

ABB develops complete system solution for 1,100 kV HVDC power transmission

1,100 kilovolt ultrahigh voltage direct current (UHVDC) technology enhances power transfer capacity to 10,000 MW and extends distance to over 3,000 km

Zurich, Switzerland, Aug 26, 2014 – ABB, the leading power and automation technology group, has successfully developed all major equipment required for the deployment of 1,100 kilovolt (kV) UHVDC power transmission systems. This advance in technology enhances power transfer capacity to 10,000 megawatts (MW) and extends the distance capability of such links to over 3,000 kilometers (km).

Higher voltage levels allow larger amounts of power to be transported across very long distances with minimal losses using HVDC technology making the latest development particularly interesting for geographically expansive countries and regions such as China, India, the Americas and Africa. China, for instance, has significant plans for several extra-long distance 1,100 kV transmission links.

In 2010 ABB supported SGCC with the Xiangjiaba-Shanghai project, the world's first UHVDC (ultrahigh-voltage direct current) transmission link to go into commercial operation. The 1100 kV development takes ultrahigh voltage DC technology to the next level.

The 1,100 kV full system capability was enabled by the successful testing of all key components like the valves, breakers, surge arresters, capacitors and bushings. ABB previously announced the successful development and testing of the 1,100 kV converter transformer, which together with the above mentioned equipment plays a critical role in HVDC transmission and serves as a vital interface between the DC link and the AC network. Development of the 1,100 kV transformer addressed several technology challenges such as the sheer size and scale, electrical insulation including bushings and thermal performance parameters.

“This is an important step in transmitting more power over even longer distances, without compromising on losses” said Hanspeter Faessler, Head of the Grid Systems business within ABB's Power Systems division. “It will help connect remote renewables and transmit electricity efficiently and reliably to bustling urban centers located thousands of kilometers away, while minimizing environmental impact.”

UHVDC transmission is a development of HVDC, a technology pioneered by ABB 60 years ago, and represents the biggest capacity and efficiency leap in over two decades. ABB is a world leader in HVDC transmission technology, with many pioneering achievements to credit.

ABB (www.abb.com) is a leader in power and automation technologies that enable utility and industry customers to improve performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs about 145,000 people.

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