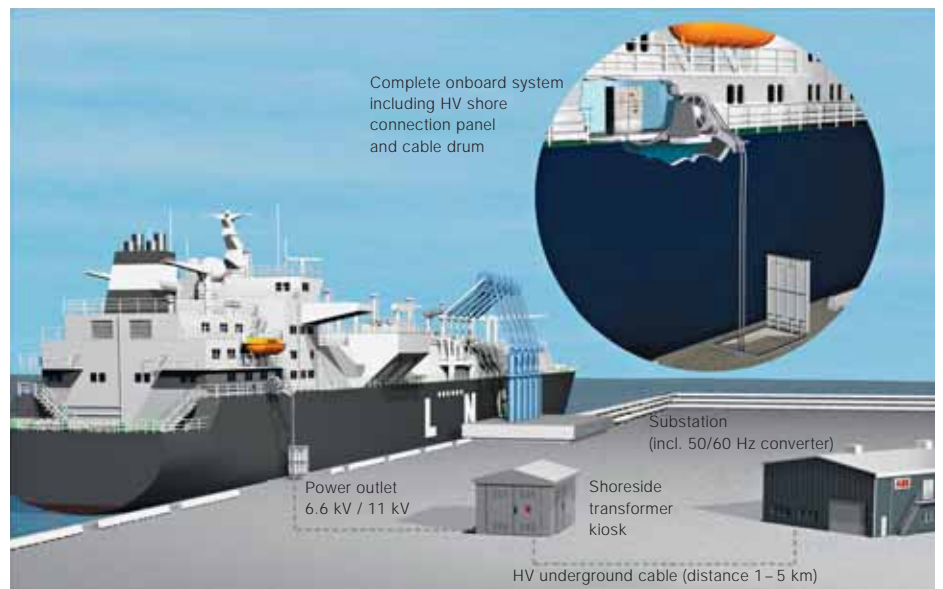


Power from shore

ABB shore-to-ship power solutions are cutting noise and greenhouse gas emissions by providing docked ships with shoreside electricity

KNUT MARQUART – Port authorities and ship owners have been seeking ways to reduce emissions as part of the global effort to mitigate climate impact. The increase in interest results primarily from the environmental benefits of using shore-based electrical power, but there are also economical benefits as costs related to fossil fuel consumption increase. ABB has thus developed optimized shore-to-ship power solutions for port authorities, ship owners and distribution companies.



that of the vessel. As the development of an onshore power supply can have a significant impact on the local grid, ABB also offers system studies to assess the overall effect, and can recommend solutions to upgrade and strengthen the local grid and port network to accommodate shore power connections.

electrical connection in the port of Gothenburg, Sweden in 2000.

A more detailed discussion of ABB's shore-to-ship offering will appear in an upcoming issue of *ABB Review*.

During a 10-hour stay in port, the diesel engines of a single cruise ship burn 20 metric tons of fuel and produce 60 metric tons of CO₂. This is equivalent to the total annual emissions of 25 average-sized European cars. But these emissions can be eliminated by supplying the ship's infrastructure with onshore power.

In addition to reducing CO₂, shore-to-ship power helps ships eliminate sulfur dioxide, nitrogen oxide and particulate emissions. It also facilitates the reduction of low-frequency noise and vibrations and allows maintenance of diesel engines while the ship is at berth.

ABB provides the electrical infrastructure – both onshore and on the ship – as turnkey solutions, including system components such as frequency converters, high- and medium-voltage switchgear, transformers, and control and protection systems. In addition, ABB offers fully engineered and integrated systems and services ranging from the main incoming substation to retrofitting the vessel's electrical system to receive shore power.

Onshore, this requires the appropriate supply of power and includes the need to adapt the voltage level and frequency of electricity from the local grid to match

ABB provides the electrical infrastructure – both onshore and on the ship – as well as fully engineered and integrated systems and services.

Solutions with single or multiple frequencies, regardless of power rating, are available for single and multiple berth applications, container terminals and city ports, as well as small footprint indoor concepts that can accommodate all major system components.

Onboard the ship, the power solution must be fully integrated with the vessel's electrical and automation system, enabling seamless power switching between the ship's own generation and the shore power supply.

A pioneer in this area, ABB successfully installed the world's first shore-to-ship

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