# Kness Solar Project
# Non-Technical Summary

*08 Dec 2017*

## 1 Introduction

This document provides a non-technical overview of the proposed development plans of the group of private Ukrainian companies KNESS (KNESS Group) to construct three solar photovoltaic power plants in Vinnytsa 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 2 at the end of this document.

The project developer KNESS Group 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:

- KNESS Group company offices
  Address: 39A, Gonty Street, Vinnytsa, 21017
  Phone: +38 0432 55 48 44

- Dashiv Council
  Address: 9, Gorkoho Street, Dashiv, Illintsi District, Vinnytsa Oblast, 22740
  Phone: +38 (04345) 3-24-50

- Pohrebyshche Town Council
  Address: 77, Bohdan Khmelnitsky Street, Pohrebyshche, Vinnytsa Oblast, 22200
  Phone: +38 (04346) 2-17–55

- Pechera Village Council (includes Petrashivka village)
  Address: 35, Lenina Street, Pechera, Tulchyn District, Vinnytsa Oblast, 23610
  Phone: +38 (04335) 4-99-34

Furthermore, these documents will be available online in English and Ukrainian 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 |
|---|---|
| Sergii Shakalov, Director | Company: KNESS Group<br>Postal Address: 39A, Gonty Street, Vinnytsa, 21017<br>Phone: +38 0432 55 48 44<br>E-mail: office@tovpek.com.ua |

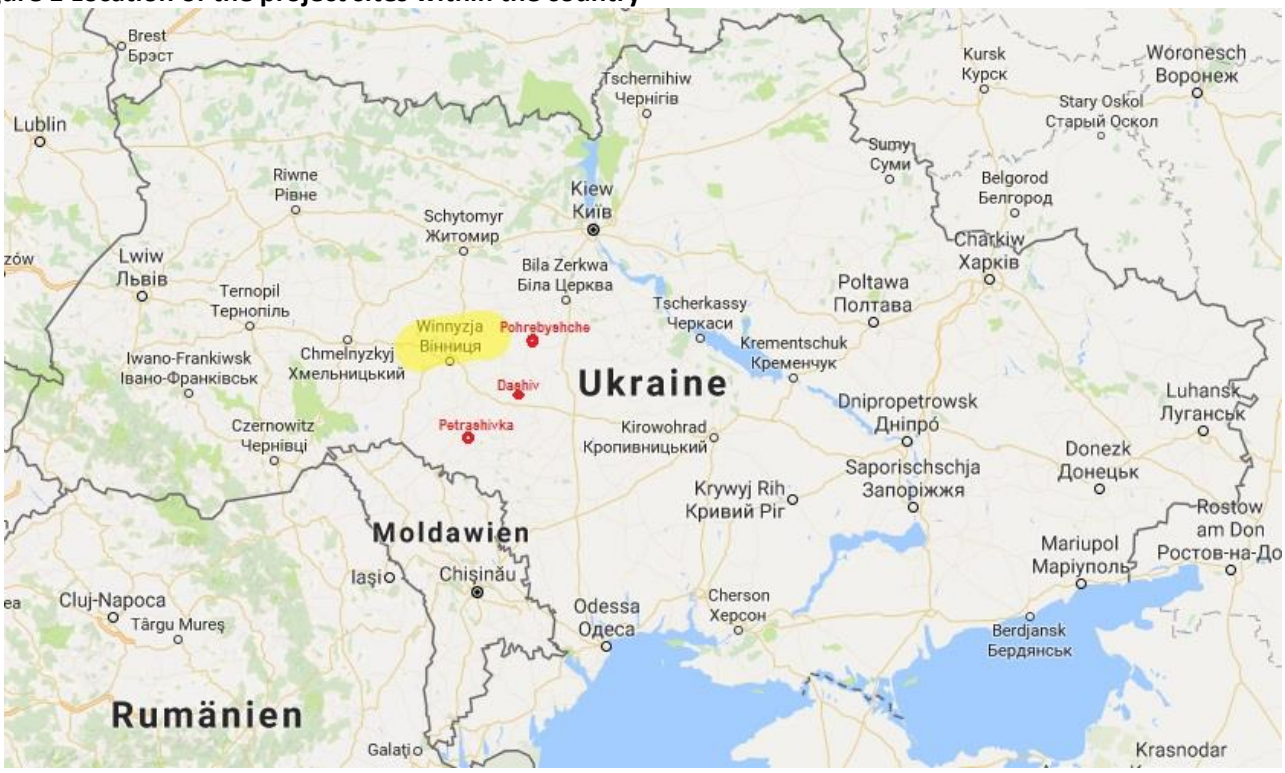
## 2 Description of the Proposed Development

The proposed project will construct and operate three photovoltaic (PV) solar power plants on three sites – Dashiv, Petrashivka and Pohrebyshche - located in Vinnytsa Oblast in central Ukraine. The total installed peak capacity of these plants will be 33.77 MW, and electricity will be sold to the grid at the "green tariff". Key technical facts of the project are summarized in the table below, and the map shows the plant locations.

**Table 1 Key Technical Data of the Plants**

| Parameter | Dashiv | Petrashivka | Pohrebyshche |
|---|---|---|---|
| Installed capacity, MW | 10.86 | 11.41 | 11.50 |
| Approximate annual electricity generation, GWh | 12.4 | 12.9 | 12.9 |
| Land plot, hectares | 20.68 | 20.0 | 22.7106 |
| Number of PV modules | 40,238 | 42,262 | 42,592 |
| Module type | Talesun TP660P-270, polycrystalline 60-cell modules 270W each | | |
| Access road, m | 50 | 900 | 1,000 |
| Transmission cable, m | 1,850 | 2,190 | 1,210 |

**Figure 1 Location of the project sites within the country**




Dashiv (4,233 residents) is an urban-type settlement in Illintsi District of Vinnytsa Oblast. The project site is located in the northern part of the settlement.

Petrashivka (553 residents) is a village in Tulchyn District of Vinnytsa Oblast. Administratively, it is part of Pechera village council. The project site is located to the north-west of the village at 3km.

Pohrebyshche (9,760 residents) is a town in Vinnytsa Oblast, which is an administrative center of Pohrebyshche District. The project site is located in the eastern part of town.

The configuration of land plots allocated to each plant, and associated grid connection infrastructure are shown for each location on the close-in satellite images presented in the Figures 2, 3, and 4 below.

**Figure 1 Location of Dashiv Site**


**Figure 2 Location of Petrashivka Site**

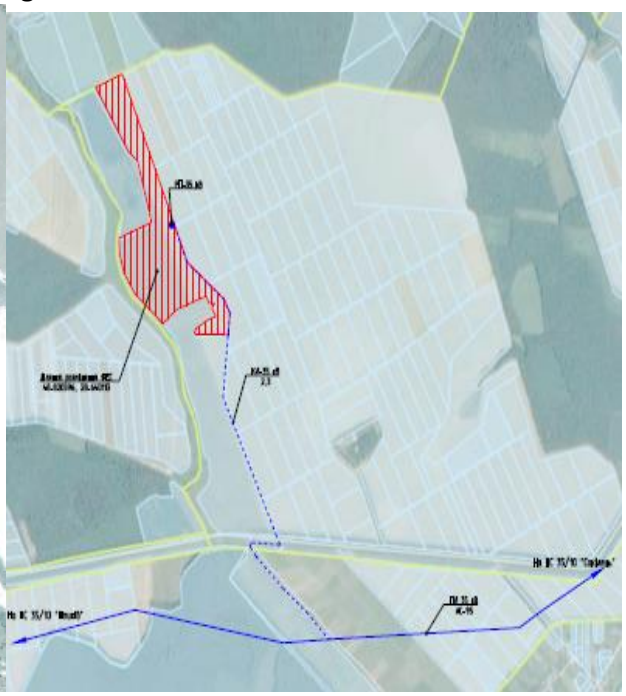
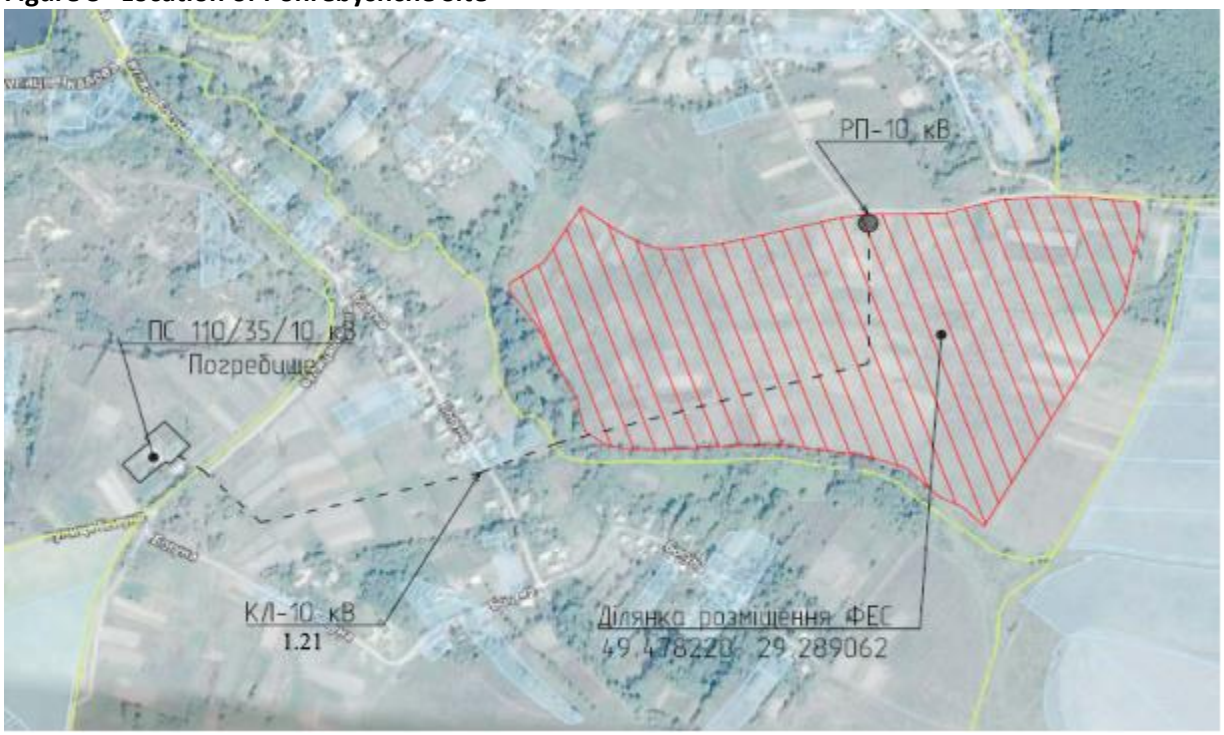


**Figure 3 Location of Pohrebyshche Site**




The project developer, KNESS Group, is a Ukrainian privately-owned company, who has been enaged in the design, construction and operation of solar power plants across the country. To date, KNESS Group has commissioned 23 solar PV plants with total capacity of 157MW.

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

30 000 tons of carbon dioxide), create some new jobs (9 permanent jobs per site), 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 the Environmental Impact Assessment (also called EIA/OVNS) reports for each project location. 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 Plant (SEP) has been developed to describe how KNESS Group 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 KNESS Group in a timely manner.

## 3.2 Sensitive locations

At Dashiv project site, the nearest residential properties are located at 130m from the site boundary. There are no environmentally protected areas or sites of cultural heritage on, or in the vicinity of, the project. River Sob is located to the east of the site. The water protection zone where no construction is permitted for this river is 50m. The distance from the project site boundary to the river ranges from 83m to 135m, which complies with respective requirements.

At Petrashivka site, the nearest residential properties are located at 3km from the site boundary. There are no environmentally protected areas or sites of cultural heritage on, or in the immediate vicinity of, the project. The nearest protected area, a landscape *zakaznyk* on river Bug, is located in Pechera village at a distance of 6km. There are no significant water bodies in the vicinity of the site.

At Pohrebyshche site, the nearest houses are located at 110m to the site boundary. There are no environmentally protected areas or sites of cultural heritage on, or in the immediate vicinity of, the project. River Ros is located to the west of the site at 550m, which is sufficiently far to avoid any water protection zones of the river.

## 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, KNESS Group 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 2 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, access roads) project facilities, such as land excavation, dust, noise, air emissions from vehicles involved, vehicle traffic, etc. | - Prepare and implement construction management plans for each project location to reduce and mitigate general construction impacts, including noise, air emissions, waste generation and disposal, erosion.<br>- Prepare and implement traffic management plans, including consideration of delivery routes, other road users, speed limits, and warning signs.<br>- Ensure project contractors adhere to relevant environmental and social requirements.<br>- Continuously monitor impacts to comply with appropriate national environmental standards and EBRD requirements. |
| 2 | Land use change | Land take to locate project installations, and land use change from grazing and gardening uses to energy generation. | - Provide sufficient and adequate alternative land areas for cattle grazing and gardening to those affected by the project before the start of construction. |
| 3 | Transmission lines | Impacts of laying underground transmission cables for grid connection of each solar plant. | - Ensure appropriate design and routing of the transmission lines to avoid sensitive locations (e.g. residential properties, private land plots, valuable environmental features), and make sure no economic displacement is caused by the project.<br>- Comply with relevant sanitary, environmental and social requirements and norms, including those of the EBRD.<br>- Conclude servitude agreements with the land-owners where relevant.<br>- Mitigate any residual impacts after the completion of construction. |
| 4 | Plant decommissioning | Waste generation and disposal during decommissioning of the plant at the end of the 25-year life cycle. | - Ensure recycling and appropriate disposal of PV modules at the end of their lifetime in line with best environmental practices.<br>- Become a member of international PV recycling network. |