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Feasibility study Walstroom Zeebrugge

Onshore power supply, also known as cold ironing or shore side electricity is the new hot topic in maritime applications. Onshore power supply allows to shut down diesel engines of berthed vessels by providing an electric connection to shore and is the most cost-effective measure to improve air-quality around ports and inland waterways.

Therefore, a number of incentives were imposed by different authorities. The measures consist of tax exemptions, project funding, and the obligation to use low-sulphur fuel among others in ports, the North sea, the Baltic sea, and the inland waterways on European mainland. These incentives increase the financial feasibility of onshore power supply. Given these circumstances, the port of Zeebrugge and POM West-Vlaanderen have laid out an ambitious plan to reduce the environmental impact of the port of Zeebrugge. A feasibility study pointing out where onshore power supply installations are to be realised on the various terminals in the outer and inner harbour, is a logical step.

The feasibility of onshore power supply is determined by the number of calls at port and the type of the visiting ships. Because of the direct access from the sea and the substantial waterdepth the outer port is visited mainly by vessels for roll-on/roll-off and container traffic. Around the docks of the inner port logistic centres are located for the handling, storage and distribution of cars, bulk cargoes or food products. Differentiated solutions per ship type are thus mandatory.
Next to the analysis of the fleet, a thorough analysis of the power distribution grids of the port of Zeebrugge is needed. A single container vessel might require up to 10 MVA while berthed. In combination with the planned wind turbine parks, this stresses the existing grid to its limits. Therefore, the hosting capacity of the transmission and distribution networks is to be analysed, and local reinforcements are to be made in order to provide the necessary power to the berths.

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Developer

POM West-Vlaanderen & Havenbestuur Zeebrugge

Location

Port of Zeebrugge

Periode Study:

2011-2012

Services

Building services engineering