

India's Infrastructure & Urban Development Experience

17 November 2016

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EY Global and India Statement of credentials

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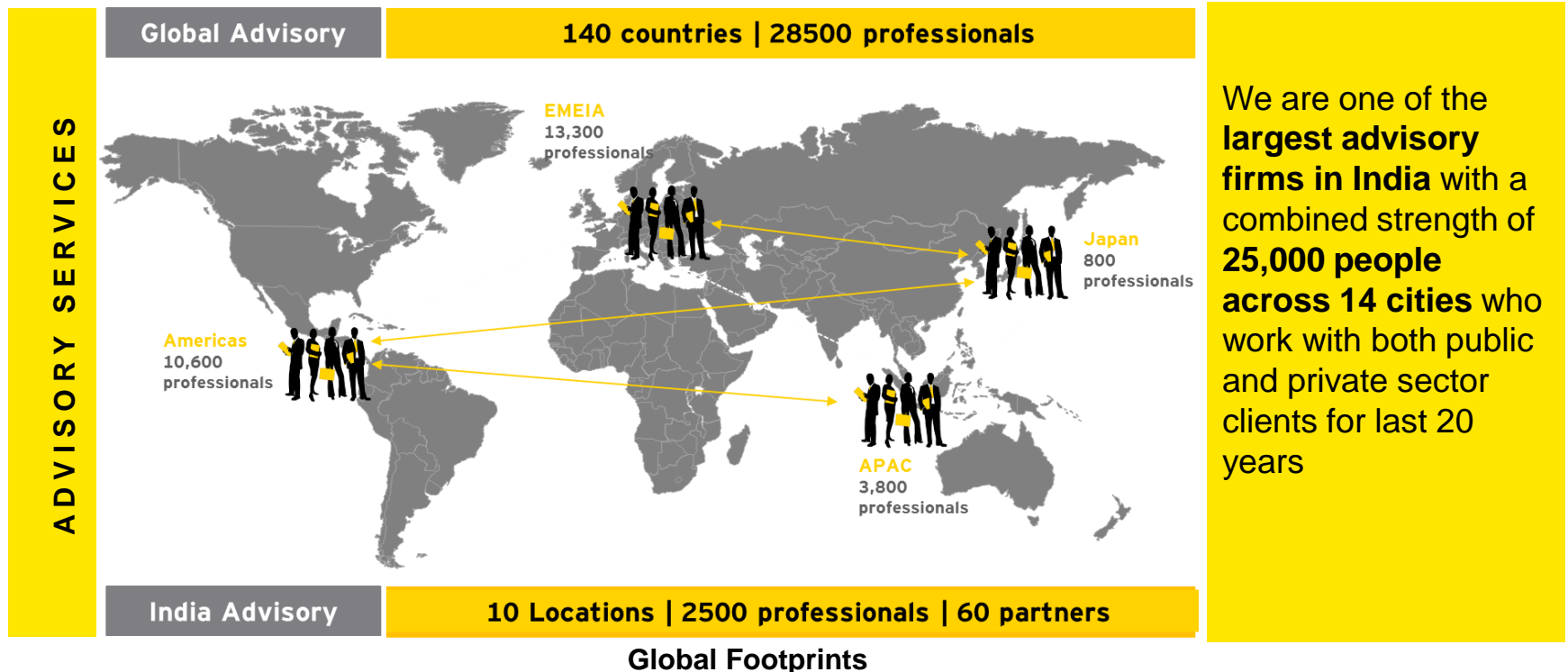
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Our organization is built -on the knowledge base of 212,000 people in 728 offices spread across 150 countries organized into 29 Regions and four areas.



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<p>Digital Government</p>	<p>IT Enablement</p> <ul style="list-style-type: none"> • Oracle/SAP/SAS • Be-spoke development 	<p>IT Transformation</p> <ul style="list-style-type: none"> • Strategy • Program management <p>IT Risk Assessment / Cyber Security</p>
<p>Performance Improvement</p>	<p>Skill Development</p> <ul style="list-style-type: none"> • Skill development and implementation <p>Education</p> <ul style="list-style-type: none"> • Performance assessment • Evaluation of schemes & ICT in schools <p>Power & Utilities</p>	<p>Agriculture & Food Processing</p> <ul style="list-style-type: none"> • Agriculture business strategy/ vision • Institutional set-up & governance • Implementation support and channel development <p>Water, Waste & Sanitation and Sustainability</p>
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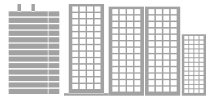
Focus Sectors & Solution offerings

<p>P&U</p>	<ul style="list-style-type: none"> • Generation Performance Improvement • Reform & Unbundling • Smart Metering & Grid Analytics • Customer & billing transformation 	<ul style="list-style-type: none"> • Load Forecasting • Customer analytics
<p>Transport (Railways, Metro, Roads, Ports, Inland waterways, Aviation)</p>	<ul style="list-style-type: none"> • Policy and strategy • Program Management • Projects formulation, planning, development & feasibility • Project structuring, PPP transactions assistance 	<ul style="list-style-type: none"> • Post award / implementation support / contract management • Reform and restructuring • Capacity augmentation strategies • Innovative financing / Digital and ICT / IT implementation
<p>Urban Infrastructure & Smart Cities</p>	<ul style="list-style-type: none"> • Policy analysis & formulation • Infrastructure Program Management @ State and City levels • Projects formulation, planning, development. & feasibility • Project structuring, PPP transactions assistance • Perspective development plan and infrastructure development plans 	<ul style="list-style-type: none"> • Digital Solutions design & procurement & program management support • Digital Solutions Implementation • Bid advisory for Implementation partners • Municipal Revenue enhancement studies • Institutional reforms – program management
<p>Social (Education, Health, Agriculture/ Livelihood, Gender)</p>	<ul style="list-style-type: none"> • Policy and regulatory • Program Management • Risk Management • Transaction Advisory • Digital / IT- Analytics, Dashboard, System transformation 	<ul style="list-style-type: none"> • Value chain Development • Farmer producer Organization • Agri Business Promotion Facilities • Results-Based Financing, Vaccine supply chain, Community involvement and M&E

Smart City Programme in India

India's Flagship City Development Programs

Go's Smart Cities Mission



Smart City Mission – \$ 8 B
GoI funding over 5 years



100 cities - Challenge grants for development of smart districts & deploying digital solutions on city-wide scale

Break away from the past

urban rejuvenation, new urbanism planning

application of digital solutions

focuses investment in pilot areas

phased scaling up of inclusion of cities

Federal funding leveraged with State / Local share

significant international interest

Pvt. Sector's led 'smart' development catalyzed

Complementary National Programs

AMRUT:



\$ 8 B 400 city basic infrastructure investment program. Focus on water, waste water & urban mobility

PMAY:



\$ 20 B program to develop affordable housing for poor in all cities

SBM:



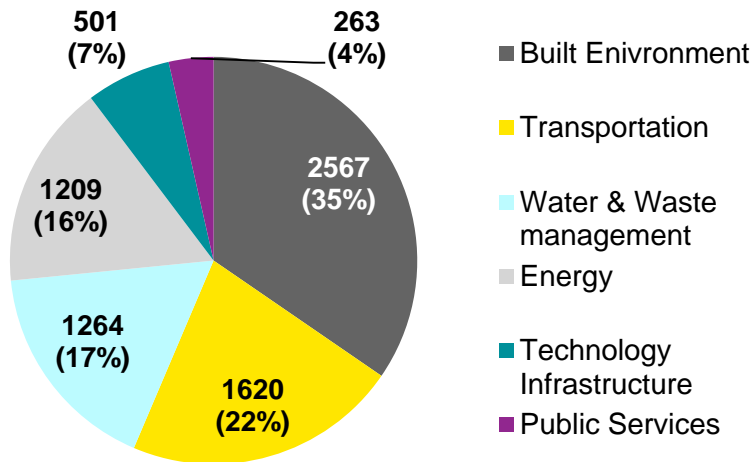
\$ 9 B Clean India Mission. Emphasis on toilets, public sanitation and waste management

Gol's Smart City Mission - Status

INVESTMENT ANALYSIS OF 1st 20 LIGHTHOUSE CITIES

Component wise breakup	Proposed investments USD million
Area Based Dev. (Smart Districts)	5,498
Pan City (City-wide initiatives)	1,927
Total	7,424
Avg. Investment / City	371

Proposed capital Investments (USD 7,424 m)



The Mission thus far:

- ▶ 14 months since launch:
 - ▶ 20 lighthouse cities selected in Jan 2016
 - ▶ 13 additional cities selected in May 2016
 - ▶ 27 second round cities selected in Sep 2016

▶ Lighthouse cities

- ▶ constituted their city level SPVs, and infused capital ~ \$30M
- ▶ Leadership positions in place
- ▶ Program management consultants being engaged

▶ 40 selected Cities

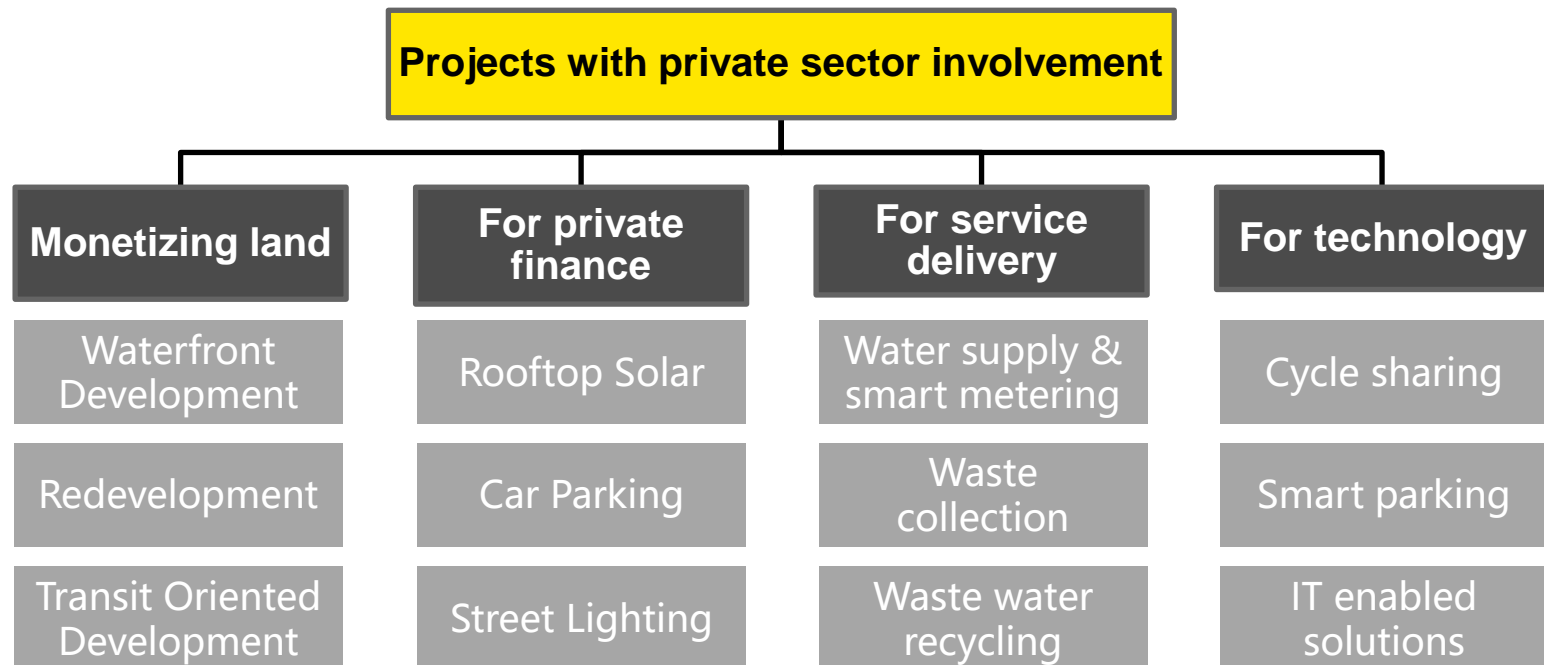
- ▶ In process of achieving above milestones

Accelerating the Mission:

- ▶ More cities (~ 40 next year) to be selected
- ▶ Project design and procurement needs acceleration
- ▶ Tying up all funding sources for selected cities

Financing Smart Cities

- ▶ The total capital cost of the proposed projects in 33 identified smart cities is estimated to be USD 12.5 Bn which is proposed to be funded by way of :
 - USD 5.3 Bn through Central Government and respective state governments
 - Approximately USD 1.0 Bn through ADB and WB as line of credit
 - Balance ~ USD 6 Bn funds will have to be mobilized through land monetization, debt and PPPs



Source: *Go! Smart Cities Website*

EY Smart Cities CoE

Multi-skill team combining solution design and development, domain and business modelling expertise.

Focus on creating 'replicable' solutions. Further, on one hand adapt the assets developed to Indian / developing country requirements; and on other hand serve and support mature markets.

Knowledge Assets for Smart Solutions

- ▶ Governance Model for digital systems
- ▶ Target Operating Model defining mode of operations, SoPs, Interagency collaboration
- ▶ Business Architecture defining links between people-process-infrastructure to achieve business outcomes
- ▶ Functional Architecture defines functional relationship between solution components / sub-systems. Includes data and process linkages.
- ▶ Technical Architecture:
 - ▶ *Application* – to meet functional & non-functional requirements. Includes integration framework
 - ▶ *Network* – Data transmission modes, protocols, SLAs and devices
 - ▶ *HW/Device* – at GUI / HMI, Computing and sensor layer

Digital Assets for Smart Solutions

Some interventions under development:

- ▶ Traffic Operations and Management Centre
- ▶ Urban Public Bus Transit Operations and Management Centre
- ▶ City-wide Solid Waste management Centre
- ▶ Emergency Response / Incidence Management
- ▶ Water utility network operations centre

Solutions will leverage existing platform solutions in the market. Value add in terms of -

- ▶ Solution layers focus on delivering use-cases / functional capabilities
- ▶ Business Intelligence tools for decision support
- ▶ Mobile app interfaces for different user-sets in selected solutions
- ▶ Integrate modelling and simulation tools with operations
- ▶ Cloud based shared service delivery models

Challenges in Commercialisation of Urban projects

Core

Low Tariffs and Billing efficiencies and full cost recovery

Lack of balancing fund to help transit from a low tariff regime to full tariffs

Low capacities in ULBs

Eco system of Banks/FIs to finance Utility projects

Credit worthiness of ULBs and Develop robust payment guarantee mechanism

High political risk – Continuity of reform process

Incidental

Multiplicity of agencies with overlapping authority/roles

Technical standards for new and emerging technology still to evolve

Low real estate prices and commercial land use going through structural change

Our Experience

EY engaged with Federal, Provincial and Local Government(s) for developing smart solutions on Commercially viable format

Some of the Case Studies from India are presented here:

- ▶ Bulk water supply on PPP
- ▶ Municipal Solid Waste Management on PPP
- ▶ Evaluation for Commercial feasibility of Recycled Water
- ▶ Monetisation of Land in Smart Disricts

Challenges in Implementation of Smart City Projects: Case Studies

The background of the slide is a close-up photograph of a water filtration process. It shows a fine mesh filter with water flowing through it, creating a misty spray. Below the mesh, there is a layer of dark, porous filter media, possibly activated carbon, with some orange-brown particles visible. The overall color palette is dominated by blues, greys, and whites, with some orange and brown accents from the filter media.

PPP for Bulk Water System

Project Background – Bulk Water Supply on PPP

EY Technical Assistance Support Team (TAST) of DFID funded Odisha Modernizing Economy Governance and Administration (OMEGA) – acted as Project Advisors to PHEO, Odisha in development for bulk water supply system on PPP format

- ▶ **Department** – Housing & Urban Development, Government of Odisha
- ▶ **Project Authority** – Public Health Engineering Organization (PHEO), Odisha
- ▶ **Project cost** – Rs 187.72 crore (~US\$ 30 million)
- ▶ **Treated water supply** – 52 MLD
- ▶ First BWSP (Bulk Water Supply Project) to be awarded successfully under central government Scheme for Financial Support to PPPs in Infrastructure (VGF) in India
- ▶ The VGF proposal was approved in 47th Empowered Institution on 23rd July, 2013.

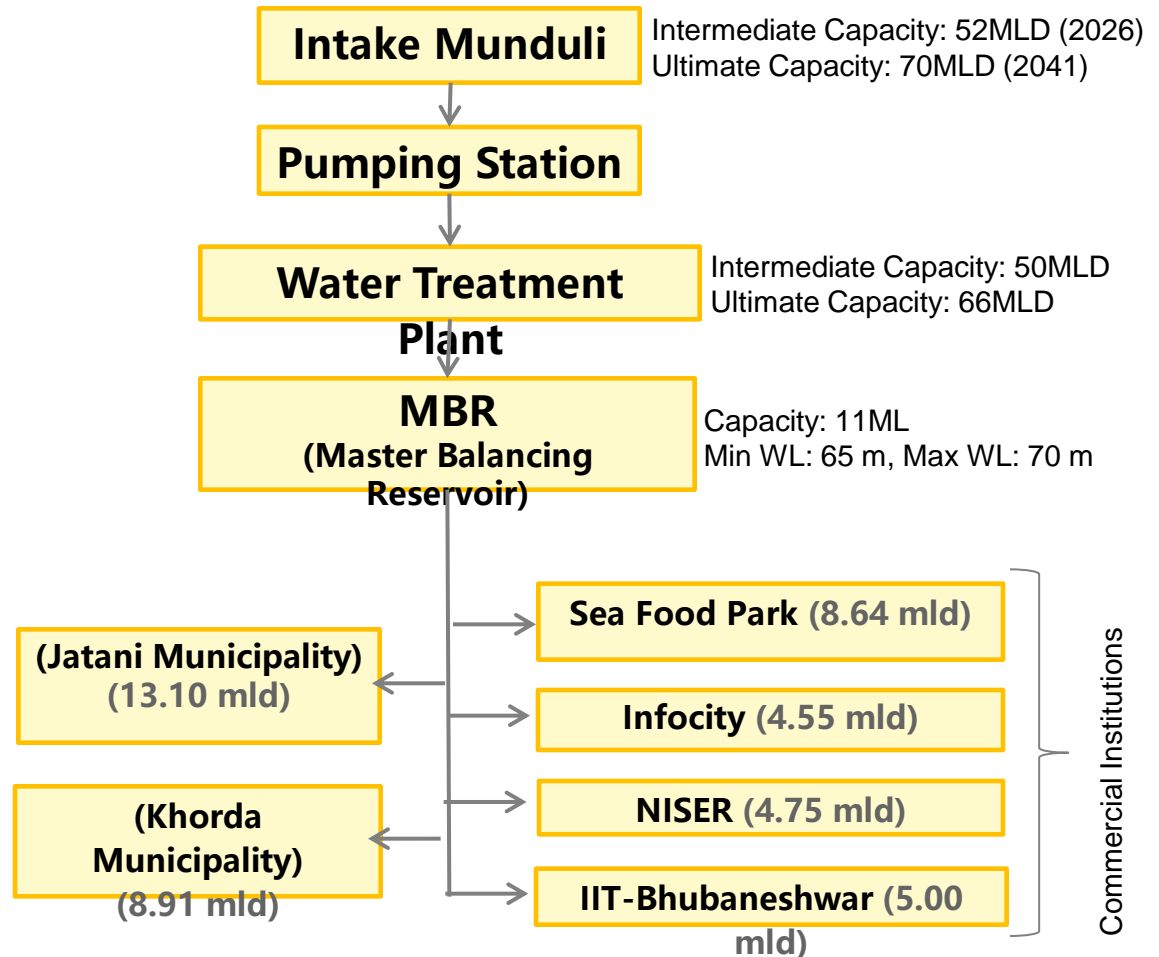
Challenges

- ▶ Project initially planned as EPC, with **no linkages to commercial viability**
- ▶ **Tariff too low** for domestic users with poor payment history
- ▶ Very **high NRW** and low cost recovery
- ▶ **Policy lacked clarity on enhancing tariff** for recovery of capital and O&M cost
- ▶ **Lack of Supplier side**: Not many Developer/Operator willing to take collection risk from domestic users
- ▶ Very long implementation period due to **delays in ROW approvals** leading to delays in COD

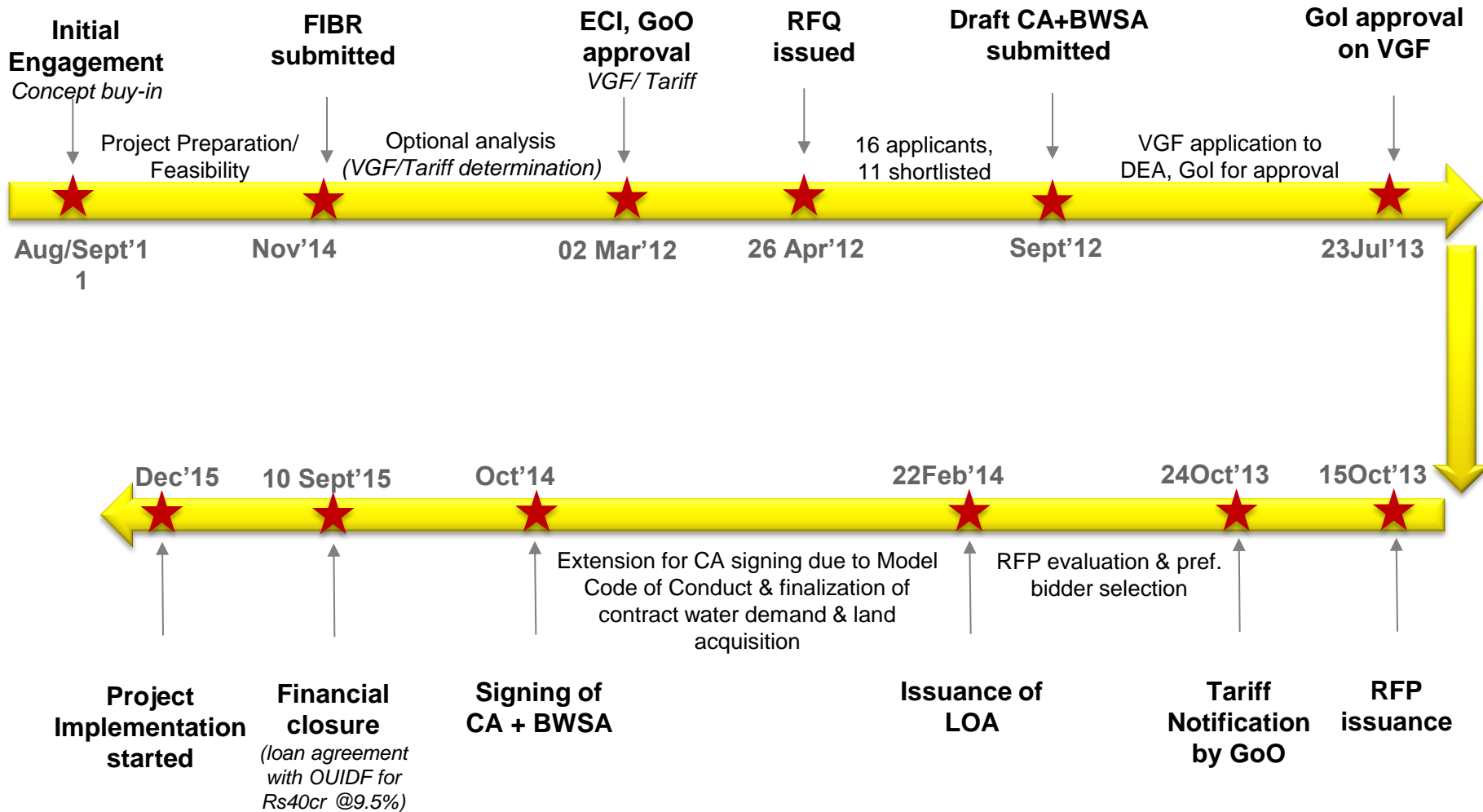
Project Components

Key Project Components

- ▶ Raw water intake
- ▶ Raw water pumping stations
- ▶ Water treatment plant
- ▶ Clear water transmission system
- ▶ Clear water pumping stations
- ▶ Master Balancing Reservoir (MBR)
- ▶ Clear water feeder mains with single point tapings
- ▶ Underground Tanks (UDTs)
- ▶ Ground Service Reservoirs (GSRs)



Project Development Milestones



Policy Level Intervention

The key aspects on cost recovery & tariff design in the State Urban Water Policy included:

- ▶ Tariff structure shall be designed to recover operational cost and then move on to recover capital cost in a phased manner
- ▶ Block rate tariff shall be adopted with higher charges for successive additional blocks
- ▶ There shall be annual increment to the tariff over the previous rate until finalization of next tariff structure (at every three years interval)

Additional aspect included in the State Urban Water Policy:

- ▶ In case of PPP projects, the water tariff will be designed on unit cost of water on project to project basis by the Government

GOVERNMENT OF ORISSA
HOUSING & URBAN DEVELOPMENT DEPARTMENT

NOTIFICATION

No. 31077 /HUD, Bhubaneswar, ଓଡ଼ିଶା, October, 2013
13-HUD-65-REFM-15-POLICY-0035/2013

Subject: Water Rate for Bulk Water Supply Project for IIT Bhubaneswar, National Institute of Science, Education and Research (NISER), INFOCITY-II, Bhubaneswar and adjoining areas under PPP mode.
Housing & Urban Development Department Resolution No. 30471/HUD, dt. 15th October, 2013.

*(73) Ref
23/10/13*

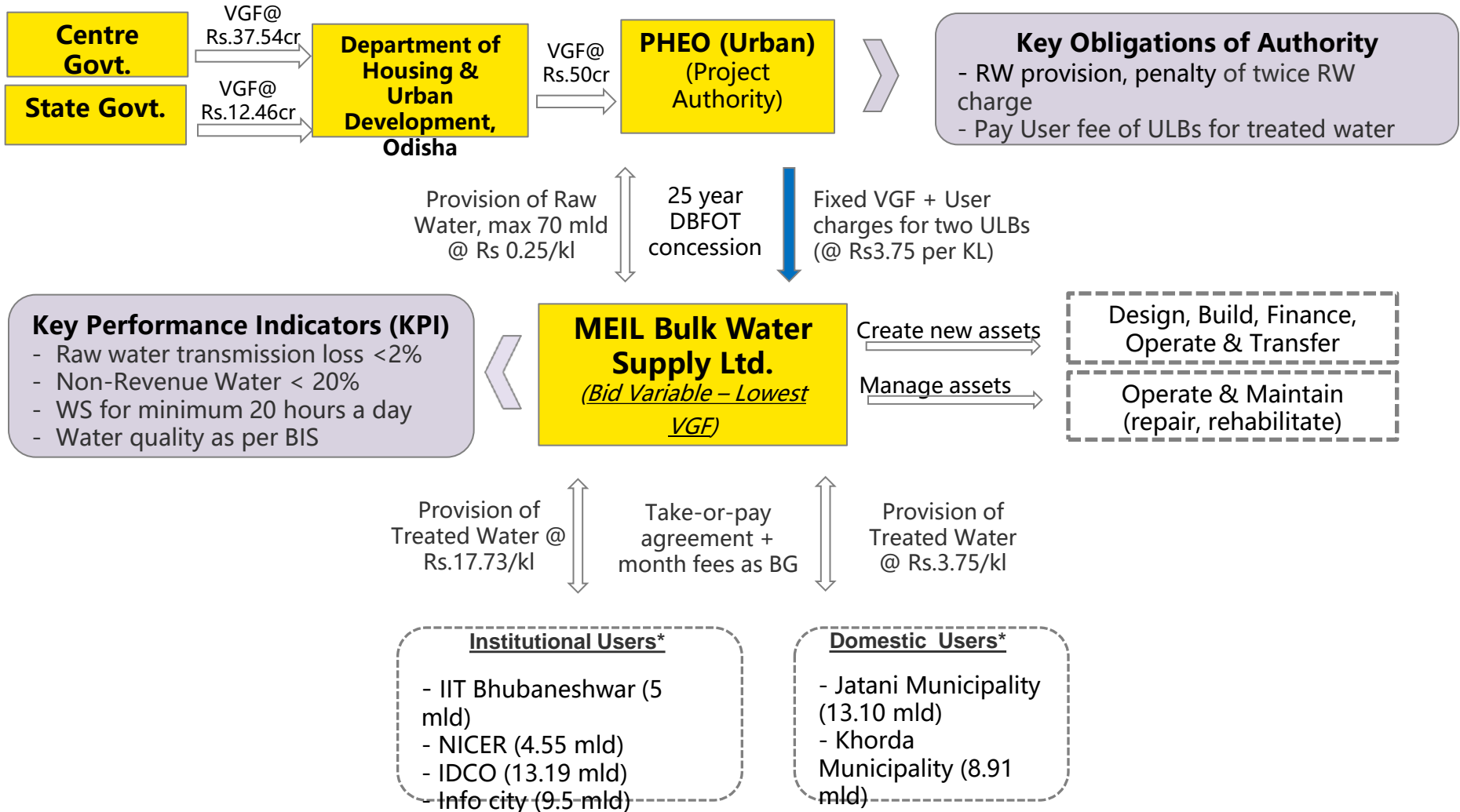
In exercise of powers under Rule-20(5) of the Orissa Water Works (Urban Local Bodies) Rules-1980, State Government do hereby notify the rate of water charges for bulk supply of water to IIT Bhubaneswar, National Institute of Science, Education and Research (NISER), INFOCITY-II and other institutions to be included under the project "Bulk Water Supply to IIT Bhubaneswar, National Institute of Science, Education and Research (NISER), INFOCITY-II and adjoining areas" under PPP mode at the rate of Rs 17.73 per 1000 litres (Seventeen Rupees and Seventy-three paise per one thousand litre) only for the financial year 2013-14.

2. The provisions of automatic increase of water tariff at the rate of 5% each year for all categories of consumers under Rule 48 of the Orissa Water Works (Urban Local Bodies) Rules 1980 shall also be applicable to the above project with effect from 2014-15.

3. The aforesaid water rate shall be applicable from the date of issue of this Notification in the Odisha Gazette.

By Order of Governor
(Injeti Srinivas)
Additional Chief Secretary to Government

Project Structure



Key Learnings

- ▶ Earlier attempts of Bulk water PPPs in mid 1990s in Goa (Selaulim), KN (Cauvery), AP (Krishna) were unsuccessful – these were primarily BOT with 100% private financing & complete demand risk to developer – these aspects were addressed with VGF provision and with take-pay agreement with the state authority for bulk water to ULBs
- ▶ Strong engagement with private sector upfront – to receive and factor feedback while ensuring transparency and process integrity
- ▶ Ensure provision for tariff design for PPP projects in the state water policy – as in this case which led to tariff notification for bulk water to institutional users
- ▶ Provision for cost over-runs to be factor in with clear responsibilities for delays on account of various approvals and fulfilment of condition precedents

The background of the slide features a close-up, slightly blurred photograph of a waterfall cascading over dark, wet rocks. The water is a vibrant blue-green color, and the rocks are dark grey and black, with some orange-brown mineral deposits. The overall scene is natural and dynamic.

Integrated Municipal SWM on PPP

Solid Waste Management Scenario in India



Challenges:

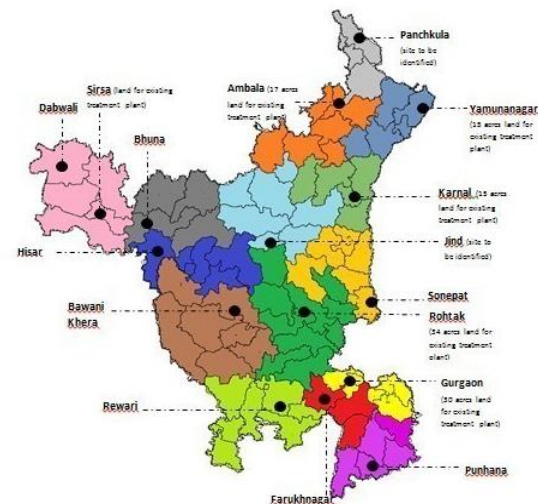
- **Smaller ULBs/Catchment** area not commercially viable
- Waste processing was neglected area with focus only on D2D collection & Disposal; Lack of **enforceable Contracts**
- **Not enough serious operators**: Operator generally not inclined to take long term revenue risk
- Project Viability constrained **by lack of revenue potential** (Tipping fee, Support price of compost/Energy/RDF)
- **Political risk**: NGOs, Worker Union, Local Residents; NIMBY Syndrome

- ▶ Current Municipal Solid Waste (MSW) generation - over 65 Million Tonnes/annum
- ▶ 70% Collection, 12.45% Processing/treatment and rest quantities remain untouched
- ▶ Projected annual waste generation up to 275 million tons/annum by the year 2047
- ▶ Open dumping is a common practice
- ▶ Ill effects : public health menace, GHG emissions, ground & sub-surface water pollution, uncontrolled fires leading to air pollution, etc

^{1,2,3} CPCB Annual reports and MoEF Technical Manual

ISWM in Haryana

- Haryana State Government intends to provide effective municipal solid waste management services with focus on private sector participation
- EY is mandated to carry out cluster based regional planning for entire state, conduct techno-economic feasibility study of each cluster, and provide transaction advisory services for procurement



Benefits of Cluster based Approach

- Enhancing project viability
- It is difficult for small projects to bear high cost of pollution control norms. Combining quantities helps in better enforcement of pollution control norms
- NIMBY syndrome leads to public opposition of MSW related projects. Clustering and reducing number of such projects mitigates this issue
- It helps in holistic planning, optimizing number of

Yellow	Cluster 1	Faridabad	1165
Green	Cluster 2	Rohtak	500
Orange	Cluster 3	Sonepat	450
Light Blue	Cluster 4	Jind	250
Dark Blue	Cluster 5	Hisar	230
Orange	Cluster 6	Ambala	350
Pink	Cluster 7	Dabwali + Sirsa	160
Light Green	Cluster 8	Rewari	190
Grey	Cluster 9	Panchkula	170
Brown	Cluster 10	Bhiwani	160
Red	Cluster 11	Farukhnagar	80
Light Green	Cluster 12	Karnal	250
Blue	Cluster 13	Yamunanagar	300
Purple	Cluster 14	Puhana	150
Grey	Cluster 15	Bhuna	180

ISWM in Haryana



Door-to-Door Collection of MSW



Primary Transportation



Transfer Station



Secondary Transportation

Operator will carry out door-to-door collection of MSW, transport the same to processing site, carry out pre-processing and make RDF, setup treatment facility for organic fraction and use RDF in WtE plant. Operator will also design, construct and operate a SLF where he will dispose all process inert

Sanitary Landfill (SLF)

Inert & processing rejects

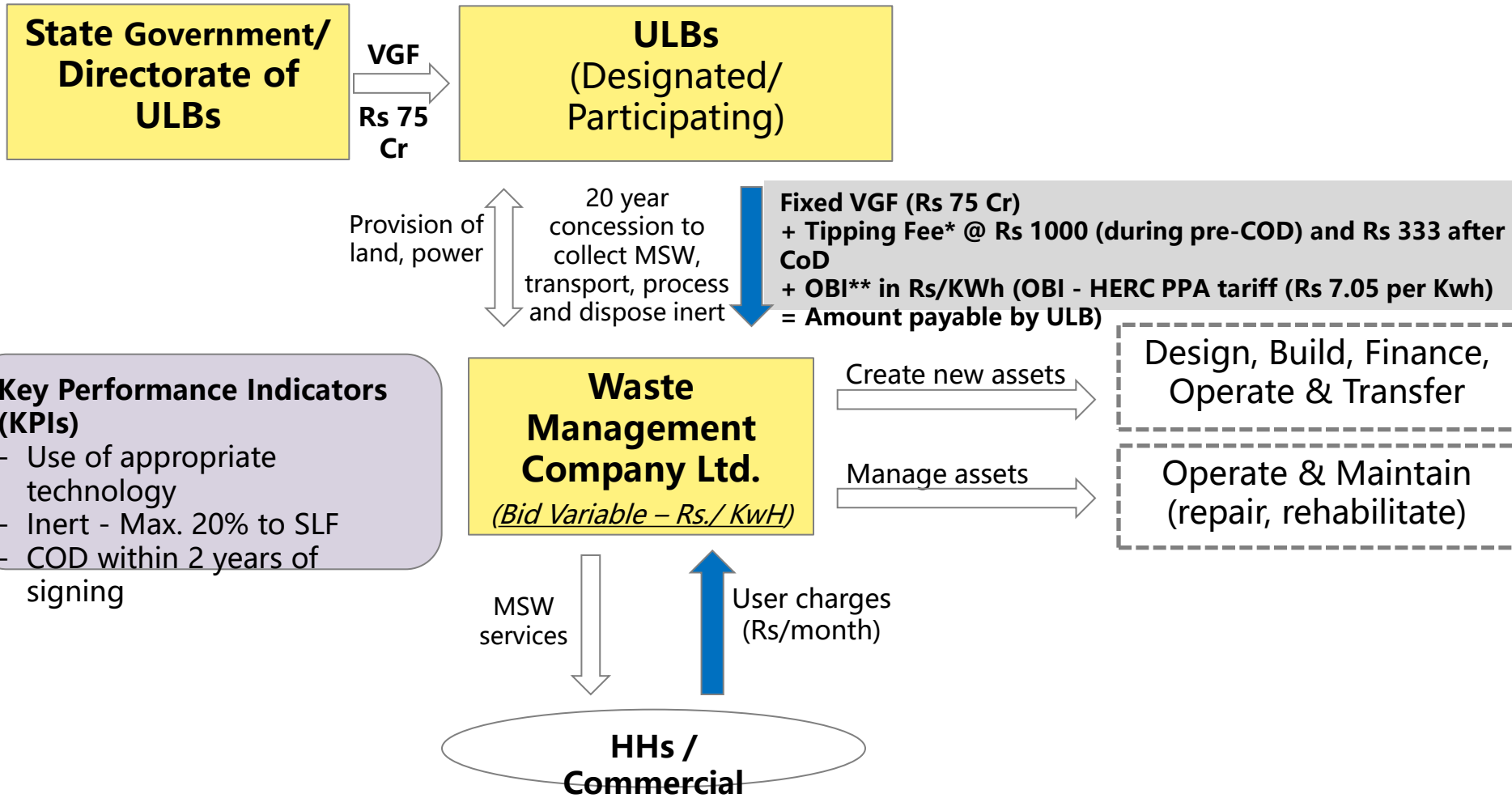


Processing Plant

Useful Products:

- Recyclables
- Power
- Compost

Final Project Structure




* Conventional Tipping fee is the charge levied upon a given quantity of waste received at a waste processing facility;

** Output Based Incentive (OBI) is charge levied upon output produced after processing of waste.

Key Learnings

- ▶ Develop a tailor made solution for SWM solutions
- ▶ Structuring the PPP model taking into account concerns of all parties – right balancing:
 - ▶ ULB/ Government:
 - ▶ Selection of reliable and experienced developer to achieve service level benchmarks
 - ▶ Safeguarding ULB's investment in terms of money and time
 - ▶ Prospective Project Developer:
 - ▶ Transparent selection process
 - ▶ Efforts to manage liquidity during operations
 - ▶ Pre and post COD tipping fee, determination of generic tariff and OBI to enhance bankability of project
 - ▶ Other Stakeholders:
 - ▶ Integration of all activities to stop passing the buck for failures
 - ▶ Ensure proper cleaning of cities with realistic penalty clauses
- ▶ Conducting in depth analysis of project design and feasibility:
 - ▶ Current state assessment
 - ▶ Review of policies, norms and regulations
- ▶ Structuring projects to ensure viability and sustainability



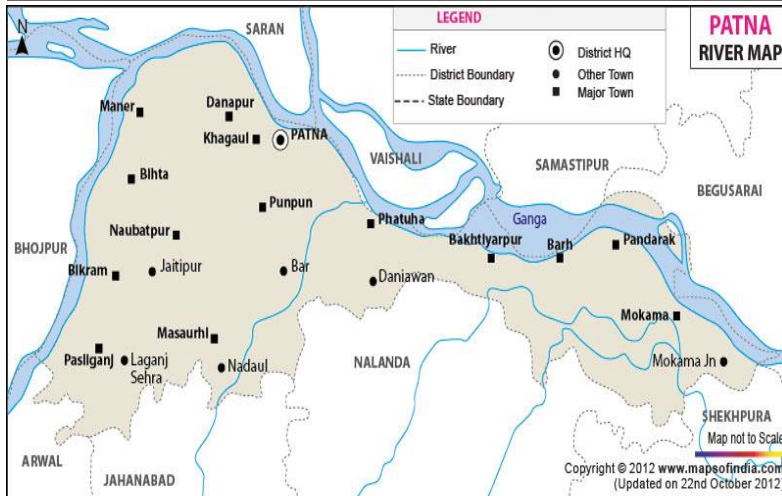
**Scoping study of likely future market
& price for recycled water from
wastewater treatment in 3 select
cities (Patna, Varanasi, Haridwar)**

Project Background

- ▶ NMGCG plan to intercept sewer lines to treat & possibly reuse wastewater in identified 118 cities along River Ganga.
- ▶ EY conducted concept feasibility of recycled treated sewage in 3 cities (Haridwar, Varanasi, Patna) – this presentation is focused on Patna city

Population (Census 2011) - 1,684,222

Municipal Corporation area - 109 sq. km



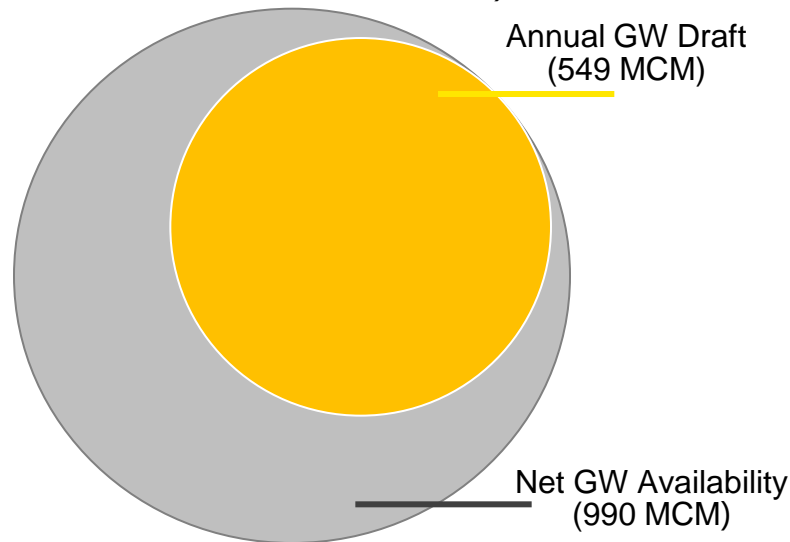
▶ Patna city carries 41% (234 MLD) of total WW (wastewater) to Ganga in Bihar through 9 drains

State	No of Drain	Flow-MLD	%	BOD load (ton/day)	%
Bihar	25	579	10%	99	10%
Uttarakhand	14	440	7%	42	4%
Uttar Pradesh	45	3289	54%	761	76%
West Bengal	54	1779	29%	97	10%
Total	138	6087		999	

Source: Pollution Assessment: River Ganga, CPCB Report 2013

Water and wastewater scenario assessment

Abundance of Ground Water availability in Patna (stage development 55%, safe category as per CGWB)



Total Annual Replenishable GW resource (1)	Natural discharge during non monsoon period (2)	Net GW availability $3 = (1) - (2)$	Annual Ground Water Draft (4)	Stage of GW development (%) $5 = (4)/(3)$
1094.59 mcm	104.06 mcm	990.53	549.16	55%

Source: Dynamic Ground Water Resources of India, as on 31st Mar, 2011 – by Central Ground Water Board, Government of India, July 2014

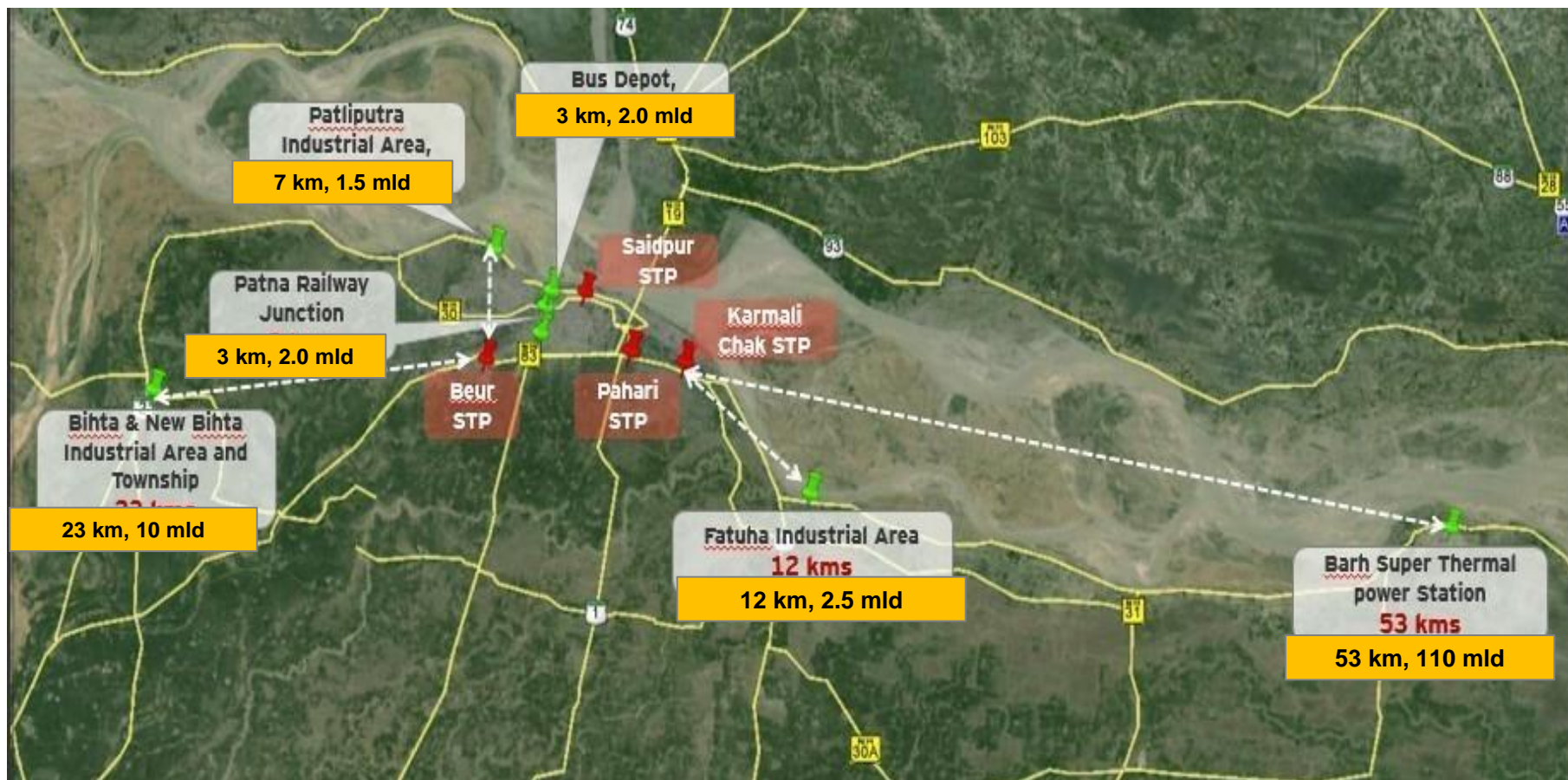
Wastewater treatment infrastructure

	Existing infrastructure	Proposed infrastructure (under various schemes)	Total (Expected by 2020)
Sewerage network	30 kms	702 kms	732 kms
HHs connected	9,000	Cover all HHs	Cover all HHs
STP installed capacity	109 mld	180 mld	289 mld
STP utilized capacity	69 mld	-	289 mld (expected)

**Recycle sewage potential in Patna city in
2015 – 69 MLD; 2030 – 289 MLD**

Source: Patna city AMRUT – SLIP plan, Ganga river action plan website, DPR of CETP plants

Mapping of potential buyers



Cost of providing treated waste water

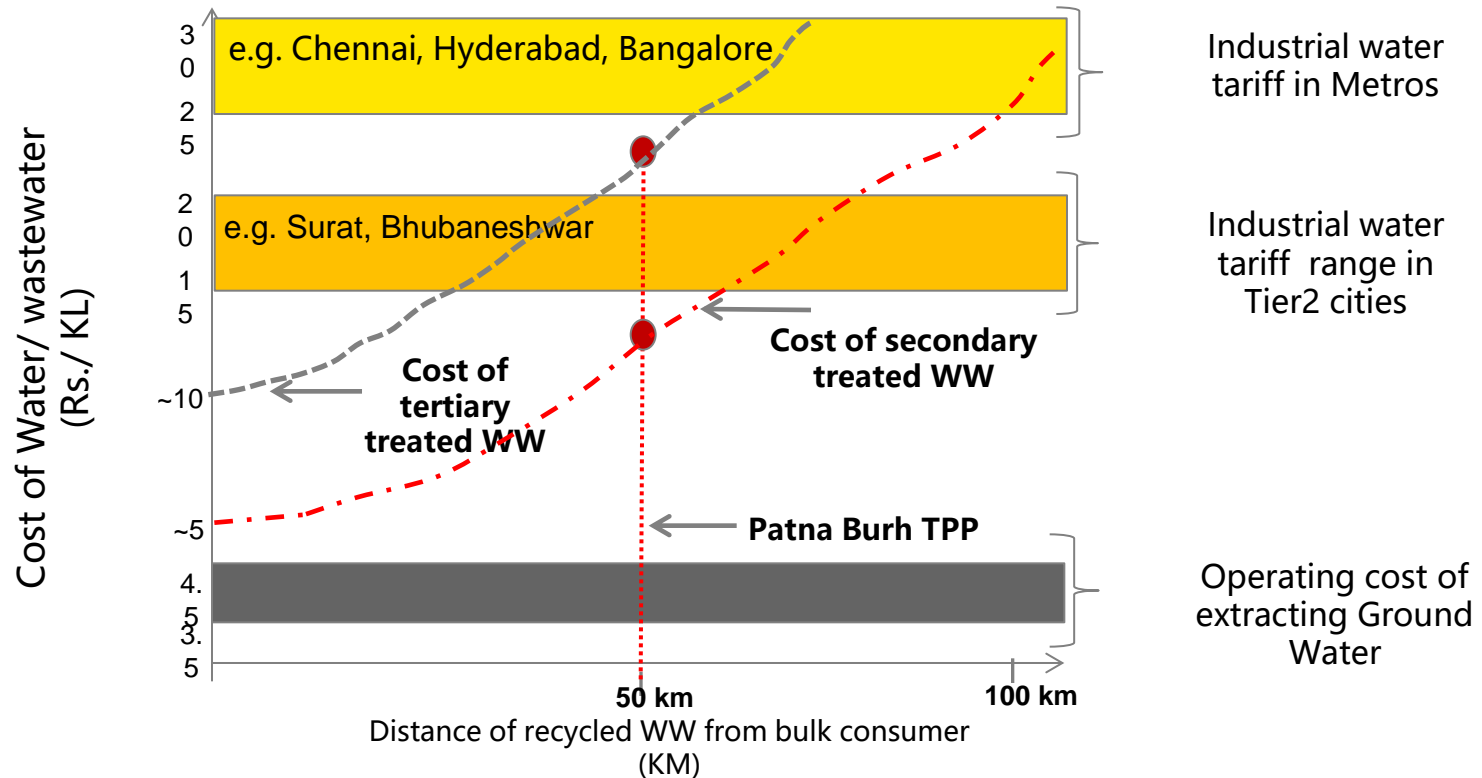
Potential Bulk consumers	Distance from STPs	Scenario - I Transmission cost (capex + opex)	Scenario - II Tertiary treatment & Transmission cost
Barh Thermal Plant	53 km	Rs 11.0 – 13.0 /kl	Rs 22.0 – 24.0 /kl
Fatuha Industrial area	12 km	Rs 8.5 – 9.0 /kl	Rs 15.5 – 16.5 /kl
Patliputra Industrial area	07 km	Rs 6.0 – 7.0 /kl	Rs 14.5 – 15.5 /kl
Railway station	03 km	Rs 2.5 – 3.0 /kl	-

Key assumptions for Barh Thermal Power Plant

Treatment Cost in Rs/KL (capacity >100 mld)				Transmission System Cost	
	Activated Sludge Process	Sequential Batch Reactor (SBR)	Membrane Bio Reactor (MBR)	Cost of HDPE pipe (2200 mm)	Rs 22,000 per meter
Secondary Treat BOD< 20mg/l, SS<30mg/l	Rs 3.5 /kl	Rs 5.5 /kl	-	Excavation, laying cost etc.	20% of pipe cost
Tertiary Treatment BOD< 10mg/l, SS<05mg/l	-	-	Rs 10.0 /kl	Cost of pumps	Rs 100 lakh per unit
				Ancillary work for pump house	30% of installation cost
				Efficiency of pumps	85%
				Pumping cost	Rs 10 /KwH

Source: Sewerage treatment – recommendations and guidelines, IIT Kanpur

Wastewater recycling assessment



Critical Factors Triggering Recycled Water Demand

- ▶ Ground water scarcity (stress zones) & stringent GW regulation enforcement
- ▶ Lack of access to water bodies (SW) and/or assured industrial water supply

Impact of energy cost of using recycled wastewater – case study of a Thermal Power Plant

	Description		Units
1	Total capacity of Obra Thermal Power Plant (A+B)	1,288	MW
2	Total water demand in Obra Thermal Power Plant	110	MLD
3	Potential demand for recycled wastewater in TPP	80	MLD
4	Per unit cost of providing treated WW (wastewater)	22	Rs./KL
5	Total annual cost of providing treated WW (wastewater)	64.24	Rs crore/year

OBRA TPP	Units	Existing Scenario			New case
		Obra A	Obra B	Obra (A+B)	Obra (A+B)
Interest on Loan	Rs. crore	30.57	124.52	155.09	155.09
Depreciation	Rs. crore	20.03	76.1	96.13	96.13
Adv. on Depreciation	Rs. crore	0.00	71.94	71.94	71.94
Return on Equity	Rs. crore	12.16	68.4	80.56	80.56
O&M expenses	Rs. crore	120.16	248.97	369.13	369.13
Interest on WC	Rs. crore	20.86	60.03	80.89	80.89
Cost of Raw Water	Rs. Crore	0.00	0.00	0.00	64.24
Total Fixed cost	Rs. Crore	203.78	649.96	853.74	917.98
Fixed cost per unit	Rs./ Kwh	1.04	1.01	1.02	1.10
Variable cost on fuel	Rs. Crore	361.94	1100.66	1462.6	1462.6
Total variable cost	Rs. Crore	361.94	1100.66	1462.6	1462.6
Variable cost per unit	Rs./ Kwh	1.85	1.72	1.75	1.75
Ex-bus energy sent out	mn Unit	1957	6408	8365	8365
Total Cost per Unit	Rs/Kwh	2.89	2.73	2.77	2.85

Estimated incremental cost per unit of using treated WW to Thermal Plant: **Rs 0.07 per Kwh**

Estimated percentage increase in cost per unit of using treated WW to Obra TPP: **2.7%**

Power plants a looming water crisis in India

Water Stressed Thermal Power Plants in India

Developer	Plant, State	Installed Capacity (MW)	Units shut down in the past 2 yrs
NTPC	Barh II, Bihar	1,320	Unit 4 & 5
NTPC	Farakka, WB	1,600	Units 1-5
KN Power Corporation	Raichur, KN	1,050	1,2,5,6, & 7
NTPC-NLC TN Power Ltd	Tuticorin, TN	500	Unit 2
Adani Power	Udupi, KN	1,200	Unit 1 & 2
Hinduja National Power	Vizag, AP	520	Unit 1
GMR Group	Emco, MH	600	Unit 1 & 2
ACB India Ltd.	Kasaipalli, CH	135	Unit 2
Essar Power	Salaya, GJ	600	Unit 2
Reliance Power	Sasan, MP	660	Unit 3
Gujarat State Electricity Ltd	Sikka, GJ	250	Unit 3

- 8,435 MW of TPP capacity had to be shut down due to water scarcity

- 40% of the proposed 52 GW TPPs located in water-stressed areas

Power sector wakes up to Rs.30k-cr opportunity

A new policy has made it mandatory for thermal plants within 50 km of sewage treatment facilities to use treated sewage water

By: Sumit Jha | New Delhi | Published: May 31, 2016 7:38 AM



It is estimated that the extra cost for a power plant in procuring this water, including the associated pipeline of average 50-km length, would result in a tariff hike of about 5-7 paise/unit. (Reuters)

Source: Ministry of Power, GOI – The above data is as of May 6, 2016

Source: Financial Express, May 31' 2016

Key Learnings

- ▶ **Current low cost of ground water extraction (~Rs 3-4 /kl) coupled with weak regulation enforcement on extraction** – is a major hindrance to recycled wastewater demand in India
- ▶ **Recycled wastewater market is highly price sensitive** – likely feasible cases (cities/ industrial areas/TPPs) are the ones falling in GW critical stress zones coupled with existing high piped-water tariffs for industrial purposes
- ▶ **Policy / regulatory reforms imperative to drive wastewater recycle market** – in January 2016, Ministry of Power, Government of India unveiled a tariff policy, which provides that thermal power plants including the existing plants located within 50 km radius of STP of municipality/local bodies shall mandatorily use treated sewerage water – also the associated cost on this account should be allowed as a pass through in the tariff

Monetizing Value Creation in Smart Districts: Sabarmati Riverfront, Ahmedabad

Need for Land Monetization

Cities struggling for resources to develop/ replace urban infrastructure

Pressure on city authorities to provide infrastructure

Adequate resources required to fund infrastructure

ULBs largely dependent on budgetary resources with limited income

Traditional Municipal Revenue Streams

Tax (Octroi*, Property Tax, Other Tax)

Non Tax (Water/Sewerage Charge, Building License, Parking, Penalties etc.)

Grants & Shared Tax (Stamp Duty, Electricity Tax, Motor vehicle Tax etc.)

Challenges for Resource Mobilization

- ▶ Given the limited budgetary resources and other commitments, accessing the State Grants is getting difficult
- ▶ Socio-political situation shows strong resistance towards increase in the urban taxable components
- ▶ ULB investment in infrastructure/transport and judicious land use planning has a multiplier effect on land values
- ▶ ULBs not equipped/geared up to capture this value; benefits almost entirely passed on to land owners

Value Capturing – Monetizing Land

Impediments

Existing Town Planning practices that largely aim at controlling the land use pattern rather than optimizing the land use in terms of

- ▶ Economic returns
- ▶ Employment generation
- ▶ Raising additional resources for city development

(A main determinant for Smart City

Urban Land Monetization Mechanism

- Land Asset Disposal of under serviced/unused ULB's land and;
- Treating landuse planning (including Change in land-use, development control regulations and building bye laws) as "Resource Planning" rather than considering only a zoning exercise

Challenges

Land Prices: Ambitious Assumptions

Overestimation of Absorption capacity

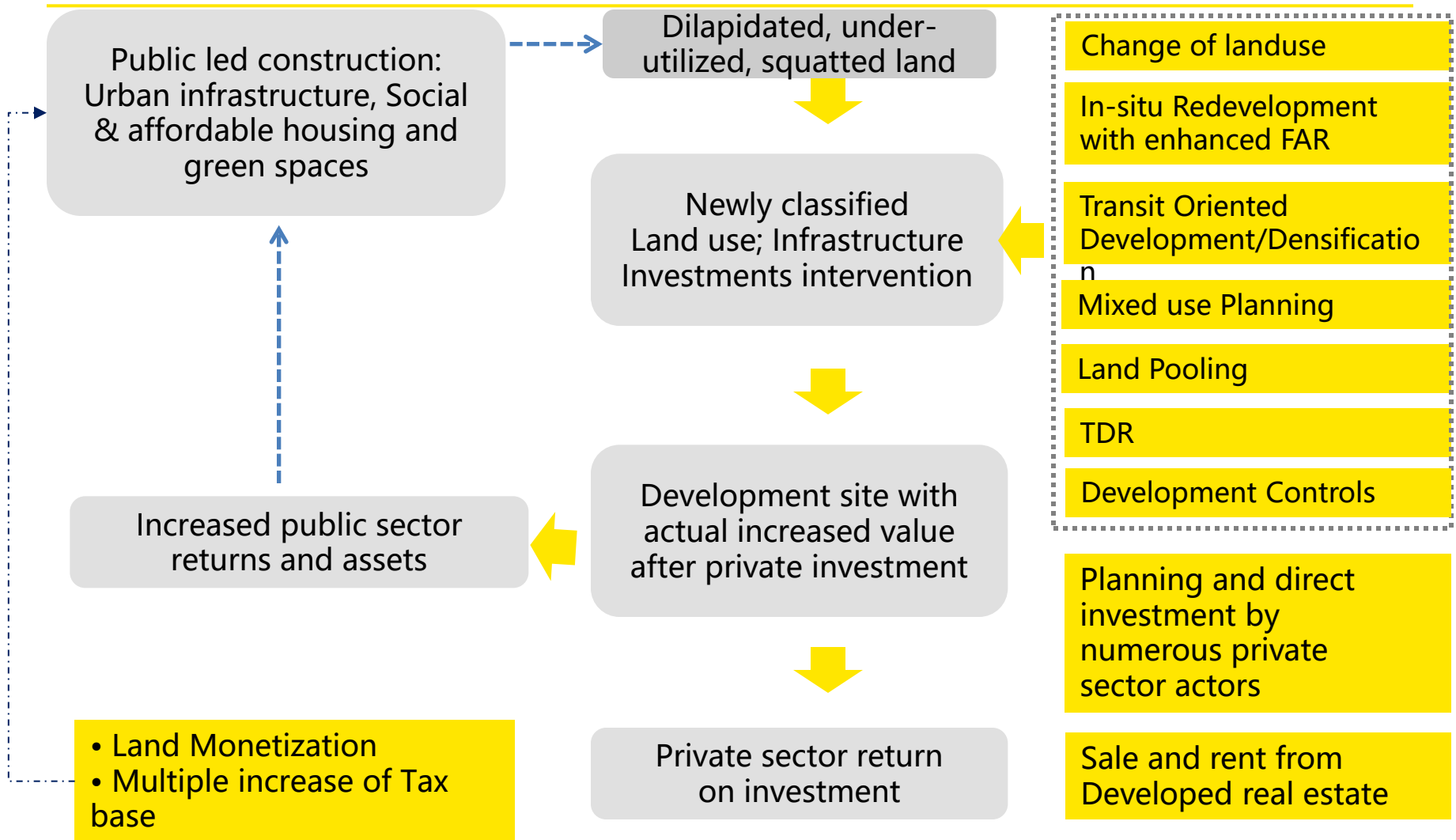
Land Ownership Issues: Encroachment, Title Deeds

Stretched litigations causing inordinate delays

Macro Economic climate of Real Estate

Challenge of Land use and Development Control Regulations

Value Capture Framework



Sabarmati Riverfront Development

Project Objectives:

- ▶ Environmental Improvement
- ▶ Social Infrastructure
- ▶ Sustainable Development



Social Upliftment & Urban Rejuvenation

Inclusive Development

- ▶ Rehabilitation of Slums

Social Infrastructure Development

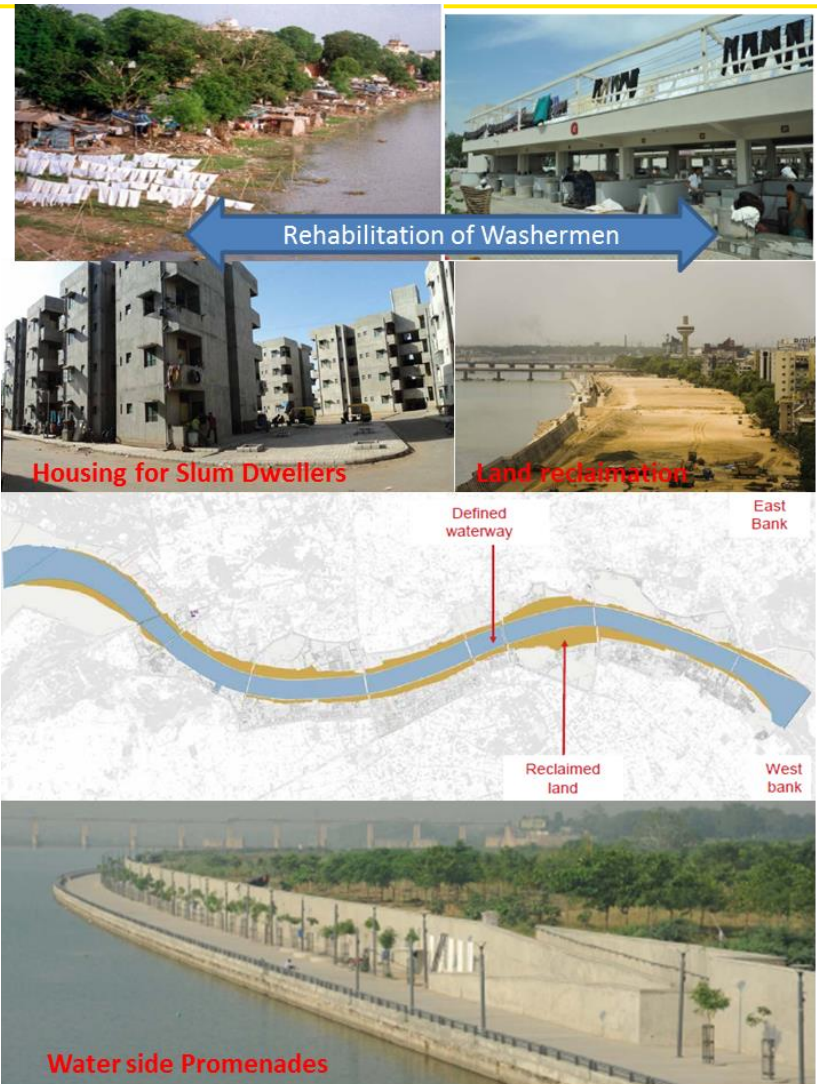
- ▶ Create people-centric network of parks, waterside promenades (11.5-km long), markets, cultural and recreational facilities in the heart of Ahmedabad

Environmental Improvement

- ▶ Creating sewerage interceptor network to arrest urban sewage disposal
- ▶ To create mechanism for maintain the perennial status of River

Economic Development

- ▶ Stitch together East & West banks of the river to facilitate smooth trade
- ▶ Connection with the fort wall city having many markets in central Ahmedabad and biggest city bus terminus i.e. Laldarwaja etc.
- ▶ Creating vibrant neighborhoods through commercial, residential and institutional development by introduction of special regulations along the river front area



Sabarmati Riverfront Development

Land Monetization

- ▶ 14.5 % of total landuse area (“the reclaimed land”) to be sold for commercial development
- ▶ Likely revenue from sale of land is Rs. 1700 Cr. Out of which, Rs. 1200 Cr. to be returned by SRFDCL to AMC
- ▶ A Corpus of Rs. 500 Cr. to be kept aside for O & M Exp. of the project
- ▶ F.A.R of 5.4 has been allowed for commercial projects
- ▶ Likely increase in revenue of property tax - Rs. 50 Crores

Area Statement of Landuse

S.	Description	Ha.	%
1	Roads	40.36	19.69
2	Residential Zones	0.8	0.39
3	CBD	5.67	2.77
4	Multiuse (Land for Sale)	29.71	14.5
5	General Industrial Zone	0.09	0.04
6	Garden	27.46	13.4
7	Open Space	37.66	18.38
8	Public Purpose	28.18	13.75
9	Public Utilities	0.84	0.41
10	Lower Promenade	27.39	13.37
11	Sports Purpose	6.74	3.29
12	Burial	0.01	0.01
	Total	204.91	100

Sabarmati Riverfront Development

A financially sustainable Project

Finance

- ▶ SRFDCL was a special purpose vehicle formed by the Ahmedabad Municipal Corporation for implementation of the riverfront project
- ▶ The Equity & Preference share capital of SRFDCL (“the SPV”) is Rs. 20 Cr and Rs. 220 cr respectively
- ▶ Ahmedabad Municipal Corporation (AMC) provided a loan to SRFDCL (Rs. 445.15 Cr). The Housing and Urban Development Company (HUDCO) has also provided a loan for the Project (Rs. 416.96 Cr)

Data Source: ICRIER website Oct'16





Thank You



The better the question. The better the answer.
The better the world works.

