

INTER-AMERICAN DEVELOPMENT BANK



ISOLUX CORPORATE LOAN

(RG-L1050)

**Environmental and Social Management Report
(ESMR)**

October 2012

Project Team: Valentina Sequi, Team Leader (SCF/INF); Joana Pascual (SCF/INF);
Christophe Prince (SCF/INF); Ulrike Aulestia Vargas (SCF/PMU); Steve Collins (VPS/ESG);
Rodolfo Tello (VPS/ESG); and Jan Weiss (SCF/SYN).

TABLE OF CONTENTS

- I. INTRODUCTION
- II. PROJECT DESCRIPTION
- III. COMPLIANCE STATUS AND PROJECT STANDARDS
- IV. KEY ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS
- V. MANAGEMENT AND MONITORING OF ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY AND LABOR IMPACTS AND RISKS
- VI. REQUIREMENTS TO BE INCLUDED IN THE LEGAL AGREEMENTS

APPENDICES

- A. Solar Power Plants in Peru
- B. Taubate Transmission Line in Brazil

I. INTRODUCTION

A. Summary Table

Country	Regional (Peru & Brazil)
Sector	Infrastructure and Energy
Project Name	Isolux Corporate Loan
Borrower and / or Sponsor	Grupo Isolux Corsan S.A.
Executing Agency and / or Company	Grupo Isolux Corsan S.A.
Transaction Type	Corporate Loan
Total Project Cost (in US Dollars)	US\$287 million
IDB A-Loan (if applicable)	Up to US\$100 million
B-Loan/Co-lenders	N/A
Environmental Category	A

B. Background

- 1.1 Isolux Corsán (“Isolux” or “the Company”), a leading Spanish infrastructure development company with a strong Latin American presence, has requested an unsecured corporate loan from the IDB to support the financing of Isolux’s equity contribution in the *Majes* and *Repartición* solar plants in Arequipa, Peru, as well as to finance their equity contribution in other infrastructure concessions in their pipeline.
- 1.2 In addition to the two solar plants in Peru, Isolux is currently in the process of developing a number of Latin American infrastructure concession projects which it has won through international public bidding, including the Taubate transmission line in Brazil. The project in Brazil proposed under this Corporate Loan has been classified as Category A in terms of environmental impacts.
- 1.3 A due diligence mission of the solar power plants project was conducted by two ESG representatives in July, 2012. Findings and observations gained during the mission, along with information provided in the project’s environmental documentation, are included in Appendix A of this report. The due diligence for the Taubate Project was conducted by an independent environmental and social consultant and can be found in Appendix B of this document.

II. PROJECT DESCRIPTION

- 2.1 **Solar Plants in Peru.** The Project consists of the construction, maintenance and operation of two, 20 MW photovoltaic solar plants in southern Peru, in the Department of Arequipa. The *Majes* solar plant will be constructed in the District of *Majes* and the *Repartición* solar plant in the District of *La Joya*. Each project has an anticipated life span of 25 years, which, based on the efficiency of the panels, may be expanded to 30, or even 35 years. Each facility will be situated on slightly over 100 ha of desert land. These plants are among the first in a growing trend of large-scale solar installations in Latin America.

2.2 Taubate Transmission Line in Brazil. This project involves the construction and operation of an approximately 257 km-long 500kV transmission line between the municipalities of Taubate in the State of Sao Paulo and Nova Iguacu in the State of Rio de Janeiro, Brazil. A new electrical substation will be constructed in Nova Iguacu and an existing substation in Taubate will be expanded. Additionally, a series of other smaller transmission lines will be constructed to connect the electrical grid, including: two 500kV transmission lines, totaling 4.4 km, to connect the existing Angra-Zona Oeste-Grajau transmission line and the new Nova Iguacu substation; a 500kV transmission line to connect the existing Angra-Sao Jose transmission line to the new Nova Iguacu substation and; a 345kV transmission line, approximately 11.3 km-long, to connect the existing Adrianopolis-Jacarepagua transmission line with the new Nova Iguacu substation.

C. Project Schedule and Workforce

2.3 Solar Plants in Peru. Based on information provided in the EA, construction on each project was scheduled to begin in November of 2011 with an eight month construction period. Operations were scheduled to commence in June 2012. The Repartición and Majes facilities went into operations on August of 2012, after a period of testing. Each project was expected to have 130 workers during the construction phase and seven workers during operations, five day-shift workers and two night-shift security guards.

2.4 Taubate Transmission Line in Brazil. A bidding process for the concession from the Brazilian Federal Government, through Agência Nacional de Energia Elétrica – ANEEL (National Electricity Agency) for the construction and operation of a 500-kV power transmission line occurred in September, 2011. The concession contract between Linhas de Taubaté Transmissora de Energia Ltda. (LTTE) and ANEEL was signed on December 09, 2011. The Project plans to hire approximately 1,450 employees, of which, roughly 1,160 will be positions for unskilled workers. Local laborers will be given priority for unskilled labor positions. A 26-month construction phase has been planned for the Project. Approximately 10 skilled workers will remain on staff during operations.

III. COMPLIANCE STATUS AND PROJECT STANDARDS

A. Appraisal Process and Local Requirements

3.1 The appraisal process for this corporate loan was based on a Due Diligence process undertaken by the Bank to assess the level of environmental and social impact and risk of the two projects in the portfolio of Isolux. This process included field missions conducted with the purpose of assessing the environmental and social impacts and risks of their projects, the environmental and social management system of the company, assess the capacity of the staff coordinating the implementation of projects in the field, understand the level of commitment of the company and its employees to undertaking the necessary measures to prevent or mitigate environmental and social impacts, compliance with national legislation and additional measures adopted as

needed, among other aspects intended to assess the overall environmental and social sustainability of this operation.

3.2 As a result of the due diligence process, based on the analysis of the two projects taken into consideration, the environmental and social analysis found that the Majes and Reparticion solar power projects are in compliance with the local requirements and have received all the necessary appraisals in order to operate. ERM, an independent consultant, conducted a due diligence mission in support of the Taubate transmission line project. Their findings indicate that, while this project is yet in the planning stage and much public consultation will be required, particularly relating to land lease or purchase agreement, the project is in compliance with all local regulations.

B. IDB Safeguard Policies

3.3 The main environmental and social safeguard policies that apply to this corporate loan are the Environmental and Safeguards Compliance (OP-703); Involuntary Resettlement (OP-710); Indigenous Peoples (OP-765); Gender Equality (OP-270); Disaster Risk Management (OP-704); and Access to Information (OP-102). A more specific description of which policy applies to which project is included in Appendices A and B.

3.4 This operation triggers the following directives of IDB's OP-703 Environment and Safeguards Policy: B.1 Bank policies; B.2, Country Laws and Regulations; B.3, Screening and Classification; B.4, Other Risk Factors; B.5, Environmental Assessment; B.6., Consultation; B.7, Supervision and Compliance; B.9 Natural Habitats and Cultural Sites; and B.12 Projects Under Construction. These directives are expected to be applicable to all projects, in addition to specific directives applicable to specific projects.

3.5 The general principle behind the application of IDB's safeguards policies is that Isolux be aware of the Bank's environmental and social safeguard policies and applies them across their portfolio when faced with circumstances that require their application. For this purpose, during the design and implementation stages the project team will provide an advisory service regarding the interpretation and scope of IDB policies, including steps to bring project practices into compliance through the organization of supervision missions.

IV. KEY ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS

A. Summary of Key Impacts and Risks

4.1 Each project presents specific key impacts and risks unique to the project based on both the location of the project and the industry sector involved. Specific details concerning the key impacts and risks associated with each individual project are provided in the attached appendices.

- 4.2 The key impacts associated with the solar facilities are loss of natural habitat, water consumption, change in land use, dust generation, and visual impact. Large quantities of non-hazardous materials, primarily polystyrene packaging used to ship solar panels, will be generated by the Project. A program to recycle and reuse these materials should be implemented.
- 4.3 The primary concerns associated with the Taubate transmission line include: potential loss of critical natural habitat (Mata Atlantica forest) including within protected areas, impacts to sensitive species, social impacts (land acquisition, involuntary resettlement, economic displacement), occupational health and safety, community safety, human encroachment along the right-of-way and surrounding areas, change in land use, and visual impact. A potential impact during operations may be the accidental electrocution of birds, particularly large raptors, or other animals, including primates.

B. Positive Impacts

- 4.4 Each project presents specific positive impacts both for the local communities and the nation as a whole. Specific details concerning the positive impacts associated with each individual projects will be provided in the attached appendices.
- 4.5 **Solar Plants in Peru.** The primary positive impacts associated with the solar facilities include: providing a reliable source of green energy; reducing carbon emissions related to the country's energy production; providing job opportunities for both skilled and unskilled workers in the local communities; and several social programs benefiting residents of local communities and several public schools which lack government funding and supplies.
- 4.6 **Taubate Transmission Line in Brazil.** The primary positive impacts associated with the Taubate transmission line include: improving the national grid to provide a more reliable supply of energy in the country's most populated area; providing job opportunities for both skilled and unskilled workers in the local communities and; several social programs benefiting residents of local communities.

V. MANAGEMENT AND MONITORING OF ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY AND LABOR IMPACTS AND RISKS

A. Description of Management Systems and Plans

- 5.1 The requirements applicable for this corporate loan were defined according to the environmental and social level of impact and risk associated to each assessed project. The two projects assessed during the due diligence process include one Category A and one Category B project. Specific requirements applicable to each of these projects can be found in the respective appendices associated to each of them. For the

purposes of project preparation, the operation as a whole activates the requirements applicable to all projects taken into consideration during the due diligence process.

- 5.2 Considering that the present operation is a corporate loan, much of the environmental and social standards applicable to the projects will be based on the practices of Isolux and its implementing partners. Isolux is certified under ISO 9001:2008 Quality Management Systems, ISO 14001:2004 Environmental Management Systems, and OHSAS 18001:2007 Occupational Health and Safety Management Systems standards. The environmental policy of Isolux also requires the organization to regularly monitor compliance of project goals and targets in relation to its environmental policy, including internal audits.
- 5.3 Beyond its own policies, the actions of Isolux and its partners must be framed within the requirements of the national legislations, in addition to the necessary measures to promote good relationships with the local population in the projects' area of influence. Isolux has also a commitment to adhere to the UN Global Compact's ten principles in the areas of human rights, labor, the environment and anti-corruption. Projects implemented by Isolux must also be compliant with IDB safeguard policies addressing environmental and social aspects, according to the type of project being implemented.
- 5.4 In the case of gender, Isolux does not have an explicit gender policy but in practice it has a significant proportion of women among its staff. In the case of Isolux Spain, approximately 15% of the workers are women, which is significant considering that most of the required staff is composed by engineers and other technical staff. The proportion of women varies according to the country and the type of operations in each specific project. The due diligence process did not identify any indication of gender discrimination in the company's operations.

B. Monitoring and Supervision

- 5.5 Monitoring and supervision of both projects would be conducted by Isolux and by the Bank. The Isolux corporate EMS mandates that monitoring and supervision occur on all projects. For each project, an individual, project-specific Environmental and Social Management Plan (ESMP) will be developed which details the monitoring and supervision regime, including schedule and budget. Typically, Isolux conducts quarterly monitoring exercises on its projects.
- 5.6 Following a due diligence mission to the solar facilities, the Bank will require annual monitoring reports from the project. Additional site visits will likely not be required since construction has already been terminated and operations of the facility pose little risk to health, safety and the environment. Quarterly monitoring missions would be requested during Taubaté's construction phase and a supervision report would be prepared following each mission. Additionally, an annual monitoring report would be

required from the project proponent. An annual site visit would be required during early operations.

C. Indicators

- 5.7 The Project consists of two separate sub-projects in different sectors; therefore, general indicators cannot be developed to accurately assess the projects as a whole. Individual indicators for each separate project are described in detail in the two annexes. Each project will have a customized ESMP which will describe the project- specific indicators. Additionally, each project will be assessed against IDB's Environmental and Safeguards Compliance Policy (OP-703) and other relevant policies.

VI. REQUIREMENTS TO BE INCLUDED IN THE LEGAL AGREEMENTS

Prior to Presentation to the Board

- 6.1 Prior to presentation of the Project to the Board of Directors, the Borrower shall, present to the satisfaction of the Bank and as a supplement to the ESMR, a detailed socio-economic survey of impacted commercial and residential properties and sites along the Taubate transmission line project corridors and a preliminary Resettlement, Compensation and Mitigation Plan , developed in accordance with the Bank's Policy on Involuntary Resettlement (OP-710). A Final Resettlement, Compensation and Mitigation Plan satisfactory to IDB must be in place by the end of 2013 and incorporated as standard operating procedure in all Latin American countries as a part of Isolux's Corporate EMS.

Prior to First Disbursement to Taubate

- 6.2 Prior to First Disbursement of the Loan, the Borrower shall fulfill the following conditions in form and substance satisfactory to the Bank:
- (a) Submit to the Bank for approval the Environmental and Social Management Plan (ESMP), including a Communications and Stakeholder Engagement Plan, for the construction phase, consistent with the requirements of IDB's safeguard policies and with the principles and basic elements of ISO 14001 and OSAHS 18000.
 - (b) Provide evidence of implementation of the program Grievance Redress Mechanism.

General Requirements During the Life of the Loan

- 6.3 As determined by IDB's Environmental Safeguard's Unit, in order to be in compliance with IDB's E&S policies and guidelines, IDB shall require and the Borrower shall covenant and agree that the Borrower and each Environmental Party shall:

(a) submit, in form and substance satisfactory to IDB, in accordance with the IDB's Environmental and Social Management Report (ESMR) and schedules provided by IDB or agreed upon by IDB and the Borrower, all E&S reports, plans, schedules, permits, procedures, programs, certificates, investigations, studies, assessments, audits, reviews, and authorizations (the **E&S Documents**) set forth in the Transaction Documents (such term to include all of the documents and agreements relating to the loan, including among other documents, the loan agreement, the project documents, the financing agreements and all other schedules, attachments or documents incorporated therein);

(b) implement the measures required by such E&S Documents in accordance with their terms and the terms set forth in the Transaction Documents;

(c) make and comply with the commitments the Borrower makes under the agreed Environmental and Social Plans and systems in relation to the Project and to each Environmental Party, including commitments to: (i) design, construct, operate, maintain and monitor the Project and any Related and Associated Facilities in compliance with all E&S requirements set forth in the E&S Documents and Transaction Documents, in accordance with the schedules set forth in such E&S Documents, which may include conditions prior to closing, disbursements, construction, project completion, financial completion or other project milestones, and continuous throughout the life of the loan, (ii) implement any specific E&S actions related to the Project agreed upon as a result of the Environmental and Social Due Diligence (ESDD); and (iii) in case of non-compliance or unexpected risks implement a corrective action plan agreed upon with IDB;

(d) comply with IDB's E&S reporting, information, access, public consultation, supervision, monitoring and notice requirements, in substance and form acceptable to IDB, including, as applicable, entering into a tripartite environmental and social monitoring agreement to pay for the services and visits of an independent Environmental and Social Consultant(s);

(e) make and comply with standard IDB E&S representations and warranties, covenants and conditions precedent to disbursement in relation to the Project and each Environmental Party;

(f) make and comply with any required representations and warranties and commitments with respect to the E&S management of Associated Facilities;

(g) provide the standard environmental indemnity required by IDB; and

(h) allocate appropriate resources, reserves and budgets (including, the pertinent component of any reserve account) to comply, in each case outlined in (a) – (g) above with the E&S requirements, commitments and obligations, and provide evidence thereof to the satisfaction of IDB.

APPENDICES

A. SOLAR POWER PLANTS IN PERU

I. INTRODUCTION

- 1.1 This appendix focuses on the analysis of the environmental and social impacts and risks associated to the solar facilities of Majes and Repartición, located in Arequipa, Peru. The information presented next is the result of a due diligence mission of these solar power plants conducted by two representatives of IDB's Environmental Safeguards Unit (ESG): Steven Collins (senior environmental specialist) and Rodolfo Tello (social specialist). This mission was conducted on July 15-19, 2012.

II. PROJECT DESCRIPTION

- 2.1 The Project consists of the construction, maintenance and operation of two, 20 MW photovoltaic solar plants located in southern Peru, in the Department of Arequipa. The Majes solar plant will be constructed in the District of Majes in the Province of Caylloma and the Repartición solar plant will be constructed in the District of La Joya in the Province of Arequipa. Each project has an anticipated life span of 25 years, which, based on the efficiency of the panels, may be expanded to 30, or even 35 years. The construction of the solar facilities was subcontracted to the company T-Solar, while Isolux is expected to undertake the maintenance and operation of the plants.
- 2.2 Each facility will be situated on slightly over 100 ha of desert land. In terms of project components and site layouts, the two projects will be nearly identical, with some minor differences detailed in Table 1, below. Each 20 MW facility will consist of 80,000 photovoltaic solar panels (model TSolar TS420) which will be elevated off the ground through the use of a network of 19,200 cylindrical concrete foundations, each 0.4 m in diameter by 1.7 m deep; there will be 160 support structures, each requiring 120 foundations. Each facility will construct a small substation and a 138 kV transmission line to connect the facility to the national grid, as well as an internal network of distribution cables to connect the solar array to the substation. An unpaved access road will be constructed at each facility. The surface of the access roads will be treated with magnesium chloride hexahydrate, a technique commonly applied to dirt roads to control dust and particulate matter emissions.
- 2.3 Several small buildings and other infrastructure will also be constructed in order to support activities during the construction process and throughout operations. These facilities include prefabricated units to house the invertors, three parking areas, showers and lockers for workers, a kitchen and dining area, on-site offices, equipment storage area, waste storage area, and hazardous waste storage areas. A large area at each facility will be dedicated to materials storage, such as excavated soils. A two meter high perimeter fence will be constructed around each facility to increase security. Precise sizes and dimensions of the above mentioned project components for each facility are detailed in Table 1 below, along with other project specific information.

Figures 1 & 2. General Project Location – Majes & Repartición

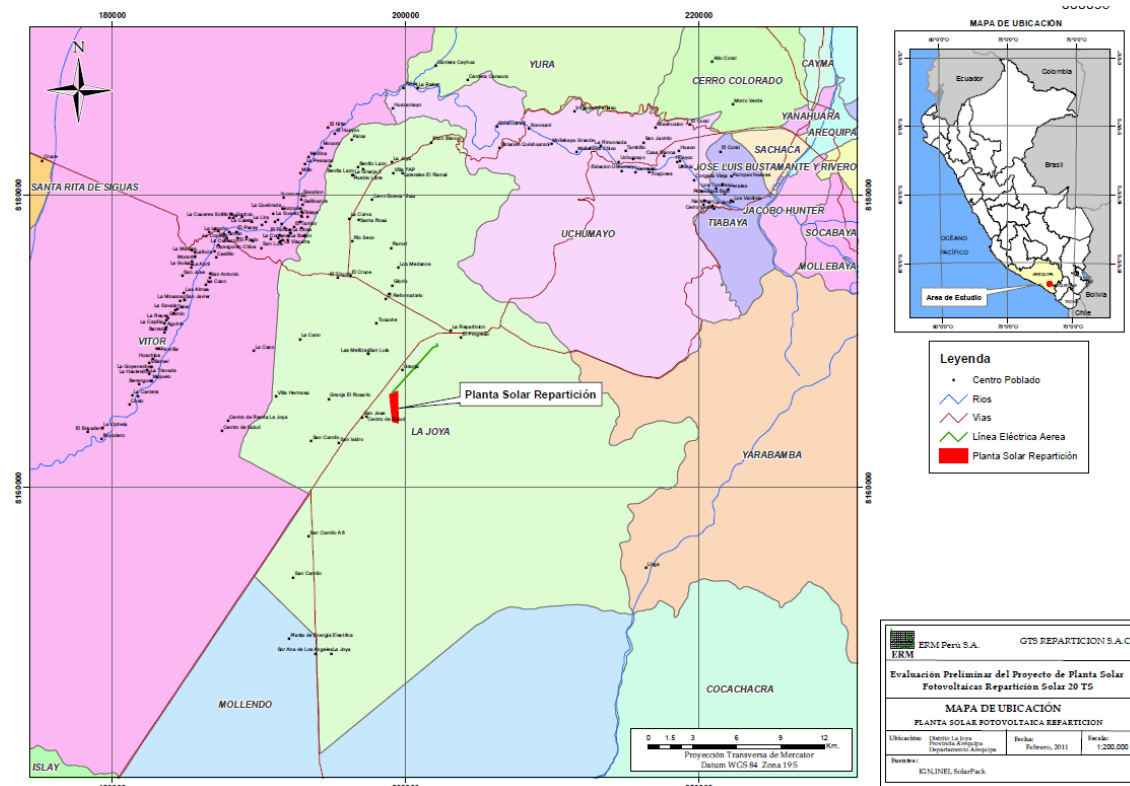
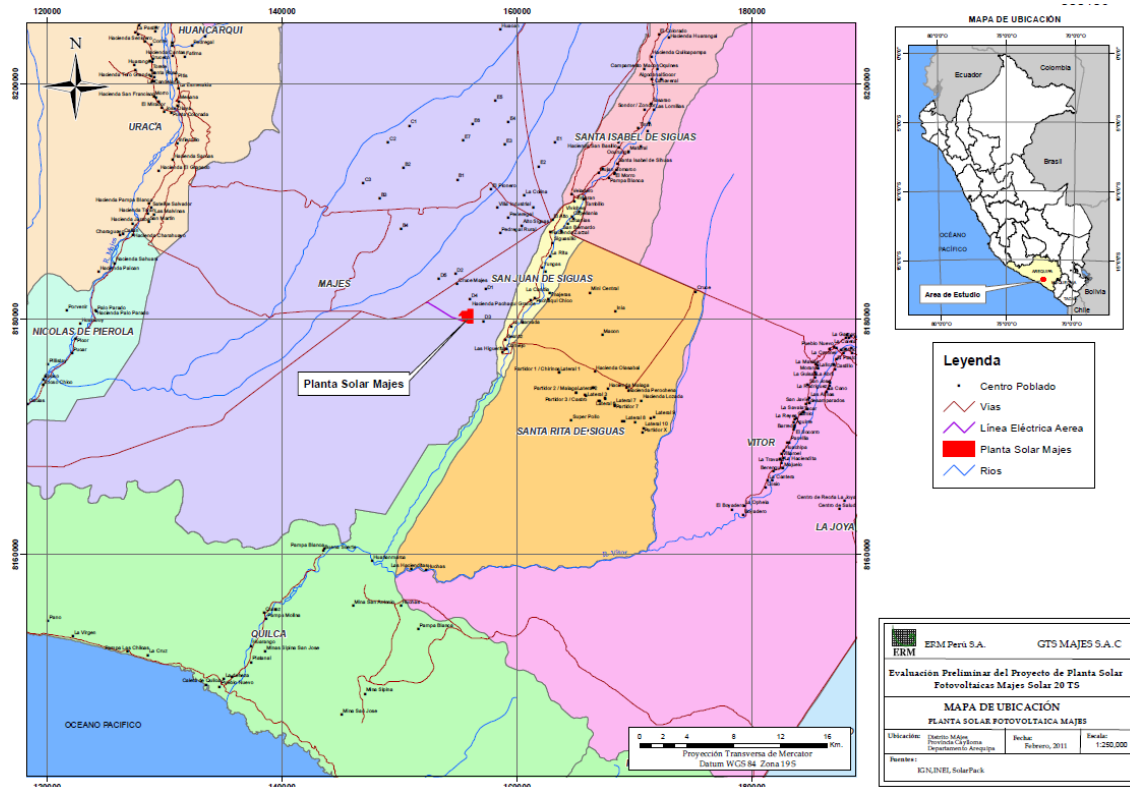


Table 1: Project Component Information

Project Aspect	Majes	Repartición
Capacity	20 MW (80,000 panels)	20 MW (80,000 panels)
Area	105.61 ha	102.35 ha
138 kV Transmission Line	3,412 m	4,674 m x 20 m
Access Road	3,280 m x 6 m	1,142 m x 8 m
Substation	1800 m ² (30m x 60m)	1800 m ² (30m x 60m)
Prefabricated units	21 units (7m x 2.4mx2.5m)	21 units (7m x 2.4mx2.5m)
Number of Foundations	19,200	19,200
Showers and lockers	124.7 m ²	124.7 m ²
Canteen	250 m ²	250 m ²
Offices	187.2 m ²	187.2 m ²
Storage area	936 m ²	936 m ²
Equipment parking	7,500 m ²	7,500 m ²
Staff and visitor parking	2,700 m ² (2 x 1,350 m ²)	2,700 m ² (2 x 1,350 m ²)
Temporary spoils storage	16,772.60 m ²	16,772.60 m ²
Solid waste storage	124.8 m ² (4 x 31.2 m ²)	124.8 m ² (4 x 31.2 m ²)
Hazardous waste storage	12 m ²	12 m ²
Hazardous waste storage for operations phase	135 m ² with 1.8 m security fence	135 m ² with 1.8 m security fence
Use of surface soils	Cut 69,256 m ³	Cut 69,256 m ³
	Fill 66,459 m ³	Fill 66,459 m ³
	Surplus 2,797 m ³	Surplus 2,797 m ³
Perimeter fence	4,847 m long x 2 m high	5,122 m long x 2 m high
Fuel consumption	49,500 l (construction) 50 kg/yr oil (operations)	49,500 l (construction) 50 kg/yr oil (operations)
Water Consumption (construction)	Drinking - 650 l/day	Drinking - 650 l/day
	Sanitary – 19,500 l/day	Sanitary – 19,500 l/day
Water Consumption (operations)	Drinking – 25 l/day	Drinking – 25 l/day
	Sanitary – 750 l/day	Sanitary – 750 l/day
	Panel cleaning – 0.9 l/panel/yr	Panel cleaning – 0.9 l/panel/yr
Effluent	Construction - 15,600 l/day	Construction - 15,600 l/day
	Operation – 600 l/day	Operation – 600 l/day
Wastes (non-hazardous)	Construction - 2.9 T/month	Construction - 2.9 T/month
	Operation – 2.9 T/month	Operation - 2.9 T/month
Wastes (hazardous)	Construction - 0.5 T/yr	Construction - 0.5 T/yr
	Operation – 0.05 T/yr	Operation - 0.05 T/yr
Air Emissions (CO ₂ reduction)	Reduction of 28,079 ton CO ₂ /year	Reduction of 28,127 ton CO ₂ /year
Number of Workers	Construction - 130	Construction - 130
	Operations – 5 day, 2 night	Operations – 5 day, 2 night

A. Environmental Setting

- 2.4 Both Project site's and their Area of Direct Influence, defined as the project site plus a 200 m buffer and the Area of Indirect Influence, described as the project site plus a one km buffer lie in an area typically referred to as the Yunga Region in the desert of southern Peru. The two projects lie at elevations of 1,200 (Majes) and 1,500 (Reparticion) meters above sea level.
- 2.5 Both project sites are described as natural habitat; however, no protected areas or priority zones for conservation were identified in the project area. Due to very little annual precipitation, the project areas do not support any plant life aside from some grasses. No sensitive or protected plant species were identified in the project area.
- 2.6 Also due to the lack of rainfall and vegetation, there are very few animal species surviving in the project areas; however, the DIA for the Majes facility has described the project area as potential habitat for two endangered species, the Andean mountain cat (*Oreailurus jacobita*) and the Andean condor (*Vultur gryphus*); one vulnerable species, the desert lancehead (*Bothrops pictus*), a venomous snake; and one near threatened species, the mountain lion (*Puma concolor*). All of these species may occur in the broader region surrounding the project; however, these species prefer rocky outcrops, which do not occur in either of the project areas.

B. Social Setting

- 2.7 In the surroundings of the Repartición solar facility the only town is San Jose. Most houses in the settlement are arranged at both sides of the Pan American highway. In the case of Majes, the nearest communities are C3, C4 and C5. These names were originally assigned as sector codes during the Agrarian Reform of the country in the 1970s. Currently, the three settlements, along with two others, belong to the area known as “El Pedregal”, in the Juan Velasco Alvarado section of the Majes district.
- 2.8 The following table describes the population of the nearest settlements and their distance from the two solar power plants.

Location of Human Settlements					
Solar Plant	Province	District	Settlement	Population	Distance
Reparticion	Arequipa	La Joya	San Jose	339	2 Km
Majes	Caylloma	Majes	C3	451	2 Km
			C4	536	3 Km
			C5	685	5 Km
Total			4	2011	---

Source: Preliminary Environmental Evaluation & Social Support Program, T-Solar.

- 2.9 The main development problems identified during the assessment of the social conditions of the local population were the low quality of education, very limited access to potable water and sanitation, inadequate prevention and treatment of health problems, weak local organization and absence of leadership. These factors are framed in a context where more than a third of the population lives in poverty rooted in a situation of historical inequality.

- 2.10 In the area of Majes, the main economic activities are cattle raising and agriculture. Even though agricultural practices have reached a significant level of technological advancement, including export crops and industry-oriented milk production, the productive capacity of the area remains stagnant. The main crops in the area include artichoke, corn, alfalfa, paprika, potatoes, squash, carrots and tomatoes. Most farmers use dripping and sparkling irrigation according to the needs of particular crops. Opportunities for independent commercialization and product transformation are very limited.
- 2.11 In relation to cattle raising in the Majes district, the main goal is to obtain milk, which is mostly sold to large companies like Gloria (associated to the Nestlé group) and Laive (associated to Watt's) to produce milk-based manufactured products. These companies collect the milk of the small farmers on a regular basis. The independent local producers and sellers of milk by-products like cheese, butter and yogurt are few. The overall size of the agricultural plots is about 5.5 hectares each. However, there is a significant proportion of land owners who do not work the land themselves but hire other people to do the work for them. These owners obtained the land in the context of the Agrarian Reform of the country and at some point moved to the city of Arequipa. Accordingly, the people currently living in the local settlements for the most part do not own the land.
- 2.12 The main economic activities in San Jose refer to the provision of services for traveling vehicles, particularly cargo trucks and buses serving long-distance routes. Services include small corner stores providing drinks and toiletries, restaurants, lodging, fuel replenishment, car and tire repair shops, vehicle cleaning services, among others. These service-oriented are complemented with small-scale agricultural activities.
- 2.13 Access to basic services near the solar facilities is precarious. For the most part, people lack access to potable drinking water and sanitation. They consume water intended for irrigation. Some families have built their own latrines, but most of them use areas near the agricultural fields as defecating grounds. Most houses have access to electricity, using a temporary connection to the grid, and the internal wiring is deficient. Houses near the Majes facility are mostly built of wooden sticks and matting materials. Overcrowding is a common occurrence, since houses usually have two rooms for about 4.5 members on average. About half of the population lack formal title to their properties.
- 2.14 The population living near the area where the project is implemented presents a very low level of educational achievement. The proportion of people who is unable to read and write in La Joya province is 7.1% (2.6% men and 4.5% women), while in the Majes province the proportion is 4.4% (1.6% men and 2.8% women). These percentages are higher than the ones of other regions in the South of the country. Women constitute the segment with less education due to inherited traditions that privileged the education of men. While school attendance has increased in recent years, low levels of retention and performance are two key issues that reduce the positive impact of education. Most students attending elementary school are children of people who work in the area.
- 2.15 In relation to health, there are not medical posts in the area of influence of the project. In addition, a significant proportion of the population settled in the area of influence of the project does not have access to medical insurance. This is significant because the country

has the Integral Insurance System (SIS), which covers most medical needs of the poor for free. The fact that a significant number of people are not affiliated to this system may reflect the weak relationship between people and the programs of government agencies. The limited availability of health services, along with the lack of access to potable water, has probably contributed to the high level of risk in the health arena. In July 2012 there was an outbreak of fasciolosis in the region, including several cases in Pedregal, the place where the three closest settlements to the Majes solar plant are located. Fasciolosis is a disease caused by parasites common in cattle that when ingested by people pose a serious health condition that may lead to death if it goes untreated. These structural problems are representative of the living conditions of the population.

C. Project Schedule and Workforce

- 2.16 Construction on each project began in November of 2011 with an anticipated eight month construction period. Operations were scheduled to commence in June 2012. The Repartición facility went into operations on July 01, 2012, and the Majes facility is expected to complete construction and move into operations phase in mid-August, 2012. At the time of the site visit, approximately 10,000 panels remained to be mounted at the Majes facility. During the construction phase the Repartición project employed approximately 180 people from the area, while the Majes facility employed 250 people. Approximately 75% of the workforce was locally hired, starting with the nearby communities and extending the geographical area as needed.
- 2.17 During the operations phase, each solar facility is expected to have seven workers, consisting of five day-shift workers and two night-shift security guards. Due to remote monitoring capabilities, from offices in Lima and Spain, it is currently anticipated that only two to three staff will be required during operations. These individuals will be present primarily to fulfill any maintenance operations required on equipment. Security guards will be in place 24 hours a day.

C. Analysis of Alternatives

- 2.18 This project did not include a formal report detailing the analysis of alternatives. The criteria employed by T-Solar for the definition of the sites was to first locate the geographical area of the country which presented optimal conditions for the generation of solar energy. Next, the company identified several possible sites, which they starting discriminating against factors such as accessibility, distanced from human settlements, and alternative uses.

III. COMPLIANCE STATUS AND PROJECT STANDARDS

A. Appraisal Process and Local Requirements

- 3.1 The Repartición project and the Majes project received separate Directorial Resolutions from the Ministry of Energy and Mines on 25 November 2009 and 23 December 2010, respectively, permitting the consulting firm of ERM in Peru to complete Preliminary

Project Evaluations for the individual projects. ERM completed and submitted separate Preliminary Evaluations for the Reparticion project and the Majes project in March 2011.

- 3.2 Following the submittal to the Ministry of Energy and Mines, separate Directorial Resolutions from the Ministry of Energy and Mines were issued for the projects on 29 April 2011 (Reparticion) and 02 June 2011 (Majes). These resolutions provided a classification of the projects as Category 1, and granted project approval for each project.
- 3.3 Both projects were also subject to obtaining a certificate to certifying the absence of archaeological remains within the project area. Before applying for these certificates from the Ministry of Culture, surveys were conducted within the project area. The project also contracted an archaeologist to be present during initial earthworks as part of the Project's Chance Find Procedure and in compliance with the request presented by the Ministry. No cultural sites were discovered at either site during construction.

B. IDB Safeguard Policies

- 3.4 The Project triggers the following directives of IDB's OP-703 Environmental and Safeguards Policy: B.1 Bank policies; B.2, Country Laws and Regulations; B.3, Screening and Classification; B.5, Environmental Assessment; B.6., Consultation; B.7, Supervision and Compliance; B.9, Natural Habitats and Cultural Sites; and B.12 Projects Under Construction. The OP-102, Disclosure of Information Policy also applies for this Project. Based on available documentation and observations during the due diligence mission, the OP-710 on involuntary resettlement will not be triggered for this Project as no resettlement or economic displacement occurred as a result of the Project. Table 1, below, illustrates the Project's capacity to comply with IDB's policies and directives.

C. Project Requirements and Standards

- 3.5 Considering that the present operation is a corporate loan, much of the environmental and social standards applicable to the solar plants will be based on the practices of Isolux and its implementing partners. Isolux is certified under ISO 14001:2004 standards for Environmental Management, as well as OHSAS 18001:2007 Occupational Health and Safety Management standards. The environmental policy of Isolux also requires the organization to regularly monitor compliance of project goals and targets in relation to its environmental policy, including internal audits.
- 3.6 In addition to its own policies, the actions of Isolux and its partners must be framed within the requirements of the Peruvian national legislation, in addition to the necessary measures to promote good relationships with the local population in the projects' area of influence. Isolux has also expressed a commitment to adhere to the UN Global Compact's ten principles in the areas of human rights, labor, the environment and anti-corruption. Isolux projects must also be compliant with applicable IDB safeguard policies.

Table 1: Compliance with IDB Policies and Directives

Policy / Directive	Applicable Aspect	Compliance Rationale
OP-703 Environmental and Safeguards Compliance		
B.1 Bank Policies	Compliance with applicable IDB policies	The project is in full compliance with all IDB policies and directives.
B.2 Country laws	Compliance with country laws and regulations	The project is in full compliance with all Peruvian laws and regulations.
B.3 Screening and Classification	Application of appropriate classification	The project has been classified as a Category B operation.
B.4 Other Risk Factors	Vulnerability to disasters – Earthquake zone	The project is located in an active earthquake zone; however, the site is located on a desert plain well away from rock fall from the mountains. Minimal, small-scale infrastructure will not be susceptible to significant damage or destruction. The project EMS also contains Emergency and Evacuation Plans
B.5 EA Requirements	Application of adequate assessment process	In accordance with both Peruvian regulations and Bank policies for Category B projects, Environmental Evaluations (Assessments) were prepared for each project.
B.6 Consultations	Project has undergone appropriate public consultation	The project has conducted public consultation meetings with the local communities and has implemented several social programs to benefit the local area, particularly schools. The community supports the operation.
B.7 Supervision and Compliance	Internal supervision and reporting	The Isolux corporate EMS contains provisions for self-monitoring and supervision in order to maintain a high level of compliance. Additionally, two Government entities, OSINERGMIN and OEFA, conduct their own supervision of

Policy / Directive	Applicable Aspect	Compliance Rationale
		the project.
B.8 Transboundary Impacts	N/A	Project does not impact neighboring countries
B.9 Natural Habitats and Cultural Sites	Conversion of natural habitat	The project site, in the desert of southern Peru, is considered natural habitat. This habitat type is abundant in the area and the site does not contain any protected areas and no sensitive species of flora or fauna were observed on the site.
B.10 Hazardous Materials	Waste management	The project's EMS provides a strict waste management program. Due to the nature of the operation, few hazardous materials are stored on-site during construction (fuel) and no hazardous materials will be stored at the facility during operations.
B.11 Pollution Prevention	Pollution control and CO ₂ emissions	The project's EMS provides a strict waste management program including a robust recycling program involving the local community. A certified contractor has been hired to remove wastes from the project site on a daily basis during construction; waste removal will shift to weekly during operations. The project will reduce the country's CO ₂ emissions by providing a source of green energy.
B.12 Projects Under Construction	Both facilities were under construction during the due diligence process.	Construction activities at both facilities were observed to be following best practice during the site visit.
B.13 Non-Investment and Flexible Lending Instruments	N/A	N/A
B.14 Multiple Phase Loans	N/A	N/A
B.15 Co-Financing Operations	Potential presence of other lenders	Currently, no other lenders have been approached; the Isolux EMS implemented on this project will comply with other lender's policies.

Policy / Directive	Applicable Aspect	Compliance Rationale
B.16 In-Country Systems	N/A	N/A
B.17 Procurement	N/A	N/A
OP-710 Involuntary Resettlement	N/A	No involuntary resettlement as a result of the project
OP-765 Indigenous Peoples	N/A	No indigenous peoples affected
OP-704 Disaster Risk Management Policy	Earthquake zone	See B.4 above.
OP-270 Gender Equality	Avoiding gender discrimination within the Project or as a result of the Project.	Women were incorporated into the labor force when feasible; no gender discrimination took place in the project.
OP-102 Access to Information Policy	Project information disclosure	The project has maintained a very transparent public consultation process and continues its involvement in the community through various support projects.

IV. KEY ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS

A. Summary of Key Impacts and Risks

4.1 The due diligence mission conducted in July 2012 identified the main impacts and risks as: air emissions related to dust and particulate matter, waste management, operating in an active earthquake zone, and settlement and/or encroachment by squatters on or near the project area, particularly along the transmission line and access road, and the limited information about the solar plants among the local population, which could create communication problems leading to actions based on project misunderstandings.

B. Environmental Impacts and Risks

4.2 The primary impact of concern identified in the environmental documentation was the conversion of natural habitat and potential impact on Red List species with potential to exist within the project's area of indirect influence. The site visit and ESG's Decision Support System (DSS) revealed that approximately 207 ha of natural desert habitat would be impacted. As over five million ha of this habitat exist in the area this does not constitute a significant degradation to the overall habitat. Additionally, the Project area does not support the microhabitat requirements of rocky outcrops preferred by all the Red List species with potential to exist in the area.

C. Social Impacts and Risks

4.3 The due diligence mission to the Arequipa solar plants did not identify any significant social impacts to the nearby population. This is mainly the result of factors such as (i) the

low-impact nature of technology associated to solar plants, and (ii) the fact that the sites are distant from human settlements, the closest ones located at 2 km from the solar plants.

- 4.4 The main social risk associated to the power plants refer to the limited information about the solar plants among the local population. Most people in the surrounding settlements are not familiar with the nature of solar plants, creating a context where this uncertainty could become a fertile ground for rumors and manipulation of peoples' perception of the project. This risk is particularly relevant considering that there have been rumors that the solar plants may be responsible for power shortages, interference with cellular phone reception, and even creating reproductive problems for women. These rumors were countered by informational workshops and meetings with the population, but communications remains an area where improvements are highly recommended.
- 4.5 Another potential risk refers to the possibility of land invasions within the right of way of the transmission line the solar plants use to connect to the national grid. Illegal land grabbing is a common activity in the country, including areas near the project. In the case of Repartición, the area near the plant included the presence of illegal pigpens and human settlements of recent occupation. However, in the event of an invasion of the right of way the only responsibility of the company is to report the situation to the Peruvian government authorities, which have the mandate of maintaining the right of way clear.
- 4.6 Other potential issues examined that after the due diligence mission ended up being considered as issues of no concern include the matter of alternative uses, particularly the use of water that could be destined for agriculture, but after examining in detail the water usage requirements of the power plans it become evident that this would not be a significant problem. The solar panels are only expected to be cleaned with water twice a year, and they do not need to be completely clean to produce the required level of energy. In a similar way, the deserted nature of the soil made was not of high agricultural value, and the amount of land used by the plants is only a small fraction of large extensions of similar terrain in the region that remains idle.
- 4.7 Land acquisition was another topic that ended up being an issue of no concern. The solar plants were built on government lands that were previously abandoned and unclaimed by the local population or any other third parties. Accordingly, the long-term land use agreements in place establish clear usufruct rights and benefits for the involved parties.

D. Cumulative Impacts

- 4.8 According to the information available at the time of the due diligence mission, the ecologically-friendly characteristics of these solar plants do not pose the risk of significant impacts of cumulative nature. They neither interact with other factors leading to combined negative effects nor present negative impacts visible over time. The Projects have been constructed in a rural environment, isolated from any settlements or other infrastructure. No other projects are known to be coming to the area in the immediate future; however, the surrounding environment could support more solar facilities. The Isolux facilities (substation and transmission line) could support three times the existing photovoltaic panels currently constructed.

- 4.9 The success of the Project could attract more growth in the area particularly in the solar energy sector. This potential growth would possibly result in net positive social impacts on the surrounding communities by providing employment to local workers and services as well as providing beneficial social programs to local schools and other social programs such as donation of recyclable goods to the community.

E. Positive Impacts

- 4.10 The most important positive impacts include the reduction in greenhouse emissions in comparison with conventional sources of energy generation in the country. In addition, the operation of these solar plants contributes toward the goals of the Energy Matrix defined by Peru to fulfill its energy needs in a sustainable manner, thereby reducing its impact on global climate change. Both Projects are tied into the Peruvian national grid, thus providing cleaner energy to the nation. Together, the energy generated at the two solar facilities will reduce the country's carbon emissions by over 56,000 tons CO₂/year.
- 4.11 Another contribution refers to the establishment of an experience that would provide the Peruvian government with important information to define the energy fares generated from solar power and assess its economic feasibility at a larger scale, opening the possibility of greater expansion of ecologically-friendly solar plants.
- 4.12 The Projects have had and will continue to have positive benefits for the nearby communities as well as the country, in general. The Project, during construction phase, provided direct employment to approximately 260 workers, 75% of which came from local communities. Various other enterprises benefited from contracts issued to complete the construction activities.
- 4.13 Several local schools have also benefited from the social programs provided by the Project. Several schools have been provided with playground equipment and sports supplies as well as classroom equipment including laptops and projector units. School field trips are envisioned for the future when the plants are in full operation to teach school children about solar energy.

V. MANAGEMENT AND MONITORING OF ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY AND LABOR IMPACTS AND RISKS

A. Description of Management Systems and Plans

- 5.1 Both solar plants have Environmental Management Plans, developed according to the requirements established by the Peruvian legislation and in line with Isolux's corporate EMS. The plans include regular monitoring of the facility and quarterly reports are prepared during construction concerning noise and air emissions. Detailed logs are maintained to document worker trainings, worker health certificates, work site incidents and accidents, waste registers, and vehicle maintenance. An annual report will be provided to the Bank.

- 5.2 Considering that the Environmental Evaluations prepared for both solar plants did not identify social impacts generated by the construction or operation of the two solar facilities, the Environmental Management Plans prepared did not include mitigation measures targeting social issues. However, during the design of the project the company identified the need to go beyond the minimum legal requirements and implement additional measures intended to establish a good relationship with the local population.
- 5.3 The most relevant social activities implemented by Isolux and T-Solar to develop a good relationship with the local communities include:
- i. Public Consultations. Before the construction activities of the project started there were public consultations for each site. These consultations were part of the necessary requirements to apply for funds of the Clean Development Mechanism. Even though the attendance rate of the local population in these events was low, the consultation sessions provided an opportunity for interested people to learn about the project and have their doubts and concerns addressed by company representatives.
 - ii. Communication Plan. This plan describes the institutionalized procedures of Isolux for internal and external communications. It lists the main institutional actors, including local communities; the channels of communication available; the response from the company according to the nature of the message and the type of inquiry or request received; and the procedures to register information exchanges.
 - iii. Community Relations Plan. The coverage of this plan includes both the Majes and Repartición solar plants. Its goal was to establish community participation mechanisms and build positive relationships with interested groups to avoid or minimize potential social conflict situations during project execution. This plan provides both a general framework and specific procedural guidance for a continuous dialogue between the local population and representatives of the company.
 - iv. Social Support Fund. This plan was the result of a social assessment commissioned by T-Solar and carried out by the Procura, a non-profit organization associated to the Company of Jesus with expertise in the area. This assessment identified primary education as the area where the needs were greater and where T-Solar could make a more significant contribution. The study recommended the implementation of a series of measures aimed to improve the educational conditions of the schools in the area. These measures were adopted by T-Solar as its corporate social responsibility strategy. The budget for the 2012 period was greater than US\$ 50,000.

B. Monitoring and Supervision

- 5.4 This project includes different levels of supervision. The most relevant ones include (i) supervision from the Organismo Supervisor de la Inversión en Energía y Minería (OSINERGMIN), government entity responsible for the supervision the energy generation processes and its associated impacts and risks; (ii) Supervision from the Organismo de Evaluación y Fiscalización Ambiental (OEFA), government agency responsible for supervising compliance of the project with the expected environmental standards; (iii) Internal project supervision, within the corporate structure of Isolux via

teams based in Spain; and (iv) Bank supervision, carried out regularly by the project team with the support of specialized consultants as needed.

C. Indicators

- 5.5 In the case of environmental indicators, the projects will be assessed in terms of compliance with the IDB Safeguard Policies and compliance with local regulations. The annual report provided by the Borrower will detail vital information including calculated reduction of CO₂ emissions. Based on current energy production in Peru, each project is expected to create a reduction of 28,079 ton CO₂/year; the development goal is a combined reduction of 40,000 ton CO₂/year. Carbon reductions will be directly related to the amount of energy generated, of which, a goal of 80 GWh has been established; roughly 89 MWh has been calculated as peak performance..
- 5.6 In the case of the Social Support Fund, the most important social management tool adopted by T-Solar to interact with the local communities, the main indicator in the compliance with the proposed timeline. The chronogram of activities includes a list of components, specific activities for each component and expected results.

PHOTO LOG – SOLAR PLANTS



1. Solar panel arrays



2. Electrical substation next to the solar panels



3. T-Solar staff wearing personal safety equipment



4. Local school benefited from T-Solar's Social Fund



5. Disposal of recyclable and reusable materials



6. Typical landscape in areas near the solar plants

B. TAUBATE TRANSMISSION LINE

BRAZIL

ISOLUX - TAUBATÉ – NOVA IGUAÇU TRANSMISSION LINE

Category A Project

**Environmental and Social Due Diligence Report
(ESDD)**

TABLE OF CONTENTS

I. INTRODUCTION	3
II. PROJECT DESCRIPTION	7
III. COMPLIANCE STATUS AND PROJECT STANDARDS	12
IV. KEY ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS	19
V. MANAGEMENT AND MONITORING OF ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY AND LABOR IMPACTS AND RISKS	30
VI. REQUIREMENTS TO BE INCLUDED IN THE LEGAL AGREEMENTS	34

I. INTRODUCTION

A. Summary Table

1.1 The project is summarized in the table ahead:

Country	Regional / Brazil
Sector	Infrastructure and Energy
Project Name	Environmental and Social Due-Diligence/ Analysis
Borrower and / or Sponsor	Grupo Isolux Corsan S.A.
Executing Agency and / or Company	Grupo Isolux Corsan S.A.
Transaction Type	Corporate Loan
Total Project Cost (in US Dollars)	Approximately US\$130 million
Environmental Category	A
Project Team	IDB: Valentina Sequi, Team Leader; (SCF/INF), Steven Charles Collins, Rodolfo Tello, Joana Pascual Jordana ERM: Carolina Retamal (Partner in Charge); José Lembo; Fernanda Britto Fernanda Sampaio; Leonardo Gonçalves; Debora Bluhu;

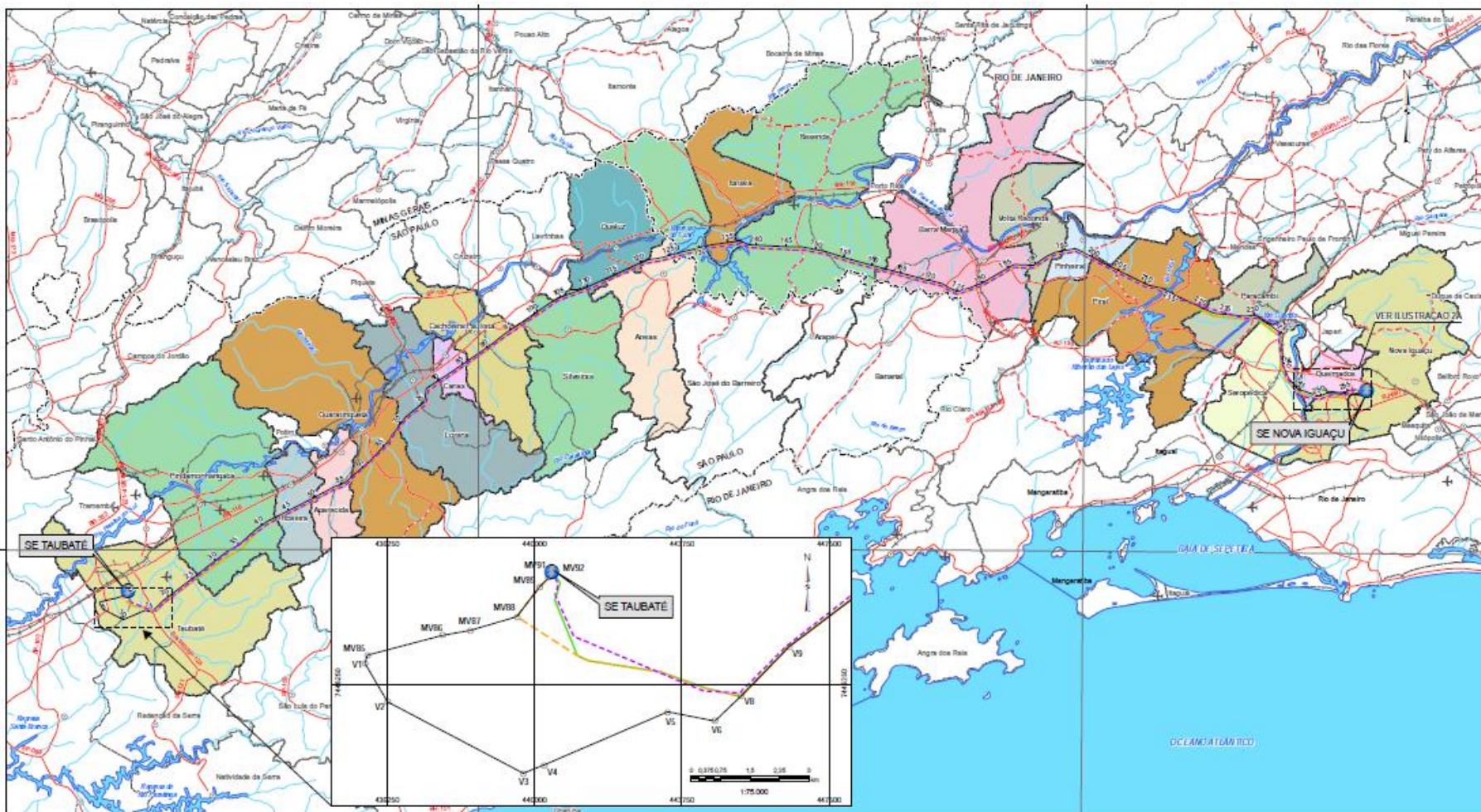
B. Background

- 1.2 Grupo Isolux Corsán (“Isolux” or “the Company”), a leading Spanish infrastructure development company with a strong Latin American presence, has requested an unsecured corporate loan from the IDB to support the financing of Isolux’s equity contribution in the 500-kV Taubaté-Nova Iguaçu transmission line, with approximately 257-km extension, crossing the States of São Paulo and Rio de Janeiro, Southeast of Brazil. The concession of the Transmission Line (TL) construction and operation was granted by the Brazilian Government to a constituted branch of Grupo Isolux Corsán – Linhas de Taubaté Transmissora de Energia Ltda. (LTTE).
- 1.3 In addition to the Transmission Line in the Southeast of Brazil, Isolux is currently in the process of developing a number of Brazilian infrastructure concession projects which it has won through public bidding, including a road concession in the states of Bahia and Minas Gerais and various transmission lines in the North of Brazil. This report focuses solely on the due diligence investigation conducted for the transmission line between the municipalities of Taubaté and Nova Iguaçu, crossing the States of São Paulo and Rio de Janeiro. The due diligence for the LTTE Project was conducted by ERM, as an independent environmental and social consultant.

- 1.4 A due diligence mission was conducted by two ERM representatives, José Lembo (senior environmental specialist) and Fernanda Britto (senior social specialist) on August 07, 2012. No field visits were conducted given the project stage and that no works have been conducted to date. The scope of ERM’s review includes the environmental and social components of the Project. Findings and observations gained during the mission along with information provided in the project’s environmental documentation are detailed within this report.
- 1.5 As explained by LTTE and according to documents reviewed, the TL route was initially defined by the state-owned company EPE – Empresa de Pesquisas Energéticas (Energy Research Company). Two alternatives were defined for bidding purposes. After the bidding process was finished and LTTE was granted concession, field studies were carried out and a “preferred” alternative was defined. Although approximately 11.0 km longer than the basic alternatives, the preferred route was defined based on the minimization of social and environmental impacts of the project. Three alternatives were also analyzed for the construction of the Nova Iguaçu substation and the definition of the preferred alternative followed the same criteria.

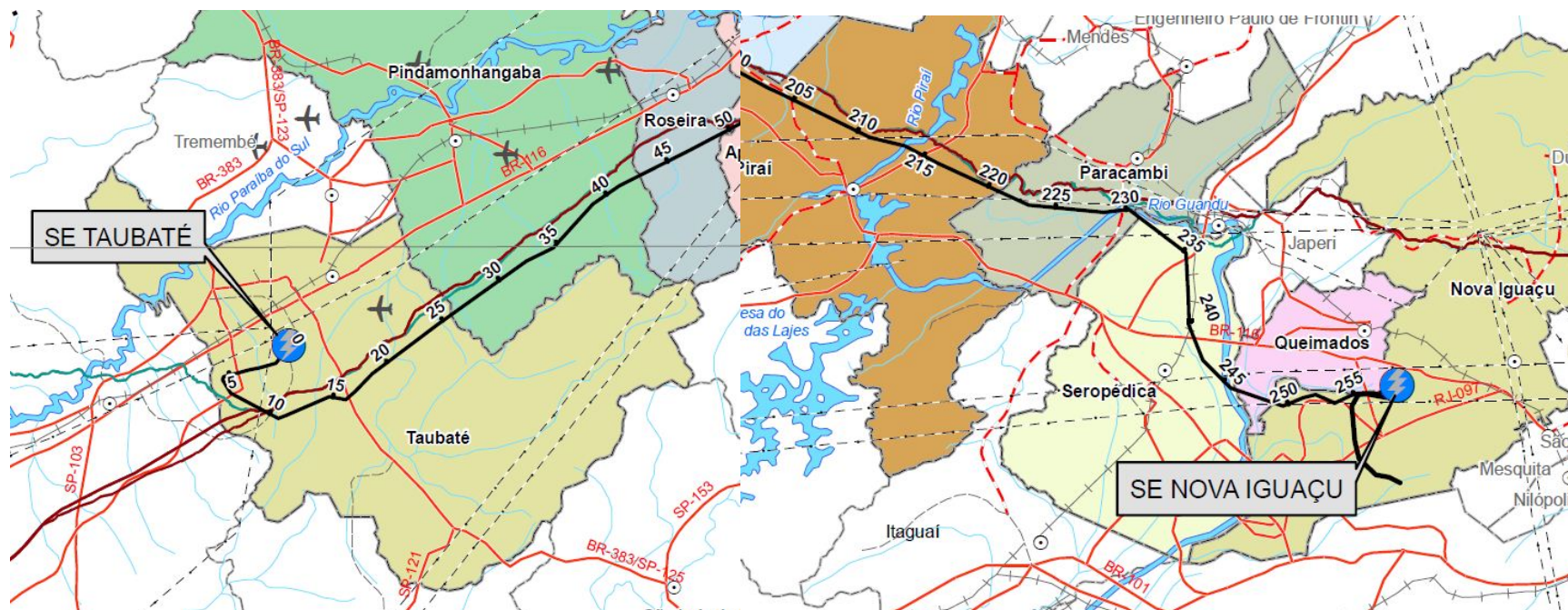
Figure 1 that follows shows the general project location; Figure 2 shows a close view of the transmission line in the municipality of Taubaté and Nova Iguaçu, where the TL respectively begins and ends.

Figure 1 LTTE location



Source: Estudo de Impacto Ambiental - LT 500kV Taubaté - Nova Iguaçu (Environmental Impact Assessment), Bio Dinâmica Rio, March, 2012.

Figure 2 Close view of Taubaté and Nova Iguaçu



Source: Estudo de Impacto Ambiental - LT 500kV Taubaté - Nova Iguaçu (Environmental Impact Assessment), Bio Dinâmica Rio, March, 2012.

II. PROJECT DESCRIPTION

A. Project Components

- 2.1 Linhas de Taubaté Transmissora de Energia Ltda. (LTTE), company wholly owned by Isolux, was granted concession from the Brazilian Federal Government, through Agência Nacional de Energia Elétrica – ANEEL (National Electricity Agency) for the construction and operation of a 500-kV power transmission line. The LTTE project comprises the following elements:
- Expansion of an existing electrical substation located in the municipality of Taubaté, State of São Paulo, to allow the installation of the transmission line;
 - Installation of one electrical substation in the municipality of Nova Iguaçu, State of Rio de Janeiro, to which the transmission line will be connected;
 - Construction of a 500-kV overhead transmission line connecting the Taubaté and Nova Iguaçu electrical substations, with a total extension of approximately 257 km; construction of a 500-kV transmission line stretch (double circuit) connecting existing Angra-São José transmission line to Nova Iguaçu substation; construction of two 500-kV transmission line stretches (single circuit) between the existing TL Angra-Zona Oeste-Grajaú and Nova Iguaçu substation (total extension of approximately 4.4 km); construction of a 345-kV transmission line stretch (double circuit) between the TL Adrianópolis-Jacarepaguá and Nova Iguaçu Substation (total extension of approximately 11.3 km).
- 2.2 The bid process with ANEEL occurred in September, 2011 and the concession contract with ANEEL was signed on December 09, 2011.
- 2.3 The transmission line will follow roughly parallel to BR-116 highway (“Rodovia Presidente Dutra), which connects the cities of São Paulo and Rio de Janeiro and is one of the busiest highways in the country. It will connect two substations located in Taubaté (to be expanded) and Nova Iguaçu (to be built).
- 2.4 To execute the installation of the transmission line and associated facilities, LTTE established a contract with Isolux Projetos e Instalações Ltda., engineering branch of the Isolux Corsan Group. ERM reviewed the contract.

Among the responsibilities established by LTTE in the contract, the following can be mentioned:

- LTTE reserves itself the right to inspect the works;
- Isolux Projetos is responsible for the basic and detailed engineering projects;
- LTTE requires in general terms the compliance with all applicable requirements;
- Specifically regarding environment, health & safety, Isolux Projetos must comply with applicable legal requirements, technical requirements of the environmental permits, inform LTTE about any archaeological feature encountered during the project implementation and respect the Basic Environmental Plans (PBAs) developed by LTTE and approved by the environmental authorities. These requirements must be extended to any Isolux Projetos contractors or persons directly involved in the project.

Isolux Projetos will be responsible for the management of contractors.

After the construction, the operation of the transmission line will be responsibility of other contractor (Plena).

- 2.5 Several temporary installations, such as temporary working camps, borrow areas, dump areas for deposition of inert material will be installed for the construction of the transmission line. LTTE has not yet defined the location of temporary installations. Reportedly, there is a trend that the central working camp will be installed in the municipality of Resende, which is located halfway between Taubaté and Nova Iguaçu.

Table 1: Project Component Information

Project Aspect	LTTE
TL extension – Taubaté – Nova Iguaçu	257.1 km
TL extension – Angra – S. José section	2.2 km
Section Angra-Zona Oeste extension	2.2 km
Section Adrianópolis – Jacarepaguá	11.3 km
Total extension	272,8 km
Nominal voltage	500 kV
Nominal Voltage – Section Adrianópolis – Jacarepaguá	345 kV
Type of structures	Self-supporting / metallic (truss towers)
Number of transmission towers (estimated)	
Taubaté – Nova Iguaçu	510
Angra – S. José section	6
Angra-Zona Oeste Section	6
Adrianópolis – Jacarepaguá Section	25
Standard truss towers height	45,5 m
Special towers height (crossing areas with native vegetation)	62 m

Project Aspect	LTTE
Minimum cable distance to the soil	12.0 m
Towers base dimension	16 x 16 m (14 x 14 m Adrianópolis – Jacarepaguá section)
Width of the Right-of-Way (RoW)	60 m
Tota RoW estimated area	1,636.8 ha
Number of Workers	Construction – 1,400
	Operations 4 operators in substation 6 in TL operations and maintenance

B. Environmental and Social Setting

2.6 Information on environmental and social setting was included in the EIA. The Transmission Line will be installed in areas of the States of São Paulo and Rio de Janeiro. According to the EIA, the TL will cross the following municipalities:

Table 2 – Municipalities crossed by the TL in the State of São Paulo

Municipality	Region (IBGE)	Crossed Extension (km)	Population (IBGE, 2010)
State of São Paulo			
Taubaté	Vale do Paraíba Paulista (State of São Paulo Paraíba RiverValey)	25.8	278,686
Pindamonhangaba		17.1	146,995
Roseira		7.6	9,599
Aparecida		6.9	35,007
Guaratinguetá		11.8	112,072
Lorena		11.0	82,537
Canas		5.6	4,385
Cachoeira Paulista		11.5	30,091
Cruzeiro		-	77,039
Silveiras		12.5	5,792
Queluz		5.4	11,309
Areias		10.4	3,696

Table 3 – Municipalities crossed by the TL in the State of Rio de Janeiro

Municipality	Region (IBGE)	Crossed Extension (km)	Population (IBGE, 2010)
State of Rio de Janeiro			
Resende	Sul Fluminense (Southern State of Rio de Janeiro)	29.6	119,769
Itatiaia		6.2	28,783
Barra Mansa		27.1	177,813
Volta Redonda		6.1	257,803
Pinheiral		5.7	22,719
Piraí		20.5	26,314
Paracambi		10.2	47,124
Seropédica	Metropolitana do Rio de Janeiro (Rio de Janeiro Metropolitan Area)	15.2	78,186
Queimados		3.3	137,962
Nova Iguaçu		7.6	796,257
Total		257,1	2,489,938

Notes: IBGE – Geography and Statistics Brazilian Institute

The Municipality of Cruzeiro will not be crossed by the TL, but is a services and infrastructure regional center.

- 2.7 The Area of Direct Influence (ADI) of the project was defined as the strip of land with 500-m width on each side of the TL axis. Regarding the substations, the ADI was defined as the project site plus a 500 m buffer zone surrounding the sites. The Area of Indirect Influence (AII) on the social and economic environment was defined as a strip of land with 5.0 km width on each side of the TL axis and surrounding the substation sites.

- 2.8 For the socio economic studies the AII included the municipalities crossed by the TL and the municipality of Cruzeiro which, in spite of not being crossed by the TL, was considered a regional attraction center regarding services and infrastructure.
- 2.9 The enterprise is located in the Brazil Southeast Region, which presents a tropical climate, characterized by high temperatures and two distinct and well defined seasons:
- Rainy season during the spring and summer (September to March) with more intense precipitations from December to February;
 - Dry season during fall and winter with dryer period between June and August.
- 2.10 The hydrology at the region crossed by the TL comprises part of the drainage basins of Paraíba do Sul River and Guandu River. According to the EIA, 130 surface water bodies will be crossed by the Transmission Line, being two large rivers, tributaries, creeks and one artificial reservoir (Reservatório do Funil).
- 2.11 The area to be crossed by the TL is represented by a valley that lies on the sedimentary basin between the Serra do Mar and Serra da Mantiqueira mountain chains. The majority of the areas to be crossed by the TL (77%), due to the soil characteristics and the topographic features, present high susceptibility to erosion processes. Approximately 22% is represented by terrains with low to moderate susceptibility to erosion process and 1% is represented by surface water bodies such as rivers, creeks and reservoirs.
- 2.12 According to the EIA, the LTTE is totally inserted in the limits of the “*Serra do Mar*” Biodiversity Corridor, region of large biological importance and priority for the conservation of the “*Mata Atlântica*” biome, for its large diversity of species, including endemic species.
- 2.13 Seismic activity is not considered a risk to the project. According to the EIA, only two seismic events of small magnitude occurred in the project area of influence, being one in 1886 in the municipality of Seropédica - magnitude 4.3 in the Richter Scale, 4.5 km distant from the LT route and one more recent in 1996, in Aparecida, with magnitude 2.3 in the Richter Scale, distant approximately 10 km from the TL route.
- 2.14 The LTTE will be installed near BR-116 (Road *Presidente Dutra*), main vector of population occupation in the region. As previously mentioned, the LTTE will cross 22 municipalities at São Paulo and Rio de Janeiro, from the region *Vale do Paraíba* to the *Baixada Fluminense*, with 2.5 million inhabitants. The *Vale do Paraíba* has gone through the main economic and social cycles of the Brazilian history and is currently a very diversified region, with industrial and rural municipalities. Most of the population lives in center of the urban cities and only 3% are in the rural area. The region attracts workers due its industrial characteristics and the quality and availability of public services

provided (health, education, etc.). The average of the GDP in the region is composed by 64% commerce and services, 35% industrial sector and 1% rural sector, specially producing rice, eucalyptus and milk.

- 2.15 Along the LTTE, the main economic activity is cattle raising and subsistence agriculture. However, many workers are migrating to the cities to find other job opportunities for non-qualified workforce. As a result, the rural area is also assuming the characteristics of dormitory towns and secondary houses for leisure during the weekends.
- 2.16 The States of São Paulo and Rio de Janeiro have large availability of public services, especially health and education, but the system lacks qualified human resources and technical infrastructure. Dengue is the main endemic disease in the region. The illiteracy rate, of those with 5 years-old or more with no access to education, is 5.6% in Rio de Janeiro, and 5.5% in São Paulo. The average at the municipalities crossed by the LTTE is 6.4% and 5.9%, respectively.
- 2.17 Water distribution, sanitation and energy supply is available at the region for more than 90% of the population (average) and it is not considered an issue.
- 2.18 No indigenous or traditional people or land were identified on the 22 municipalities, thus this project shall not impact indigenous or traditional rights.

C. Project Schedule and Workforce

- 2.19 Based on information provided in the EIA, the construction of the TL and substations will mobilize approximately 1,450 employees, of which approximately 1,160 non-qualified workforce. LTTE will reportedly focus on hiring local workforce for the construction works, thus minimizing the increase on demand of public services and infrastructure. The timeframe established for the construction of the transmission line and associated facilities was determined in the contract LTTE signed with ANEEL. According to the contract, the time for implementation of the TL is 26 months after the contract signature (that occurred on December 09, 2011). As reported by LTTE, after the implementation phase, the operational staff will consist of approximately 10 qualified workers for operation and maintenance activities.

III. COMPLIANCE STATUS AND PROJECT STANDARDS

A. Appraisal Process and Local Requirements

Brazilian Environmental Licensing Process Overview

- 3.1 According to the Brazilian environmental licensing process, the activities for the implementation of the Transmission Line demand an environmental permit from federal

scope, by IBAMA (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis) the Brazilian Institute of Environment and Renewable Natural Resources.

- 3.2 Considering the licensing process overview, the Resolutions 01/86 and 237/97 issued by Federal Environmental Council – CONAMA (Conselho Nacional do Meio Ambiente) addresses the environmental permitting at federal level and define that the licensing is required for the construction, installation, enlargement and operation of establishments and activities which use environmental resources and are considered as effective or potential polluters or can cause environmental degradation. The Annex 1 of the CONAMA Resolution 237/97 presents the list of activities and establishments which are subject to environmental permitting.
- 3.3 The next step required is to decide which environmental authority is responsible for the analysis. The Resolutions mentioned above define the rules for determining which sphere of authority (federal, state or municipal) is indicated for the analysis, regarding the dimensions of the impacts generated by the activities/establishment.
- 3.4 Federal Scope – Permit provided by IBAMA (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis) the Brazilian Institute of Environment and Renewable Natural Resources

Establishments and activities:

- I. Located or developed jointly by Brazil and adjacent Country; at territorial ocean waters; at the continental shelf; at the exclusive economic zone; at indigenous lands or at Federal preservation areas;
- II. Located or developed in two or more States;
- III. Whose direct environmental impacts outreach the territorial boundaries of the Country or of one or more States;
- IV. Purposed to investigate, to explore, to produce, to process, to transport, to store and to dispose of radioactive material, at any stage, or activities/establishments that use any kind of nuclear power for any kind of purpose, authorized by the National Commission of Nuclear Energy (CNEN); and
- V. Military bases or establishments, whenever applicable, considered the specific legislation.

Licensing Process under Federal Scope

- 3.5 The environmental licensing process of activities that are considered potential sources of pollution or present potential environmental impacts is regulated at the Federal level by Federal Law 6938/81; Federal Decrees 99274/90 and 3942/01; CONAMA Resolution

001/86 and CONAMA Resolution 237/97. The governmental agency responsible for analyzing the permits requirements is the Brazilian Institute of Environment and Renewable Natural Resources – IBAMA.

The regulations mentioned above describe the main characteristics of the Federal Licensing:

- There are three general permit stages: Preliminary Permit (*Licença Prévia – LP*), Installation Permit (*Licença de Instalação – LI*) e Operating Permit (*Licença de Operação – LO*);
- Permitting procedure start point for large impacting establishments/ activities: Environmental and Social Impact Assessment (Estudo de Impacto Ambiental - EIA). For less impacting cases it may be required only a Preliminary Environmental Report (*Relatório Ambiental Preliminar – RAP*), a Simplified Environmental Report (*Relatório Ambiental Simplificado – RAS*) or other type of assessment; and
- It does not guarantee for the applicant the status quo in force when of its bestowal (= temporal stability).

3.6 The Federal Regulations mentioned before also indicate that the environmental authorities shall define licensing procedures compatible with the planning and implementation steps of new projects. The permitting is divided into three phases:

Preliminary Permit (Licença Prévia - LP)

It is issued at the preliminary planning phase of the establishment/activity, approving its location and conception, certifying its environmental viability and laying down the essential prerequisites and circumstances to be followed during the subsequent phases.

Expiration Term: at least the period stated by the timeline of the plans, programs and projects related to the establishment/ activity, not being more than 5 years.

Installation Permit (Licença de Instalação - LI)

This permit authorizes the construction/ installation of the establishment/ activity, according to the specifications listed in the approved plans, programs and projects, including the environmental control measures and other conditions.

Expiration Term: at least the period stated by the establishment /activity installation timeline, not being greater than 6 years.

Operating Permit (Licença de Operação - LO)

The last stage of licensing authorizes the operation of the establishment/ activity. It is issued after verified the fulfillment of the technical requirements established by the previous permits, including the environmental control measures, and the conditions established for the proper operation procedures.

Expiration Term: varies from 4 to 10 years.

- 3.7 According to the CONAMA Resolution 237/97, article 14, the governmental agency responsible for the permits issuance has a maximum period of 6 months to analyze the requirements. Whenever an EIA is required, the maximum period is 12 months.
- 3.8 Existing plants/ facilities/ developments must obtain new environmental permits whenever any processes are changed, any facilities are expanded or new facilities are constructed, which includes any new equipment or building.

Environmental and Social Impact Assessment

- 3.9 CONAMA Resolution 01/86 requires that Environmental and Social Impact Assessment (EIA) must be conducted by developers for new projects or expansions of projects listed in Article 2, including mining facilities, railways, ports, pipelines, transmission lines above 230 kV, energy power plants above 10 MW etc. However, this list is only indicative, allowing State or Municipal agencies to require an EIA for other planned industries or enlargement of existing ones.

An EIA and its report RIMA - Environmental Impact Report (*Relatório de Impacto Ambiental*) must be developed, submitted to the environmental protection agency and to a public hearing, reviewed and approved before the issuing of the Preliminary Permit.

The authorities responsible for the EIA review at Federal Level are IBAMA and CONAMA (National Environment Council), and at State Level is the Environment Office/ Environmental Council of the respective State.

CONAMA Resolution 01/86 also indicates that the EIA must be conducted by a qualified multidisciplinary team, independent of the project entrepreneur.

Alterations, Suspensions and Annulments

- 3.10 All the 3 stages of permit described previously, besides having an expiration term, are also subject of alterations, suspensions and annulments. These actions can happen on the following cases:
- Violation or unsatisfactory fulfillment of any legal rule or circumstance;

- Omission or misdirection of relevant information during the permitting process; and
- Occurrence of severe environmental and/or health risks.

Publicity

- 3.11 According to the Federal Regulations, the permits must be publicly announced. This measure was created in order to allow the stakeholders to take part on the licensing procedure. As stated by the CONAMA Resolution 006/86, “all the permit requests, renewing and issuing must be published in the official press, as well as in regional or local periodicals of large circulation”. Failure in doing so causes the cancellation of the permit by the government or the judicial power, by means of a class action.

Project Licensing Status

- 3.12 Considering the activities for the implementation of the Transmission Line, all licensing process is under responsibility of IBAMA (federal scope), as the project area is located in two States.

Considering that the nominal voltage of the Taubaté – Nova Iguaçu Transmission Line is higher than 230 kV, an Environmental and Social Impact Assessment (EIA) was required for the licensing process, as established in Federal CONAMA Resolution 01/1986.

The company submitted the final EIA to IBAMA on April, 12th 2012. After that, Public Hearing occurred on July 27th and 28th, 2012 in the municipalities of Taubaté and Volta Redonda.

Currently the company is waiting for the EIA approval by IBAMA and subsequent issuance of the Preliminary Permit – LP.

After obtaining LP, it will be necessary to accomplish all License conditions (Technical Requirements) and then develop the Environmental Programs Report – PBA for obtaining Installation License - LI. This PBA will present the environmental programs detailing.

After accomplishing all LI Technical Requirements, the company is allowed to apply for the Operating Permit – LO.

The environmental licensing status of Taubaté – Nova Iguaçu Transmission Line, can be summarized as follows.

Table 4: Summary of LTTE Licensing Status

Brazilian Environmental License	Project area	Environmental Studies	Phase Status	Public Hearings
The company is waiting for the issuance of the Preliminary Permit – LP from IBAMA, since EIA was submitted in April, 2012.	Taubaté – Nova Iguaçu Transmission Line and associated facilities	Environmental and Social Impact Assessment (EIA) was developed to fulfill legal requirement for the LP application.	The company is waiting for the Preliminary Permit – LP from IBAMA. The LP will include technical requirements to be met by LTTE.	Occurred on June 27 th and 28 th , 2012.

The company is expecting to obtain the LP in October, 2012.

- 3.13 It is not clear yet, whether the environmental permit to be issued by IBAMA will include temporary and support installations or not. In case they are not included, LTTE will be required to apply for specific permits for these installations at the sphere of competence defined by IBAMA.

B. IDB Safeguard Policies

- 3.14 The Project triggers the following directives of IDB’s OP-703 Environmental and Safeguards Policy: B.1, Compliance with Bank policies; B.2, Country Laws and Regulations; B.3, Screening and Classification; B.5, Environmental Assessment; B.6., Consultation; B.7, Supervision and Compliance; B.9 Natural habitats; and B10 Hazardous Materials. The OP-102, Disclosure of Information Policy, also applies for this Project. Based on available documentation, it is not expected that OP-710 on involuntary resettlement will be triggered for this Project. However, the team will monitor that in case there is need for resettlement, this will be conducted in full compliance with IDB’s policy on involuntary resettlement (OP-710).
- 3.15 A consultation process was carried out for the EIA and it included owners of the lands crossed by the LTTE, local government, community nearby, community leaders and public health agencies. The results of the EIA were presented in two public hearings as part of the licensing process, one in the municipality of Volta Redonda, State of Rio de Janeiro and other in the municipality of Taubaté, in the State of São Paulo. Owners of the lands crossed by the LTTE are being contacted for the request of passage authorization, topographic studies, assessment of the financial compensation, negotiation and monitoring of the installation impacts. Further information about communication initiatives and land negotiation is disclosed on item IV – Key environmental and social impacts and risks.

- 3.16 This complies with the O-P-102, Access to Information Policy, and directive B.6, Consultation, of IDB’s OP-703, Environmental and Safeguards Compliance Policy. However, it is recommended the development of a robust communication plan to guarantee timely provision of information and identification of impacts during installation and operation of the LTTE.
- 3.17 There are no indigenous or traditional people impacted by the project. Thus OP-765 on indigenous people will not be triggered for this project. However, if indigenous communities are identified in the area of influence of the project, then IDB’s policy OP-765 will be activated and appropriate management measures will be taken.
- 3.18 The LTTE will be installed in a consolidated occupation area, in rural area, parallel to other transmissions lines and to Petrobras’ (Brazilian oil company) pipelines. Properties are usually registered and land tenure is not considerable a risk to the project. No physical resettlement is planned, because the LTTE installation and operation does not compromise the use of the properties. Thus, OP-710 on involuntary resettlement will not be triggered for this Project. Further information about the process to define financial compensation is disclosure on item V- Management and monitoring of environmental, social, health and safety and labor impacts and risks.

C. Project Requirements and Standards

- 3.19 LTTE is also required to comply with all relevant national and local laws and regulations. Those that are potentially applicable to this investment are summarised in Table xx

Table 5: Relevant Brazilian Regulations

Environmental:

- Brazilian Constitution of 1988.
- Federal Law n. 4771/1965 - Forest Code
- Federal Law 6938/81, Federal Decrees 99274/90 and 3942/01, CONAMA Resolution 001/86 and CONAMA Resolution 237/97 - Environmental Permitting;
- Federal Decree 24643/34 - Brazilian Waters Code - Water from water bodies or wells
- Federal Law 9433/97 - Water Resources National Policy
- CNRH - Water resources National Council - Resolution16/01 - Water Use Permit
- CONAMA Resolution 357/05, which establishes national surface water quality standards; Article 34 was altered by CONAMA Resolution 430/11, which establishes wastewater discharges standards;
- CONAMA Resolution 436/11 – Atmospheric emissions for fixed sources.
- Waste classification and national inventory (CONAMA Resolution 313/02)
- CONAMA Resolution 307/02, establishes criteria for construction waste management;
- CONAMA Resolution 348/02, includes asbestos-containing wastes from construction in the hazardous wastes category;
- Brazilian Standards ABNT 11174 and 12235 that defines respectively non-hazardous and hazardous wastes storage criteria.
- ANEEL Resolution 398/10, which establishes the limits to human exposure to electric and magnetic fields;
- Normative Instruction IBAMA 08/11, which regulates the environmental compensation procedures;
- CONAMA Resolution 371/06, which establishes criteria for the calculation, application, approval and control of environmental compensation costs;
- Regulations that address conservation units located next to the TL route (Itatiaia National Park, Floresta da Cicuta, APA Serra da Mantiqueira, Floresta Nacional Mário Xavier, Floresta Nacional de Lorena, among others);
- CONAMA Resolution 429/11, which establishes the methodology for the recovery of Permanent Preservation Areas;

- IPHAN Ordinance 07/88, regulates the authorization of archaeological prospection;
- CONAMA Ordinance 218, 89, which addresses procedures for vegetation suppression and exploration of the Mata Atlântica forest;
- CONAMA Resolution 01/90 and Brazilian Standard NBR 10151 that defines environmental noise levels.
- Federal Law 9605/98 - Environmental Crimes Law - regulated by Federal Decree 6514/08
- Specific São Paulo State Decree 8468/76 and its amendments, which addresses environmental pollution in the State of São Paulo;

- State of São Paulo SMA (Environment Secretariat) Resolution 068/10, which classifies the State of São Paulo regions regarding the air quality saturation degree;
- Specific Rio de Janeiro State legislation, such as NT 202.R-10 that defines wastewater discharge limits; DZ-205.R-6, which establishes directives for control of organic load of industrial origin and DZ-215.R-4, which establishes directives for control of organic load of sanitary origin;

Health and Safety:

- Federal Decree (Decreto Lei) 5.452/1943 - "Consolidação das Leis do Trabalho" (CLT or Labor Law Consolidation) - Labor rights;
- Federal Ordinance 3.214/1978, approves the Regulatory Standards (NR) regarding Occupational Health and Safety;

Social

- Federal Decree (Decreto Lei) 5.452/1943 - "Consolidação das Leis do Trabalho" (CLT or Labor Law Consolidation) - Labor rights;
- Federal Standard – Ordinance 221/ 2001 – Slave Labor
- Federal Standard – Ordinance 540/04 – Black List
- Federal Law 8069/90 - Establish the Child and Teenager Statute
- Federal Decree 3.597/00 Promulgate the 182 ILO Convention and 190 ILO Recommendation concerning the worst forms of child Labor and immediate action to eliminate them, convened in Geneva, June 17 1999.
- Federal Decree 5.598/2005 which regulates the employment and enrolment of a number of apprentices.
- Federal Law 7.853/89 that establishes the National Policy for the Integration of Disabled Person

Note: Besides national and state regulations, municipal regulations must also be taken into consideration, given that the transmission line will cross 11 municipalities in the State of São Paulo and 10 municipalities in the State of Rio de Janeiro.

Compliance with IDB Policies and Directives

Policy / Directive	Applicable Aspect	Compliance Rationale
OP-703 Environmental and Safeguards Compliance		
B.1 Bank Policies	Compliance with applicable IDB policies	The project is still in the early planning stage and, currently, is in full compliance with all IDB policies and directives.
B.2 Country laws	Compliance with country laws and regulations	The project is in full compliance with all Brazilian laws and regulations.
B.3 Screening and Classification	Application of appropriate classification	The project has been classified as a Category A operation.
B.4 Other Risk Factors	Vulnerability to disasters	No other risk factors have been identified impacting the Project.
B.5 EA Requirements	Application of adequate assessment process	In accordance with both Brazilian regulations and Bank policies for Category A projects, an Environmental Impact Assessment was prepared for this project. IBAMA is currently reviewing the EIA and is expected to respond with the issuance of a permit, potentially with conditions.
B.6 Consultations	Project has	The project has conducted public

Policy / Directive	Applicable Aspect	Compliance Rationale
	undergone appropriate public consultation	consultation meetings with the local communities. Additional public consultations will be required, particularly concerning land owners affected by the transmission line alignment.
B.7 Supervision and Compliance	Internal supervision and reporting	The Isolux corporate EMS contains provisions for self-monitoring and supervision in order to maintain a high level of compliance. Additionally, the Bank will conduct quarterly monitoring missions during construction and annual during early operations. The Project will also be susceptible to inspections from IBAMA.
B.8 Transboundary Impacts	N/A	Project does not impact neighboring countries.
B.9 Natural Habitats and Cultural Sites	Conversion of natural habitat	The transmission line crosses Mata Atlantica forest and several protected areas. The Project will utilize existing access roads to minimize impacts and will employ special construction methodology in areas of native vegetation to reduce impacts. IBAMA is expected to place other conditions on the Project following their review of the EIA. As required in Brazil, 0.5% of the project cost will be required to be placed into an account to protect natural habitat. The Project has also prepared a Fauna Management Program and a Reforestation Program to manage and mitigate the impacts.
B.10 Hazardous Materials	Waste management	The project's EMS provides a strict waste management program to control the generation, segregation and proper disposal of solid and liquid wastes, including storage, use and disposal of hazardous materials. Workers will

Policy / Directive	Applicable Aspect	Compliance Rationale
		be trained on the management of hazardous material and other wastes under the Environmental Education Program.
B.11 Pollution Prevention	Pollution control and abatement	The project's EMS provides appropriate techniques in waste management and pollution control and abatement. Plans include handling, use and storage of materials as well as erosion control and drainage. These plans will be critical in conserving the areas of native vegetation, protected areas, and 130 water bodies crossed by the Project.
B.12 Projects Under Construction	N/A	The Project is in the planning phase and construction has not started.
B.13 Non-Investment and Flexible Lending Instruments	N/A	N/A
B.14 Multiple Phase Loans	N/A	N/A
B.15 Co-Financing Operations	Potential presence of other lenders	Currently, no other lenders have been approached
B.16 In-Country Systems	N/A	N/A
B.17 Procurement	N/A	N/A
OP-710 Involuntary Resettlement	N/A	Involuntary resettlement is not expected to occur as a result of the project; however, a significant number of individuals will likely experience economic displacement. Investigations are currently underway to determine the extent of economic displacement. Additionally, the Project may interfere with permitted mining operations, which will require compensation.
OP-765 Indigenous Peoples	N/A	The ESDD process did not identify impacts on indigenous peoples.
OP-704 Disaster Risk Management Policy	N/A	The Project is not located in an area prone to natural disasters.
OP-270 Gender Equality	Avoiding gender discrimination within the Project or	Women will be incorporated into the labor force when feasible; no indications of gender

Policy / Directive	Applicable Aspect	Compliance Rationale
	as a result of the Project.	discrimination were identified during the ESDD process.
OP-102 Access to Information Policy	Project information disclosure	The project has maintained a very transparent public consultation process and will continue its involvement throughout the Project lifecycle.

IV. KEY ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS

A. Summary of Key Impacts and Risks

4.1 According to the EIA, the key environmental impacts can be summarized according to the table below:

Table 6 – Summary of Key Impacts and Risks

<ul style="list-style-type: none"> • Alteration in the drainage system (construction phase) • Erosive processes (construction phase) • Interference on mining areas already approved by the competent authorities • Electromagnetic interferences (operation phase); • Solid and liquid wastes generation (construction phase). • Alteration in biodiversity (construction and operation); • Loss of native vegetation areas (construction phase); • Pressure on wildlife (construction phase) • Avian collisions (operation phase) • Improvement in energy offer (operation phase) • Economic dynamism increase (planning, construction and operation phases) • Creation of favorable expectations (planning and construction phases) • Creation of unfavorable expectations (planning and construction phases) • Increase of job opportunities (construction phase) • Workforce demobilization (construction phase) • Interference in the population daily routine (planning, construction and operation) • Increase of vehicles traffic (planning and construction phase) • Pressure on infrastructure and essential services (construction phase) • Interference on land use and occupation (construction and operation phase) • Interference on archaeological patrimony (construction phase)
--

Two important impacts not highlighted in the EIA are (i) the impacts associated to the land acquisition process, and (ii) the economic impact on the affected population. Investigations are currently underway to determine the extent of the affectations and their

corresponding mitigation measures, which need to be included as part of the mitigation measures of the project.

B. Environmental Impacts and Risks

4.2 The key environmental impacts identified in the EIA are summarized in the table that follows:

Table 7 – Key Environmental Impacts

Environmental Impact (EIA)		Significance (EIA)	Environmental Actions and Programs (EIA)
Change in drainage system (water percolation and infiltration in the soil, with possibility of silting in water bodies) (Construction Phase)	According to EIA, this impact may occur due to the starting and acceleration of erosion, which can be caused by vegetation removal, opening or improvement of road access, construction and earthwork activities.	Negative impact. Considering the implementation of mitigation and treatment systems, this impact is classified as important, but with low intensity and very low significance.	<p>Actions:</p> <ul style="list-style-type: none"> - Strict control of earthworks; - Adequately designing the drainage structures and other sediment containment structures; - Performing the construction phase in the shortest time and avoid the rainy season; - Using appropriate construction methods. <p>Associated programs:</p> <ul style="list-style-type: none"> - Program for prevention, monitoring and erosion control; - Program for recovery of degraded areas; - Environmental plan for construction.
Starting and acceleration of erosive processes	According to EIA, this impact will occur mainly during the construction phase, due to vegetation removal, opening or improvement of road access, construction and earthwork activities.	Negative impact. Considering the implementation of mitigation and treatment systems, this impact is classified as important, with medium intensity and low significance.	<p>Actions:</p> <ul style="list-style-type: none"> - Adoption of techniques of erosion control in accordance with the peculiarities of each area; - Avoid major earthworks during the rainy season; - Conduct drainage works - Perform periodic inspections during and after construction in order to correct any nonconformities <p>Associated programs:</p> <ul style="list-style-type: none"> - Program for prevention, monitoring and erosion control; - Program for recovery of degraded areas; - Environmental plan for construction.
Interference with areas of mining commitments and concessions	The implementation of the transmission line will interfere with mineral deposits or mining processes corresponding to processes under review by the DNPM (National Department of Mineral Production).	Negative impact. Considering the implementation of mitigation and treatment systems, this impact is classified as important, with medium intensity (only during construction phase) and low significance.	<p>Actions:</p> <ul style="list-style-type: none"> - Update and detail the procedures for mining authorization granting along the route of the transmission line, according to DNPM database; - Register the range area of the transmission line in DNPM, so there will be restrictions on new demands for research and licensing; - If necessary and possible, deviate the route of transmission line in areas of mining exploration. <p>Associated programs:</p>

Environmental Impact (EIA)	Significance (EIA)	Environmental Actions and Programs (EIA)
		<ul style="list-style-type: none"> - Program for management of interference with mining activities; - Environmental plan for construction; - Program for clearance of the right-of-way and indemnifications
Electromagnetic interference	During the operation of the transmission line, electromagnetic interference will be detected in the areas close to the right-of-way.	<p>Negative impact. Considering the implementation of mitigation and treatment systems, this impact is classified as with some importance, with low intensity (only during operation phase) and very low significance.</p> <p>Actions:</p> <ul style="list-style-type: none"> - Follow the guidelines of ANEEL (National Agency of Electrical Energy), according to Normative Resolution No 398/2010; - Perform measurements of magnetic and electric field; - Perform measurements of audible noise; - Perform measurements of radio interference. <p>Associated programs:</p> <ul style="list-style-type: none"> - Program for monitoring of electromagnetic interference; - Social communication program.
Generation of wastes and effluents	Generation of wastes and effluents will occur during the construction phase. Their bad management can result in changes in water quality, soil, among others.	<p>Negative impact. Considering the implementation of mitigation and treatment systems, this impact is classified as with some importance, with low intensity (only during construction phase) and very low significance.</p> <p>Actions:</p> <ul style="list-style-type: none"> - Appropriate environmental management systems and appropriate treatment / control for liquid and solid wastes. <p>Associated programs:</p> <ul style="list-style-type: none"> - Environmental plan for construction; - Environmental education program.
Biodiversity local change	This impact will be a consequence of the loss of native vegetation area, strain on the fauna, and avifauna collision with cables of the transmission line. It will occur during the construction and operation phases. According to EIA, the region of implementation of the project is already environmentally degraded.	<p>Negative impact. Considering the implementation of mitigation and treatment systems, this impact is classified as very important, but with low intensity and low significance.</p> <p>Actions:</p> <ul style="list-style-type: none"> - Follow the recommendations for cleaning the service range, according to the technical standard ABNT NBR 5.422/85, with limited vegetation suppression (as low as possible); - The transmission line route should be implemented with the maximum of deviations of areas occupied by native vegetation; - The use of existing accesses will be prioritized; - Whenever possible and when necessary, conduct the selective cutting, reducing the range with total suppression; - Support and encourage conservation initiatives in the region, particularly the existing programs or projects; - Perform a reforestation plan in order to facilitate the connectivity of forest fragments. <p>Associated programs:</p> <ul style="list-style-type: none"> - Program for vegetation suppression; - Program for fauna management - Program for reforestation.

Environmental Impact (EIA)		Significance (EIA)	Environmental Actions and Programs (EIA)
Loss of native vegetation area	This impact will occur due to the implementation of the right-of-way, transmission tower bases and electrical substation. According to the EIA, areas with native vegetation correspond to about 18% of the total area of the right-of-way. However, according to the EIA, this percentage is over estimated with respect to the vegetation that will be effectively suppressed.	Negative impact. Considering the implementation of mitigation and treatment systems, this impact is classified as with some importance, with low intensity and very low significance.	<p>Actions:</p> <ul style="list-style-type: none"> - Following of the recommendations for cleaning the right-of-way, according to as the technical standard ABNT NBR 5.422/85, with limited vegetation suppression; - The transmission line route should be implemented with the maximum of deviations of areas occupied by native vegetation; - The use of existing accesses will be prioritized; - Whenever possible and when necessary, conduct the selective cutting, reducing the range with total suppression; - Support and encourage conservation actions in the region, particularly the existing programs or projects. <p>Associated programs:</p> <ul style="list-style-type: none"> - Program for vegetation suppression; - Program for the rescue of germplasm plant; - Environmental plan for construction; - Program for reforestation; - Environmental education program.
Pressure on the wildlife	Construction activities may change the number of individuals (abundance) present in the direct and indirect areas of influence of the project: vegetation removal, opening of pits for towers installation, increasing of people, machinery and vehicles circulation (with consequent noise increase).	Negative impact. Considering the implementation of mitigation and treatment systems, this impact is classified as important, with low intensity and very low significance.	<p>Actions:</p> <ul style="list-style-type: none"> - Enclosure and covering of open pits during the construction period in order to prevent eventual fall or death of the animals; - Proper handling, storage and transportation of found individuals; - Monitoring of the vegetation suppression by teams of containment and rescue of fauna; - Support for triage centers for wild animals. <p>Programs:</p> <ul style="list-style-type: none"> - Program for vegetation suppression; - Program for fauna management; - Environmental education program; - Environmental plan for construction.
Avifauna collision with cables of the transmission line	Avifauna collision can occur along the entire length of the transmission line, and may be related to natural factors, including topography, vegetation and weather conditions. According to the EIA, the new transmission line will not represent a new impact in the region, since other transmission lines run parallel to this in some places.	Negative impact. Considering the implementation of mitigation and treatment systems, this impact is classified as with some importance, with low intensity and very low significance.	-

Critical Habitats

- 4.3 Speleological importance: the analysis of geological aspects (lithology and structures), geomorphologic (types of relief) associated with the topography and current location of water bodies was conducted in the EIA and classified the potential for speleological occurrence as low. However, according to CECAV/ICMBio (National Center of Caves Research and Conservation) and Brazilian Society of Speleology, the area of influence (ADI and AII) of the transmission line comprises geological units of which little information is available. Considering this, in case caves are identified less than 250 m from the TL route (*chance finding*), additional speleological studies and strategic planning must be developed, due to the limitations imposed by applicable regulations (CONAMA Resolutions 347/2004 and 428/2010).

Conservation Units

- 4.4 Conservation units: in the TL areas of influence there are nine protection areas destined to sustainable use, as defined by the regulations, and two areas of integral protection. Of the sustainable use areas, four will be crossed by the TL. The remaining are at a minimum distance of 0.5 km from the TL route. The integral protection areas will not be crossed by the TL. The restrictions of use in Protection Areas refer to the limitation or prohibition of earthworks that could impact the local ecological conditions or pose a risk of extinction in the protected area of rare species of regional biota. For the intervention within the limits of the protected areas destined to sustainable use, LTTE will need to apply for and have the authorization from the protected areas management entities.
- 4.5 Priority Areas: the future TL will cross priority areas for biodiversity conservation, one classified as extremely important (Angra dos Reis), and one classified as highly important (Serra de Paracambi). The AII comprises two other highly important areas. For the determination of primary data (field works), LTTE (through its hired consulting company Biodinâmica Rio) followed the required steps, including the submittal to IBAMA of the work plan for the physical, biotic and socio-economical environments assessment and applied for all the necessary authorizations (opening of trails, capture, collection and transport of biological material, authorization for the execution of field assessment, among others).
- 4.6 As for the flora and fauna assessment, the field works were conducted in two sampling areas, one in the State of São Paulo and one in the State of Rio de Janeiro. Field works were not conducted in all conservation units to be crossed by the TL. As informed in the EIA, IBAMA requested through official letter (Ofício 041/2011-COEND/ CGNE/ DILIC/ IBAMA, March 19, 2012) the inclusion of the areas crossed by the TL inserted in conservation units in the forest inventory. As stated in the EIA, the field works had already been conducted considering the methodology of the Work Plan (developed on

January 05, 2012) and that these studies would be addressed at a later stage, after the feasibility step. ERM understands that this situation could impair the licensing process. IBAMA may require the studies to be conducted prior to the issuance of the Preliminary Permit. On the other hand, IBAMA may include as technical requirement of the Preliminary Permit the complementation of the primary data assessment regarding flora and fauna, to include the conservation units to be crossed by TL. ERM considers that these studies should be conducted to assure that the impacts considered in the EIA are not underestimated.

C. Social Impacts and Risks

4.7 The social impacts and risks are summarized in the table below:

Table 8 – Key Social Impacts

Environmental Impact (EIA)		Significance (EIA)	Environmental Actions and Programs (EIA)
Creation of unfavorable expectations among the population	Unfavorable expectations are related to unfamiliarity with the project characteristics, construction procedures and security measures during construction and operation, effects on human health, fear of accidents, electric shocks and interference with electric appliances, uncertainties about the indemnifications and compensation for settlers and non-owners, among others.	Negative impact, classified as with some importance. The intensity is medium during the planning stage, and high during construction. The significance is low for both phases.	<p>Actions:</p> <ul style="list-style-type: none"> - Clarify any doubts about the project safety and disseminate the necessary precautions in the intervention area; - Establishment of communication mechanisms in order to clarify questions, collect concerns, suggestions, requests, as well as other issues of interest of local communities, especially people from the area of direct influence; <p>Programs:</p> <ul style="list-style-type: none"> - Social Communication Program; - Environmental education program; - Program for clearance of the right-of-way and indemnifications
Demobilization of labor	The end of construction stage will determine the reduction in labor opportunities and demobilization of construction sites, offices and lodging. During the project operation and maintenance, the generation of jobs will be reduced (estimated at about 30 direct staff, the majority for specialized labor).	Negative impact, classified as with some importance. The intensity is medium during the construction stage. The significance is low for the end of construction.	<p>Actions:</p> <ul style="list-style-type: none"> - Promoting explanations to the population and workers about the demobilization. <p>Programs:</p> <ul style="list-style-type: none"> - Social Communication Program; - Occupational health and safety Program

Environmental Impact (EIA)		Significance (EIA)	Environmental Actions and Programs (EIA)
Interference in daily routine of the population	These interferences will occur mainly during the construction phase (increased movement of vehicles, adequate access, handling and storage of materials, noise and dust), and the arrival of workers from other regions (with social and different cultural habits from local resident population). However, it should not represent labor concentration in one place due to the dynamic advancement of work fronts, with constant displacement of workers to other locations.	Negative impact, classified as important. The intensity is low during the planning and operation stages, but high during construction. The significance is very low for planning and operation and low for construction.	<p>Actions:</p> <ul style="list-style-type: none"> - Disclosure of the planned actions in the construction stage; - Provide direct contact channel with the entrepreneur; - Provide training to employees, including presentation of Code of Conduct; - Give special attention to communities and localities where construction sites will be installed; - Planning the schedule of transportation of labor, materials and equipment, avoiding rush hours and nighttime; - Noise control. <p>Programs:</p> <ul style="list-style-type: none"> - Social Communication Program; - Environmental education Program; - Environmental plan for construction.
Increase in vehicle traffic	Increase in vehicle traffic can occur mainly during construction stage. It will cause different effects depending on the existing road structure and intensity of use. This impact will be most noticeable in the small pathways and municipal roads.	Negative impact, classified as important. The intensity is low during the planning stage, but medium during construction. The significance is very low for planning and low for construction.	<p>Actions:</p> <ul style="list-style-type: none"> - Planning the schedule of transportation of labor, materials and equipment, avoiding rush hours and nighttime; - Require from the construction companies a transportation plan for the works; - Implement appropriate traffic signs and inform communities about the changes in traffic conditions and access; - Driver training; - Perform improvement of roads for access to construction sites and work fronts. <p>Programs:</p> <ul style="list-style-type: none"> - Social Communication Program; - Environmental plan for construction.
Pressure on the basic services infrastructure	Construction sites should be self-sufficient, considering the existence of lodging for employees, energy supply, sanitation (water, sewer and garbage) and telephone that should not impact the infrastructure of municipalities. The pressure on municipal services will be more related to public health and safety.	Negative impact, classified as with some importance. The intensity is medium during the construction stage, with low significance.	<p>Actions:</p> <ul style="list-style-type: none"> - Perform installation of proper sanitary structure at construction sites, according to legal requirements; - Implement measures to maintain the workers' health, and sanitation in the construction sites and work fronts; - Negotiation with local government, seeking alternatives to reduce the pressure of new employees to the region; - Promote explanations to the population with regards to quantity, profile and qualifications of hired labor; - Meet safety and occupational health Brazilian standards;

Environmental Impact (EIA)	Significance (EIA)	Environmental Actions and Programs (EIA)
		<ul style="list-style-type: none"> - Apply the code of conduct for employees; - Perform health admission and regular exams for health control; - Maintain first aid facilities at work sites and construction site. In severe cases, refer to private hospitals, avoiding the overload on public health services; - Request temporary staff reinforcements of security police, if necessary <p>Programs:</p> <ul style="list-style-type: none"> - Environmental education Program; - Environmental plan for construction; - Occupational health and safety Program.
Interference in land use and occupation	This impact is related to all areas where current use may be affected, especially those located on the intervention area (right-of-way) throughout the transmission line.	<p>Negative impact, classified as with some importance. The intensity is medium during the construction stage and low for its operation. The significance is low for construction and very low for operation.</p> <p>Actions:</p> <ul style="list-style-type: none"> - Provide information on conditions of use and occupation to all owners of property crossed by the transmission line; - Remove a minimum of arboreal vegetation; - In areas of permanent preservation, using only the area required for the installation of the project. <p>Programs:</p> <ul style="list-style-type: none"> - Environmental education Program; - Social Communication Program; - Program for clearance of the right-of-way and indemnifications.
Interference with the national archaeological heritage	The EIA demonstrates the archaeological and cultural-historical potential of the region, as well as its great ethnographic diversity. After approval of the Institute for National Artistic and Historical Heritage (IPHAN), new surveys of archaeological and historical data will enable the enrichment of the accuracy and reliability from current studies. During construction stage, activities as vegetation removal, opening and capping access, grading, earthmoving and vehicle traffic can generate impacts on the archaeological heritage.	<p>Negative impact, classified as important. The intensity is high during the construction stage as well as the significance.</p> <p>Actions:</p> <ul style="list-style-type: none"> - Perform archaeological surveys prior to all intervention areas of the enterprise. - When archaeological sites are located, two steps can be taken: displacement of access and facilities outside the boundaries of archaeological sites; or prior rescue of the archaeological sites at risk, after authorized by IPHAN. <p>Programs:</p> <ul style="list-style-type: none"> - Program for management of archaeological and cultural heritage; - Environmental education Program; - Social Communication Program; - Environmental plan for construction.

4.8 Third party contractors

The installation of the LTTE will be carried out by Isolux Projetos and operation of the LTTE will be under the responsibility of Plena. Isolux Projetos is expected to subcontract other companies for the installation of the LTTE. There is no procedure yet in place to monitor working conditions of third party contractors, which poses a risk to the project. There are several infrastructure programs currently in place in Brazil, increasing the competition for qualified contractors and workers. As a result of this competition, there are several cases of companies being charged for employing non-decent work conditions, which includes overtime work and overtime payment, accommodation, benefits, hiring and transportation of migrant workers, and other items included in the Ministry of Labour checklist of slave-like conditions.

4.9 Consultation and Relation with Community

A consultation process was carried out for the EIA. It included owners of the lands crossed by the LTTE, local government, nearby communities, community leaders and public health agencies. According to the EIA, land owners have negative expectation regarding the project installation because of their previous experience on negotiating the right of way with the other transmission lines operators. Local governments have positive expectation due to the increase of income and job opportunities.

The results of the EIA were presented in two public hearings as part of the licensing process, one in Volta Redonda and other at Taubaté. ERM reviewed the hearing minutes and issues raised by participants were the following: environmental financial compensation to municipalities; comparison with the installation and operation of the other transmissions lines; the relevance of the LTTE project and the energy generation; cultural heritage assessment and impacts on Legal Reserve and Permanent Protected Area (PPA).

A communication plan is currently being developed but it was not available at the time of the due diligence process. It is recommended that this plan contains the guidelines for timely consultation process and monitoring of the impacts on the properties crossed by the LTTE during operation.

4.10 Grievance Mechanism

A grievance mechanism is in place to for the transmissions lines Isolux is installing in the North of Brazil. The same mechanism will be available for the LTTE. The flow is the following:

- The community member can call a toll free number and will be answered by the environmental staff located at Rio de Janeiro office;

- The grievance is registered in a spreadsheet that contains name of the person, date and hour of contact, contact data, issue, person in charge of the response, date and hour of the feedback;
- The issue is forwarded by e-mail to the field coordinator to be addressed.

ERM reviewed the spreadsheet and it does not contain a cell to register how the issue was addressed. Although implemented, the spreadsheet is not filled, even though it was reported that one grievance was received.

The grievance mechanism is disclosed to local community (toll-free number). However, staff interviewed could not inform if third party contractors are aware of this mechanism.

4.11 LTTE has not yet established a mechanism to monitor labor conditions on supply chain and no plans for the development of such mechanism were reported by LTTE representatives. LTTE should develop a routine to verify the performance of contractors in issues such as labor rights, freedom of association, non-discrimination, harassment, child and forced labor. Special attention should be given in case of migrant workers. Contracts with suppliers should contain specific clauses related to these issues.

D. Cumulative Impacts

4.12 For the EIA, the baseline considered the existence of other transmission lines and pipelines in the region. The financial compensation for the right of the way of the LTTE considers the existence of other transmission lines and the restrictions already applicable in each property.

E. Positive Impacts

4.13 The positive impacts identified in the EIA are summarized in the table below:

Table 9 – Summary of Positive Impacts

Environmental Impact (EIA)		Significance (EIA)	Environmental Actions and Programs (EIA)
Increase in energy offer	The project will promote the strengthening of the primary energy supply that serves Rio de Janeiro State. It will ensure the system functioning after the entry into operation of the Nuclear Power Plant of Angra dos Reis (Unit III) and strengthen the energy transmission from hydroelectric plants in Madeira River (North of Brazil). Currently, studies indicate problems in the	Positive impact, classified as important, with high intensity and very high significance.	Potentiating actions: - Promote the importance of strengthening the energy supply, through the Social Communication Program Programs: - Social Communication Program

Environmental Impact (EIA)	Significance (EIA)	Environmental Actions and Programs (EIA)
	power transmission system in Rio de Janeiro.	
Development of local economy	The project will increase the contribution of human and financial resources, especially during the construction phase. At this stage, it is expected a generation of 1,450 direct jobs, with positive impacts in 22 municipalities in the area of indirect influence (hiring of local labor). There will also be an increased demand for goods and services and temporary increase of retail sales. It may also be mentioned the increase in tax revenue for the municipalities involved.	<p>Potentiating actions:</p> <ul style="list-style-type: none"> - Prioritize the hiring of local labor (municipalities in the area of indirect influence); - Giving preference to the use of local services and commerce; - Release of the labor profile required and the expected number of jobs to be offered in the region; <p>Programs:</p> <ul style="list-style-type: none"> - Social Communication Program
Creation of favorable expectations among the population	Favorable expectations are related to generation of new jobs, local commerce improvement and increasing in municipal revenues.	<p>Potentiating actions:</p> <ul style="list-style-type: none"> - Establishment of the profile and amount of labor required, work duration, actions regarding the acquisition of right of transit, use restrictions, access construction and improvement and taxes generated; <p>Programs:</p> <ul style="list-style-type: none"> - Social Communication Program; - Environmental education program; - Program for clearance of the right-of-way and indemnifications.
Increase in job opportunities	This impact will occur from the planning stage (early field surveys), by generating direct and indirect jobs. Considering the next stages, the direct jobs will be generated mainly in the construction activities when it is expected the hiring of 1,450 employees in total. Local labor hiring will be prioritized.	<p>Potentiating actions:</p> <ul style="list-style-type: none"> - Prioritize the hiring of local workers (including municipalities in the area of indirect influence); - Getting support from municipal governments of area of indirect influence for the registration of workers; - Training the hired labor in the Codes of Conduct in order to promote good social relations with the local population; - Installing construction sites in locations that cause the least impact on the environment and local communities <p>Programs:</p> <ul style="list-style-type: none"> - Social Communication Program; - Environmental education Program; - Occupational health and safety Program

V. MANAGEMENT AND MONITORING OF ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY AND LABOR IMPACTS AND RISKS

A. Description of Management Systems and Plans

5.1 As informed by LLTE, the Isolux-Corsan group, as a corporation, has developed management systems certified under the scope of standards ISO 9001 (quality), ISO 14001 (environment) and OHSAS 18001 (occupational health & safety). The corporation has not yet defined whether it will seek specific certification for the TL project or not. Regardless of the certification, LTTE informed that a specific management system will be developed for the project. There are corporate policies and general procedures already in place (human resources, for instance). In addition, specific procedures will be developed for the project.

B. Monitoring and Supervision

5.2 LTTE has proposed environmental and social programs in the EIA. In General, the proposed programs are approved by the licensing authority (IBAMA), which includes as technical requirement of the Preliminary Permit (first licensing stage) the further development of the proposed plans/programs in the form of Basic Environmental Plans (PBA – Plano Básico Ambiental). IBAMA may also establish the requirement for the development of additional plans or programs deemed necessary but not included in the EIA. As LTTE has not yet been granted the Preliminary Permit from IBAMA, it is not possible to assess if IBAMA will accept the proposed programs or if additional programs will be required. The PBAs must include methodology and indicators (parameters to be monitored). The PBAs, in executive character, must be submitted to the Environmental Agency with a time schedule for execution in the subsequent licensing steps.

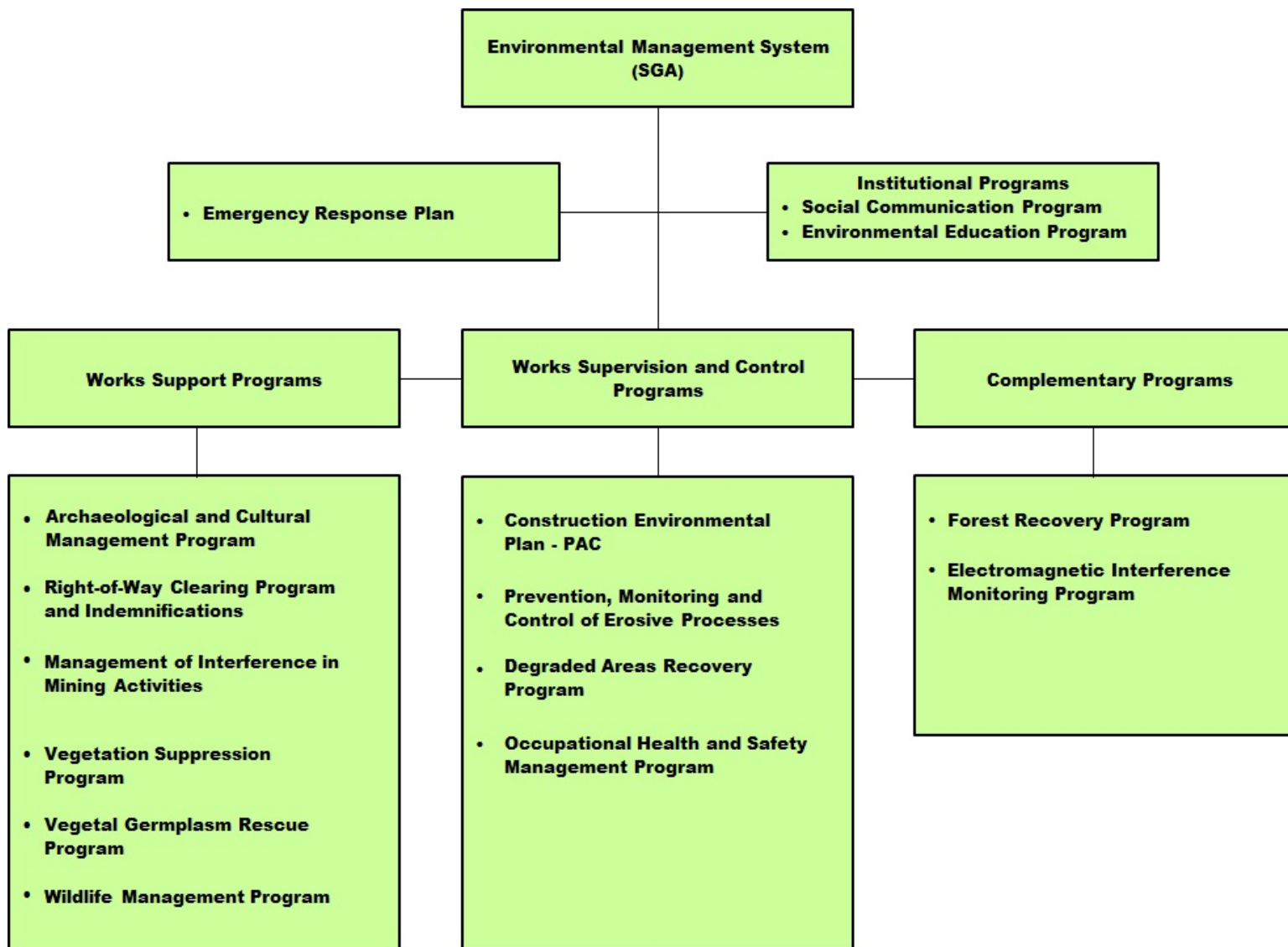
5.3 As informed by LTTE representatives, in spite of not holding the Preliminary Permit, the PBAs are already being developed. LTTE will reportedly establish partnership with specialized consulting companies for the PBAs management.

5.4 Except for the negotiation with property owners, in charge of a third party consulting company (ECARI), which is in the initial stage, no work fronts have been mobilized to date.

5.5 The proposed programs, for management purposes, were divided in three categories: (1) work support programs, (2) environmental programs associated with the supervision and control of the impacts caused by the works and (3) complementary programs.

5.6 To follow up the implementation of the proposed programs, an environmental management structure is proposed in the EIA and will also include the social communication and environmental education programs. These programs, as stated in the EIA, will be applied during all the project phases. The environmental management system structure is illustrated in the figure that follows:

Figure 3 Proposed Environmental Management Structure



- 5.7 The LTTE will be installed in a consolidated occupation area, in rural area, parallel to other transmission lines and to Petrobras' pipelines. Properties are usually registered and land tenure is not considerable a risk to the project. Use restriction of the right-of-way includes not growing trees higher than three meters (such as eucalyptus), cultivation that requires crop burning (such as manually harvested sugar cane plantations), and edifications. Houses are not expected to be affected, and edifications compromised will be compensated or rebuilt in another area of the property.
- 5.8 A third part company named ECARI is in charge of relations with the owners of the properties that will be impacted by the LTTE and the whole financial compensation negotiation. According to interview with ECARI's staff and evidences, the process is divided in the following steps:
- First contact to register the lands and its owners. This includes data related to the land, the owner and the person living in the land (in case of workers or leased properties), legal reserve location (portion of rural properties legally required to be preserved), boundaries, location (rural or urban area), distance to the urban area, accesses;
 - Request of the authorization to enter the land for topographic studies;
 - Conduction of the topographic studies and registration on the form of the total land area, area occupied by the right of way and remaining area;
 - Assessment of the impact and definition of the financial compensation. The definition of the financial compensation includes the following factors: land use and agricultural suitability; risks and restriction imposed by the transmission line to the land; position of the transmission line in relation to the property (cross the property, traverse, cross a portion, etc.); percentage of the land compromised for the current use; number of existing towers and towers expected to be installed in the property; edifications affected.
 - Negotiation of the financial compensation;
 - Payment and registration of the agreement on the land title of property;
 - Monitoring of the impacts, complaints and grievance during the installation process;
 - Negotiation and payment of any additional impact caused by the installation of the LTTE.
- 5.9 The financial compensation analysis includes the proportion, use and tenure of land lost in each affected property. In case the assessment concludes that most part of the property will be impacted by the LTTE and the other transmission lines and pipelines, the financial compensation for the right of way can achieve the amount of 99% of the total property value.
- 5.10 The LTTE will cross part of two settlements and negotiations will be carried out with the National Institute of Colonization and Agrarian Reform (INCRA), in charge of the settlement.

- 5.11 Around 400 properties will be crossed by the LTTE. 45% of them have been contacted and authorized the conduction of the topographic studies; 11% of the assessments were conducted and no negotiation has already started with the remaining owners. Reportedly, ECARI has not faced difficulty in obtaining the passage authorization.
- 5.12 Land owners are geographically divided in three groups and for each one there is one person from ECARI responsible for communication with the land owners according to the whole cycle described above.

C. Indicators

- 5.13 Each program established in the EIA defines indicators in conceptual level. The indicators will be detailed in the Environmental Basic Plans (PBA – Plano Básico Ambiental).

VI. REQUIREMENTS TO BE INCLUDED IN THE LEGAL AGREEMENTS

- 6.1 Table 10 that follows indicates the identified gaps during the course of the assessment, result of documents review and field observations. The identified gaps will be incorporated into a project Environmental and Social Action Plan.

Table 10 – Identified Gaps

Issue	Measures to be Taken	Responsibility	Priority	Target Completion	Indicator for Achieved Compliance
Land compensation procedures may need adjustments to be consistent with IDB policies	Develop a Land Acquisition and Resettlement Framework, as part of the social management instruments, and based on policy OP-710, which will address the procedures to be followed in each case, according to a matrix of affected people and/or businesses, including economic displacement.	Project proponent	High	Draft approved before Board date and final version before end of 2013.	Presentation of the plan, which should describe how it will be implemented
LTTE has not yet implemented a formal integrated management system. However, there are management system elements at corporate level (Isolux) or being developed. According to LTTE representatives, regardless of certification under international standards scope (ISO, for instance), an integrated management system will be developed.	Structure a Social Environmental Management System for LTTE, that should include, among others: <ul style="list-style-type: none"> • Management System Policy • Health & safety directives • Pollution prevention policy and requirements; • Programs and measures to adequately manage the impacts identified in the EIA; • Organizational structure including responsibilities and authority to implement the management system; • Employees and contractors training programs; • Community engagement (as indicated in the following item); • Monitoring Programs with performance indicators. 	Environmental and H&S Manager	High	Prior to First Disbursement for Taubate	Management system developed and implemented.
Lack of a systematic approach to deal with land owners after the installation and with general stakeholders	<ul style="list-style-type: none"> • Develop a Stakeholder Engagement Plan, including: <ol style="list-style-type: none"> A. identification, characterization and priority of stakeholders, focusing on those directly affected by the project and vulnerable groups, B. definition of communication channels, including those to disclose information about risk and impact. C. definition of timely and appropriate mechanism to consult stakeholders, according to items above. • The Engagement Plan shall be aligned with the 	Communication Manager	Medium	Prior to First Disbursement for Taubate	<ul style="list-style-type: none"> -Engagement Plan developed; -Stakeholder matrix; -Evidence of community consultation.

Issue	Measures to be Taken	Responsibility	Priority	Target Completion	Indicator for Achieved Compliance
	negotiation process currently carried out to guarantee the monitor of land owners expectations and grievance.				
Lack of registration on the existing grievance mechanisms	<ul style="list-style-type: none"> • Monitor if disclosure of information about the grievance mechanism is efficient and improve it if necessary; • Disclose information related to grievance mechanism to workers (employee and third party contractors); • Train staff to register every grievance received and the treatment and feedback response; • Monitor grievance received and the provision of feedback. 	Communication Manager and Human Resources Manager	Medium	Prior to First Disbursement for Taubate	<ul style="list-style-type: none"> -Evidences of disclosure of grievance mechanism to workers; -Registration of grievance received and treated.
No established mechanism to monitor labor conditions on supply chain was identified and no plans reported.	<ul style="list-style-type: none"> • Develop a routine to verify the performance of contractors in relation to labor rights and other issues addressed such as freedom of association and collective bargain, non-discrimination in employment relationship, harassment, child and forced labor; • In case of migrant workers, monitor recruitment process, transportation and workers accommodation • Identify categories of significant suppliers in the primary supply chain in high risk of child labor and forced labor. • Define measures to monitor significant suppliers on employment of child labor and forced labor. • Define measures and orient contractors on prevention of discrimination in employment relationship 	Project Manager	High	Prior to First Disbursement for Taubate.	<ul style="list-style-type: none"> -Contracts formats with specific clauses related to labor rights, freedom of association and collective bargain, non-discrimination in employment relationship, harassment, child and forced labor. -Internal audits to monitor the supply chain performance
According to the EIA, the potential for speleological occurrences was classified as low. However,	<ul style="list-style-type: none"> • In case caves are identified less than 250 m from the TL route (chance finding), additional speleological 	Environmental Manager	High	Before the beginning of construction	<ul style="list-style-type: none"> -Training developed -Registration of workers training.

Issue	Measures to be Taken	Responsibility	Priority	Target Completion	Indicator for Achieved Compliance
<p>according to CECAV/ICMBio (National Center of Caves Research and Conservation) and Brazilian Society of Speleology, the area of influence (ADI and AII) of the transmission line comprises geological units of which little information is available.</p>	<p>studies and strategic planning must be developed, due to the limitations imposed by applicable regulations (CONAMA Resolutions 347/2004 and 428/2010). Develop a training program for those at the work fronts on the actions to be taken in case of potential chance findings.</p>				
<p>The field works for flora and fauna assessment were conducted in two sampling areas, one in the State of São Paulo and one in the State of Rio de Janeiro. Field works were not conducted in all conservation units to be crossed by the TL. As informed in the EIA, IBAMA requested the inclusion of the areas inserted in conservation units in the forest inventory (field works had already been conducted when this request arose). ERM understands that this situation could impair the licensing process. The complementary studies may be required prior to the Preliminary Permit issuance or be included as technical requirement of the LP</p>	<ul style="list-style-type: none"> Complement the primary data assessment regarding flora and fauna, to include the conservation units to be crossed by TL. ERM considers that these studies should be conducted to assure that the impacts considered in the EIA are not underestimated. 	<p>Environmental Manager</p>	<p>High</p>	<p>Prior to First Disbursement for Taubate</p>	<p>-Complementary studies completed and assessment report issued. -Recommendations of the assessment followed.</p>