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PBAPP's Zero Waste Recycling Project Clinches Gold Award At MIWC 2025

GEORGE TOWN, Oct 17 (Bernama) -- The Penang Water Supply Corporation (PBAPP) and PBA Holdings Bhd have clinched the Gold Award at the Malaysian International Water Convention 2025 (MIWC 2025) for a groundbreaking project at the Sungai Dua Water Treatment Plant (WTP), which recycles water treatment residue (WTR) into sustainable building material while continuously harvesting supernatant water.

PBAPP chief executive officer Datuk K. Pathmanathan said the project, launched in February, earned the award in the Circular Economy & Water Reuse category at the ceremony held on Wednesday.

"The Zero Waste Recycling Project at Penang's largest water treatment plant represents an innovative approach to addressing the safe handling of WTR, which has been classified as a scheduled waste (SW204) by the Department of Environment (DoE) since 2009, mandating disposal in Class 4 Sanitary Landfills (C4SLs), the closest of which is in Selangor.

"In Penang, PBAPP has opted for a more environmentally friendly, cost-effective and sustainable recycling solution, processing and repurposing WTR as a raw material for the production of cement bricks," he said in a statement today.

He said the circular process of continuously harvesting and re-harvesting supernatant water operates 24 hours a day, seven days a week, producing an average of 25.4 million litres per day (MLD) of recycled water at Sungai Dua in September.

Pathmanathan said that at the same time, SW204 solids are transported from the Sungai Dua Water Treatment Plant (WTP) to a factory in Bukit Minyak, where they are used to produce cement bricks containing 30 per cent SW204 material.

He said the Zero Waste Recycling Project offers an environment-friendly solution, ensuring that WTR is not wasted or sent to a C4SL but recycled into green building material with economic value, while allowing PBAPP to tap a recycled water resource for Penang.

"The project is also a cost-effective solution with minimal impact on Penang's water rates, as the state's WTR recycling cost is 74 per cent lower than the projected cost of transporting SW204 to the nearest C4SL in Selangor.

"Moreover, it is an outsourced project, and PBAPP did not incur any capital expenditure for the construction of the Sungai Dua Dewatering Plant (SDDP) and the cement factory," he said.

Pathmanathan also said the project promotes sustainability in PBAPP's water supply operations, turning cyclically harvested supernatant water into a new recycled resource to help ensure good water supply services in Penang, a water-stressed state with limited raw water resources.

"In terms of operational sustainability, the SDDP was built to process about 91,250 tonnes of WTR in 2025, 105,850 tonnes in 2026 and 112,201 tonnes in 2027. This Penang project effectively recycles SW204 for safe use in compliance with the Environmental Quality Act 1974," he said.