Customer Success Story:
Webaxys

Market Segment:
Data center

Eaton provides Webaxys' new eco-designed data center with a complete energy storage and management system

Location:
Saint-Romain de Colbosc, Seine-Maritime, France

Challenge:
Help a data center become more environmentally friendly by incorporating an energy storage and management system that relies on renewable energy.

Solution:
An energy storage and management solution comprised of Nissan's second life electrical vehicle batteries and Eaton's complete range of data center products adapted for renewable energy storage management and battery storage. Products include Eaton's xStorage buildings solution, 93PM UPS and IPM infrastructure monitoring software.

Results:
The energy storage and management system installed at Webaxys provides real-time energy consumption information for each server; enables the optimal utilization of energy from network, photovoltaic, and battery sources; and minimizes the environmental impact of the data center — proving it is possible to adopt a socially and environmentally responsible approach to data center management and meet customers' sustainable development expectations.

"We wanted to develop human-scale data centers that are close to our customers and respond to the societal challenges of energy management and consumption. Eaton was very responsive in meeting our requirements, and along with Nissan, provided the technology necessary to begin this transformation."

Emmanuel Assié, CEO of Webaxys.

Background

Webaxys is a hosting company and telecom operator located in Normandy, France. Since its inception in 2003, the company has pursued a strategy of innovation based on strong values of social engagement and respect for the environment. For its first data center, Webaxys relied entirely on renewable energy sources. When it was time to design and build its next data center, the company wanted to go even further to reduce its energy dependence and minimize the environmental impact of its activities. The new site is part of an outreach strategy that aims to create human-scale data centers that are well integrated into the local economy and located close to customers.

Challenge

Renewable energy technologies, such as photovoltaics, are by their nature intermittent. However, data centers need a constant flow of energy, so it needs to be accessible via battery storage technology. Furthermore, the management of the different energy sources needs to be integrated into the server and process management hardware and software infrastructure to optimize the use of the energy mix

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and guarantee the service quality customers require.

Solution

Eaton is a member of the European Commission-financed GreenDataNet consortium, which works to develop new technologies for more energy-efficient data centers.

During COP21 in Paris at the end of 2015, Eaton entered into a partnership with Nissan to develop the commercial deployment of energy management and storage solutions. These solutions give a second life to Nissan's electric vehicle batteries, which have already been used to their full capacity in Nissan LEAF sedans, the most popular 100% electric cars in the world. This approach maximizes the life of the batteries before they are ultimately recycled, minimizing the use of natural resources.

The integration of this battery technology with Eaton's UPS technology provides a standardized, industrialized, global energy management solution for data centers. The double conversion Eaton 93PM UPS, suited to the most modern IT environments (including virtual environments), is specifically tailored for use with a photovoltaic power source and Nissan batteries. This solution enables the integration of local renewable power sources and the storage of energy from the grid or the return of energy to the power grid under a demand-management or rate-optimization contract with energy suppliers.

Electric power distribution units (PDUs) ensure the reliability of data centers by allowing the measurement, monitoring, and management of energy consumption down to the individual server level.

The Eaton Intelligent Power Manager (IPM) software suite provides all the tools necessary to monitor and manage the power used by the physical and virtual infrastructure. In the IPM Infrastructure version, this software provides real-time mapping of specific server requirements and energy availability from the various sources to facilitate intelligent management decisions.

The new Webaxys data center has 30 IT racks, with capacity for an additional 60, and it incorporates photovoltaic power production and a particularly powerful air/air heat exchanger system. Eaton provides the infrastructure equipment in the IT room, in collaboration with Nissan, which provided the storage batteries. Some of the racks are equipped with batteries, a first in an IT production environment.

The solutions Eaton used in the Webaxys project also include open-frame racks to house IT equipment with a variety of cabling configurations and optimized access, the xEnergy switchboard system, CrystalWay exit luminaries and systems, and the Intrusion I-ON security management system.

Results

Since its establishment in spring 2016, the new Webaxys data center has demonstrated that it is possible for a data center to minimize environmental impact by committing to more autonomous, less energy-intensive operation.

"Our customers appreciate this proactive commitment that is very much in line with a Corporate Social Responsibility (CSR) philosophy increasingly shared by the economic stakeholders," said Emmanuel Assié, CEO of Webaxys. "During these first six months, we've seen just how effective Nissan's battery storage technologies, together with Eaton's products, can be and how valuable they are to our production environment."

This industry validation represents a major milestone and opens up the possibility of large-scale deployment for small and medium-sized data centers seeking to become energy independent.

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