



HEATING UP GOLD MINING IN SIBERIA

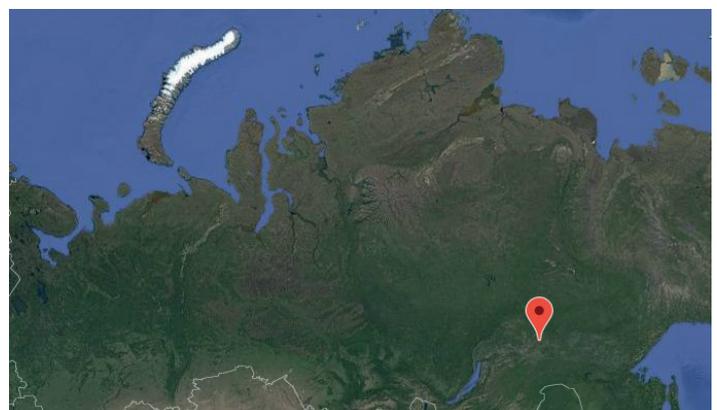


An extreme story of heating up a remote gold mine location in Siberia with harsh climate conditions. How did Cetetherm succeed to supply a 100% tailor-made heating substation to Gross, an important development mining project in the Republic of Sakha (Yakutia in Siberia) ?

BACKGROUND

Nordgold is an international mining company owning nine operating mines in Russia, Burkina Fasso, Guinea and Kazakhstan with a staff of more than 8000 people. Gross is an important development project for Nordgold based in Yakutia (Siberia). In the residential mining village of Gross there are working and living more than 380 people.

On the plot are residential modules and well-equipped dormitories, a bath and laundry complex and women's and men's baths facilities with sauna and showers. Also there is a medical centre and different sport complexes.





MATERIAL SUPPLIED BY CETETHERM

According to the contract with the customer Cetetherm's delivery scope was one Maxi heating substation fixed into a «container-building», ready for immediate installation on site. On site the substation just needed to be plugged and connected to the local boiler house thus supplying heat for the different buildings of the mining village.

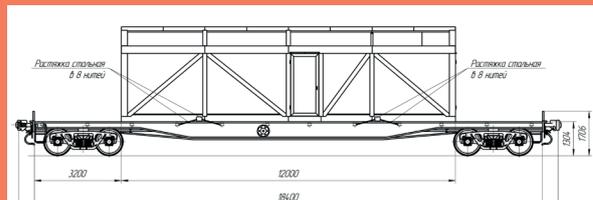
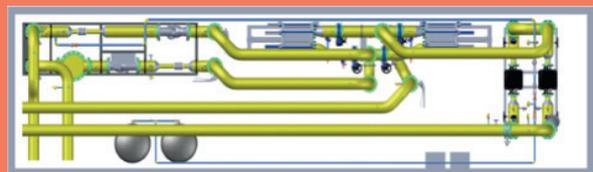
CHALLENGE

Not only the harsh climatic conditions was a challenge, but also the extreme long distance demanded a thorough analysis about the way of transport and a fast installation with a high degree of readiness for commissioning. One of our customer's priorities was also an easy access for maintenance and repair on site.



SOLUTION

Already at the stage of the initial design from the Cetetherm sales engineer department, it was agreed to bring into place blocks of a pre-fabricated substation with a heat-metering unit, ready to be mounted on site in a large container-building. The supply and the total dimension of the container was agreed on 6 to 8 meters. The 3D design optimization allowed us to fabricate to precise tolerances at the factory stage, so the Cetetherm prefabricated blocks could be loaded into the container with dimensions that permitted transport by rail avoiding any additional costs for oversized cargo.



The **container-building** was made with a welded spatial frame of steel bent profiles with stiffening ribs, container walls consisted of three-layer galvanized sandwich panels with mineral wool insulation of sufficient thickness, with sufficient fireproof protection. Operating data are from -40 to +40°C and limited work conditions are from -50 to +50°C.

In accordance to technical demands the container has its own electrical cabinet with power grid, ventilation system, illumination, drainage, fire alarm with light and sound detector modules including automatic fire extinguishing system. The total weight of the container with the Maxi substation included is about 20 tons.



The **Cetetherm Maxi** substation inside the container - with a total capacity of more than 6.5 MW - is fully automated and does not require the presence of maintenance staff. It includes an input part with a metering section with strainer, filters, sensors and a heat meter with two electromagnetic flowmeters.

Due to the size of the container the common collectors run slightly to the side in the middle zone of the room. A block of two huge circulating pumps (working / standby) with corresponding valves is located at the end of the room near the swing gates and the huge expansion tank is split into two in order to keep them inside.

A real puzzle fitting into the box !



Besides these specific dimensions, the Cetetherm team has premeditated to provide a very easy access for maintenance and repair in this remote part of the world. Even disassembling the heat exchanger for mechanical cleaning of the plates or to replace gaskets is possible without moving the original position of the frame, the pressure plate and the connected pipelines.

A state of the art solution for a golden customer !

More information

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