

Case note

ABB's EssPro™ Energy Storage Power Conversion System (PCS) facilitates a research project at the Lodz University of Technology in Poland



ABB has successfully commissioned the first EssPro Energy Storage Power Conversion System (PCS) in Poland at the Laboratory of Distributed Generation of the Lodz University of Technology. The solution enables the integration of a variety of energy storage devices, thus opening up new opportunities for extensive research in the field. At the same time, the installed system considerably enhanced the quality of the existing microgrid, boosting its efficiency and reliability.

Highlights – EssPro PCS

Minimized risk due to proven technology

High availability ensures lowest cost of ownership

Easily deployable

Utility grade with advanced controls

Modular design

Global lifecycle management in close-cooperation with customers

The Lodz University of Technology (TUL) was officially established in 1945 and has been developing dynamically ever since. Currently, over 20,000 students start building their professional career at the university, broadening their knowledge and competence owing to the access to world-class research facilities.

Challenge

TUL is engaged in many research projects. One of them, launched at the Laboratory of Distributed Generation of the Institute of Electrical Power Engineering, involved the use of different types of energy storage devices. However, to allow these devices to be coupled to the grid, the university required a flexible grid interface that would enable such functionality and at the same time could strengthen the performance and reliability of the existing microgrid.

Solution

ABB's EssPro PCS was selected as the only available solution that could ensure the integration of as many as three different types of energy storage devices. Accompanied by a DC switchgear, the EssPro PCS connects easily with lead batteries, flywheel as well as supercapacitors. Thanks to this functionality, prototypical test stands will be created, which will initiate pioneering research.

An additional task of the installed 45 kVA EssPro PCS is to improve the energy efficiency of the existing microgrid consisting of wind turbines and photovoltaic cells. The EssPro PCS is also used to stabilize the microgrid during the operation of the university's existing gas turbine.

Benefits

ABB's EssPro PCS constitutes a superior response to the challenges posed by energy storage and power quality in a wide range of applications.

Modular design

ABB's EssPro PCS ranges from 50 kVA to 30 MVA. One of the key features of the system is its modular construction, which accounts for the platform's extreme reliability. Modular inverter blocks also make the system highly configurable and versatile, thereby enabling both indoor and outdoor placement.

Seamless integration

The EssPro PCS solution is easily deployable in terms of installation time and space requirements. Furthermore, low operational costs derive from its high efficiency and low maintenance.



TUL's and ABB's representatives during the successful commissioning

For more information please contact:

ABB Sp. z o.o.

Power Converters
27 Placydowska St
95-070 Aleksandrow Lodzki
Poland
Phone: +48 728 401 286

ABB Inc.

Power Conversion
16250 W. Glendale Drive
New Berlin, WI 53151, USA
Phone: +1 262 785 3200
Email: pes@us.abb.com

ABB Beijing Drive Systems Co. Ltd.

No. 1, Block D, A-10, Jiuxianqiao Beilu,
Chaoyang District, Beijing 100015, P.R.China
Phone: +86 10 5821 7788
Hotline: +86 400 810 8885

www.abb.com/converters-inverters