Annex C – New Energy Pilot Projects

Companies	About the Project	Link
Advario Asia Pacific and VFlowTech	**Vanadium Redox Flow Battery Storage** Advario Asia Pacific, JTC and local start-up VFlowTech (VFT) signed an MOU to collaborate on scaling up of vanadium redox flow battery (VRFB) capacity for clean energy storage on Jurong Island. Under the MOU, VFT will use Advario's existing storage tank infrastructure to scale its VRFB technology to a capacity of up to 40MWh, about 25 times its current capacity. This is equivalent to powering over 3,000 4-room HDB flats daily. The large-scale deployment optimises the storage of surplus electricity generated across Singapore, particularly from renewable sources like solar power, feeding electricity back into the national grid during peak demand periods. This will help smooth out fluctuations in energy consumption, enhance demand response, and improve grid stability by discharging power when demand is high and charging during off-peak hours. The collaboration was a result of JTC and the Energy Market Authority's Jurong Island Renewable Energy Request-For-Proposal (JI RFP) innovation call, launched in October 2021.	Link
Terrenus Energy, Sembcorp Solar Singapore	**Jurong Island's Largest Solar Deployment** JTC's journey to optimise land for solar deployment started in 2018 when it first awarded the contract for Phase 1 of its SolarLand programme to Terrenus Energy and S.M.E Electrical to set up the first grid-connected solar farm on Jurong Island.	Link

	Since then, more solar panels have been deployed with the award to solarise 60ha of interim vacant land to Sembcorp Solar Singapore. This is the largest land-based solar deployment on Jurong Island, increasing the total solar generation capacity on Jurong Island from 25.2MWp to 142.2MWp, equivalent to powering approximately 33,400 4-room HDB flats annually and reducing over 63,220 tonnes of carbon emission per year.	
Sembcorp Industries, the Energy Market Authority	**Singapore's Largest Energy Storage System** The Sembcorp Energy Storage System (ESS), launched by Sembcorp Industries and the Energy Market Authority (EMA), is Singapore's largest utility-scale energy storage facility. Spanning two hectares on Jurong Island's Banyan and Sakra region, the utility-scale system was commissioned in six months and has been operational since December 2022. It has a storage capacity of 326-megawatt hour (MWh), sufficient to power around 27,300 4-room HDB households for one day in a single discharge.	Link
PacificLight Power, Meranti Power, Keppel Sakra Cogen, Sembcorp Cogen, YTL PowerSeraya	**Hydrogen-Ready Power Plants e.g. Combined Cycle Gas-Turbine (CCGT), Fast Start Ancillary Services Facility (Fast Start), Open Cycle Gas Turbine (OCGT)** Since 2024, all new and repowered natural gas power plants are required to be at least 30% hydrogen-compatible by volume. This means that the plants can burn at least 30% hydrogen, a cleaner fuel, with natural gas making up the rest, to generate electricity. By 2030, Jurong Island will be home to two 50MW plants (Fast Start) by PacificLight Power (2025), two 340MW plants (OCGT) by Meranti Power (2025), a 600MW plant (CCGT) by Keppel Sakra Cogen (2026), a 600MW plant (CCGT)	Link (two 50MW plants by PacificLight Power) Link (two 340MW plants by Meranti Power) Link (600MW plant by Keppel Sakra Cogen) Link (600MW plant by Sembcorp Industries)

	by Sembcorp Cogen (2026), a 600MW plant (CCGT) by YTL PowerSeraya (2027), and a 670MW plant (CCGT) by PacificLight Power (2029).	Link (670MW plant by PacificLight Power) Link (600MW plant by YTL PowerSeraya)
Keppel Ltd, Sumitomo Corporation	**Low-or-Zero Carbon Ammonia Power Generation** EMA and the Maritime and Port Authority of Singapore (MPA) have appointed the consortium led by Keppel Ltd to conduct the next phase of the project to provide a low- or zero-carbon ammonia solution on Jurong Island for power generation and bunkering. Keppel Ltd and partners will conduct a Front-End Engineering Design (FEED) study to advance the power generation proposal. Sumitomo Corporation, Keppel Ltd's bunkering partner, will also conduct a FEED study to advance the bunkering proposal. The project has yet to reach Final Investment Decision to formally proceed. Subject to the findings of the FEED studies, the project seeks to develop the end-to-end ammonia solution to (i) generate 55 to 65MW of electricity from imported low- or zero-carbon ammonia via direct combustion in a Combined Cycle Gas Turbine; and (ii) facilitate ammonia bunkering at a capacity of at least 0.1 million tons per annum. A key thrust of this strategy is to experiment with the use of advanced hydrogen technologies. Ammonia, which does not produce carbon emissions when combusted, is a ready and available hydrogen carrier with an established	Link

	international supply chain for industrial use and can be stored and transported over long distances.	