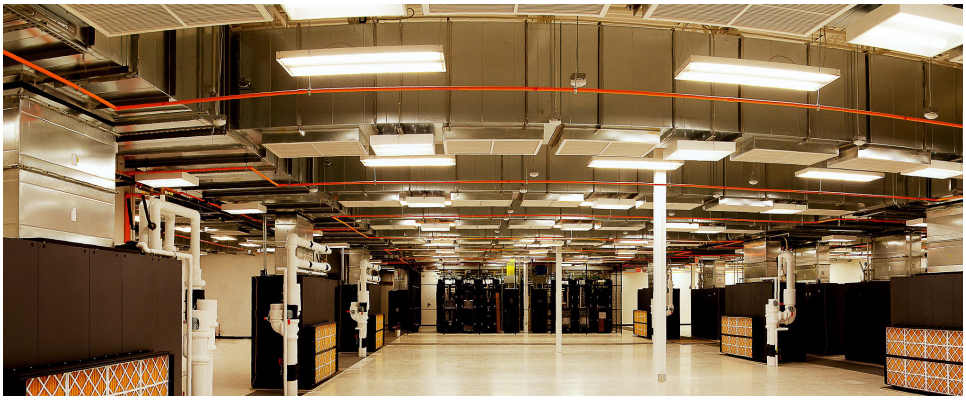
Minnesota

Level 3 communications

Use less, save more with efficient data centers



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> Colocations Operations Manager

When you're in the network reliability business with hundreds of clients in dozens of countries, you can't exactly shut down to upgrade equipment. The Minnetonka maintenance team for Level 3 Communications, a premiere global communications provider, knew they could be operating more efficiently but they weren't sure where to start. They partnered with Xcel Energy to review their systems, equipment and processes to determine an energy efficiency priority list.

Prioritizing projects

Level 3's global network provides enhanced, scalable network capabilities to address the increasingly complex operating environment of today's technology landscape. Their comprehensive portfolio includes data, security, video, voice and unified communications solutions to address customer's most difficult IT challenges.

Xcel Energy representative, Scott Heimstead, suggested a Data Center Efficiency study to identify equipment and processes that could be improved to save them energy and money.

"We thought we could invest a little money in energy efficiency changes and reduce our overall footprint," says David Malone, Colocations Operations Manager at Level 3. "The report gave us a big laundry list of items, recommendations, costs and returns on investments that support our overall goal of being an environmentally-friendly company."

From that list, Malone and his team worked with Heimstead to find the best mix of projects that would provide the best return on investment. Any items they couldn't tackle right away went on the waiting list for the next round.

"A lot of the projects didn't necessarily have to happen in sequence," explains Heimstead. "For example, we worked on the network controls and variable frequency drives as a package deal."

Steps to savings

In all, Malone and his team completed the following energy conservation measures, all of which were identified in the initial study:

- Installed networked control of individual computer room air conditioning (CRAC) units to reduce unnecessary simultaneous humidification and dehumidification

Project snapshot	
Total incremental capital cost	$363,015
Xcel Energy rebate	$150,996
Cost after rebate	$212,019
Annual energy savings	3,496,859 kwh
Annual electric cost savings	$241,406
Demand reduction	505 kW
Simple payback with rebate	0.88 years

- Recommissioned variable volume pumping controls
- Added variable volume pumping controls to existing constant volume systems
- Installed occupancy sensors in the data center spaces to shut off lights when spaces are unoccupied
- Consolidated the loads on transformers to improve the operating efficiency
- Installed variable frequency drives (VFDs) on the CRAC unit supply fans, allowing reduced speed operation resulting in fan and cooling power savings

These measures now save them more than $240,000 per year in energy costs or 3,496,859 kWh. According to the Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator, that's the equivalent of powering 220 homes for a year. Even better, the projects will pay for themselves in energy savings in less than a year.

"The rebates were definitely a factor," explains Malone. "Being able to say we'll get a rebate in addition to saving a lot of money and reducing our environmental footprint over time definitely helped our approval process."

"If we can save them energy and money, they can show management that the project was worthwhile," explains Heimstead. "One bonus was the relatively inexpensive nature of some of the equipment and the remarkable payback of implementing these projects."

He adds that energy efficiency makes a lot of sense to operations of companies like Level 3 since reducing their energy bill increases their profitability.

Because the project worked so well at this facility, other Level 3 facilities mirrored the efforts, further saving the company money. Malone credits Heimstead for his diligence in seeing everything through.

"Scott's been a great partner," Malone says. "I get a call once a month where he'll suggest something like better lighting options to provide better savings. It's been nice to have someone there trying to help us keep our operating costs as low as possible."

More efficiency to come

Level 3 is now building a brand new data center on the same site to meet their customers' growing needs. The savings they recouped from the first set of projects will help them get the next data center built that much faster. Armed with the knowledge that efficiency can be built in during the design phase, Malone reached out to Heimstead once again.

"It's great to get us involved early," says Heimstead. "We can provide ideas and options to help customers save energy and money right from the beginning."

"Improving our environmental sustainability practices including energy efficiency and carbon emissions reduction is part of our playbook," says Mike Beekman, Director of Global Environmental Health and Safety at Level 3. "We continuously evaluate how our operations affect the environment and look for creative and cost-effective ways to reduce those impacts."

Moving forward, he says, any expansion or upgrade will include energy efficiency every step of the way.

Through the Xcel Energy Data Center Efficiency program, you can earn study rebates that cover up to 75% of your study cost, not to exceed $25,000 as well as implementation rebates of up to $400/kW saved. A study is not required to receive implementation rebates.

Call us for a free, no obligation walk-through of your data center to get energy-saving ideas.

Get your energy-savings project started

Not sure where to start? Tell us about your project and an energy efficiency specialist will be in touch to see if it qualifies for a rebate.

For more about Xcel Energy's Data Center Efficiency program, please visit **xcelenergy.com/DataCenterEfficiency** or call the Business Solutions Center at **855.839.8862**.