

Project Solis Non-Technical Summary

ENCRO d.o.o

Zagreb, July 2023

Contents

1.	INTRODUCTION	3		
2.	INFORMATION ABOUT THE PROJECT	5		
2.1.	Rationale of the Project	5		
2.2.	Project locations	6		
2.3.	Project development and implementation	. 9		
2.4. Summary of expected Environmental and Social impacts and benefits of the Project 11				
3.	AVAILABILITY OF ADDITIONAL INFORMATION	14		

1. INTRODUCTION

A solar power plant, also called solar farm, is a facility that generates electricity using solar energy with minimal impact on the environment. There is no combustion process, emission of harmful substances, impact on air or water quality, soil degradation, noise pollution, and after the end of life and dismantling of the plant, there is no waste that needs to be stored permanently and that has a long-term negative impact on the environment.

The EU has committed itself to a clean energy transition, which will contribute to fulfilling the goals of the Paris Agreement on climate change and provide clean energy to all. To deliver on this commitment, the EU has set binding climate and energy targets for 2030: reducing greenhouse gas emissions by at least 40 %, increasing energy efficiency by at least 32.5 %, increasing the share of renewable energy to at least 32 % of EU energy use and guaranteeing at least 15% electricity inter-connection levels between neighbouring Member States.

To ensure that the EU targets are met, EU legislation requires that each Member State drafts a 10- year National Energy and Climate Plan (NECP), setting out how to reach its national targets, including the binding national target for reducing greenhouse gas emissions that are not covered by the EU Emissions Trading System (ETS).

The Energy Development Strategy of the Republic of Croatia until 2030 with an outlook to 2050 (OG 25/20) envisages a significantly greater share of energy from renewable energy sources (RES), greater energy efficiency, and reduction of GHG emissions. In the period until 2030, it is planned to increase the share of RES relative to consumption to at least 32% with potential to reach 36.4 %, while in 2050 this share should reach 65 %. This is also stated in the Integrated National Energy and Climate Plan (NECP) for the period 2021 – 2030. According to the NECP, the share of renewables in the final energy consumption should be raised to 36.4% in 2030 (63.8% for electricity, 36.6 % for heating and cooling, and 14% in transport). It should reach 53-65.6 % in 2050.

The development of solar energy is one of the measures to achieve the limitations of air emissions and increase of energy production from renewable sources. The main benefit is that photovoltaic plants convert solar energy to electricity, while generating no emissions to the air. Conventional energy sources, mainly based on various types of coal incineration, when producing energy generate emissions of greenhouse gases, SO₂, dust and others.

The project will allow for limiting the air emission from conventional energy sources

This Non-technical Summary (NTS) provides an overview of the environmental and social impacts and benefits associated with the construction and operation of the three solar power plants (SPPs) i.e. SPP Gornji Humac, Pelegrin and Gradić as well as mitigation and monitoring measures that will be implemented to avoid or minimise the project impacts.

Lumen Solis d.o.o., Humac d.o.o. and 4 Encro d.o.o., project companies from the ENCRO group, have so far obtained all the necessary permits and started construction of three solar power plants (SPP) with an aggregate export capacity of about 30 MW, located in Croatia (the "Project"). The plants details are as follows:

SPP NAME	SPP POWER [MW]	LOCATION	OWNER (SPV)
Gornji Humac	9,9	Island of Brač, Split – Dalmatia county	Humac Ltd.
Gradić	9,9	Benkovac area, Zadar county	LUMEN SOLIS Ltd.
Pelegrin	9,9 (Phase I)1	Island of Brač, Split – Dalmatia county	4 ENCRO Ltd.

Table 1 Information about project Solis



Figure 1-1 Locations of the SPP Gradić, Gornji Humac and Pelegrin

 $^{^{\}rm 1}$ Possibility for capacity increase of additional 9.9 MW in Phase 2 of the project implementation

2. INFORMATION ABOUT THE PROJECT

2.1.Rationale of the Project

Project Solis is comprised of three solar power plants - SPP Pelegrin Phase I, SPP Gornji Humac and SPP Gradić.

SPP consist of multiple interconnected photovoltaic modules, commonly known as solar panels. These PV modules are made up of semiconductor materials, which convert sunlight directly into electrical energy using the principle of the photoelectric effect.

PV modules are mounted on mounting structures which are designed to support and position them for optimal sunlight exposure.

To achieve adequate voltage, multiple PV modules are connected in series forming PV strings. Multiple PV strings are connected to the inverter –electronic device that converts direct current (DC) electricity into alternating current (AC) electricity.

A larger number of inverters are connected to a transformer station which is used to raise the voltage to a higher voltage level and feed it into the grid.

A solar power plant can range in size from small installations on rooftops to large-scale utility power plants installed usually on ground. The electricity generated by solar power plant is clean and renewable, making them a sustainable alternative to traditional fossil fuel-based power plants.

The Project is under construction. All necessary permits for the Project are in place, including construction permits, as regards compliance with the essential requirements for the construction work, location requirements and other requirements stipulated in the below listed construction permits:

- SPP Gradić: Construction permit, Class: UP/I-361-03/17-01/38, Regulation number (URBROJ): 2198/1-11-1/1-17-6, issued on 19 October 2017 by the Administrative Department for Spatial landscaping, environmental protection and communal affairs of Zadar County, Benkovac Branch and valid until 13 November 2023 (according to the Decision on the extension of the validity of the construction permit Class: UP/I-361-03/20-01/000032, Regulation number (URBROJ): 2198/1-07-01/1-20-0004 issued by the before mentioned authority on 13 October 2020).
- SPP Gornji Humac: Construction permit, Class: UP/I-361-03/19-01/000028, Regulation number (URBROJ): 2181/1-11-00-07/03-19-0008, issued on 30 July 2019 by the Administrative Department for Construction and Spatial Planning of the Split-Dalmatia County, Supetar Branch and valid until 06 September 2025 (according to the Decision on the extension of the validity of the construction permit, Class: UP/I-361-03/22-01/000168, Regulation number (URBROJ): 2181/1-11-00-07/03-22-0003, issued by the before mentioned authority on 01 December 2022).
- SPP Pelegrin: Construction permit, Class: UP/I-361-03/22-01/000185, Regulation number (URBROJ): 2181/1-11-00-07/02-23-0028, issued on 11 April 2023 by the Administrative Department for Construction and Spatial Planning of the Split-Dalmatia County, Supetar Branch and valid until 09 May 2026.

After the power plant is built, HEP-ODS confirms with a Permit for permanent operation that the power plant of the grid user has acquired the right to permanent operation with the

distribution network on the basis of a successfully conducted trial operation with the distribution grid under the conditions defined in the issued Electricity Agreement and concluded contracts that regulate the use of the distribution grid.

After issuing the Certificate on the start of use of the network and the Permit for permanent operation, HEP ODS confirms that the power plant of the grid user has met the special conditions of HEP ODS and that on this basis there are no obstacles to the issuance of the Operating Permit.

The Project is expected to start with the operations in 2024.

2.2.Project locations

Solar Power Plant Gradić (SPP Gradić) will be located in the administrative scope of the City of Benkovac, near Kula Atlagić, in Zadar County. The wider location is dominated by flat rocky terrain, succession towards a smaller forest. The project location is in the immediate vicinity of the VE ZD4 wind power plant, but no other building structures have been built at the project site itself.

The geographical coordinates are:

- Latitude: 44° 4'48.31"N
- Longitude: 15°36'22.09"E
- Altitude: about 257 m a. s. l.



Figure 2-1 Location of the SPP Gradić, Benkovac area, Croatia

Solar Power Plant Gornji Humac will be located in the municipality of Pučišća and municipality of Selca (near the municipality of Gornji Humac) on the island of Brač, Split-Dalmatia county. The location is foreseen in the spatial plan of the county, municipality and city as a possible area for the construction of solar power plants. The wider area of SE Gornji Humac belongs to the Mediterranean biogeographic macroregion of Croatia.

The geographical coordinates are:

- Latitude: 43°18'10.93"N
- Longitude: 16°46'29.05"E
- Altitude: about 332 m a. s. l.



Figure 2-2 Location of the SPP Gornji Humac, island of Brač, Croatia

SPP Pelegrin Phase I will be located near the municipality of Gornji Humac, on the island of Brač, in close proximity of SPP Gornji Humac. Same as for the Gornji Humac power plant, the location is planned according to the spatial plan for the construction of solar power plants.

The geographical coordinates are:

- Latitude: 43°18'5.31"N
- Longitude: 16°46'2.72"E
- Altitude: about 408 m a. s. l.



Figure 2-3: Location of the SPP Pelegrin Phase I, island of Brač, Croatia



Figure 2-4: Location of the SPP Pelegrin Phase I and SPP Gornji Humac, island of Brač, Croatia

2.3.Project development and implementation

Project developer of all three SPPs is ENCRO Ltd. ("ENCRO"). ENCRO provides full technical & commercial management to the projects as well as operation and maintenance of the project.

ENCRO d.o.o. is recognised as one of the largest producer and developer of wind energy in Croatia, with a background experience of 15 years in the development of wind farms and solar power plants in the country. The company is a project developer mainly focused on renewable energy sources, responsible for engineering, supervision and renewable portfolio management.

Special Purpose Vehicles (SPVs) are created for the specific purpose of owning, managing and financing specific Solar power plants, which is common practice in renewable energy project development. There are three SPVs that are part of the Solis project:

- Humac Ltd.:
- Lumen Solis Ltd.:
- 4 Encro Ltd.:

Project companies signed agreements for the construction of the plants (EPC contracts) with:

Siemens Energy d.o.o. for SPP Gradić

Siemens Energy d.o.o. Croatia is a subsidiary of Siemens Energy Global: founded in 1847 in Germany, having deployed 21 GWs of wind and 1.6 GWs of solar, Siemens is a true global leader in clean, renewable energy, delivering projects for more than 30 years.

HELB d.o.o. for SPP Gornji Humac

Founded in 1990, HELB is an engineering company with more than 200 employees and external associates; it has 30 years of professional experience in electric power infrastructure. Its portfolio of projects encompasses works on facilities for production, transmission, and distribution of electricity at all voltage levels, through the building of biomass, hydro, wind, solar or geothermal power plants.

INERO d.o.o. for SPP Pelegrin

Established in 1992, INERO is an engineering and construction company, specialised in the execution of electro-installation work on constructions, reconstructions, and maintenance of electric power systems at all voltage levels.

The Project is co-financed by European Bank for Reconstruction and Development (EBRD) and Privredna banka Zagreb (PBZ) therefore compliance with EBRD Performance Requirements and applicable Croatian regulations was assessed and confirmed during the project preparation.

Category and scale of the Project

The Project consist of a photovoltaic modules covering an area of (i) ca 37 ha in the Benkovac area (SPP Gradić), as a part of 422 ha parcel, which is designated area for the use of wind energy (according to the spatial plan, use for solar energy is allowed) and of (ii) ca 41 ha on the island of Brač (SPP Gornji Humac and SPP Pelegrin Phase I), as a part of ca 327 ha area, which is, by the spatial plan, designated as the area intended for the construction of solar power plants and other forms for the use of solar energy.

The locations were selected keeping in mind the site setting, low population density, access to public road and existing electricity network, protection regimes and compliance with applicable spatial documents.

PV plants on all three locations will utilise photovoltaic modules manufactured by Seraphim (model of SRP-570-BTA-BG with bifacial and N-TOPCon technologies). Seraphim is a global tier 1 manufacturer of high-performance solar photovoltaic products for utility scale power generation plant.

The modules are connected in series and then connected to 32 Huawei Technologies string inverters with model of SUN2000-330KTL-H1 with total export power capacity equal to 9.6 MWac. Huawei is a leading global provider of information and communications technology (ICT) infrastructure and smart devices.

The project has been categorised as category 'B' project according to European Bank for Reconstruction and Development's (EBRD) Environmental and Social Policy (2019). Results of ESDD confirmed initially screened category B, since the potential adverse environmental and social impacts will be site-specific, largely reversible and can be mitigated through readily available and recommended mitigation measures.

ENCRO implemented policies to ensure proactive environmental actions. The standards are implemented throughout the ENCRO group of companies and are discussed with employees, customers and suppliers. For supply chain, ENCRO has taken a pro-active approach to addressing potential risks in the solar supply chain, and it requires all its (sub-) contractors are in compliance with the EU Charter of Fundamental Rights and Croatian Labour Act, which also prohibits child labour, forced labour, or harm to workers, including gender-based violence. Additionally, Encro developed its Code of Conduct.

The Environmental and Social Action Plan (ESAP) stipulates the measure to strengthen and formalize the management of environmental and social (E&S) and health and safety issues through development of management system (ESMS). In line with ESAP, Environmental and Social Management and Monitoring Plan (ESMP) will be developed prior to construction and operational phases of the project.

2.4.Summary of expected Environmental and Social impacts and benefits of the Project

All three SPPs (i.e. SPP Gornji Humac, Pelegrin and Gradić) are acceptable for environment and ecological network according to Environmental Decision which was obtained for each of the SPP.

Environmental assessment is a procedure that ensures that the environmental implications of decisions are taken into account before the decisions are made. Environmental assessment of individual projects is undertaken in line with the requirements of Directive 2014/52/EU of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (EIA Directive). EIA Directive is fully transposed in the Environmental Protection Act (Official Gazette No. 80/13, 78/15, 12/18, 118/18) and Regulation on the environmental impact assessment (Official Gazette No. 61/14, 03/17). Solar power plants as stand-alone facilities are listed in Annex II, point 2.4. to the Regulation.

The project companies submitted requests for the implementation screening procedure for the construction of all three solar power plant. The requests were accompanied by the environmental reports prepared by the authorized companies. Pursuant to Article 84, paragraph 1 of the Environmental Protection Act, Article 27, paragraph 1 of the Nature Protection Act and Article 5, paragraph 3 of the Regulation on Environmental Impact Assessment, the Ministry of Economy and Sustainable Development issued a decision that projects do not require an environmental impact assessment procedure and it is not necessary to conduct a main assessment of the acceptability of the project for the ecological network.

However, the companies are obliged to apply all measures arising from the relevant regulations.

Additional mitigation measures prescribed by the Ministry of Economy and Sustainable Development for SPP Pelegrin Phase I will be fully considered and implemented:

	MITIGATION MEASURES
CONSTRUCTION PHASE	When setting up the construction site (during the preparation and construction), lay out a strip at a distance of 50 m from the natural monument wild pear tree, <i>Pirus amygdaliformis</i> and the sign with an inscription indicating protection.
	Inform the responsible forestry office about the start of the construction work. In cooperation with forestry office, access routes to the construction site must be determined, using the planned or built forest infrastructure.
	Establish and implement forest order, fire protection and protection from forest pests after cutting through the area;
	Keeping the existing vegetation that will not be directly affected by the construction;

	Fire protection and special care not to jeopardise the function of existing firebreaks and fire protection means must be taken into account when planning and organising the construction site
	Internal roads within the scheme should be constructed in such a way that the drainage of rainwater into the surrounding terrain does not lead to increased erosion
	Permanent cooperation must be established with hunting right holders to relocate hunting and hunting-related facilities to other sites or replace them with new ones in a timely manner, to ensure tranquillity in hunting areas and to report any suffering of game to the competent hunting authority.
OPERATION PHASE	Rehabilitate the site with biological and hydro-engineering measures: hydroseeding, native planting of forest trees to prevent erosion and an increase in sediment caused by erosion.
	Mechanical methods, not herbicides, must be used to remove vegetation
	Prevent the spread of invasive plant species in the project are

As the PV plant location is in an area with a higher probability of fire, measures to reduce the risk of fire are implemented within project documentation and should be applied during construction and installation phase.

Agreement on easement on forests and forest land was signed between companies and The Ministry of Agriculture for the purpose of construction and operation of solar power plants. The easement has been established for a period of 30 years.

Mutual environmental and social impacts conclusion from Screening procedures:

- The area of Project is located outside forest complexes, marshy areas, areas identified as valuable for scientific interest.
- No valuable fauna or flora will be impacted by the construction of the SPPs. No protected areas will be affected during construction and locations are located outside of NATURA 2000 sites.
- In line with the documentation prepared for the cable routing, no issues associated with the environmental impact of the line are expected.
- No significant environmental impacts are associated with the soil, surface waters, air quality, fauna, cultural heritage or landscape during construction or operation of the Project.
- During the operation of the project no air pollution is expected that covers a large area of the local population, flora and fauna, soil and it will not affect the water quality in any way.
- Since planned solar power plants will be installed on a flat terrain and partly shielded by vegetation, closest residential dwellings, which are at the distance of 1 km and more, will not have visual line of sight to the solar panels.
- The photovoltaic plants are constructed to the maximum level of 4 metres above the ground and will not significantly influence the landscape.
- The transport routes mostly pass outside populated areas.

- The Company will place warning signs in due distance at all access roads to solar plant, information boards about entering solar plant area and providing contact details of the Company.
- If during the execution of works archaeological or ethnological finds are found, the contractor is obliged to inform the Conservation Departments.
- The solar farm design assumes at least 30 years of operations. After that time, the area can be returned to previous role.

Summary of other expected environmental and social impacts and benefits is presented below:

ENVIRONMENTAL AND SOCIAL IMPACTS	BENEFITS
Construction stage: key impacts are associated with impact on sub- Mediterranean grassland habitat type. Screenings estimated that the impact on habitats is <u>spatially</u> <u>limited and acceptable</u> .	The local community will have positive effect from energy facilities that produce electricity primarily through budget revenues from the fee paid to local governments.
Construction stage: only temporary increased noise and vibration. The contractors will be required to implement best practice solutions to minimise the nuisance caused by the construction works.	As renewable source of energy, production of electrical energy from solar power plant can indirectly decrease emissions of pollutants into the air from production of electrical energy from fossil fuels.
	The Project is expected to contribute to climate mitigation through the addition of 30 MW of solar capacity to the Croatian electricity system, expected to generate 52 GWh annually and to save 12,565 tonnes of CO2 per annum.

3. AVAILABILITY OF ADDITIONAL INFORMATION

ENCRO will maintain a <u>webpage</u>, where all achievements associated with the project will be announced and requests for additional information related to the Project could be addressed.

The local public (residents on possible transport routes, residents of surrounding settlements and hamlets) will be informed in a timely manner about the progress of the works in the local media. If necessary, other activities, such as consultation events, will be organized. Communication with residents during construction will include the collection and analysis of complaints that may arise due to increased traffic or construction disruptions. The complaint form and short instructions will be available on the project website, in the local community and at the solar power plant locations. During construction and during subsequent work, communication with the competent authorities will be focused on fulfilling legal obligations related to reporting, providing additional explanations, and solving open questions, and participating in official meetings.

In accordance with the obligations from the Energy Approval, the project holder will regularly report to the competent authorities (Ministry of Economy and Sustainable Development). Also, they will regularly prepare information on the status of the project and the environmental and social aspects of the activity and publish it as a minimum on the project's website. In addition, information about the start of trial work will be published in the local (and, if necessary, national media), which will also inform the Ministry of Spatial Planning, Construction and State Property and HEP-ODS. If necessary, additional information will be published in the media (local and national) and the local community. In order to mark the official start of the operation of the solar power plant, it is possible to organize a special event.

ENCRO will maintain a Stakeholders Engagement Plan and grievance mechanism to secure appropriate exchange of information with all the stakeholders, including local society, and properly address all situations assessed by individuals or organizations as the issues of concern.

The mechanism for the claim procedure will be implemented as part of the Project management system – a standard grievance form is provided at the end of this document.

Direct requests can be addressed to:

- Through the electronic grievance form on the project's website: <u>www.encro.hr</u>
- Submitting a written or verbal grievance during a public meeting
- Handing or mailing a written grievance to the Stakeholder Engagement Expert; Mrs.Rujana Lukač <u>rlukac@encro.hr</u>
- Calling direct number- Zagreb office + 385 (0) 1 4693040

PUBLIC GRIEVANCE FORM

Same Public Grievance form is available in Stakeholder involvement plan and mechanism for submitting complaints (SEP) which is public available on the <u>official website</u> of the European Bank for Reconstruction and Development (EBRD).

COMPLAINT FORM

Printed form

Name:

Last name:

E-mail address:

Phone number / mobile phone:

• I agree that the personal data provided in this form are used for the purpose of submitting and processing my complaint

• I want to remain anonymous

Description of the incident / complaint / problem

What happened?

When did it happen?

Where did it happen?

Who are the participants?

Was there immediate damage?

Could this lead to a serious impact on people and nature?

What are/can be the possible consequences?

What should be done to resolve the complaint / problem?

Date

Signature