



# Reference Report

Bosch Industrial



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Invented for life

## Bosch boilers keeping 30 000 inhabitants warm below -30°C in Kazakhstan

Shymkent is the 3rd largest city in Kazakhstan, located in the south of the country close to the boarder to Uzbekistan. Due to the growing population a new residential and administrative district called Nursat has been established and provides space to nearly 30 000 inhabitants within an area of 370 hectares (equal to nearly 580 soccer fields). As winter temperatures in Shymkent hit lows below -30°C, providing absolutely reliable heating and hot water supply to the new district was one of the essential tasks during planning.

With it's 190 MW common heat output from five Bosch Unimat UT-HZ firetube boilers, the boiler house in Nursat is the largest of its kind in Kazakhstan and Central Asia. Each of the boilers has an output of 38 MW and was delivered directly from the Bosch Industrial Boilers plant in Gunzenhausen, Germany (until 2009 known as Loos International). The first of the firetube-boilers was delivered already on New Year's Eve 2015 – less than one year after the project started. In comparison: The establishment of one large watertube boiler would have taken



at least 18-24 months and lacks the required reliability (backup).

Main reasons to decide for boilers from Bosch were the famous reliability and 130 years of experience of the large boiler specialist. Further, the high primary efficiency of 96.3 % in combination with the wide modulation range of 1:20 (from 5-100%) ensure very low energy costs and extremely low emissions.

To maximize the system's reliability all of the boilers use dual-fuel burners that are able to use both gas and diesel fuel in case of a supply shortage. The system control adaptively puts one of the boilers in a warm standby mode so it can jump in immediately if necessary. This enables performing maintenance on the boilers without interrupting the system's operation and secures a long boiler lifetime by preventing standby corrosion.



In addition to the sophisticated design, the project is also interesting from the point of its logistics. For the delivery various types of transportation were used. First boilers were delivered overland from the factory in Gunzenhausen (Germany) to the river port city of Roth (Germany). On river barges they proceeded to Rotterdam (Netherlands) from where a liner shipped them to St. Petersburg. On the route to Shymkent on a special low loader transport, some bridges had to be drawn, and some power lines had to be temporarily removed due to the height of more than 5 m of the transport. The total distance was about 7 200 km, of which 4000 km were by land. The transportation company Instar Logistics is experienced with large overweight cargo for spaceports, and other outer space objects in the past. The progress at the construction site went according to the plan so that the first two boilers have been successfully put into operation in November 2015 and provide the people of Nursat with heat during Christmas and New Year's Eve.



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