Luxembourg, 13.12.2019

Public
Environmental and Social Data Sheet

Overview

Project Name:	*ZERO-E SOLAR PV*
Project Number:	*2019-0237*
Country:	*Spain*
Project Description:	*Construction and operation of 18 solar PV plants with a total capacity of c. 865 MW_p located the Spanish regions of Aragon and Castilla La Mancha.*

EIA required: yes

Project included in Carbon Footprint Exercise[1]: yes

Environmental and Social Assessment

Environmental Assessment

The Project consists of the construction and operation of 18 solar photovoltaic (PV) plants with a total capacity of c. 865 MW_p located in the Spanish regions of Aragon and Castilla-La-Mancha. The PV plants included in the Project are identified in the table below:

Cluster	Plant Name	Capacity (MWp)	Region
ALCAZAR	ALCAZAR 1	44.99	Castilla – La Mancha
	ALCAZAR 2	44.99	
	VALDECARRO	49.88	
	VALDIVIESO	49.88	
ARAGÓN	ESPLENDOR SOLAR	49.88	Aragón
	HAZAÑA SOLAR	49.88	
	TALENTO SOLAR	49.88	
CHIPRANA	EL ROBLEDO	49.88	
	SIERRAZUELA	49.88	
	RIBAGRANDE	49.88	
	VALDELAGUA	49.88	
ESCATRÓN	ESCARNES SOLAR	40.18	
	ENVITERO SOLAR	45.62	
	MOCATERO SOLAR	40.17	
	ESCATRÓN SOLAR DOS	49.88	
	IGNIS SOLAR UNO	49.88	
	EMOCIÓN SOLAR	49.88	
	MEDIOMONTE SOLAR	49.88	

[1] Only projects that meet the scope of the Carbon Footprint Exercise, as defined in the EIB Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: 100,000 tonnes CO2e/year absolute (gross) or 20,000 tonnes CO2e/year relative (net) – both increases and savings.

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All solar PV plants and grid connection facilities fall under Annex II of the Environmental Impact Assessment (EIA) Directive 2014/52/EU amending the EIA Directive 2011/92/EC. Based on national and regional environmental regulations, they have been screened in by the competent authorities, requiring an EIA process, including public consultation. The competent authorities considered all the comments presented during this process, in line with the relevant legal framework. General quality of the Environmental Impact Studies (EIS), in terms of the impact assessment methodology, desk studies and field work conducted, is considered to be acceptable. The EIS of each PV plant included a cumulative impacts assessment taking into account the neighbouring (existing and planned) infrastructures, including the PV plants within the relevant cluster. Environmental permits were granted for all plants in 2018. The project schemes are currently under construction and are expected to be operational by end 2019.

The Promoter has access to the expertise and services of its parent companies and it also has experience in the construction, acquisition and operation of PV projects in Spain. The Promoter has a solid organisational structure and has certified its operational, environmental and H&S management systems (ISO 9001, ISO 14001, OSHAS 18001 and ISO 50001).

According to the promoter documentation, none of the PV plants are located within Natura 2000 sites. The Natura 2000 sites closest to the project sites are listed in the table below.

The Spanish EIA process incorporates the Habitats assessment, whereby competent authorities can only issue the environmental permit once the appropriate assessment has been satisfactorily performed. Although the competent authority did not refer to appropriate assessments performed on the different PV plants in the environmental permits, the EISs either consider that the impacts of Project components in the neighbouring Natura 2000 sites are not likely, or they perform an appropriate assessment of these impacts. In the latter case, the EISs propose mitigating measures that are in turn taken up in the environmental permit. These measures generally include compliance with the related Natura 2000 site management plans, and setting up environmental monitoring plans to assess whether additional measures need to be considered.

Cluster	Plant Name	Natura 2000 site	Distance (km) and direction	Appropriate Assessment (AA)
ALCAZAR	ALCAZAR 1	*Montes de Toledo* (Habitat ID Code ES4250005 and Birds ID Code ES0000093)	21.9 km NW	Impacts not likely. AA not performed
	ALCAZAR 2	*Montes de Toledo* (Habitat ID Code ES4250005 and Birds ID Code ES0000093)	24.6 km NW	
	VALDECARRO	*Montes de Toledo* (Habitat ID Code ES4250005 and Birds ID Code ES0000093)	21.4 km NW	
	VALDIVIESO	*Montes de Toledo* (Habitat ID Code ES4250005 and Birds ID Code ES0000093)	20.4 km NW	
ARAGÓN	ESPLENDOR SOLAR	*Bajo Martín (Habitat ID Code ES2430095)*	3.9 km N	AA performed,

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Cluster	Plant Name	Natura 2000 site	Distance (km) and direction	Appropriate Assessment (AA)
	HAZAÑA SOLAR	*Bajo Martín (Habitat ID Code ES2430095)*	2.3 km N	no significant impacts after mitigating measures
	TALENTO SOLAR	*Bajo Martín* (Habitat ID Code ES2430095)	3 km N	
CHIPRANA	EL ROBLEDO	*Complejo Lagunar de la Salada de Chiprana* (ID Code: ES2430041)	1.9 km S	
	SIERRAZUELA	*Complejo Lagunar de la Salada de Chiprana* (ID Code: ES2430041)	1.9 km S	
	RIBAGRANDE	*Complejo Lagunar de la Salada de Chiprana* (ID Code: ES2430041)	1.8 km SW	
	VALDELAGUA	*Complejo Lagunar de la Salada de Chiprana* (ID Code: ES2430041)	1.9 km S	
ESCATRÓN	ESCARNES SOLAR	*Bajo Martín (Habitat ID Code ES2430095)*	1 km W	
	ENVITERO SOLAR	*Bajo Martín (Habitat ID Code ES2430095)*	2 km W	
	MOCATERO SOLAR	*Complejo Lagunar de la Salada de Chiprana* (ID Code: ES2430041)	3.8 km E	
	ESCATRÓN SOLAR DOS	*Bajo Martín (Habitat ID Code ES2430095)*	3.3 km W	
	IGNIS SOLAR UNO	*Complejo Lagunar de la Salada de Chiprana* (ID Code: ES2430041)	4 km NE	
	EMOCIÓN SOLAR	*Bajo Martín (Habitat ID Code ES2430095)*	3.2 km W	
	MEDIOMONTE SOLAR	*Bajo Martín (Habitat ID Code ES2430095)*	5 km NW	

The Project is located on agricultural land, and is expected to generate minor impacts during both construction and operation phases. The Project, taking also into account cumulative impacts, entails limited negative impacts in particular on fauna, landscape and soil. During the construction phase, main impacts are associated with the presence of machinery, vehicles, construction workers, and the erection of the PV plants infrastructures, and related to:

- Increased dust and noise due to construction related activities, as well as increased traffic in the surrounding areas;
- Soil erosion due to the loss of vegetal cover;
- Visual impacts due to the construction operations;
- Loss or fragmentation of habitats.

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During the operation phase, given the presence of the PV plants, connection infrastructures and other similar facilities in the surrounding area, main impacts are related to:

- Loss and fragmentation of habitats;
- Barrier effect;
- Visual impacts.

Specific mitigation measures required for implementation during construction and operation phases, vary per Cluster/PV plant, but overall can be summarised as follows:

- Implementation of general prevention and mitigation measures during construction, in particular for dust and noise emissions, protection of soil and groundwater, and conservation of protected trees;
- Use of specific fences to guarantee fauna permeability, mitigating barrier effects;
- Habitat conditioning (nesting aids) of certain bird and bat species;
- Implementation of fauna monitoring programmes, including pre-works surveys to signal and protect potential areas of interest of certain species;
- Reuse of soil layers for restoration activities;
- Implementation of restoration plans;
- Landscape integration plans (including the implementation of tree barriers, revegetation with autochthonous species, and monitoring programme);

A detailed description of the specific issues regarding each cluster is included below:

ALCAZAR

This cluster occupies a total area of 385 ha, with 558 390 solar panels installed and a total capacity of c. 190 MW_p.

The EISs consider it unlikely that Natura 2000 sites will be affected, and conclude that there is no need for an Appropriate Assessment. The competent authority issued the permit on this basis.

The main impacts of the PV plants relate to fauna and flora conservation, protection of wetlands, soil and groundwater and landscape integration. The related mitigation measures include reuse of soil layers for restoration activities and tree barriers with autochthonous species[2]. In addition, the competent authority required full life-cycle bird studies, fauna monitoring plans, reforestation plans,overall environmental monitoring plans and a restoration plan (per PV plant) once the operation period has ended..

ALCAZAR's grid connection facilities consist of two substations and a 220 kV underground cable of c. 250 m in length. They were submitted to an EIA process within the VALDIVIESO PV plant. No specific mitigation measures were contemplated for the associated facilities, and defined measures are general (soil conservation and restauration, fauna and flora protection using adequate ditch systems and landscape integration), related with construction and operation activities. No mitigation measures were considered due to the project's low environmental impact.

[2] E.g. Elaeagnus angustifolia, Tamarix, Pinus pinea and Pinus halepensis

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ARAGÓN

This cluster occupies a total area of 544 ha, with 557 066 solar panels installed and a total capacity of c. 200 MW_p.

The related EISs comprehensively assess the potential impacts on nature protection areas (including Natura 2000 sites). The EISs conclude that the plants are not expected to have significant impacts on these areas.

The main impacts of the PV plants relate to fauna[3] and flora conservation, soil and groundwater and landscape integration. The related mitigation measures include pre-works surveys to signal and protect potential areas of interest for reptiles and birds, the implementation of a vegetal cover under the PV panels, and habitat conditioning for protected birds and bats[4]. The environmental permits require periodic environmental monitoring plans, vegetation conservation and a restoration plan (per PV plant) once the operation period has ended.

The cluster's grid connection facilities consist of three substations and a c. 7 km 132 kV overhead power line. They were submitted to an individual EIA process and the permit includes mitigation measures such as the installation of bird flight-diverters, the replacement of crosspieces in existent lines that are dangerous for birds, and underground laying of existing power lines nearby.

CHIPRANA

This cluster occupies a total area of 471 ha, with 578 160 solar panels installed and a total capacity of c. 200 MW_p.

The related EISs assess the effect on nature protection areas (including Natura 2000 sites), where the potential impacts on these areas – including on bird species linked to the above Natura 2000 sites[5] – are comprehensively assessed. The EISs conclude that the plants are not expected to have significant impacts on these areas. Furthermore, the competent authority considered that the existing Natura 2000 site environmental monitoring plans will ensure the detection of any potential impacts that would require additional mitigation measures.

The main impacts of the PV plants relate to barrier effects, fauna and flora[6] conservation, soil and groundwater and landscape integration. The related mitigation measures include porous fencing to allow passage of fauna, pre-works surveys to detect protected species that could potentially be present on the sites, as well as vegetation barriers with autochthonous species and implementation of drainage systems. The environmental permits require periodic environmental monitoring plans, vegetation conservation and a restoration plan (per PV plant) once the operation period has ended.

The cluster's grid connection facilities consist of two substations and a 4 km 132 kV overhead power line. They were submitted to an individual EIA process. Mitigation measures include the installation of bird flight diverters, and vegetation barriers for landscape integration. No mitigation measures were considered due to the cluster's low environmental impact.

[3] E.g. Coronella girondica, Psammodromus hispanicus

[4] E.g. Nesting aids for, inter alia, Falco Naumanni

[5] In particular, to Complejo Lagunar de la Salada de Chiprana.

[6] E.g. Thymus Loscosii and Ferula Loscosi.

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ESCATRÓN

This cluster occupies a total area of 1050 ha, with 1,014,780 solar panels installed and a total capacity of c. 325 MW_p.

The EISs consider it unlikely that Natura 2000 sites will be affected, and conclude that there is no need for an Appropriate Assessment. The competent authority issued the permit on this basis.

The main impacts of the PV plants relate to fauna[7] and flora[8] conservation, soil and groundwater and landscape integration. The related mitigation measures include porous fencing to allow passage of fauna, pre-works surveys to detect protected species that could potentially be present on the sites, vegetation barriers with autochthonous species, implementation of drainage systems, and habitat conditioning for protected birds and bats (see footnote 4). The environmental permits require periodic environmental monitoring plans, vegetation conservation and a restoration plan (per PV plant) once the operation period has ended.

The cluster's associated facilities consist of a c. 3 km 66 kV overhead power line. They were submitted to an individual EIA process. Mitigation measures in the environmental permit include landscape integration (vegetation barriers) and vegetation protection (if necessary after botanical assessment). No mitigation measures were considered due to the cluster's low environmental impact.

EIB Carbon Footprint Exercise

The emissions savings are estimated at 629 000 tons of CO_2 equivalent per year, based on 1633 GWh/a average annual generation over the project life and the Bank's Carbon Footprint methodology (75% operating margin and 25% of build margin).

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be prorated according to the EIB lending amount signed in that year, as a proportion of project cost.

Conclusions and Recommendations

Undertakings:

- Provision of the annual environmental monitoring plans (*Plan de Vigilancia Ambiental – PVA*) reports, for each individual site and associated facilities, ensuring the implementation and effectiveness of the environmental plans established by the promoter.

With the mentioned conditions in place, the EIA processes and their results are acceptable to the Bank.

[7] E.g. Salaria fluviatilis, Tetrax tetrax and Pterocles alchata.

[8] E.g. Thymus Loscosii, Halopeplis amplexicaulis, Tamarix boveana, Microcnemum coralloides, Clypeola Clyclodontea and Limonium catalaunicum.