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*Every drop is so precious!*

# WASTE WATER RECYCLE AND REUSE
## An Overview

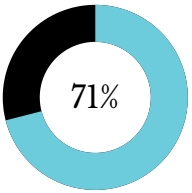
### Mission


Reduce, recycle, and reuse water through proper treatment and management.

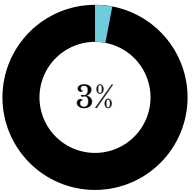
### Vision

Water: Save this precious resource for our planet, and for future generations, and a sustainable environment.

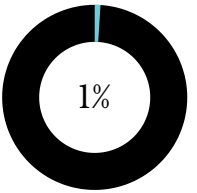
Water is the most abundant natural resource in the world. It covers up to 71% of the Earth's surface. However about 3% of water is fresh and out of this, only about less than 1% is available for human use. The total supply of fresh water on earth far exceeds human demand.




Available water




Fresh water




Potable water

Water reuse is essentially important as a means of achieving sustainable use of the world's water. Wastewater recycling, reuse and reclamation have been, now, accepted as appropriate ways to conserve water resources as well as to contain polluted waters from contaminating other available clean water sources. It is important to manage water efficiently. Proper management of water is achieved by water treatment both on a small and large scale. Domestic wastewater, industrial effluents and stormwater can undergo treatment through different wastewater technologies according to the feed and required water quality.

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Water recycling and reuse is the process of collecting, treating and using wastewater, particularly from municipalities, industry and agriculture. The treated wastewater can be used for domestic and industrial use or for safe disposal. Using recycled water for such applications reduces reliance on increasingly scarce and expensive surface water. It can also minimize groundwater overdrafts and reduce discharges of treated wastewater into rivers and oceans.

Treatment of wastewater coupled with effluent reuse also has important direct climate benefits. In many cases, treating sewage water helps reduce greenhouse gas emissions, particularly methane. A well-designed wastewater project allows for better sludge management solutions, such as methane capture and energy generation, which help mitigate the greenhouse gas emissions coming from plants' operations.

The recycled water can be used for irrigation or industrial purposes, as well as domestic purposes if properly treated. In some cases, treated wastewater is indirectly used for drinking purposes, for example by injecting it into groundwater aquifers to increase capacity and minimize saltwater intrusion. Water recycling primarily makes non-potable wastewater useful, thus saving the economic and environmental costs related to establishing new water supplies. Sources of water for potential reuse can include municipal wastewater, industry process and cooling water, stormwater, agriculture runoff and return flows, and produced water from natural resource extraction activities.

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These sources of water are adequately treated to meet “fit-for-purpose specifications” for a particular next use. "Fit-for-purpose specifications” are the treatment requirements to bring water from a particular source to the quality needed, to ensure Public Health, Environmental protection, or specific User needs.



**AQUASTAR ROLES AND RESPONSIBILITIES FOR WATER REUSE AND RECYCLE:**

Advances in treatment technologies now make it possible to recycle water of a quality which is fit for all public and industrial uses. For different uses of water, there are different levels of treatment. The extent of treatment —secondary, tertiary or advanced —is determined by the initial (inlet) quality of the water, the end-use application and state laws.

Keeping in line with today's needs, Aquastar brings an innovative, cost-effective and energy-efficient technology that especially compliments large Municipal and Industrial wastewater to treat and re-use the same for non-potable utilization.

Aquastar is equipped with more than 30 years of rich and experienced technocrats from Water & Wastewater technologies such as Extended Aeration, Membrane Bioreactor (MBR), and Sequential Bioreactor (SBR) etc to provide customized solutions as per the client’s requirement.

At Aquastar we provide a fully integrated array of key consultancy services for major markets in the Municipal and Industrial segments in the field of Environmental Management.

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## OUR SERVICES INCLUDE:

- Our experienced team of engineers, draft persons, and process designers work on various processes as mentioned below for the treatment of wastewater which results in non-potable uses of treated water or reintroducing treated water back into the environment.
- Techno-economic Feasibility Report, Preparation of Conceptual note, Design & Engineering, cost estimations, Detailed Project Report, RFQ Documents, tender documents & tender Evaluation.
- Water & Wastewater treatment (Conventional & Advanced processes) - Basic and Detailed Design & Engineering
- Environmental Studies - Environment Management and Compliance.
- Value engineering – providing cost-effective and energy-optimized designs
- Existing treatment facility retrofitting and up-gradation.
- Bid Process Management.
- Research & Development/ Treatability studies
- Recycle & Reuse of treated Sewage Wastewater/Industrial Effluent for non-potable as well as for process applications as part of the ZLD scheme.
- On-Demand, our team of trained and specialized engineers visits the site to evaluate the client's operations to improve plant efficiency, utilize available infrastructure, navigate evolving regulations, and develop strategic, long-range, sustainable, cost-effective plans.
- Safety, process efficiency, ease of operations, asset longevity, and minimizing life cycle costs are at the forefront of our designs and recommendations. Our professionals develop tailored approaches, utilizing the latest in technology to deliver economical, operator-friendly, wastewater treatment facilities that also meet the regulatory requirements of the respective authorities.