



Bioenergia Santa Irene Project
Americas Clean Energy Fund II (AEF II):
Proposed Investment

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1 INTRODUCTION

As required by the guidelines for investing of Americas Energy Fund II Clean Energy (“AEF II CE”), the investments categorized by the General Partner within guidelines categories 1 through 7 the General Partner may determine to make the Investment in accordance with the Partnership Agreement and such Investment will be deemed an “Eligible Clean Energy Investment”.

The following information is presented to the Committee to analyze and provide a recommendation regarding the eligibility of the Proposed Investment as Eligible Clean Energy Investment.

The Proposed Investment described in this report is:

TABLE 1: PROPOSED INVESTMENTS

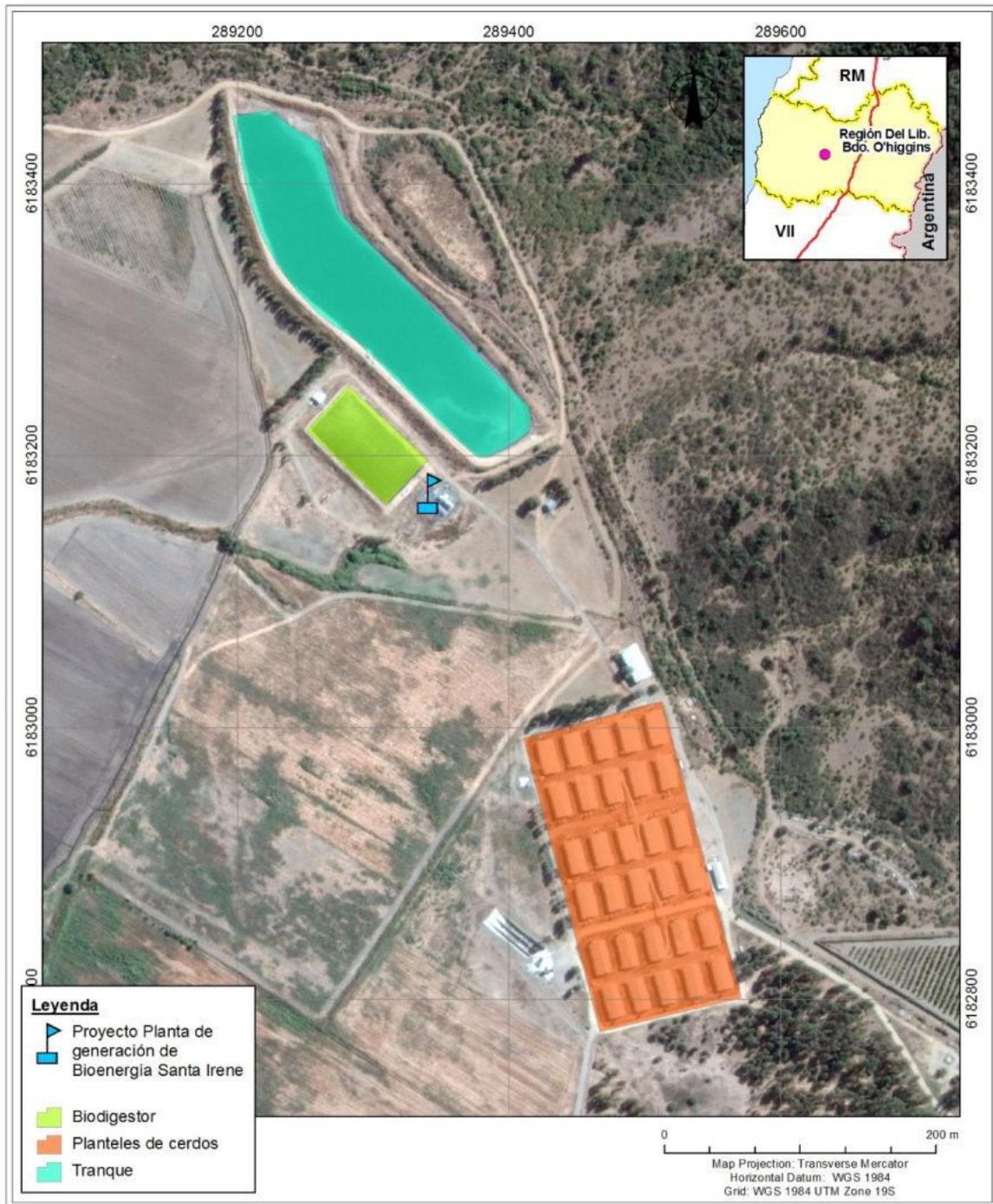
Proposed Investment	Category	Type
Santa Irene Bioenergy Plant	2	Electricity generation from biomass residues

2 CLASSIFICATION AND RATIONALE

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

The proposed investment is an operating project located into a pigs facility of an agricultural company located in Palmilla, Colchagua province, VI region of Chile (see Figure 1 below). This project was presented as an environmental improvement of the pigs slurry management to solve bad smells from the pig facility perceived by the surrounding community. First, it was installed a biodigester to generate biogas and burn it, minimizing smells and vectors (such as flies and rats). Then, it was presented to the environmental authority the installation of a 0,5MW generation plant to produce electric energy through the biogas from the biodigester, injecting energy to the distribution system.

Figure 1. Project Location



As the environmental authority stated that this project does not generate new social and environmental risks and impacts than the ones identified and assessed at the Environmental License of the pig facility and

its following modification (RCA N° 021/2006 and N° 012/2008), there was no need to apply for an specific EIS to the Environmental Impact Assessment System (SEIA).

Considering the project is a small facility installed into much bigger pig facility owned by Maxagro (a Chilean holding dedicated to the production and commercialization of agro-industrial products). It has no mayor impacts on surrounding communities and their health, safety and security, does not require land acquisition or involuntary resettlement and does not affect the biodiversity conservation or natural resources. From the information reviewed and analyzed, Maxagro is in compliance with social and environmental commitments set on its Environmental License applicable to the pig facility where the project operates.

3 PROJECT DESCRIPTION

Santa Irene is a 0.4 MW biogas fuelled power plant and started operations in 2013. The plant is located in Palmilla, Libertador General Bernardo O'Higgins Region, Chile, next to Santa Irene, a pork farming facility owned by Maxagro. Maxagro is a Chilean company dedicated to animal and meat production.

The pig slurry (300 – 400 m³/d, 2.5 % weight in solids) from the feedlots is driven to a reception pool and then to an anaerobic digester owned by Maxagro. The digestate produced in the digester is sent to a reception pool within the boundaries of Maxagro production process.

Santa Irene plant battery limit starts at gas reception, and the plant consists in a gas reception system, a flare, a gas cleaning system, one 0.4 MW engine and the electrical connection to the public distribution grid. The generation sets make and model is MTU Serie 400.

FIGURE 1: SANTA IRENE POWER PLANT





4 SANTA IRENE CORRECTIVE ACTION PLAN

Considering the SEDD results/conclusions and the corrective action plan suggested by the consultant GHD, the Project considers the following actions for implement:



Applicable Performance Standards	Gap / Risk	Recommendations	Priority	Responsible	Project cycle phase / Deadline	Completion Indicator
1, 3	There is no evidence of environmental, social and safety regulations compliance	Identify all environmental, social and safety regulations applicable to the project and manage for their compliance	High	Bio E Spv	May 31, 2017	Document with environmental, social and safety regulations applicable to the project and the plan for their full compliance.
1, 3	Not having identified and assessed the social and environmental risks and impacts, could lead to manage these aspects badly during operation, without mechanisms to control and monitor the E&S risks and impacts.	The project requires to Identify and Assess its Environmental and Social risks and impacts in order to secure the operation of the project and implement actions or mechanisms to control and monitor these aspects, even health and safety aspects.	High	Bio E Spv	May 31, 2017	A document with the environmental and social risks and impacts identified and assessed.



<p>1, 3</p>	<p>The lack of an SEMS for the operation of the power plant can generate constraints in the future related to environmental, safety and social risks.</p>	<p>An SEMS must be established according to characteristics of the company, incorporating the following elements: (i) policy; (ii) risks and impacts identification; (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. Occupational Health and Safety management system as well as incident tracking and follow up, among others, will be included in the SEMS.</p>	<p>High</p>	<p>Bio E Spv</p>	<p>Sept 30, 2017</p>	<p>Established SEMS with defined structure and related documents for its implementation.</p>
<p>1, 3</p>	<p>The absence of an organizational scheme for monitoring the environmental and social aspects of the operation represents risks to the proper implementation and monitoring of environmental management measures. It can lead to further sanctions by the competent institutions.</p>	<p>A structure of staff for managing the E&S risks and impacts, and SEMS must be defined as soon as possible.</p>	<p>High</p>	<p>Bio E Spv</p>	<p>April 30, 2017</p>	<p>Defined and implemented an organizational structure for managing the E&S impacts and risks of the project, and within the SEMS and the Policy of Human Resources for the operation.</p>
<p>2</p>	<p>Not having policies and human resources procedures can become an obstacle to build and maintain long-term good relationships between workers and the company.</p>	<p>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</p>	<p>Medium</p>	<p>Bio E Spv</p>	<p>June 30, 2017</p>	<p>Formulated Human Resources Policy Procedures and related documents to implementation of the Policy</p>



		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.				
1, 3, 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	Bio E Spv	May 31, 2017	Communications Policy, procedures, defined dialogue and dissemination mechanisms.
3	It is required to record and calculate the GHG emissions on Annual Report to the Fund.	Develop an annually calculation of greenhouse gas (GHG) for direct and indirect emissions of GHG.	Medium	Bio E Spv	Annually reported during first quarter	GHG emissions included on Annual Report to the Fund.

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