

Irshanska Solar Project

Non-Technical Summary

15 June 2019

1 Introduction

This document provides a non-technical overview of the proposed development plans of private company *Irshanska SES LLC* to construct a solar photovoltaic power plant in Zhytomyr Region of Ukraine.

It also presents a summary of potential environmental and social impacts and other environmental and social issues related 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 *Irshanska SES LLC* 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:

- *Tesla Energo LLC* company offices
Postal Address: 10003, Zhytomyr Region, Zhytomyr, 81, Pokrovska Str.
Phone: +380 67 411 411 2
- Meleni Village Council
Address: 11576, Zhytomyr Region, Korosten District, Meleni Village, 22A, Sadova Str.
Phone: +380 4142 67231

Furthermore, the documents will be available online at www.teslaenergo.com , www.facebook.com/LLC-Irshanska-SES-2006511222976160 and ebrd.com. Any interested party is encouraged to provide comments and suggestions on the environmental, social or other aspects of the project. For further information or comments, please contact:

Name	Contact information
<i>Oleg Gramotenko</i> , Director General	Company: <i>Tesla Energo LLC</i> Postal Address: 10003, Zhytomyr Region, Zhytomyr, 81, Pokrovska Str. Phone: +38 044 333 72 18 Mobile phone: +38 067 411 411 2 E-mail: office@teslaenergo.com

2 Description of the Proposed Development

The project will construct a solar power plant with 91 048 photovoltaic modules and other associated equipment, which will provide a maximum installed capacity of 23 MW_{AC}, and approximately 34.41 Gigawatt-hours of net electricity generated per year.

The plant will be operated on an area of 47.89 hectares split into 6 land plots that are leased for the project. For connection to the distribution grid, the project will construct a new 110/10kV substation "*Irshanska SES*", which will connect to an existing 110/10kV substation "*Meleni*" owned by Oblenergo by an 800m-long underground 110 kV transmission cable. The generated electricity will be sold to the

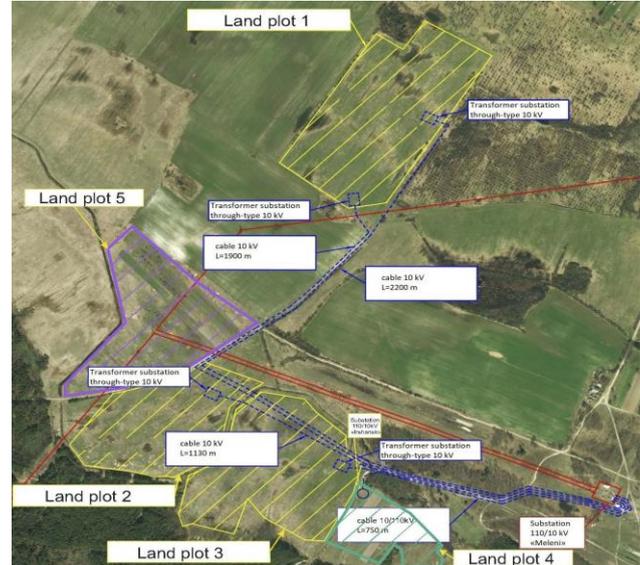
grid at the “green tariff”. No new roads to access the project site are planned, but the existing dirt roads will be upgraded with gravel.

The project will be located near Meleni village (1019 residents) of Korosten district in Zhytomyr Region. The nearest residential area of Meleni is located at approximately 600 m east of the project site. The location of the project site and key facilities are shown on the Figure 1.1 and Figure 1.2 below.

Figure 1.1 General map view



Figure 1.2 Close-in satellite image



The plant will be constructed, commissioned and operated by *Irshanska SES Limited Liability Company*, which was established for implementation of this project, or its contractors. Its parent company, *Solar World Aquiris (Luxembourg)*, is one of leading solar power developers in Europe. The local partner for the project will be *Tesla Energo*, an established Zhytomyr-based renewable energy company.

By employing the renewable solar power, the project will provide significant environmental benefits over other types of energy generation, such as those using fossil fuels (gas, coal) or nuclear. It will contribute to the reduction of emissions of greenhouse gases (expected annual emission reductions are 26 480 tons of carbon dioxide equivalent), create some temporary construction 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 in a separate EIA/OVNS chapter of the project design documentation. Also, an Environmental and Social Action Plan (ESAP) has been developed as part of the environmental and social due diligence process. The ESAP identified mitigation measures to prevent or reduce potential negative impacts of the project and ensure its compliance with the EBRD’s Performance Requirements.

A Stakeholder Engagement Plan (SEP) has been developed to describe how *Irshanska SES* 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

together with this NTS. 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 *Irshanska SES* in a timely manner. The grievance mechanism is outlined in the SEP.

3.2 Sensitive locations

The project is located in a greenfield area covered mostly with grass, and occasionally some undergrowth and small trees. There are no environmentally protected areas or sites of cultural/archaeological heritage on, or nearby, the project site.

Some of the lower-lying parts of the project location include marshland areas, water from which is drained into canals, which have water protection zones with landuse restrictions.

The nearest residential properties of Meleni village are located at approximately 600m north-east of the closest project site. Some increased traffic, dust and noise can be expected during the short period of construction works (including upgrade of site access roads and construction of electric transmission lines), and these public nuisances will be mitigated accordingly. The operating plant will not generate any emissions, noise or flickering, and thus will not disturb the residents of the nearby village. The glint/glare impacts are assessed as low due to outlying location and low population density of the residential area.

An overhead 110kV aerial transmission line owned by *Zhytomyroblenergo* crosses the project site. The safety zone of this 110kV line is 20m on each side. No project installations will be placed within this zone, and access for maintenance of this line will be provided to the owner.

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, *Irshanska SES* 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 1 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 lines and access roads) project facilities, such as land excavation, dust, noise, air emissions from vehicles involved, vehicle traffic, generation of construction wastes, 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, land 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	Substation and transmission lines	Impacts of construction of a new 110/10 kV substation “ <i>Irshanska SES</i> ” and an underground 110kV 800m-long transmission cable for grid connection.	<ul style="list-style-type: none"> - Ensure appropriate design of the substation and routing of the transmission line to avoid sensitive locations. - Comply with relevant sanitary and environmental and social requirements and norms, including those of the EBRD. - Conclude land-lease (or servitude) agreements with the land-owners for the substation and routing of the transmission line. - Mitigate any residual impacts after the completion of construction.
3	Vegetation clearance	Removal of trees and undergrowth present at some project areas	<ul style="list-style-type: none"> - Obtain all required permits for vegetation clearance (including trees) and implement all the requirements in those permits. - Offset the removed trees by making arrangements to replant new ones in the vicinity at available spots.
4	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, including the ones under the PVCycle international initiative.