

Details of Awarded Projects for Second Energy Efficiency Grant Call for Power Generation Companies

Title	Description	Project Team
KMC CCP4 GT26 High Efficiency (HE) Upgrade in C3 Inspection	Keppel Merlimau Cogen Pte Ltd has embarked on enhancements to improve its Combined Cycle Power Plant efficiency and performance. These include upgrading the internal components of the gas turbine with new cooling technologies and advanced materials. Such enhancements will allow the gas turbine to operate at higher firing temperatures while achieving better cooling, allowing the gas turbine to deliver more power while using the same amount of fuel. The upgrade is the first in Southeast Asia and has resulted in higher overall plant efficiency and lower carbon dioxide emissions.	Principal Investigator: Miguel Benito Dols, Keppel Merlimau Cogen Pte Ltd
Tuas Power Station CCP1 & 2 Gas Turbine “F” Technology Upgrade including Application of Inverter (Variable Speed Drive) Motor for TCA Cooler to Improve the Energy Efficiency of the Combined Cycle Plants and Reduce Carbon Emissions	Tuas Power Generation Pte Ltd will collaborate with the gas turbine (GT) Original Equipment Manufacturer, Mitsubishi Heavy Industries to implement Gas Turbine “F” Technology Upgrade including Application of Inverter (Variable Speed Drive) Motors for Turbine Cooling Air (TCA) Cooler to increase the energy efficiency and reduce carbon emissions of Combined Cycle Plant 1&2 (“CCP 1&2”). This upgrade is part of Tuas Power’s efforts to achieve energy efficiency improvements and fulfil decarbonisation measures. The energy efficiency improvement project focuses mainly on the upgrading of existing gas turbine hot gas path parts by applying Mitsubishi’s latest gas turbine technologies. The parts to be upgraded include selected rows of turbine blades, vanes, ring segments and discs. These will be replaced with	Principal Investigator: Lim Tze Siong, Tuas Power Generation Pte Ltd

	parts of new improved High Strength Alloy, Advanced/Thickened thermal barrier coating and modified cooling profile to allow for higher GT inlet temperature. The application of inverter motors for TCA cooler will optimise the blades tip clearance, thus reducing loss and add to the improvement in energy efficiency of the CCP 1&2.	
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