

Green Sewage Treatment Plant Based on Integrated Wetland Technology



Problem Statement: Conventional Sewage Treatment Plant (STP), unlike the usual sewage treatment process, follows an activated sludge process to biodegrade and remove pollutants from wastewater to reuse the recycled water. The process requires huge capital for construction and extensive power, machinery and skilled labour for operation, and heavy maintenance expenses. The efficiency and aesthetics of the STPs are also affected by various factors like the odour from the hydrogen sulphide and a whiff of ammonia; solid sludge dumping in the premises of the treatment plant; local climate factors, appropriate sewage volume and sewage characteristics that enter the STPs. Thus, we need alternative solutions.

Uniqueness of the Solution: The system makes use of natural treatment of sewage water via microbes and plant-based ecology.

Current Status of technology: The

green Sewage Treatment Plant (gSTP) system has gone through various stages of testing, and several systems have been successfully implemented across Maharashtra. Soon, the team will install one gSTP system at the WALMI campus in Bhopal and another at the Central Railway Bodybunder Depot in Mumbai.

Societal Impact: The increase in ecological awareness and new regulations in wastewater treatments has questioned conventional wastewater treatment methods about the use of hazardous chemicals during the degradation of the sludge, dumping of solid sludge waste, and maintaining cleanliness in the STPs. The gSTP system is innovative, reduces energy-related costs, provides a better and cheaper alternative for sewage treatment as the degradation process is natural using aerobic and anaerobic microbes. And the solids, instead of dumping in the premises, are utilised and absorbed by the plants. The technology in gSTPs reduces the contamination of

natural wetlands and other water bodies. This process also reduces our reliance on conventional STPs.

Patent(s): Nil

Relevant Industries: Municipalities, Cities, Towns, Environment.

Faculty: Prof. Anil Kumar Dikshit, Environmental Science & Engineering.