Moving Towards 24x7 Water Supply
An Endeavor of Nagpur Municipal Corporation through Public Private Partnership

WATER SUPPLY AND USER CHARGES INNOVATIONS

COMMISSIONER
Nagpur Municipal Corporation
26th Nov 2018
For moving towards 24x7 water supply, core issues to be tackled are:

- Water tariff
- Governance
## Continuous Water Supply: Holistic Approach

<table>
<thead>
<tr>
<th>Water Security</th>
<th>Willingness</th>
<th>Policies</th>
<th>Infrastructure</th>
<th>Management</th>
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<tbody>
<tr>
<td>Sustainable source</td>
<td>Political</td>
<td>Service level</td>
<td>Physical (Source to consumer)</td>
<td>People participation</td>
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<tr>
<td>Water Reuse</td>
<td></td>
<td>Stakeholder Consultation</td>
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<td>Supply Side Efficiency</td>
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<tr>
<td>Adequate supply</td>
<td>Administration</td>
<td>Slum/Unauthorised</td>
<td>SCADA/Monitoring</td>
<td>Demand Side Efficiency</td>
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<td>Connect/disconnect</td>
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<td>PPP/Inhouse</td>
<td>Customer services</td>
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<td>Tariff/Subsidy/Funding</td>
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<td>Bylaws/Act</td>
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</table>
100 mld Bhosadi STP under up-gradation to 200 mld for Recycle & Reuse.

Power Plant, Koradi

NMC WATER REUSE = MORE WATER FOR CITY, IRRIGATION & INDUSTRY

INNOVATIVE* FINANCING

130 mld reuse of treated waste water for thermal power plant & reduce stresses on fresh water sources (InNURM Grant + Mahagenco)

15 Cr. per yr. → Revenue to NMC

Escrow

Upgradation of existing 100mld STP to 200 mld & reuse of effluents on PPP basis (Operator - Vishvaraj Infrastructure)

Revenue to NMC → From sale of recycle water

New Asset (Future)

*No financial burden on NMC

<table>
<thead>
<tr>
<th>Consumer</th>
<th>Water Reuse Potential In mld</th>
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<tbody>
<tr>
<td>MAHAGENCO</td>
<td>130 (Agreement Executed)</td>
</tr>
<tr>
<td>Industrial / TPS</td>
<td>150 (PPP - Operator Appointed)</td>
</tr>
<tr>
<td>MIHAN</td>
<td>40</td>
</tr>
<tr>
<td>IRRIGATION</td>
<td>70</td>
</tr>
<tr>
<td>CITY BULK</td>
<td>25</td>
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<tr>
<td>TOTAL</td>
<td>415 Mld</td>
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24x7 WATER SUPPLY PROJECT NAGPUR
Augmentation to Water Supply

Before Jnnurm – 470 mld

Augmentation under Jnnurm
1. Upgrade of old WTP/Pumps  60 mld
2. Augmentation of Kanhan  120 mld
3. Augmentation of Pench  115 mld

Total Investment Under Jnnurm – Appx 1200 crore

PPP – Investment – Rs 185 Crore (Against ULB share)

Present Water Supply Capacity 765 mld

“All new WTPs are fully automatic and built under PPP mode and long term 10-15 years of performance based contract”
Bulk water Security – is not end of the problem ... 

low efficiency resulted in to higher water losses, poor financial position, deteriorated assets, frequent contamination of water affected the public health specially urban poor and overall unsatisfied citizen services.

Augmentation to water supply is not a answer to above challenges

Expected Result After Investment of Jnnurmm funds in Augumentation
Policy & Strategy adopted by NMC for Implementation of full city 24x7 Water Supply Project through PPP

Project at final leg towards implementation

Water Audit

Pilot Project for improvement in SLB

Full City Rehabilitation Plan

O & M Strategy for Sustainability

Tariff

- Telescopic Tariff
- Annual Price revisions by Administrative action
- Energy & Raw water surcharge to pass on revisions in cost directly to consumers

Slum Policy

- Installing Individual water connections and removal of free public stand posts.
- Subsidy up to lifeline supply and normal charges for higher consumption
- Delinked water connection with land ownership

PPP

- All WTP/STP constructed on PPP with 10 to 15 years of performance contract
- Water Supply rehabilitation & O&M for entire city for 25 years on PPP (Only city in India)
Nagpur 24x7 Water Supply Project Features

- Public Private Partnership
- Partnership
  - Asset Ownership : NMC
  - Operation: Private
  - Investment: Both
- NMC to decide Tariff
- NMC to decide Development Plan for City
- Private Partner to Operate the system.
- Private Operator to earn profit through efficiency in Implementation and operations
Nagpur Holistic Approach

24x7 water To Citizens

Policy /Bylaws

Infrastructure

Management

Investment for Efficient delivery of water

Public

Private

Accountability
Incentive for performance
Customer centric Approach
Efficient operations

Tariff /Cross subsidy
Connection/disconnection
Urban poor/ Unauthorised
PPP / Inhouse
Salient features of NMC’s user charges Reform

- With the priority of fulfilling mandatory reform under JnNURM regarding levy of reasonable user charges with the objective of full cost recovery of O&M and recurring costs, NMC undertaken the exercise of setting rational user charges in the year 2008. The salient features of water tariff revision implemented by NMC are as under;
  - Telescopic tariff to promote water conservation.
  - Affordable supply for life line volume, subsidized supply for consumption within the norms and premium rates for consumptions higher than the norm.
  - Tariffs revision to meet Operating expenses and repay the loan for JnNURM Projects.
  - No tariff revision effected since year 2000, and also need for its rationalisation.
  - Tariff flexibility to cope up with ever increasing energy & raw water tariffs (which constitute almost 40% of the total cost) owing to inbuilt provision to pass on the increase in input cost of raw water and energy directly to the consumers as surcharge.
  - Autonomy for tariff fixation and minimum 5% increase in tariff every year.
  - Addressed all tariff related issues of consumers by NMC before the entry of private operator under full city 24x7 W.S. Project through PPP.
Monthly Bill of Domestic consumer having Family of 5 members

Telescopic Tariff for Demand Management

- **Slum < 55LPCD**
- **Upto 70 lpcd**
- **up to 135 LPCD**
- **up 300 LPCD**

**Old Tariff**

**New Tariff**
Institutional Reform

**NESL Water Company**

- Formation of 100% owned water company of Nagpur Municipal Corporation (NMC) called Nagpur Environmental Services Ltd (NESL)
- Registered under Companies Act 1956 on 28th Oct 2009
- Having mandate of General Body (GB) of NMC and Government of Maharashtra (GOM)
- Transfer of assets of NMC to NESL for operation, maintenance and management only.
- Apart from water supply, NESL can take up the work of planning and implementation of projects of Nagpur City under Environmental Sector.
Features of the PPP Institutional Arrangement

- **Project scope**
  - 25-year Performance Management Contract (extendable for another 25 years)
  - First 5-year OCWPL responsible for O&M of existing network and rehabilitation of the network
  - O&M of the water supply system for next 20 years
  - Revenue and collection risk loaded on Operator
  - Operator’s performance to be monitored against performance parameters
  - Remuneration based on metered volume that is billed and collected.
# Full City 24x7 work in progress

<table>
<thead>
<tr>
<th>Sr.no</th>
<th>Component</th>
<th>Qty to be executed as per revised BOQ</th>
<th>Qty executed</th>
<th>Balance</th>
<th>% work completed</th>
<th>% to be completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Replacement of Pipe line (inside slum and Outside Slum)</td>
<td>676.106 km</td>
<td>610.405 km</td>
<td>65.70 km</td>
<td>90.28%</td>
<td>9.75%</td>
</tr>
<tr>
<td>2</td>
<td>House service connection (inside slum and Outside Slum)</td>
<td>320211 nos</td>
<td>176299 nos</td>
<td>143912 nos</td>
<td>55.06%</td>
<td>44.96%</td>
</tr>
</tbody>
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## Conversion of command area into 24X7 (Achievement upto October, 2018)

- Total C.A – 68 nos.
- Converted C.A – 16 nos.
- No. Of consumer benefitted by 24x7 water supply – 81,826
- Population covered – 5,31,706

Physical progress – 77.61%
Financial Progress – 79.26%
Challenges ahead

• Continued stakeholder engagement and communication to build trust and credibility.
• Sequencing and moving forward on tariff reforms.
• Replacement of consumer connections and addressing last-mile and internal plumbing issues will need to be tackled head-on as these aspects are critical to consistently deliver 24x7 supply.
• Cost escalation in costs of the Initial Improvement Program.
Lessons learnt

• Holistic planning and integrated set of actions for Implementation of city-scale PPPs will need.
• Institutional clarity on the public side helps; needs to be backed with building adequate contract monitoring and administration capacity.
• Sustained Political and administrative commitment is critical; so is wider stakeholder engagement and achieving consumer support.
• Sequencing tariff reform.
Nagpur Learning

Communication/Involvement with Citizens is most crucial .......

It should be People-Public-Private- Partnership

It proves that Indian Urban Intermittent water supply can be upgraded to 24x7 without 100% replacement of Network
Key prerequisites for moving towards 24x7 WS Initiative

- Water Audit and Rapid Assessment of existing WS system
- Political and Administrative will
- Availability of Raw Water and Infrastructure
- Availability of Govt Grants (Reform based)
- Quality metering / telescopic tariff / billing & customer management
- Ring fencing of water supply operations & accounts
- Financial independence through tariff revision for O&M cost recovery
- Clearly written RFP document with objective of minimising areas of potential conflict.
- Information, Education Communication (IEC) practices
- Conversion of manageable area into 24x7 WS in a phased manner
- Conformity of PPP contract with legal frame work applicable to specific ULB.
THANK YOU