October 2024

CONSTRUCTION OF PV POWER PLANT AT WASTEWATER TREATMENT FACILITY IN LUTSK

– Lutsk, Ukraine (Volyn oblast)

In a nutshell

The Lutsk municipality has applied for a loan funding of 378.000 EUR to finance the installation of a 600 kW photovoltaic plant for the wastewater treatment facility owned by municipal utility company, Lutskvodokanal.

Background

In 2009, Lutsk joined the Covenant of Mayors initiative, committing to reducing its energy consumption and CO2 emissions while significantly increasing the share of energy, particularly electricity, generated from renewable sources (RES). Since February 2022, the city has been severely affected by power outages due to Russia's attacks on energy infrastructure, which also disrupted the operations of the municipal water company, Lutskvodokanal, causing interruptions with water supply to over 70% of its residents.

The project aims to improve secure of Lutskvodokanal's critical energy infrastructure through introduction of an alternative solar energy sources, enhancing its resilience to power outages, reducing CO2 emissions, and reduction of the financial burden on the utility company's budget.

Due to the economic downturn and lack of own resources, the municipality sought credit financing. This marked the first instance of a local bank financing of a utility company owned by a municipality in Ukraine.

Description of the action

01

The project aimed to install a rooftop photovoltaic (PV) power station with a total capacity of 600 kW at the premises of the municipal water supply company, Lutskvodokanal.

02

The Lutsk municipality, in collaboration with the Lutskvodokanal, applied to credit financing from the state-owned bank Ukreximbank to secure 378.000 EUR investments under the 5-year loan programme with an annual interest rate of 18,5%.

03

The project was implemented within just 4 months of signing the loan agreement.

EU4Energy

Covenant of Mayors for Climate & Energy Eastern Partnership

Focus on renewable energy in Ukraine

Ukraine has embarked on an ambitious journey to significantly increase its use of renewable energy sources. Driven by the dual goals of enhancing energy independence and aligning with European directives, the country has set a target to source 25% of its total energy mix from renewables by 2035.

This marks a substantial leap from its previous levels, where renewables accounted for aro und 11% of its power generation in 2020. This shift towards renewables is not only seen as crucial for the country's post-war recovery but also as a key step in its broader environmental and climate objectives.

As Russia is continuing to destroy Ukraine's energy infrastructure, it is critical for the country to expand its renewable energy generation to enhance energy security and reduce dependence on vulnerable common power grids. Accelerating the transition to renewables, like solar energy, is not only an environmental necessity but also a strategic response to the ongoing energy crisis.

Photo

PV panels at Lutskvodokanal's buildings

Lutsk

Population:
243.482

Area
382,5 sq. km

CoM Signatory since:
2009

CO_2 emission reduction target:
256.466 tons by 2030

Key figures

- RES generation – **540.000** kWh per year;
- CO_2 emission reduction – **275** tons per year;
- Monetary savings – **108.000** EUR per year;
- **160.000** beneficiaries of the city who receive water services
- 1 job created

Achievement and advice for replication

Key project achievements:

• Increased Energy Resilience.

PV station provide a reliable energy source, especially during times of instability in the power grid. This is particularly important for water supply companies, where continuous operations are critical. Solar energy can act as a backup during outages. The PV station, at peak capacity, covers the majority of Lutskvodokanal's energy demand, with any surplus supplied to the grid under the Net Billing system.

• Energy Cost Savings.

PV system can significantly reduce energy bills for water supply companies considering current tariff for electricity, which often have high and constant energy demands for pumping, treatment, and distribution. By generating their own electricity, companies can offset the cost of purchasing power from the grid. The annual electricity generation from the PV station covers at least 20% of the Dubniv's water pumping station annual electricity demand.

Advices for replication:

• Ensure Technical Feasibility.

Proper technical studies and onsite assessments are critical to ensure that conditions of buildings may bear a rooftop PV installation. This includes evaluating the structural integrity of the buildings and understanding the energy consumption patterns of the water facilities. Technical conditions for installation of power storage and power plants need to be clarified with energy supplier beforehand.

• Utilize Net Billing/Net Meteringю.

Where available, tap into schemes like Net Billing or Net Metering to maximize the economic benefits of solar energy. Selling unused electricity back to the grid may enhance project sustainability and provide an additional revenue stream.

• Public-Private Financing Models.

In view of considerably short payback period for investments, the municipalities and public utilities can explore similar credit financing models in collaboration with state banks or international financial institutions, especially when local self-governments have limited access to capital.

Financing the project

Financing source(s):
30% co-financing Lutsk vodokanal 70% loan from Ukreximbank

Total amount:
540.000 EUR

Return on investments:
App. 108.000 EUR per year

Payback period:
5 years

Useful links

https://www.eximb.com/ua/business/klientam-msb/msb-kredyty/msb-lizyng.html

https://vd.lutsk.ua/

https://www.lutskrada.gov.ua/

https://youtu.be/GiSiW3Wut24

Contact

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