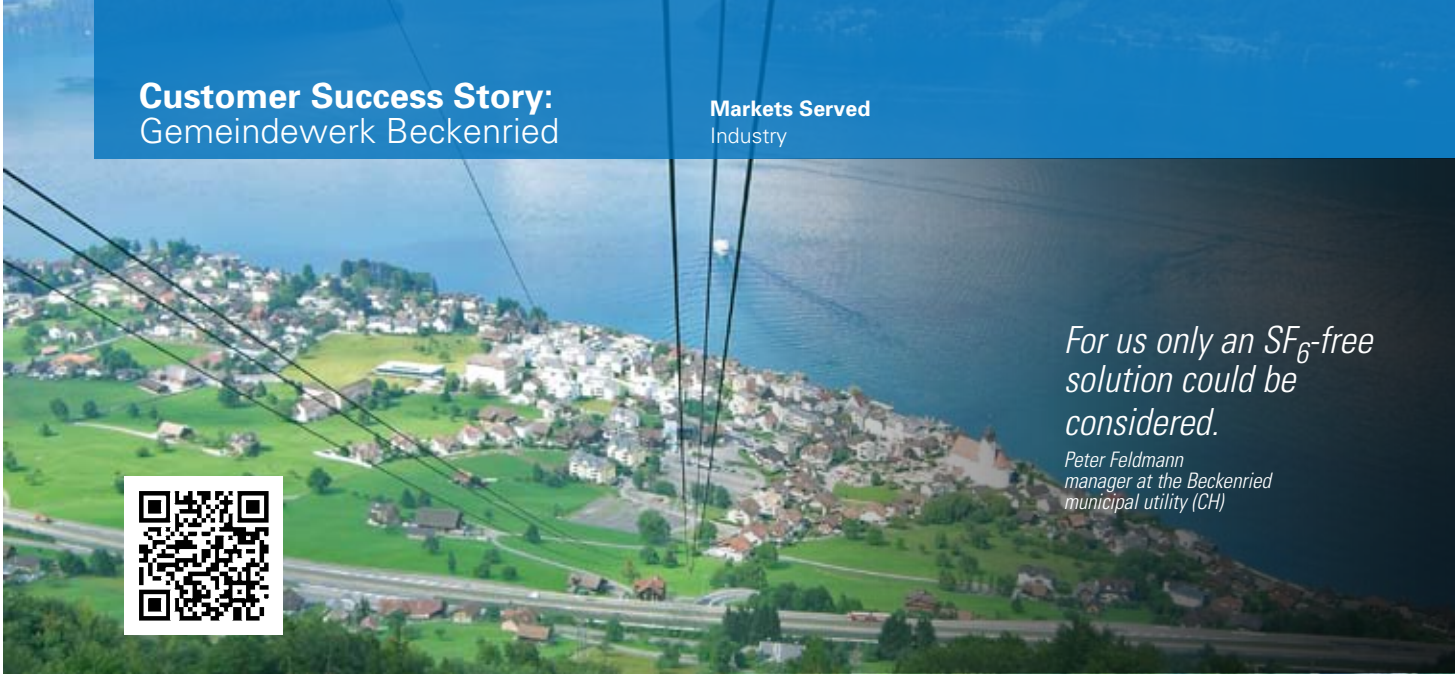
Customer Success Story:
Gemeindewerk Beckenried

Markets Served
Industry



For us only an SF_6-free solution could be considered.

Peter Feldmann
manager at the Beckenried municipal utility (CH)

Power Supply on a Mountain

Location:
Beckenried
(Canton Nidwalden, Switzerland)

Segment:
Power supply

Problem:
Replacement of a medium-voltage switchgear on an Alp, difficult to access at 1,600 above sea level

Solution:
Five panels of the extendable Xiria E switchgear (two load switches, three circuit-breakers)

Results:
Space-saving medium-voltage power distribution

Contact Information

Markus Baumgartner
Account Manager
markusbaumgartner@eaton.com

Christian Bücker
Manager Trade Press
christianbuecker@eaton.com

Background

The core business of the municipal utility company is the production, distribution and sale of electricity. Beckenried offers a special feature: self-generated electricity. The Sustli hydroelectric power station as well as the Lätten and Lanzig mini hydropower stations. With an annual output of around 9.4 gigawatts per hour, they produce half of the electricity required in the municipality from a clean primary energy source.

Challenges

"Treating the environment responsibly has a high priority in the corporate philosophy of our utility company," explains Peter Feldmann, manager at the Beckenried municipal utility company. "That is why only an SF_6 (sulfur hexafluoride)-free solution could be considered for replacing the switchgear." Xiria E meets these requirements exactly: Like all mediumvoltage switchgear from Eaton, the Xiria E makes absolutely no use of environmentally harmful SF_6 gas.

Thanks to the use of advanced vacuum circuit-breakers and innovative insulation technology, they are a particularly environmentally-friendly and durable alternative in the medium voltage sector. A positive side effect: The operating costs are also reduced, since regular examinations of the gas pressure and other routine work become unnecessary as the switchboard is maintenancefree.

Solution

The Alpstubli transformer station is situated in the middle of a hiking and skiing resort. It supplies all the businesses and facilities of the Klewenalp tourist and holiday region, such as the mountain inns and restaurants, the holiday chalets and group hostels, as well as the ski lifts. The new installation therefore had to meet some particular requirements. This not only involved the challenging transportation over narrow mountain paths up to the remote alpine slope: "The installation is located in an underground station that can only be accessed through a very narrow entrance.

The compact design and flexibility of the switchgear was

Powering Business Worldwide

Difficult transport: The Xiria E reached the Klewenalp above Lake Lucerne.

Difficult to access: The transformer station is situated underground at 1,600 m above sea level. It only has a very narrow entrance.

Compact: five panel Xiria E switchboard of the Alpstübli transformer station

Fully to spec: easy to expand

therefore one of the most important criteria in selecting the system." With a panel width of only 500 mm the Xiria E is one of the most compact representatives of its class, requires only a small mounting footprint and can even be installed in the most confined spaces. "Although we had to extend the power line, the new switchboard in our station enabled us to gain space," says Peter Feldmann delighted.

"The station is situated on the mountain side and is therefore covered with snow in winter. Access is therefore difficult in the truest sense of the word," Peter Feldmann explains, "we therefore placed a great deal of importance on reliability and maintenance requirement when making our decision." Both the live primary components as well as the drive mechanisms on the Xiria E are sealed for life, thus protecting the entire system from environmental influences and making it maintenance-free. The contact wear of the vacuum circuit-breakers is negligible and is also certified maintenance-free for up to 30,000 operating cycles.

The Xiria E system has a modular design. This means that any combination and order of panels is possible. The number of panels that can be used in a system is unlimited since several panels can be interconnected without any problem. They can also be fitted and connected quickly thus ensuring the rapid commissioning of the switchgear. Cellpack Power Systems AG based in Villmergen (Switzerland) thus only needed one day to install the system. They also spoke about how pleased they were with the project on site. As the cable connection for the Xiria E is implemented from the front, it was not only possible to save on building costs but also to erect the system close to the wall of the building. A further benefit of the system given the limited space available in this project.

The local operator panel of the Xiria E is arranged ergonomically at eye level. However, during normal operation the Alpstubli system is remotely operated from the control center in Beckenried: "The integration in our existing control system was completed without a hitch," as Peter Feldmann confirmed. Like the protective and control devices, the equipment for the remote control functionality is installed in a fully separated low-voltage room.

Results

An expansion of the snow production equipment of the skiing resort is planned in the near future. However, it is still not yet clear what the additional requirements the necessary pumping stations and snow cannons will have: "The fact that additional panels can be added to the Xiria E at any time is very useful here."

"We are very pleased with the new Xiria E switchgear," plant manager Peter Feldmann sums up. "Installation and commissioning could be completed quickly, the system is very compact and we are open for extensions." The municipal utility will use this experience when conversions are due in the coming years.

Eaton Industries Manufacturing GmbH
Eaton Electrical Sector EMEA
Route de la Longeraie 7
1110 Morges, Switzerland
www.eaton.eu

EATON
Powering Business Worldwide