

Energy Efficiency Demo Projects in Ukrainian District Heating

DemoUkrainaDH Funding Programme

The aim with the programme is to demonstrate modern, energy efficient and sustainable district heating solutions in Ukraine. This is done by supporting the development and implementation of up to 20 demonstration projects in different cities. The projects are typically designed to be replicable and feasible to implement

successfully in larger scale. The programme provides credit and grant funding together with Technical Assistance to selected Project Partners, publicly owned District Heating companies, to support them in the development and implementation of the demonstration projects.

DemoUkrainaDH project in Poltava

The demonstration project in Poltava was completed in autumn 2015. The project area includes a boiler house supplying heat and hot water to ten, mainly residential buildings but also a children's hospital and a school. The project concept was to:

- (I) Introduce demand driven heat supply to customers, by installing individual heat substations (IHSs) with control of heat supply in relation to outdoor temperature in all buildings connected to the boiler house.
- (II) Reduce losses in the heat distribution system by replacing all district heating pipelines in the area.
- (III) Replace the old boilers with new efficient condensing boilers with capacity to adapt the heat production to the heat demand.

Project results and achievements

The project in Poltava demonstrates best practices in technical design, procurement and project implementation in a small-scale project. For the city of Poltava installation of IHSs is a new application of district heating technology.

The IHS configuration used in the project is substantially simpler and more cost effective than the configuration normally used in Ukraine. Installation of the IHSs demonstrates a complete conversion to a demand driven system.

The replacement of old district heating pipelines is done with flexible type pipelines to demonstrate efficient pipe laying in narrow areas. Further reduction of investment costs could be achieved by modern pipe sizing accepting higher pressure drops.



New boilers and commissioning of Individual Heating Substation

Customers of the district heating company, residing in the buildings with the new IHSs, are benefiting from improved supply of domestic hot water and improved indoor climate.

As a result of reduction of losses and improvement of production efficiency, gas savings of more than 30% has been achieved. The project is also profitable for the utility with an expected pay-back time of less than eight years.

Project facts

Total investment: 545,000 EUR Pay-back time: 7.3 years

Energy savings: about 35% or 2.300 MWh/yr

Reduction of CO2 emissions: 415 ton/yr

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