**INTER-AMERICAN DEVELOPMENT BANK DOCUMENT**

## SURINAME

**Support for the Implementation of the EBS Investment Plan**

**(SU-L1039)**

**environmental and social management report**

**(ESMR)**

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**LIST OF ACRONYMS**

|  |  |
| --- | --- |
| ANSI | American National Standards Institute |
| DEV | Rural Electrification Agency |
| EA | Executing Agency |
| EBS | National Electricity Company |
| ENICK | Electricity *Nieuw Nickerie* |
| EPAR | Electricity Supply Paramaribo and Surroundings |
| ESMR | Environmental and Social Management Report |
| ESA | Environmental and Social Assessment |
| ESMP | Environmental and Social Management Plan |
| ESS | Environmental and Social Strategy |
| GOS | Government of Suriname |
| IDB | Inter-American Development Bank |
| ICT | Information and Communication Technology |
| kV | kilovolt |
| kW | kilowatt |
| kWh | kiloWatt-hour |
| M&E | Monitoring and Evaluation Plan |
| MNH | Ministry of Natural Resources (Ministerie van Natuurlijke Hulpbronnen) |
| MRD | Ministry of Regional Development |
| MW | Megawatts |
| NIMOS | National Institute for Environment and Development in Suriname (Nationaal Instituut voor Milieu en Ontwikkeling in Suriname) |
| PEU | Project Execution Unit |
| PPA | Power Purchase Agreement |
| PV | Photovoltaic |
| RE (T) | Renewable Energy (Technology) |
| ROW | Right of Way |
| SCADA | Supervisory Control And Data Acquisition |
| S/S | Substation |
| TL | Transmission Line |
| USR | Upper Suriname River-area |

1. INTRODUCTION

|  |  |
| --- | --- |
| Country | Suriname |
| Sector | INE/ENE |
| Project Name | Support for the Implementation of the EBS Investment Plan |
| Borrower and / or Sponsor | Republic of Suriname |
| Executing Agency and / or Company | *N.V. Energiebedrijven* Suriname (EBS) |
| Transaction Type | Specific Investment Operation |
| Total Project Cost (in US Dollars) | US$ 33,000,000 |
| Environmental Category | B |

1. PROJECT DESCRIPTION
2. **Key Project Infrastructure Components and Schedule** 
   1. The Support for the Implementation of the EBS Investment Plan Program (“Program”) will consist of two (2) components. The first will be dedicated to institutional and operational strengthening of EBS, National Energy Company, the second will cover the implementation of critical infrastructure as explained below.
   2. **Component I**. Improvement of EBS’s Operations (US$12,853,000). Component I will support EBS’s institutional and operational strengthening by: (i) implementing a Distribution/Outage Management System (DMS/OMS) and training activities; (ii) financing the implementation of an Enterprise Resource Planning (ERP) platform and training activities; (iii) assisting EBS during the transition to the new unbundled corporate model; and (iv) implementing a program to promote RE and EE.
   3. **Component II**. Critical Infrastructure (US$18,000,000). Component II will contribute to the upgrade and retrofitting of the National Power System’s critical infrastructure, with aim of improving the reliability of the EPAR sub-system. Activities to be financed include: (i) upgrade of two existing S/S in the EPAR network (J and F); and (ii) construction of a new S/S in the EPAR network (Boma). S/S J is one of the main providers of energy to the central zone of Paramaribo. With the current expansion in generation and transmission, its design ratings will be exceeded. The upgrade will consist of: (i) the renovation of the existing building; (ii) the replacement of switchgears to facilitate the dispatch of EBS’s generation from DPP2; (iii) the replacement of protections and accessories; and (iv) the incorporation into the SCADA system. S/S F is an open air substation located in Para district. The substation needs to be upgraded to improve the reliability and to facilitate the connection of future customers. The retrofit will mainly include: (i) construction of the substation building; (ii) installation of a 25-MVA transformer; (iii) installation of switchgears; and (iv) integration into the SCADA system. The new S/S Boma will improve the quality and reliability of the electricity supply in the Santo Boma area, and allow for the connection of new customers. The activities include: (i) construction of S/S Boma and provision of equipment; (ii) construction of a new 33-kV line to connect the new S/S to the existing S/S HL; (iii) construction of a new 33-kV line to connect the new S/S to the existing S/S E; and (iv) the upgrade of the existing S/S E.

**Table 1. General Setting of Activities under Component II**

|  |  |
| --- | --- |
| Substation J | This substation is the main provider of energy to the central zone of Paramaribo. With the current expansion in generation and transmission, its design ratings will be exceeded. The upgrade will consist of: (i) the renovation of the existing building; (ii) the replacement of switchgears to facilitate the dispatch of EBS’s generation from DPP2; (iii) the replacement of protections and accessories; and (iv) the incorporation into the SCADA system. |
| Substation F (La Vigilantia) | Open air substation located in Para district. The substation needs to be upgraded in order to improve the reliability and to facilitate the connection of future customers. The retrofit will mainly include: (i) construction of the substation building; (ii) installation of a 25-MVA transformer; (iii) installation of switchgears; and (iv) integration into the SCADA system. |
| Boma | For the new substation at Santo Boma, the land is not yet owned by EBS. Currently, the Ministry of Natural Resources on behalf of EBS is in the process of acquiring the title to the land for the new Boma substation. The land is observed to be approximately one half acre (exact size TBD) of former agricultural land in Santo Boma community in the District of Wanica located by the roadside that is growing back to bush and that does not appear to have been cultivated or used as pasture for one or two years. |

* 1. The schedule for implementation of works can be accessed here: [Pluriannual Execution Plan](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=39033202).

1. **Environmental and Social Setting**
   1. Therefore, this ESMR is prepared based on the information included in the [Environmental and Social Assessment](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=39178878) (ESA) and the environmental and social consultant observations.
   2. The proposed project activities will be located in rural and urban areas of Suriname. Activities under Component II will be mainly located in the Greater Paramaribo Area within the Districts of, Para and Wanica.

**Table 2 Relevant Districts[[1]](#footnote-2)**

|  |  |  |
| --- | --- | --- |
| **District** | **Area (sq.km.)** | **Population Census (2012)** |
| Paramaribo | 182 | 240,924 |
| Wanica | 443 | 118,222 |
| Para | 5,393 | 24,700 |

* 1. The Greater Paramaribo Area, the area linked by Substation J, and the area linking with Substation F (La Vigilantia) are considered to have a low level of environmental sensitivity due to the following aspects:
* No observed protected areas
* No presence of ecosystems recognized as of high or critical sensitivity (wetlands, primary or secondary forests)
* Dominantly flat terrains (slope <15%)
* Mostly built up areas for residential, commercial and institutional purposes
  1. Detailed topographical surveys for the new substation at Santo Boma, as well as the upgraded and new 33-kV electricity transmission lines (TL) to be buried along existing utility corridors may not be necessary if the stations and the TL follow the existing utility corridor lines. Although Suriname is characterized by a rich biodiversity, an ecological survey is not deemed necessary at this stage since none of the proposed activities are within environmentally sensitive areas. The Greater Paramaribo area is mostly covered by swamps, shrubs and common grass species in Suriname. The area has no other specific ecological resources and/or protected nature areas in its surroundings. There are no rare or endangered species within the project construction area. A survey is only necessary if the project activities will have a significant impact on the biodiversity within a specific ecological resource or/and protected area. Generally TLs will be built along the public roads that already have an impact on the environment.

1. **Alternative Analysis**
   1. An alternative analysis was not performed during the ESA process for this operation and ESA did not identify the presence of any sensitive biodiversity areas or cultural sites within the areas of the projects. However, it is important to note that the land had not been acquired for the specific location for the new substation of Santo Boma at the time the environmental and social due diligence was conducted. Given these circumstances, the Bank considers it necessary to establish a set of required criteria to be applied during the selection of remaining sites to ensure compliance with IDB Policy requirements and consistency with the project’s environmental categorization.
   2. The proposed activities under the Program shall not:
   * Cause significant negative impacts on protected areas;
   * Cause significant conversion or partial degradation of natural habitats, so to result in extensive changes in the socio-environmental context;
   * Cause immitigable adverse impacts on culturally sensitive sites or objects, including archaeological, historical or paleontological sites;
   * Cause immitigable adverse impacts of resettlement, by means of a Resettlement Plan;
   * Be located in areas for which land titling or land use agreements have not been properly obtained by the Executing Agency;
   * Be located in areas of inconsistent zoning or land use planning patterns; and
   * Cause strong opposition from the community, where it can become a high risk factor against the implementation of the activities or the reputation of the Bank.
2. COMPLIANCE STATUS AND PROJECT STANDARDS
3. Environmental and Social Appraisal Process:
   1. The legal framework for Environmental Impact Assessments (EIA) in Suriname is currently under development.[[2]](#footnote-3) Five institutions are tasked with environmental protection: (i) Ministry of Natural Resources (MNH); (ii) National Institute for Environment and Development in Suriname (NIMOS); (iii) Ministry of Public Works; (iv) Ministry of Regional Development; (v) Ministry of Labor, Technological Development and Environment (ATM). These authorities should provide environmental protection, rational use of natural resources, preservation of natural and cultural heritage and biodiversity, and environmental information and education. The MNH has the responsibility for the management of natural resource exploitation and for energy policy and supervision of the energy sector. MNH also supervises EBS, the state-owned utility company and Executing Agency for the Program.
   2. An [Environmental and Social Assessment](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=39178878) (ESA) and corresponding [Environmental and Social Management Plan](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=39055895) (ESMP) were prepared for the project per the guidelines in the Bank’s policy. The Bank retained a consultant to elaborate the ESA and ESMP for the Program. It is important to mention that due to the limited information available during the environmental and social due diligence, the consultant was not able to complete certain sections of the ESA. Recommendations presented in the ESA were used as a base for the ESMP, which will be applied to the entire Program to facilitate adequate environmental and social management, including the management of risks and potential environmental and social impacts associated with the proposed works. The ESMP is framed within local regulations and supplemented with the requirements of Bank policies to ensure that each activity is aligned with the Bank's requirements, and also in compliance with any applicable local laws.
4. Consistency with IDB Policies and Directives
   1. The Environmental Safeguards Policy OP-703 and its relevant directives have been activated as follows: OP-703, Directives B.1 (Access to Information), B.5 (Environmental Assessment Requirements), B.07 (Monitoring and Compliance), and B.10 (Hazardous Materials). The need for resettlement is not anticipated, however if necessary, Policy OP-710 (Involuntary Resettlement) will be applied to each case. Major policies and guidelines are outlined below while a summary of the identified risks is presented in Section IV, and the current state of compliance and required actions are detailed in Appendix I of this Report.
   2. **B.7 Supervision and Monitoring.** The Program’s ESMP will include guidelines for developing the monitoring program and monitoring reports that form part of the semiannual reports to be submitted to the Bank. Within the monitoring reports issues such as the responsibilities and associated costs will be included in the monitoring of each project as well as the progress in the implementation of plans for environmental, social management, and occupational health and safety.
   3. **Hazardous Materials B.10.** To ensure compliance with this Directive, the ESMP will include a comprehensive waste management plan that includes transportation, handling, disposal, and treatment of the most significant hazardous waste and hazardous materials to be used, to address potential impacts from the disposal of hazardous waste. The ESMP will also include guidelines on the use of hazardous materials referenced in the IDB’s Exclusion List of activities to be financed. The ESMP must be presented to the Bank and obtain the non-objection before initiating the tendering process for the proposed works.
   4. **OP-704 Disaster Risk.** The disaster risk category of the project was evaluated and found to be low. The Bank has developed site selection criteria to avoid, among others, areas prone to natural disaster risks. According to the Directive A.2 of Disaster Risk Policy OP-704 operations with low risk level of natural disasters generally do not require specific disaster risk management measures.
5. Project Standards and Requirements
   1. Annex I of this ESMR shows the requirements to achieve compliance with IDB Policy requirements.
   2. According to the information gathered during the ESA of the Program, in Suriname power sector regulations, standards, guidelines and design criteria mainly follow the United States guidelines, ANSI (American National Standards Institute[[3]](#footnote-4)) and the National Electrical Code (NEC), which includes NFPA 70, a United States standard for the safe installation of electrical wiring and equipment. It is part of the National Fire Codes series published by the National Fire Protection Association (NFPA). The use of NEC is commonly mandated by state or local law in the U.S, as well as in many jurisdictions outside of the United States. NEC codifies the requirements for safe electrical installations into a single, standardized source. In Suriname, EBS will be responsible for ensuring compliance with these minimum standards[[4]](#footnote-5).
   3. Currently, EBS applies the NEC codes and IFC regulations concerning removal and disposal of toxic wastes, but no laws currently exist to enforce these standards. The Government of Suriname does not have specific laws or regulations pertaining to the safe disposal of toxic materials, however EBS regularly requests NIMOS to allow EBS to follow the highest standards for individual projects (IFC, IDB).
   4. Additionally, Suriname has ratified the Basel Convention[[5]](#footnote-6), on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, and the Stockholm Convention[[6]](#footnote-7) Stockholm Convention, on Persistent Organic Pollutants (POPs). Both conventions are intended to minimize the amount and toxicity of wastes generated, to ensure their environmentally sound management as closely as possible to the source of generation, and to assist less developed countries in environmentally sound management of the hazardous and other wastes they generate.
   5. A draft Environmental Health and Safety Plan and Waste Management Plan are currently being developed by EBS following the American power sector standards. Both plans are required to be completed as part of the ESMP for the Program, as specified in Annex I.
6. Other Key Compliance Information
   1. In addition to compliance with obligations under the Stockholm and Basel Conventions pertaining to management & disposal of PCBs, and extending to licensing of contractors who do disposal of heavy metals, the Program will take into account the IFC’s General Guidelines on Environment, Health and Safety.
7. ENVIRONMENTAL AND SOCIAL IMPACTS AND RISKS AND MITIGATION
8. Environmental Impacts and Risks
   1. The Bank has reviewed the potential environmental and social risks and impacts of the proposed activities under the Program. Based on this review, the Bank has categorized the project as a “B”. As a result, effects are expected to be localized and short-term that usually results from the construction of the proposed activities.
   2. The most important for the mitigation of environmental and social impacts of the Program is the proper implementation of the ESMP updated according to the needs of each project and appropriate supervision, monitoring, and monitoring measures described there.
   3. **Construction.** At this stage it is expected that infrastructure projects generate both negative and positive environmental impacts. The negative impacts are considered moderate and relatively short duration. Primarily, it is expected that nuisances to the surrounding communities will increase during the construction phase. Table 3 includes some identified impacts for the construction phase. These impacts are not considered significant and can be mitigated by following the recommendations specified in the ESMP.

|  |  |
| --- | --- |
| **Table 3 IMPACTS DURING CONSTRUCTION PHASE** | |
| **NEGATIVE** | **POSITIVE** |
| * Increased Particulate matter, dust and noise in the surrounding environment * Risk Fuel spill and oils of machinery during construction work. * Altered surface runoff due to soil movements * Erosion Natural terrain and elimination of native flora * Increase of transit movement of trucks for the work * Nuisances to neighbors because of increased noise and dust | Increase of the demand for labor for construction work (short term effect). |

* 1. **Operational Phase.** During this stage the most significant environmental risks and impacts are related to the disposal and maintenance of equipment. In particular, the removal and disposal of hazardous waste, such as polychlorinated biphenyls (PCBs) traditionally found in electric transformers dating back to the 1970’s and typically used as fire retardants. Table 4 expands on the most significant operational impacts and benefits expected as a result of the proposed works.

|  |  |
| --- | --- |
| **Table 4 IMPACTS DURING OPERATIONAL PHASE** | |
| **NEGATIVE** | **POSITIVE** |
| * Risk of contamination to environmental receptors due to inadequate handling and disposal of hazardous materials and hazardous waste and during equipment maintenance activities. * Occupational-accidents related to the operation of distribution / transmission equipment. | * Development of adequate environmental and social management plans * Improvement to the quality of life of the beneficiary population * Implementation of environmental controls * More reliable electricity service to the population |

1. Social Impacts and Risks
   1. It is anticipated that investments under the Program will produce a net positive social impact on the quality of life and welfare of beneficiaries through the overall improvement on the reliability of the service through upgrades to critical infrastructure in the National Power System.
2. IDB Additionality
   1. The Program will support the implementation of modern and integrated data collection and management systems to allow EBS to improve its capabilities in customer service, among others. The Program supports the implementation of integrated actions that will result in more positive impact on society and particularly in the population affected by the improvements.
3. MANAGEMENT AND MONITORING OF ENVIRONMENTAL, SOCIAL, HEALTH AND SAFETY AND LABOR IMPACTS AND RISKS
4. Management Systems and Plans
   1. To address the impacts and risks presented in Section IV, the Bank will require that an [Environmental and Social Management Plan (ESMP)](http://idbdocs.iadb.org/wsdocs/getDocument.aspx?DOCNUM=39055895) is developed by EBS. The Plan will be required to include at a minimum a series of sub-plans developed for each area of concern such as: (i) a health and safety plan; (ii) a hazardous material, waste / hazardous waste management plan; and (iii) a training plan for workers involved in the construction and operation of the works.
   2. The ESMP should also be adjusted during the construction and operational of the project to reflect any changes in the original project design.
   3. Execution of the Program is responsibility of the Executing Agency (EA), EBS. The EA will be responsible for administering the loan and financing of counterpart funding in a timely manner. Responsibilities of the EA also include the development of preliminary studies, design, construction and supervision of the works in order to ensure compliance with local legislation and regulations, the Bank’s environmental and social safeguards, and guidelines and procedures set out in the ESMP and agreed with the Bank.
5. The Environmental and Social Management Plan
   1. An Environmental and Social Action Plan has been developed for the Program and included in Annex I of this ESMR. The plan has been prepared based on the information gathered during the environmental and social due diligence of the Program. The Action Plan must be followed as recommended in order to assure compliance with IDB Policies.
6. Monitoring and Supervision
   1. The Environmental and Social Specialists of the EA will conduct supervision and monitoring of projects, understood as the realization of visits that result in reporting for internal use of the Program. The EA will report semi-annually on environmental, social, and occupational health and safety to the IDB. These reports will include descriptions of the proper implementation of the ESMP and indicators. Monitoring reports must include environmental and social indicators, monitoring frequency, responsibility and associated costs, the need to improve operational management, education and training.
   2. During the operation phase and maintenance of the works, the contractor will be responsible for the implementation of prevention and mitigation measures comprised in the management tools and the environmental licensing process, which shall be clearly established in the bidding documents.
7. Environmental and Social Safeguard Performance Indicators
   1. The ESMP for the project contains environmental and social aspects. Environmental and social EA teams should develop a system of indicators to follow up the works during its different phases. The EA should present the various indicators to the Bank and include them in the semi-annual reports to IDB.
8. REQUIREMENTS TO BE INCLUDED IN THE LEGAL AGREEMENTS
   1. Conditions and specific steps for the various stages of the loan process were determined based on the findings presented in the Environmental and Social Analysis for the Program. Annex I further presents an Environmental and Social Action Plan for the Program describing actions to be taken to ensure compliance with Bank policies.
9. During the duration of the loan
   1. IDB will require as part of the project that the borrower and the EA are in compliance with the following requirements for the duration of the loan:
   * All the relevant Bank policies: Environment and Safeguards Compliance Policy (OP-703), the Access to Information Policy (OP-102) and their respective implementation guides.
   * All legal environmental, health and safety, social and labor requirements in Suriname including all requirements associated with permits, environmental permits or licenses, health and safety, social work and apply to the program, the borrower and any entity responsible for implementing the program and / or mitigation measures.
   * All aspects and components included in the environmental, social, health and safety documents including the ESMP and other environmental and social management plans, such as monitoring plans.
   * All standards and guidelines included in the ESMP and standards listed in Annex I.
   * Provision of information to the Bank including: (i) notification to the Bank of any non-compliance with environmental, social, health and safety and labor requirements; and (ii) any accident or other new environmental, social, health and safety risk related to the program and proposed corrective actions.
10. Prior to the Commencement of Tender
    1. Prior to tendering of the works the Borrower must present evidence, for the Bank's non-objection, that all requirements per Annex I of the ESMR have been met.

ANNEX I

**Environmental and Social Action Plan**

| **Policy** | **Applicable Aspects** | **Status of compliance** | **Required action** |
| --- | --- | --- | --- |
| ***Conditions to be met before loan approval*** | | | |
| OP-102 | Access to Information | All relevant documentation must be uploaded to the Executing Agency’s website.  The ESA has been received and analyzed by the team. The consultant is incorporating Bank’s comments. The publication process for the draft ESA has initiated.  Compliance is expected once required actions are completed. | Publish all pertinent documentation per OP-102, in particular the ESA and ESMP for the Program. |
| ***Conditions to be met before first disbursement*** | | | |
| OP-703 B.4, B.7 | Capacity / Institutional Deficiencies  Supervision and Monitoring | Compliance is expected once required actions are completed. | Submit final version of the Operating Manual (“Reglamento Operativo”) for review of all the environmental and social specifications for the projects under the Program. |
| ***Conditions to be met before tendering the Program activities*** | | | |
| OP-703 B.5, B.10 | Environmental Assessment | Full compliance is expected once required actions are completed. | Finalize the ESA and ESMP per the Bank’s observations.  The Environmental Health and Safety Plan and Waste Management Plan, currently being developed by EBS, must be finalized as part of the Program’s ESMP and submitted to the Bank for its non-objection. |
| OP-710 | Land titling | Compliance is expected once required actions are completed. | Present evidence of land titling of the properties / sites where the proposed activities will be developed. |
| OP-703 B.2, B.4, B.5, B.6, B.10 | Compliance with Environmental Requirements | Compliance is expected once required actions are completed. | Ensure that contracts with construction and operation contractors include clauses concerning the mitigation and control of socio-environmental impacts. Confirm that such contractors have environmental / social professionals in charge of the implementation of measures identified in the ESMP as necessary for the control and monitoring of environmental management. |
| ***Conditions to be met during the duration of the loan*** | | | |
| OP-703 B.2, B.5, B.6, B.10  OP-710, OP-765, OP-270 | Compliance with Environmental and Social Requirements | Compliance is expected once required actions are completed. | * + All legal environmental, health and safety, social and labor requirements in Suriname including all requirements associated with permits, environmental permits or licenses, health and safety, social work and apply to the program, the borrower and any entity responsible for implementing the program and / or mitigation measures.   + All aspects and components included in the environmental, social, health and safety documents including the ESMP and other environmental and social management plans, such as monitoring plans.   + All standards and guidelines included in the ESMP and standards listed in Annex I.   + Provision of information to the Bank including: (i) notification to the Bank of any non-compliance with environmental, social, health and safety and labor requirements; and (ii) any accident or other new environmental, social, health and safety risk related to the program and proposed corrective actions. |

ANNEX II

**Additional Requirements**

| **Applicable Aspect** | **Applicable regulation** | **Applicable standard** | **Entity responsible for compliance** |
| --- | --- | --- | --- |
| Management and environmental impacts; the environmental, health and safety | General Guidelines on Environment, Occupational Health and Safety and Environment Guidelines, Occupational Health (World Bank, 2007) | Occupational health and safety, dust and noise levels | EBS/ IDB |
| Stockholm & Basel Conventions | Updated technical guidelines for the environmentally sound management of wastes consisting of, containing or contaminated with polychlorinated biphenyls (PCBs), polychlorinated terphenyls (PCTs) or polybrominated biphenyls (PBBs) | Use and handling of POPs / PCBs | EBS / IDB |

1. Source: Algemeen Bureau voor de Statistiek, Suriname. http://www.geohive.com/cntry/suriname.aspx [↑](#footnote-ref-2)
2. Netherlands Commission for Environmental Assessment http://www.eia.nl/en/countries/sa/suriname/ [↑](#footnote-ref-3)
3. http://www.ansi.org [↑](#footnote-ref-4)
4. http://www.esfi.org/index.cfm/page/National-Electrical-Code-(NEC)/pid/10860#sthash.nAIKuAZK.dpuf [↑](#footnote-ref-5)
5. The Basel Convention was opened for signature on 22 March 1989, and entered into force on 5 May 1992. [↑](#footnote-ref-6)
6. Stockholm was signed in 2001 and effective from May 2004. [↑](#footnote-ref-7)