBR uses physical separation with membranes, the typical value of BOD and suspended solids are < 2 ppm

and < 0.5 ppm respectively. In comparison, a conventional treatment plant without a tertiary filtration system will deliver BOD and suspended

solids of approximately 30 and 50 ppm respectively.



Flat sheet membrane module

## Q. What essential information is required to design an MBR for waste streams?

It is critical to design the MBR with correct flux rates based on experience (full scale plants) or long term pilot data. Designing an MBR system at a higher than desired flux rate may lead to lower capital cost but it may entail



significantly higher lifetime costs and problems in operation and maintenance.

**Q. Is there a pretreatment requirement for the MBR?**

It is essential to use a fine screen to remove grit and other abrasive materials from going to the membrane tank.

**Q. What kind of applications can the MBR be used for?**

While the MBR can be used for most biological waste water, prior experience or piloting is essential. Experience in MBR technology currently exists for sewage, sullage, tannery waste and textile waste. The MBR can also be used as reverse osmosis (RO) pretreatment in sewage recycle systems since the MBR treated water can be directly fed to RO without any further treatment. The MBR can also be used for nutrient removal (bio-phosphorous, nitrogen).

**Q. In an MBR system, is there a flux decline over a period?**

Flux decline in the MBR is like any other membrane system. The flux decline can be restored by proper chemical cleaning at regular intervals. Usually, in the MBR, trans-membrane pressure (TMP) is the parameter used to monitor the fouling level on the membrane. Flux

is usually maintained as a constant by increasing the suction pressure. If the TMP increases beyond permissible limits specified by the membrane manufacturer, water backwash and chemical cleaning are carried out.

**Q. At what frequency does this bio-fouling necessitate physical/chemical cleaning?**

In hollow fibre MBR membranes, frequent backwashing (once in 5-10 minutes) and regular chemical cleaning (once in 5-10 days) are carried out. In flat sheet MBRs, no backwashing is carried out and chemical cleaning is done once in 3-6 months.

**Q. How does the MBR take care of issues related to sludge settling?**

There is no clarifier in the MBR. Separation

of sludge from mixed liquor is done through membranes. Hence, all the problems related to sludge settling are absent in the MBR. But, it is very important to maintain good dewatering characteristics of the sludge by maintaining a well flocculated sludge which reduces the resistance on the membranes, thereby minimising membrane fouling.



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with over 44 years of global expertise & the industry's largest service network offers

**INDION® Sewage Treatment & Recycle Systems**

- ▲ New Generation Packaged Sewage Treatment Plant (NGPSTP)
- ▲ Fluidised Media Reactor (FMR)
- ▲ Membrane Bio Reactor (MBR)

State-of-the-art latest technology | Compact | Low footprint | Unique single tank design  
Low operating cost | Superior performance over conventional processes | Low sludge volumes  
Good aesthetics | Modular, capacities ranging from 10—1000 m<sup>3</sup>/day

**Ideal for SEZ, Hotels, Hospitals, Builders, Housing Colonies**  
Recycle of sewage for applications like flushing, gardening, vehicle washing, cooling tower makeup & process use

- Solves water scarcity problems
- Saves over 60% of fresh water
- Reduces dependence on municipal water supplies

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ION Exchange (India) Ltd. - ISO 14001  
& Ion Exchange (India) Ltd. - ISO 45001  
BEST PRACTICE COMPANY  
Waste Water Management

Awarded by **Water Digest** in association with **UNESCO**



Membrane bio-reactor at our zero discharge plant implemented for the Angeripalayam common effluent treatment plant, Tirupur. The 10 MLD capacity zero discharge facility uses an innovative combination of membrane systems to maximise recovery of water, save costs of fresh water input as well as reduce disposal problems. It will also improve the quality of the dyeing. 7 per cent of the feed water is also obtained as pure brine solution as nano permeate and will be used by the dyeing industry for the purpose of dyeing effectively. This means that around 93 per cent effluent is recycled and reused by the industries.

# Ion Exchange Honoured with Top Water Awards Again



Clockwise from top: Mr. Rajesh Sharma, (extreme right) Vice Chairman & Managing Director, Ion Exchange India receives the 'Best Water Company Award 2007-08' from Union Minister of State for Water Resources Mr. Jai Prakash Narayan Yadav and Ms. Minja Yang, Director, UNESCO (SAARC Countries). Looking on is Mr. D. Grey, Lead Water Specialist – World Bank. Mr. R.S. Rajan, Sr. Vice President, Community & Commercial Water Solutions, Ion Exchange India and Mr. A. Popat, CEO, Ion Exchange Waterleau receive the 2007-08 awards for Best Domestic RO Water Purifier and Best Water Conservor (Waste Water Management) respectively.

The Ion Exchange contribution to the water industry was once again recognised as it received three prestigious Water Awards for the second consecutive year at the award function held in Delhi on November 29, 2007.

- Best Water Company – Ion Exchange (India) Ltd.
- Best Water Conservor (Waste Water Management) – Ion Exchange Waterleau Ltd.
- Best Domestic RO Water Purifier – ZeroB from Ion Exchange (India) Ltd.



The Water Digest Water Awards were instituted in 2006 in association with UNESCO to recognise the efforts and excellence of individuals, NGOs and corporates in the field of water and the water industry.

Eighteen awards were presented in different categories to corporates, individuals and NGOs. These awards recognise excellent performance in specific areas and they also help society by stimulating public awareness and attention on critical water issues.





# Mera Brand

There's no doubt that Brand ZeroB is firmly established in the domestic water purification market as a pioneer in reverse osmosis (RO) technology. For the fourth consecutive time ZeroB has won the most preferred brand in the RO water purification category



Mr. Sriprakash Jaiswal (left), Union Minister of State for Home, presents the ZeroB Mera Brand Award to Mr. R. S. Rajan, Sr. Vice President, Community & Commercial Water Solutions, Ion Exchange India.



in a nationwide survey held among consumers in 225 towns, 25 state capitals and six metros.

## IMC RBNQ Award for Ion Exchange Services

Ion Exchange Services Ltd. (IESL) was awarded a Commendation Certificate under the Indian Merchant Chambers – Ramakrishna Bajaj National Quality Awards (IMC-RBNQA) for 2007 in the Service Category.

- Knowledge Management Systems and Training Initiatives by Top Management
- Employee Welfare and Recognition methods – Achievers Club

Modelled on the Malcolm Baldrige National Quality Award (USA), the IMC-RBNQA is one of India's most prestigious quality and business excellence awards, since 1996. Applicants are judged by a panel of experts on the critical framework of Leadership, Strategic Planning, Customer and Market Focus, Measurement – Analysis and Knowledge Management, Human Resources Focus, Process Management and Business Results.



Mr. Montek Singh Ahluwalia, Deputy Chairman, Planning Commission, Government of India presented the award to Mr. Dinesh Sadasivan, Executive Director & CEO, IESL on March 21, 2008 in Mumbai.

The IMC-RBNQA committee identified the following as benchmark practices of IESL:

- Total Water and Waste Water Management Solutions business approach to optimise use and recycle of water
- Multi-level Customer Feedback and Satisfaction Monitoring Reports

- Corporate Social Responsibility – Supporting underprivileged children of convicts for education and drinking water

IESL provides a complete spectrum of after sales services and products including O&M and Build-Own-Operate/Transfer (BOO/T) contracts to users of water and waste water treatment equipment across diverse industries and institutions across India. IESL has also extended its operations to neighbouring countries like Nepal and Bangladesh and is poised to enter other Asian countries. Headquartered at Bangalore,

the ISO 9001:2000 company with a NABL Certified Laboratory has the largest service network in the Indian water treatment industry with 25 branches, 75 territories and 1200 trained, experienced personnel.



## Jal Tarang

Our annual bonding celebration, Jal Tarang, was held on February 16, 2008 at Mumbai. The family get-together provided an excellent occasion to showcase the multi-faceted talents of employees and their families; enthralling music, songs and dances filled the evening.



## Felicitating Long Service

Jal Tarang also provided an appropriate setting to felicitate our loyal employees who have contributed so much to the growth of the company. The long service award ceremony formed a key part of the festivities; awards were presented to the 25-, 15- and 10- year awardees by Mr. G. S. Ranganathan, Chairman and Mr. Rajesh Sharma, Vice Chairman & Managing Director.



Silver Jubilarians with our Chairman Mr. G.S. Ranganathan (centre)



# Taking the Floor



Mr. Rajesh Sharma, our Vice Chairman & Managing Director, delivered the keynote address at the conference organised by Confederation of Indian Industry on Sustainable Water Management Technologies for Recycling, Reusage & Retreatment.



Mr. L.V. Keshav, Senior Vice President, Corporate Quality, R&D & Systems, presented water management solutions at the seminar on Water Treatment & Technologies organised by the IMC Ramkrishna Bajaj National Quality Award Trust.



Mr. Ajay Popat, CEO, Ion Exchange Waterleau Ltd., chaired the session on Sustainable Resource Management on industrial water conservation and re-use at the conference on Holistic Planning for Indian Cities and Green Technologies organised by the Bombay Chamber of Commerce & Industry.

## New Branches

### At Vizag

We launched branch operations in Vishakhapatnam, Andhra Pradesh at Ion Exchange (India) Ltd., Flat 3B, Rednam Alcazar, Rednam Gardens, Opp. SBI, Ram Nagar, Vishakhapatnam -530 002, Andhra Pradesh.  
Tel: 0891-324 6253  
Fax: 0891-257 2007  
E-mail: [sales.vizag@ionexchange.co.in](mailto:sales.vizag@ionexchange.co.in)

### At Bhubaneshwar

Ion Exchange (India) Ltd., House No. 2B, Joy Durganagar, Bamikhal, Cuttack Road, Bhubaneshwar 751 006, Orissa.

# On Display

**A**t Chem Pharma Expo, Mumbai, showcasing our high purity water generation and distribution systems and our range of speciality resins for the pharma sector. On display were our INDION RO-EDI system and INDION Swift demineraliser.

**H**ighlighting our total water and environment management solutions at Everything about Water Expo, Mumbai. Demonstration of our membrane bio-reactor and fluidised media reactor drew a large number of visitors and enquiries.



**O**ur solutions for the municipal infrastructure sector on display at Municipalika 2008, Mumbai attracted a large number of visitors from municipal corporations and public health engineering departments.

**O**ur total water management capability for the power sector on display at PowerGen, New Delhi.



At SugarAsia, New Delhi we exhibited our total water and environment solutions as well as speciality process chemicals for sugar manufacture.

Presenting our spectrum of solutions for the paper industry – total water management and speciality process chemicals, at Paperex – Asia’s largest paper show, at New Delhi. We were awarded the second prize in the Technology for the Paper & Pulp Industry category.



At the India International Recycle & Waste Management (IIRWM) at New Delhi, the focus was on our total water and environment management capability with the spotlight on waste water/sewage treatment & recycle, solid waste management and waste-to-energy technologies.



## CSR at Work

Ion Exchange Services Ltd. (IESL) coordinates its Corporate Social Responsibility (CSR) activities in education and drinking water supply for children of convicts through Society for Care of Indigents (SOCARE), an organisation looking after the welfare of around 150 children of convicts, at two locations. IESL has donated food, books and other stationery, clothes including winter wear, shoes, etc. and also encourages its employees to celebrate family occasions with the students of SOCARE. A reverse osmosis plant for safe drinking water supply has also been donated and is maintained by IESL at SOCARE's premises.



From left: Mr. Dinesh Sadasivan, Executive Director & CEO of IESL, Mr. Rajesh Sharma, our Vice Chairman & Managing Director and Mrs. Sharma on a visit to SOCARE orphanage to donate clothing for the children.

## Polymer Plant



Our recently set up polymer manufacturing plant at Patancheru, Andhra Pradesh. This state-of-the-art facility manufactures speciality polymers for paper and ceramics processing and other non-water applications.



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