


Urban Solutions & Sustainability R&D Congress

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**MAKE
EVERY
DROP
COUNT**

Our Water Story

Diversifying Supply Options



WATER FROM LOCAL CATCHMENT

17 reservoirs for storage



IMPORTED WATER

Imported from Johor, Malaysia under the 1962 Water Agreement



NEWATER

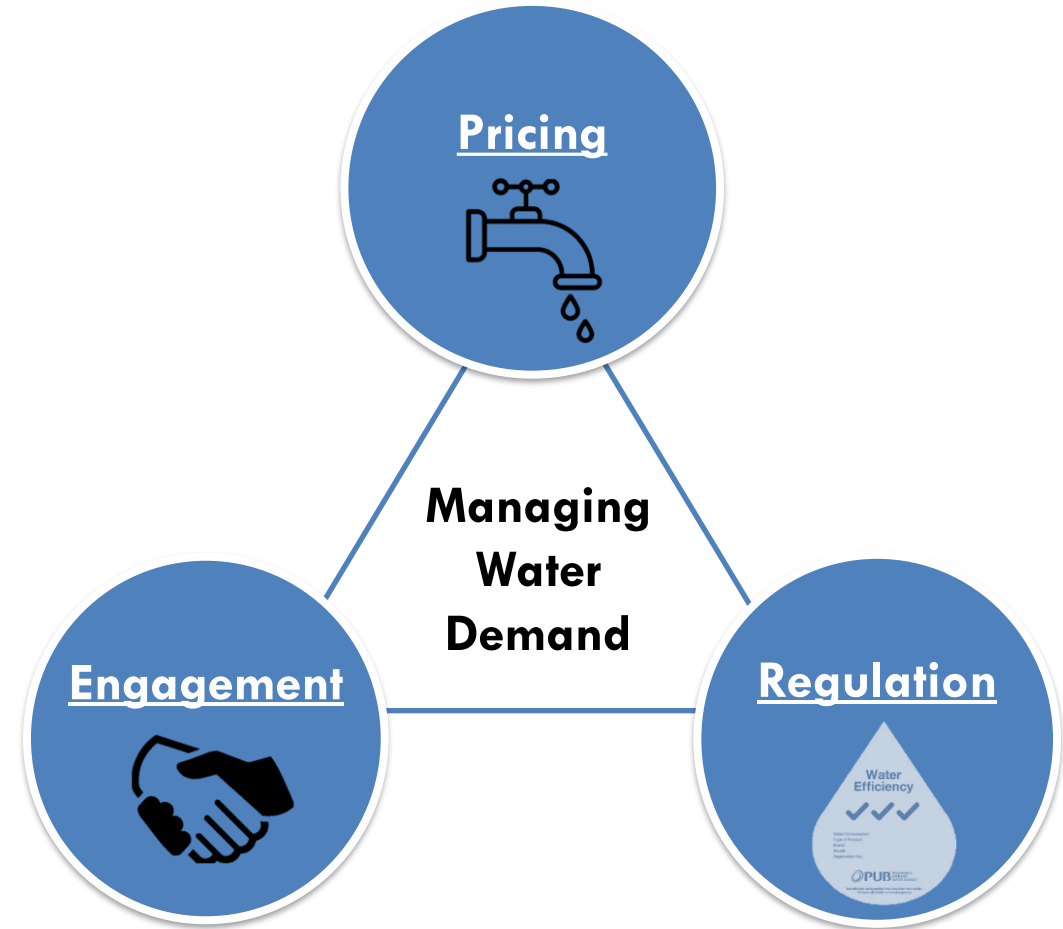
Ultra-clean, high-grade reclaimed water



DESALINATED WATER

Conversion of seawater into drinkable water

Managing Water Demand



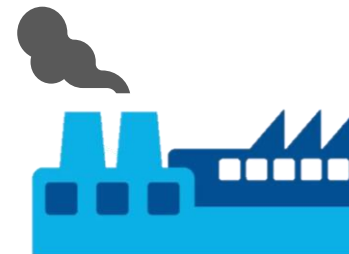
Challenges Ahead

By 2065, if business as usual...

Water demand projected to **double**



Energy intensive processes (Weather-resilient sources like desalination and NEWater)



Our energy consumption will **triple to 2.5TWh**



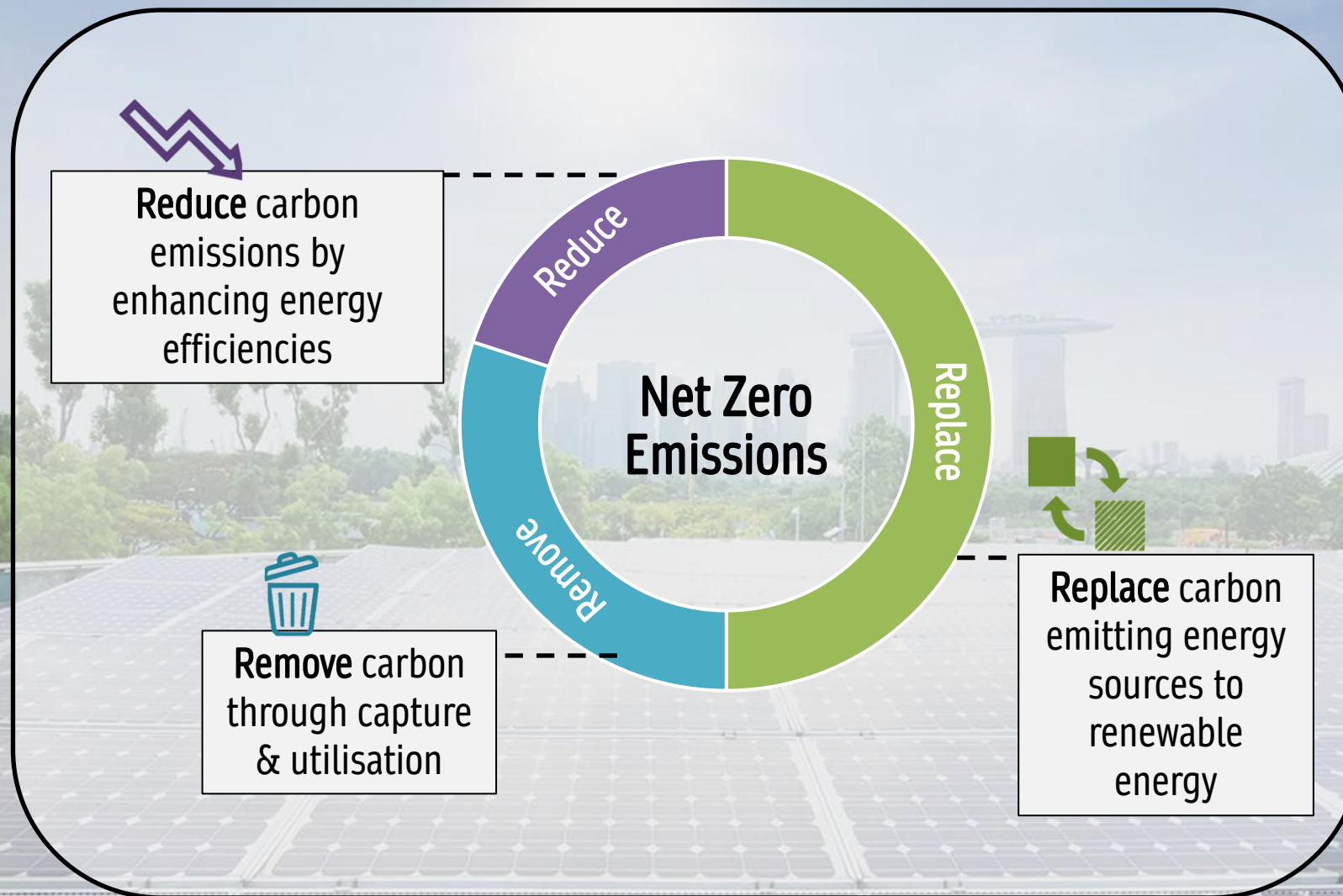
Our carbon emissions will **triple to 1 mil tons/year**



Our waste generation will **increase** and space at Semakau landfill will **run out**



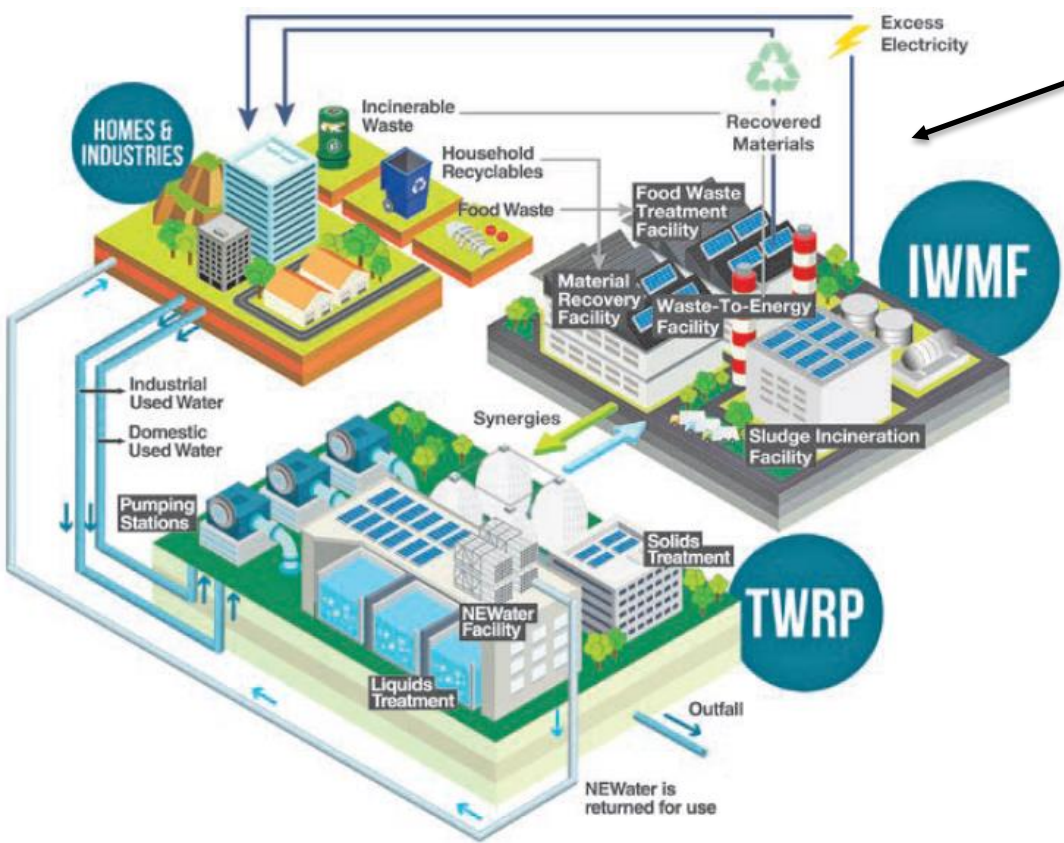
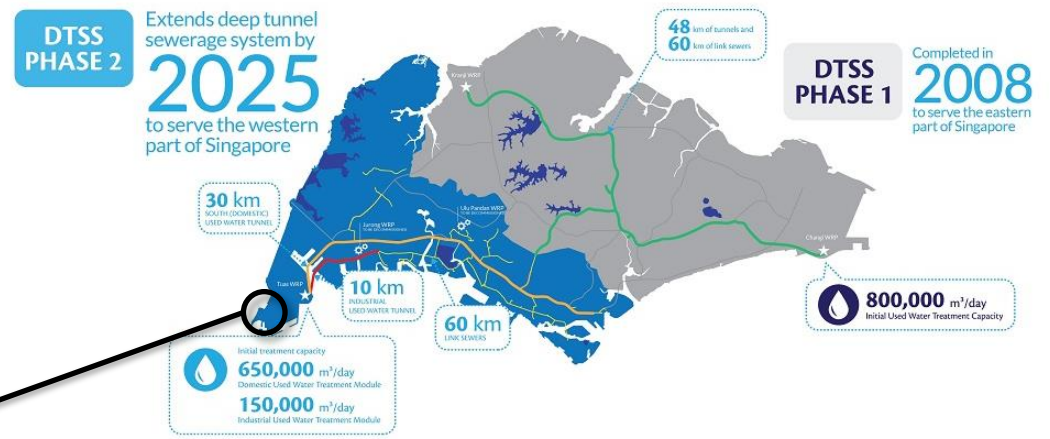
PUB's 3R Strategy to Net Zero Emission



Reducing Carbon



Deep Tunnel Sewerage System (DTSS)



Tuas Nexus

Tuas Water Reclamation Plant (TWRP), Tuas NEWater Factory, Integrated Waste Management Facility (IWMF)

- Optimise land take
- Leverage synergies and resource efficiencies between water, energy and waste processes



Replacing Carbon

Solar PV deployed at Tengeh Reservoir (Top)

Solar PV deployed at rooftop of Choa Chu Kang Waterworks (Bottom)

Replacing carbon-based energy with renewable energy

10% of PUB's local energy needs are met by solar

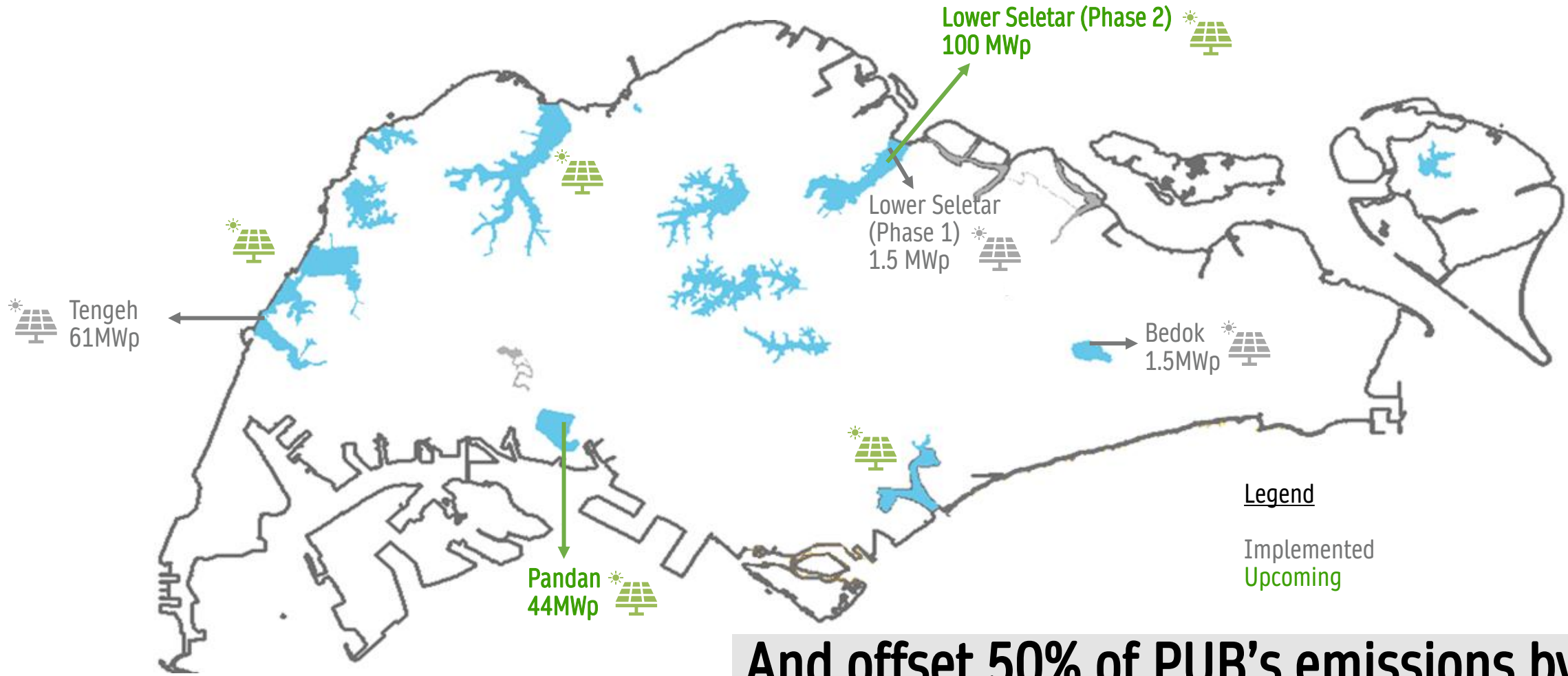
CLEAN WATER
from
CLEAN ENERGY





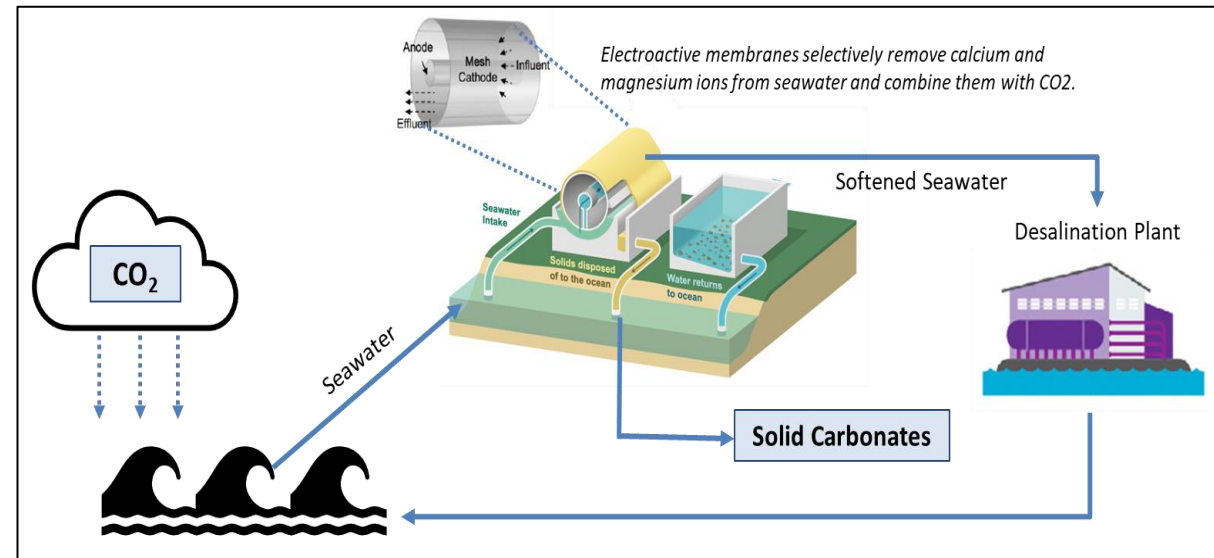
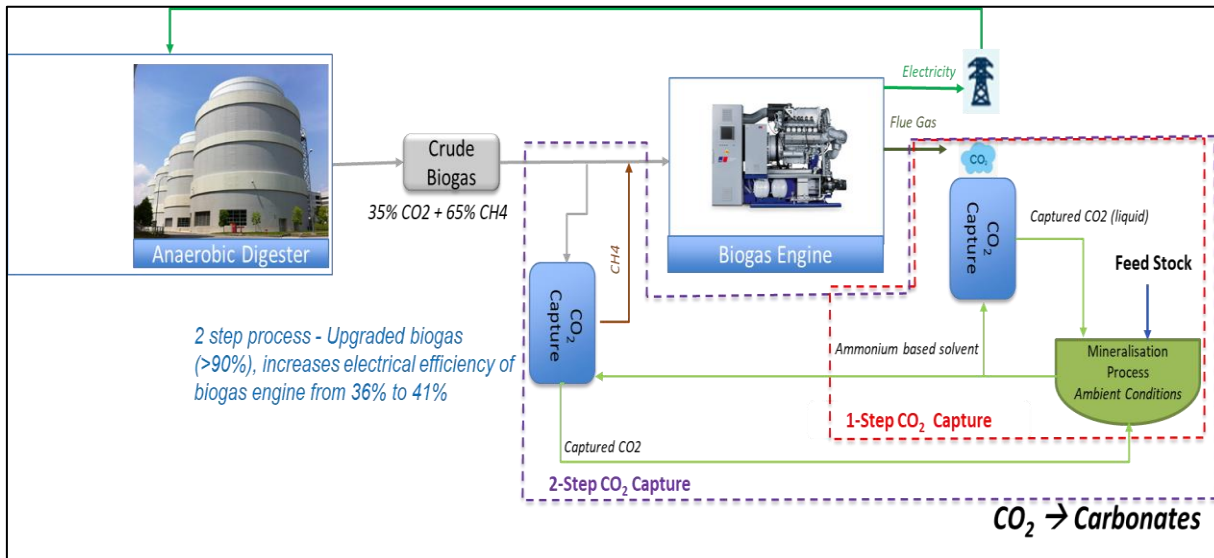
Replacing Carbon

Solar Deployment to TRIPLE by 2028



And offset 50% of PUB's emissions by 2045

Removing Carbon



CO₂ Capture from Biogas and Mineralisation

- Biogas is rich in CO₂ (about 35%) and is hence a good stream to target for CO₂ capture and mineralization.
- Additional feedstock is required for the mineralization reaction, and can be sourced from waste materials (such as incineration ash), as well as other natural minerals.

Capture CO₂ from Seawater

- Process produces calcium carbonate and magnesium hydroxide, which are used to capture CO₂. Hydrogen and chlorine are also produced, which can be used for other processes.

Key Takeaways

Sustainability at Our Core

It impacts the work we do and is key to our mission success.

Towards Zero Carbon and Waste

Initiatives for net zero carbon emissions, and zero waste to landfill – for a sustainable water system.

Sustainability by All

We need to take ownership towards sustainability. Everyone can be involved in sustainability efforts (big or small).

Thank You

Punggol Reservoir