

Ministry of Jal Shakti



Safe Reuse of Treated Water Gains Momentum; Policy Notified in Uttarakhand

City-Level Implementation Accelerated with Proven Industrial Adoption

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Amid the growing requirement of water in the country and increasing pressure on freshwater resources, the Safe Reuse of Treated Water (SRTW) is emerging as a national priority. Aimed at ensuring water security, reducing pollution load in rivers and strengthening urban water management, the SRTW framework is being institutionalized across states and cities as a key reform towards sustainable development and environmental balance.

A major push and impetus on this area has been given by Minister Jal Shakti Sh. C.R. Paatil by reviewing this aspect regularly in the Empowered Task Force meetings. A multi-dimensional approach has been promulgated by HMJS which includes policy alignment at national and state levels, development of city action plans and sectoral approach for promoting reuse in power, agriculture, industrial etc.

Policy Progress at State Level

In a significant development, the Government of Uttarakhand has notified its SRTW policy, providing a formal regulatory framework for the reuse of treated wastewater. The policy promotes the use of treated water for non-potable purposes such as industrial processes, construction activities, irrigation of parks and green spaces, flushing and other urban uses. It also clearly defines the roles and responsibilities of departments, urban local bodies and industries to ensure effective implementation. Meanwhile, SRTW policy for Uttar Pradesh, Bihar and West Bengal are at final stage of notification.

Demonstrated Success in Industrial Reuse

A notable example of effective wastewater treatment and reuse is the 30 MLD Sewage Treatment Plant (STP) at Bingawan, Kanpur, developed under the Namami Gange Mission. This is the city's first advanced Hybrid Annuity Model (HAM)-based STP, operational since June 2023 and based on Sequential Batch Reactor (SBR) technology, enabling efficient treatment in a compact space with

automated processes. The plant receives sewage through multiple intermediate pumping stations and consistently operates at full capacity, treating around 30 MLD of wastewater daily. The treated water, compliant with prescribed standards, is safely discharged into the Pandu River, thereby reducing the pollution load on the Ganga. Additionally, the availability of treated water supports local agricultural use through downstream pumping, demonstrating its potential as a resource. Building on such treatment infrastructure, the Panki Thermal Power Plant at Bingawan is utilizing 40 MLD of treated water, significantly reducing dependence on freshwater and showcasing a scalable model for industrial reuse.



Similar reuse practices are being adopted by other major industrial and power units across the country, including:

- Jojobera Power Plant, Jharkhand – 4 MLD
- Pragati Power Station-I – 20 MLD (from Dr. Sen Nala)
- Pragati Power Station-III – 120 MLD
- IOCL Mathura Refinery – 8 MLD (from Trans Yamuna Plant)

City-Level Action Plans Driving Implementation

To operationalize the policy at the ground level, detailed City-Level Reuse Action Plans (CLRAPs) are being developed. Plans for Agra and Prayagraj have been completed, while that for Varanasi is in the final stage and Kanpur has been initiated.

These action plans provide a comprehensive framework covering treated water availability, distribution systems, identification of reuse demand centres, institutional coordination and monitoring mechanisms. They aim to ensure systematic and safe reuse of treated water while reducing dependence on freshwater sources and improving river health.

Prayagraj: Advancing Circular Water Management

Prayagraj is implementing a structured roadmap for reuse of treated used water (TUV) to address rising water stress caused by rapid urbanization and excessive groundwater extraction. The city currently operates 10 sewage treatment plants with a capacity of 340 MLD, which will increase to 595 MLD. However, reuse remains limited, with most treated water discharged into rivers.

The CLRAP identifies significant reuse potential across sectors such as thermal power, railways, agriculture and urban landscaping. Key projects include:

- Naini STP III to Prayagraj Power Generation Company Ltd – 50 MLD
- Naini I & II STPs to Meja Urja Nigam Pvt. Ltd – 72 MLD
- Rajapur STP to Prayagraj Junction – 3.32 MLD
- Kodra STP to Subedarganj Railway Station – 1.13 MLD

These projects together represent a reuse potential of 126.45 MLD, with an estimated investment of ₹1,625 crore.





Implementation will be carried out in phases, supported by a dedicated City-Level Reuse Cell (CLRC) for coordination, monitoring and financing. The plan also emphasizes policy reforms, tariff structures and accountability mechanisms to enable large-scale reuse.

Agra: Reducing Pressure on Yamuna and Groundwater

Agra, facing acute water stress and pollution challenges in the Yamuna River, is adopting a circular water economy approach through its reuse action plan.

The city generates 286 MLD of sewage, of which nearly 21 percent remains untreated. Existing STP capacity of 221 MLD will increase to 398 MLD.

The plan identifies key reuse projects including:

- Dhandupura STP to Agra Cantt, Agra Fort and Idgah railway stations – 5 MLD
- Jaganpur STP to Medical College Metro corridor – 2 MLD
- Bichpuri STP to Keetham Jheel – 21 MLD

These projects together operationalize 28 MLD of reuse potential with an estimated investment of ₹93 crore.



The plan also proposes institutional strengthening, monitoring systems, tariff mechanisms and digital reporting to ensure transparency and efficiency.

A Transformative Step Towards Water Security

The SRTW initiative represents a shift from wastewater disposal to resource recovery. By promoting safe and structured reuse of treated water, it reduces environmental stress, conserves freshwater resources and supports long-term sustainability.

The combined progress at policy, city and implementation levels — supported by proven industrial adoption — is laying the foundation for a resilient and circular water management system. In the coming years, SRTW has the potential to emerge as a model framework for addressing water challenges, particularly in the Ganga basin and other water-stressed regions of the country.

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