



## Case study

# Leading telecoms company in Asia achieves energy savings with cooling system upgrade



## Background

As data centers continue to expand, the demand for energy-efficient cooling solutions has become more critical than ever. It is in this light that a leading telecommunications provider in Singapore sought to enhance the energy efficiency and sustainability in their two locations. The two sites were utilizing aging Computer Room Air Conditioning (CRAC) units, which made them prone to operational inefficiencies and unexpected downtimes. Additionally, regulatory pressures surrounding carbon emissions necessitated a strategic approach to reducing energy usage.

To address these challenges, Vertiv approached the customer for a CRAC retrofit project, which aimed at reducing energy consumption, improving cooling efficiency, and aligning with the company's overall sustainability goals. This initiative was a key component of their broader commitment to environmental responsibility and operational excellence.

## Challenge

The company faced several hurdles with their legacy CRAC units:

- **Excessive Energy Consumption:** The aging CRAC units were inefficient, leading to inflated operational costs.
- **Maintenance Challenges:** Outdated components made servicing difficult and costly.
- **Overcooling & Energy Waste:** Cooling loads at both data center sites were significantly higher than necessary, resulting in unnecessary energy expenditure.
- **Regulatory Compliance:** Government-imposed carbon tax policies increased the urgency for energy efficiency improvements.

### Company profile:

A Singaporean telecommunications conglomerate, the country's principal fixed-line operator of mobile network operators operating in the country.

**Industry:** Telecom

**Region:** Singapore

### Challenge

The customer was facing opportunities to reduce energy consumption through an enhancement of their aging CRAC units.

### Vertiv Service:

- CRAC retrofit service through the replacement of traditional fans with Electronically Commutated (EC) fans for variable-speed operation and precise cooling adjustments.
- Comprehensive retrofit across multiple units at both sites.

### Results:

- Significant reduction in cooling load: from 24KW to 7.5KW at the 6-UNIT CRAC Retrofit site, and from 18KW to 5KW at the 4-UNIT CRAC Retrofit site.
- ROI in just 3 months without the need for a major upgrade or overhaul of cooling system.



## Solution

Realizing these challenges, Vertiv provided the customer with the CRAC retrofit service program. The service includes identifying energy-saving opportunities to existing CRAC units, without the need for major upgrades or investments. Among the services provided by Vertiv in the CRAC retrofit program includes:

- **Upgrading to Electronically Commutated (EC) Fans:** EC fans provide variable-speed operation and precise cooling adjustments, ensuring dynamic power regulation and optimized energy usage.
- **Comprehensive Retrofits Across Multiple Units:** The retrofit was carried out at both sites, ensuring scalable and effective implementation.

The impact of the CRAC retrofit was immediate and substantial:

- **Drastic Reduction in Cooling Load:**
  - **Site A (6-unit CRAC Retrofit):** Cooling load decreased from 24KW to just 7.5KW. Which is a reduction of **68.75%**.
  - **Site B (4-unit CRAC Retrofit):** Cooling load reduced from 18KW to 5KW. Which is a reduction of **72.22%**.
- **Significant Cost Savings:** Lower energy consumption translated into substantial reductions in electricity bills. The average percentage decrease in cooling load across both sites is **70.49%**.
- **Rapid Return on Investment:** The retrofit investment was fully recouped within just three months.
- **Enhanced Sustainability & Reliability:** Optimized cooling performance not only improved operational efficiency but also reinforced the company's commitment to environmental sustainability.

By modernizing their cooling infrastructure, the customer successfully reduced energy waste, cut costs, and ensured compliance with environmental regulations. Through strategic retrofits, the company has positioned itself as a leader in sustainable data center operations, setting a benchmark for the industry.

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

To learn more about Vertiv Services, visit [Vertiv.com](https://www.vertiv.com)

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