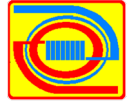


DH Gjakova - Transition from fossil fuel heating to biomass combined heating and power in Gjakova, Kosovo



Project description

Similar to other parts of the East European energy sector the district heating system in Gjakova has suffered from lack of re-investments and strategic planning since the 1980s. The old Gjakova District Heating system was designed to operate on imported expensive heavy fuel oil and therefore it is contributing negatively to climate change. In addition, operations are not efficient since while the design capacity of the plant is 38 MW, the plant operates at only 20 MW or lower. Some parts of the piping network, substations and control equipment are close to the end of their normal technical lifetime resulting in high inefficiencies, water and heat losses in particular.

The main objective of the implemented measures was to provide district heating to the residential, industrial, and commercial customers in sufficient quality, reliable and at the lowest possible cost with least ecological impact. At the same time DH Gjakova should be transformed to an appropriate organisation with the highest possible skills and knowledge for providing its customers the best possible service at an economically sound operation.

The old heavy fuel oil fired production plant has been replaced with a state-of-the-art combined heat and power plant operating entirely on biomass from forest waste.



The district heating network has been rehabilitated with new pre-insulated pipes to provide for sustainable operation the coming 30-40 years and with the lowest possible water and heat losses. Further, new frequency-controlled circulation pumps will operate in accordance with the heat demand and only circulate the necessary water in the network. This reduces the electricity consumption as well as the network losses to a minimum.



The heating substations at the customers have all been refurbished to work in a "demand driven" heating system. Control equipment is installed in all heating substations to allow for optimal use of the energy provided from the production plant. At the same time the new control equipment will ensure correct distribution of the heat in the network. All heating substations has been equipped with a heat meter for future introduction of consumption-based billing of the heat consumption.



9 public buildings have been connected to the network: the Gymnasium "Hajdar Dushi", the Ambulance building, the Prosecution office, the Court building, the Police station, the Red Cross building, the Music School, the Directorate of Education and the Training Centre QAPO.

DH Gjakova's organisation has been stream-lined to meet the daily management and operation of the company. At the same time the necessary capacity building has been provided to the staff.

Key Facts

Production Plant:

- 2 biomass boilers, heat only, each 5.5 MW
- 1 x combined heat and power plant providing 4 MW heat and 1.1 MW electricity
- 2 x heat storage, each 250 m³
- Biomass storage for 1,500 tons wood chips
- Administration offices, 300 m²

Transmission pipe:

- 1.1 km pre-insulated pair of pipes, DN350 for connection to the distribution network

Distribution network:

- 8.6 km pre-insulated pair of pipes in the North branch, DN25 to DN300
- 14.9 km pre-insulated pair of pipes in the south branch, DN25 to DN300

Heating substations:

- 353 heating substations with capacities from 50 kW to 2,000 kW

Finances

Production Plant and Transmission pipe

- European Union, grant € 15,000,000

Rehabilitation of network and substations incl. corporate development

- Swiss Confederation SECO, grant € 4,500,000
- Gjakova Municipality € 500,000

Rehabilitation of HVAC systems in the Regional Hospital "Isa Grezda"

- Swiss Confederation SECO, grant € 800,000