European Investment Bank

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Public

Environmental and Social Data Sheet

Overview

Project Name:	VILLETA GREEN H2 FERTILISER PLANT
Project Number:	2024-0771
Country:	Paraguay
Project Description:	The Project includes the construction and operation of a low carbon fertiliser plant for the production of 260,000 tpa Calcium Ammonium Nitrate (CAN), located in Villeta, Paraguay.
EIA required:	yes
Project included in Carbon Footprint Exercise[1]:	yes

(details for projects included are provided in section: “EIB Carbon Footprint Exercise”)

Environmental and Social Assessment

Environmental Assessment

The Project consists in the construction and operation of an industrial facility for the production of 260,000 tons per annum of low carbon Calcium Ammonium Nitrate (CAN) fertilizer. The facility will be located in Villeta municipality, Paraguay.

The production process will be powered by 145 MW of hydropower provided by the Itaipu dam, which will be mostly used for the water electrolysis process to produce green hydrogen (110 MW) but also for the other needs of the plant. A Power Purchase Agreement (PPA) for the hydropower supply to the plant has been already finalised by the Promoter with the national authority Administración Nacional de Electricidad (ANDE).

The Project falls under the Law No. 294/93 - Environmental Impact Assessment and Law No. 5211 on Air Quality of the Paraguayan environmental regulatory framework. An Environmental and Social Impact Assessment (ESIA) has been carried out. The ESIA is aligned to internation standards (e.g. IFC) and the EIB Environmental and Social Framework, and consistent to the national legislation requirements. The main impact of the project relates to loss of vegetation over its 24-hectare footprint, air emissions, and the water intake structure and discharge of treated effluent during operation.

In order to minimise the Project impacts, mitigation measures such as biodiversity conservation are foreseen. The facility design includes state of the art systems to minimise freshwater use,

[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: 20,000 tonnes CO2e/year absolute (gross) or 20,000 tonnes CO2e/year relative (net) – both increases and savings.

as well as abatement systems to minimise water and air emissions. An Environmental monitoring plan will be implemented and applied during construction and operation.

The facility would fall under the SEVESO Directive 2012/18/EU remit, if it was located in the EU. It involves industrial risks due to the handling and storage of hazardous substances such as hydrogen, ammonia, nitric acid and ammonium nitrate.

In the design phase, Hazard Identification (HAZID) and Hazard and Operability (HAZOP) studies have been conducted to identify potential hazards and assess associated risks. The design of the facility has been aligned with applicable local and international regulations, as well as best practises. The facility will comply with safety standards for high-risk processes (e.g., API RP 750, IEC 61511), including basic considerations for the safety of hydrogen systems (ISO/TR 15916:2015).

In Paraguay, the environmental authorisations are granted by the Ministry of Environment and Sustainable Development (MADES).

The environmental permit was issued by the competent authority through Resolution No. 105/2023 in September 2023. The environmental permit has been later amended, the updated permit was issued by the competent authority in Oct 2024 through Resolution No. 195/2024.

The facility will feature state of the art technologies which are equivalent to Best Available Technics compliant. The emissions including air and water are compliant with the national law and to IFC EHS guidelines (https://www.ifc.org/content/dam/ifc/doc/2000/2007-general-ehs-guidelines-en.pdf). These are aligned with EU Air and water emission standards.

The Project is located on land which is not considered a critical habitat, nor is a wildlife protected area. The indirect area of impact of the Project is also not affecting such areas. Nonetheless, the land where the Project will be located (~25 hectares) includes some small areas in a good state of conservation, mostly patches of sub-humid forest which may be considered natural habitats. In order to minimise any impacts on biodiversity, a biodiversity compensation plan (BCP) is being developed by the Promoter in cooperation with MADES. These measures will aim to achieve a net-zero loss of biodiversity, and include forest conservation (e.g., adapt the facility design to maintain the most possible forest area) and restoration measures (e.g., rescue and relocation of plant species of conservation importance) and additional conservation actions (e.g., flora and fauna monitoring).

Climate change mitigation:

The Project addresses nitrogen fertilizer production, one of the industrial segments with the highest GHG emissions impact globally. The availability of nitrogen fertilizers is key for the downstream agriculture sector, allowing the optimisation of agricultural and food production. As such the sector has also substantial indirect impacts on food prices. The Project will have substantial positive climate change impacts in terms of reduction of GHG emissions from the production of nitrogen fertilizer. In fact, it will implement an alternative renewable energy powered process for nitrogen fertilizer production, drastically reducing GHG emissions and industrial pollution compared to the standard fossil-based process.

Climate change adaptation*:*

The region where the Project will be located presents the following physical climate risks: an increase in drought events and heat waves, with a consequent intensification of water scarcity, which could potentially represent a risk for the Project. Furthermore, there is also a moderate exposure to the flooding from overflows of the Paraguay River, this risk appear low as the Project plot is more than 2 km away from the plot of land.

To assess such risks, a study of ‘floodability and surface runoff pattern’ has been carried out, including modelling adverse climate events. The study indicates that flooding events and/or water availability in extreme drought conditions will not affect the Project in a critical way. However, to mitigate potential climate risks, even if moderate, the Project has been designed

to cope with a rainfall event with a 25-years return period, and a river flood event with a return period of more than 500 years. Nonetheless, the Promoter will continue to monitor risks associated with climate change for all stages of the Project and look for adaptation measures to mitigate them.

Paris Alignment of projects:

The Project is aligned with the Climate Bank Roadmap, under “Focus 5: Striving for greener industry” by supporting low-carbon technologies to replace carbon-intensive processes of energy intensive industries (Table B: Industry). It also contributes to “Sustainable production on existing agricultural land, focusing on reducing the GHG footprint” (Table E: Bioeconomy).

EIB Carbon Footprint Exercise

The absolute annual emissions of the Project in a standard year of operation are estimated at 1.2 kilo-tonnes CO2e per year. This estimate comprises the Scope 1 emissions (direct emissions from production processes) and Scope 2 emission (indirect emission from the energy production).

The Project will result in substantial avoidance of CO2e emissions, if compared to the Project’s baseline scenario, which represents a scenario that considers the production of the same amount of CAN fertilizer with the standard fossil based state-of-the-art process. Based on the Bank’s carbon footprint exercise methodology, it is estimated that the overall Project will result in emission savings of 463.6 kilo-tonnes of CO2e per year.

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 the Project cost.

Social Assessment

The promoter is currently updating its Human Resources policy to align with international best practices and the core conventions of the International Labour Organization (ILO). Although a general grievance mechanism is already in place, a dedicated worker grievance mechanism will be developed to ensure accessibility for both contracted and subcontracted workers.

The development of a labour management plan and a workers’ code of conduct will be responsibility of the main Engineering, Procurement and Construction (EPC) contractor during the construction phase. While the promoter in cooperation with the EPC contractor will develop and implement measures to minimise disturbances to the local community, including traffic management plans and measures to minimise noise and dust, especially during construction.

The EPC contractor will be responsible for implementing appropriate security measures at the site, as such it will carry out a Security risk assessment and design a security management plan aligned with IFC standards.

The Promoter has already designed an Environmental and Social Action Plan (ESAP), which includes the development of an Environmental Social and Management System (ESMS), covering, among the others, training and Health and Safety policies.

The Project will not cause economic or physical displacement. Only one property will experience minor impact due to an easement for the electricity transmission line and water pipeline. Agreements regarding these impacts, which include temporary right-of-way and permanent effects involving two towers, have been negotiated with the property owners.

The Project does not require any involuntary resettlement as there are no persons living on the plot. There is only one residence in direct vicinity of the project site (i.e., on an adjacent plot). Appropriate measures are being designed to minimise the impact of the Project, including the installation of an acoustic barrier. The closest settlement, Don Bosco, is at a distance of around 26 km from the Project site.

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Public Consultation and Stakeholder Engagement

The Promoter has developed a stakeholder engagement plan, and stakeholder engagement and consultation activities have been carried out including direct communications with directly and indirectly affected people in the area of influence of the Project.

In December 2023 ATOME Paraguay conducted a public consultation in Villeta open to all stakeholders, with community groups, government and district institutions. All stakeholders were informed in advance about the Project and the public consultation. Encouraging the important active participation of residents of the community of Ypeka'e, as well as representatives of the Villeta Council and Municipality, the Ministry of Environment, the Ministry of Industry and Commerce, among other stakeholders. Beside this public consultation ATOME held two meeting with local fishing communities at their location and have opened a telephone and email line for any consultation that might arise. The nearby fishing communities have not opposed the Project, while they expressed some concerns about the potential disturbance to the fishing activities. In this context, further follow up engagement activities are planned, including information sessions in Guarany, which is the local language spoken by a large share of the population, and further communication about specific Project aspects, such as the low amount of the water use, the quality of the water discharged and the impact on the river fauna and flora. The promoter prepared a community grievance mechanism already in function and is in the process of being updated.

Other Environmental and Social Aspects

The Promoter is designing the E&S management plan (ESMP) for the Project, the plan is being elaborated in cooperation with the EPC contractor for the construction phase. It will include all the E&S policies applicable during construction and operation, including, emissions monitoring, OHS, training, etc. Such plans will be managed mostly by the main EPC contractor during the project construction and by the Operations & Management (O&M) contractor during the first years of operation, nonetheless the Promoter will maintain overall oversight and responsibility.

The EPC contractor which will be responsible for the construction operations, holds an ISO 9001/2015; ISO 14001 and 45001 certifications and established Quality and H&S policies, which apply also to their work on clients' sites. The EPC contractor will require other subcontractors to adhere to the same standards, their capability to do so, may be a criterion for procurement.

The Promoter has dedicated resources in place for the management of environmental and social risks and impacts. These resources include currently dedicated ATOME experts in environmental, social and communication related matters as well as in health and safety, an E&S advisor, and two more E&S dedicated resources are currently being added to the Promoter's team along with several external consultants.

An Environmental and Social Action Plan (ESAP), setting a number of milestones, has been agreed with the promoter. These will include the finalization of an Environmental and Social Management System (ESMS), and the updates of other environmental and social management related plans such as worker grievance mechanisms and Human resources policy among others.

Conclusions and Recommendations

The Project is well advanced through the various permitting processes and has obtained the required environmental authorizations for the facility.

The Promoter has committed to address the measures agreed upon in the ESAP. These include the establishment of an ESMS, and relevant policies covering key E&S aspects, including, labour and OHS. The Project will include state of the art industrial equipment to minimise water and atmospheric emissions, as well as water use. The emission levels are

expected to fulfil National requirements and comply with more stringent IFC guidelines. These are aligned with EU Air and water emission standards.

Condition for disbursement:

- The Promoter is expected to achieve the milestones set in the ESAP before the relevant disbursements in line with the bank E&S standards.
- The promoter is expected to finalise the ESMS in line with the bank E&S standards before the first disbursement.

Undertakings:

The Promoter shall:

- Notify the Bank about any subsequent change/modification/extension of the Project, including whether it triggers a permitting process, under the Paraguayan environmental regulatory framework, and submit the relevant assessment reports to the satisfaction of the Bank.

Subject to the above E&S conditions, according to the information currently available on the project and considering the Promoter's capability and the systems in place to manage environmental and social impacts and issues, the project is considered to be acceptable for EIB financing in environmental and social terms. However, a deeper assessment will be carried out during the phase II due diligence.