

1. General Information and Overview of Scope of IIC E&S Review JinkoSolar is developing a solar project consisting of the construction, operation and maintenance of a solar photovoltaic power plant totaling 80 MW and its associated facilities, including access roads, transmission line and transformer substations (the "Project") to be located in the Department of Iglesia, in the Province of San Juan, Argentina. The site is located in the south margin of the National Road N°150, 6 km west of Las Flores village. The solar plant will be connected by an overhead transmission line of approximately 15 kilometers to the future 132 kV Bauchaceta substation, scheduled to start operation in March 2018. The Bauchaceta substation is not part of the Project. Sterling and Wilson ("S&W" or the "EPC Contractor") from India has been assigned for the engineering, procurement, construction and commissioning of the Project, including the civil works and the electrical infrastructure up to the connection point. S&W will subcontract Inelsa from Spain for the balance of plant (BoP), civil and installation works, and Isotrón also from Spain for medium and high voltage works, including the interconnection infrastructure. In turn, Inelsa and Isotrón will hire local contractors for specific works. IIC hired G-Advisory for the environmental and social due diligence. A visit to the site was carried out on July 18th, 2017, together with the local representatives of the Sponsor and members of the environmental and social team that carried out the background studies for the Project. During the visit, the IIC team met with local authorities of the Province of San Juan and the department of Iglesia. Environmental and Social Categorization and Rationale. According to the IIC Environmental and Social Sustainability Policy, the Project has been classified in Category B (medium risk), since its potential environmental and social risks and impacts are limited to the project site, are largely reversible, and can be mitigated via measures that are readily available and feasible to implement in the context of the operation. The Project has triggered the following IFC Performance Standards: • Performance Standard 1: Assessment and Management of E&S Risks and Impacts • Performance Standard 2: Labor and Working Conditions • Performance Standard 3: Resource Efficiency and Pollution Prevention • Performance Standard 4: Community Health, Safety and Security • Performance Standard 8: Cultural Heritage

2. Environmental and Social Context. The Project will be located 40 km east of the Andes mountain range and 30 km west of the Cordillera Frontal, almost in the Andean foothills. The topography of the Project site, at approximately 2,040 meters above sea level, is relatively flat with soft slopes. The climate corresponds to a desert area with scarce rain precipitation concentrated in the summer (average 52 mm/year), mild temperatures during the summer and cold winters with wide temperature ranges. Vegetation consists of sparse low shrubs and no trees. There are several ravines caused by water runoff from the mountain, especially in the first tranche of the electrical line. The land at the Project site is categorized as rural area, but is currently unused due to its almost null productivity. The Project site is located at about 190 km northwest of the city of San Juan, capital city of the Province of San Juan, and can be easily accessed via national roads. There are 3 small populations close to the Project site: Las Flores (900 people) located at about 6 km to the northeast, Iglesia (660 people) at about 20 km in the southeast direction, and Rodeo (4,000 people), situated about 20 km to the northeast. The whole Department of Iglesia has a total population of about 9,100 inhabitants, with a very low population density (0.46 inhabitants per km<sup>2</sup>). The main economic activities of the population are cattle growing and agriculture, tourism and mining related activities. However, unemployment rates are high (35-40%).

3. Environmental Risks and Impacts and Proposed Mitigation and Compensation Measures

3.1 Assessment and Management of Environmental and Social Risks and Impacts

a. E&S Assessment and Management System. Two EIAs were carried out for the Project: one for the photovoltaic power plant, and one for the transmission line. Both studies were submitted to the Secretaría de Estado de Ambiente y Desarrollo Sustentable of the Province of San Juan and the corresponding licenses were obtained. JinkoSolar developed guidelines for the Construction Environmental Management Plan and for the Health and Safety Management Plan that are part of the bidding documents for the EPC Contractor. S&W, with extensive experience in this type of projects, has its own version of such plans. Thus, the management plans for the Project will combine both.

b. Policy. JinkoSolar's Environmental and Health and Safety Policies are set out in the respective guidelines. Each of these

policies is expressed as a statement of commitment. In turn, S&W also has its policies as part of each management plan.

c. Identification of Risks and Impacts

i. Direct and indirect impacts and risks. The direct risks associated with the Project correspond mainly to the construction phase. These include: air quality alteration (gaseous and particulate emissions), production of noise and vibration, potential spillage and leakage of chemicals and fuels, storm water drainage and soil erosion, potential impact on fauna and habitat loss, solid waste management, hazardous materials handling, wastewater management, water and quarry materials procurement, increased traffic and load transport, potential archaeological findings, workers accommodations and social interactions, occupational health and safety, use of security personnel, among other.

ii. Cumulative impact analysis. There are no other existing projects in the vicinity of the Project site that are generating cumulative impacts. However, there is an important project under preparation that foresees the construction of a tunnel through the Andes (Agua Negra Tunnel) that will link Argentina and Chile via the Route 150. Since the entrance to this tunnel will be located about 60 km west of the Project site, it is possible that the end of the construction phase of the Project will coincide with the beginning of the construction of the Agua Negra Tunnel, and therefore cumulative impacts on traffic and on workers influx to the Project's area will be generated. These potential impacts have not been assessed yet and will have to be considered in the corresponding management plans.

d. Management Programs. As part of the Environmental and Social Action Plan (ESAP) the IIC will require that the EPC Contractor develops and implements a Construction Environmental and Social Management Plan (CESMP) and a Health and Safety Management Plan (HSMP) which will have to be Project specific, comply with IDB Group and IFC standards, comply with the conditions set out on the environmental licenses and with JinkoSolar's guidelines.

e. Organizational Capacity and Competency. The Sponsor will establish an Environmental, Health and Safety Team that is adequate to implement the CESMP, the HSMP and monitor the EPC Contractor's environmental and social responsibilities.

f. Emergency Preparedness and Response. The Emergency Response Procedure (ERP) is part of S&W's HSMP. As stated in the ESAP, a Project specific ERP will be developed considering emergency services available, emergency routes and relevant local authorities and organizations for contact. The Project site is classified as seismic risk 3 in a 0 to 4 scale (4 being the highest risk). Thus, specific provisions for seismic risk will have to be included in the ERP.

g. Monitoring and Review. S&W CESMP includes a monitoring plan for environmental and social parameters. For the HSMP a monthly HSE Report will be produced.

h. Stakeholder Engagement. A stakeholder engagement process during the lifetime of the Project will be in place. This process will include a range of activities such as public disclosure of appropriate information, consultation, and mechanisms by which people can make comments and raise grievances. The Sponsor will provide affected communities with access to relevant information on:

- The purpose, nature, and scale of the project;
- The duration of proposed construction activities;
- Any risks to and potential impacts due to construction activities to its neighborhood and relevant mitigation measures;
- The communication & grievance mechanism, including who is responsible for receiving and responding to complaints.

3.2 Labor and Working Conditions

a. Working Conditions and Management of Worker Relationships

i. Human Resources Policies and Procedures. The Project Manager is responsible for human resources policies and health and safety throughout the construction phase. The EPC Contractor will establish the management structure required to develop and implement the site specific management plans (CESMP and HSMP).

ii. Working Conditions and Terms of Employment. The Sponsor will develop a labor and employment plan to maximize use of local skills and services, include an ethics code for workers, worker's grievance mechanisms, and establish working conditions in line with the International Labor Organization (ILO) policies.

iii. Workers' Organizations. The local construction labor union, the Unión Obrera de la Construcción de la República Argentina (UOCRA), is a strong organization. Isotrón will represent the EPC Contractor in its relationship with UOCRA with respect to labor issues.

iv. Non-discrimination and Equal Opportunity. The Sponsor and the EPC Contractor provide equal employment opportunities for all employees and applicants. However, the labor and employment plan will include an effort to

increase women in the workforce. v. Grievance Mechanism. Workers grievance mechanisms are ensured by the participation of workers unions. However, the labor and employment plan to be developed will include such mechanism. b. Protecting the Workforce. No minors or forced labor will be used in the Project. c. Occupational Health and Safety. According to Argentinian legislation, during the construction, the EPC Contractor must have an H&S professional on site and develop a specific H&S Plan for the construction. Safe work procedures are developed for specific jobs found in the Project, such as: electrical risks, works at heights, use of electrical and pneumatic powered tools, hot works, compressed gas handling, hoisting and rigging, trenches and excavations, etc. The use of personal protective equipment is mandatory and a permit to work must be issued before any high risk job or critical activity is initiated. d. Workers Engaged by Third Parties. As part of S&W HSE Policy, the EPC Contractor must ensure that health and safety standards extend to suppliers and sub-contractors.

### 3.3 Resource Efficiency and Pollution Prevention

JinkoSolar is assessing water availability on site for the execution of the civil works. Water for the construction may be extracted from the Agua Negra or Iglesia rivers, or eventually groundwater sources. In all cases the relevant permits will be obtained. Concrete aggregates for the construction will be extracted on site and nearby. Required legal authorizations will be obtained for that purpose. JinkoSolar will prepare plans to manage solid and liquid waste, both hazardous and nonhazardous, for the construction and operation stages. For the construction stage, those plans will be implemented with the EPC Contractor. In particular, the Contractor of the civil works will design a plan to handle the effluents from washing the equipment to mix and transport concrete. Moreover, each contractor will be responsible for handling fuel and lubricant waste from the operation and maintenance of machinery and equipment, as well as the storage, handling and potential spills. Greenhouse gases and air pollutants will be produced primarily during the construction stage, due to the movement of machinery and the transportation of cargo and people. Contractors will keep the equipment in good operating conditions to minimize such emissions, keep the roads wet, and cover cargos and piles of loose material to reduce the production of dust.

### 3.4 Community Health, Safety and Security

a. Community Health and Safety. jinkoSolar will develop a Social Impact Management Plan that will include, among other things:

- Sufficient and necessary monitoring measures of the relevant environmental issues
- Public communication procedures to receive and process community grievances
- Access to information and transparency in social actions implemented
- Open communication channels with local communities
- Construction program schedule with information of work activities, timings and locations, and mitigation measures implemented
- Notifications to the community of any disruptions to services S&W will develop a Traffic Management Plan that will include:
- Schedule of major material supply for off-peak hour traffic
- Clear identification of truck routes and site entry points for heavy vehicles
- Monitoring of congestions on local roads networks
- Adequate training of drivers
- Clearly posting of site entry and exit signs.

b. Security Personnel. Security systems for the Project site are not defined yet. The EPC Contractor will define a Site Security Plan (SSP) to identify security threats and define measures to be put in place, including a security training plan. In the event of hiring professional security forces, the EPC Contractor will develop a plan following the best practices and guidelines from voluntary principles on security and human rights.

### 3.5 Land Acquisition and Involuntary Resettlement

There is no land acquisition. The land where the Project will be set up is private property. Cordillera Solar and the landowner signed a 30-year lease agreement for 202 hectares, including the right of way for the transmission line and other associated facilities. The Project will not imply population displacement or any restriction on land use or displacement for third parties.

### 3.6 Biodiversity Conservation and Natural Habitats

Regionally, the area is classified as a xerophilous and halophyte shrub steppe, proper of desert or semi-desert climates. The EIA study identified 28 flora species, being only the so called wormwood (*Artemisia mendozana*) of interest for its regional endemism that covers 4 provinces of Argentina (Catamarca, La Rioja, Mendoza, San Juan). Regarding Fauna, the EIA study identified 43 vertebrates, being only the Andean Condor (*Vultur gryphus*) classified as Near Threatened by IUCN Red List and a type of partridge (*Eudromia elegans*) classified as vulnerable by Aves Argentinas. The

Project site area is not situated in or near and will not affect any national, provincial or municipal environmental protection figure. The closest protected area is San Guillermo Biosphere Reserve, located more than 100 km to the North. The flora and fauna species will not be materially affected by the Project, although provisions will be taken in the CESMP to minimize impact during construction.

**3.7 Indigenous Peoples** The Project will not affect any indigenous, ethnic or afro-descendant communities.

**3.8 Cultural Heritage** A detailed archaeological study has been undertaken for the solar power plant site and the path of the transmission line. Some vestiges of pre-Hispanic cultures were found in both sites. While those found in the solar power plant site are of minor importance, some of the findings in the path of the transmission line have certain significance and will require special considerations (see ESAP) when defining the final layout of the line.

**Contact Information** For project inquiries, including environmental and social questions related to an IDB Invest transaction please contact the client (see Investment Summary tab), or IDB Invest using the email [requestinformation@idbinvest.org](mailto:requestinformation@idbinvest.org). As a last resort, affected communities have access to the IDB Invest Independent Consultation and Investigation Mechanism by writing to [mecanismo@iadb.org](mailto:mecanismo@iadb.org) or [MICI@iadb.org](mailto:MICI@iadb.org), or calling +1(202) 623-3952.