

A stylized green tree graphic on the left side of the slide. The trunk and branches are green. Several circular icons are placed along the branches, including a factory, a graph, a sun, a recycling symbol, a factory with gears, a wind turbine, and a bar chart with a coin.

Green Infrastructure and Municipal Services

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Green Business Forum for Asia and the Pacific

Investing in a Sustainable Future

22–24 November 2016 • ADB Headquarters

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Overview

- Urbanization: Trends and Issues
- Municipal Services: Improving Resource Use, Reducing Waste
- Opportunities for Waste Reduction in ADB Operations
- Opportunities for Circular Economies in ADB Operations





The Rise of Asian Cities

PERCENTAGE OF ASIA'S POPULACE
LIVING IN URBAN AREAS



OVER 70%
OF THE REGION'S
GDP
IS DERIVED FROM
CITIES

BY 2020...



Many of Asia's major cities have been established in some of the most hazardous locations possible



MOST ASIAN CITIES
LACK EFFECTIVE
WASTEWATER
TREATMENT SYSTEMS

MORE THAN TWO-THIRDS
OF COLLECTED SOLID WASTE
IS NOT DISPOSED OF
PROPERLY



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Greening Municipal Services

- Judicious use and recovery of water, energy and land are critical in cities
- Greening in
 - City Design and Services
 - Green and Sustainable Buildings
 - Smart Energy Systems for Cities



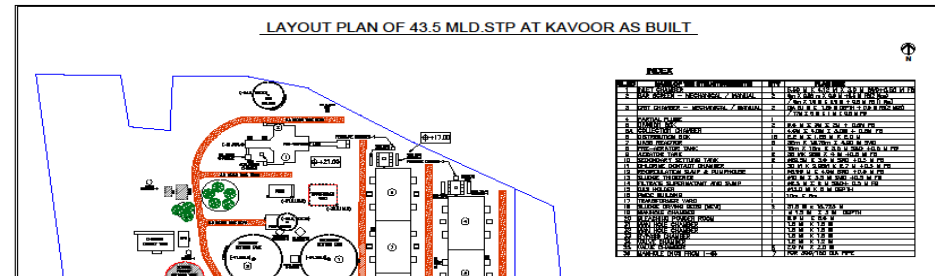
Reducing Water Leakage in Kolkata

- Objective: provide continuous water supply
- First NRW Reduction Performance Based Contract in Zone 1 – to be followed
- NRW Reduction from about 65% to < 20% over 4 yrs.



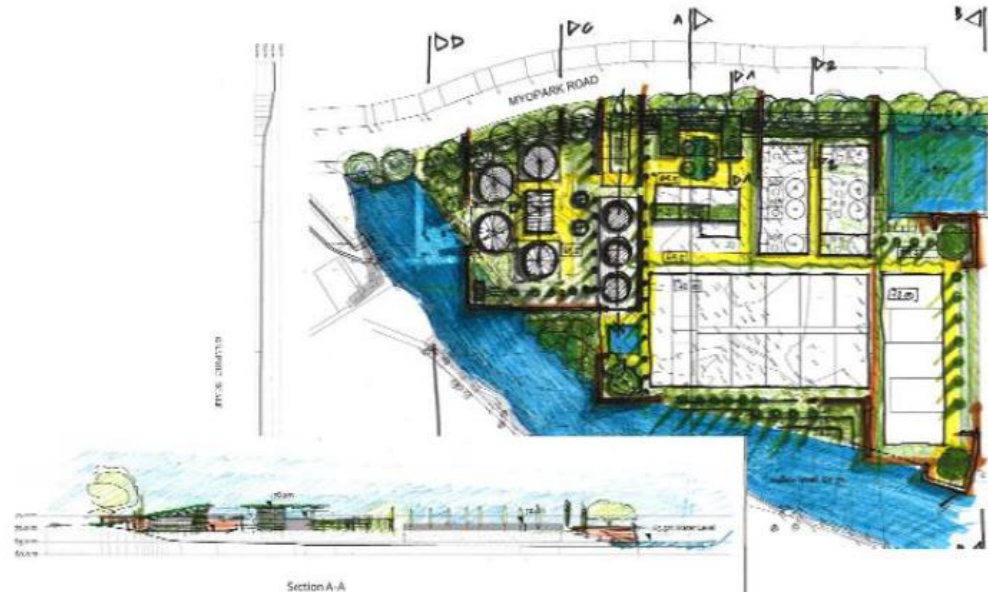
Mangalore Reuse of Treated Effluent

- 4 STPs (19.5 MLD), Kavoor STP (9.5 MLD)
- MoA (MSEZ & MCC)
- New transmission pipeline, 22.7MLD Tertiary Treatment Plant and distribution network within the industrial area



Nankad Lake WWTP

- First phase physico-chemical wastewater treatment plant with a design flow of 75 MLD
- Sludge treatment system including thickening, digestion and drying
- cogeneration system to transform biogas into electricity



Sewage Treatment Plants with Methane Capture at Delawas (Jaipur)

- 62.5 MLD (\$2.8 million) AS STP, constructed in August 2006
- Sludge digested turned into power in gas engines and manure.



Solid Waste Resource Recovery in PRC

- Segregation at Source with Final Separation on-site
- Methane Recovery from Closed Landfills
- Waste-to-Energy and Ash Reuse (bricks and landfills)

