



CLIENT: Port of Freetown

PROJECT: Commissioning of a power plant

LOCATION: FREETOWN – SIERRA

KOHLER-SDMO: A POWER PLANT TO SUPPLY THE LARGEST PORT IN SIERRA LEONE

TRANSPORTATION

Maritime transport currently accounts for 75% of international trade. Maritime traffic in Africa has seen exponential growth in recent years, with some 50 billion dollars invested over the past 10 years in the construction of larger, deeper and better equipped ports. Such projects have enabled Africa to conduct 3% of global containerised trade, mainly in petrochemical and agricultural products.

Construction and extensions at goods terminals are spreading out around the Gulf of Guinea, a strategic crossroads for African maritime trade. The objective of such projects is to transform ports such as Cotonou, Pointe-Noire, Doraleh, Lomé and Freetown into hubs, enabling Africa to enhance its global standing.

In October 2017, a private operator commenced extension works at the Port of Freetown in Sierra Leone. This colossal project is costing some 120 million euros, notably incorporating a 120m extension to the deep-water docks, supplementing the existing 707m. The ultimate goal is to significantly increase the productivity of the port.



The long-term handling capacity will reach 750,000 TEU (20-foot equivalent units), against the current 90,000. The storage areas will cover 3.5 hectares and will be equipped with 2 ship-to-shore gantry cranes and 3 yard gantry cranes.



EXPRESSION OF NEED: GENERATING SETS TO KEEP THE PORT OPERATING

Maritime traffic is booming in Africa, which nonetheless continues to have the world's least developed electricity infrastructure. The public grid is currently unable to guarantee the electricity supply at the continent's ports. Shipping terminals require supplementary power, mainly to operate the gantry cranes – the lifting equipment used to load and unload container ships.

Most goods terminals operate 24/7; they must therefore be equipped with generating sets.

KOHLER-SDMO has tailored its offering to meet the needs

of the container terminal sector. With most ports having similar energy requirements to power their gantries, KOHLER-SDMO's comprehensive offering includes products (generating sets, fuel tanks, electrical cabinets, circuit breakers, etc.), commissioning and maintenance.

This is why many African ports such as Cotonou, Lagos, Pointe-Noire, Doraleh, Tajourah and Lomé have already decided to place their trust in the expertise of KOHLER-SDMO to power their facilities.



Pic. 1: Power station (6 x 2000 kVA) undergoing installation at the Port of Doraleh in Djibouti

The Port of Freetown in Sierra Leone, currently under construction, also decided to call on KOHLER-SDMO to power its 2 ship-to-shore gantry cranes. The terminal must be operational by September 2018 and the client requested installation of the power station by April 2018; KOHLER-SDMO accepted the challenge.



**PROJECT IMPLEMENTATION:
INSTALLATION OF 4 GENERATING SETS TO
POWER 2 SHIP-TO-SHORE GANTRY
CRANES**

The operators of the Port of Freetown were won over by a power station composed of 2 x 1 megawatt gensets plus 2 x 2 megawatt gensets. Although installed for back-up power, the power station will initially be used on a full-time basis.



Pic. 2: Two 2200 kVA generating sets at the Port of Freetown

Installation was carried out by RMT, a partner of KOHLER-SDMO. A technician worked on site for 1 month to oversee the commissioning of the power station. This operation included connection and synchronisation of the electrical cabinets, fuel tanks and medium-voltage circuit breakers. In spite of the very short lead times, the power station was commissioned on schedule. As the gantries were yet to be installed, the power station remained in shutdown on completion of this initial operation.

A second visit is scheduled to restart the gensets and conduct testing. Once the 2 gantries have been installed, confirmation will be required that the power station is able to handle the load of the containers and that the 2 gantries can be used simultaneously. Final modifications will then certainly be carried out to ensure that the client is fully satisfied. This second operation will also present the opportunity to train the port's personnel on how to operate the generating sets.



**KOHLER-SDMO SOLUTION: A UNIQUE OFFERING
FOR THE PORTS SECTOR**

The 4 generating sets were installed in an equipment room in accordance with the client's requirements, with 2 diesel tanks located outside. One 50m³ tank for unloading diesel and another of 40m³.

It is this very flexibility to adapt to the client's specific requirements that gives KOHLER-SDMO a significant advantage.



Pic. 3: Diesel tanks located in the open air

KOHLER-SDMO's comprehensive offering includes high-quality products, technical assistance and replacement parts, in addition to training to ensure that the gensets are operated optimally and in complete safety: a turnkey solution to meet the demands and constraints of container terminals.

Furthermore, once installation is complete KOHLER-SDMO clients can take advantage of the services provided by the Technical Assistance Department to retain expert support.

The Port of Cotonou has already called on KOHLER-SDMO to carry out the 10,000 hours service on its power station. Equally won over by the KOHLER-SDMO offering, the Port of Tema in Ghana also decided to join the lists of ports placing their trust in the expertise of KOHLER-SDMO by placing an order for the installation of a power station.



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