



**Sewage as a
Resource**

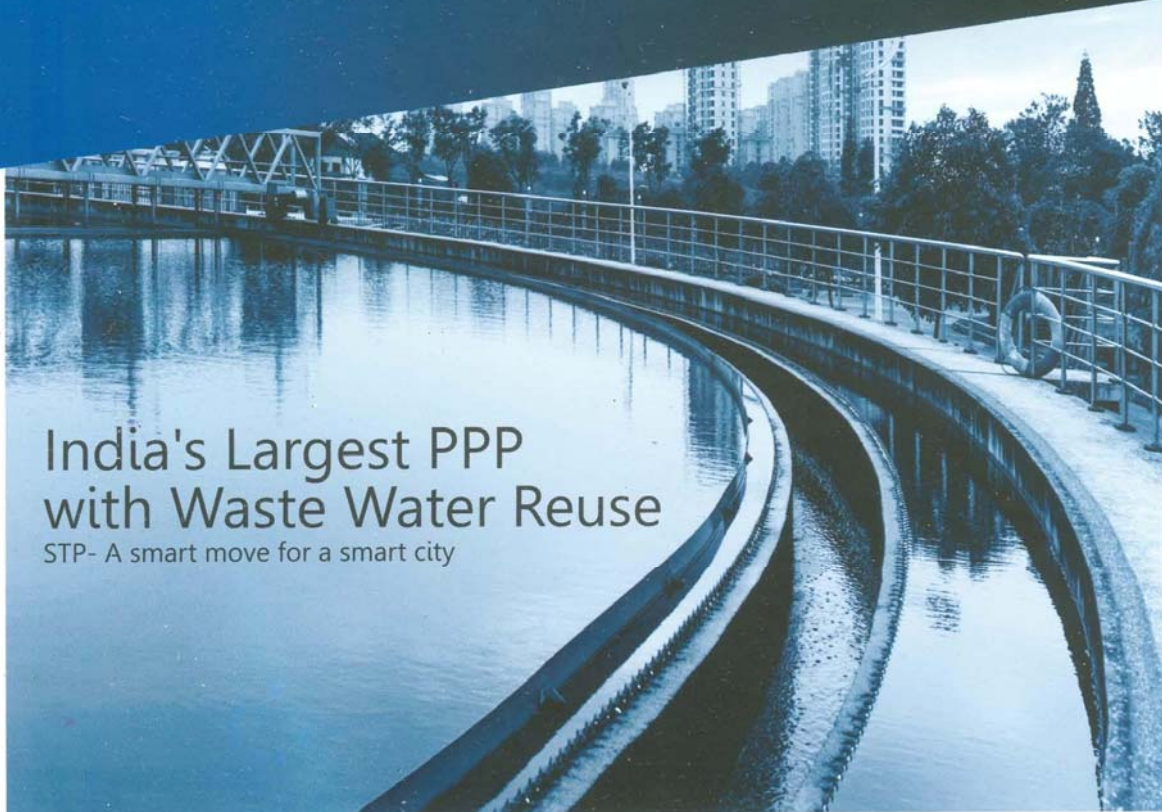


**Augmentation of existing 100 MLD STP at Bhandewadi to 200 MLD
with reuse option under PPP**

Making Sewage a Resource

A paradigm shift is required to treat sewage as resource and not waste. With growing urbanization sewage has become the curse of modern urbanization. But all that is needed is a change of perspective; the moment sewage is looked at, as an invaluable resource the curse becomes a boon. Nagpur Municipal Corporation (NMC) realized this and formulated a unique model to convert sewage into usable water and energy. Under this model NMC proposed a 100% privately funded **Sewage Treatment Plant**, which would treat the huge amounts of sewage generated by the city. This model allows for a revenue sharing structure with the private operator leading to total cost recovery of the project and its operation for NMC.

The single most important aspect of this proposal is the freeing up of 200 MLD fresh water for human consumption, which is currently being supplied to the thermal power plants & industries, as this plant would substitute it with the treated water it generates. In addition to this, the STP would generate enough CNG to run 50 to 75 green buses for urban transport, thus helping move closer to the realization of its green smart city dream.



India's Largest PPP with Waste Water Reuse

STP- A smart move for a smart city

Key Highlights

Scope –
Augmentation of
existing 100 MLD
STP to 200 MLD
with reuse option
under PPP

Project Cost –
INR 236 Cr
(100% financing
by the Operator)

Technology –
Sequential Batch
Reactor Process

**Options of producing
Power Generation or
CNG from Biogas –**
Plan is to produce 1.3 MW
of Power for captive use or
8500 cum/day of Biogas which
will run 50-75 Green Buses



Reuse Benefits - Creating Sustainable Development Model

Environmental Sustainability



Water
Security -
People

- Town to get additional 200 MLD fresh water
- Dam construction plan deferred with additional sources - saving investments, rehabilitation and environment



Water
Security -
Industries

- Power plants/Industries to get assured water source
- No conflicts in summer season (Water is diverted to domestic users in summer)



Green
Buses

- Will provide environment friendly CNG for running green buses

Adding value to water

Win-Win Situation –

- By using treated water for power plants/industrial units, additional portable water will be made available to the people for drinking/agriculture use
- Through revenue sharing model, the revenue accrued after selling of treated water will make the asset (STP) cost free to the Client, thus the funds can be used for other beneficial schemes for the benefit of people of Nagpur
- This will also postpone the requirement of expansion/construction of dam by many years thus saving hundreds of crores of exchequer of the State Govt.
- The waste water will also be used to produce CNG that will fuel eco-friendly buses in the city
- The process saves natural water resources from being polluted and will thus improve health security
- The Operation and maintenance of the STP and treatment of sewage is ensured for 30 years
- The same principle can be replicated all over India

Challenges = Opportunities

Waste Water - Used, treated, reused

Water tables - Saved

Industrial Water need - Met

Health Security - Improved

Employment - Generated

Need of new dams - Controlled

Revenue- Ensured

State Govt Exchequer Money - Saved

Contents in waste water - Turned to CNG

Water Value - Doubled!

Gosekhurd Dam water - Saved from contamination

Rehab scheme for 24x7 water supply in Nagpur city

The city- Nagpur

The 3rd Largest city & winter capital of Maharashtra State, Nagpur is India's 10th largest city with a population of over 2.5 million people. It became the first city of its size in the country to out source its water supply to a Private Operator under PPP model for 25 years.



The Objective

One big objective was to provide 100% safe & healthy drinking water 24X7 to 100% of the population including the slum dwellers within 5 years. The second major objective was to reduce non-revenue water below 25% in 10 years.

The Principle

Nagpur Municipal Corporation awarded the project through an international tendering process in June 2011 under Government of India's JNNURM programme.

The Company

The contract was awarded to Orange City Water Limited- a 50:50 joint venture of Vishvaraj Environment Pvt. Ltd. and Veolia Water, France.

The Project

The Private entity to bring in 30% of the investment of the estimated project cost, 70% to be the Public entity's contribution under JNNURM + 100% escalation. The total Concession Period is of 25 years.



Nagpur Municipal Corporation
Mahanagar Palika Marg, Civil Lines, Nagpur-440001



DRA CONSULTANTS PVT. LTD.
58, Ingole Nagar, Opp. Airport, Behind Hotel Pride,
Wardha Road, Nagpur-440 005 (M.S.) India.

The Scope

The project covers management of the entire water cycle from production, treatment, transport, storage and delivery to the last point of usage i.e. the customer's tap. This involves replacement of 3,00,000 house service connections, rehabilitation of water treatment facilities, service reservoirs and pipelines.

Social Inclusiveness

Every household including slums to get individual continuous piped water supply connection.

The Accolades

The project received recognition from Hon'ble Prime Minister of India at the launch of prestigious AMRUT and Smart Cities initiatives in Delhi on 25th and 26th June 2015 and was selected as National Best Practice in Urban Water Sector.

The project was selected for and awarded amongst the top 10 PPP projects in Asia region for Emerging Partnerships Initiatives by London based Infrastructural Journal (IJ) and International Finance Corporation.

The project was also awarded the prestigious 'Deal of The year' Award for the year 2013 by Global Water Intelligence.



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