Water & Effluents

Conserving a Scarce Resource

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Despite having ample freshwater resources, the Philippines has been facing water scarcity since 2017, with a national water availability of just 1.3 megaliters ("ML") per capita—0.3 ML below the threshold for water stress. In addition to this, 40 million Filipinos do not have access to clean and potable water and still rely on unsafe water sources. To help address these interrelated challenges, One Meralco implements various initiatives aimed at managing the Group's water consumption without exacerbating water stress and treating wastewater to protect water quality within our areas of operation.

WATER MANAGEMENT METRICS OF MGEN (in megaliters)

	2022	2023	2024
Withdrawn	1,201,625	1,468,928	1,464,320
Consumed	616	222,101	5,160
Discharged	1,201,009	1,246,827	1,459,160
Recycled	149	249	282

In 2024, MGEN, which accounts for more than 99% of our Group-wide water use each year, extracted nearly 1.5 million ML of water—representing a decrease of 0.3% versus 2023—from different sources to cool its coal-fired power plants during operations via a once-through process. Ninety-nine percent (99.65%) of this water, which was withdrawn from surface water, groundwater, seawater, and utility water, was treated before being safely discharged back to the sea.

To further minimize the adverse ecological impact of its power plants and help ease global freshwater scarcity, MThermal, a fully owned subsidiary of MGEN, has rolled out a wastewater management program across its facilities in the Visayas at a low cost. Initiatives under this program include but are not limited to recycling of deep well reverse osmosis reject water (for backwash, fire hydrants, and plant-watering service), conversion of closed-loop seawater pump cooling systems to open systems, and diversion of effluents to rainwater to desalination plants. Thus far, MThermal has spent only PhP 600,000 on this program, which was only used for the last initiative, as each project required either internal process modifications or materials and equipment that were readily available in the company's facilities.

From the Distribution Utility perspective, we have made significant strides in reducing our freshwater consumption and associated operating costs as part of RCEP. In 2024, we equipped key Meralco facilities—including the Meralco Operating Center, 10 Sector Offices, the Sub-Transmission Services Facility, and three support facilities (the Powerbase Lineman's Training Camp, the Pagbilao Service Center, and the Pala-pala Stores)—with sewage treatment plants ("STPs") utilizing advanced sequencing batch reactor ("SBR") technology. This technology effectively treats wastewater by optimizing the removal of organic matter and nutrients, in compliance with DENR's general effluent standards.

To reduce the volume of freshwater we use, as well as the quantity of treated wastewater discharged into the environment, we invested in a cutting-edge tertiary treatment facility ("TTF") at the Meralco Operating Center. The TTF further purifies the SBR-treated water to stringent quality standards, enabling us to reuse the high-quality effluent in our cooling towers. By doing so, we are not only compliant with the Philippine Clean Water Act but also advancing sustainable water management practices across our operations. As a result of this initiative, by the end of the reporting period, we had successfully reduced Meralco's water consumption by 10% compared to the previous year—exceeding our year-end target of 5%.

BRIGHT SPARKS

Innovating for *Water Reclamation*

In 2024, Maynilad, one of the two major water supply and wastewater service providers in the Greater Manila Area, partnered with MSERV as its chosen contractor to construct its new STPs in the cities of Pasay and Parañaque, as well as modernize its water reclamation facility in Muntinlupa. Aimed at meeting the updated water quality guidelines and general effluent standards under the DENR Administrative Order No. 2021-19, these upgrades enhance the STPs' treatment capacity and efficiency, ensuring compliance with the DENR's stringent standards for wastewater management. MSERV handled the design and construction of all civil and electrical non-process equipment and non-process auxiliary equipment for the project.

A key component of the project is the introduction of advanced treatment processes to further purify effluent from the STPs. This innovative approach, which is the first in the country, produces "NEW WATER", a high-quality, potable-grade water source. By transforming treated wastewater into a reusable resource, the project helps reduce the reliance of Metro Manila's West Zone on freshwater sources and can help address the country's water scarcity problem.

Looking ahead, Maynilad will upgrade its Cupang Water Reclamation Facility this year to meet the updated DENR standards, once again tapping MSERV as its trusted engineering partner.