

Mažeikiai – Green District Heating City



Mažeikiai with 33 thousand of population is located in northwestern part of Lithuania. It is one of the more densely populated regions. Therefore, environmental protection and reduction of air pollution are among the priority issues to be resolved by the Municipality.

Up to 1974, the heat was provided to the residents from various local boiler houses, until the construction of one large Mazeikiai boiler house of 70 MW installed heat capacity and construction of the main DH pipelines, to which most of buildings were connected.

So far, a few decades ago, a strategically correct and environment friendly decision has been made - district heating helped to eliminate highly polluting local heating sources and thus improved overall air quality in the city.

Currently the total length of DH network is 49 km and total installed DH generation capacity makes 84 MW. Around 90% of buildings in the city receive heat from the DH network. The annual heat demand is 130 thous MWh. The main DH consumers are inhabitants accounting for 70% of total consumers. The remaining users are budgetary institutions and business organisations. Annually about 1 km of pipes are replaced and about 0,5 km of new pipes are installed mainly to connect new consumers or to optimise the configuration of the network.

Heat supply in Mažeikiai municipality is organised according to the general planning documents or based on the special local heat plan. The main task of specific planing in the heat sector is to satisfy consumers at the lowest cost and to minimise negative impact on the environment.

Mazeikiai DH company has always focussed on the use of renewables for energy generation, to increase efficiency of heat production facilities thus reducing greenhouse gas emissions in the City.

During the last 15 years, Mažeikiai DH company invested over 10 mio eur. Significant share of these funds was received as financial support from European Union Structural Funds and Lithuanian Environmental Investment Fund.

Achievements:

- Mazeikiai one of the few cities in Lithuania, which rapidly implemented biomass revolution in DH economy. Since 2014 around 99 % of district heat is already produced from biomass. The first biomass boiler firing house was built in 2002. Introduction of renewables has brought a triple advantage: it has cut down emissions, dependence on imported fossil fuels (coming at higher price than biofuel) and has reduced significantly heating prices for Mažeikiai residents and business subjects.

- During 2013-2018 years there were replaced and installed new almost 60 % of total heating pipelines of Mazeikiai district heating system. The overall investments was around 1.6 mio eur with financial support from EU Structural funds. The DH losses in networks dropped to 15 %
- Annually new customers are connected to DH grid - that creates even greater benefits for the city in terms of environmental protection. Recent developments: 7 buildings (1352 m²) in 2016, 10 buildings (6274 m²) in 2017, and 27 buildings (11006 m²) in 2018. This indicates the growth of DH system and less polluted environment of the City

Lithuania's National Energy Independence Strategy foresees that DH supply from renewables will be 100% by 2050 and at least 90% of buildings in cities receive heating from the DH network. Mazeikiai is delighted to have already accomplished this achievement and thus contributed to the overall goals of the country.

In the future Mažeikiai are planning to start a further development phase introducing flex-

ible complex energy systems that help accumulate excess and cheap heat flows:

- Mazeikiai Municipality Strategic Plan foresees cooperation with nearby situated oil refinery AB ORLEN Lietuva in order not only to attract potential new investor but also to use waste heat from the industry process of AB ORLEN Lietuva in the Mazeikiai DH network as well.
- Usage of solar energy, installation of heat pumps and heat storage facilities are among plans of the further improvement of district heating system in Mazeikiai.
- Mazeikiai district heating system is closed to CO₂ free energy provider and tries to expand this service attracting new consumers. For this purpose, DH company actively works with owners of individual houses offering green and reliable heat supply. State support instruments will be applied for this purpose.

Mazeikiai city heating is almost decarbonised, based on environment friendly local resources and that it's useful for heat users, city economy and society in general.

