

Yavoriv-1 Solar Project

Non-Technical Summary

Update 21 Nov 2017

1 Introduction

This document provides a non-technical overview of the proposed development plans of private company *Energopark Yavoriv* to construct a solar photovoltaic power plant in Lviv Oblast of Ukraine.

It also presents a summary of potential environmental and social impacts and other environmental and social issues relevant to the project activities. Appropriate measures to mitigate key adverse environmental and social effects that may arise during project construction and operation are provided in *Table 1* at the end of this document.

The project developer *Energopark Yavoriv* has approached the European Bank for Reconstruction and Development (EBRD) for financing this development. The project is thus subject to EBRD's 2014 Environmental and Social Policy and has been determined as a Category B project.

This Non-Technical Summary (NTS) document, and a Stakeholder Engagement Plan (SEP) for the project will be placed in the locations shown below for public review and comment:

- *Energopark Yavoriv* company offices
Address: : Sichovyyh Strilciv str. 12/9, Lviv, 79007
Phone: +38 032 2610776
- Ternovytsa Village Council
Address: 32, Svobody str, Ternovytsa, Yavoriv district, Lviv region, 81060
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Furthermore, the documents will be available online at www.uself.com.ua. Any interested party is encouraged to provide comments and suggestions on the environmental, social and other aspects of the project. For further information or comments please contact:

Name	Contact information
Maksym Kozytsky, Director	Company: <i>Energopark Yavoriv</i> LLC Postal Address: Sichovyyh Strilciv str. 12/9, 79007, Lviv Telephone: +38 032 2610776 E-mail address: maxim@gaz.net.ua

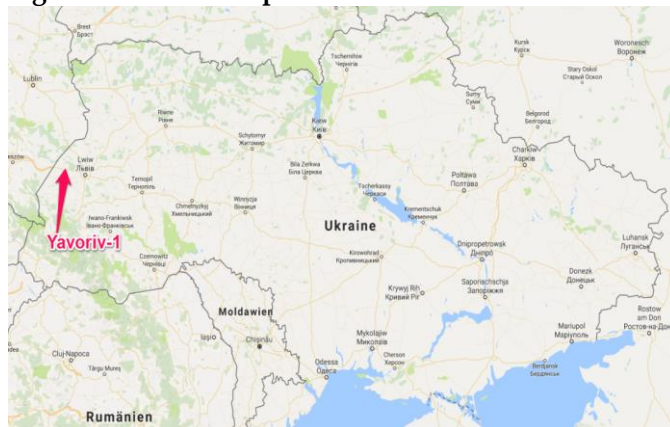
2 Description of the Proposed Development

The project will install 131 000 photovoltaic modules, which will provide an installed peak capacity of 36 MW, and approximately 36,000 megawatt-hours of gross electricity generated per year. The solar power plant will be operated on an area of 115 hectares that is leased for the project. The plant will be connected to the distribution grid by means of a 3.1km long underground transmission cable attached to an existing substation "Yavoriv" owned by Ukrenergo. Electricity will be sold to the grid at the "green tariff".

Yavoriv solar project is the first stage of a larger project with total capacity of 72 MW. The second stage of the project shall be constructed on the same land plot following the commissioning of the first stage.

The Project is located near Ternovytsa village (900 residents) of Yavoriv district in Lviv Oblast. Three other villages, Lis, Solygy and Shklo, are located at 1.5km from the site. The project land plot comprises sulfur mining tailings of former chemical plant closed in 1990s, and cannot be used for any agricultural or heavy construction purposes. The location of the project site is shown on the Figures 1 and 2 below.

Figure 1. General map view



Source: Google Maps

Figure 2. Close-in satellite image



Source: Google Maps, Energopark Yavoriv LLC

The project developer, *Energopark Yavoriv Limited Liability Company*, is owned by private individuals from Ukraine, who have been engaged in the development of renewable energy projects in Western Ukraine, including solar and wind power plants .

By employing the renewable solar power, the project will provide significant environmental benefits over other types of energy generation, such as those using fossils fuels (gas, coal) or nuclear. It will contribute to the reduction of emissions of greenhouse gases (expected annual emission reductions are 30 000 tons of carbon dioxide), create some temporary jobs, and improve the security of energy supply in the area.

3 Environmental, Health, Safety and Social Review

3.1 Project studies and documents

Solar energy power plants can be considered as having perhaps the least impact on the environment and the biodiversity of the surroundings. However, to assess and manage their impacts, several environmental documents have been prepared, as explained below.

The project preparation included assessment of the environmental conditions of the site, surrounding area, as well as environmental and social impacts. These have been summarized as a separate section in the project design documentation. As part of the environmental and social due diligence, an Environmental and Social Action Plan (ESAP) has been developed. The ESAP identified mitigation measures to prevent or reduce potential negative impacts of the project.

A Stakeholder Engagement Plan (SEP) has been developed to describe how *Energopark Yavoriv* will communicate with people and institutions who may be affected by, or interested in the project, at various stages of project preparation and implementation. The SEP will be disclosed to the public. The company will assign a social liaison function to one of its staff, who will be responsible for keeping an open dialogue with stakeholder groups and local residents. At any time before and during construction and operation, any stakeholder can raise concerns, provide comments and feedback about the project.

All such comments or grievances will be accepted, processed and answered by *Energopark Yavoriv* in a timely manner.

3.2 Sensitive locations

The project is situated in an area of low environmental sensitivity. The land plot comprises the mining tailings of former Yavoriv chemical plant, which was engaged in sulfur mining and closed in early 1990s. This waste backfill land has low value, as it cannot be used for agricultural purposes or construction of heavy buildings and structures.

There are no protected areas in the immediate vicinity of the project. The nearest protected area is an ornithological reserve Cholgynskiy, located at about 4km from the site boundary, which will not be affected. The nearest residential houses (villages Lis, Solygy and Shklo) are located at approximately 1.5km from the site. The operating plant will not generate any noise or flickering, and thus will not disturb the residents of the nearby villages.

3.3 Project impacts and their mitigation

The evaluation of potential environmental and social impacts has determined that, in addition to its benefits, the project may have some negative impacts on the environment and people, if not managed carefully. Therefore, *Energopark Yavoriv* will implement certain actions (called “mitigation measures”) to prevent or reduce potential negative impacts of the project as outlined in the ESAP. Key mitigation measures are summarized in the table below.

Table 1 **Overview of Key Potential Project Impacts and Their Mitigation**

No	Issue	Potential impact	Mitigation measures
1	General construction activities	Impacts during construction of the main (solar modules and inverter stations) and associated (transmission line) project facilities, such as land excavation, dust, noise, air emissions from vehicles involved, vehicle traffic, etc.	<ul style="list-style-type: none"> - Prepare and implement construction management plan to reduce and mitigate general construction impacts, including noise, air emissions, waste generation and disposal, erosion. - Prepare and implement traffic management plan, including consideration of delivery routes, other road users, speed limits, and warning signs. - Ensure project contractors adhere to relevant environmental and social requirements. - Continuously monitor impacts to comply with appropriate national environmental standards and EBRD requirements.
2	Transmission line	Impacts of laying an underground transmission cable (110 kV, 3.1km) for grid connection, which will be located close to private gardening allotments and, possibly, some of the summer houses ("dachas").	<ul style="list-style-type: none"> - Ensure appropriate design and routing of the transmission line to avoid sensitive locations where possible. - Comply with relevant sanitary, environmental and social requirements and norms, including those of the EBRD. - Conclude servitude agreements with the land-owners where relevant. - Mitigate any residual impacts after the completion of construction.
3	Plant decommissioning	Waste generation and disposal during decommissioning of the plant at the end of the 25-year life cycle.	<ul style="list-style-type: none"> - Ensure recycling and appropriate disposal of PV modules at the end of their lifetime in line with best environmental practices. - Become a member of international PV recycling network.