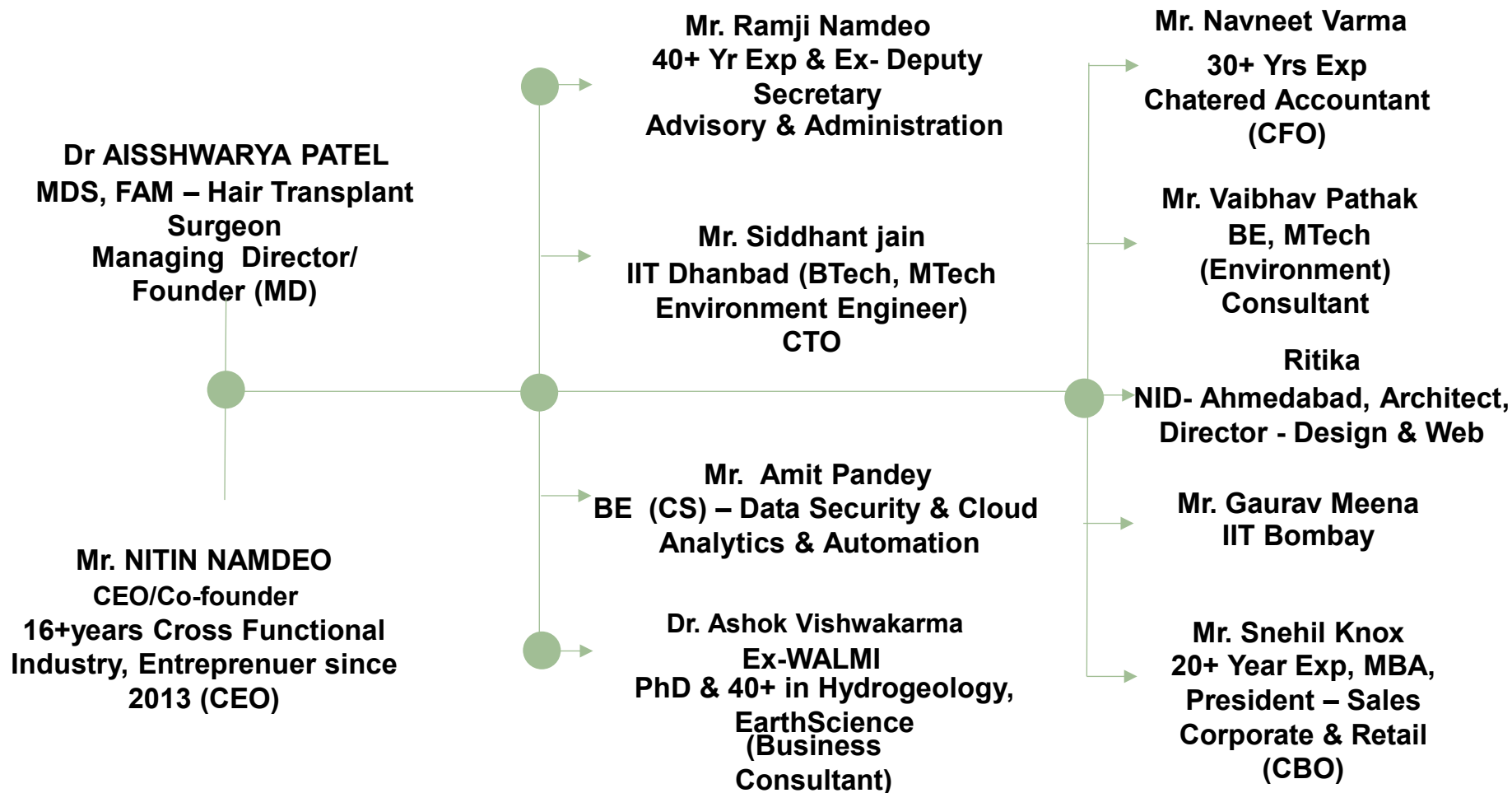


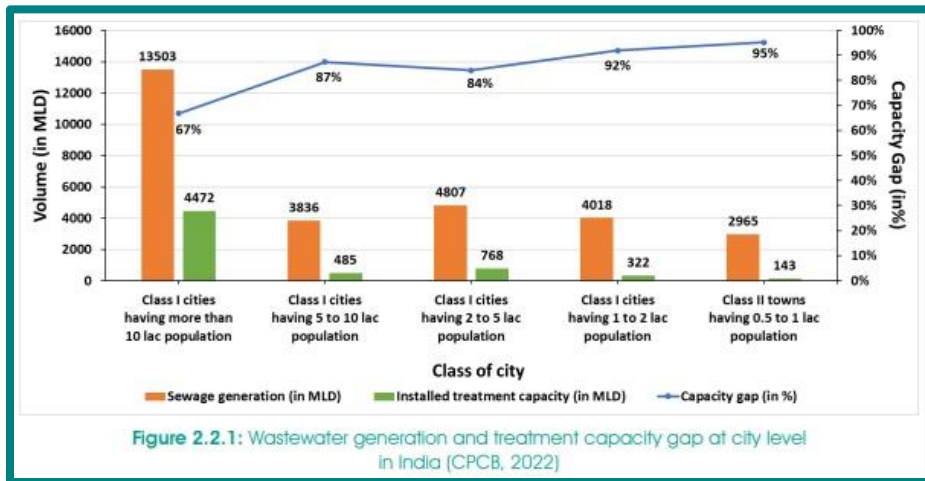
Team



Problem

According to [Central Pollution Control Board \(CPCB\)](#) figures,

- 72,368 Million Litres per Day (MLD) Sewage generation in India in 2020-21.
- 26869 MLD operational Capacity & 28 percent (20,236 MLD) is Treatment capacity.
- **Gap of 72 percent remains untreated (20-2021) & 78.7 % (2022-23)**



A Picture/Statistics is Worth a thousand Words

**Urgent
Need**

- ✓ Technology Upgrade [Source CPCB](#)
- ✓ Reduced Operational cost Model– [Source SWM](#)
- ✓ Decentralized Treatment [Source AMRUT 2.0](#)
- ✓ Energy Efficient model - [Source CPCB](#)
- ✓ Sustainability Focused initiatives [Source NMCG](#)



Ground Water Contamination



Soil fertility Degradation – Agriculture & agroforestry



Water Borne Diseases – Malaria, typhoid.



Human Health Risk- Cancer.



Water Scarcity & pollution



Fisheries & Habitat Loss (SDG14)



Biodiversity Loss & Climate Change

















Summary of product or innovation

Estd in 2024, dedicated to pioneering sustainable solution for environmental management adhere to NGT & ESG Compliances, align with Sustainable Development Goals

Sustainable Development Goals



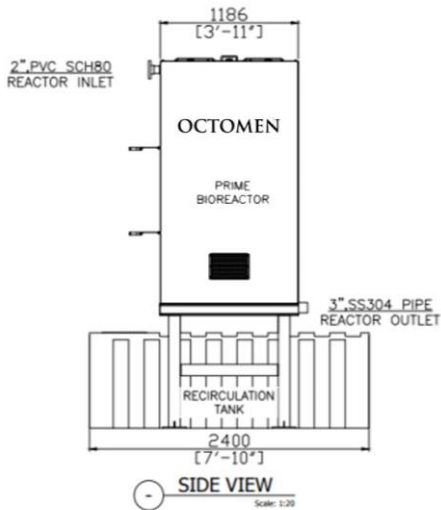
INNOVATIVE FRAMEWORK & INSIGHTS

						
Decentralized System & Comprehensive Solution	Hydrophilic Nanoceramic biofilters	Customizable & Flexible	Easy to Operate	Scalable & Modular	Multi Handling Area Technology	No Odor
						
Natural & Eco-friendly Solution	Energy Efficient	Aerobic Process (High BOD Removal)	Anaerobic Digestion (Low Sludge Yield)	Low Sludge output	Solar Operated STP/ETP/CETP	Resilient to Shock load & FOG

ECOSYSTEM INTEGRATION & PROTOTYPE DEMO

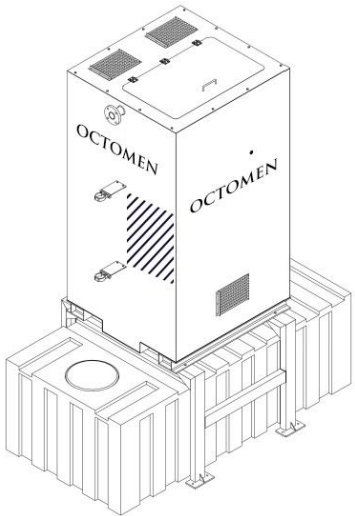
Flow per unit per project is determined by wastewater temperature, per cent removal required, and system configuration

AnaBoT



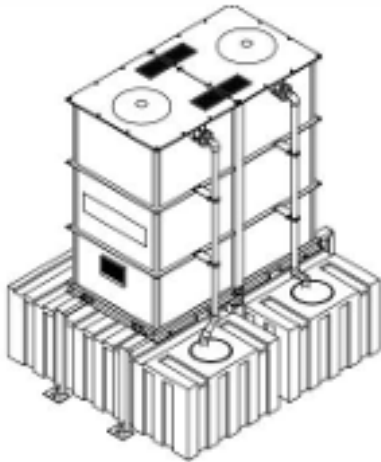
Treatment Capacity
(1KLD to 20KLD)

HydraBoT



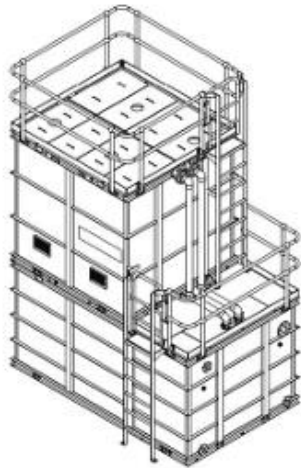
Treatment Capacity
(20KLD to 50KLD)

ScanBoT



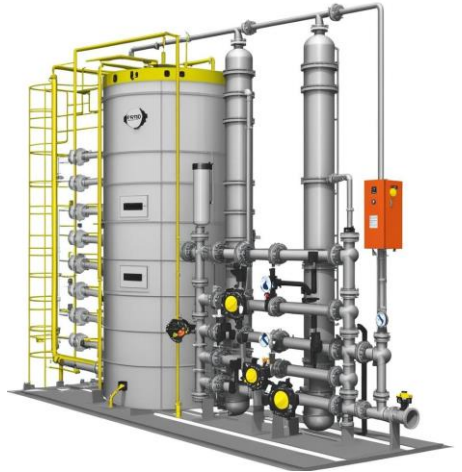
Treatment Capacity
(50KLD to 100KLD)

MegaBoT



Treatment Capacity
(100KLD to 200KLD)

TransBoT



Treatment Capacity
(200KLD to 1MLD)

Capacity > 1MLD

We can extend the Treatment capacity up to 100 MLD by using Series and parallel combination and As per site condition

OCTOMEN TECHNICAL CAPABILITIES

	Temperature	Inlet BOD	Capacity	Effluent BOD
Sewage	25>C 77> F	300 mg/l	1 - 100 MLD	<10 mg/l
Winery	30>C 86> F	4000 mg/l	0.5-10MLD	<300 mg/l

TECHNOLOGY STACK : Attached Growth Bacteria Trickling Filter Technology

- 1. Inlet:** wastewater is pumped into dispersion head
- 2. Dispersion Head:** Non-Clog dispersion head distributes flow evenly across arms.
- 3. Arms:** microbes grow on both side of semipermeable arms
- 4. Air Vent:** natural convection current generated by heat from the biomass pulls air for bacteria through the unit
- 5.Outlet:** treated water flows through the gravity

WATER SIDE

- Water side biomass can experience **anoxic, anaerobic and aerobic** digestion depending on nutrient loading.
- Nutrients are supplied from the wastewater to water side biomass
- Nutrients diffuse from water to Air side.

AIR SIDE

- Air transfer occur directly from the atmosphere to air side biomass
- No water body layer to impede oxygen mass transfer
- Air side biomass generally experience **Aerobic conditions**.
- Air side biomass is separated from solids and FOG.

Innovation of Plug and Play architecture, Smart, Scalable, Nano & Biotechnology driven IOT based Bio Reactors & Bioeconomy-Solutions for Sustainable Water, Waste, & Energy.

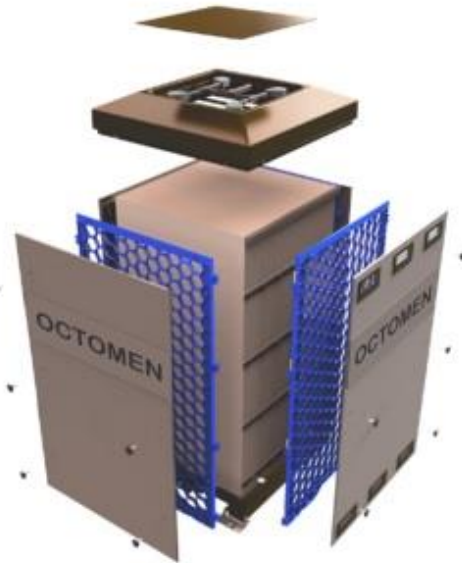
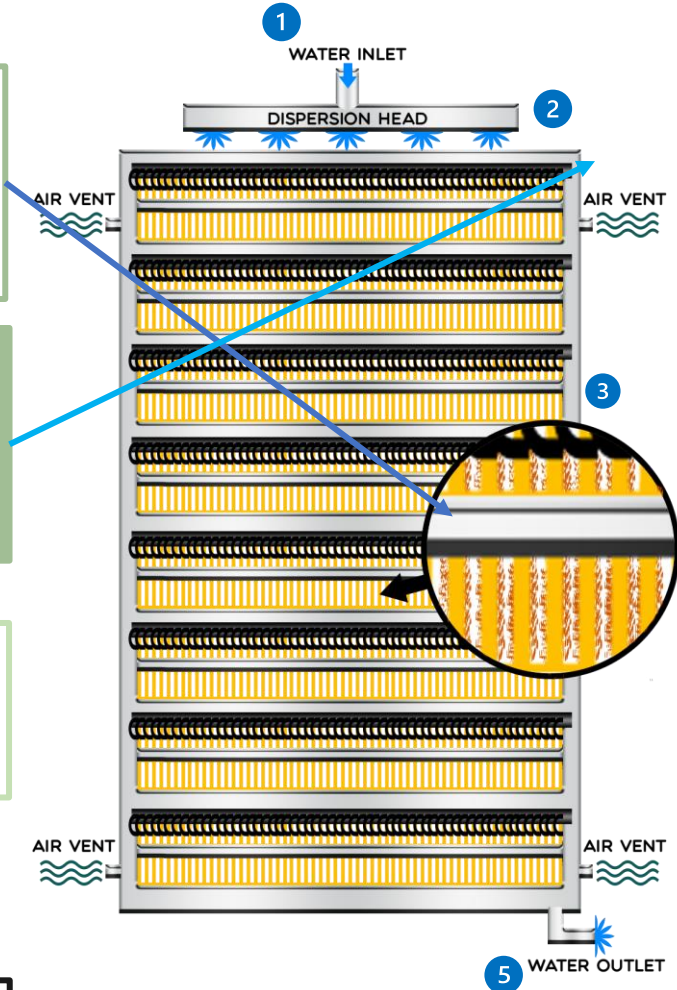
Using In
Situ Bioremediation

**TREATED
WASTEWATER**

1237.5 ML
(million Litre)

**ENERGY
CONSUMPTION**

0.001 Kwh/m³



Impact & Use cases

Environment & Social Impact metrics



Reduction in Untreated Wastewater

Increase Existing Plant capacity 10,000 MLD



Carbon Emission Reduction for Earth's

Annual 20MT CO₂ per 1 MLD.



Ecosystem Restoration for Biodiversity

restore 200km polluted river



Health Benefits for Community

Reduce >30% in Geography



Rapid Deployment (within 10 days) Authorities & Community will benefit for quick water access



Clean Water Access using Zero Untreated Sewage or Sludge



IOT Enabled Monitoring for Stakeholders & Authorities (Real Time Water Quality Dashboards)



Organic Matter & Resource Recovery for Municipal Sites, Authorities & Community Health



Healthier, Cleaner, Climate resilient for Mahakumbh & Water Bodies



Water Saved for Reuse for Agriculture, Bathing & Others

Planned Improvement for Simhastha ujain



High-Capacity Modular Units: for Pilgrims to use Millions of water per day



Mobile Bioreactor Fleets: Mobile Plant to be deployed anywhere or used on site



Advanced Monitoring: using AI for command to Real time monitoring



Resource Recovery & Hybrid Treatment Integration



Odour-Free Public Sanitation Modules

Scalability:



Municipal Corporation



Rural Development



Healthcare & Hospitals



Tourism



PWD



Railways



Power Plants



Leather Industry



Winery / Brewery/ Distillery



Dairy Industry



Schools/ Colleges



Textile Industry



Pharma Industry



Oil & Refinery

Conclusion:

Key Performance Differentiator



Low Energy Consumption (1 Kwh for 20-30 m³/day) & 4 kg BOD /Kwh for Octomen VS conventional 1.5 kg BOD/Kwh ,



Expandable (Useful in Overloaded STP, Increase capacity of Existing Plants)



Low Space requirement or footprints (easily fit in tight spaces, rural areas)



Plug & Play Architecture



Low Lifecycle Cost (Only pumps & gills media required to operate)



Quick installation (need 15-20 days to start the Treatment)



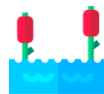
Rapid biological start-up & restart time



No blowers / Aerators required



No Civil work or Heavy Infrastructure Required



Easy Deploy or Onsite Treatment – Pond, Drain, Ground Water



Easy to Operate & Maintain



Fully Solar Operated wastewater treatment Plant