

Float

the news

Vol. 13, No. 3

The inhouse bulletin of Indomer Coastal Hydraulics

July 2024

INDOMER ENTERS INTO SUPPLY OF MODULAR PREFABRICATED SEAWATER REVERSE OSMOSIS (SWRO) DESALINATION PLANT

CAPACITY

0.25 MLD * 0.5 MLD * 1 MLD * 1.5 MLD * 2 MLD



INDOMER OFFERS ALL UNDER ONE PACKAGE

Seabed surveys & Oceanographic measurements

Location of intake and outfall

Design of seawater intake & brine reject outfall

Modelling study of brine discharge

Erection of subsea pipeline

Supply of RO unit, O&M / Annual maintenance contract

CRZ mapping, SCZMA and MoEFCC Clearances

From Director's Desk

Dear Friends



Welcome to another edition of 'The Float', our newsletter that sails through the currents of our collective endeavors and industry insights.

As we stand on the cusp of the monsoon season, it's not just the earth preparing to embrace the rains but also a time for our esteemed clients to formulate their marine study needs. The post-monsoon season is the best period to take up marine-related work.

In an era where water scarcity casts a long shadow across continents, Indomer is taking significant strides towards sustainability and self-sufficiency. We proudly announce our collaboration with pioneering companies in India and abroad to deploy containerized desalination plants near the coastlines. This initiative is a testament to our commitment to providing comprehensive solutions - from site selection and study to obtaining clearances for desalination plants. It's a logical extension of our mission to deliver end-to-end solutions that resonate with our clients' needs and environments.

The winds of change are blowing towards renewable energy and Indomer is at the helm, navigating towards a greener future. We are enthusiastically partnering with offshore wind and floating solar entities. Vast opportunities lie in India's renewable energy space. Our accumulated experience helps new clients eager to explore and establish their footprint in these promising sectors.

We are writing to express our profound appreciation for your continual engagement and support as we anchor this newsletter. We are always a phone call away to hear your requirements and offer our best services.

Mr. J. Guru Prasath, Director

KEY FEATURES OF MODULAR DESALINATION

Mobility

Our plants are designed to be easily transported to any location, enabling rapid deployment in emergency situations or remote areas.

Modularity

With modular design, our desalination units can be customized to suit specific water treatment requirements, scaling up or down as needed.

Efficiency

Utilizing state-of-the-art desalination technologies, our plants ensure high efficiency and minimal energy consumption, making them environmentally sustainable.

Reliability

Built with robust materials and engineering, our plants are designed for durability and reliable operation even in challenging environments.

User Friendly

Intuitive controls and automated processes make operation and maintenance hassle-free, requiring minimal training for personnel.

Compliance

Adhere to international standards for water quality, ensuring the water produced is safe for consumption and meets regulatory requirements.

INDOMER'S DESALINATION PROJECTS

100 MLD Desalination plant at Ramayapatnam



Indomer is involved in Seabed Investigations, design and engineering study for setting up of 100 MLD Desalination Plant, North of Nellore, Andhra Pradesh.

500 KLD SWRO Desalination plant at Alibaug

Indomer has selected an ideal location for setting up of 500 KLD SWRO desalination plant at Raigad District, Maharashtra.



Desalination plant & pipelines near Sikka

Indomer has taken up a large project in Gulf of Kutch near Sikka for the expansion of the oil terminals and to increase the capacity of Desalination Plants. Indomer is taking up EIA and EMP study, Mathematical Modelling study, Ecology and Biodiversity study, preparation of Environmental Management Plan, CRZ study for obtaining MoEFCC Clearances.

INDOMER'S NEW VENTURES

Physical Model Laboratory



Indomer has started construction of Hydraulic Laboratory with wave flume of 40 m long x 1 m wide x 1.2 m deep. These facilities are coming up in SIPCOT complex, Theni, Tamil Nadu.

Food & Water Laboratory



Indomer has also proposed to establish a state-of-the-art Water and Food testing laboratory at SIPCOT, Theni.

The laboratory will cater to the needs of various stakeholders, including industries, agricultural producers, Government agencies and individuals to ensure accurate, reliable test results of water and food products.

Supply of Prefabricated Desalination Plants

Indomer is now entering into supply of Modular Prefabricated Seawater Reverse Osmosis (SWRO) Desalination Plant of capacity 0.25 MLD, 0.5 MLD, 1 MLD, 1.5 MLD and 2 MLD.



OVERSEAS PROJECTS

Feasibility study for Floating Solar project in Bahrain



The Electricity and Water Authority (EWA) in the Kingdom of Bahrain is embarking on a journey to harness renewable energy sources, addressing

the growing demand for electricity. This initiative will see the exploration of wind and solar power, with a significant focus on the development of floating solar power plants along the kingdom's coastlines. To bring this vision to life, EWA has enlisted the expertise of Indomer to collaborate with Tata Consulting Engineers (TCE), ensuring a comprehensive study on the feasibility of these innovative floating solar projects.

INDOMER'S PORT PROJECTS

Expansion of Lighterage Jetty at Sikka

Indomer has been awarded the project of conducting all oceanographical studies including EIA for MoEFCC Clearances for the Expansion of Existing Lighterage Jetty at Sikka, Gujarat.



Bulk cement terminals at Gujarat



Indomer is carrying out Oceanographic Investigations, Modelling studies, EIA study at Kori Creek for the expansion of existing Bulk Cement Terminal.

Expansion of Marine terminal facility at Cuddalore

Indomer has taken up Oceanographic surveys, Mathematical Modelling, EIA & EMP studies for the expansion of existing Marine Facilities to handle new cargo mix along with desalination plant.



Development of a berth in Port of San Pedro



To advance its maritime infrastructure, the Terminal Industrial Polyvalent De San Pedro (TIPSP) has announced plans to develop a new berth at the Port of San Pedro. Indomer has collaborated with stakeholders to prepare reports on mooring analysis, Fast ship simulation and compilation of Detailed Project Reports for the proposed developments.

ANOTHER MILESTONE IN INDOMER'S JOURNEY - OFFSHORE STUDY



Indomer has been assigned to conduct a detailed oceanographic investigation including Marine Environmental Impact Assessment study as per EIA Notification 2006. Various International Experts are involved in this offshore project to prepare this unique Plan coming up in Gulf of Mannar.

POSITIONS OPENED AT INDOMER AT SENIOR LEVEL POST

- M.Sc./Ph. D. Chemistry
- M.Sc./Ph. D. Maths
- B.E./M. Tech. Environmental Engineering
- B.E./M. Tech. Marine Engineering
- B.E./M. Tech. Naval Architect
- M.Sc. Applied Geophysics
- B.E./M. Tech. Civil Engineering

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"Knowledge Accreditation: Empowering Dissertation Opportunities for Students"



Indomer has provided an opportunity for a postgraduate student from Anna University to conduct dissertation work as part of his M-Tech degree program. This collaboration highlights Indomer's commitment to supporting academic research and fostering the development of future engineers and scientists in the field of marine and environmental sciences.

ISLAND PROJECTS



Lakshadweep Island

Indomer is taking up the EIA study for getting the EC clearance for the proposed passenger jetties and associated landside facilities at Androth, Kadmath & Kalpeni islands in Lakshadweep for Union Territory of Lakshadweep Authority.

SITE VISITS

Mr. R.C. Bragath, Director of Indomer along with the expert team headed by the Director of CICEF visited Vaniyakudi in connection with the establishment of Fishing Harbour at Vaniyakudi in Kanyakumari district.



Dr. Deepak Apte, Former Chairman, MoEFCC, New Delhi and Prof. (Dr.) T. Balasubramanian, Former Chairman, Tamil Nadu State Expert Appraisal Committee & Former Director & Dean - Annamalai University & Former Vice Chancellor - Chettinad Academy of Research visited the Kazhuveli for the Biodiversity assessment.

INTERNSHIP FOR STUDENTS

Indomer has given internships to students from Padmaseshadri School, K.K. Nagar by providing them with hands-on experience in marine environmental studies and renewable energy projects. At the end of the program, students received certificates acknowledging their contributions and learning.



GEOHORIZON SPONSORSHIP



The Institute of Remote Sensing, Anna University, Chennai organized Geo Horizon 24, a 3-day Inter-College Technical Symposium, from 8th May to 10th May 2024. Indomer was a major sponsor and was honored by the Society of Geoinformatics Engineers in the opening ceremony.

Coastal Regulation Zone (CRZ)

The Coastal Regulation Zone (CRZ) notification, established by India's Ministry of Environment, Forest and Climate Change (MoEFCC), provides a legal framework for managing and protecting coastal areas. Its primary goal is to balance development with the protection of coastal ecosystems and ensure sustainable development. The history of Coastal Regulation Zone (CRZ) notifications in India reflects efforts to protect ecologically sensitive coastal areas, with key notifications issued in 1991, 2011, and 2019.

With the most recent being 2019 notification, the significant changes between the 2019 and the 2011 versions are of:

- No changes in CRZ I A, CRZ I B and CRZ IV A, CRZ IV B.
- CRZ II classification of urban area will be based on Floor Space Index (FSI) or Floor Area Ratio (FAR). FSI/FSR > 50% and have been provided with drainage and approach roads & other infrastructural facilities. Floor Space Index (FSI) or the Floor Area Ratio (FAR) had been frozen at 1991 Development Control Regulation (DCR) levels.
- CRZ III - Remains 500 m from HTL. However, classification of CRZ III A & CRZ III B will be based on population density of 2161/Km². No Development zone of 200 m in CRZ III in general changed to 50 m in CRZ III and 200 m CRZ III B areas. In case of creek/Rivers NDZ of 100 or width of creek has changes to 50 m or width of the creek.
- Those projects attracting CRZ I and CRZ IV, final clearance will be given by MoEFCC on recommendation of CZMA and for CRZ II & CRZ III, SEAC/CZMA will give the final clearance.

Various coastal states in India follow the CRZ Notifications of 2011 and 2019 differently. Gujarat, Maharashtra, Goa, Kerala, Tamil Nadu, Andhra Pradesh, and West Bengal adhere to the CRZ 2011 regulations but have not yet adopted the CRZ 2019 regulations. In contrast, Karnataka and Odisha comply with both the CRZ 2011 and CRZ 2019 regulations. Additionally, regions under Greater Mumbai have an approved Coastal Zone Management Plan (CZMP) as per the CRZ 2019 guidelines.

Q&A

1. What is Kallakadal?



The "Kallakadal" known as a swell surge, has recently affected the coastal areas of Kerala and southern Tamil Nadu. This phenomenon involves sudden and intense sea waves caused by distant storms

or short strong winds, often leading to coastal flooding. Kallakadal, which literally means a sea that comes suddenly like a thief, is a phenomenon which triggers a sudden swell in seas waves. It causes rise in sea level and coastal flooding.

2. What is deep ocean sinkhole?



A deep ocean sinkhole, also known as a blue hole, is a large through processes such as chemical erosion and the collapse of limestone bedrock. These sinkholes can be incredibly deep, with some

extending hundreds of meters below the ocean's surface. They are characterized by steep vertical walls and can host unique ecosystems due to their isolated nature. Examples include the Great Blue Hole in Belize and the Dragon Hole in the South China Sea. Recently, researchers have discovered the world's deepest blue hole located in Mexico's Chetumal Bay in Mexico, known as Taam Ja' Blue Hole (TJBH).

3. What is Hydrothermal vent?



A hydrothermal vent is a fissure on the seafloor from which geothermally heated water typically found in regions with volcanic activity, such as along mid-ocean ridges where tectonic plates are diverging. The water

emerging from hydrothermal vents is rich in minerals and supports unique ecosystems, including various species of bacteria, tube worms, and other organisms that thrive in the extreme conditions. These ecosystems rely on chemosynthesis, a process where bacteria convert the vent's chemical-laden water into energy, rather than relying on sunlight and photosynthesis.

Colossal 'ocean' found 700 km below Earth's crust



In a groundbreaking discovery, scientists have identified a massive underground reservoir of water situated approximately 700 kilometers beneath the Earth's surface.

This hidden 'ocean' is contained within a mineral known as ringwoodite. The volume of water in this subterranean reservoir could be three times greater than that of all the surface oceans combined, fundamentally altering our understanding of the Earth's hydrosphere and geological processes. Led by geophysicist Steven Jacobsen, researchers used a network of 2,000 seismographs across the US to detect this hidden ocean, trapped within a mineral called ringwoodite.

Previously, scientists believed Earth's water primarily came from comets. However, this discovery challenges that notion, suggesting water exists deep within the mantle, playing a crucial role in the planet's water cycle. By analyzing seismic waves from over 500 earthquakes, researchers identified regions where these waves slowed down, indicating the presence of water-absorbing minerals. This finding redefines our understanding of Earth's internal processes and has profound implications for planetary science. It underscores the possibility of a global reservoir of water deep underground, potentially reshaping how we perceive the movement of water within our planet and its impact on Earth's history and habitability.



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BOOK POST

Indomer Coastal Hydraulics (P) Ltd.
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DESALINATION PLANT



(LTTD Desalination Plant, Lakshadweep - NIOT)

ARE YOU LOOKING FOR SETTING UP DESALINATION PLANT (1 MLD TO 500 MLD)

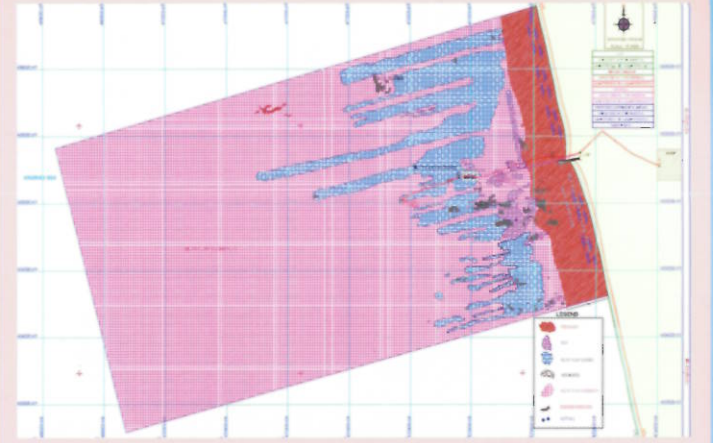
WE OFFER TOTAL CONSULTANCY ON MARINE ASPECTS

- Seabed surveys on Bathymetry, Seismic & Sidescan
- Currents, Tides & Waves Measurements
- Location of intake and outfall
- Hydrodynamic modelling study for intake and outfall
- Dispersion study on brine discharge
- Design of pipelines, intakes and outfalls
- EIA study
- CRZ mapping
- Clearances from State and MoEF&CC

**Indomer is the company carried out most of the
Marine projects for Desalination Plants in India**



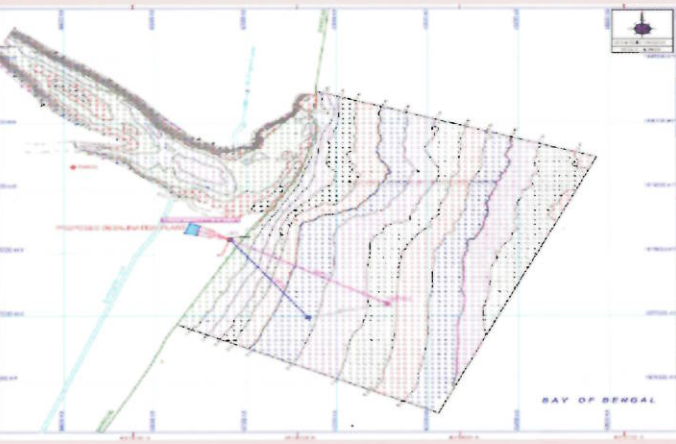
100 MLD desalination Plant - Minjur



Seismic Map



Laying of Pipelines



Bathymetry Map



Survey in Sea



DESALINATION PLANT – KEY PROJECTS DONE BY INDOMER

- 400 MLD Desalination plant at Perur, Chennai Metro Water
- 150 MLD Kutch Desalination plant, Gujarat
- 150 MLD Desalination plant at Nemmeli, Chennai Metro Water
- 100 MLD Desalination plant at Minjur, Chennai Metro Water
- 100 MLD Desalination plant at Nemmeli, Chennai Metro Water
- 100 MLD Desalination plant at Jodiya, Gujarat
- 70 MLD Desalination plant for MRPL at Mangalore
- 60 MLD Desalination plant at Kuthirai Mozhi, Tamil Nadu
- 60 MLD Desalination plant at Chinna Ervadi, Tamil Nadu
- 60 MLD Desalination plant at Kela Nagachi, Tamil Nadu
- 60 MLD Desalination plant at Karankadu, Tamil Nadu
- 60 MLD Desalination plant at Alanthalai, Tamil Nadu
- 60 MLD Desalination plant at Chingithurai, Tamil Nadu
- 60 MLD Desalination plant at Kombuthurai, Tamil Nadu
- 60 MLD Desalination plant at Tharuvaikulam, Tamil Nadu
- 60 MLD Desalination plant at Vaippar, Tamil Nadu
- 60 MLD Desalination plant at Naripaiyur, Tamil Nadu
- 50 MLD Desalination plant at Dahej, Gujarat
- 45 MLD Desalination plant at Gopalpur, Odisha
- 45 MLD Desalination plant for VSP at Visakhapatnam
- 15 MLD Desalination plant at Gopalpur, Odisha
- 4 MLD Desalination plant at Singarayakonda, Andhra Pradesh
- 0.15 MLD Desalination plant at Amini Island, Lakshadweep
- 0.15 MLD Desalination plant at Androth Island, Lakshadweep
- 0.15 MLD Desalination plant at Chetlat Island, Lakshadweep
- 0.15 MLD Desalination plant at Kadamat Island, Lakshadweep
- 0.15 MLD Desalination plant at Kalpeni Island, Lakshadweep
- 0.15 MLD Desalination plant at Kiltan Island, Lakshadweep

