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Covenant of Mayors for Climate & Energy Eastern Partnership

January 2024

CONSTRUCTION OF PV POWER PLANT FOR LOCAL HOSPITAL IN TROSTYANETS

Trostyanets, Ukraine (Sumy oblast)

In a nutshell

In 2017, Trostyanets committed to the Covenant of Mayors initiative, deciding to reduce its own energy consumption and CO_2 emissions, as well as to drastically increase a share of energy produced from renewable energy sources (RES). These plans keep be relevant for the municipality even after the full-scale Russia's invasion in February 2022 when the city was seriously damaged and destroyed. Subsequent attacks on energy infrastructure have also increased the need to enhance the energy security and uninterrupted energy supply.

The main aim of the project was to contribute to implementation of the SECAP of municipality via implementation of the pilot RES project.

Specific objectives of the project were to: i) install a rooftop solar PV power plant and backup power storage for Trostyanets central hospital; ii) improve energy security and sustainability; iii) use sustainable energy solutions to improve the quality of health care services, and iv) significantly reduce the energy bills of the municipality.

Background

The unprovoked Russia's invasion of Ukraine has caused significant damage to the infrastructure of many Ukrainian communities. Trostyanets was invaded by Russian troops during the first days of the war. During that time, the major municipal infrastructure, communal vehicles, and public buildings were destroyed, significantly damaged, or looted. The central hospital – a pride of Trostyanets – was refurbished within the project with Nordic Environment Finance Corporation (NEFCO) in 2021 but eventually destroyed by the constant shelling and bombings. The interruptions in power supply of the hospital due to the constant damaging of the power grids caused a lot of problems to the hospital, therefore the uninterrupted electricity supply remains a top priority for the local authorities.

Trostyanets is an active signatory of the Covenant of Mayors initiative and since 2021 has been implementing the European Energy Award certification system. In the framework of the project "Institutionalisation of the European Energy Award in Ukraine" Swiss government agreed to support Trostynatens in its efforts and allocate some budget to support the PV project for local hospital in Trostyanets.

Description of the action

01

Determination of the exact configuration of the PV station, assess the expected impact, and select the installation site, a pre-feasibility study had been conducted before the implementation of the works

02

At a later stage, based on the feasibility study, the technical documentation was developed and approved allowing proper technical implementation and supervision.

03

Installation of a rooftop PV power station with a capacity of 45 kW at Trostyanets Central Hospital to cover its own energy needs.

04

Connection of the set of backup batteries with a total capacity of 52.2 kWh to ensure an uninterrupted power supply in case of power outages

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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 environmental standards, 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 around 11% of its power generation in 2020. This shift towards renewables is not only seen as crucial for the country's economic recovery post-war but also as a key step in its broader environmental and climate objectives

Trostyanets

Population:	*Area*
21 778	***155,8 sq. km***
Signatory to the Covenant of Mayors since:	***CO_2 emission reduction target:***
21.11.2017	***42 597 tons***

Batteries and controllers of the PV station in the basement

Photo

PV panels at the roof of the hospital

Achievement and advice for replication

Factual results of the project are following:

Annual RES generation
50,3 MWh

Annual reduction CO_2
25,6 tons

Monetary savings –
7.000 EUR

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Hospitals in both urban and rural areas consume a significant amount of energy throughout the day, as the electrical equipment used for patient treatment requires an uninterrupted power supply. The local hospital in Trostyanets, with its complex infrastructure, necessitates a constant power supply to maintain life-saving daily operations. The combination of the PV power plant with a backup power source can ensure the autonomous functioning of essential critical systems such as the operational block, intensive care unit, emergency lighting, refrigerators, water purification system, and oxygen station for extended hours during sunny days. During the night and in cloudy weather, the backup storage, along with the existing emergency diesel generator in automated switching mode, can provide an uninterrupted power supply for the critical healthcare systems of the hospital.

Implementation of the project has created several additional benefits that make the investment worthwhile:

- Demonstration project of use of solar energy for hospitals, potential for replication;
- Support of UA business that operate in the field of renewables energies and energy efficiency that are suffering from the war;
- Possible saved lives thanks to a better quality of health care services;
- Stop fleeing of local population from Trostyanets and neighbourhood who search for health care services.

Key figures

RES generation – **50.274** kWh per year,

CO_2 emission reduction – **25,6** tons per year

Monetary savings – 7**000 EUR** per year

125.000 beneficiaries of the region

1 job created

Financing the project

Financing source(s):
Grant from SECO (100%)

Total amount:
77.000 EUR

Return on investments
App. 1.000 EUR per year

Payback period:
88 years

Useful links

https://trybuna.sumy.ua/stories/darmova-energiya-yak-trostyaneczkij-miskij-likarni-vdalosya-chastkovo-perejty-na-sonyachnu-energiyu/

https://www.youtube.com/watch?v=%D0%BCYKHm5y-MXOw

Contact

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