

BR-L1015 - COELBA INVESTMENT PROGRAM BRAZIL

ENVIRONMENTAL AND SOCIAL STRATEGY⁽¹⁾

I. PROJECT AND COMPANY OVERVIEW

- 1.1 Coelba (*Companhia de Eletricidade do Estado da Bahia*) was created in March 1960, privatized in July 1997, and is the largest electricity distribution company in the state of Bahia (see **Figure 1**), the fifth largest state economy in Brazil (area approx. 567,300 km²; population approx. 13,300,000 inhabitants). Presently, with a workforce of about 2850 employees, the Company provides service to 415 municipalities in the state, servicing approximately 3,300,000 consumer units (*i.e.*, about 99 percent of the total number of consumer units in the state), and distributing around 9,930 GWh per year (*i.e.*, about 58 percent of the total consumption in the state). Of the energy provided by Coelba, approximately 32 percent is used by residential consumers, 20 percent commercial, 21 percent industrial, and others (government, municipalities, street lighting) make up 27 percent.
- 1.2 The existing Coelba network comprises approximately: (i) 5590 km of 69 kV transmission lines, 1850 km of 138 kV, and 446 km of 230 kV; and (ii) 153,200 km of distribution lines. The Company also generates a relatively small amount of the energy it distributes, through two small hydraulic and one thermal development, with a combined installed capacity of around 19.2 MW, mostly from hydraulic origin, which makes approx. 0.3 percent of the total installed generating capacity in the state.
- 1.3 To increase service coverage and quality under its Concession contract, Coelba has developed a four-year (2004-2007) investment program, which is under analysis by IDB. The majority of this investment (*i.e.* approx. 86 percent of the total) will be directed toward increasing energy distribution capabilities through network expansion, including constructing new connections and extending the existing distribution network. The investment program comprises basically the following components:
 - (a) Energy Distribution and Transmission - Comprises the following categories:
 - *Network expansion*: (i) extension of Coelba's transmission and distribution lines (both aerial and underground) for increased network capacity; (ii) construction of new substations to absorb the increased capacity; and (iii) investments to improve Coelba's network;
 - *Rural Electrification Project (Projeto Luz no Campo)*: Expansion program, in conjunction with the government of the state of Bahia, to develop the energy

⁽¹⁾ This Environmental and Social Strategy (ESS) is being made available to the public in accordance with the Bank's Policy on Disclosure of Information. The ESS has been prepared based primarily upon information provided by the project sponsors and does not represent either the Bank's approval of the project or verification of the ESS's completeness or accuracy. The Bank, as part of its due diligence on the feasibility of the project, will assess the environmental and social aspects. This assessment will be presented in the project Environmental and Social Management Report, prepared by the Bank, and will be made available to public prior to consideration of the project by the Bank's Board of Executive Directors.

distribution system required to bring electricity to over 200,000 rural customers located basically in the countryside of the state of Bahia;

- *Renewal of substations and distribution lines*: modernization of existing substations, upgrading of existing lines;
- *New connections*: extension of Coelba's distribution network to connect new customers (essentially residential and commercial) located all throughout the state;
- *Quality improvement of the distribution network*: (i) improve quality of the distribution lines (aerial and underground) in order to minimize the duration and frequency of outages; and (ii) replacement of obsolete equipment.

(b) Upgrading Systems Servicing Residential and Commercial Areas - (i) upgrading and/or modernization of existing distribution system components to improve services in residential and commercial areas throughout the state of Bahia; (ii) automation of control and management systems to curtail energy losses, optimize equipment use, and raise system reliability standards;

(c) Improvements and Modernization of Support Systems – (i) installation of new hardware and software to upgrade existing information support systems; and (ii) installation of equipment and software, and upgrading of support facilities associated with telecommunication systems; to improve data and communication transmission;

(d) Other investments - acquisition of laboratory, measuring and other instruments and tools, and service vehicles to improve service provisioning and system maintenance; research and development; standards; installation of new equipment and refurbishing of existing buildings and facilities to improve safety (e.g., fire combat) and working conditions.

1.4 As indicated in Section III, given the nature and characteristics of the main components, the majority of the projects and actions involved in Coelba's proposed 2004-2007 investment program are not likely to generate environmental and social impacts of significant magnitude and importance. However, potential negative environmental and social impacts and risks are likely to be associated with the first two components of the distribution and transmission expansion, *i.e.* with network expansion and rural electrification project. Concerning the existing facilities and operations, Coelba has identified a few liabilities (e.g., associated with PCB containing equipment) and is implementing adequate measures to correct them.

1.5 The expansion of the distribution and transmission networks component of the 2004-2007 investment program will require essentially the construction of: (i) 31 transmission lines segments with extensions ranging from 100 m to 80 km, and voltage of 69 kV or 138 kV; and (ii) 19 new substations. These projects will be implemented in different regions of the state of Bahia, embracing areas that have urban, suburban and rural characteristics.

1.6 The Company has an Environmental Policy, as well as an Environmental Unit and a Health and Safety Department in their organizational structure, both staffed with full-time specialists. Coelba possesses a Health and Safety Management System, and recently initiated the creation of an Environmental Management System within the Company. Moreover, Coelba presently adopts several plans, procedures, guidelines and standards to specifically address environmental, social, health and safety issues, such as: (i) Environmental Risks Prevention Program; (ii) Environmental Licensing Procedure; (iii) Tree Trimming Procedure; (iv)

Procedure for Handling, Storage, and Disposal of Capacitors Containing PCBs; and (v) Occupational Health Medical Control Program; among others.

- 1.7 Coelba has also health and safety plans and environmental procedures that apply specifically to their contractors (e.g., Health and Safety Plan for Contractors), as well as to monitor and follow-up their compliance. Furthermore, the Company provides specific training on environmental, and health and safety issues to their contractors.

II. ENVIRONMENTAL AND SOCIAL COMPLIANCE STATUS

- 2.1 According to Brazilian federal and state of Bahia environmental laws, the presentation of an Environmental Impact Assessment Study (EIS) within a formal Environmental Impact Assessment process (EIA) is mandatory in licensing new transmission lines carrying electricity above 230 kV, which is not the case for the Coelba's projects included in the investment program under consideration by IDB. In some particular instances, for example when conservation or other sensitive areas may be at risk of being adversely affected, the environmental licensing authority may request submission of an Environmental Impact Assessment Study, even in cases where transmission lines carrying electricity at less than 230 kV are involved.
- 2.2 The environmental licensing authorities in the state of Bahia can be: (i) the Environmental Resources Center (*Centro de Recursos Ambientais – CRA*), linked to the Bahia State Department of the Environment and Water Resources (*Secretaria de Estado do Meio Ambiente e Recursos Hídricos - SEMARH*); (ii) the State Council on the Environment (*Conselho Estadual do Meio Ambiente – CEPRAM*); and, in some cases, (iii) a municipality. The environmental licensing system in Bahia foresees a Simplified License for projects and/or actions that have associated impacts and risks of low magnitude and reduced significance, based on simplified procedures and a simplified Environmental Impact Assessment Study. For other cases involving projects and actions, with potentially relevant negative impacts the system includes progressive issuance of the following licenses upon satisfactory compliance with the applicable requirements of the previous one: (i) Localization License; (ii) Installation License; (iii) Operating License; (iv) Operating License Renewal; and (v) Operating License for Alteration. The environmental licensing system in Bahia includes public announcement of the license request and, in some cases, procedures for requesting and conducting public hearings.
- 2.3 According to the information available, Coelba is currently in compliance with the applicable environmental legislation. The works involved in the investment program are presently at different stages of their planning, implementation, and license procedures. Of the projects that are in advanced stages, only three (involving segments of new transmission lines) were required to undergo an EIA, under a simplified procedure, and received their respective Simplified Licenses from the issuing authorities. Two of these segments (of 69 kV) involved areas presenting native vegetation, and the other (of 138 kV) involved a historic urban area. The license requirements included, as applicable, measures to control impacts on native vegetation and on nesting and breeding areas, creation of native vegetation nurseries and reforestation measures, and development and implementation of environmental education programs for workers, and, in special cases, for the community directly affected.

- 2.4 For the remaining projects included in the investment program, the Company will adopt their established Environmental Licensing Procedure and perform the necessary environmental impact assessment studies if required by the authorities, as have been done in the past to obtain the required licenses. For instance, Coelba performed 32 environmental studies in 2002 in relation to new transmission lines and substations (all but the tree transmission line segments referred above were implemented earlier and not included in the investment program under analysis by IDB).
- 2.5 Relative to licensing of existing facilities and operations, Coelba established in 2001 a Term of Agreement with CRA to obtain up to 2005 the necessary environmental licenses for all their facilities existing at that time. The Company is implementing the terms of the agreement and has already received operating licenses for six of their operational regions in the state.

III. POTENTIAL IMPACTS, RISKS AND CONTROL MEASURES

- 3.1. The majority of the works included in the investment program will involve the installation of new aerial or underground electrical energy distribution cables and other associated equipment in areas of consolidated urban and suburban use. These works will be developed, in great part, through established rights-of-way, existing corridors, or areas with substantially completed infrastructure; therefore, no expropriation or resettlement issues are anticipated. In addition, as the areas involved are mostly urban or suburban in nature, or with consolidated land use, no impacts or issues are anticipated involving indigenous population, or environmental protected areas.
- 3.2 In great part, the potential negative impacts during construction will be related, in the cases involving underground energy distribution works to dust and noise emissions and traffic disruption, or reduced access to local residents, along the excavated trenches. It should be pointed out that Coelba adopts underground cables and equipment sometimes to avoid visual impacts in areas of historic importance. Disruption of services can also be a possibility, in some cases involving both aerial and underground cable installation. However, these impacts usually occur on a limited scale, are temporary, and can be mitigated with standard construction environmental management procedures and by implementing the specific procedures the Company has to control impacts and risks during construction activities. Potential health and safety risks will be associated with possible accidents involving worker contact with energized lines, fall from high places during aerial cable installation, or minor accidents involving falls and cave-ins during trenching and excavation. These impacts and risks can be prevented and/or mitigated by adopting basic precautions and standard procedures, as established in Company's health and safety procedures and plans.
- 3.3 Relative to new transmission lines and respective substations, Coelba takes into consideration also environmental criteria in the selection of alignments and sites, and try to avoid, as much as possible, affecting sensitive areas, such as conservation and indigenous areas (the state of Bahia has a few indigenous communities scattered mainly along the coastal zone), as well as housing, commercial and industrial areas; therefore, by adopting these criteria, the Company avoids indigenous and resettlement issues. However, in some instances the transmission line must pass through rural areas of agricultural use; in these cases, considering the relatively narrow width of the right-of-way (around 15m), typically an agreement is established with the property owner, and if cultured land is affected, an indemnity is provided to compensate for the affected

narrow band of land corresponding to the right-of-way. IDB participation will ensure that, if required, the compensation measures will be in compliance with applicable Bank policies.

- 3.4 Other relevant potential negative impacts associated with the construction of new transmission lines and substations are: (i) vegetation loss and soil erosion; (ii) disturbance to fauna habitats; (iii) dust and noise emissions; (iv) increased concentration of suspended solids in nearby body of waters; and (v) visual impacts, particularly on urban areas of historic importance. Some of these impacts usually occur on a limited scale, are temporary and can be mitigated with the standard construction environmental management procedures established by the Company and/or by environmental authorities (*e.g.*, see paragraph 2.3). Others, like the visual impacts on historic sites can be mitigated by adopting underground cables and equipment, as is performed by Coelba in such situations.
- 3.5 Concerning possible negative environmental and social impacts associated with work camps, sites and presence of workers, no significant impacts are expected as the works, which individually will be of limited magnitude, dispersed in time and space throughout the state, will not require concentration of workers, and crews will be usually composed of a limited number of workers.
- 3.6 No significant negative environmental, social, health and safety impacts and risks are expected in association with maintenance and operation of the facilities involved in the investment program. Coelba no longer acquires equipment that contains PCBs and adopts specific procedures for disposal of solid wastes generated at their facilities and buildings. Furthermore, noise emitted by some substation equipment is typically perceived only at short distances from the source; thus, proper siting of these facilities and isolation of the source, if applicable, will adequately attenuate noise impacts. To reduce risks of accidents with power lines, the Company conducts periodical trimming of trees and suppression of vegetation in the right-of-way, but these activities are performed adopting appropriate procedures established by the Company, applicable also to contractors, and taking into account the safeguards included in the authorizations granted by the environmental authorities. Coelba has a forest engineer, which is responsible for training all the employees and contractors in the activities of trimming of trees and suppression of vegetation.
- 3.7 Relative to possible health effects associated with electromagnetic fields generated at transmission lines, the current body of evidence from the international scientific community suggests that transmission lines operating at voltages such as those in the case of Coelba (69 kV up to 230 kV) do not present a human health hazard. Nevertheless, Coelba adopts the technical standards and regulations established by the Regulatory Authority (National Electrical Energy Agency, or *Agência Nacional de Energia Elétrica – ANEEL*), which are consistent with the international standards and based on precautionary principles.
- 3.8 In regard to possible environmental, social, health and safety liabilities associated with Coelba's existing facilities and operations, it should be pointed out that the Company concluded deactivation of all the equipment containing PCBs in 2003, and sent them for proper incineration at a licensed facility run by specialized company. Possible environmental and social liabilities need to be evaluated in association with the existing thermal power plant, and with possible illegal settlements within the right-of-way of existing distribution lines. In

addition, evaluation of possible existing environmental, social, and health and safety liabilities at company level may be required to assess associated risks.

IV. OTHER ISSUES

- 4.1 Electric energy is fundamental for economic and social development, and human well-being. Distribution companies such as Coelba provide energy to residential areas, community services (*e.g.*, hospitals, schools, sports facilities, community centers), as well as to commercial and industrial establishments. Therefore, the projects included in the investment program have the potential to benefit several areas and communities throughout the state of Bahia, by providing electricity to areas that did not have it before, and increasing service quality and reliability throughout the system. These improvements may induce significant beneficial impacts on economic and social conditions of the served communities.
- 4.2 Furthermore, Coelba develops several initiatives and programs to improve relationship with customers and integration in the served communities. The Company established and implements the following most relevant programs and actions: (i) a Social Responsibility Program for the Company; (ii) Environmental Education Programs for communities; (iii) Ecological Stations Program with University, private sector and community; (iv) Energy Efficiency Program to improve energy use and reduce waste; and (v) several social partnerships with local community and state institutions.

V. ENVIRONMENTAL AND SOCIAL STRATEGY

- 5.1 The Project team, with the assistance of an independent environmental and social consultant will perform an environmental and social due diligence in order to confirm that all Project impacts and risks have been, or will be properly and adequately evaluated and mitigated. The environmental and social due diligence will specifically assess the following aspects:
- (a) An assessment of Project and Company existing operations and facilities compliance status with national, state of Bahia, and municipal environmental, social, health, safety and labor regulatory requirements (*e.g.*, laws, regulations, standards, permits, authorizations, applicable international treaties/conventions, etc.), project specific legal requirements, and any applicable IDB environmental and social policy or guideline.
 - (b) An evaluation of the available Environmental Impact Assessment Reports related to the investment program projects to assess the appropriateness of the identification and evaluation of relevant direct and indirect environmental and social impacts and risks, and the adequacy of the definition of mitigation and monitoring measures, in terms of their completeness, sufficiency of detail, implementation, cost, definition of responsibility, schedule, and quality control.
 - (c) An evaluation of Project-related information disclosure and public consultation activities that have been performed, and the proposed future actions, to provide adequate ongoing information disclosure and public consultation with the local population.
 - (d) An evaluation to assess if the proposed Project direct and indirect environmental, social, health and safety potential impacts and risks have been properly identified and evaluated,

including those referred to in **Section III** of this document, and if adequate control measures have been introduced.

- (e) An evaluation of the Company's Environmental, Health and Safety Management System, including plans (Environmental and Social Management Plan, Health and Safety Plan, Contingency Plan, Spill Prevention and Counter Control Plan, etc.) and procedures, to assess their adequacy including in terms of responsibilities, training, auditing, reporting, and resources to be made available to ensure adequate implementation, and specifically all the system components necessary to ensure that projects and works which will be implemented will not generate significant negative impacts.
 - (f) An evaluation of potential existing and future environmental, social, health, safety and labor risks and liabilities associated with Project sites and Company's existing facilities and operations.
 - (g) An evaluation to confirm that an acceptable Action Plan is in place, as necessary, in order to correct or mitigate the existing environmental, social, health and safety non-compliances and/or liabilities associated with the Company's existing facilities and operations.
- 5.2 Furthermore, the Bank, as part of the due diligence process, will analyze the environmental and social aspects of the Project and establish the appropriate environmental, social, health, safety, and labor requirements in the Loan Proposal for review and approval by the Bank's Committee on Environment and Social Impact (CESI).

FIGURE 1
PROJECT LOCATION MAP

State of Bahia
BRAZIL

