



Advantage India




WATER SECTOR OPPORTUNITY- INDIA
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sustainable solutions. for a better life. Water is our element.


Consulting - Design - Engineering - Procurement - Construction - Commissioning - After Sales Service - Operational Management - Turnkey Contract



Drinking Water Treatment - Industrial Water Treatment - Desalination - Wastewater Treatment - Sludge Treatment - Water Reuse - Water Recycling



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IMF about INDIA

“INDIA’S GROWTH RATE TO SURPASS CHINA’S IN 2016”
 INTERNATIONAL MONETARY FUND

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About WABAG

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WABAG at a Glance

- > **500 PLANTS COMPLETED SINCE 2000:** *Established reference position*
- 1,500 EMPLOYEES:** *well-trained and ambitious employees*
- LIFE CYCLE PARTNER:** *Full Service: Planning, engineering, installation, operational management*
- 90 YEARS OF EXPERIENCE:** *Mature know-how and competence*
- IN 20 COUNTRIES:** *International presence in key countries*
- > **100 PATENTS:** *Comprehensive technology range*





Product Portfolio

WATER & WASTE WATER TREATMENT



Drinking water treatment



Industrial water treatment



Municipal wastewater treatment



Industrial wastewater treatment

OTHER APPLICATIONS



Desalination of sea and brackish water



**Water reclamation:
Reuse & Recycling**



Sewage sludge treatment

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Service Portfolio

Our service range

is based on a holistic life cycle model extending from project development to long-term plant operation:

- Consulting
- Financing
- Planning
- Design & Engineering
- Procurement
- Construction
- Commissioning
- After sales service
- Operational management (**O&M, DBO, BOT, BOOT**)

Comprehensive technical and economic know-how guarantee efficient project realisation.

From the supply of systems components to turnkey order realisation as well as rehabilitation, upgrade and extension of existing plants.



Complete supplier
&
Life cycle partner

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WABAG **Critical facts about India**

- ❑ India has 18% of the world's population but has only 4% of total usable water resources and this ratio is expected to increase phenomenally over years
- ❑ More than 100 million people live in areas of poor water quality
- ❑ Frequent monsoon failure across India
- ❑ Rapid growth in Industries, lead to high intake for water & untreated effluent into water bodies
- ❑ Top growers of agriculture produce but Inefficient use of water in agriculture. Water lost due to evaporation, drainage, conveyance etc.,
- ❑ Inadequate drinking water supply & sanitation
- ❑ Per capita water availability declining continuously

54%
of India
Faces
**High to
Extremely
High
Water Stress**

Baseline Water Stress (withdrawals/available supply)

- Low (<10%)
- Low to Medium (10-20%)
- Medium to High (20-40%)
- High (40-80%)
- Extremely High (>80%)
- Arid & Low Water Use

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WABAG **Urban Infra market**

- ❑ **Greater than before Government Focus:**
 - Separate Ministry for Water
 - Higher emphasis attached to it by honorable Prime Minister
 - Within 3rd day of Govt. formation a cabinet level meeting has been convened to initiate Water sector reforms
- ❑ Swift Industrialization calls for "Recycle & Reuse" model
- ❑ More demand for self sustaining STP, independent of utility power

Other Sectors; 11%

Water Supply; 8%

Sewerage; 6%

(MSWM); 1%

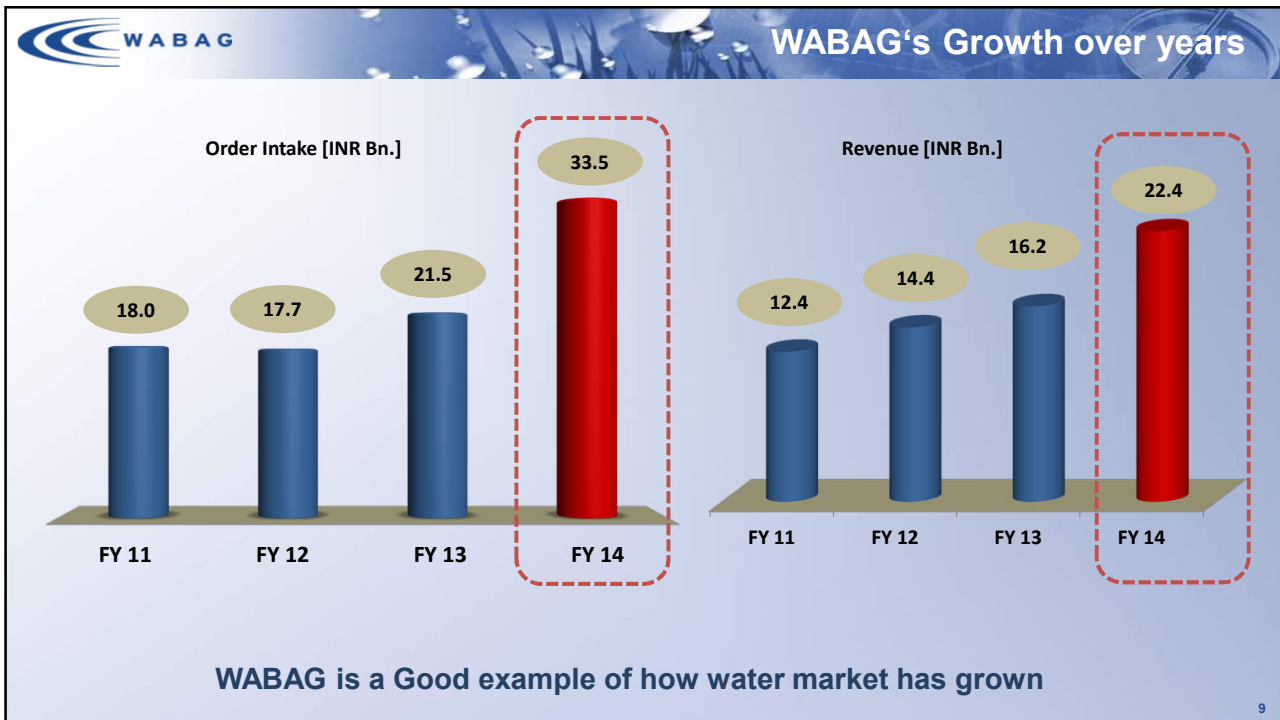
Storm Water Drains; 5%

Urban Roads & transport; 58%

Renewal and redevelopment ; 10%

Total market : 548614 million Euro (2012-31)

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WABAG **Key projects - India**

Kodungaiyur & CPCL – Municipal Waste Water to Industrial Reuse

110,000 m³/d STP built on a turnkey basis, based on Activated Sludge Process (ASP) with anaerobic sludge digestion

The biogas utilisation by means of a power plant based on gas engine of capacity 1317 KVA ensures that the plant is self sufficient in meeting its power requirements

Treated effluent from the STP is used as raw water for water reclamation plant at CPCL Manali

Plant is being operated & maintained continuously for the past 9 years using professional expertise and ensuring that the water balance is maintained



WTP for Commonwealth Games Village, Delhi

Membrane Filtration; Capacity- 4,540 m³/d

Realisation of a new water treatment plant for the supply of fresh and service water to the Games Village for the 19th Commonwealth Games in Delhi in October 2010.

Implementation of a modern multi-barrier system including membrane filtration (ultrafiltration) and UV-disinfection to turn groundwater into pure drinking water. DBO-project.



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Key projects - India

Pappankalan - Municipal WWTP with Power Generation, New Delhi

The 91,000 m³/d WWTP is one of the first of its kind in India to incorporate tertiary treatment in the process

Delhi Development Authority envisages the reuse of the effluent for a variety of non-contact purposes

The state of the art sludge management system along with the power generation from bio gas will ensure that the maximum utility is derived from the wastewater

The biological treatment is based on well proven Activated Sludge Process.



RIL Dahej - Industrial Waste Water Reuse

The 86.4 MLD Effluent treatment plant and recycle facility is the first large scale facility for PTA wastewater in India.

The first of its kind facility in India benefits from a combination of advanced technologies that includes a state of the art MBR technology followed by Ultrafiltration and Reverse Osmosis.

The treated water is recycled for Industrial applications.



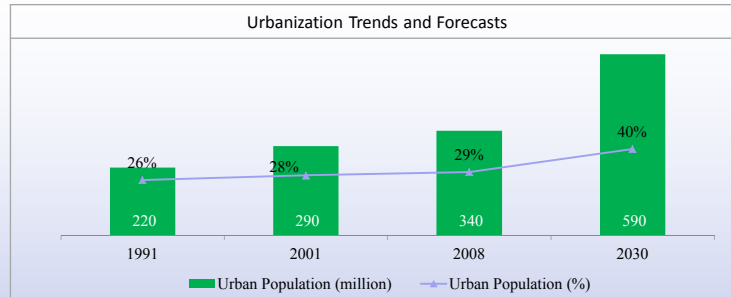
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Rapid Urbanization

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WABAG Urbanization Growth Will Create Demand for Urban Infrastructure



- Urban areas are expected to add ~118 million jobs between 2008-30, leading to increased urbanization due to migration.
- Growing contribution of urban areas to the economy will spur urbanization.
- This will lead to increased demand for urban infrastructure.

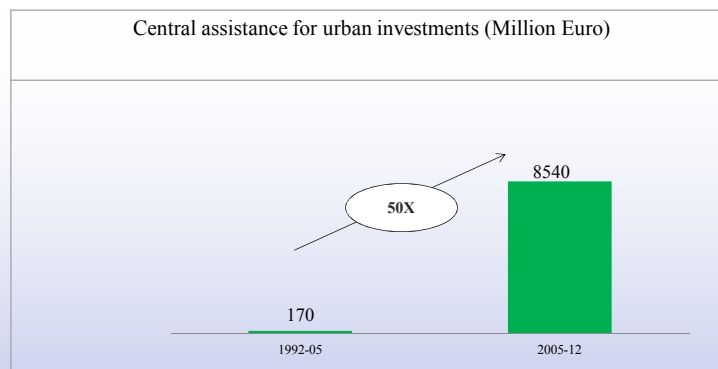
Source: McKinsey Report- India's urban awakening: Building inclusive cities, sustaining economic growth

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Central Assistance for urban infra



Euro- Conversion rate INR 1= 0.014 Euro

There has been exponential increase in the Central Government assistance to the urban sector. This is expected to continue.

Source: Report on Indian Urban Infrastructure and Services by High Powered Expert Committee constituted by Ministry of Urban Development, Government of India

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- Boost to private sector participation in service delivery in the water sector

"The "Service Provider" role of the state to be gradually shifted to that of a regulator of services and facilitator. The water related services to be transferred to community and / or private sector with appropriate "Public Private Partnership" model.

- It also talks of pricing water by treating it as an "economic good"

To be treated as an economic good above the pre-emptive uses of sustaining life and ecosystem

- To be priced to promote efficient use and maximize value
- Economic principles need to guide administered prices.

- Boost for effluent treatment plants in industries

Subsidies and incentives should be implemented to encourage recovery of industrial pollutants and recycling / reuse, which are otherwise capital intensive.

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NEW OPPORTUNITIES:

- ✓ ***GANGA REJUVENATION PLAN***
- ✓ ***SWACHH BHARAT***
- ✓ ***SMART CITY***
- ✓ ***MAKE IN INDIA***

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Market Opportunities



Ganga Rejuvenation Plan

- Plan for 118 cities & towns in Ganga states for
 - Sewage Treatment
 - Industrial ETP
 - Recycle & reuse
- Plan – Euro 7 billion allotted under this program with assistance of JICA & World Bank. Also PPP opportunities
- Big opportunity for refurbishment & O&M



Swachh Bharat Mission

WABAG - Only pure play water company!

- More than 50 companies empanelled by govt. for sewerage and solid waste management
- Everyday > 38,000 MLD of sewage is generated in India, but only 30% is treated, with the balance dumped in water bodies




Smart Cities

Delivering Total Water solutions

- Urban population is rapidly growing - stress on infrastructure
- Govt. to invest Euro 1.08 trillion in Smart Cities with Euro 1.08 billion in 14-15 to de-congest
- Pet project of PM Modi to develop 100 smart cities in next 20 years

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KEY ISSUES GANGA

Sewage

- Poor sewerage network
- Degradable Organics
- Inorganics
- Salt & Sugar (TDS)
- Sludge/Rejects

12,000
MLD

Industrial Effluent

- No compliance of effluent treatment
- Laid back attitude by industry
- Big Polluters – tanneries, distilleries, pulp & paper, textiles, pharma/chemicals
- Heavy metals
- True treatment costs are high which industry hasn't internalised

3,000
MLD

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- Supreme Court directive to clean Ganga
- The below investment will be spanned over 10 year period.
- The investment shown below does not consider the cost of sewage network..
- Likely Concession Period- 15 Years
- River Front Management- Austria to look into this opportunity in line with Danube
- WABAG has capitalized this opportunity with initial order value of ~31Mil Euro

Capex	
Sewage Baseline Load	12,000 MLD
Capex 0.21 Mil euro /MLD (A)	2520 Mil Euro
Industrial Effluent Baseline Load	3,000 MLD
Capex Recycling 0.7 Mil euro /MLD	2100 Mil Euro
Total (A+B)	4620 Mil Euro

How will this be funded-

- DBO
- PPP /BOOT structure.

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Industry	Location	Volume	CAPEX (Million Euro)
1. Tanneries (integrated w/ sewage)	Kanpur	60 MLD	126
2. Pulp & Paper	Kashipur ++	30 MLD	63
3. Distillery	Muzaffarnagar ++	100 MLD	210
4. Textiles	Panipat, Haryana	25 MLD	52.5
5. Sewage	Vrindavan, UP	70 MLD	21
TOTAL			476

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SEZ and Make in INDIA

SEZ / Make in India campaign

- Additional opportunity in the field of desalination exists in terms of development along the waterfront.
- Idea to make and export
- Kandla and Tuna in Gujarat are two such opportunities (anticipated capacity (2X50 MLD))
- First initiative by Government of India
- Investment & Tax friendly to attract FDI

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Thank You !