

**CUSTOMER:** SMP4 CONSORTIUM**POWER PLANT:** 4 x 1900 kVA**LOCATION:** SAINT-MARTIN-LA-PORTE  
FRANCE

## KOHLER – SDMO OFFERS BACK-UP ENERGY SUPPORT FOR RAIL CONSTRUCTION PROJECTS

### CONSTRUCTION



The Lyon-Turin tunnel is a 57km rail link project that will provide a mixed passenger/freight rail service through the Alps. This project will meet an environmental need to free up road traffic from the south-east corner of France. With the enlargement of the European Union, existing links are at saturation point and HGV traffic is expected to increase by nearly 75% by 2020. This new link will therefore constitute an alternative to road freight by favouring a modal shift as it will offer lines mixing high-speed trains and road-rail transport. This immense project co-financed by France, Italy and the European Union will ultimately convey 40 million tonnes of goods and 5 million passengers each year. Scheduled for completion in 2029, alongside the Gotthard tunnel, the Lyon-Turin rail link will become the world's longest tunnel.



### EXPRESSION OF NEED: ENERGY SUPPLY VITAL FOR ENSURING SITE SAFETY

The first exploration and ground works began in 2003 in sites in the Savoy region with the three access tunnels in Modane, La Praz and Saint-Martin-La-Porte. The exploration work in Saint-Martin-La-Porte, currently underway, will drill a 9km gallery in the direction of Italy, in the axis and diameter of the future cross-border tunnel.

In 2014, the SMP4 consortium consisting of 6 companies (the lead contractor Spie batignolles TPCI, Eiffage Génie Civil, Ghella, CMC di Ravenna, Cogéis and Sotrabas) was selected by Tunnel Euralpin Lyon Turin (TELT) to carry out the exploration work via the access tunnels already completed in Saint-Martin-La-Porte. An electrical grid connection of 20 megawatts was created by the local energy supplier Synergie de Maurienne to provide power to the site. This connection has multiple objectives:

- To operate the tunnel boring machine: this machine 11.26 metres in diameter excavates and extracts rock via its cutting wheel and conveyor belt;
- To power the water evacuation pumps: the boring machine excavates up to 10m of rock each day. This requires the installation of water pumps and associated electricity supply to prevent the gallery from becoming flooded;
- To provide site lighting and ventilation: some 60 employees work in the gallery each day, requiring permanent and adequate ventilation and lighting to ensure the safety of the workstations.

All of these functions require back-up power via generating sets in the event of an outage.



## PROJECT IMPLEMENTATION: INTEGRATION OF 4 x 1900 kVA GENERATING SETS AT THE FOOT OF THE PAS-DU-ROC CLIFF

KOHLER-SDMO won the tender issued by the SMP4 consortium by proposing four generating sets each with back-up power of 1900 kVA installed in containers. The installation is completed by a diesel storage tank and a special technical room including electrical boards and circuitry.

The power station is located at the foot of the Pas-du-Roc cliff at the entry to the gallery to enable connection to the water evacuation pumps. Particular attention was paid to noise levels, as the installation is located just a few hundred metres from housing.



*Pic. 1. Installation drawing for the four generating sets*



## KOHLER-SDMO SOLUTION: UNDERSTANDING THE NEED AND RESPONSIVENESS ARE THE KEYWORDS

The collaboration between KOHLER-SDMO and the SMP4 consortium is the fruit of regular and in-depth contact between the sales department, the engineering department and the client. These discussions alongside responsiveness and presence on the ground made it possible to precisely define the client's needs and constraints and to offer a targeted solution that perfectly matches the expressed requirements.

KOHLER-SDMO proposes turnkey solutions right up to on-site installation and also offers project support by supplying drawings. This second option was selected by the consortium to create a perfectly functional installation. The power station will be in situ throughout the four years of works on site and will then be sold to the contracting authority, Tunnel Euralpin Lyon Turin (TELT).



*Pic. 2. The four 1900 kVA generating sets installed at the foot of the Pas-du-Roc cliff*

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