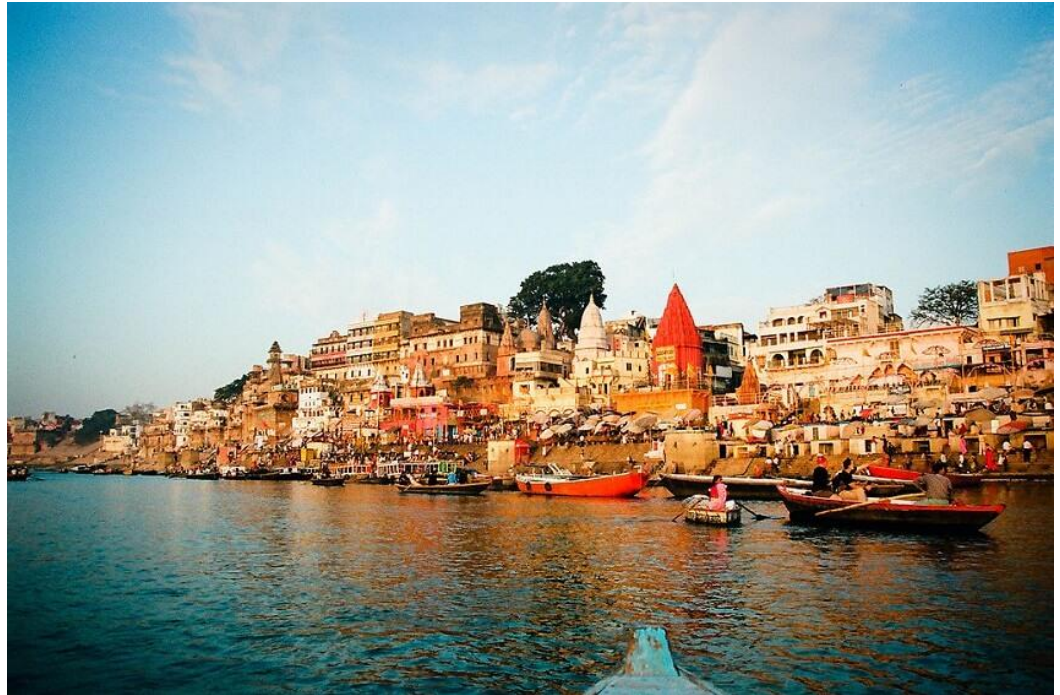




Public-Private Partnership Stories

Clean Ganges (Varanasi & Haridwar) PPP



Over three-quarters of the sewage generated in the towns and cities along the river Ganges in India flows untreated into the 2,525-km long river, which is a water source for 400 million people, or about 40% of India's population. Recognizing the need to rejuvenate the river Ganges, the Government of India (GoI) approved the "Namami Gange" ("Clean Ganges") program in 2015. The National Mission for Clean Ganga (NMCG), managed by the Ministry of Water Resources, River Development and Ganga Rejuvenation, looked to develop modern sewage treatment plants (STPs) through Public-Private Partnerships (PPP) to reduce the pollution flowing into this sacred river. IFC supported the NMCG in Uttar Pradesh Jal Nigam and Uttarakhand Pey Jal Nigam to design and tender PPPs to find the right private sector partners to sewage treatment plants and rehabilitate the associated infrastructure in cities of Varanasi (Uttar Pradesh) and Haridwar (Uttarakhand).

After a competitive bidding process, development of a 50 Million Liters Per Day (MLD) STP in Varanasi was awarded to a consortium led by Indian infrastructure company – Essel Infra Projects Ltd., and two STPs in Haridwar with total capacity of 82 MLD were awarded to HNB Engineers Private Ltd. On October 11, 2017, tripartite agreements were signed by NMCG, state water authorities, and the winning bidders for setting up STPs under India's hybrid-annuity PPP model, marking the first time this model has been used for wastewater treatment projects in India.

This series provides an overview of public-private partnership stories in various infrastructure sectors, where IFC was the lead advisor.

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BACKGROUND

India's holy river Ganges is a water source for 400 million people, which accounts for approximately 40% of India's population. Over three-quarters of the sewage generated in the towns and cities of India's crowded northern plains flows untreated into the 2,525-km (1,570-mile) river Ganges. The river, which stretches from the Himalayas to the Bay of Bengal, is also a destination for waste produced by hundreds of factories. This presents serious health and environmental risks for the people of India. Moreover, the use of untreated or partially treated wastewater for irrigation is widespread among farmers and is responsible for a variety of health and food safety issues.

Previous attempts to clean the river under the Ganga Action Plan (GAP) launched in 1985 largely focused on creating sewerage infrastructure assets that state governments or urban local bodies (ULBs) operated and maintained. This approach, was primarily driven with a focus on constructing assets, but failed to adequately invest in their operation and maintenance. This approach has not led to an improvement in the quality of water of river Ganges.

The GoI looked to change this by leveraging the expertise of the private sector to construct, operate, and maintain treatment facilities in major cities along the river. In January 2016, GoI approved a "hybrid annuity PPP model" for the creation and maintenance of sewage treatment assets under the Clean Ganges program. The NMCG intends to establish the hybrid annuity PPP model as sustainable model for developing wastewater treatment plants and sought IFC expertise to structure and tender the first PPPs.

IFC'S ROLE

As lead transaction advisor to NMCG and state water authorities of Uttar Pradesh and Uttarakhand, IFC helped design the first of its kind hybrid annuity structure with a view to balance public and market risks and created a competitive bidding process.

IFC's role included technical, legal, and analytical support including:

- Conducting a detailed technical analysis for determining waste quality depending upon seasonal fluctuation and evaluation of various technology options for its treatment.
- Assessing financial feasibility under different PPP contractual options.
- Reviewing social, legal, and commercial issues related to the project to identify impediments and/or constraints that could affect private sector participation under different contractual schemes and financial arrangements, and to design a risk allocation framework.
- Leading discussions with potential investors to gauge commercial viability of the project, investor interest, and enable optimal project structuring.
- Managing the bid process, including preparation of bid documents and evaluation of bids.

TRANSACTION STRUCTURE

A transaction structure for constructing, operating, and maintaining STPs for 15 years at Varanasi and Haridwar was developed, with assets to be transferred back to the state water authorities at the end of the concession term. As per the hybrid annuity model, 40% of the capital cost would be paid to the private developers on the completion of construction while the remaining 60% of the cost will be paid over the life of the project as annuities along with operation and maintenance (O&M) expenses. The annuity and O&M payments will be linked to the performance of the STP, which will ensure continued performance throughout the life of the PPP due to greater accountability.

NMCG will be responsible for all payments under the project, and the state water authorities will be responsible for reviewing and monitoring the works undertaken by the private developer during construction and O&M during the tenure of the agreement. This transaction structure has huge potential for India and has significantly increased investor confidence in the Clean Ganges program and in NMCG as a partner. NMCG is now developing hybrid annuity projects in 10 more cities using the model documents developed by IFC.

BIDDING

A single stage bid process was adopted and the tender had more than 35 companies express interest and participate in the pre-bid consultations. Six bids were received for Haridwar and eight for Varanasi. This is significantly higher than the 1-3 bids NMCG typically receives for its DBOT projects. Essel Infra Projects Ltd. won the bid for the Varanasi project with a bid of \$24 million and HNB Engineers Private Ltd. was awarded the Haridwar project with a bid of \$27 million. The construction period for these projects is around 2 years and the operation and maintenance period 15 years.

EXPECTED POST-TENDER RESULTS

- The project is expected to improve drinking and industrial water supply, reduce the stress on groundwater, and make safe water available for irrigating agricultural crops.
- First successful hybrid annuity PPP in sewage treatment in India.
- The framework for this hybrid annuity PPP will influence the design of future PPPs in the states along the river basin and in India.