CUSTOMER REFERENCE

BES/2020/003

SMART GRID PROJECT FOR SPORT CENTER OF BÉKÉSCSABA IN HUNGARY

The smart-grid project of Békéscsaba is part of the “Modern Cities” program of Hungary. The objective is to supply all energy needs of the urban sport center area, which includes today a general-purpose sports hall, a fencing sports hall and parking lots and will be extended further with a second multifunctional sports hall and a competition swimming pool. Geothermal power plants are also part of the project. The sports facilities of the city will then be powered by green energy sources. INFOWARE implemented the full microgrid. The power will be provided by a 1.3 MWp photovoltaic power plant. The DC voltage produced by the solar cells is connected to the grid via 2 AEG Protect PV 880 inverters at a rated power of 650 kVA each.
The time and quantity differences between the weather-dependent production and the consumption of sports facilities are compensated by a lithium-ion battery energy storage system rated at 1.2 MW power and a capacity of 2.4 MWh. The energy storage system is based on lithium-ion battery modules of 7.61 kWh each, installed in a fire protection rack system.
The batteries are connected to the grid through two Convert SC Flex converters with a power rating of 600 kVA each. AEG PS Convert SC Flex features include grid fault detection and islanding as well as resynchronization once the supply is provided by the public grid again. In the event of any grid failure, the systems switch seamlessly to off-grid operation and supply electricity directly from the solar power plant and energy storage to the sports facilities. Convert SC flex systems make this possible by performing the necessary local network stability tasks. The facilities can continue to operate even in the event of a grid power outage, preventing potential emergency problems. When grid supply is available again, the microgrid is automatically reconnected thanks to the resynchronization process.
INFOWARE is also providing real-time energy management (EMS) and control system which performs local and remote-control tasks as well as the local smart grid center which collects data further used by the “brain” of the microgrid system allowing to minimize the cost of energy used and optimize the whole installation. The Békéscsaba SG1 smart grid project was implemented by the end of 2020.

CUSTOMER INFORMATION

System integrator	INFOWARE, Hungary
End customer	Békéscsaba, Hungary

PROJECT DETAILS

Location	Hungary
Application	Hybrid Smart Grid • 7.1 MW capacity • 13 MWp PV power, 10,680 solar panels • 2.4 MWh battery energy storage 1.2 MW Li-Ion batteries • Geothermal power
Products AEG PS	2 x Protect PV 880 2 x Convert SC Flex 600 kVA power converters incl. Off-Grid option