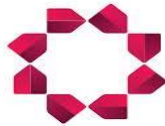


Client



مطار حمد الدولي
Hamad International Airport
قطر QATAR

Project

Energy Consultant

Case Study

Energy Audit

Conserve Consultants Pvt Ltd

Energy Audit - Condenser Pump limiting speed in VFD's

Hamad International Airport is a leading International Airport in the world welcomes around 30 million passengers per year. The facility receives chilled water supply from 4 main Central Utility Plants named as CUP-1, 2, 3 & 4, with total installed load of 50,000TR



Findings

Presently the condenser pumps are running with full speed and the VFD is bypassed. Pump is running full load of 100%, designed BKW is 154.4 kW and actual power consumption is 154.87 kW, designed flow rate of pump is 1500m³/hr & actual flow rate is 1817m³/hr. The power consumption & flow rate for the condenser pumps in CUP 2 & 3 is higher compared to design.

Solution

It is recommended to operate VFDs with limiting the maximum speed. This leads to reduced in pump flow and reduces the pump power consumption. By this VFD limiting speed easily 10 kW reduction per pump is envisaged.

Results

Annual Electrical Energy Savings	: 262,800 kWh/year
Annual Cost Savings	: 57,816 QAR/year
CO ₂ emission Reduction	: 130 tons/year