Shore to Ship Power: A One-Stop Solution

Ships generate emissions while docked in port by running their auxiliary engines to create onboard electric power. In ports with heavy ship traffic, this practice creates emissions, environmental concerns for the community and affects worker health. Sustainability is a key focus in the shipping industry, where strong measures are being taken on several fronts to dramatically reduce ship emissions. One such measure is shore-to-ship power, which eliminates pollution problems such as SOx, NOx, CO2 and particle discharge.

Widespread implementation of shore power
Many North American cities such as Los Angeles, Long Beach, Seattle, Juneau and Vancouver have already implemented shore-to-ship power. In addition, several European ports have implemented high voltage shore power supply systems (HVSC) including Gothenburg, Bruges and Antwerp. ABB was the first to deliver a complete HVSC to the Port of Gothenburg in 2000. Shore power is especially useful to ships operating on fixed routes and vessels that consume large amounts of power and emit high levels of air pollutants when berthed. Typical vessel types include ferries, cruise ships, LNG carriers, tankers and container ships.

Complete solutions from the grid onto the vessel
As a full-scope supplier, ABB offers turnkey Shore Connections encompassing fully engineered systems, equipment and services for a complete shore-to-ship solution. ABB prepares a complete integration and control plan so that installation and commissioning cause minimal interruption to ship operations. The onshore solution includes the entire system from the main incoming substation to the power outlet at the berth. The system includes transformers and frequency converters to match the grid power, voltage and frequency to the ship’s onboard power system. ABB’s high-efficiency, low-maintenance frequency converters offer reactive power compensation and voltage control. These features help to reduce energy cost while stabilizing the grid. This solution allows several vessels to be connected simultaneously.

A full range of services
ABB’s Shore Connection portfolio is complemented by a comprehensive scope of services to ensure the overall system is optimized both technically and economically. ABB offers system studies to assess the impacts of the Shore Connection on the local grid and recommend optimized solutions to upgrade and strengthen the local grid and port network. By bringing ABB into the project from an early phase, design and implementation risks are minimized. As the project matures, ABB provides proficient project management as well as training courses at ABB’s or the customer’s premises to maximize the value of all assets and investments.

Benefits all around
Reduced emissions are the ultimate goal of ABB Shore Connection, yet another important benefit is lower noise, which creates a better environment for passengers, crew, dockworkers and local residents. For ship owners, operators and harbor authorities, a one-stop ABB solution provides enhanced safety and availability through experience, in-depth application knowledge and lifetime support from ABB’s global service network.