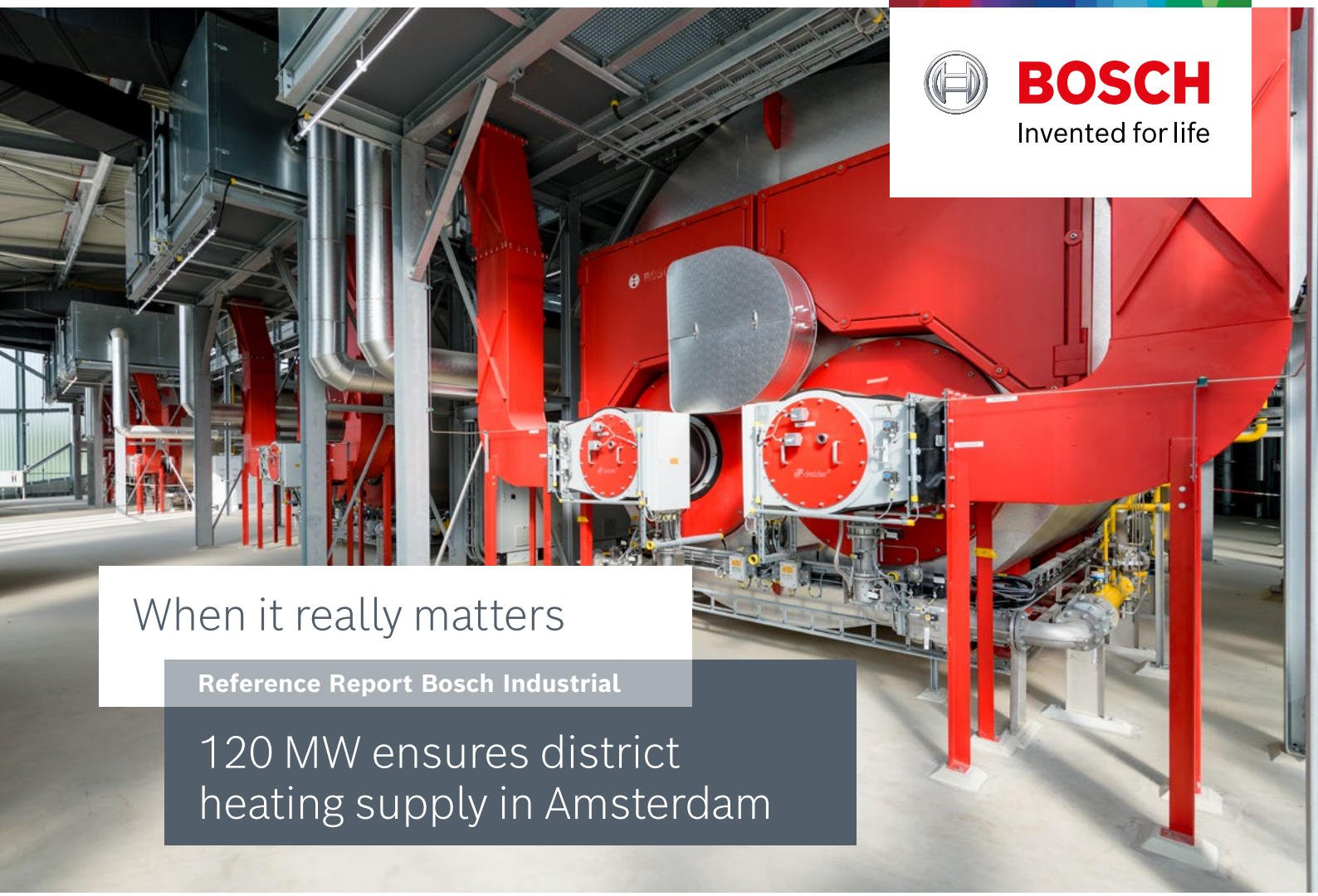

BOSCH
Invented for life

When it really matters

Reference Report Bosch Industrial

120 MW ensures district heating supply in Amsterdam

Four new low-NO_x hot water boilers from Bosch have been connected to the district heating grid in Amsterdam in order to reliably handle consumption peaks and guarantee the supply as a round-the-clock backup solution.

The district heating grid in the vibrant city of Amsterdam is changing. As part of the initiative to provide a sustainable district heat supply, the energy provider Vattenfall has, among other things, had an enormous buffer cylinder constructed. With a capacity of 2.8 million litres, it enables additional waste heat from a local waste processing facility to be fed into the network. At the same location, EQUANS (a company of ENGIE), was commissioned by Vattenfall to construct an auxiliary heating station in order to guarantee a stable heat supply. This facility uses four Bosch hot water boilers, which can supply up to 120 MW of heat. They spring into action immediately in the event of an unexpected failure and when load demand peaks. When planned work is performed on the heating grid, they also serve as a reliable backup. Typically, the boilers are only operated for around 600 hours per year; however, they play a key role in keeping Amsterdam's district heat supply up and running.

Three of the hot water boilers are connected to the south-east part of the network, while the fourth is connected to the north-west part. If required, the boilers can also heat the hot water buffer. These boilers meet Vattenfall's high standards for reliability and operating efficiency. The UT-HZ boiler type used features a double-flame tube design which offers full flexibility. The complete separation of the two flue gas paths and firings doubles the modulation range and protects the burner during continuous operation and reduces the fuel-intensive start-up and shutdown events. The hot water boilers are capable of meeting dynamic performance requirements comfortably and operate efficiently, even under partial load. Since the configurable BCO control that is used is compatible with all common systems control protocols, EQUANS was able to integrate the boilers into the complex communication technology in the district heating grid.

Alongside especially high reliability, the heat generators from Bosch offer low-NO_x natural gas operation. This helps the energy supplier to reduce emissions in a manner that has a real beneficial effect on the environment. The optimal coordination of the boiler furnace and burner with flue gas recirculation achieves outstandingly low NO_x emissions, below 50 mg/Nm³. Additional equipment, such as O_2/CO controls, ensure continuously high combustion efficiency.

Intelligent control

With the aim of achieving complete CO_2-neutrality by 2040 in mind, Vattenfall concentrates on particularly sustainable heat production. Today, the energy provider is already using a range of heat sources, including some from waste recovery. Connecting the north-west and south-east networks means that this waste heat can now be used by the entire city. In the future, additional sustainable sources will be able to be integrated, such as a biomass power plant, the natural choice. The Bosch boilers can also be converted to use CO_2-neutral fuels, such as biogas, bio-oil or hydrogen. This means that the boilers not only guarantee the heat supply, but also ensure that Vattenfall is ready for the future.

Low NO_x: <50 mg/Nm³

Project: Auxiliary heating station Amsterdam

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Auxiliary heating station Amsterdam

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