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Case study

Regional colocation provider achieves energy savings with Vertiv cooling retrofit services

Background

A leading data centre operator in Singapore embarked on a large-scale cooling system retrofit to enhance energy efficiency and sustainability. The initiative aimed to reduce high energy consumption and operational costs linked to ageing Computer Room Air Conditioning (CRAC) units. By modernising these units, the company sought to lower electricity bills, extend equipment lifespan, and comply with regulatory carbon emissions requirements. This project was a key component of the company's broader commitment to environmental sustainability and operational excellence.

Unlike traditional retrofits, this initiative involved retrofitting 114 CRAC units spread across multiple data halls and floors, necessitating a highly scalable and strategic implementation approach.

Challenges

- **Excessive Energy Consumption:** The ageing units operated inefficiently, leading to high energy usage.
- **Obsolete Components & Rising Maintenance Costs:** Spare parts were no longer readily available, increasing downtime risks and maintenance expenses.
- **Inefficient Variable Speed Drives (VSDs):** Legacy VSDs lacked modern fan control, preventing optimal energy regulation.
- **Regulatory Compliance:** The company applied for a government energy efficiency grant, requiring demonstrable energy savings.
- **Monitoring & Data Accessibility:** While the company's internal Building Management System (BMS) tracked energy performance, the retrofit service provider lacked direct access to this data, adding complexity to performance verification.

Solution

To address these challenges, Vertiv provided the customer with a comprehensive CRAC retrofit service, which included:

- **Upgrading existing CRAC Units with Electronically Commutated (EC) Fans:** EC fans enabled dynamic power regulation, optimising energy usage.
- **Installing intelligent Liebert® iCOM™ Controllers:** With Liebert iCOM controllers, the customer can integrate multiple cooling units into an intelligent system, allowing for ease of management and enhanced performance.

Results

- Achieved significant energy savings through the implementation of EC fans and teamwork mode control.
- Extended the lifespan of CRAC units by an additional 7 years.

This scalable approach ensured balanced energy distribution across various data halls and floors, improving efficiency while minimizing disruptions.

By modernising its cooling infrastructure, the customer successfully reduced operational costs, enhanced energy efficiency, and improved system reliability. Vertiv CRAC retrofit services can drive significant energy savings, support sustainability goals, and enable future-ready critical infrastructure.

Industry: Colocation

Region: Singapore

Challenge

Outdated and inefficient CRAC units, resulting in high energy consumption and operational costs.

Vertiv Service:

- CRAC retrofit service for 114 units through replacement of Electronically Commutated (EC) fans.
- Replacing existing CRAC AM control with Liebert® iCOM™ controllers with enhanced intelligence features for ease of management.
- Adding IS unity cards and THB sensors to enhance system performance.

Looking to optimise your data centre's efficiency? Explore how innovative cooling solutions can transform your operations and drive long-term savings.

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11-07-CAS-SG-SRV-Data Center Retrofit (11/25)