Coppervale

Information Sheet

CRITICAL FACILITIES

DATA CENTERS | HEADENDS | HUB SITES

Optimize Energy Efficiency, Improve Reliability and Reduce Operating Costs

Background

As cable operators continue to migrate their networks from one-way, analogue broadcast television networks to fully two-way, interactive triple-play networks, they are adding significant amounts of equipment inside traditional headend sites, as well as adding a large number of data center and hub locations that were not a part of the previous single service analogue delivery need.

Problem

From a business perspective, growth driven by customers' demand for new and better services is a problem worthy of investment. For most operators, the explosive growth in facility space has quite rightly caused them to focus more on the speed and availability of critical facility space. However, as facility space has grown, so has the cost of running and maintaining that space. Additionally, the sheer cost and technical complexity of the new equipment placed in critical facilities requires operators to manage their critical environments with greater care. This growth phenomena puts the focus on operators to create and maintain an appropriate environment for the equipment while simultaneously managing OpEx.

Solution

Coppervale consultants have considerable experience working with major North American and International MSOs, specifically focusing on identifying energy efficiency opportunities in headend and hub locations, and implementing solutions to lower power costs, improve operations, space efficiency and equipment reliability.

Coppervale Enterprises Inc. is the leading energy management and sustainability consultancy to the broadband industry. Our team consists of energy and carbon management specialists, environmental experts, and sustainability professionals who provide:

- **Business Intelligence** – financial, energy and environmental auditing and analytics to optimize energy purchasing, consumption and planning
- **Turnkey Integration** – sustainable strategies and solutions to create cost savings, improve energy efficiency and reduce carbon emissions

Coppervale can also show you how to take full advantage of the public relations value associated with reducing your environmental impact. Visit us at **www.coppervale.org**

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The Coppervale Process

Assess, Propose and Act

The Coppervale process starts with an energy efficiency audit of a facility to assess energy usage. This audit generates a detailed energy profile of the facility in which key measurements in energy efficiency are benchmarked against industry-wide norms.

Proposed recommendations based on the audit are focused on ways to improve the efficiency of the facility and allow operators to prioritize work according to operational and capital expense requirements.

In our experience, improving the cooling and airflow in a critical facility can yield 10-30% in electricity cost savings. Even better, as electricity rates rise, cost savings from energy efficiency projects increase exponentially. In addition to energy savings, a smaller power load can extend and improve on the designed power back-up and survivability, thus allowing for the ability to handle outages for longer periods of time. Additionally, the more stable temperature environment enabled by elimination of hot and cold spots lengthens the life of the equipment and its components.

With a lower power load, you have the potential to avoid the capital needed to grow the power infrastructure as the network grows and adds equipment to the facility. If power is reduced enough, it may even be possible to eliminate and/or re-deploy power supplies, as well as look at more reliable back-up mechanisms (i.e. N+1 for power supplies, etc.). Consolidation and/or elimination of excess equipment to improve energy efficiency also provide needed expansion space for new equipment growth.

Monitor and Manage

Coppervale understands that maintaining efficiency of dynamic critical facilities once capital has been spent can be challenging. For this reason, it is important to monitor and manage the facilities using a combination of building management systems (BMS) and enterprise energy management systems (EMS). This will ensure facilities continue to stay energy efficient as the business grows.

Coppervale and its partners **Wipro EcoEnergy, Quest Controls** and **WES** can provide operators with world class monitoring and management solutions. The intent of these solutions is to make sure key energy efficiency performance parameters within these sites can be controlled and maintained over time.

Assess
Conduct facility-level energy audit to establish and benchmark energy consumption.

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Propose
Identify opportunities that will make the biggest impact on energy savings.

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Act
Correct billing errors, improve tariff structures. Implement positive ROI projects to improve energy efficiency.

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Monitor
Utilize BMS hardware/ software to actively monitor facility functions and energy consumption.

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Manage
Establish facility energy policies. Leverage EMS to optimize performance and manage continual improvement.

Coppervale

WIPRO
Applying Thought

Quest Controls
Intelligent Solutions. Controlled.

WES
Worldwide Environmental Services