

High Voltage Shore Connection – green onshore electricity

Power and productivity
for a better world™



Green onshore electricity

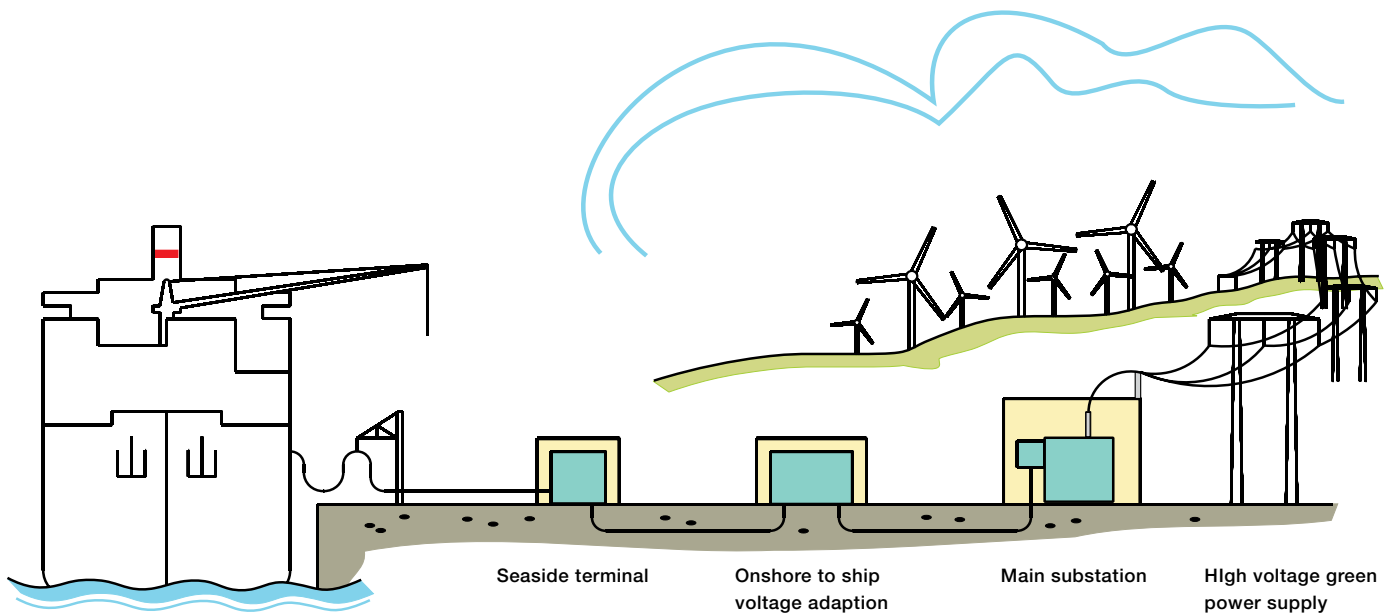
ABB products and solutions continuously help ports and ship-owners to reduce environmental impact while increasing productivity

Improved environment with onshore power supply

There is ever-increasing pressure on ship owners and port authorities worldwide to improve air quality in ports, especially as they are often located in densely populated areas. When turning off the engines and supplying the vessel with shore-side electricity there are multiple benefits for shipping lines, ports, nearby

cities and, not the least, the environment. The key benefit of using onshore power supply, apart from cost saving, is the elimination of air. Air pollution can practically be eliminated if renewable energy sources are used. Other benefits to be mentioned are elimination of the low frequency noise and the possibility to do maintenance on the ships' diesel engines while at berth.





Flexibility

A vast majority of all ships are built with a 60 Hz electrical system. To be able to connect these vessels to shore-side electricity in Europe and many other parts of the world a frequency converter is needed. The converter used in the onshore power supply concept allows the ship to connect to the public grid regardless if it uses 50 or 60 Hz. The power electronic modules are virtually maintenance free and highly standardized and the onshore power supply concept offers substantial advantages in terms of cost and quality. The installation is supervised by a control system continuously monitoring the parameters of the connection ensuring a safe and reliable electricity supply. The ABB concept is built in modules to fit small ports as well as large ports, but also to give ports flexibility to grow and do the investment in stages.

Invisible indoor solutions

Space is always at a premium in ports. ABB has recognized this problem and offers indoor solutions with a small footprint and the possibility to place the relatively large frequency converters and transformers hidden at a distance from the berths. This concept enables ports to install onshore power supply despite stacked containers, crossing rails and heavy traffic. ABB's indoor solutions are compact in design, they are also protected from the harsh port environment and hence the maintenance costs are drastically reduced for indoor concepts. Building indoors gives advantages in terms of integration to the surrounding environment and personnel safety. The design of the indoor concept can be adjusted to nearby buildings and the onshore power supply installation is therefore to be seen as practically invisible.

Turn-key deliveries

Developing onshore power supply has a significant impact on the local grid. In many cases the electrical distribution grid around to the port needs to be strengthened. ABB offers system studies to examine the effects on the local distribution network before installing onshore power supply. As one of the major suppliers of electrical equipment world wide ABB has know-how and products to be the reliable partner assuring a high quality delivery; from the distribution network, via the port's electrical infrastructure all the way onto the vessel where we retrofit the vessel's electrical system for onshore power supply.

Long experience

ABB delivered the world's first onshore power supply to the port of Gothenburg in January 2000. Ever since this pioneer installation, ABB has been a preferred supplier for onshore power supply installations world wide. ABB's long experience and local presence in more than 100 countries stand as a guarantee for a state-of-the-art installation, optimizing your solution and providing an environmental friendly alternative.

Some applications where ABB technology can help you:

- **Grid strength:** New installations or upgrade of existing substation.
- **Electrical infrastructure on the ship:** Retrofit or new installations.
- **Electrical infrastructure in ports:** Built in modules to fit all types of ports.
- **Safe connection:** Interlocks to ensure personnel safety.
- **Seamless transfer of power** with no interruption.
- **Integration with renewable energy sources** or natural gas.
- **Control system** for metering and for monitoring onboard as well as onshore activities.

High Voltage Shore Connection from ABB connects your harbour to future demands by providing green onshore electricity.

Contact us

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