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Singapore strives to accelerate low-carbon innovation with new industry partnerships at Jurong Island

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Transforming Jurong Island into a sustainable global hub for energy and chemicals



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As Jurong Island marks its 25th anniversary, JTC and EDB are developing the islandâ??s infrastructure and ecosystem to make it a vibrant hub for specialty chemicals and sustainable materials, and a premier testbed for new energies and low-carbon technologies. **Specialty chemicals** are projected to grow faster than the overall chemicals sector, driven by rising demand in Asia and global sustainability trends.

Recent specialty chemicals investments across manufacturing and R&D from global companies are expected to create more than 1,000 jobs. Close to 300ha on Jurong Island has been set aside for next-generation energy solutions infrastructure, including hydrogen, ammonia, sustainable aviation fuel and advanced battery systems.

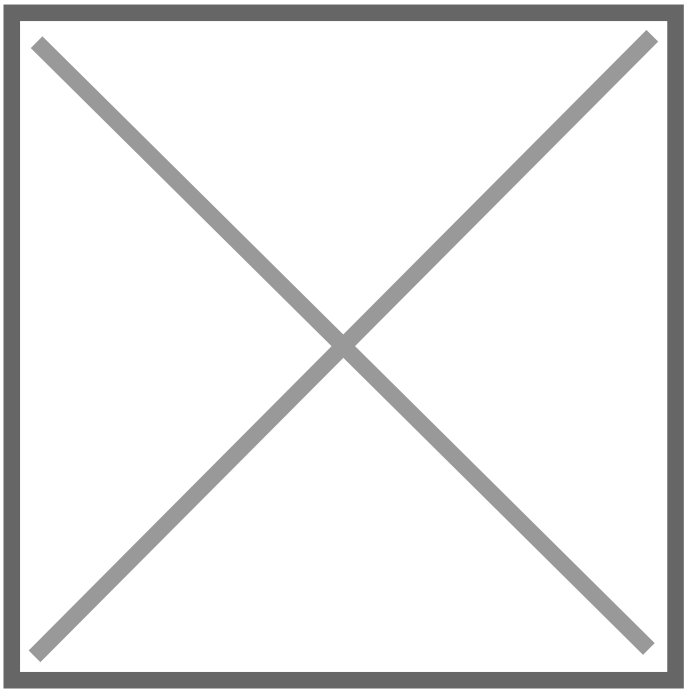
Six new strategic partnerships between global Energy & Chemicals (E&C) companies, academia and solution providers will enhance the islandâ??s R&D capabilities and boost talent development and infrastructure, advancing Singaporeâ??s leadership in low-carbon innovation and new energies.

The partnerships were formalised at the Jurong Island 25th Anniversary Dinner, attended by leading E&C companies, as well as pioneers who were instrumental in conceiving and developing the island. Deputy Prime Minister and Minister for Trade and Industry **Gan Kim Yong** witnessed the agreements and highlighted the partnerships in his welcome address.

R&D capabilities and infrastructure enhancement for low-carbon innovation

The government will continue to prioritise closer collaboration among like-minded partners to transform the island into a sustainable E&C hub that enables companies to seize new opportunities from the global shift to cleaner energy.

a. Developing AI-ready technology for low-carbon data centre



JTC signed an MOU with the National University of Singapore (NUS)

JTC had earlier announced that 20ha of land on Jurong Island will be set aside for the development of Singaporeâ??s largest low-carbon data centre park (with a capacity of up to 700 MW) to support growing AI use cases. To enable data centre operators to trial AI-ready, low-carbon technologies such as predictive energy management, intelligent workload optimisation, and liquid cooling (including direct-to-chip and immersion cooling), **JTC signed an MOU with the National University of Singapore (NUS**) to commence a study in 2026 on the establishment of a Sustainable Tropical Data Centre Testbed Phase 2 facility on Jurong Island. The testbed expands the scale and scope of the Phase 1 testbed in the NUS campus to enable data centre operators to test their low-carbon solutions in water- and energy-efficient systems on Jurong Island.

b. Ready facility for testing emerging low-carbon technology

The Institute of Sustainability for Chemicals, Energy and Environment of the Agency for Science, Technology and Research (A*STAR ISCE) and Surbana Jurong (SJ Group) signed an MOU to collaborate on A*STARâ??s upcoming Low Carbon Technology Translational Testbed (LCT) on Jurong Island. This partnership will provide companies with a ready-to-use platform, offering comprehensive research, engineering, and project management services to cost-effectively test and scale low-carbon solutions for commercial deployment.

c. Tapping startups for innovative solutions

Startups play a crucial role in developing solutions to global sustainability and climate challenges. To tap this potential, Rocky Mountain Instituteâ??s global climate-tech accelerator Third Derivative (D3) and JTC are forming a strategic collaboration to accelerate climate and low-carbon technologies adoption on Jurong Island and across JTCâ??s other industrial estates. Leveraging D3â??s global network of over 280 startups and solution providers, the partnership will enable companies to crowdsource fresh ideas to pilot new clean energy solutions. At the same time, startups gain access to valuable mentorship and capacity-building support to advance and scale their innovations.

Infrastructure for new energy solutions

Under an MOU, JTC and Keppel Ltd. (Keppel) will work with the Energy Market Authority on a study in 2026 on the pilot deployment of a microgrid testbed for renewable energy and digital demand-response solutions trials. JTC and Keppel will also study thermal network systems that can minimise energy use for cooling for energy-intensive facilities such as data centres. These efforts enable energy efficient systems and circular-energy integration on Jurong Island by redistributing surplus energy across users and unlocking practical pathways for cross-industry energy efficiency. The Sustainable Tropical Data Centre Testbed Phase 2 by JTC and NUS will also study how facilities including data centres can become smart, microgrid-compatible assets, and integrate seamlessly with new energy sources.

Aster has announced a **US$150M investment in a hydrogen-ready integrated gas turbine** to be located in its manufacturing complex. This investment will enable Asterâ??s facilities to generate and utilise low-carbon electricity, as well as supply additional low-carbon electricity to Singaporeâ??s power grid. Aster and Air Liquide have also signed an MOU to produce low-carbon hydrogen on Jurong Island, using Air Liquideâ??s proprietary auto-thermal reforming technology with integrated carbon capture capabilities. Their partnership aims to unlock the upstream hydrogen supply chain and drive the adoption of low-carbon hydrogen. This initiative is aligned with Singaporeâ??s National Hydrogen Strategy and is an example of how industry collaboration is critical in powering a low-carbon future for Singapore.