It is natural to demand a power supply solution from land, whenever possible. Especially as it is both more environmentally friendly and inexpensive to provide power to ships this way instead of using their diesel generators while docked. Fewer hours of operation and reduced maintenance of diesel generators saves money. Through land-based power supply, fewer emissions of both nitrogen and carbon dioxide are significantly reduced. CO₂ emissions can be reduced by as much as 75-96 percent compared with light-fuel-generated power from ship generators.

The Danish Navy is leading the defence industry with environmentally friendly power supply. This a true fact after the finance committee of the Danish Parliament granted a total amount of 47.5 million DKK for a new power supply solution to the three new frigates of the Danish Defence, which will be based in Korsør Harbor. The shore-based solution from ABB means that the inhabitants of Korsør will be free of noise and air pollution from the diesel engines of the frigates.

It is often a nuisance to the local community, when ships in a port produce their own power by means of diesel generators. The generators are noisy and discharge large quantities of nitrogen (NOₓ) and carbon dioxide (CO₂). However, when the three new frigates of the Danish Defence move to Korsør Harbor, neighbours will sleep and breathe easier.

As one of the world’s largest producers of energy technology ABB will deliver the solution, which the Danish Defence has selected in cooperation with the consulting engineers Moe & Brødsgaard.

Shore power is always favoured, especially as it is both more environment friendly and cost efficient to have the power delivered in this way, compared to a solution where the ships run their own diesel generators when they are in port. Bjarne Kilde, who is project manager of the Danish Defense Construction and Establishment Service (FBE), prepared the tender, which ABB won. He says, the reduced operating time and the lower demand of maintenance for the diesel generators will save the Danish Defence department a lot of money.
Power from shore much more energy efficient

ABB is met with an increasing demand for shore-based power supplies to ships from shipping companies in both Denmark and the rest of the world. This applies especially to ships which are berthed alongside the quay for many hours, like cruise ships and ferries. There is a clear trend in Europe, particularly Sweden, for countries to focus on the considerable environmental advantages they obtain when choosing solutions where the ships are supplied with power from shore connections. This power comes more and more often from sustainable energy sources and is produced in a far more energy efficient way, according to Jonas Kehr, sales manager of ABB.

ABB’s solution means that the NOX and CO2 discharge will be reduced by 96 percent and 75 percent respectively, compared to light fuel-generated power from the ships’ own generators. During the periods when all three frigates are berthed at the quay in Korsør, the inhabitants of Korsør town will avoid exposure of up to nine tons NOX and 450 tons CO2 each month.

Technical data

ABB’s scope of supply includes an advanced control system complete with all electric equipment, from 10 kV 50 Hz switchgear, to the three 440 V 60 Hz quay cabinets. Several low voltage power distribution panels and a large number of transformers are also included.

When choosing the solution, the Danish Defence has attached great importance to the efficiency and the reliability of the plant. Therefore they selected ABB’s new 50/60 Hz static converters, which are based on modular and redundant power electronics, with he highest efficiency in the market.

To find out more about ABB’s power protection solutions:
https://new.abb.com/power-converters-inverters/grid-interconnections/industrial/pcs100-sfc

Web: www.abb.com/ups
Email: powerconditioning@abb.com

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