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Hon'ble National Green Tribunal
Principal Bench, New Delhi

Presentation on O.A. No. – 606/2018

Government of Gujarat

17th October 2024

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Liquid Waste Management

2839

Status & Measures taken for Liquid Waste Management

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- **Sewage Treatment GAP** :
  - 1004 MLD (Gap as on Hon'ble NGT Order dated Feb -2023) / 446 MLD as on today
- **Commissioned STPs (2015-24)**
  - 125 STPs of Capacity 4782 MLD (as on NGT order dated Feb-2023)/ 204 STPs of capacity 5,872 MLD as on today
- **Work In Progress STPs**
  - 13 STPs with 306 MLD capacity will be completed by **Dec 2024**
  - 29 STPs with 698 MLD capacity will be completed by **Dec 2025**
  - 4 STPs with 127 MLD capacity will be completed by **Dec 2026**
  - 2 STPs with 435 MLD capacity will be completed by **Dec 2027**
- The utilization of STPs is directly linked to sewage network and household connection.
  - **5.8 Lakhs** connections are planned under AMRUT 2.0, **3.6 Lakhs** connections planned under SJMMSVY & around **2.07 lakh** connections are planned under Janbhagidari scheme which are planned to be completed in next two years.

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Summary of Collection Gap

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#	MC/ NP	Sewerage Generation (MLD) (As on NGT Order)	Sewerage Generation (MLD) (As on Today)	Current Installed Capacity (MLD)	Capacity Utilized (MLD)	Gap as on NGT Order (MLD)	Gap as of Oct 2024 (MLD)	Additional treatment capacity planned (MLD)
1	**Municipal Corporations**	**3,307**	**3,454**	**4,443**	**3,400**	**202**	**31**	**1,853**
2	**Nagarpalika**	**1,099**	**1,184**	**1,249**	**707**	**802**	**392**	**497**
	Total	**4,406**	**4,638**	**5,692**	**4,107**	**1,004**	**423**	**0**

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Municipal Corporations Gap Reduction Details

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#	Municipal Corporations	Sewerage Generation (MLD)	Current Installed Capacity (MLD)	Capacity Utilized (MLD)	Gap as on NGT Order (MLD)	Gap as of Oct 2024 (MLD)	Expected date to fulfill the gap	Additional treatment capacity planned (MLD)
1	**Ahmedabad**	1,280	1,367	1,280	40	0	-	959
2	**Surat**	1,032	1,726	1,076	72	0	-	297
3	**Vadodara**	440	614	488	0	0	-	271
4	**Rajkot**	260	332	260	0	0	-	38
5	**Bhavnagar**	100	144	117	25	0	-	115
6	**Jamnagar**	80	70	70	10	10	June - 2025	50
7	**Junagadh**	40	37	19	32	21	Jan – 2025	30
8	**Gandhinagar**	75	153	90	22	0		93
	Total	**3,307**	**4,443**	**3,400**	**202**	**31**		**1,853**

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Municipalities Gap Reduction Details

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#	RCM Zones	Sewerage Generation (MLD)	Current Installed Capacity (MLD)	Capacity Utilized (MLD)	Gap as on NGT Order (MLD)	Gap as of Oct 2024 (MLD)	Expected date to fulfil the gap	Additional treatment capacity planned (MLD)
1	**Ahmedabad**	179	218	112	87	67	Dec - 2025	82
2	**Bhavnagar**	139.4	132	81	110	58	Dec -2025	102
3	**Gandhinagar**	216	221	140	135	76	Dec - 2025	104
4	**Rajkot**	194.46	308	157	180	38	Dec - 2025	80
5	**Surat**	194.74	166	77	189	118	Oct - 25	75
6	**Vadodara**	175	204	140	101	35	Dec – 25	54
	Total	**1,099**	**1,249**	**707**	**802**	**392**		**497**

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Reuse of Treated Wastewater | Municipal Corporations

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Municipal Corporations	Existing		Planned		
	Total Sewage Treated (MLD)	Existing Reuse of Treated wastewater (MLD)	Upcoming Projects		Tentative Operational Date
			No. of Projects	Capacity (MLD)	
Ahmedabad	1,280	345	1	160	Jun-2026
Surat	1,076	330	4	565	Dec-2025
Vadodara	488	70	2	67	Nov-2025
Rajkot	260	257	1	90	Mar-2026
Bhavnagar	117	42	2	6	Nov-2025
Jamnagar	70	08	1	70	Dec-2025
Junagadh	19	0	1	11	Dec-2025
Gandhinagar	90	75	1	65	Mar-2026
Total	**3,400**	**1,127**	**13**	**1,034**	

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Details of Existing Reuse of Treated Wastewater Projects Municipal Corporations

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Sr. No	Municipal Corporation	Existing Reuse of Treated Wastewater (MLD)	Existing Users
1	**Ahmedabad**	356	**356 MLD** - Agri & Tree Plantation
2	**Surat**	330	**227 MLD** - Industry (Textile Cluster & Other industry) **49 MLD** - reused in treatment process at STPs **28 MLD** - Agri - Mass Plantation **5 MLD** - Ecological Park **2 MLD** - Rejuvenation of Lakes **17 MLD** - Gardening, Traffic Circles, Road Dividers through tanker filling stations
3	**Vadodara**	70	**60 MLD** - Industries **5 MLD** - Agriculture & Garden **5 MLD** - Irrigation
4	**Rajkot**	257	**257 MLD** - Agriculture
5	**Bhavanagar**	42	**41 MLD- Industries** **1 MLD** - Gardening
6	**Jamnagar**	8	**3 MLD** - Industries **5 MLD** - Irrigation
7	**Gandhinagar**	75	**5 MLD** - Industries **10 MLD** - Gardening **60 MLD** - Irrigation

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Reuse of Treated Wastewater | Municipalities

2846

RCM Zones	Existing		Planned		
	Total Sewage Treated (MLD)	Existing Reuse of Treated wastewater(MLD)	Upcoming Projects		Tentative Operational Date
			No. of Projects	Capacity (MLD)	
Ahmedabad	112	20.3	10	53.84	June-26
Bhavnagar	81	4.5	9	16.20	Dec-25
Gandhinagar	140	19.5	11	67.55	Dec-25
Rajkot	157	29.5	3	22.00	Nov-26
Surat	77	0.17	4	36.00	Dec-25
Vadodara	139	5	12	42.55	Dec-25
Total	**707**	**79**	**49**	**238**	

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Details of Existing Reuse of Treated Wastewater Projects Municipalities

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Sr. No	Zone	Existing Reuse of Treated Wastewater (MLD)	Existing Users
1	**Ahmedabad**	20.33	**4.75 MLD** - Botad - Agri **1.67 MLD** - Nadiad - Industry **2.5 MLD** - Surendraganar **0.5 MLD** - Dholka **0.9 MLD** - Dhangadhra - Industry **0.65 MLD** - Viramgam - Industry **1.51 MLD** - Dhandhukar - Agri **2 MLD** - Kapadwanj - Agri **1.2 MLD** - Kheda - Agri **1.5 MLD** - Mahedabad - Agri **1 MLD** - Bareja - Agri + Industry **1.5 MLD** - Kanjari - Agri **0.65 MLD** - Thangadh
2	**Bhavnagar**	4.5	4.5 MLD – Irrigation
3	**Gandhinagar**	19.5	19.5 MLD – Irrigation
4	**Rajkot**	29.5	26 MLD - Industries 2[illegible] – Irrigation

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Details of Existing Reuse of Treated Wastewater Projects Municipalities

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Sr. No	Zone	Existing Reuse of Treated Wastewater (MLD)	Existing Users
5	**Surat**	0.17	0.17MLD – Gardening
6	**Vadodara**	5	5 MLD - Industries
Total		**79**	

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Details of UGD Household Connections- Municipal Corporations

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Municipal Corporations	Number of HHs	Number of HHs connected to UGD	HHs not connected to UGD	UGD Connections Planned under various schemes		Pending Connections yet to be planned
				AMRUT 2.0	Others	
	A	B	C=A-B	D	E	F =C-(D+E)
Ahmedabad	19,01,145	18,44,111	**57,038**	14,828	42,210	0
Surat	16,95,220	16,07,656	**87,564**	87,564	0	**0**
Vadodara	6,58,277	6,24,555	**33,722**	33,722	0	**0**
Rajkot	5,67,578	3,62,524	**2,05,054**	2,05,054	0	**0**
Bhavnagar	2,12,060	2,02,199	**9,861**	8,870	991	**0**
Jamnagar	2,00,018	1,94,436	**5,582**	5,080	502	**0**
Junagadh	94,655	53,112	**41,543**	41,543	0	**0**
Gandhinagar	1,28,500	1,17,300	**11,200**	8,490	2,710	**0**
Total	**54,57,453**	**50,05,893**	2849 **1,564**	**4,05,151**	**46,413**	**0**

Details of UGD Household Connections- RCM

2850

RCM Zones	Number of HHs	Number of HHs connected to UGD	HHs not connected to UGD	UGD Connections Planned under various schemes			Pending Connections
				AMRUT 2.0	Janbhagidari	UGD- II	
	A	B	C=A-B	D	E	F	H= C-(D+E+F)
Ahmedabad	4,63,414	3,62,022	1,01,392	15,565	15,915	69,912	0
Bhavnagar	3,37,435	2,09,936	1,27,499	850	38,130	88,519	0
Gandhinagar	5,11,343	3,56,460	1,54,883	77,115	23,795	53,973	0
Rajkot	5,42,002	3,65,460	1,76,542	46,675	10,392	75,686	43,789
Surat	4,75,315	3,89,382	85,933	29,303	50,271	6,359	0
Vadodara	4,32,949	2,93,179	1,39,770	5,900	69,055	64,815	0
Total	**27,62,458**	**19,76,439**	**7,86,019**	**1,75,408**	**2,07,558**	**3,59,264**	**43,789**

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Sewage Management Projects to be Funded by the Hon'ble NGT Ring-Fenced Account (Rs. in Cr.)

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#	Details of Amount deposited in Ring Fenced Fund	RCM/MC	Gap as per NGT (MLD)	Funds in Ring Fenced A/C (@ 2cr. per MLD)	Fund alloted	Planned Fund Allotment	Fund Utilized
1	To be refunded by GUDC under the SJMMSVY scheme	RCM	802	500	350	150	105
2	To be refunded by GWSSB under the SJMMSVY scheme			600	600	0	194
3	Amount deposited in Ring Fenced Fund (by GMFB) for the outstanding amount due under the Swarnim Jayanti Yojna in current Financial Year			500	0	500	
4	Amount deposited in Ring Fenced Fund (savings of GUDM under the SJMMSVY scheme) To be Utilised by MCs	AMC	40	404	80	0	0
		BMC	25		50	0	0
		GMC	23		46	0	0
		JMC	10		20	0	0
		JuMC	32		64	0	16
		SMC	72		144	0	134
		VMC	0		0	0	0
5	Amount deposited by Swacch Bharat Mission			90	0	90	
	Balance amount for MCs			6	0	6	
Total amount deposited in GUDM ring fenced account			**1004**	**2100**	**1354**	**746**	**449**

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Solid Waste Management

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Complaince of NGT Order | Solid Waste Management

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1. Detail breakup of waste processing plants in operation and their nature (composting waste to energy, RDF, etc.) and Channelization of product like compost, Biogas and other residues/reject
2. Planning to address the processing Gap of 1445 TPD and utilization of end products
3. Waste accumulated in ULBs and nature of dumping of waste

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Comparative Status

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Sr.no.	NGT O.A. 606/2018 : Hearing dtd: 23.02.2023			Current Status (17.10.2024)		
Solid Waste Management						
1	**Quantity of generation in the State (in TPD)**	**Waste Processed (in TPD)**	**Gap in generation and Processing (in TPD)**	**Quantity of generation in the State (in TPD)**	**Waste Processed (in TPD)**	**Gap in generation and Processing (in TPD)**
	9542	8090	1452 (Unprocessed waste)	10,317	8872	1445 (Unprocessed waste)
Legacy Waste Remediation | Total Waste – 255 Lakh MT						
2	**Remediated**	**Un remediated**	**No. of sites cleared out of 165**	**Remediated**	**Un remediated**	**No. of sites cleared out of 165**
	142 Lakh MT	113 Lakh MT	14 cleared	253.76 Lakh MT	1.24 Lakh MT	158 cleared
	1445 TPD is added per day as legacy waste					

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1. Detail brekup of waste processing plants

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Sr.	Type of Waste	Total Waste Generation (TPD)			Total Waste Processed (TPD)			GAP (TPD)		
		MC	NPs	Total	MC	NPs	Total	MC	NPs	Total
1	Wet Waste	3,963	1,353	5,316	3,906	661	4,567	57	692	749
2	Dry Waste	3,557	1,444	5,001	3,527	778	4,305	30	666	696
Total Waste		7,520	2,797	10,317	7,433	1,439	8,872	87	1,358	1,445

In total, there is a processing gap of 1,445 TPD. It has been observed that, while this gap exists for 8 Municipal Corporations, it is significantly larger in 157 Nagarpalikas, amounting to 1,358 TPD. Remaining 87 TPD of gap exists in Junagadh Municipal Corporation.

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1. Type of operational waste processing plants

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Sr No	Operational waste processing plant name	Capacity (MT)	
		MC	NPs
1	Waste to Composting Plant	3,401	661
2	Material Recovery Facilities (Dry waste processing) plant	2,027	778
3	Bio-methanation plant	435.56	-
4	Refuse Derived Fuel plant	2,850	-
5	Waste to Energy plant	600	-
	Total	9,313.56	1,439

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1. Quality of compost & its destined user

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Sr No.	ULB	Total compost generated/ Month (MT)	Total compost sold/ month (MT)	Destined user
1	AMC	5019	3136	Gardening & Agriculture
2	SMC	3823	3073	Gardening, farming, various companies, sold to farmers and used in biogas/Indian oil etc.
3	BMC	4019	1182	Gardening and filling low lying areas
4	VMC	4390	4390	Gardening and filling low lying area
5	RMC	1888	Self utilize ULBs	Gardening & Agriculture
6	GMC	845	43	Gardening and filling low lying area
7	JuMC	12	12	Gardening & Agriculture

- In **157 Nagarpalikas, 3,958.08 MT** of compost has been generated, which is being utilized by the Nagarpalikas for garden maintenance and roadside beautification.

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1. Channelization of product like compost, Biogas etc

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- The state has implemented a comprehensive and structured waste management system aimed at ensuring efficient processing and utilization of various waste materials. This system involves the segregation of waste into distinct categories, including inert materials, **Refuse-Derived Fuel (RDF), compost/soil, construction and demolition (C&D) waste**, **metal, and other materials**. Each of these categories is managed in a way that maximizes resource recovery and minimizes environmental impact.
- Additionally, the Municipal Corporations have established bio-methanation plants with a total **processing capacity of 435.56 MT**, which **generate biogas with a capacity of 84.52 cubic meters**. The biogas produced is partially utilized by the Municipal Corporations themselves to meet their energy needs, while the remaining portion is supplied to selected agencies such as **Reliance, IOCL, and other relevant industries**.

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2. Planning to address the processing gap of 1445 TPD

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Composting Plants & MRF plants

- A total of **156 composting plants** with a combined capacity of 5,559 MT
- **151 MRFs** with a combined capacity of 5,477 MT
- **32 projects**, totalling approximately 2965 MT (Wet – 1814 MT + Dry – 1151 MT) capacity, are currently **under construction**
- The remaining ULBs are in various stages of tendering, with **71 tenders completed, 39 work orders issued, 37 tenders under evaluation, and 25 tenders live**
- The **23 smaller ULBs** with pending waste management projects are currently undergoing a **re-tendering process due to the limited capacity of the proposed plants**. The state is actively supporting these ULBs by providing continuous assistance to help finalize the selection of agencies. This collaborative effort aims to ensure that the re-tendering process is completed efficiently and that appropriate agencies are appointed.

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2. End product utilization plan

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- The RFP for selection of successful bidder for **construction and 7 years of O&M of processing plants** includes the **responsibility for the proper utilization** of end products.
- The bidder's responsibilities are to ensure that they are **directed to predefined**, **sustainable destinations**. This includes converting **organic waste into compost**, which is to be utilized for **agricultural purposes or landscaping and managing biogas production** from bio-methanation processes for energy generation, either for internal use or through supply to external agencies like industries or energy companies.
- Furthermore, the **Refuse-Derived Fuel (RDF) produced from non-recyclable waste** must be supplied to industries such as **cement factories or power plants**, where it serves as an alternative fuel source.
- The bidder is also responsible for ensuring the proper disposal or management of residues and rejects that cannot be processed or utilized, following environmentally sound practices such as **disposal in sanitary landfills.**

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3. Legacy waste remediation

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- Total legacy waste: **253.76 lakh MT remediated** till date. Remaining **1.24 lakh MT under process**.
- Presently, **98% of legacy waste from the 8 corporations and 148 Nagarpalikas** has been successfully remediated. However, **remaining below 2% .i.e. 1.24 lakh MT** of legacy waste pending to be remediated in 7 Nagarpalikas. The timelines for these pending actions are provided for your reference

Legacy waste reported in NGT: 255 Lakh MT			
Legacy waste remediated: 253.76 Lakh MT			
Legacy waste remediation pending: 1.24 Lakh MT			
Sr No	ULB Name	Pending Legacy Waste (MT)	Timeline (100% legacy remediation)
1	Palanpur	5425	Dec -2024
2	Chansma	1550	Dec -2024
3	Patan	95024	Jan-2025
4	Dhrol	400	Dec -2024
5	Okha	200	Dec -2024
6	Dhrol	3210	Dec -2024
7	Dahod	18500	Jan-2025
	Total	**1,24,309**	

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3. Disposal of materials from legacy waste

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Sr No.	Segregated Material	Quantity (MT)	Utilization
1	Inert	87,36,515	Riverfront work, Dholera NHAI, Landfill site, etc
2	RDF	39,55,288	GGEPIL & WTE plant, Cement industries etc
3	Compost/Soil	44,24,487	compost used in farming by farmers, Gardening & Self utilize etc
4	C&D Waste	21,49,909	Low lying area, Paver block work
5	Metal	5,335	Sculpture, waste to best, Waste to art statue etc
6	Other	77,643	Self utilize ULBs

We have taken significant steps to ensure that the utilization of these materials aligns with environmental regulations and promotes sustainable practices. For instance, the **RDF generated is being used in GGEPIL & WTE plants and cement industries**, reducing the need for fossil fuels. Similarly, the compost and soil produced are being utilized in agriculture and gardening, improving soil health and reducing reliance on chemical fertilizers.

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3. Unprocessed waste is accounted as legacy waste and its processing

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- To address the processing gap of 1,445 TPD, which amounts to a total of **41,15,823 tonnes** of waste, it has been determined that **Municipal Corporations** are responsible for **14,08,357 tonnes**, while **Nagarpalikas** are accountable for **27,07,466 tonnes**.
- The Regional Commissioners of Municipalities of six defined zones have been instructed to remediate this waste. ULBs have already initiated remediation efforts.
- Additionally, the reverification of accumulated legacy waste is being carried out and if required an additional funds will be allocated.

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Thank You

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