

Low-carbon Technology Translational Testbed (LCT³)

What is it?

The Low-Carbon Technology Translational Testbed (LCT³) is a test-bedding facility which will translate and scale-up different emerging low-carbon technologies in areas like carbon utilisation and hydrogen, to bring them closer to full-scale, real-world deployment. It will reduce the time and resource required for technology optimisation, validation and deployment, thus accelerating commercialisation and adoption of these technologies by industry. The LCT³ facilities will be hosted at A*STAR Institute of Sustainability for Chemicals, Energy and Environment (ISCE²) and will be located on Jurong Island.

LCT³ will strengthen our position as a location in Asia for industry-led low-carbon R&D. It will also support our efforts to decarbonise hard-to-abate industrial activities in Singapore. We expect these efforts to create opportunities to unlock economic value through the commercialisation of low-carbon solutions and innovations developed and scaled up here in Singapore.

How does it work?

LCT³ will feature a modular plug-and-play system that allows companies to configure the modules of equipment based on their specific needs. Companies will be able to test their technologies and processes much faster and at a lower cost than if they had constructed a test-bed just for themselves. This modular approach will enable LCT³ to host a variety of different low carbon technologies while avoiding duplicative infrastructure investments.

It will leverage digital twin technology to employ a data-centric approach in test-bed configuration, automation, and process modelling with analytics, to enhance operation and optimisation. This will help companies to fine-tune their processes before full-scale implementation of low-carbon technologies, making it easier to scale up by lowering risks and enhancing efficiency.

How can companies tap on LCT³?

Companies will be able to access LCT³ through pay-per-use projects for technology demonstration and joint projects or collaborations with the host A*STAR Institute of Sustainability for Chemicals, Energy and Environment (ISCE²). Companies looking to test, scale up or validate their innovations can leverage the facility's state-of-the-art infrastructure to fast-track their technology deployment.

As LCT³ aims to work closely with industry partners to accelerate the adoption of low-carbon solutions in Singapore and support our net-zero ambitions, companies may

testbed solutions at mid to high technological readiness levels, with a clear pathway to commercialisation and deployment within Singapore and/or the region.

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