

JTC, NUS exploring Jurong Island facility to test green data centre innovations

Separately, refiner Aster will invest US\$150m in a new gas turbine, and inks deal to produce low-carbon hydrogen

By Sharanya Pillai
hspillai@sph.com.sg

INDUSTRIAL landlord JTC and the National University of Singapore (NUS) will look into setting up a facility on Jurong Island to test green innovations for tropical data centres – which are designed to operate in warm climates.

Both organisations inked a memorandum of understanding to commence the study in 2026.

"Through this facility, data centre operators will be able to test their low-carbon solutions and develop large-scale, water and energy-efficient systems on Jurong Island," said Deputy Prime Minister Gan Kim Yong on Monday (Nov 24).

He was speaking at Jurong Island's 25th anniversary dinner, held at the Pan Pacific Orchard.

The facility will be part of the second phase of an ongoing project, the Sustainable Tropical Data Centre Testbed. The test bed for the first phase is located in NUS.

Singapore had previously imposed a moratorium on new data centres from 2019 to 2022, following concerns about their high energy and water consumption. It later introduced a selective approval regime – through the Data Centre - Call for Applications pilot – to manage new growth.

In October, the Republic announced that it will set aside 20 hectares on Jurong Island for a low-carbon data centre park with up to 700 megawatts (MW) of capacity – its largest such facility.

The Phase 2 test bed will focus on optimising data centres' energy and water usage with artificial intelligence, as well as innovations in cooling and power distribution, JTC said in a statement.

NUS and JTC will also explore the



DPM Gan has called for Jurong Island to remain not only a hub for the world's energy and chemicals, but also a "beacon" of low-carbon innovation. PHOTO: ST

use of clean-energy sources – such as solar power, biofuels and fuel cells – through smart microgrids and virtual power plants.

They will also look into developing the energy and chemicals sector workforce through specialised courses, training and internships.

Low-carbon hydrogen

Separately, Aster – which took over Shell's refinery on Pulau Bukom – inked a deal on Monday with industrial gas supplier Air Liquide to produce low-carbon hydrogen. This is the first such partnership in Singapore.

Both companies will develop an auto thermal reformer (ATR) unit to produce hydrogen, with integrated carbon-capture capabilities. The ATR process enables a carbon capture rate of up to 99 per cent.

AirLiquide will leverage its expertise in ATR technology, while Aster will provide its refining-petrochemical infrastructure and market knowledge, both companies said in a statement.

"This collaboration directly supports Singapore's hydrogen strategy and aims to accelerate pathways to reduce emissions in hard-to-abate sectors," said Aster's group chief executive Erwin Ciputra.

Aster further announced a US\$150 million investment in a new hydrogen-ready gas turbine for its manufacturing complex, via its recently formed unit Aster Power.

Aster Power is backed by Chandra Daya Investasi (CDI Group), the infrastructure arm of Indonesia's Chandra Asri Group, and focused on industrial energy efficiency upgrades.

Aster is targeting for the turbine to be operationally ready in end-2029. The new turbine will "future-proof our operations", said Ciputra.

The company has set aside US\$2 billion in investments for the Singapore market, its group chief financial officer Andre Khor previously told *The Business Times*.

Other partnerships

Four other partnerships were announced at Monday's event.

First, Surbana Jurong will collaborate with the Institute of Sustainability for Chemicals, Energy and Environment (ISCE2) on the upcoming Low Carbon Technology Translational Testbed on Jurong Island.

ISCE2 is part of the Agency for Science, Technology and Research (A*Star), which helms scientific re-

search and development in Singapore. The partnership will provide companies with a ready-to-use platform to test and scale low-carbon solutions for commercial deployment.

Second, JTC is teaming up with Third Derivative, a global climate-tech accelerator with a network of more than 280 startups and solution providers. This is to provide companies with access to clean-energy innovations.

JTC also inked a deal with clean-energy player Keppel and the Energy Market Authority to embark on a study in 2026, focused on a micro-grid test bed for renewables and to trial demand-response solutions.

Demand-response involves incentivising customers to shift electricity demand to non-peak periods, to reduce the strain on the power grid.

JTC and Keppel will also study thermal network systems that can minimise energy use for cooling facilities such as data centres.

Fourth, tank storage player Advantio Singapore is teaming up with Workforce Singapore (WSG) to prepare employees for the safe handling of new energy sources.

Advantio will tap WSG's Career Conversion Programme and Job Redesign Reskilling programmes, and expects 150 personnel to benefit.

In his speech on Monday, DPM Gan expressed hope that more companies will redesign jobs and upskill their workforce as they transform their product mix.

Singapore's energy and chemicals sector, which employs more than 27,000 workers, accounts for around 3 per cent of gross domestic product and a quarter of manufacturing output in 2024.

DPM Gan called for Jurong Island to remain not only a hub for the world's energy and chemicals, but also a "beacon" of low-carbon innovation.