

About The Company



Background

Modern commercial buildings use Heating, Ventilation and Air Conditioning (HVAC) systems to dehumidify and keep the building at optimal temperatures. An essential component of HVAC systems are chillers. In fact, they are sometimes referred to as the “heart” of an HVAC system.

Chillers help facilitate the transfer of heat from an internal environment to an external environment. Its role is crucial particularly in commercial facilities such as data centers, manufacturing plants, and hospitals. But because of its role in transferring heat and ensuring optimal temperatures, chillers account for one of the biggest electricity consumers in many facilities. It is estimated that about 25-35% of energy consumed by HVAC systems are from chillers. Today, there is a drive to seek more efficient HVAC systems to improve on building performance and sustainability.

It is against this backdrop that one of Singapore’s leading telecoms operator has reached out to Vertiv to identify energy savings opportunities in its facility’s HVAC chillers. The customer’s headquarters houses about 6 floors of data center space with a total of 10 Chillers - they ordered 6 EDD for their 6 chillers and we are targeting to get additional 4 more.

Solution

Energy optimization through an AI/IIoT Technology

To address the needs of the customer & without compromising its Data Centre’s day to day operations – which is a critical part of their business – Vertiv worked with the customer to install a Chiller optimization device/service known as “External Digital Demand – Response Technologies or EDD-RT. This AI/IIoT technology “has been installed in each of the customer’s six chiller plants.

EDD, through its patented algorithm enhances the Chiller’s day to day operating characterises enabling the Chiller to make small & regular set point changes resulting in reduced operating costs though reduced kWh consumption while maintaining existing condition of a building.

The Outcome

Notable energy savings through a simple, intelligent device

Notable energy savings through “EDD-RT” which is a Vendor neutral retrofittable device that simple and intelligent, just a little over a week since its installation, average energy consumption in the customer’s chiller plants decreased by about 33 kW or a 9.5% reduction in energy consumption. This means in each of the customer’s chiller plant, there is an estimated 289,080 kWh’s saved in a year, translating to roughly U\$26,000 in savings per chiller plant annually.

Leading Telco Operator in Singapore

A Vertiv Case Study



Device selector ☰

Chiller 2 X

CHART SELECTED

SITE ENERGY

1 WEEK

3 DAYS

1 DAY

12 HOURS

ALL

◀

▶

SAVE AS

REPORTS ▼



Chiller 2

IT ENERGY
Avg: 0.00 kW

COOLING ENERGY
Avg: 311.67 kW

TOTAL ENERGY
Avg: 311.67 kW

TOTAL KWH
167677.31 kWh

TOTAL SGD
\$ 20,121.28

From:

Aug 25 2019, 0:00

To:

Sep 16 2019, 9:59

Power

PF

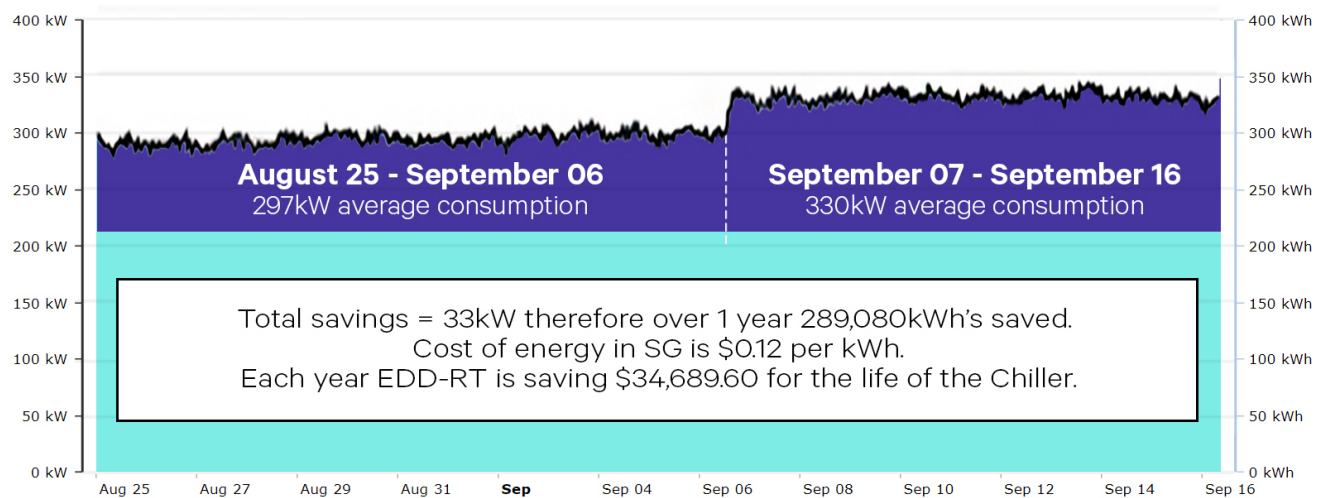
vRMSMin

vRMSMax

iRMSMin

iRMSMax

kWh



In addition to this, the device also helps to provide a comprehensive and real-time monitoring of the compressor performance of the chillers including:

- Fan and compressor operation
- System Faults
- Outside Ambient Temperature Monitoring
- Air quality sensing
- Three-phase and single-phase power monitoring and management

“The EDD-RT device installed by Vertiv has really allowed us to see the potential energy savings we can achieve using just a simple solution. We are excited to see the ROI in a few months’ or a year’s time. The process of working with Vertiv has been smooth and we appreciate their support in providing us with this solution to help us achieve our efficiency and sustainability goals,” said the customer’s Facilities Manager.

“Cooling accounts for one of the biggest consumers of energy in a facility – whether it be a data center facility or any other commercial facility. By identifying opportunities for savings and having the right partner and solution, energy savings can certainly be achieved at no disruption to day-to-day critical business operations,” said Chris Mandahl, senior director for services and project management for Vertiv in Southeast Asia.

To learn how Vertiv can support your facility optimization goals, visit [Vertiv.com](https://www.vertiv.com) or this [link](#).

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