

## Environmental and Social Review Summary (ESRS) Mendubim Solar PV Power Project – BRAZIL

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### 1. General Information of the Project and Overview of Scope of IDB Invest's Review

The proposed operation consists of the design, construction, operation, and maintenance of the Mendubim Photovoltaic Power Plant ("PV Power Plant") with a capacity of approximately 452.76 megawatts ("MW") and a substation, as well as a 5.17-kilometer ("km") long 230 kilovolts ("kV") Transmission Line ("TL") to connect the PV Power Plant to the Brazilian interconnected grid at the existing Açú III Substation ("The Project"). The Project will be developed in the municipality of Assú, Rio Grande do Norte State, Brazil.

The Project is sponsored by Equinor New Energy AS, Norsk Hydro and Scatec ASA ("Scatec"), each with a 33.33% indirect ownership of the Borrowers (each a "Sponsor" and, collectively, the "Sponsors"). Project construction will be carried out by an Engineering Procurement and Construction Contractor ("EPC Contractor") to be determined.

The Project's Environmental and Social Due Diligence ("ESDD") included the review of, among other, the following documentation: i) the Environmental and Social Impact Assessment ("ESIA") of the PV Power Plant; ii) Simplified Environmental Assessment ("SEA") of the PV Power Plant; iii) the Environmental and Social Management Plan ("ESMP"); iv) the Project's environmental permits; v) the descriptive Project memorials; and vii) the archaeological assessment reports. Given the travel restrictions imposed by the COVID-19 Pandemics, no site visits were performed. Instead, virtual meetings were held with the Sponsors and their technical teams. In addition, some spatial assessments were performed by superimposing the Project elements upon satellite imagery using the software Google Earth.

### 2. Environmental and Social Categorization and Rationale

The Project has been classified in Category B, in accordance with IDB Invest's Environmental and Social Sustainability Policy because its potential environmental and social impacts and risks are deemed to be limited to the Project site and can be mitigated via measures that are readily available and feasible to implement in the context of the proposed operation. Such impacts and risks include: i) vegetation and habitat loss; ii) land use changes; iii) traffic interference with neighboring communities; iv) noise and dust emissions during construction; v) waste and wastewater generation; vi) resettlement of two families; vii) potential contamination of soils and water resources; viii) increased traffic accident risks during construction; ix) potential accidents involving workers during construction and operation, x) erosion, among others. These impacts are deemed to be of medium-high intensity, are generally 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 Performance Standards ("PS") triggered by the Project are: i) PS1: Assessment and Management of Environmental and Social Risks and Impacts; ii) PS2: Labor and Working

Conditions; iii) PS3: Resource Efficiency and Pollution Prevention; iv) PS4: Community Health, Safety, and Security; v) PS5: Land Acquisition and Involuntary Resettlement and vi) PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

### 3. Environmental and Social Context

#### 3.1 General characteristics of the Project's site

The Project site is in a rural area in the municipality of Assú, Rio Grande do Norte State, Brazil. Project properties consist of agricultural fields mostly subjected to extensive livestock rearing (sheep and goats), Umbu<sup>1</sup> tree planting and occasional crops. The area is covered by Caatinga<sup>2</sup> vegetation, adapted to water deficits, and dominated by cacti and shrubs. The climate in the area is semi-arid, with high water deficits during nine months of the year.

The Project site can be accessed using two existing highways BR-304 (federal highway) and RN-233 (state highway) and is also served by a network of unpaved roads. The area, subject to chronic droughts and heatwaves, is sparsely populated. However, it lodges some rural residences, corrals, sheds, and other agricultural infrastructure. There is an organized rural settlement less than one kilometer away from the Project property. The main productive activities in the area include bean and corn crops that are planted during the rainy season, and extensive livestock rearing.

The 5.17 km-long TL alignment crosses areas used for extensive livestock rearing linked to the nearby agricultural settlement.

#### 3.2 Contextual risks

The Project area has been known to be subject to migrations of local communities towards larger cities during extended droughts and heatwaves, as such climatic conditions are known to generate livestock losses and bring hardship to local inhabitants. Other than that, the area is relatively calm and no records of public demonstrations against projects were found.

The Project may cause some interferences in the activities of the nearby agricultural settlement, particularly during the construction phase, linked to increased traffic along the access road. In addition, water consumption by the Project may be an issue due to the significant water deficit in the project surroundings during nine months of the year, as it may generate conflict with neighbors depending on the sourcing of water.

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<sup>1</sup> Umbu or Imbu (*Spondias tuberosa*) is a tree that provides a fruit appreciated by local communities and used as livestock feed. This species withstands long periods of drought as it stores water in their root system. It provides fruit while other vegetation is dry.

<sup>2</sup> *Caatinga* is a specific type of vegetation adapted to severe water deficits which predominates in Northeastern Brazil. The term *Caatinga* means "white forest" due to the color that vegetation assumes during the dry season.

## **4. Environmental Risks and Impacts and Proposed Mitigation and Compensation Measures**

### **4.1 Assessment and Management of Environmental and Social Risks**

The Sponsors hired a consultant to carry out a Simplified Environmental Assessment (“SEA”) required by the Environmental Authority of Rio Grande do Norte (IDEMA)<sup>3</sup>, which was the basis for the Project’s Preliminary Environmental Permit<sup>4</sup>. The Construction Permit was also issued by IDEMA after the preparation of a report detailing the contents of the Project’s Environmental and Social Management Plan (“ESMP”). In addition, an archaeological impact assessment was carried out under close supervision of IPHAN<sup>5</sup>.

#### **4.1.a E&S Assessment and Management System**

The Project will be built by an EPC Contractor. A project-specific Environmental and Social Management System (“ESMS”) will be prepared by the Sponsors under the terms of their Sustainability Policy. In addition to those detailed in the Project’s ESMP, the ESMS will include all requirements included in the environmental permits. The EPC contractor will be responsible for undertaking most of the ESMP.

The Sponsors will hire consultants to supervise the EPC Contractor’s compliance with the ESMP and to undertake some environmental management programs not covered by the EPC Contractor.

#### **4.1.b Policy**

The Sponsors will apply their Sustainability Policy whereby they declare expressly their commitment to: i) comply with the IFC Performance Standards and Equator Principles; ii) use of ESMS in all projects; iii) prepare Environmental and Social Impact Assessments (“ESIAs”) and prepare and execute Environmental and Social Action Plans (“ESAPs”); iv) use of the precautionary, impact management and resource efficiency principles; v) constantly report on CO<sub>2</sub> emissions; vi) reinvest a share of their revenues in local communities to contribute to the UN Sustainable Development Goals (“SDGs”); vii) use local labor; viii) promote stakeholder engagement; ix) maintain grievance mechanisms; x) support scientific research in the area of renewable energy, and xi) proactive investigation to improve environmental and social performance of projects.

#### **4.1.c Identification of Risks and Impacts**

The main environmental and social impacts that the Project is likely to produce include: i) solid waste and wastewater generation; ii) traffic interference; iii) increased risks of traffic accidents; iv) landscape alterations; vi) noise emissions; vii) habitat loss; viii) dust emissions; ix) soil and water contamination; x) risk of accidents involving workers; xi) land erosion; xii) vegetation loss; xiii) potential increase in the cost of living; xiv) employment generation, among others.

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<sup>3</sup> IDEMA (Instituto de Desenvolvimento Sustentável e Meio Ambiente) is the environmental agency responsible for environmental permitting in Rio Grande do Norte State, Brazil.

<sup>4</sup> The Preliminary Environmental Permit accepts project design, location, impact assessment and risk and impact mitigation measures as described in the environmental impact assessment. However, Project construction can only start once the by the Construction Permit is issued.

<sup>5</sup> IPHAN (Instituto do Patrimônio Histórico e Artístico Brasileiro) is the authority responsible for the safeguarding of cultural heritage in Brazil.

#### 4.1.c.i Direct and indirect impacts and risks

Direct impacts include: i) job generation; ii) dust emissions; iii) solid waste and wastewater generation; iv) habitat loss; v) traffic interference; vi) landscape alterations; vii) soil and water contamination; viii) land erosion, ix) increased risks of accidents involving workers, and x) vegetation loss, among others.

Indirect impacts include i) indirect job generation; ii) increased risks of traffic accidents during Project construction; iii) risk of river sedimentation, iv) increase in the cost of living at neighboring communities, v) increased risks of sexual exploitation of women and children; vi) loss of connectivity between natural vegetation stands; vii) alteration in wildlife distribution and behavior; viii) potential neighbors disturbance during construction, etc.

#### 4.1.c.ii Analysis of alternatives

According to Rio Grande do Norte State environmental regulations, solar photovoltaic (“PV”) projects only require simplified environmental impact assessments under which alternatives assessment is not required. Therefore, no assessment of Project alternatives was performed.

#### 4.1.c.iii Cumulative impact analysis

As it is not also required by the local legislation, no cumulative impact assessment was carried out for the Project.

#### 4.1.c.iv Gender risks

At the peak of construction activities, the Project will attract up to 1,200 workers. No worker camps will be needed: some Project personnel will stay in hotels at Assú Municipality<sup>6</sup>, while those recruited locally will continue to use their own accommodations. The worksite will have separate sanitary and locker rooms for males and females.

According to IPEA<sup>7</sup> femicides in Rio Grande do Norte State in the period between 2010 and 2019 ranged from 64 to 148 per annum, with an average rate of 94.2 femicides/annum. In Assú Municipality (Project area) femicides per annum in the same period ranged from 0 to 4, with an average rate of 1.3 femicides/annum. The problem has received attention from Assú Municipality who is working to address the issues of Gender-Based Violence (“GBV”) and sexual exploitation of children and adolescents. A situation room (“Lilac Room”) and a Police Station organized to address GBV are at the preliminary implementation phase. This indicates that Gender-Based Violence (“GBV”) is a relevant issue in the Project’s influence area.

The influx of workers in the area will raise the risk of sexual exploitation of women and children and gender-based violence. Therefore, under the Sponsors supervision, the EPC Contractor will implement the Social Communication and Environmental Education Program that will, among other things, contain specific training modules on the prevention of gender risks and impacts. In addition to the training, potential gender risks and impacts will be discussed as part of the daily

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<sup>6</sup> Assú is a municipality at Rio Grande do Norte State, Where the Project will be developed.

<sup>7</sup> Applied Economics Research Institute (IPEA). Violence Atlas. <https://www.ipea.gov.br/atlasviolencia/>.

toolbox talks, to reinforce awareness against gender-based violence and sexual exploitation of women and children.

#### 4.1.c.v Climate change exposure

At the project site, there is high exposure to droughts, which may be exacerbated due to climate change. Furthermore, under both a climate scenario with lower emissions and one with higher emissions and hence more changes in the climate, there is high exposure to heatwaves. Given this exposure to natural hazards that may be exacerbated by climate change, the Sponsors will implement a Water Management Plan (“WMP”) to promote efficient use of water resources and will consider the local conditions in the Project design to minimize potential damages to solar panels.

#### 4.1.d Management Programs

Under their Sustainability Policy, the Sponsors will prepare a Project specific Environmental and Social Management System (“ESMS”). Such system will encompass, among other topics, the following plans and programs: i) Environmental Management Plan; ii) Erosive Process Control Program; iii) Degraded Areas Monitoring and Recovery Program; iv) Deforestation Control Program; v) Solid Waste and Effluent Management Program; vi) Worker Protection and Safety Program; vii) Environmental Education and Social Communication Program; viii) Urban Equipment Monitoring Program; ix) Worker Training, Hiring and Demobilization Program; x) Works Signaling Program; xi) Works Environmental Control Program; xii) Fauna Management Program; xiii) Wildlife Monitoring Program; xiv) Environmental Emergency and Safety Program, and xv) Project Deactivation Program. In addition, the Sponsors will prepare a Traffic Management Plan.

#### 4.1.e Organizational Capacity and Competency

The Sponsors will supervise compliance with environmental and social impacts and risk management by means of a local consultant that will carry out the Environmental Management Program (“EMP”), the Fauna Management Program and the Wildlife Monitoring Program. As part of the EMP, the consultant will also supervise the EPC Contractor, who will be responsible for the implementation of most of the environmental and social programs during construction.

The EPC contractor will be responsible for the implementation of the following programs: i) Erosive Process Control; ii) Degraded Areas Monitoring and Recovery; iii) Deforestation Control; iv) Solid Waste and Effluent Management; v) Worker Protection and Safety; vi) Environmental Education and Social Communication; vii) Urban Equipment Monitoring; viii) Worker Training, Hiring and Demobilization; ix) Work Signaling; x) Works Environmental Control, xi) Environmental Management, and xii) Traffic Management. To cope with the requirements of the latter, the EPC Contractor will hire a team of environmental and social specialists, who will be responsible for program implementation and oversight.

During operation, the Sponsors will hire consultants to manage environmental and social plans.

#### 4.1.f Emergency Preparedness and Response

The Sponsors have a Corporate Emergency Preparedness and Response Plan (“EPRP”) that covers: i) general provisions; ii) operational crisis management procedures; iii) roles and responsibilities; iv) requirements for local emergency response plan; v) strategic crisis management; vi) holding statements; vii) stakeholder dialog; and viii) checklists. Under this plan, all individual projects are expected to prepare specific emergency preparedness and response plans, adapted to the local context.

#### 4.1.g Monitoring and Review

The Sponsors will hire local consultants that will oversee the EPC Contractor to ensure that it complies with all the Project’s ESMP and other environmental and social management requirements. In this context, the EMP<sup>8</sup> was designed as an ongoing auditing procedure, including regular inspections of the works to assess compliance with environmental and social impact management measures, to report nonconformities, and to implement action plans to resolve these. Regular monitoring of wildlife, erosion, noise, and other relevant aspects will be included in the ESMP.

The Project will be also monitored by IDEMA who will regularly assess compliance with the terms of the environmental permits, and by the Lenders, who will regularly assess compliance with the environmental regulations and the Environmental and Social Action Plan (“ESAP”).

#### 4.1.h Stakeholder Engagement

The Sponsors have prepared a Stakeholder Engagement Plan (“SEP”). Stakeholder engagement will be maintained continuously during Project construction and operation by means of the Social Communication and Environmental Education Program.

#### 4.1.i External Communication and Grievance Mechanisms

Under the terms of their Sustainability Policy, the Sponsors are committed to implement a grievance mechanism to capture both internal and external complaints. The description of the Grievance Channel for external complaints is included within the Client’s SEP. The grievance channels will include a dedicated telephone line, an e-mail, and a Project webpage link. These channels will be publicized in the Project’s area of influence using the construction signage. They will be also used during stakeholder engagement and the implementation of the Social Communication and Environmental Education Program. The channel will be set up to accept anonymous complaints. The grievance procedure will establish timelines for complaints reception, analysis, and response to complainants. During construction, the SEP will be implemented by the EPC Contractor under consultants’ supervision. During the operational phase, the grievance mechanism will be implemented by consultants.

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<sup>8</sup> The Environmental Management Plan (EMP) is one of the sixteen environmental and social management programs that is part of the Project’s overarching Environmental and Social Management Plan (ESMP)

## 4.2 Labor and Working Conditions

### 4.2.a Working Conditions and Management of Worker Relationships

In the peak of construction, the Project will reach 1,200 workers while during operation it will be reduced to 25 workers. The workers will be hired before work commencement by the EPC Contractor. Operation workers will be hired once the construction is finalized.

As part of the ESMP, a Training, Hiring and Demobilization of Local Labor Program will be implemented. Before the mobilization, the EPC Contractor will carry out a survey of the labor available in the municipality, using the existing the National Employment System (“SINE”, as per the system acronym in Portuguese)<sup>9</sup>, as well as a survey with local leaders and the Government. After being hired, the workers will receive initial mobilization training, including health and safety standards and environmental procedures, and, during the first weeks of work, practical training by foremen or managers.

#### 4.2.a.i Human Resources Policies and Procedures

The Sponsors will require the EPC Contractor to follow their Global Human Resources Policy. Diversity and inclusion, equal opportunities, employee motivation, work/life balance, fair remuneration, and people development are promoted. On the other hand, the Policy specifies restriction to employ minors or use products produced by children.

#### 4.2.a.ii Working Conditions and Terms of Employment

Employment conditions will be regulated by the National labor laws (Decree-Law 5452/43<sup>10</sup>, Law 8212/91<sup>11</sup>, Law 8213/91<sup>12</sup>). These present very detailed regulations and worker rights, including legal sanctions for non-compliance. In addition, the Sponsor’s Global Human Resources Policy defines employment conditions that will be applied in the Project. Salaries, working hours, benefits and other conditions will comply with national work regulations.

The working hours will consider the amount forecasted on the National Labor Law, which is 44 hours per week from Monday to Saturday with maximum of 2 hours overtime per day. All the limits will be informed to the employees in the employee handbook.

#### 4.2.a.iii Workers’ Organizations

The Sponsors respect the freedom of association and collective bargaining as part of their Human Rights Policy. Workers will be free to join or form unions.

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<sup>9</sup> Sistema Nacional de Emprego (SINE) is the National Employment System in Brazil. This was created by Brazil’s Ministry of Economy to unify work opportunities, to control payment of unemployment benefits and to support the creation of employment opportunities. It is a national system with agencies distributed in all Brazilian states.

<sup>10</sup> Decree 5453/43 covers the Brazilian Consolidation of Labor Laws.

<sup>11</sup> Law 8212/91 provides for the organization of Social Security.

<sup>12</sup> Law 8213/91 provides for the organization of Social Security.

#### 4.2.a.iv Non-discrimination and Equal Opportunity

Non-discrimination and equal opportunity are emphasized in the Sponsors' Global Human Resource Policy, their Code of Conduct and their Diversity and Inclusion Policy. The EPC Contractor will be required to comply with these policies and code.

#### 4.2.a.v Retrenchment

After finalizing Project construction, the EPC Contractor will likely reassign most of its permanent qualified workforce to other projects and will dismiss most of the local workers who provide unskilled labor. The ESMP includes a Hiring, Training and Demobilization of Local Labor Program that contains measures to minimize the impacts on affected workers. This program will be revised to enhance protection of the work force during the demobilization process.

#### 4.2.a.vi Grievance Mechanism

The Sponsors will prepare an internal grievance mechanism for use by their own employees, as well as the EPC Contractors and subcontractors. This mechanism will allow the capture of anonymous grievances and will guarantee confidentiality and non-retaliation for the claimants.

#### 4.2.b Protecting the Workforce

The Sponsor's Code of Conduct explicitly opposes all forms of slavery, forced labor, trafficking, illicit forms of child labor and violations of human rights in their operations. Prohibition of use of child labor is also contained in their Global Human Resources Policy. The EPC Contractor and other subcontractors will be required to comply with the code and policy.

#### 4.2.c Occupational Health and Safety

The Sponsors have a Health, Safety, Security and Environment ("HSSE") Policy that aims at achieving zero harm to their workforce. In addition, their HSSE Manual and Procedure detail the requirements to comply with the policy.

The Sponsors' HSSE management system is certified in ISO 45001<sup>13</sup>. In addition, a Project-specific HSSE Program has been prepared including objectives, requirements for statutory compliance, organization, responsibilities, activity plan, management plan and appendices. The program clearly specifies the responsibilities of the EPC Contractor and subcontractors regarding health and safety.

#### 4.2.d Provisions for people with disabilities

Under their Diversity and Inclusion Policy, the Sponsors aim to ensure flexibility in hiring qualified individuals with disabilities or special needs. Hence, the EPC Contractor will be required to consider hiring qualified individuals with disabilities or special needs in their recruitment process.

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<sup>13</sup> A certification granted by the International Standardization Organization (ISO) for occupational health and safety management systems.



#### 4.2.e Workers Engaged by Third Parties

Under the terms of the Sponsor's HSSE Policy, Manual and Procedure, compliance with all health, safety, security, and environmental provisions will be mandatory for all contractors and third parties. In addition, under their Global Human Resources Policy, the Sponsors are committed to the fair and equal treatment of job applicants, employees, contractors, suppliers, agency workers, visitors, and customers.

#### 4.2.f Supply Chain

The Sponsors' commitment on the prevention of forced labor is clearly stated in their Corporate Human Rights Policy, Global Human Resources Policy and HSSE Policy, as well as in their Code of Conduct. The Sponsors' expectations are also clearly stated in their Supplier Conduct Principles. Human rights and Code of Conduct training is mandatory for all employees. In addition, due diligence internal training is held on an annual basis for employees.

The Sponsors require that all suppliers comply with their Supplier Conduct Principles. The risk of forced labor is managed by the Sponsors' Sustainability, Compliance, Supply Chain and HSSE department. All policies are ultimately reviewed by the Board and compliance is regularly reported to the Board of Directors' Audit Committee.

The Sponsors have updated their policies to conduct human rights audits on all high-risk suppliers. The requirement to monitor and audit suppliers on forced labor is contained in suppliers' contracts, whereby the Sponsors reserve the right to conduct human rights audits on all suppliers and sub-suppliers whenever deemed necessary. They have also included new targeted measures and databases in their due diligence process to include new suppliers.

The Sponsors are aware of recent allegations of forced labor in the solar panel supply chain and have taken the following steps to ensure that their supply partners follow their integrity standards: i) updating contracts to specifically address the concerns of forced labor practices along the solar panels supply chain; ii) working with specialist consultants on a broader strategy to ensure traceability in the downstream supply chain; iii) working with suppliers to locate solar panel makers that are in condition to trace the origin of polysilicon in their supply chains; iv) collaborating with peers in the industry to understand their approach and create collective pressure on the issue of forced labor in the solar panel supply chain to ensure compliance; and v) cooperating with their stock listed partners on the Bloomberg tier 1 list and continue to work with them on a mitigated sustainable supply strategy.

The Sponsors will prepare a comparative risk assessment about forced labor exposure including the companies under consideration for solar panel provision and will in turn provide the rationale for the selection of a solar panel provider.

### 4.3 Resource Efficiency and Pollution Prevention

#### 4.3.a Resource Efficiency

##### 4.3.a.i Greenhouse Gases

The Project's estimated energy consumption during the construction phase (23 months) is 24.600 kilowatt-hour per month ("kWh/month"). During the operations phase the estimated consumption will be 14.000 kWh/month. In terms of Greenhouse Gas ("GHG") emissions, the Project Scope 1 and 2 emissions will be concentrated in the construction phase. These will reach 159,005 tons CO<sub>2</sub> equivalent in the first year of construction, due to deforestation<sup>14</sup>. In the second year, still during construction, the emissions will fall dramatically to approximately 2,200 tons CO<sub>2</sub> equivalent<sup>15</sup>. During operation, Scope 1 and 2 GHG emissions will fall even more, to approximately 450 tons of CO<sub>2</sub> equivalent/year linked to fuel, electricity, and waste generation<sup>16</sup>. Subsequently, emissions will be maintained at this level for the duration of the Project.

The Sponsors will prepare a GHG Emissions Monitoring Plan and a Forestry Compensation Plan to compensate for the emissions caused by deforestation.

##### 4.3.a.ii Water Consumption

At the peak of construction, the worksite installations will require 18,5 cubic meters per day ("m<sup>3</sup>/day"). The water will be stored in seven 20,000-liter water tanks and one 10,000-liter water tank. A reserve of 24 m<sup>3</sup> will be stored for firefighting. During operation, the panel cleaning will require 5.440 m<sup>3</sup> of water and take 109 days to be completed.

The Client prepared a Water Management Plan ("WMP") to ensure: i) the continuous use of water resources (surface water and groundwater); ii) that the water for the Project is used rationally and with maximum efficiency; iii) that water quality is maintained without adversely affecting people (health and well-being) nor land uses at the site; iv) that the statutory requirements will be implemented, and acceptable agreed standards will be monitored and maintained; v) that potential impacts to the quality of water resources caused by the construction work are mitigated; and vi) protection of the ecosystem surrounding the project area.

To ensure compliance with the regulatory framework and the use of appropriate water sources, the WMP establishes rules for the drilling and using of water wells by the Project, restricts the sources of water that can be used, and sets up the requirements for the selection of water truck companies.

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<sup>14</sup> Project Scope 1 and 2 emissions during the first year of construction include 156,823 tons CO<sub>2</sub> equivalent due to deforestation, 139 tons CO<sub>2</sub> equivalent due to fuel consumption, 48 tons CO<sub>2</sub> equivalent linked to electricity consumption and 1,995 tons of CO<sub>2</sub> equivalent linked to waste production.

<sup>15</sup> Scope 1 and 2 emissions for the second year of Project construction have been estimated as 139 tons CO<sub>2</sub> eq. for fuel, 48 tons CO<sub>2</sub> eq. for electricity and 1995 tons CO<sub>2</sub> eq. for waste.

<sup>16</sup> During operation, estimated electricity consumption will be approximately 40% lower than in the construction phase. GHG Emissions linked to electricity will therefore be reduced to approximately 28 tons CO<sub>2</sub> eq./annum. The use of vehicles will also be significantly reduced. An 85% reduction has been estimated, resulting in fuel emissions of approximately 21 tons CO<sub>2</sub> eq./annum. An 80% reduction in waste generation is expected during operation, resulting in the emissions of 399 tons CO<sub>2</sub> eq./annum, linked to waste.

#### 4.3.b Pollution Prevention

##### 4.3.b.i Wastes

The Sponsors have a Corporate Waste Management Procedure that will be used in the Project, as well as a project-specific Solid Waste and Effluent Management Program, that covers both construction and operation phases.

The Solid Waste and Effluent Management Program states that solid waste needs to be segregated according to its characteristics and temporarily stored at the construction site before it is sent for reuse, recycling, or final disposal. The volumes and weights of all waste generated will be recorded. Waste sent for recycling or final destinations will be managed by authorized companies and will be accompanied by appropriate documentation to ensure that the amount delivered is equal to that disposed or recycled. Hazardous waste will be destined to local licensed providers to ensure adequate disposal.

Non-hazardous waste generated by the Project will include ferrous and non-ferrous materials, plastic, plastic packages, sand, glass, plastic bags, plastic wrapping, tetra packs, food wrappers, old pens and markers, snack bags, candy wrappers, broken glass, straws and others, paper and cardboard, gloves, boots, wood, uncontaminated textiles, styrofoam packaging, disposable cups, napkins, toilet paper, paper towel, tissues, sanitary towel, cement bags, chewing gum, coffee filters, teabags, organic matter including grass, branches, leaves, and food leftovers, fats, oils and greases from kitchen, bricks, blocks, ceramic, tiles, land from earthworks, flooring boards, mortar, gypsum, concrete, and precast concrete parts.

Hazardous waste will include ink cartridges, e-waste, batteries, hydrocarbons, and rags containing them, fluorescent lamps, waste tires, pharmaceuticals, sludge, polyurethane foam containers, modules including wafer from cells, spray cans, empty paint cans, thinner containers, containers, and packaging with leftovers of pesticides and detergents, containers and packaging containing contaminated soil.

The main source of domestic liquid effluents will be the sanitary facilities and the cafeteria at the construction site. These will be treated in a compact sewage treatment plant (septic tank followed by an infiltration ditch). Effluents will reach approximately 18,500 liters/day during construction and around 500 liters/day during operation. The quality of the final effluent prior to its infiltration into the soil will be monitored regularly to assess compliance with national (CONAMA Resolution 430/11<sup>17</sup>) and IFC Environmental, Health and Safety Guidelines.

##### 4.3.b.ii Hazardous Materials Management

The Solid Waste and Effluent Management Program requires that the storage of hazardous waste is done in an area containing impermeable and waterproof floor coverage. The storage bays must have a containment basin to prevent any contamination in the event of a leak, and water and oil separation boxes. For mobile sources of hazardous waste generation, such as fuel supply, lubrication of equipment and machines used in vegetation clearing activities; mobile containment basins will be available to accompany the work fronts.

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<sup>17</sup> CONAMA Resolution 430/11 Provides for the conditions and standards for the release of effluents, complements and amends CONAMA Resolution 357/05.

The accumulated hazardous waste will be transported to a properly licensed landfill and/or properly licensed incinerators by an outsourced company dully regulated for such purpose.

#### 4.3.b.iii Pesticide Use and Management

Pesticides to be used by the Project include household pesticides, weed killers, other products for pest (mice, ants, spiders, thermites, mosquitoes) and vector control. Formulas with lower toxicity and known to have minimal effects on non-target species and the environment, will be preferred.

Pesticides for vegetation control will be avoided. However, should they be needed, risk assessments and special training for operators will be performed to ensure minimal exposure to their purchase, storage, transportation, handling, use, and disposal. Pesticides with lower toxicity class and labels will be preferred.

### 4.4 Community Health, Safety and Security

#### 4.4.a Community Health and Safety

##### 4.4.a.i Infrastructure and Equipment Design and Safety

The main potential health, safety and security issues that can impact the Project's neighboring communities include traffic disturbance and accidents, dust, vehicle fumes, road degradation and noise from construction and operation activities.

To manage such impacts the Sponsors will require the EPC Contractor to implement a Work Construction Signaling Program to ensure safety for workers and residents nearby. Dust emissions will be controlled by spraying of water along the roads and work fronts. Noise levels will be regularly monitored during construction at sensitive receptors to assess compliance with national regulations (ABNT Norm 10,151/19<sup>18</sup>) and with IFC Environment, Health and Safety Guidelines. A Traffic Management Plan, that will also be implemented to manage potential traffic impacts, will also assess potential alternative access routes to the Project and to avert road degradation induced by the works.

##### 4.4.a.ii Hazardous Materials Management and Safety

Other than small quantities of fuel, pain, greases and oils, the Project will not use or manipulate hazardous materials. However, all hazardous waste will be segregated, temporarily stored on site, and dispatched to appropriate disposal or recycling institutions by licensed companies. All the process will be recorded so that no hazardous wastes are left uncontrolled. Access to the Project area will be monitored constantly by a security team, fences, and closed-circuit television ("CCTV") to prevent access from unauthorized personnel. No contact between neighbors and hazardous waste is anticipated.

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<sup>18</sup> ABNT NBR 10,151/2019 – Noise evaluation in inhabited areas. 2019.

#### 4.4.a.iii Ecosystem Services

The main economic activities in the Project's affected area include crops and extensive livestock rearing. Crops are planted only during the rainy season, including corn, beans, and others. The existing vegetation is consumed by livestock. In addition, the properties affected by the Project provide *umbu* fruit, which is gathered by property tenants for their consumption and as animal feed.

#### 4.4.a.iv Community Exposure to Disease

The main potential risks associated with the Project is the onset of sexually transmitted diseases ("STDs") in neighboring communities due to interactions of workers and local people. The occurrence and transmission of STDs will be managed by the Social Communication and Environmental Education Program through awareness campaigns that will involve workers and the community. A protocol to prevent the spread of COVID-19 will also be adopted.

#### 4.4.a.v Emergency Preparedness and Response

A Project-specific Emergency Preparedness and Response Plan will be prepared by the Sponsors. It will identify relevant stakeholders that are to be informed in case of emergencies, including neighboring communities and local authorities.

#### 4.4.b Security Personnel

Project security will be ensured by physical installations consisting of perimeter fence, CCTV, monitoring screens and motion detectors. A specialized security service provider will be hired. Security personnel that will be deployed twenty-four hours a day, seven days a week, will be trained on Voluntary Principles on Security and Human Rights (VPSHR). A specific Security Management Plan will be developed for the Project.

### 4.5 Land Acquisition and Involuntary Resettlement

#### 4.5.a General

The lands to be used by the PV Solar Plant consist of 10 properties owned by 4 owners with whom the Sponsors have signed lease contracts. Also, a strip of land of 40 m wide and 5.17 km long that crosses through 8 properties belonging to 7 owners, will be needed for the TL.

Within the properties to be used by the PV Solar Plant there are three families: two that live as tenants, and one who owns the land. The latter will voluntarily leave the premises as established in lease contract already signed with the Sponsors. The two tenant families (one that has 4 people, including two adult males and two adult females; and the other that has 3 people, including one adult male, one adult female and one teenager female) will need to be relocated. These tenants live in a situation of social and economic vulnerability and use the land to raise animals and grow crops. Therefore, to ensure their adequate and fair relocation process, a Resettlement and Livelihood Restoration Plan will be prepared and implemented by the Sponsors.

The land easement for the TL will not affect any houses, constructions, or crops. Therefore, no relocation of people will be required along this strip. A Public Utility Decree was published by ANEEL<sup>19</sup>, providing legal authorization to the Sponsors to begin the land easement.

The valuation of the affected areas along the TL's corridor was conducted following Brazilian Norms ABNT NBR 14653-1<sup>20</sup> and 14635-3<sup>21</sup>. These norms establish appropriate procedures to value land, constructions, crops, and other improvements whereby a fair compensation to landowners due to the restrictions of use posed by the easement was calculated. The degree of intervention to each property caused by the land easement ranges from 0.44 to 10.99%, with an average affection per property of 4.58%<sup>22</sup>. Therefore, the area affected by the easement strip represents a small proportion of the properties.

The only permanent use restrictions within the easement strip are access roads to the towers and the towers footprints. According to the Brazilian Norm ABNT NBR 5422<sup>23</sup>, which establishes the procedures for the construction and management of TLs and associated easements, the use of the easement strip to cultivate crops is permitted, given that minimum safety clearance is maintained between the plants and the TL. Considering that most of the land to be eased already lodges short stem plants, affected property owners will still be able to continue to perform their agricultural practices and their cattle raising under the TL. The Project's Environmental Education and Social Communication Program will ensure that affected property owners are correctly informed about permitted and restricted uses along the easement strip.

#### 4.5.a.i Project Design

The Project was designed to avoid interference in vulnerable communities, including the selection of land plots for Project's installation and access roads to the Project area. Nonetheless, two families will be involuntarily displaced by the Project. Their resettlement will be completed before works commencement.

#### 4.5.a.ii Compensation and Benefits for Displaced Persons

The compensation of the affected families will be defined in a participatory manner, so that they will be able to decide on the location and conditions of their new lands, houses, other infrastructure, crops, etc. The relocation will ensure that property rights are secured for the affected families in the new locations, that the dwellings there are of equal or better quality than those they had before the relocation, and that the lands offer equal or better opportunities for agricultural use. The Sponsors will also provide support in the moving process.

In addition to the resettlement process, livelihood restoration actions will be implemented to ensure that resettled families are able to restore their livelihoods in the new locations. These actions will be implemented for at least three years after the resettlement. At the end of the three-year period, the Sponsors will provide an independent assessment to evaluate the results

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<sup>19</sup> ANEEL. Authorization Resolution 10,324 of 07/20/2021. Declaration of public utility, for the institution of administrative easement, in favor of Mendubim Geração de Energia Ltda., the required land area for the passage of the 230 kV Transmission Line Mendubim - Açú III, located in the state of Rio Grande do Norte.

<sup>20</sup> ABNT NBR 14653-1. Goods Evaluation: Part 1 - General Procedures. 2019.

<sup>21</sup> ABNT NBR 14653-3. Goods Evaluation: Part 2 – Rural Real Estate.

<sup>22</sup> This corresponds to the percentage occupied by the easement in proportion to the total property area.

<sup>23</sup> ABNT NBR 5422. Project for Aerial Electricity Transmission Lines. 1985.

of the process. If required, additional actions to restore the living conditions of those involved will be implemented.

The property owners along the Transmission Line will be compensated due to the land restriction use along the easement strip.

#### 4.5.a.iii Community Engagement

As part of the Resettlement and Livelihood Restoration Plan, affected families will be informed, engaged, and will also take part of the discussions and the decision-making process, to ensure that the resettlement terms are satisfactory. The Sponsors hired Community Liaison Officers to maintain close contact and to facilitate communications with the affected families.

#### 4.5.a.iv Grievance Mechanism

A specific communication channel and grievance mechanism will be part of the Resettlement and Livelihood Restoration Plan to address suggestions, complaints and other issues raised by the two families to be resettled. Complaints will be recorded, assessed, and responded in a timely manner.

#### 4.5.a.v Resettlement and Livelihood Restoration Planning and Implementation

The Sponsors will implement a Resettlement and Livelihood Action Plan before the construction starts. The Action Plan will include, among other topics, the following: i) models and strategies of compensation for physical and/or economic displacement; ii) relocation procedures and responsibilities; iii) engagement and participation of affected parties in planning, development and decision making; iv) a grievance mechanism and a communication channel specific for the occupants for complaints, suggestions, and information; v) monitoring, evaluation, and reporting actions.

The resettlement component of the plan will be carried out before works commencement. Livelihood restoration will continue for three years after resettlement.

#### 4.5.b Displacement

##### 4.5.b.i Physical Displacement

Physical displacement will affect two families and seven people in total. This impact will be addressed by means of a Resettlement and Livelihood Restoration Plan.

##### 4.5.b.ii Economic Displacement

Economic displacement will affect the current residents of the PV Solar Plant and will be treated by means of a Resettlement and Livelihood Restoration Plan. The landowners along the path of the transmission line easement strip will be compensated using appropriate standards for land valuation. Some land uses under the TL will still be admissible.

## 4.6 Biodiversity Conservation and Natural Habitats

### 4.6.a General

The Project area consists of a combination of modified and natural habitats in the Caatinga Biome. Caatinga vegetation is a type of Forested Steppe Savanna, characterized by its tolerance to semi-arid conditions. The Project location includes modified natural habitats (anthropic Caatinga) which is used for crops and livestock rearing, and denser vegetation stands which are representative of reasonably undisturbed Caatinga vegetation. The easement path of the Transmission Line will affect mostly modified habitat covered by low lying vegetation and exposed soils.

The Project will remove 700.58 hectares of vegetation, affecting both modified and natural habitats.

### 4.6.b Protection and Conservation of Biodiversity

#### 4.6.b.i Modified habitat

Modified habitat includes shrublands and grasslands with sparse trees, which have been previously affected by crops and livestock grazing. In some areas there are signs of vegetation recovery due to lack of recent use by landowners and tenants. These areas are used by a series of fauna species adapted to disturbed habitats, including the Lava Lizard (*Tropidurus hispidus*), the Small Crab (*Ameiva ocellifera*), the Tropical Kingbird (*Tyrannus melancholicus*), the Guira Cuckoo (*Guira guira*), the Spix Yellow-toothed Cavi (*Galea spixii*), the Crab-eating Fox (*Cerdocyon thous*), and many other generalist species. Some 69.24 hectares of Modified habitat will be affected by Project implementation.

#### 4.6.b.ii Natural Habitat

Natural habitat includes stands of relatively dense Caatinga forest vegetation, including trees and shrubs. This area has two separate strata: the higher are formed by trees, and the lower by shrubs and low-lying vegetation. In this habitat a tree species considered vulnerable by IUCN<sup>24</sup> has been found: the Amburana de Cheiro (*Amburana cearensis*). Another tree species classified as Near Threatened in a Brazilian Threatened Species List<sup>25</sup> was also found, namely Ipê Roxo (*Handroanthus impetiginosus*). In addition, these forested vegetation stands offer a habitat for wildlife, including the White-eared Opossum (*Didelphis albiventris*), the Six-banded Armadillo (*Euphractus sexcinctus*), the Striped Hog-nosed Skunk (*Conepatus semistriatus*), the Boa Constrictor (*Boa constrictor constrictor*), the Caatinga Parakeet (*Eupsittula cactorum*), and many other species. Some 631.35 hectares of natural habitat will be affected by Project implementation.

The potential record of two IUCN vulnerable species was pointed out in interviews with the local community, including the Giant Anteater (*Myrmecophaga tridactyla*) and the Brazilian Three-banded Armadillo (*Tolypeutes tricinctus*). Although these species were not confirmed by direct observation in the Project area by two separate teams of biologists, a robust Wildlife Monitoring

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<sup>24</sup> International Union for the Conservation of Nature.

<sup>25</sup> CNC Flora. National Center for Flora Conservation. 2021.



Program will be in place to assess wildlife composition in the Project area and evaluate impact management.

The Sponsors will prepare a project-specific Biodiversity Action Plan encompassing the following Programs from the existing ESMP: i) Deforestation Control Program; ii) Fauna Management Program iii) Wildlife Monitoring Program and iv) Degraded Area Recovery Monitoring Program, adding the following programs: v) Flora Rescue Program<sup>26</sup>, and vi) Forestry Compensation Plan<sup>27</sup>, to manage the impacts on biodiversity.

#### 4.6.b.iii Critical Habitat

The Project area is not considered to be critical habitat, although there are indirect reports of the potential presence of some endangered wildlife species.

#### 4.6.b.iv Legally Protected Areas and Internationally Recognized Areas

The Project area does not interfere with any conservation units. The nearest conservation unit is the Açú National Forest, which is 7 km distant from the PV Solar Plant and 12 km distant from the Transmission Line. No internationally recognized area will be affected by the Project.

#### 4.6.b.v Invasive Alien Species

The Project does not bring any perceived risk of alien species introduction.

#### 4.6.c Management of Ecosystem Services

The removal of 700.58 hectares of vegetation, including forested Caatinga, will affect ecosystem services. Therefore, the Sponsors will carry out a Biodiversity Action Plan to minimize biodiversity impacts and to restore and enhance ecosystem services.

### 4.7 Indigenous Peoples

#### 4.7.a General

The Project does not affect indigenous peoples.

### 4.8 Cultural Heritage

#### 4.8.a Protection of Cultural Heritage in Project Design and Execution

During the preparation of the SEA, an archaeological assessment was performed following IPHAN regulations<sup>28</sup>. This assessment, carried out by archaeologists hired by the Sponsors and approved by IPHAN, showed that most of the area is devoid of archaeological materials, but

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<sup>26</sup> The Flora Rescue Program will promote rescue of seeds and seedlings of native flora from the area affected by deforestation for future use in the Forestry Compensation Plan.

<sup>27</sup> The Forestry Compensation Plan will promote vegetation enrichment of the Projects Legal Reserve and Permanent Preservation areas, specific compensation for the removal of *Amburana cearensis*, *Handroanthus impetiginosus* and *Spondias tuberosa*, as well as promoting reforestation and other conservation measures at other protected areas.

<sup>28</sup> IPHAN Normative instruction nº 001/2015. Establishes administrative procedures to be observed by IPHAN in environmental licensing processes in which it participates.

some pottery remains, and lithic materials were found in a particular site. After assessing these results IPHAN concluded that the remains found were not sufficient to characterize an archaeological site or a site of historical interest and authorized the works without any additional requirement.

#### 4.8.a.i Chance Find Procedures

The Sponsors will prepare a chance finds procedure to ensure that if additional archaeological remains are found the works around the finds will be stopped and archaeologists will investigate and communicate with IPHAN to verify if further actions are required.

### **5. Local Access of Project Documentation**

Information relating to the project can be accessed at the following link:  
<https://scatec.com/locations/brazil/#mendubim-brazil-530-mw>.