CASE STUDY

Data center captures new value with existing energy assets

How a data center in Alberta uses its backup generators to earn demand response payments

For a data center, operational stability is crucial. Resiliency solutions like backup generators are essential tools to ensure system reliability, and data centers often have extensive resiliency measures in place. But these tools can have other benefits. By monetizing their backup generation to earn payments through demand response programs, data centers can use generators to find new revenue streams, too.

A new revenue opportunity

One telecommunications company in Calgary saw an opportunity to use their generators to earn incentive payments in the Alberta Operating Reserves (OR) program, a type of demand response. The company has earned more than $400,000 participating in OR since 2014.

To take part in OR, a business agrees to lower their energy use by a certain amount if the local grid is strained, and in exchange earns payments for being on standby. A program like this cannot cause any disruption to day-to-day operations at the data center.

"The three data centers that we have are very critical to our nationwide network," the supervisor at the data center said. "If any one of the three were to go down, it would cause significant network disruption across the country."

Location
Calgary, Alberta

Program
Alberta Operating Reserves (OR)

DR earnings
Moer than $400,000 since 2014

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>
> —Data center supervisor

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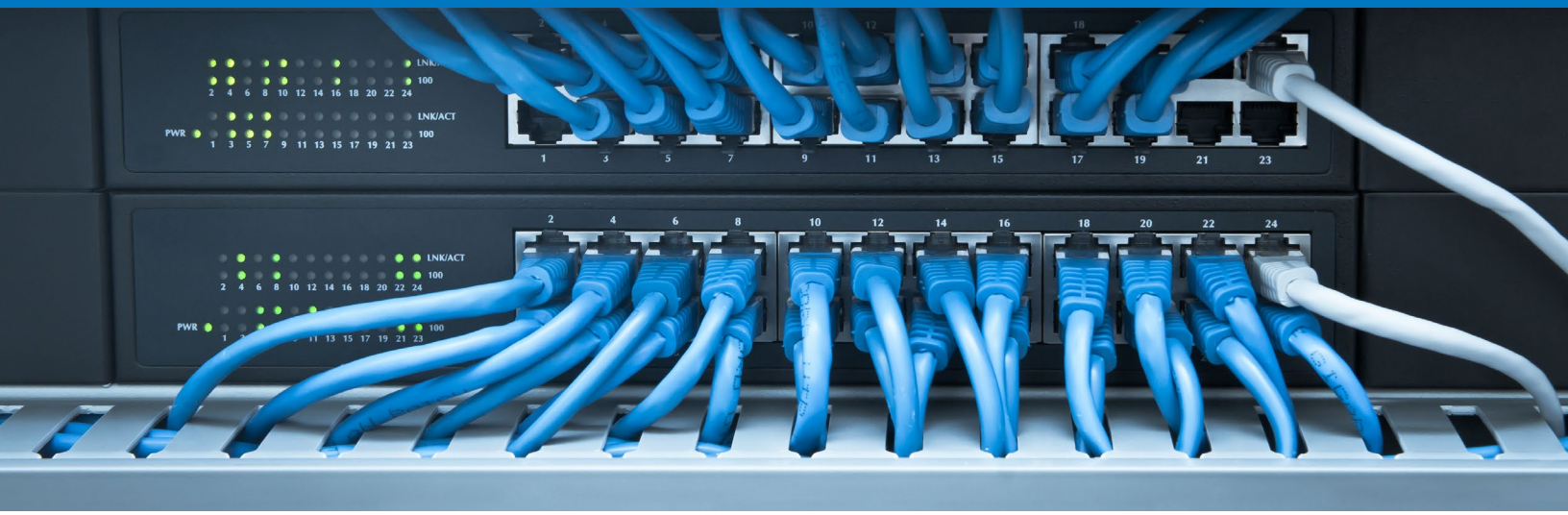

A simple process

Because of the importance of uptime, it was crucial that an OR directive not cause any disruption to the data center. Directives are the times when Enel instructs customers to lower their energy use, and these only happen a handful of days each year – most days, the data center is paid simply for their willingness to turn down their energy.

But with Enel, responding to directives is easy. "It's a simple process. It takes one person. You basically just hit two buttons, and we can go totally islanded from the grid within two minutes."

No disruption

By using a closed circuit transfer switch, the data center experiences no disruption in power. "There's no bump in service whatsoever. It's a very smooth transition. Same with going back onto the grid."

Because of their importance, the data center is manned 24/7. When they are notified of an event, whoever is on duty at that time simply walks over to the generator and transfers all load onto their backup system. Businesses have ten minutes to respond to a directive, but switching to backup generation simplifies the process.

How OR helps them stay prepared

The data center uses the generators often, even outside of an OR event. This allows them to be sure the generators are working in case of an emergency. Enel customers frequently tout this as a benefit to enrolling generators in DR – without occasional directives, customers may otherwise go years without using their generators, and are often unprepared in case of a true emergency.

For this data center in Alberta, it's simply a necessity, and something they have already been practicing for years. It's been essential in ensuring the staff is always ready. "We have one data center in a very old part of Calgary that has outages more often, so it's good that the guys are trained on how to do it."

In all, the experience with the Enel team has been a positive one, and the customer in Alberta recommends Enel and OR to other data centers considering demand response. "It's been a successful program."