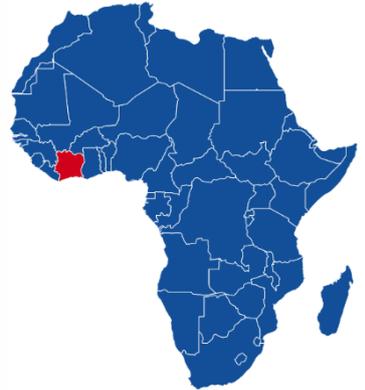




KOHLER-SDMO PROVIDES A SECURE POWER SUPPLY FOR ONE OF THE LARGEST DATA CENTERS IN WEST AFRICA

DATA CENTERS



In the period from antiquity to 2003, humans amassed five exabytes of knowledge – the same amount as we now create in a few hours using our phones, computers, cameras and tablets. In 2020, this will have reached almost 40 zettabytes, equivalent to 80 billion years' worth of listening, if this data were music. We have entered a new era, known to marketing specialists as the era of Big Data. Data is the oil of the twenty-first century, and many companies are vying for an opportunity to profit from this new industrial revolution by using the data to study consumer needs as closely as possible. This digital revolution has also created a need for new, larger and more efficient storage areas.

These storage areas, known as data centers, house vast cabinets that contain servers used to host billions of data items belonging to companies, websites or online storage professionals. The computers used by these servers have a capacity 10,000 times greater than that of an ordinary home PC. Connected to the internet, they can transmit information in just a few milliseconds.

Our modern economy rests on this industrial equipment to such an extent that data center professionals live in fear of losing digital data.

Interruptions to the electrical power supply pose the biggest threat to data centers. According to a report by the Ponemon Institute, the average cost per minute of an unanticipated malfunction at a data center was 8851 dollars in 2015. To combat this risk, data center professionals build in so-called redundancy, by doubling, tripling or even quadrupling the infrastructure. This includes cooling systems, since a server cooling fault could cause the temperature to rise from 21°C to 30°C in a few minutes, leaving servers very vulnerable. Running 24/7, these cooling systems, in addition to all of the digital streams generated, consume a lot of power.

According to estimates from the French electricity transmission network (RTE), data centers account for around 4% of the world's energy consumption.



STATEMENT OF REQUIREMENTS: SUBSTANTIAL POWER REQUIREMENTS FOR A FAST-GROWING SECTOR

This power consumption will grow in line with the exponential proliferation of data centers around the world. The global memory is now concentrated around the major European economic centers (Paris, Brussels, Amsterdam, Frankfurt, London, Dublin), but primarily in the USA, home to the largest data providers, including Google, Facebook and Amazon.

However, several new countries are now exploring opportunities in this area as they become aware of the economic benefits of developing information and communications technologies (ICT).

One such example is Ivory Coast which, in 2016, became home to the largest data center in West Africa. Covering 16,000 m², this digital fortress in Grand-Bassam stores the data for a major Ivorian mobile phone company.



PROJECT IMPLEMENTATION: KOHLER-SDMO'S WEALTH OF EXPERIENCE AND EXPERTISE APPLIED TO THE GRAND-BASSAM DATA CENTER

The mobile phone company chose KOHLER-SDMO to fulfill an order for two 1400 kVA generating sets for its new data center. The phone company's decision was informed by KOHLER-SDMO's recognized expertise and experience in data centers. Customized support tailored to the customer's needs throughout project and negotiations on price were also decisive factors during the call for tenders.

Installation was carried out by our local agent, ADEMAT. The solution also included two 25,000-liter diesel tanks, installed underground to maximize the available space. The two generating sets were installed in 20-foot ISO containers with a sound level of just 80 dB(A) at 7 meters.

The power plant complies with pollution control standard no. 2910 which requires smoke release beyond 10 meters if the power plant is located next to infrastructure. To meet this requirement, each generating set was equipped with a long ventilation stack.



Photo 1: On-site installation of the two 1400 kVA generating sets



Photo 2: One of the two 25,000-liter tanks being installed on the site



KOHLER-SDMO SOLUTION: COMPLETE ELECTRICAL REDUNDANCY FOR ALMOST ZERO RISK OF DATA LOSS

As noted previously, data centers use the principle of redundancy to reduce the risk of data loss to almost zero. This data center is no exception since, although a single 1400 kVA generating set is sufficient to secure the entire site, a second generating set with the same output was included in the project to act as a backup should the first suffer a malfunction.

The redundancy does not stop there, however: Even the components of the two generating sets, including the ATS and the power supply for the auxiliaries and starter, are duplicated.

- ATS: The Automatic Transfer Switch is a device that allows the power to be redistributed by switching from the grid to the generating set, and vice versa. Two of these devices were included to allow for possible malfunctions during switching.

- Switching box: A generating set comprises auxiliary components, such as preheating or the central console used to monitor the status of the voltage on-site. These components need to be powered either via the grid, if operational, or by generating set. A switching box is used to duplicate the power distribution to the auxiliaries in the event of a malfunction in the transition from the grid to the generating set.

- Double starter: A second starter was also installed. It is used if the generating set fails to start after three attempts using the first starter.

These technical adaptations illustrate KOHLER-SDMO's superior expertise in the data center sector. KOHLER-SDMO's teams demonstrated their capability to the phone company by incorporating these useful features into the project.



Photo 3: One of the two 1400 kVA generating sets installed near the data center.

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