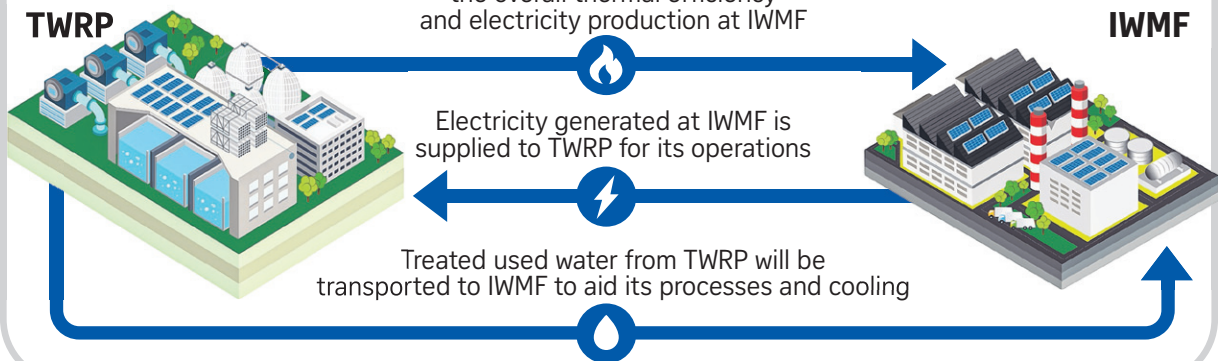# Saving water, energy and space

The co-location of the Tuas Water Reclamation Plant (TWRP) with the Integrated Waste Management Facility (IWMF) is the first of its kind in the world, enabling Singapore to reap the benefits of a water-energy-waste nexus while minimising land footprint.

WORKING TOGETHER

TWRP

IWMF

Biogas produced at TWRP will be used to enhance the overall thermal efficiency and electricity production at IWMF

Electricity generated at IWMF is supplied to TWRP for its operations
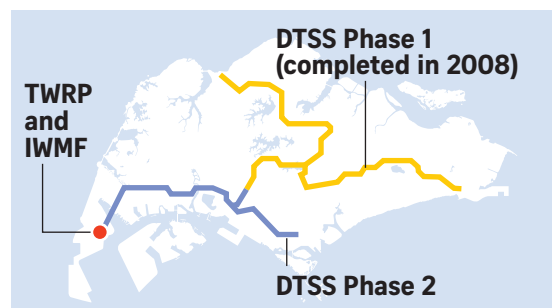
Treated used water from TWRP will be transported to IWMF to aid its processes and cooling
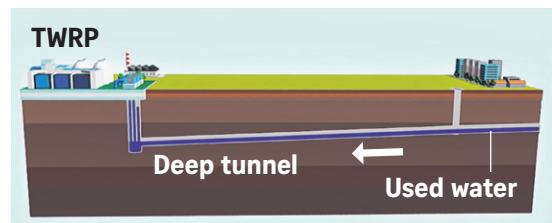
TWRP

- To be completed in 2025

It will be built as part of Phase 2 of Singapore's Deep Tunnel Sewerage System (DTSS), which is the core used water management system made up of deep tunnels and link sewers.

DTSS Phase 1 (completed in 2008)

TWRP and IWMF

DTSS Phase 2

Used water will be transported from the existing network into deep tunnels, flowing by gravity to TWRP for treatment, purifying it to Newater and industrial-grade water for reuse.

TWRP

Deep tunnel

Used water

When TWRP is operational, the exisiting water reclamation plants in Ulu Pandan and Jurong will be phased out to free up land for other uses.

IWMF

- First phase: 2022   • Completion: 2027

Unlike the existing Waste-To-Energy (WTE) Plants, IWMF is an integrated facility that can handle various waste streams such as:

Incinerable waste
Capacity: 5,800 tonnes per day
Currently: Able to treat 200 to 300 tonnes per day per hectare
What's new: Advanced WTE units will minimise land footprint, allowing the treatment of 500 tonnes per day per hectare

Household recyclables
Capacity: 250 tonnes per day
Currently: Sorted in private facilities
What's new: Consolidated for automatic sorting

Food waste
Capacity: 400 tonnes per day
Currently: Most of the food waste are disposed of at existing WTE plants
What's new: Food waste will be co-digested with used water sludge to increase biogas production

Dewatered sludge from TWRP
Capacity: 800 tonnes per day
Currently: Dried and transported to private facilities for incineration
What's new: No transportation needed for TWRP sludge as it will be incinerated at IWMF for electricity production

Apart from the process synergies, TWRP and IWMF will share common facilities — such as the admin building and carpark — to further optimise land use.