

TEDOM



Case study

Modernization of a municipal boiler house

in Szydłowiec, Poland

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More efficient heat production

Poland is currently facing a serious problem: it is one of the countries with the highest levels of air pollution in Europe and the world. The main reason for this is the large-scale burning of coal and lignite, often in outdated and inefficient boilers. The standards set by the Polish government are exceeded in many cities, and pollutant levels are often hundreds of percent above these limits. As a result of this situation, Polish cities are at the top of the list of the most polluted places in the world, especially in windless weather. Ensuring clean heat has therefore become an important issue for the Polish government in recent years. The aim of these efforts is not only to improve air quality but also to increase the efficiency of heat generation. These factors were the main motivation for the conversion of the municipal boiler house in Szydłowiec.

About the project

The client for the conversion of the municipal boiler house in 2021 was Ciepłownia Szydłowiec Sp. z o.o. which is wholly owned by the city. The aim of this project is to completely modernize the city's heating system. The solutions used are primarily intended to minimize negative environmental impacts, increase the overall production efficiency, and thus significantly reduce the cost of heat production in the city.

800 kW

total installed electrical output

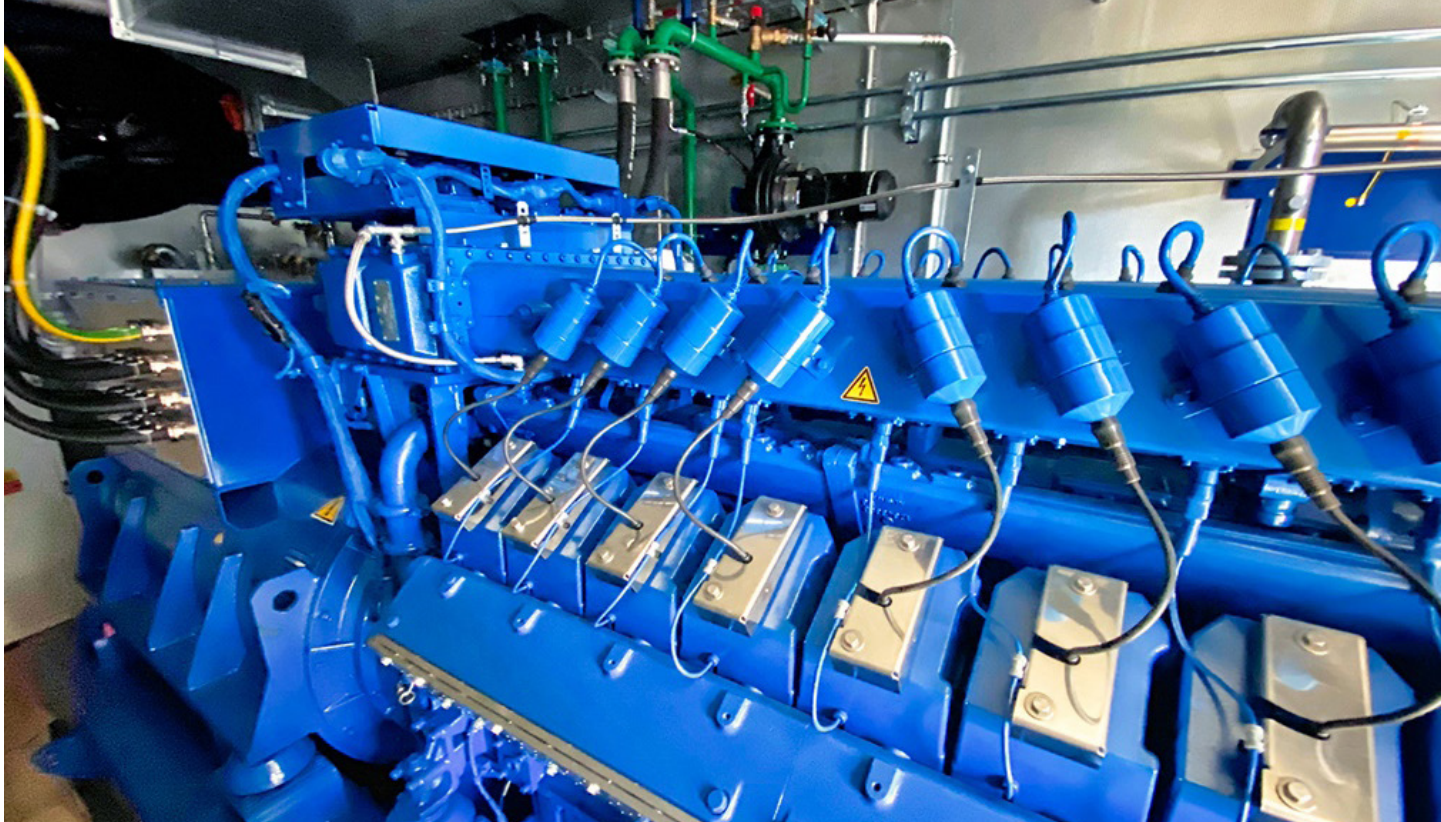
14 500 GJ

reduction in the primary energy
consumption per year

6 250 tons

of CO₂ saved per year





Cogeneration solution

Before the reconstruction, the district heating plant operated an outdated and non-environmentally friendly boiler house equipped with three coal-fired boilers that provided water heating. These boilers have been in operation since 1984. In addition, one of them had been scrapped in the past due to its poor technical condition.

We entered the tender, prepared the entire project, and submitted it together with our long-standing Polish partner, Zakład Innowacyjny technik energetycznych Promat Sp. z o.o. which will also provide maintenance and service for the entire system in the future.

The CHP unit produces heat for the district heating network and electric power that the district heating plant supplies to the national grid which constitutes its additional income. The unit includes online monitoring services, which allow the operator to comfortably control it remotely.



Natural gas
CHP unit



Excess electricity
as an additional
source of income



Online monitoring
and control of
the CHP unit

Current status

The CHP unit was commissioned at the end of 2022 and currently (October 2023) has endured over 5,500 hours of operation. The environmental effect of the whole boiler house project is to reduce carbon dioxide emissions by more than 6,000 tons per year.

Online monitoring of the boiler room allows the CHP unit to work with other energy sources in the area, which together manage consumption to reduce the overall environmental burden. This system includes a coal-fired power plant and several solar energy sources in the vicinity.

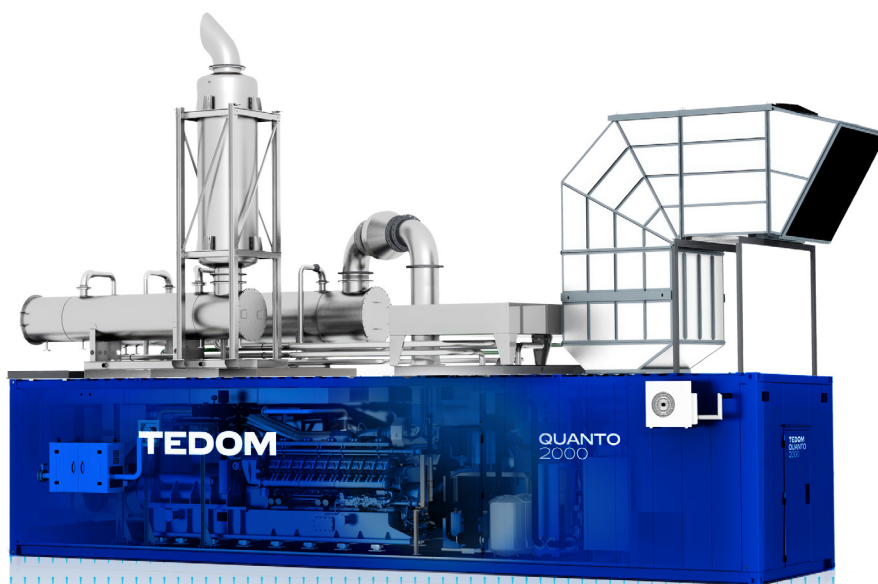


„TEDOM has met our every expectation as a consortium contractor for the task“.

Dariusz Podgórski, Chairman of the Board of Directors of Ciepłownia Szydłowiec Sp. z o.o.

Installed CHP unit

CHP Unit type	TEDOM Quanto 800, Container
Fuel	Natural gas
Electrical output	800 kW
Heat output	1059 kW
Total efficiency	98.4%



Similar references

In the field of district heating systems and boiler rooms, TEDOM has delivered its CHP units in more than 900 projects to 15 countries. Directly in Poland, TEDOM CHP units have been installed for the central heating in many other cities such as Warsaw, Lubliniec, Ostróda, Wojkowice, Blonie, Jelenia Gora and Tarnowskie Góry.

About Cogeneration

Cogeneration is the combined production of power and heat. The biggest advantage of cogeneration is the high efficiency in utilizing the energy in fuel which amounts to more than 90 %. Our cogeneration technology brings substantial savings in the source consumption of fuel and a significant reduction in the amount of CO₂ emissions. As compared to conventional power plants where the heat generated during the production of electrical energy is usually wasted into the atmosphere, this heat is utilized by CHP units for heating which makes the production of electrical power significantly more efficient. Due to their flexibility, the CHP units are also convenient complements to renewable energy sources during periods lacking solar radiation or wind.