



Santuario PV Power Plant Project
Americas Clean Energy Fund II (AEF II):
Proposed Investment

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1 INTRODUCTION

The following information is presented to Americas Energy Fund II Clean Energy Green Committee to provide a recommendation about Project Santuario and its eligibility as an Eligible Clean Energy Investment. Solar E is the Investment Vehicle for this project.

The Proposed Investment described in this report is:

TABLE 1: PROPOSED INVESTMENTS

Proposed Investment	Category	Type
Santuario PV Power Plant	1	Electricity generation from renewable sources (wind, solar, geothermal, hydro, wave or tidal)

2 OVERVIEW OF SCLEA'S SCOPE OF REVIEW

For the project Santuario PV Power Plant (the Project) SCLEA conducted a review of the information provided by the sellers, Visibilty SpA. The information reviewed considers environmental and other permits, technical reports and studies presented to the competent authorities. There was also carried out a site visit in order to check revised information and get a general panorama of the project and its surroundings.

3 PROJECT DESCRIPTION

Rationale

The transaction considers the purchase of 100% of the Project, a greenfield photo voltaic one located in central Chile, in Rinconada de Los Andes Commune, Valparaiso Region, some 70 km North from Santiago. The installed power capacity for the project is 2.99MW, the energy generated will be injected to the distribution system, through a 23kV transmission line 1.1km long.

This investment is in line with the strategy of seeking positions in distributed renewable generation for the following reasons:

- Small projects with low risk and fast development;
- Direct electrical connection to consumption centres through distribution networks eliminating transmission tolls and reducing distribution costs; and
- Preferential energy tariffs defined in the electrical regulation.

Particularly, this transaction represents an attractive option in the above described strategy because it allows SCLEA to enlarge its participation in the solar distributed generation market through the construction and erection of this new project.

Asset Description

The Project is a Greenfield one, located in Rinconada de Los Andes Commune, Valparaíso Region, Chile. Particularly the Project site, with an area of about 9 Has, is part of a larger piece of land (>250 Has) of the Santuario de Auco, a sanctuary dedicated to Saint Teresita de Los Andes, owned by the Carmelitas Descalzas Monastery, a cloistered nun community. The Sanctuary can be accessed through a public highway, Los Libertadores, and is about 70km North away from Santiago. The access to the Project site is through an existing path which crosses part of the Santuario area (parking lot and part of the park). See figures below for project location and access:

FIGURE 1: PV PLANT GENERAL LOCATION

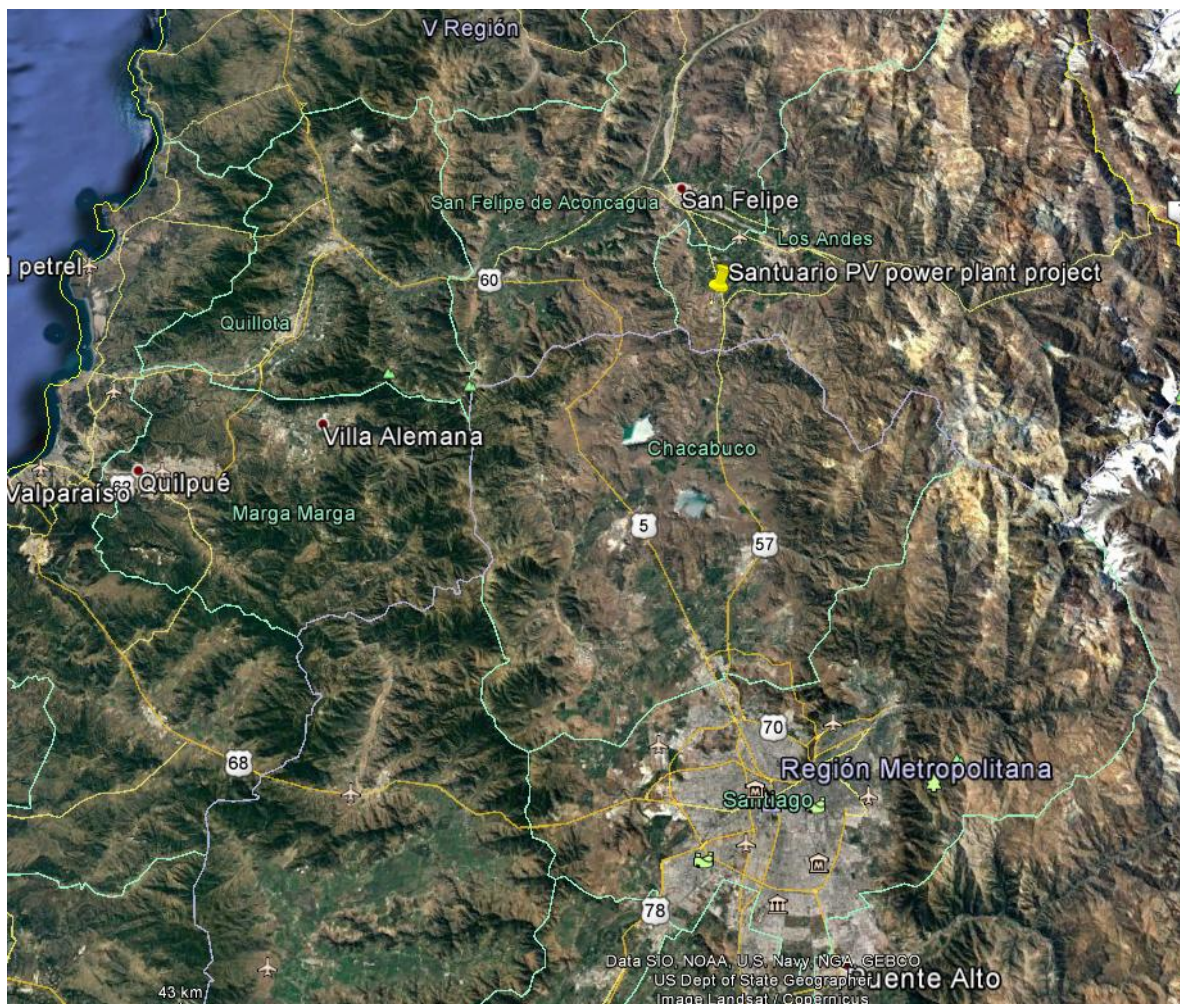
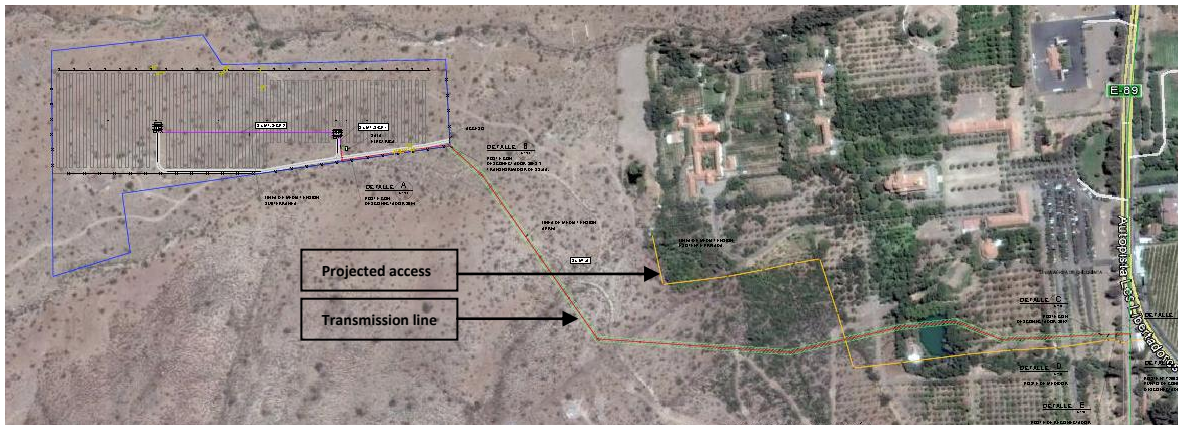


FIGURE 2: PV PLANT LOCATION AND ACCESS



The Project considers the installation of 11000 photovoltaic panels and auxiliary equipment. The following table summarizes the characteristics of the power plant:

Characteristic	Santuario PV power plant
Commercial Operation Date	Expected during October 2017
Site area, ha	8,8
Power DC, MWp	3.51
Power, MW AC	2.99
Modules	Canadian Solar 320W
Inverters	SMA Sunny Central 760CP XT, 4 Inverters
Tracking System	Single Axis
Connection Voltage, kV	23 kV
Connection Point	Chacabuco feeder (on site)
Guaranteed Performance Ratio, %	81

During construction, the Project will require around 40 or 50 containers 40ft size, containing steel structures, solar panels and other equipments and materials for the Project equipments mounting, transmission line perimeter fence, etc. The transmission line will be mounted on concrete poles and connect to an existing electric power line located by the main access road. Both the Project site and connecting power line stripe have been agreed with the nuns and are covered by a 30 year leasing contract.

During operation phase, the personnel required will be minimum as the operation will be remote controlled. Only during maintenance periods a couple of workers will be necessary on site.

No new roads will be required to access the project since the transit of trucks and vehicles will be by existing ones. The main access is through one of the entrances to the temple at parking sites, and the transit is considered going by a perimeter way until reaching the project site, avoiding or minimizing affection to visitors. The majority of transits will be during construction and will be necessary to plan and coordinate them in order to minimize impacts. On this planning, should be considered two dates where massive visits take place: Virgen del Carmen celebration (by mid of july) and the pilgrimage to the Santuario in October where pilgrims go to pray to Saint Teresa de Los Andes. Both dates are celebrated on weekends, the first

one is on a Sunday 16th July (2017) and the other is on one weekend during October (normally starts on Saturday and finish on Sunday, but there is no defined date yet). As both celebrations will be carried out at weekends, no works will be scheduled for those dates.

The picture below shows the current landscape where the project will be installed. The site project is located in the lowest part of a nearby hill to Sanctuary of Auco (Santuario de Auco), covered mostly by scrubs and pastureland.

FIGURE 3: SANTUARIO PV POWER PLANT SITE PROJECT



4 ENVIRONMENTAL AND SOCIAL CATEGORIZATION AND RATIONALE

The property of the land, where the project will be built, belongs to the religious congregation, Monasterio Carmelitas Descalzas, who have supported and encouraged for the project success.

Regarding to surroundings of the site project, there are no communities identified closer to the project site, however there are households along the main road access to the Sanctuary. The biggest city closer to the project is Los Andes, about 12km away. In general terms, the surrounding fields are for farming.

On November 23rd 2015, the legal representative of California Venture SpA, presented a “Consulta de Pertinencia Ambiental” to the Environmental Authority, including description and background information related to the project. Through the letter N°414, from December 23rd 2015, the Environmental Authority concluded, considering the information presented, the project should not have to enter to the Environmental Assessment System (SEA), considering the project doesn’t exceed 2,99MW and the connection line is 23kV mid voltage. In case of exceeding the specified power capacity for the project or the connection line exceeds 23kV, should obligatorily enter to SEIA. The useful lifetime of the project is 30 years.

Figure 1. Project Location



Source: Google Earth

The land is owned by Monasterio Carmelitas Descalzas and there is no exploitation for its use, just the presence of scrubs and pastureland. The project will affect 10 hectares for the installation of access pathway, modules, inverters, transformer and mid voltage line.

The proposed investments are classified as **Category B** (Medium Risk Projects) because they have potential limited adverse environmental or social risks and/or their impacts that are few in number, generally site-specific, and most likely reversible and easily addressed through mitigation measures.

The Performance Standards that are relevant to this investment include:

PS1: Assessment and Management of Environmental and Social Risks and Impacts;

PS2: Labor and Working Conditions

PS3: Resource Efficiency and Pollution Prevention

PS4: Community Health, Safety and Security

PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources



PS1: Assessment and Management of Environmental and Social Risks and Impacts

Environmental and Social Assessment and Management System

The background information presented for the project, considers to storage raw material and supplies (modules, steel structures, aluminium pieces, concrete, cables, inverters, transformer) during construction phase. During operation, is considered to storage replacement parts such as cables and modules. None of these raw materials, supplies and replacement parts for construction and operation, are classified as hazardous substances accordingly to Chilean regulation.

The residues produced will come from these materials required for both phases before mentioned. During construction, the residues will be: plastics, wood, cardboard and related. The estimated amount of residues during construction will be 0,5 to 1 tonne/month, and will be managed through authorized companies.

The drink water will be provided bottled for construction and operation. Chemical toilets will be used for construction phase and will be maintained by an authorized company.

There were others studies presented for the project: Flora and vegetation, fauna and archaeology. All studies concluded there were not found conservation categorized species, nor archaeological or heritage findings accordingly to national regulations, not affecting any of these environmental components.

Considering the information before mentioned, it is recommended to identify and assess the S&E risks and impacts for construction and operation phase. It is also necessary to assure compliance with local regulations and aligne with IFC Guidelines and PS. An ESMS or an Environmental Management Plan should be implemented in order to identify the applicable environmental, social, safety and health regulations applicable and to guarantee the well managing of these issues during lifetime of the project.

Identification of Risks and Impacts and Management Programs

Considering the information presented for the project, the environmental risks and impacts do not seem to be difficult to manage. The low impacts and risks identified at the “Consulta de Pertinencia Ambiental” presume, prior starting construction phase, to establish an ESMS to make sure of identified ones and to clearly identify potential risks and impacts when the project operates.

Regarding to social risks and impacts, the project is allocated into a private property owned by a religious congregation. Within this field, there is the Sanctuary and temple surrounding by a park. People from several locations come to pray to Santa Teresa de los Andes but they are mainly concentrated in a couple of dates. Nearby communities are few, rural fields and low population describe the surrounding landscape and the biggest city closer is about 10km away: Los Andes. Despite the “Consulta de Pertinencia Ambiental” doesn’t mention anything respect affected communities, an implemented ESMS should help to identify and prevent potential risks and impacts to surrounding communities (if any) and to visitors.

The access to the project will be through existing roads. It will be required to enhance them for trucks and vans traffic during construction. It shall be needed to be carefully during transit and identify potential risks and impacts, due part of access roads are within the Santuario, in particular at the parking site, where many



people parks their cars and walk to the temple. Mitigations measures shall be taken such as: speed limit signals, flagman or flaggers, among others.

Organizational Capacity

From the documents reviewed related to this greenfield PV project, there is no organizational capacity identified for project's management. Once the deal is done, will be required to establish a proper organizational structure including E&S matters management. A full time safety specialist will be needed during construction phase.

Emergency Preparedness and Response

There was no an Emergency or Contingency Plan from revised documents. Therefore, it shall be required to establish ones for construction and operation phases, in order to identify and assess potential emergencies and contingencies risks with proper measures accordingly to them.

Monitoring and review

As soon as identified the E&S risks and impacts, including applicable regulations and IFC's PS, the monitoring process shall proceed for construction and operation phases, covering all lifetime of the project. Periodically E&S reporting is also required in order to check compliance and improvements.

Client's Stakeholder Engagement

As this project was presented as a "Pertinencia Ambiental", which means it didn't require to enter to the Environmental Assessment System (SEA), there was no public audiences or workshops with communities to explain the project and there is no evidence of such instances have been occurred. In any case, there is no formal mechanism established to reach and have a direct communication with communities or any stakeholder. It is requested to implement a Grievance Mechanism accordingly to requirements of IFC PS.

PS2: Labour and Working Conditions

It is required to establish HR policies and procedures in order to secure labour and working condition for direct staff and contractors/subcontractors related to the project. All labour requirements for contractors and subcontractors should be included in the legal agreements. HR policy commitments and procedures should ensure freedom of association, child labour prevention, encourage non-discrimination, avoid the use of forced labour, both for direct staff and contractors and full alignment with Chilean labour laws.

Occupational Health and Safety (OHS)

It is required to verify the OHS regulations and standards applicable to the Project. The managing company should implement an OHS management system/plan for the Project, identifying its OHS risks and impacts for construction and operation phases. Procedures within OHS management system/plan must aim to avoid accidents, injuries and diseases, addressing proper preventive and protective measures and reporting on these matters.



PS3: Resource Efficiency and Pollution Prevention

Due the small scale and the characteristics of the Project, this solar power plant was approved via “Pertinencia Ambiental” where the environmental authority pronounced this project is not susceptible to cause environmental impacts, and therefore, does not need to enter to the environmental assessment system. Considering the low resources consumption, raw materials required and wastes produced by the project during construction, it should promote the sustainable use of resources and pollution prevention accordingly to Chilean regulations and IFC PS3.

Greenhouse gases

Although the Project generation will displace other power plants, there is not evidence whether it will reduce project-related GHG emissions during the design, construction and operation of the project. It should be conducted a GHG emission estimation (before starting operation phase) and calculations during operation in order to be reported annually.

PS4: Community Health, Safety and Security

From the information reviewed, there are no communities identified nearby the project, just a few houses along the main access road to the Sanctuary. Besides, the project will be installed into a private field. Nevertheless, there is a temple within the field which is very visited by people from many locations, as a religious place. The medium voltage line goes within the field until connect to distribution system at the electric pole which is right in front of the Santuario’s field, along the main access road to the temple. In general terms, the project itself produces low social and environmental risks and impacts to communities and people, but it is required to identify and evaluate risks and impacts to health and safety of the visitors and nearby communities, implementing mitigation measures accordingly to their nature and magnitude.

Respect to hazardous materials management and storage, there are no identified for the project as stated at “Pertinencia Ambiental” document. Wastes produced during construction phase are plastics, wood, paperboard and related ones. The emergency preparedness and response will be applicable as well, in order to respond effectively in case of an emergency situation. Also, the managing company will document its emergency preparedness and response activities, resources, and responsibilities, and will disclose appropriate information to affected ones (communities, visitors, authorities, etc.).

PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

From reviewed information, the project presented a Forest Management Plan (FMP), due it is needed to clear the area where hawthorn (*acacia caven*) was identified into the project location. The competent authority approved the Plan where is committed to reforest with hawthorn and quillay (*quillaja saponaria*). The approved surface to forest and reforest is 2,42 hectares.

The project location will affect a natural habitat, but it has been assessed by the environmental authority and approved it considering the information presented the project should not have to enter to the Environmental Assessment System (SEA). The FMP consider to reforest hawthorn, same species that will be cut and clear to install de project, mitigating this impact over the current biodiversity present in the area.



5 SANTUARIO POWER PLANT CORRECTIVE ACTION PLAN

Considering the SEDD results/conclusions and the information and reports provided by the seller, the Project considers the following actions for implement:

Applicable Performance Standards	Gap / Risk	Recommendations	Priority	Responsible	Project cycle phase / Deadline	Completion Indicator
1, 2, 3	It is required to identify all E&S risks and impacts for construction and operation of the project.	Environmental and Social Risks and impacts assessment	High	Solar E	Prior to Construction	Document with environmental, social risks and impacts assessment.
1, 2, 3	There is no Social and Environmental Management System or Plan (SEMS or SEMP) for the project during construction and operation.	A SEMS or SEMP must be established according to characteristics of the projects, incorporating the following elements: (i) policy; (ii) risks and impacts identification and assessment; (iii) management programs; (iv) organizational capacity and competence; (v) preparedness and response to emergencies; (vi) participation of social actors, and (vii) monitoring and evaluation. Develop a policy on social, environmental and risk management, which should be part of SEMS or SEMP. Occupational Health and Safety management as well as incident tracking and follow up, among others, will be included in the SEMS or SEMP.	High	Solar E	Prior to Construction	Established SEMS or SEMP with defined structure and related documents for its implementation.

2	Not having human resources policies and procedures can become an obstacle to build and maintain long-term good relationships between workers and the company.	Formulate the guidelines for implement a human resources policy with procedures to define aspects such as selection criteria, recruitment mechanisms and procedures, induction, manual of functions, training, safety practices and occupational health, etc. Also, within the human resources procedures and requirements, considering the labour conditions and terms of employment according to PS2 of the IFC, as well as the structure of personnel required by the company with the description of job profiles, requirements and hiring records. Additionally, the policy should explicitly describe the guidelines pointing out to non-discrimination, no forced labour, no child labour, and no hinder or prevent the associations and labour organizations.	Medium	Solar E	3 months after takeover	Formulated Human Resources Policy Procedures and related documents to implementation of the Policy
1, 4	Not having a definition of dialogue mechanisms and communication with stakeholders identified for the project, jeopardize the company's image and therefore the acceptance of the project and relations with the communities.	The project must have a policy and explicit information procedures and dialogue mechanisms through which stakeholders may be informed of the project and can present concerns, questions, complaints or claims (Grievance Mechanism).	High	Solar E	Prior to Construction	Communications Policy, procedures, defined dialogue and dissemination mechanisms.
3	Not identified GHG estimation for construction and operation phases of the project.	GHG estimation before construction and annually calculation during operation of the project.	Medium	Solar E	Annually calculation	GHG estimation and annually calculation record.
1	Considering the access road crosses the Sanctuary site, it is required to assess proper measures in order to minimize affection to visitors.	Measures to minimize impacts and risks to visitors should be assessed and implemented when transit of trucks and vehicles during construction and operation phases.	High	Solar E	Prior to construction	Document with measures to be taken for construction and operation phases.



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