


CUSTOMER: SELECT**POWER STATION:** 6 X 2000 kVA**LOCATION:** PORT OF DORALEH - DJIBOUTI

KOHLER-SDMO ENERGY SUPPLIER TO THE PORT OF DORALEH, A NEW MARITIME AND COMMERCIAL HUB ON THE HORN OF AFRICA

TRANSPORTATION

Djibouti is small territory with less than 1 million inhabitants located on the east coast of Africa. One of the countries on the Horn of Africa, the country occupies a unique geo-strategic position opening out onto the straits of Bab-el-Mandeb, which is the only maritime route from the Red Sea to the Indian Ocean. As capital city of the same name, Djibouti is therefore the main port in Northeast Africa and gives the main access to the sea for Ethiopia and the main area for routing goods from neighbouring countries.

A victim of the boom in global maritime traffic, the International Autonomous Port of Djibouti (PAID) has seen its facilities reach saturation point and is unable to expand due to its location within the confines of the city. Located 8km from the capital, the new versatile port of Doraleh was officially opened on 24 May 2017 and is designed to turn Djibouti into a maritime and commercial hub for the entire Horn of Africa. Composed of 12 immense red gantries on a 1,200 metre long dockside stretching out as far as the eye can see over a depth of 18 metres, this new extension constructed by the sea will be able to receive ships carrying some 15,000 containers, handling 9 million tonnes of goods each year.



This major project is the fruit of a joint investment of 580 million dollars by China Merchants Holdings International and the Djibouti port authority. It is part of a more monumental global project of 100 billion euros instigated by the Chinese government to create a new trade network beginning at European ports and passing through the Red Sea followed by Sri Lanka and Singapore, terminating in Shanghai.



EXPRESSION OF NEED: GENERATING SETS TO PROVIDE BACK-UP POWER TO THE ELECTRICITY GRID

In addition to building the port, the Djibouti port authority and China Merchants Holdings International, the shareholders of this new extension, have decided to issue a tender for the supply of 6 x 2,000 kVA generating sets to power the port of Doraleh in the event of the Djibouti national grid experiencing an outage. This requirement represents a vital precautionary measure to safeguard the port's power supply should a problem occur with its main source of energy.



**PROJECT IMPLEMENTATION:
ABILITY TO COMMUNICATE THE
PRODUCT/SERVICE BENEFITS TO THE CLIENT**

KOHLER-SDMO and its local partner, SELECT, won the tender issued by the two shareholders of the new port of Doraleh thanks to a number of decisive factors that set them apart:

- A pertinent technical offer: KOHLER-SDMO was able to suggest improvements to the technical solution requested by the client. It was able to demonstrate the merits in terms of the power plant's purchase cost and operational simplicity.

- A high-quality power plant: KOHLER-SDMO is one of the few operators in the market that designs, manufactures and assembles generating sets in Europe. Our cutting edge and innovative solutions are verified in a testing laboratory which is one of only two bodies worldwide that has ISO 17025 accreditation for testing generating sets.

- The presence of a local agent: the strong partnership maintained by KOHLER-SDMO and its local agent, SELECT, was an important factor in the success of the project. KOHLER-SDMO supported its distributor during the upstream phases of the project, while the proximity on the ground of SELECT enabled it to manage on-site installation and offer maintenance services. A 2,000-hour stock of replacement parts was supplied with each generating set included in the project. SELECT is therefore able to offer a local and efficient after-sales service, 24/7.

- A turnkey solution: from the pre-project phase through to site visit, installation and commissioning, KOHLER-SDMO personnel provided the client with support and a turnkey solution adapted to the specific features of the environment.



Pic. 1: 3D pre-project representation of the power plant



**KOHLER-SDMO SOLUTION:
RECOGNISED EXPERTISE IN A PORT
ENVIRONMENT**

The 6 x 2,000 kVA generating sets are housed in CPU40 containers. They are coupled together in series and will supply power to the port and its cranes in the event of a mains outage. The power plant is supplemented by 3 x 120,000 litre diesel tanks and a high-voltage equipment room. If the port is extended in the future, additional connections have been built into the design to be able to receive a further three generating sets.



Pic. 2: The power plant during installation on site



Pic. 3: The completed power plant at the Doraleh site. In the background are the port's cranes.

The output of the generating sets was also defined to be able to adapt to the hot/cold climatic constraints in Djibouti. The power plant is able to operate in an optimum manner without load loss at up to 48°C.

At the suggestion of KOHLER-SDMO, two load banks were also added; when operating via the grid, a port crane draws electrical power when lifting a container. Conversely, when putting down a container it generates power that the grid is able to access. This is not the case with generating sets which, in the event of electrical power being cut, cannot absorb this power without the intervention of the load banks.

This sound suggestion is a good example of the wide experience and expertise of KOHLER-SDMO in supplying generating sets to cargo ports. The added value of KOHLER-SDMO which has already benefited numerous port developments around the world, and which has provided full satisfaction during this project to the Djibouti port authority and China Merchants Holdings International.



Pic. 5: 120,000-litre diesel tanks



Pic. 4: Generating sets in CPU40 containers

KOHLER[®]
SDMO[®]

SDMO Industries

Headquarters: 270 rue de Kerervern - 29490 Guipavas - France
SDMO Industries - CS 40047 - 29801 Brest cedex 9 - France
Tel. +33 (0) 2 98 41 41 41 - www.kohlersdmo.com