Client	مطار حمد الدولي Hamad International Airport QATAR قطر
Project	Energy Audit
Energy Consultant	Conserve Consultants Pvt Ltd
Case Study	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 1500m^3/hr & actual flow rate is 1817m^3/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