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ARTICLE

# Successful shore-to-ship power link in China



ABB's static frequency converter (SFC) providing reliable power infrastructure for a greener and more efficient ports

ABB has commissioned an advanced Shore-To-Ship (S2S) power supply for vessels in the Nansha terminal in the Guangzhou Port, which is located at Longxue Island in South Guangzhou city, China. This solution enables ships docking at the port to plug for power instead of running on polluting diesel generators and using expensive power. In early April 2017 the Nansha terminal successfully provided 60 Hz, 6.6 kV shore power to a container vessel named COSCO Africa.

The Nansha Terminal is the only deep-water container terminal on the west Pearl River Delta (PRD) region. Nansha Terminal covers 14 dynamic city clusters including Guangzhou, Foshan, Zhongshan, and Jiangmen. It provides international shipping services to Europe, America, Middle East, and the Mediterranean Sea and provides the most advance shipping hardware and equipment.

The project was to construct one 3 MVA S2S substation for Nansha Port Phase 111 container terminal, which was listed as one of seven demonstrative S2S projects during 2015-2016 by the Ministry of Transport (MOT) in China.

## Solution

ABB's PCS100 Static Frequency Converter (SFC) solution was selected to meet the regulation of emission reduction from the MOT, which is to achieve zero emission in port, and reduce around 1500 tons of CO2 emission and 600 tons fuel consumption per year.

The PCS100 SFC end-to-end solution is engineered for the demanding port applications with a modular construction, overload capability and power flow control in either direction. The end user selected ABB's solution because of the well-known technical parameters and site testing performance of the PCS100 SFC as S2S power.



## 01 PCS100 SFC

### ABB's ship-to-shore technology

As a technology pioneer in low voltage installations for marine applications, ABB's PCS100 SFCs, are a safe, economic and highly efficient solution for converting grid electricity to the appropriate load frequency. This leading-edge frequency conversion technology guarantees a seamless automated power transfer of the ship load from the onboard power plant to the onshore source and back.

This solution contributes to a significant reduction of fuel and lubrication oil consumption, which means less pollution and improved financial benefits. S2S power is especially applicable to ships operating on dedicated routes, and vessels that consume large amounts of power while in port or at a shipyard. This could bring real benefits for terminal operators whose ships berth each day for a fixed number of hours.

To find out more about ABB's power protection solutions:

Web: [www.abb.com/ups](http://www.abb.com/ups)

Email: [powerconditioning@abb.com](mailto:powerconditioning@abb.com)

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