

Industrial Water Heating and Cooling for Electroplating

About HAECO Group (HAECO)

Established in Hong Kong in 1950, HAECO is one of the world's leading independent aircraft engineering and maintenance groups. It is one of the largest Maintenance, Repair and Overhaul ("MRO") service providers in terms of capacity. Through its 17 subsidiaries and joint venture companies around the world, the Group offers a full spectrum of services including airframe services, line services, component services, engine services, inventory technical management, fleet technical management, cabin integration and reconfiguration services and interior products, private jet solutions, freighter conversion, parts manufacturing and technical training.

HAECO fulfils its vision to be a green and sustainable MRO service provider by striving to be a good steward of the natural resources and biodiversity in the areas where we operate. What's more, the nature of our business of providing MRO services means that we contribute to the efficiency of aircraft which, in turn, alleviates the adverse impacts of the aviation industry on the environment. HAECO promotes and encourages compliance with international standards, such as the ISO 14001 framework within the group. We carefully manage our energy use, emissions and waste in accordance with relevant laws, regulations and industry best practice.

We have strived to protect our environment through de-carbonisation, water conservation, waste reduction, adoption of renewable energy.

For further details on HAECO sustainability efforts: <https://sd.haeco.com/en/>

Problem Statement

To reduce energy consumption associated with industrial water heating, pre-heating and cooling for use in electroplating.

Aims

Swire Pacific Sustainable Development (SD) Fund Challenge Process, invites innovators to submit a new solution to be trialled with the intention of implementing and scaling to other sites with similar problems.

- Solution may include, but not limited to:
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- Efficient heating and colling systems
- Efficient water-cooling systems
- Software-enabled water heaters/chillers
- Materials solutions including innovative passive heating and cooling materials
- HAECO requires temperature ranges between 40-93 degrees Celsius.
- The trial may be conducted in HAECO Landing Gear Services operations in Xiamen.

Problem Background

HAECO Landing Gear Services (HLGS) offers a full range of inspection, repair, maintenance, modification, overhaul and leasing services for landing gears at the Xiamen Gaoqi International Airport. As part of the HAECO Group Component Services division, HAECO Landing Gear Services is a one-stop specialist that supports and complements the Group's other major aircraft-related projects during aircraft in-hangar checks and conversions, or during modifications.

HLGS offers electroplating services, as a critical part of the landing gear repair process. Electroplating is responsible for ~20 percent of the total electricity consumption of the operation and contributes significantly to the overall carbon footprint of HLGS. A major part of the energy required for electroplating is in the heating and cooling of water and solution in the electroplating tanks. There are roughly 32 tanks that currently use heaters and water chillers to control temperature. The total power rating is 1 808 kW and the annual energy consumption is roughly 2.6 million kWh.