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EUROPEAN UNION COVENANT OF MAYORS DEMONSTRATION PROJECTS

TECHNICAL FACTSHEET

**Modernisation of the district heating system and
school in the town of Novovolynsk (Ukraine)**



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GENERAL

Applicant: Novovolynsk city council
Total project budget: 1.151.166 EUR
EU contribution: 920.933 EUR
Project duration: 2015 - 2019

IMPLEMENTED MEASURES

- 1) Refurbishment of the district heating system in Novovolynsk, including decommissioning of the non-effective boiler house at Ostrovskogo 26 from the pipeline of the district heating system, and construction 822 m of pre-insulated district heating pipes.
- 2) Thermal refurbishment of a school including insulation of the entire façade, roof insulation, replacement of windows/doors, installation of a centralised ventilation system, modernisation of indoor heating and lighting systems.

BENEFICIARIES

6.300 inhabitants of the residential buildings in Novovolynsk connected to the district heating system, as well as 570 children and 70 staff members of the school are the final beneficiaries of the project. In addition, the project has sustained 36 jobs.

PROJECT DETAILS AND RESULTS

1) Refurbishment of the district heating system in Novovolynsk

- Decommissioning of the non-effective boiler house at Ostrovskogo 26
- Reconnection of existing consumers to 2 neighboring boiler houses at 26 quarter and Shakhtarskiy district
- Installation of 822 m of pre-insulated district heating pipes

Project costs¹ in EUR: 180.201 (excl. VAT)

Energy savings (electricity, heat energy): 765 MWh/y (3% of the baseline consumption)

CO₂ savings: 209 t/y



¹ Project costs include the cost of technical design, equipment and installation but not general costs such as office rent, salaries of the project team, marketing, travel cost, etc.



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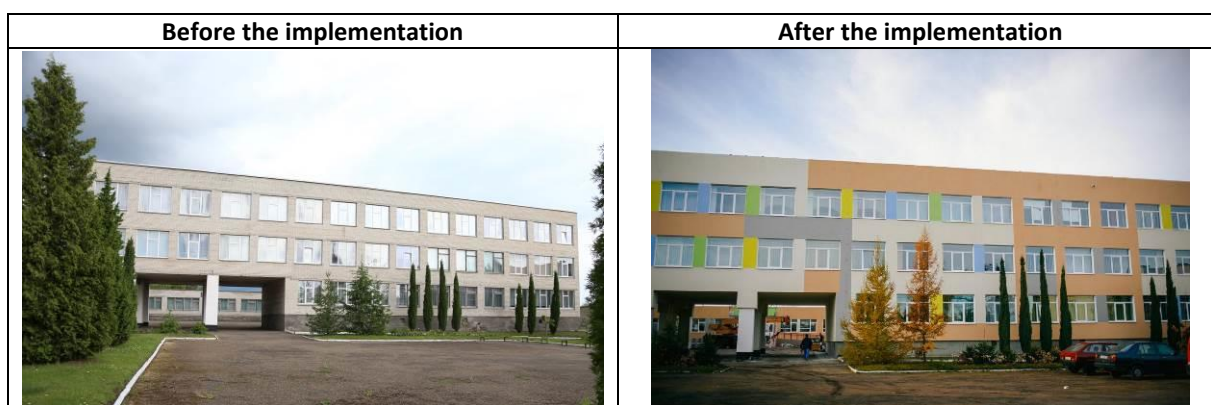
2) Thermal refurbishment of the school #7

- Thermal insulation of external walls with 15 cm of mineral wool (approx. 3200 m²)
- Thermal insulation of dado area with XPS (underground) and mineral wool (aboveground) 8 cm (approx. 1094 m²)
- Replacement of 223 windows and 11 doors (approx. 1406 m²); U-value of less than 1,5 W/m²K
- Refurbishment and thermal insulation of the roof with 20 cm of mineral wool (approx. 2859 m²) incl. lightning protection
- Installation of a centralized ventilation systems for class rooms, gym and concert hall incl. heat recovery (productivity approx. 25.100 m³/h) and a centralized ventilation system for kitchen (productivity approx. 3.000 m³/h)
- Refurbishment of the internal heating system (265 radiators, 3576 m of pipes, individual heating substation) and lighting system (1010 LED lamps and 112 sodium lamps)
- Reinforcement of building elements and construction of new ramp for handicapped people

Project costs² in EUR: 825.365 (excl. VAT)

Energy savings (electricity, heat energy): 1.100 MWh/y (67 % of the baseline consumption)

CO₂ savings: 326 t/y



² Project costs include the cost of technical design, equipment and installation but not general costs such as office rent, salaries of the project team, marketing, travel cost, etc.



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COSTS INDICATORS OF THE DEMOSTRATION PROJECTS³ (excl. VAT)

Thermal refurbishment of municipal buildings	District heating projects
<p>Thermal refurbishment of municipal buildings – 180-300 EUR per sq. m of heated area, including:</p> <ul style="list-style-type: none"> • Windows replacement – 115-130 EUR per sq. m. • Walls insulation – 70-90 EUR per sq. m. • Plinth insulation – 50-60 EUR per sq. m. • Flat roof insulation – 60-70 EUR per sq. m. • Attic floor insulation – 45-55 EUR per sq. m. • Basement ceiling insulation – 45-55 EUR per sq. m. • Heating system modernization – 15-25 EUR per cub. m of conditioned area • Ventilation system modernization – 15-40 EUR per cub. m of conditioned area 	<p>Boiler house modernization – 150-300 EUR per installed kW of biomass boilers</p> <p>Installation of pre-insulated pipes – 125-175 EUR per m of trench</p> <p>Installation of Individual heating substation (IHS) – 7.000-12.000 EUR per unit</p>

³ Please use these numbers for information purposes only



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ACHIEVEMENTS TOWARDS LOGFRAME AND SEAP

Indicator	Energy savings	Renewable energy	CO ₂ savings
SEAP targets	378.548 MWh	190.681 MWh	104.020 tons
Expected project results (Logframe)	1.712 MWh/y	69 MWh/y	384 t/y
Factual achievements	1.865 MWh/y	n/a	534 t/y
Final statement	Logframe targets have been achieved	Logframe targets have <u>not</u> been achieved	Logframe targets have been achieved