

Xiamen Island VSC-HVDC Demonstration Project

An innovative solution to secure reliable power supply and enhance system reliability

On August 4, 2014, C-EPRI was awarded the Xiamen Island VSC-HVDC Demonstration Project by State Grid Power Corporation of China (SGCC), the largest utility in the world.

Xiamen Island is the main part of Xiamen City in South-east China's Fujian Province, and has high requirement for power quality and reliability. Currently, the Island is mainly powered by six 220kV AC lines. However, with the rapid development of economy in this area, the existing network is looming with growing power deficit.

C-EPRI's solution is to transmit electricity from Xiamen mainland to Xiamen Island, using its latest $\pm 320\text{kV}/1000\text{MW}$ VSC-HVDC technology. It employs a bipolar configuration and has the highest capacity and voltage ratings world-wide, with two converter stations linked via 10.7km XLPE subsea cables. C-EPRI is responsible for the design, engineering, supply, installation and commissioning of key converter station equipment. Commercial operation of the project is scheduled for the end of 2015.

The winning of the bid not only reinforces C-EPRI's leading position in the Chinese market, but also builds up its confidence to tap further into the international market.



Key facts

Commissioning time:	2015
Project duration:	18 months
Rated capacity:	1000MW
Rated DC voltage:	$\pm 320\text{kV}$
Cable length:	10.7km



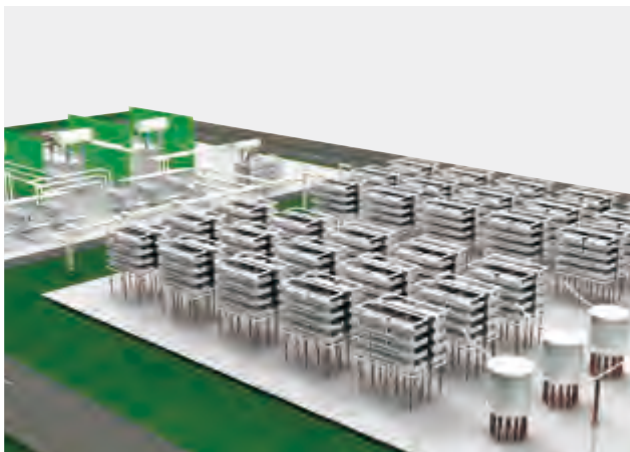
C-EPRI's M2000 HVDC Flexible Valve Technology

Deliver green power Shape future grid

HVDC Flexible is a new HVDC transmission technology, based on a voltage source converter (VSC). It makes use of insulated gate bipolar transistors (IGBTs) instead of thyristors for power conversion between AC and DC.

The benefits associated with HVDC Flexible include independent control of both active and reactive power, capability of feeding into passive networks, and inherent STAT-COM functionality, etc. Therefore it offers an effective solution for renewable energy integration, supply for offshore loads, in-feed to city centres as well as multi-terminal interconnection.

C-EPRI initiated the research of HVDC Flexible technology as early as 2006. In July 2011, C-EPRI successfully delivered Nanhui Wind Farm Integration Project, China's first VSC-HVDC scheme. In early 2013, the second generation of M2000 series VSC converter valve and Valve Base Controller aiming at 1000MW/±320kV applications achieved an unprecedented success by passing all the type tests specified in IEC62501 with witness of DNV KEMA; it was then accredited by China's National Energy Administration a few months later.



Key features

- Up to 1000MW / ±320kV
- Uses 3300V / 1500A IGBT
- Floor-mounting design
- High power density

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