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Financing Municipal Water and Sanitation – Trends and Thoughts

Workshop | Water Financing in India

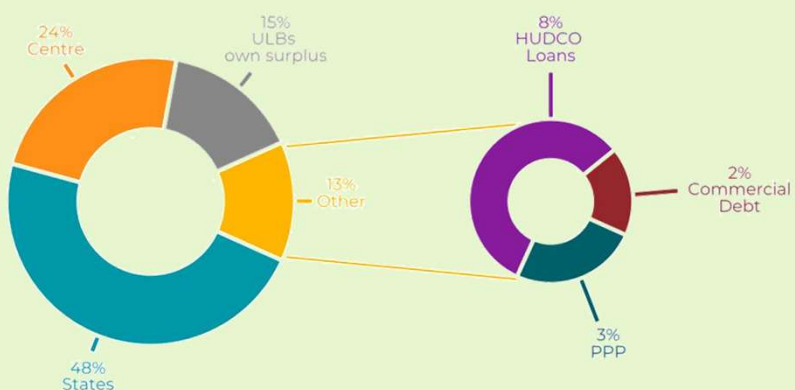
17th Nov 2023

Overview of Water Financing in India



Low Share of Private Financing

Share of Urban Investments (2011 to 2018)



- **Own Revenues** contribute to less than **15%** of the total urban infrastructure financing in India¹
- **Inter-Governmental fiscal transfers** (Central & State) contributes to the major share of **75%**¹
- **Private financing** contribute to **less than 5%** of the total urban infrastructure financing in India¹

Sources: ¹ World Bank Report: Financing India's urban infrastructure needs - Constraints to commercial financing and prospects for policy action

² 45% is average O&M cost of water services select 14 cities as presented in the World Bank Report. The O&M cost recovery values for some of the cities also include water and sanitation services.



Low cost-recovery

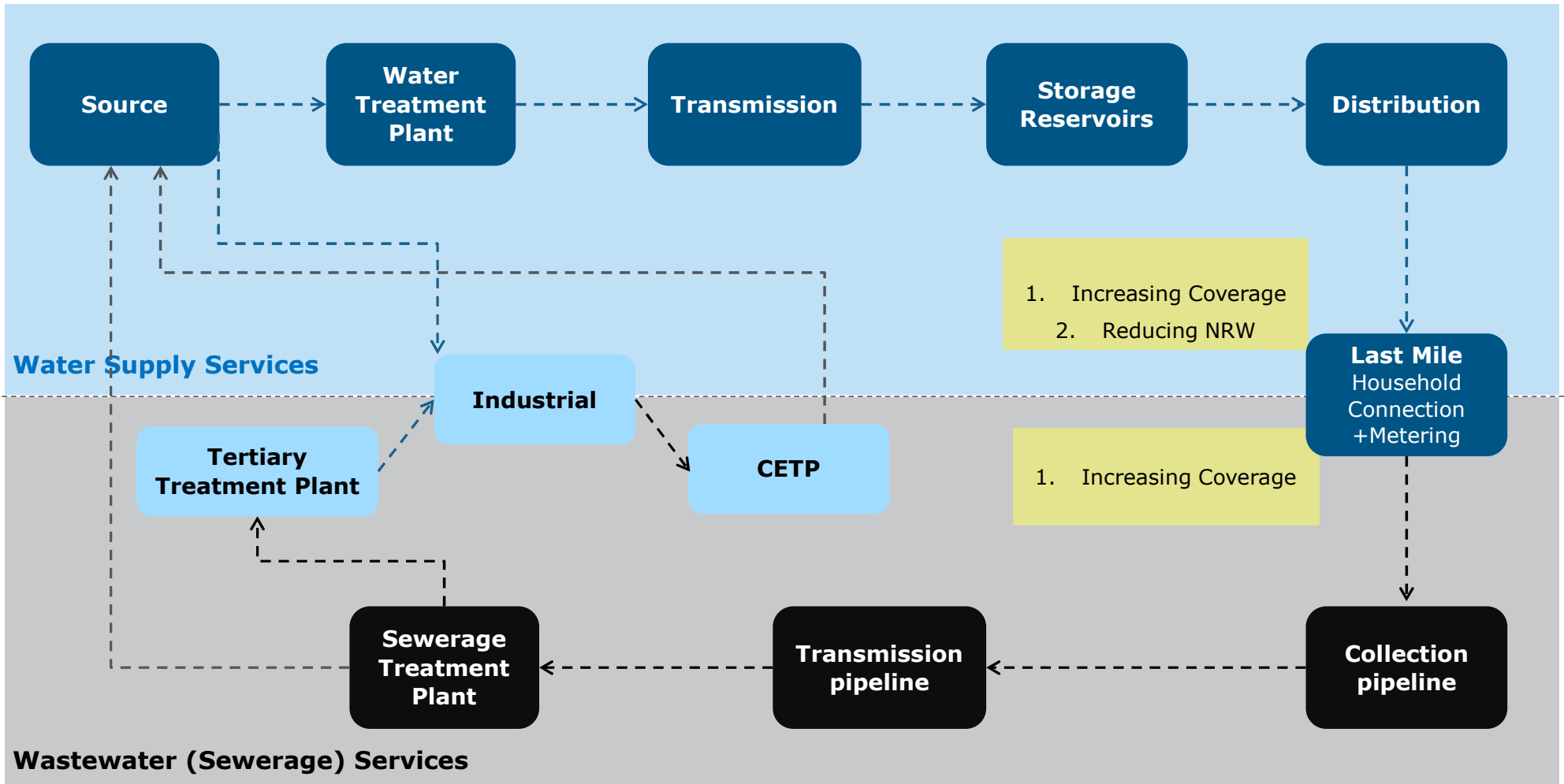
- Average **O&M cost recovery** for water services in Indian cities is low at **45%**^{1&2}
- **Low tariff** /user charges - States yet to rationalize tariff /user charges
- **High NRW**



Municipal Bonds & Pool Financing

- **Only 5 ULBs** have explored Municipal Bonds in recent times; 11 over the past 20years
- **Very few States** have successfully explored Pool Financing for urban infrastructure projects – Tamil Nadu & Karnataka; Kerala has initiated bonds for infrastructure
 1. Water & Sanitation Pooled Fund by Tamil Nadu
 2. Water and Sanitation Pooled Fund by Karnataka

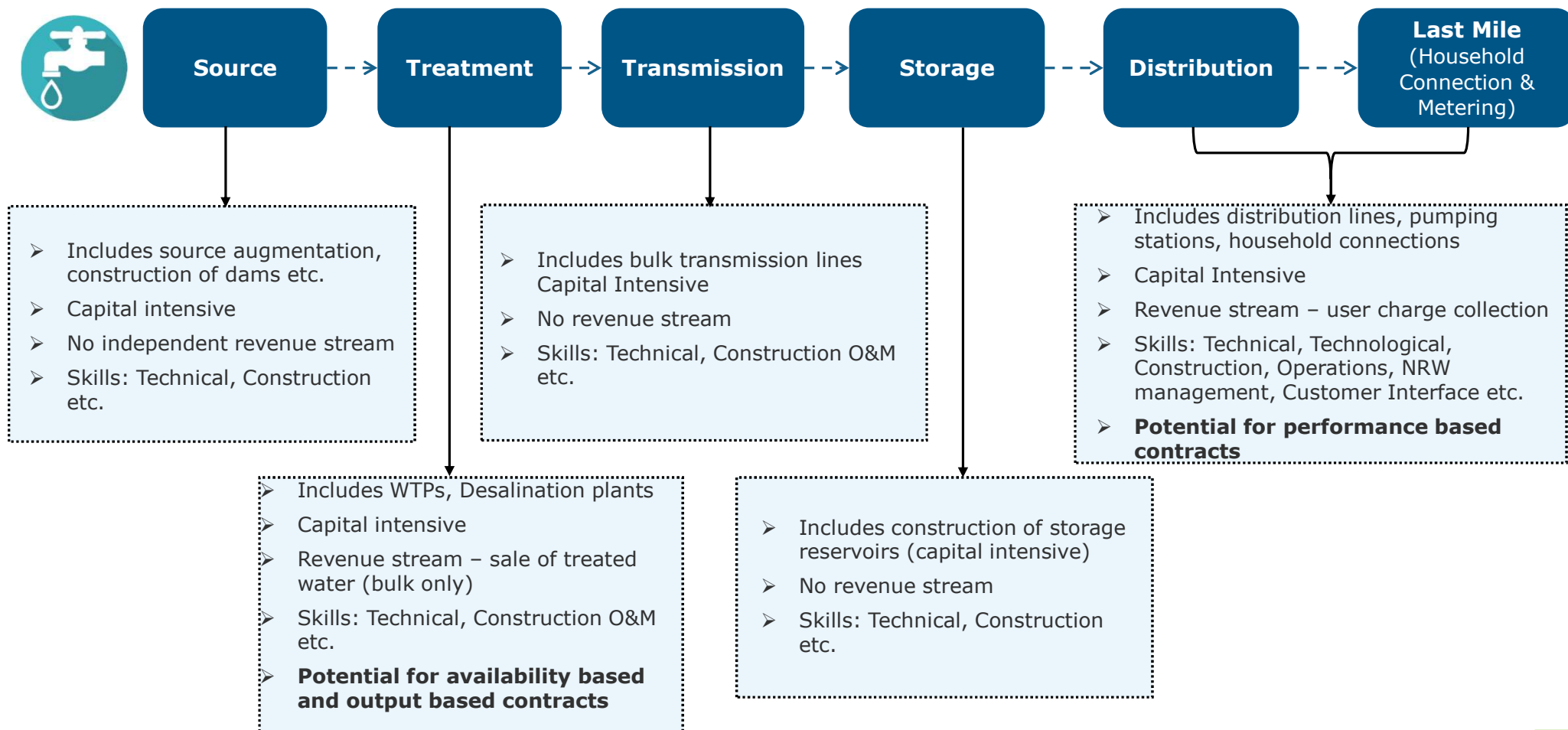
Circular Value Chain for Water & Wastewater (Sewerage) Services



Slide 3

ASO Scope for sanitation - septic tanks IHHL - financed by user contribution + SBM
Agarwal, Sourav, 2023-11-16T05:09:03.162

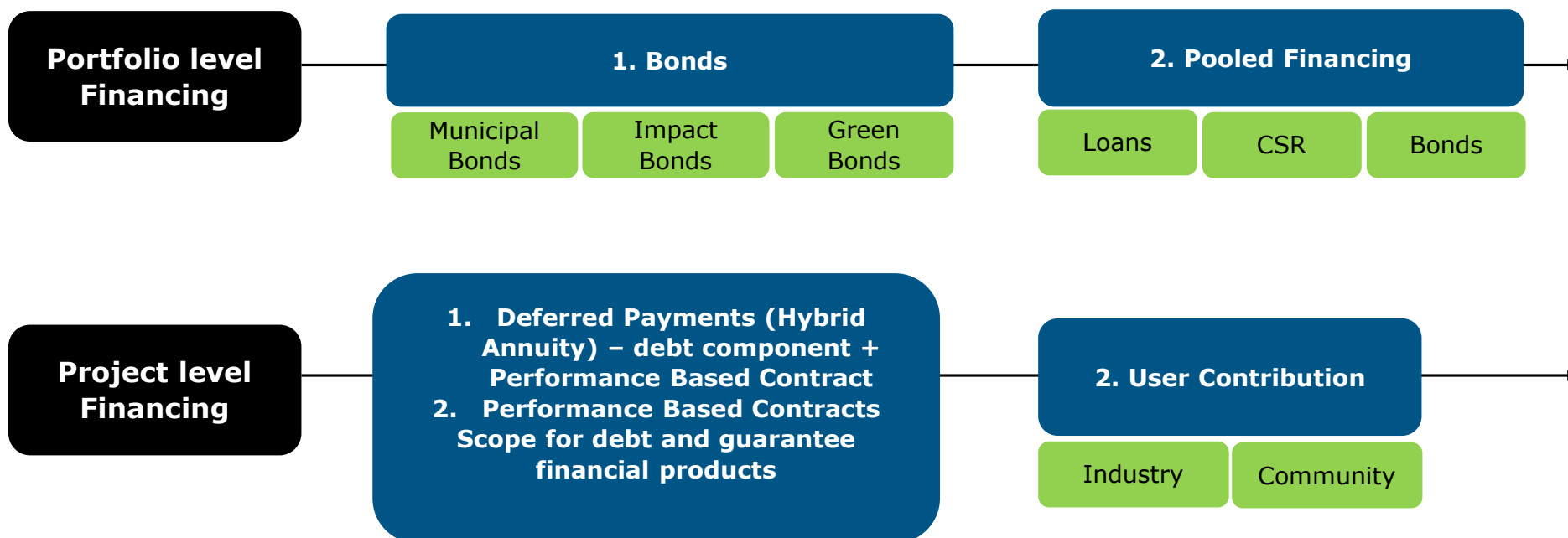
Considerations across Value Chain for Water Services



Slide 4

ASO Think we should add a similar slide for sanitation - starting with IHHL to STP/TTP to reuse
Agarwal, Sourav, 2023-11-16T05:09:15.303

Different Financing Options



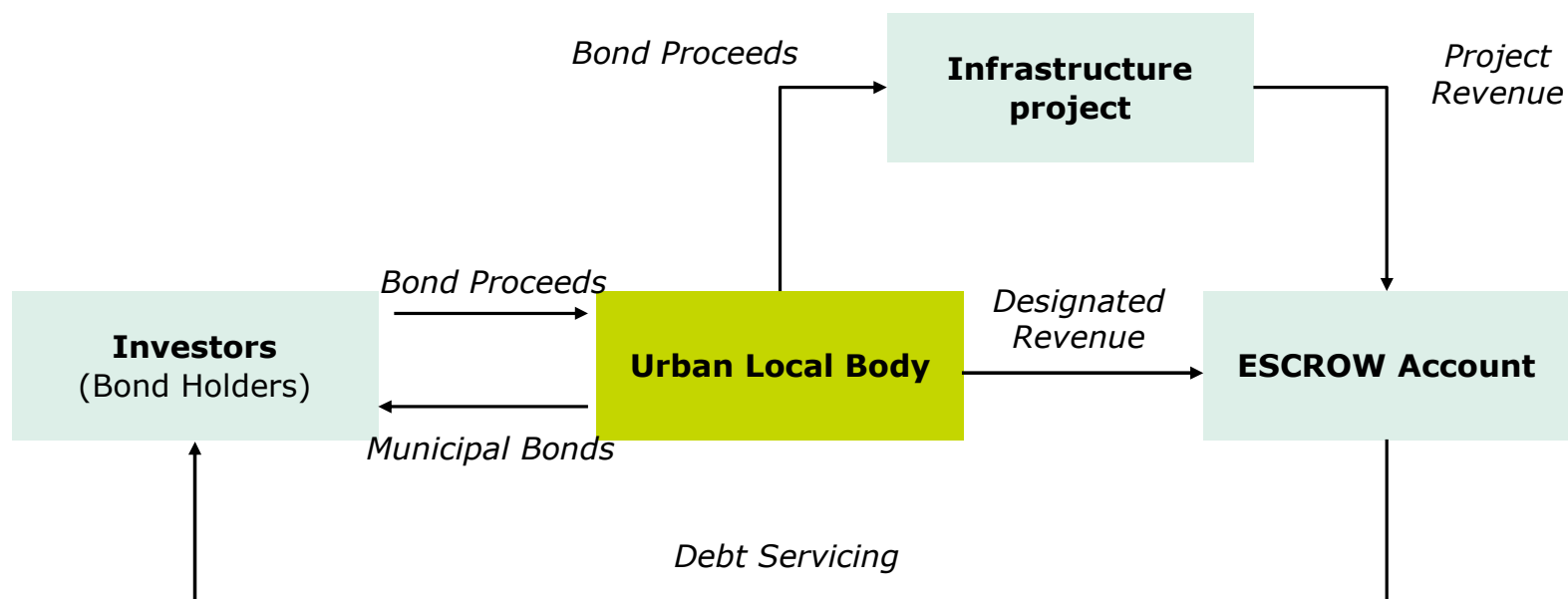
Capex and Opex contribution by the user

Eg: (1) Industries contributing to capex of CETP (2) Community contributing to local water supply and sanitation project

Slide 5

ASO Dovetailing of funds from other GOI schemes
Agarwal, Sourav, 2023-11-16T05:09:31.959

1. Different Financing Structures – Municipal Bonds

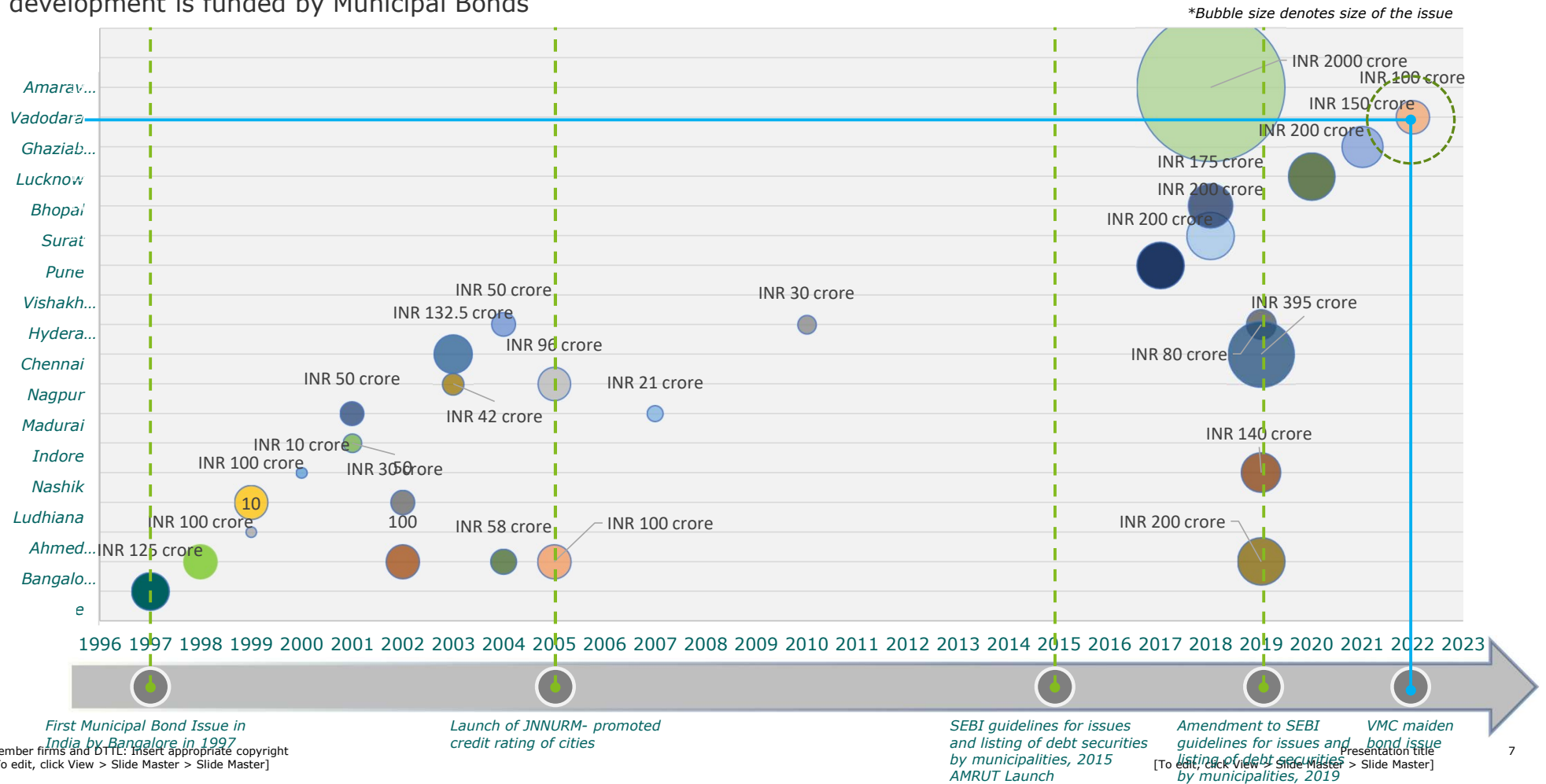


- Started by **Bangalore MC in 1997** and followed by **Ahmedabad in 1998**
- Issuances of Municipal Bonds **reduced in 2005** with the introduction of JNNURM
- GoI has provided **financial incentives** in the form of a lump-sum grant-in-aid for municipal bond issuances at the rate of **INR 13 crore per INR 100 crore** of bonds issued under AMRUT

Sources: Report on Municipal Finances, Reserve Bank of India

Trend of Municipal Bonds in India (1997 – 2022)

With a huge potential of Municipal Bond market in India, only 1% of the total ULB contribution towards infrastructure development is funded by Municipal Bonds



1. a) Different Financing Structures – Green and Impact Bonds

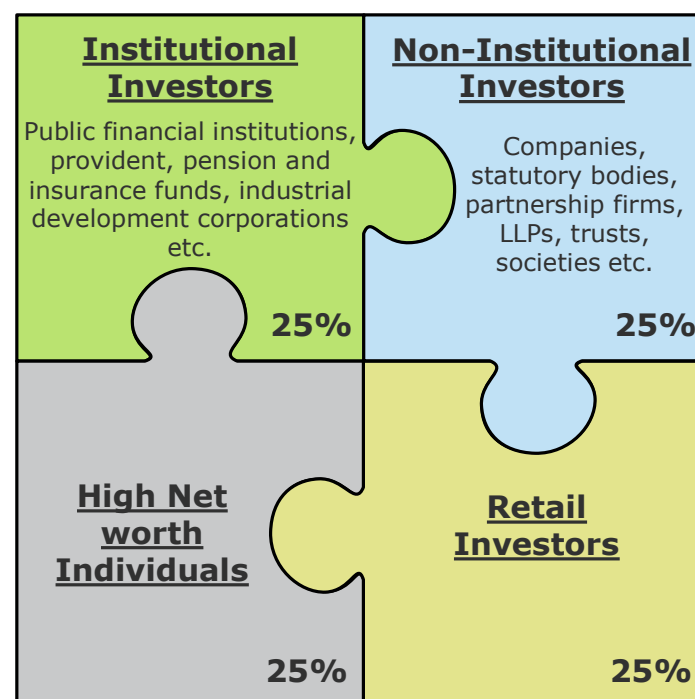
Green Bonds

- Green bonds were created to fund projects that have **positive environmental and/or climate benefits**
- **Encourages diversified investors including funds having green mandate**
- Green bonds are **fixed-income financial instrument** for raising capital through the debt capital market
- Green bonds provide **access to low-cost, long-term capital**
- Green bonds increase liquidity and drive green investment by **enabling refinancing**
- Issuance of green debt securities (“GDS”) in India is formalized and monitored by SEBI since 2017
- Amendments to the existing regulatory framework for GDS issuance was made in December 2022

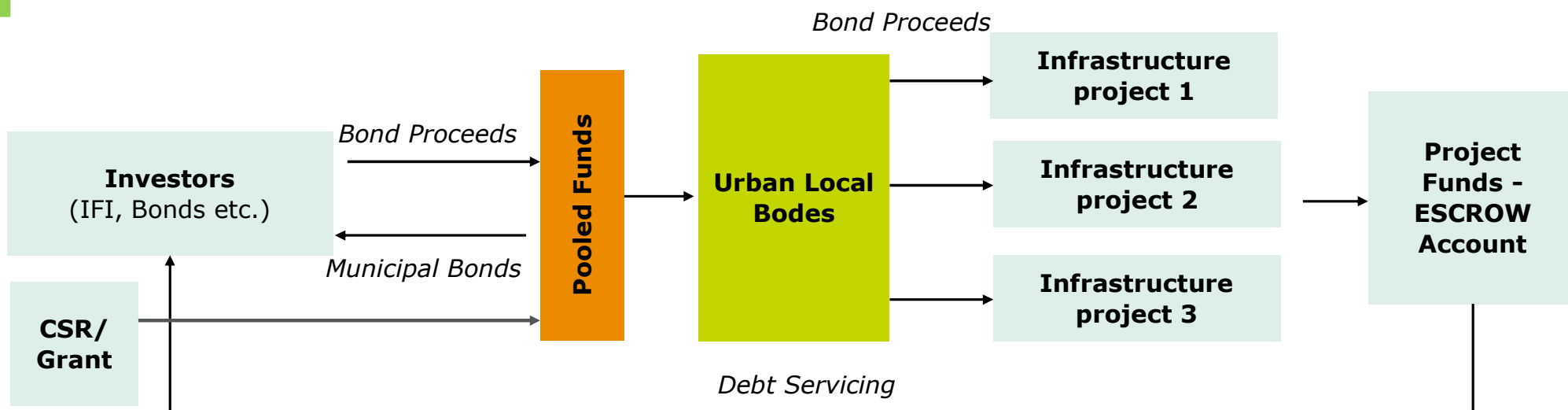
Illustration- Green Bonds by IMC

- Indore Municipal Corporation (IMC) has come up with a secured, redeemable non-convertible **green municipal bonds**
- Bond proceeds will be utilized towards funding capital expenditure for **60 MW Ground Mounted Captive Solar PV Power Plant**
- IMC Eligible to receive incentive from MoHUA GoI AMRUT 2.0"
- Bond issue opened on February 10 2023 and closed on, February 14 2023.
- IMC planned to raise approximately INR 244 crore through sale of green bonds, but raised about **INR 720 cr** (oversubscribed by 5.90 times)

Eligible entities and allocation ratio



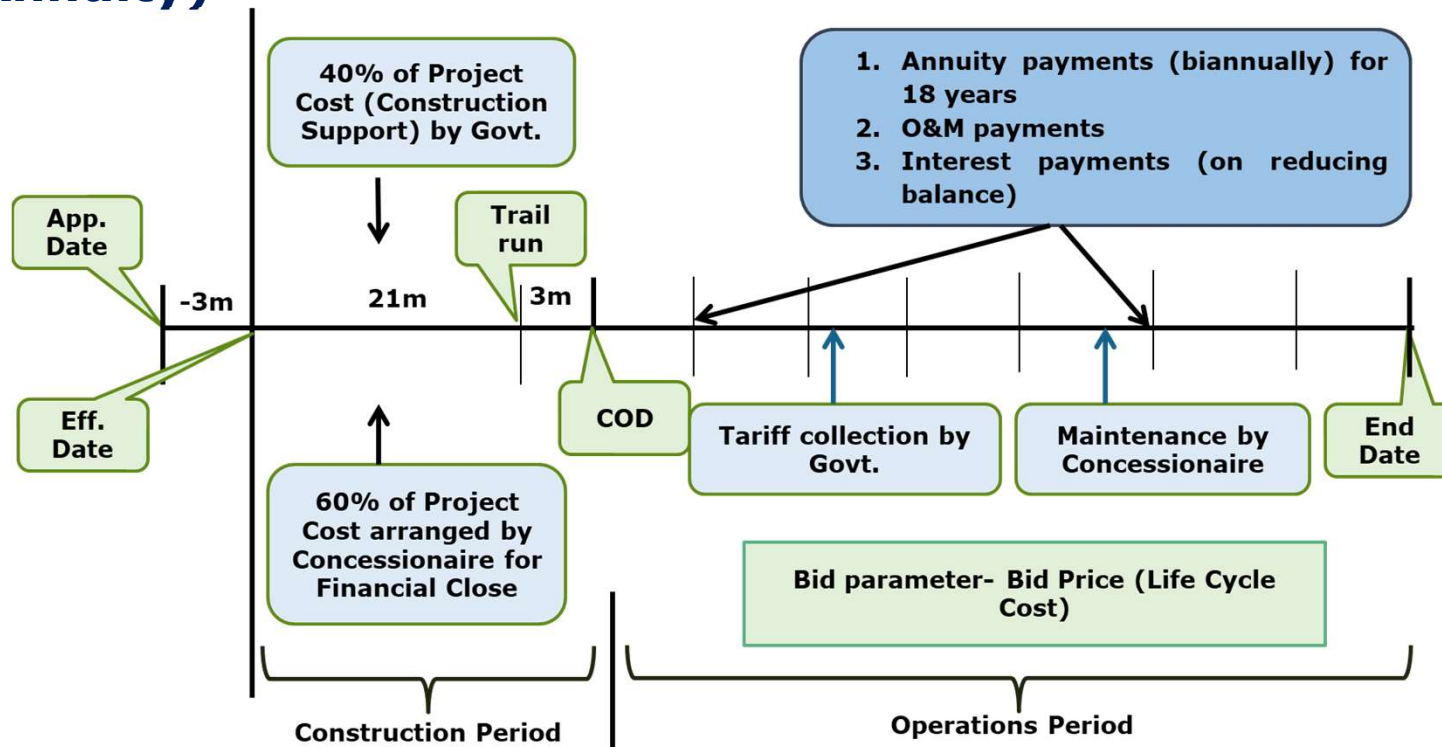
2. Different Financing Structures – Pooled Financing



- **State Government** to create a State Pooled Finance Entity (SPFE) – SPV that issues bonds and debt servicing is financed through the pooled revenue stream of the participating municipal bodies
- **Tamil Nadu Urban Development Fund (TNUDF)** issued bonds on behalf of 14 municipalities through a Water and Sanitation Pooled Fund in 2003; subsequently been pooling funds from IFIs
- Karnataka created a debt fund – **Karnataka Water and Sanitation Pooled Fund (KWSPF)** - to raise money for the Greater Bangalore Water and Sanitation Project (GBWASP) in 2005
- In Kerala, KIIFB and KFC have ongoing plans for infrastructure bonds including Green bonds

Sources: Report on Municipal Finances, Reserve Bank of India

3. Different Financing Structures (Project Level) – Deferred Payments (Hybrid Annuity)



- HAM is an **availability-based** mechanism with **upfront capex support**; involves **debt financing**; **scope for guarantee financial products**
- **Namami Gange** – Several STP Projects bid out and operational

4. Different Financing Structures – Industry-Municipal Interface

integrated sewerage infrastructure for Mathura and treated sewage water reuse in Mathura Refinery

Project Details

- Development / rehabilitation of STPs with a cumulative treatment capacity of 67 MLD
 - a) Development of a 30 MLD capacity STP at Masani
 - b) Rehabilitation of 6.8 MLD WSP STP at Masani
 - c) Rehabilitation of 14.5 MLD capacity WSP STP at Trans Yamuna
 - d) Rehabilitation of 16 MLD capacity UASB STP at Trans Yamuna
- Development of a 20 MLD tertiary treatment plant at Trans Yamuna for supply of treated sewage water to IOCL refinery
- Rehabilitation of the pumping stations and associated infrastructure with the STPs
- I&D works of total 20 numbers, and pipeline works of 17 kilometers
- Operation and maintenance of the facilities for a period of 15 years

4a. Different Financing Structures –Municipal-Industrial Interface

Addressing Demand for

Fresh Water for product based industries
Treatment of Effluent generated by industries
Reclaimed Water supply for processes/ cooling towers

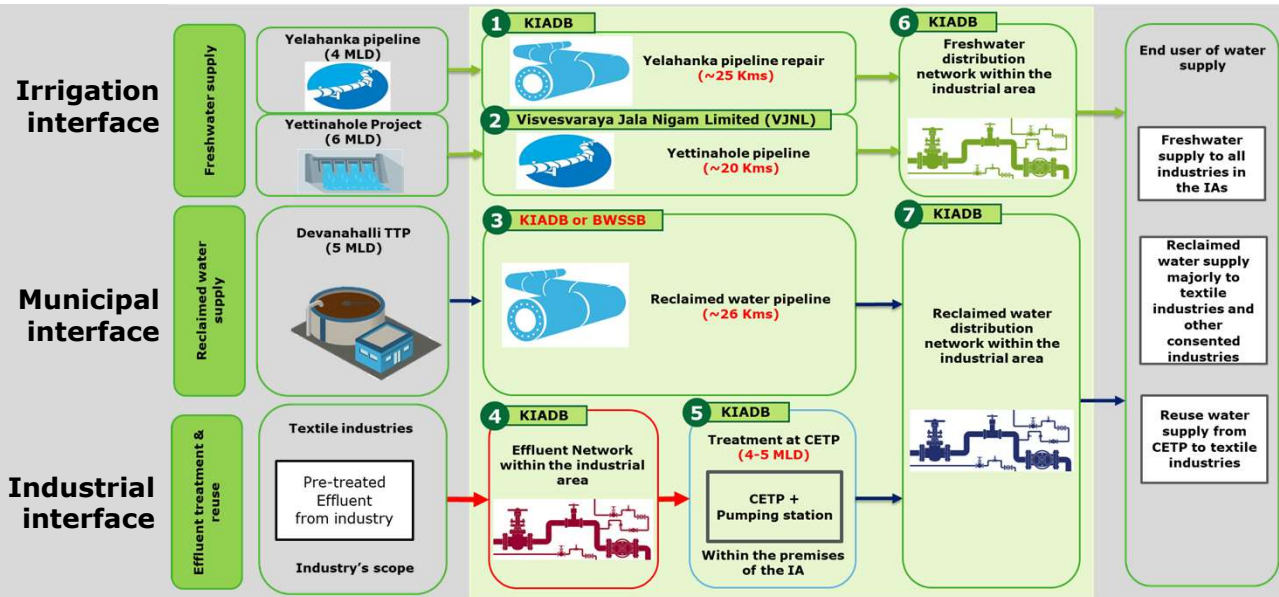
Important to consider interface with other departments

Demand	Source	Interface with other deptt.
Fresh water supply	Surface water	Irrigation / water resource deptt.
	Ground water	Groundwater deptt.
	Municipal water supply	Water board / Municipality
Reclaimed water supply	Treated effluent	Industrial area authority
	Treated sewerage	Concerned municipality

Case study

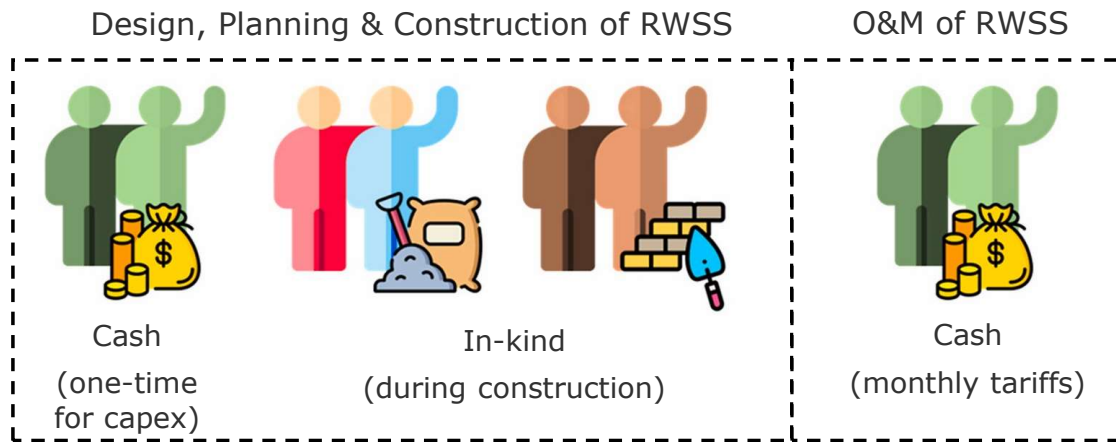
Doddaballapur Industrial Cluster, Karnataka

- Interface** between municipal – industrial-irrigation deptt.
- 7 different** project components to be developed for water sustainability
- Bundled** to make it into a viable project under a single implementing authority
- Project / financing structure dependent** on project revenues and project level viability



4. b) Different Financing Structures – Community Contribution

Types of Community Contribution during various stages of RWSS



- Community contribution introduced to **improve the sense of ownership** of RWSS among communities
- Type of community contribution varies across various stages of RWSS
- Community contribution in the ongoing **Jal Jeevan Mission (JJM)** varies between **5% to 10% of the capex incurred in-village RWSS infrastructure**
- **Similar structures can be explored for select urban conglomerations, townships and for aspects such as metering**

Case Study- Background | Launch and Listing Of VMC's Municipal Bonds

VMC channelized investments into key water supply and sanitation projects identified under AMRUT scheme through Municipal Bonds.

Financing sources

Total tender value of all AMRUT projects in Vadodara was **~INR 533 crore**

AMRUT Grants, INR 309 crore

VMC contribution INR 224 crore

VMC approved to channelized INR 200 crore of own contribution through municipal bonds across two tranches, each of INR 100 crore



AA Credit rating from ICRA and CRISIL



Lowest Coupon rate of 7.15 percent



Unlocked reform incentives of INR 13 crore under AMRUT

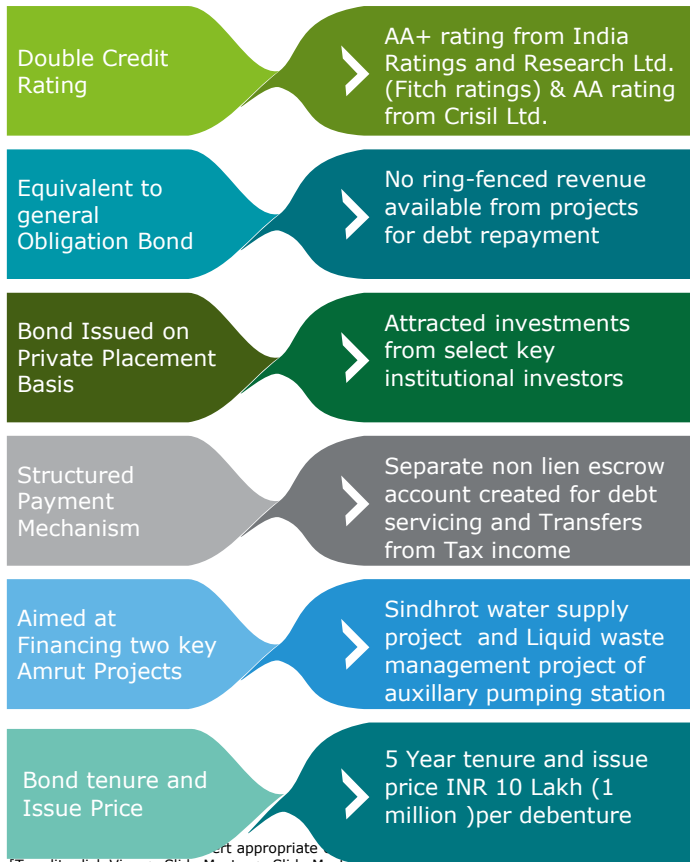


Issue oversubscribed by 10 times

Case Study | VMC Bond Structure and its Success

Despite the economic slowdown due to Covid-19 and prevailing tensions due to global geo-political conflicts, VMC's bond issue received an overwhelming response from the investors and was oversubscribed by over 10 times.

VMC Bond Structure



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Tweets from ministry and press releases post issue of VMC's municipal bond



VMC's FIRST MUNICIPAL BONDS PRESS COVERAGE BY NATIONAL AND REGIONAL PRINT MEDIA: INDIAN EXPRESS



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Presentation title

Case Study-Background | Project Overview Improvement to water supply arrangement Vadodara City – Phase III

VMC mobilizing fund of INR 100 Crores for the gap funding of VMC’s contribution under Amrut Scheme was initiated in the month January 2019 for water source augmentation project in Sindhrot and liquid waste management project

Key parameters

Project Overview

Project Name Improvement to water supply arrangement Vadodara City – Phase III

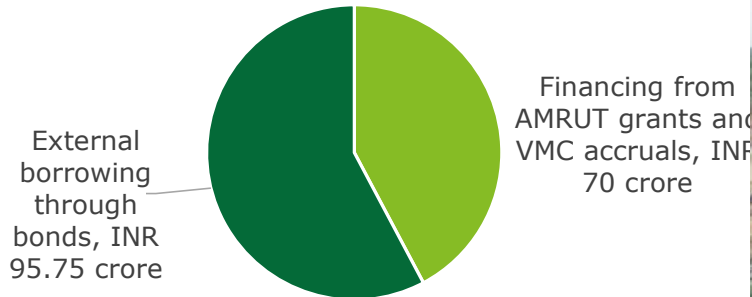
Project Description Constructing Intake Well, Water Treatment plant and Providing, Lowering & Laying Rising Main and Transmission Mains including O&M for five years near Sindhrot Village near Vadodara on Turnkey Basis

Project Cost INR 165 crore

CAPEX INR 161 crore

OPEX INR 5 crore (for 5 years)

FINANCING STRUCTURE



IMPACT

- Resolve shortage of water supply in southern part of Vadodara like Manjalpur, GIDC, Tarsali, Makarpura and Jambuva
- Around 400,000 population will be directly benefitted
- Address future water requirements of the city till the year 2048 with overall population of more than 4 million .

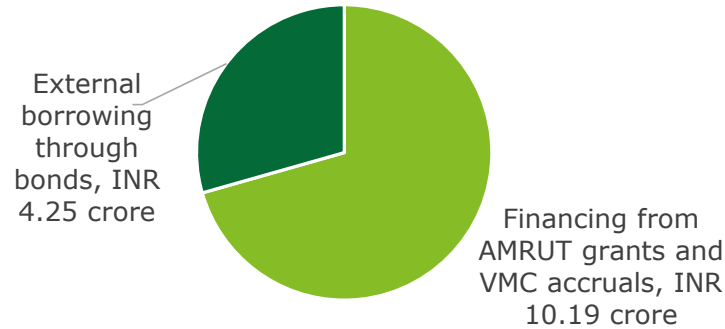


Case Study-Background | Project Overview Auxillary Pumping station at Amit Nagar




VMC mobilizing fund of INR 100 Crores for the gap funding of VMC's contribution under Amrut Scheme was initiated in the month January 2019 for water source augmentation project in Sindhroot and liquid waste management project

Key parameters	Project Overview
Project Name	Auxillary Pumping station at Amit Nagar
Project Description	Construction Of New APS At Amitnagar and Laying New Drainage Gravity Main by Micro Tunneling Method
Project Cost	INR 14.44 crore
CAPEX	INR 13.92 crore
OPEX	INR 0.52 crore (for 5 years)

FINANCING STRUCTURE



IMPACT

-  Population of about 70000 is benefited.
-  Sewage trapped to APS will lead to significant reduction in water pollution . Successful in reducing direct disposal of sewage into Vishwamitra river
-  Improvement of sanitation in the surrounding area.



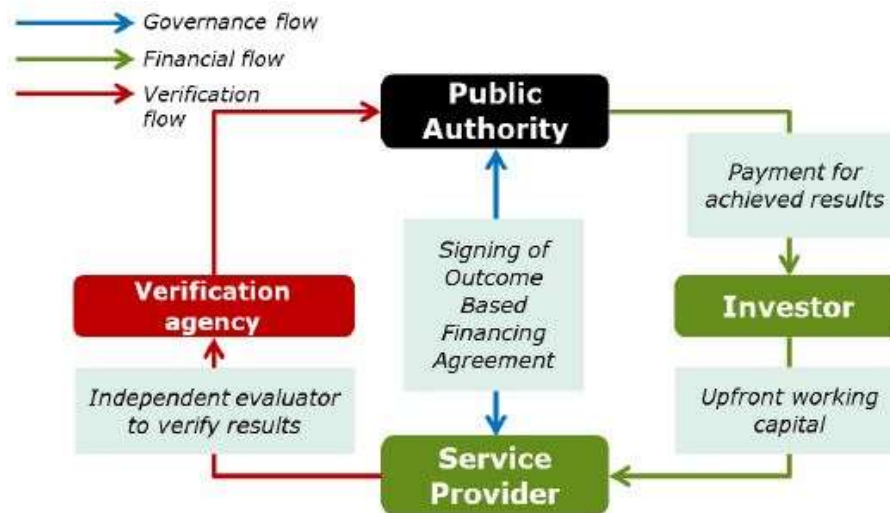
- **Key Challenges in Replicating**
 - **Municipal Bonds?**
 - **States to set up Pooled Financing Facilities**
 - **Structuring WTPs, STPs on Hybrid Annuity Mode**
 - **Extending Urban- Industry interface projects; leveraging funding from Industrial users**

Thoughts...???

Thank You

Sr. No.	Name of Municipality	Date of Issue	Date of Maturity	Amount (Rs. In crs.)	Coupon (%)	Tenure (in years)
1	Pune Municipal Corporation	20-Jun-17	20/06/2027	200	7.59	10
2	Greater Hyderabad Municipal Corporation	16-Feb-18	16/02/2028	200	8.9	10
3	Indore Municipal Corporation	28-Jun-18	29/06/2028	139.9	9.25	10
4	Greater Hyderabad Municipal Corporation	14-Aug-18	14/08/2028	195	9.38	10
5	Bhopal Municipal Corporation	25-Sep-18	26/09/2028	175	9.55	10
6	Greater Vishakhapatnam Municipal Corporation	21-Dec-18	21/12/2028	80	10	10
7	Ahmedabad Municipal Corporation	11-Jan-19	15/01/2024	200	8.7	5
8	Surat Municipal Corporation	Feb 27,2019	1/3/2024	200	8.68	5
9	Greater Hyderabad Municipal Corporation	20-Aug-19	21/08/2029	100	10.23	10
10	Lucknow Municipal Corporation	13-Nov-20	18/11/2024	200	8.5	4
			18/11/2025			5
			18/11/2026			6
			18/11/2027			7
			18/11/2028			8
			18/11/2029			9
18/11/2030	10					
11	Ghaziabad Nagar Nigam	31-Mar-21	6/4/2025	150	8.1	4
			6/4/2026			5
			6/4/2027			6
			6/4/2028			7
			6/4/2029			8
			6/4/2030			9
6/4/2031	10					
12	Vadodra Municipal Corporation	24-Mar-22	28/03/2027	100	7.15	5
13	Indore Municipal Corporation	20-Feb-23	20/02/2026	244	8.25	3
			20/02/2028			5
			20/02/2030			7
			20/02/2032			9
14	Pimpri Chinchwad Municipal Corporation	28-Jul-23	28-Jul-28	200	8.15	5
Total				2383.9		

Impact Bonds



- **Outcome-based contracting** between a service provider and a public sector authority
- Investor provides upfront working capital to a service provider and the returns are paid by the public sector authority based on the positive social/ developmental outcomes achieved
- Not affected by variables such as market risk