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SURINAME

SUPPORT TO THE INSTITUTIONAL AND OPERATIONAL STRENGTHENING OF THE ENERGY SECTOR II

(SU-L1035)

LOAN PROPOSAL

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ABBREVIATIONS

CARTAC	Caribbean Regional Technical Assistance Centre
CBA	Cost-Benefit Analysis
CM	Council of Ministers
CPI	Consumer Price Index
CS	Country Strategy
CSU	Country Office Suriname
DEV	*Dienst Electrificatievoorziening* (Department for Rural Energy)
EA	Executing Agency
EAC	Energy Advisory Committee
EBS	*Energiebedrijven Suriname*
EBS Plan	EBS Business Plan
ENE	Energy Division
ENIC	*Electricy Nieuw Nickerie*
EPAR	Electricity Supply *Paramaribo* and Surroundings
ESA	Environmental Strategic Assessments
FOB	*Suriname Fonds Ontwikkeling Binnenland* (Fund for the Development of the Interior of Suriname)
GCI-9	Ninth General Capital Increase
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GIR	Gross International Reserves
GOS	Government of the Republic of Suriname
Green Paper	Suriname Electrical Power Sector Final Draft Policy Green Paper
G-T	Generation and Transmission
GWh	GigaWatt hour
HR	Human Resources
IDB	Inter-American Development Bank
IL	Investments Loans
IMA	Independent Macroeconomic Assessment
IMF	International Monetary Fund
JICA	Japan International Cooperation Agency
km	kilometers
kW	kiloWatt

kWh	kiloWatt-hour
M&E	Monitoring and Evaluation Plan
MDBs	Multilateral Development Banks
MIF	Multilateral Investment Fund
MoF	Ministry of Finance
MNH	Ministry of Natural Resources
MW	MegaWatt
MWh	MegaWatt-hour
NPV	Net Present Value
NUMES	New Sustainable Energy Matrix Program
Operation	Support to the Institutional and Operational Strengthening of the Energy Sector II (SU-L1035)
OS	Operational Support
PBP	Policy-Based Programmatic
PCR	Project Completion Report
PPA	Power Purchase Agreement
Program	Support to the Institutional and Operational Strengthening of the Energy Sector Program
RE	Renewable Energy
RETs	Renewable Energy Technologies
SEFS	Sustainable Energy Framework for Suriname
SSF	Safeguard and Screening Form for Screening and Classification of Projects
Staatsolie	*Staatsolie Maatschappij Suriname N.V.*
Suralco	Suriname Aluminum L.L.C.
SWF	Sovereign Wealth Fund
TC	Technical Cooperation
VAT	Value Added Tax
WAC	Weighted-average life

PROJECT SUMMARY
SURINAME
SUPPORT TO THE INSTITUTIONAL AND OPERATIONAL STRENGTHENING OF THE ENERGY SECTOR II
(SU-L1035)

<table>
<tr><th colspan="4">Financial Terms and Conditions</th></tr>
<tr><td colspan="2" rowspan="2">Borrower: Republic of Suriname

Executing Agency: The Ministry of Finance</td><td colspan="2">Flexible Financing Facility *</td></tr>
<tr><td>Amortization Period:</td><td>20 years</td></tr>
<tr><td>Source</td><td>Amount</td><td>Original WAL</td><td>12.75 years</td></tr>
<tr><td>IDB (Ordinary Capital)</td><td>US$10 million</td><td>Disbursement Period:</td><td>12 months</td></tr>
<tr><td>Other/Co-financing</td><td>0</td><td>Grace Period:</td><td>5.5 years</td></tr>
<tr><td>Local</td><td>0</td><td>Supervision and Inspection Fee:</td><td>**</td></tr>
<tr><td>Total</td><td>US$10 million</td><td>Interest Rate:</td><td>LIBOR-based</td></tr>
<tr><td colspan="2"></td><td>Credit Fee:</td><td>**</td></tr>
<tr><td colspan="2"></td><td>Currency of approval::</td><td>U.S. dollars</td></tr>
<tr><th colspan="4">Project at a Glance</th></tr>
<tr><td colspan="4">Project Objective/Description: The general objective of the Program is to increase the efficiency, transparency, sustainability and accountability of the power sector. The specific objectives are to develop an institutional and regulatory framework and to strengthen the corporate capabilities of the sector to supply electricity in an economic, efficient and sustainable manner.</td></tr>
<tr><td colspan="4">Special contractual clauses:
Disbursement of the financing is subject to compliance with the policy reform measures, according to Annex II (Policy Matrix), and compliance with the conditions provided in the loan contract.</td></tr>
<tr><td colspan="4">Exceptions to IDB policies: None</td></tr>
<tr><td colspan="4">Project qualifies for: SEQ[ ] PTI [ ] Sector [ ] Geographic[ ] Headcount [ ]</td></tr>
</table>

(*) Under the Flexible Financing Facility (FN-655-1) the Borrower has the option to request modifications to the amortization schedule as well as currency and interest rate conversions, in all cases subject to the final amortization date and original WAL. In considering such requests, the IDB will take into account market conditions and operational and risk management considerations.
(**) The credit fee and inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the IDB's lending charges, in accordance with the relevant policies.

I. DESCRIPTION AND RESULTS MONITORING

A. Background, Problem Addressed, Justification

1.1 **Macroeconomic Framework.** Suriname's economy continues to perform well on most accounts. Although still dependent on gold, oil, and bauxite, recently rebased Gross Domestic Product (GDP) estimates show stronger contributions from the services sector, mainly in the manufacturing, wholesale, and retail subsectors over the last four years. GDP growth in 2012 was around 4%. Higher levels of investment, particularly in mining and the public sector, will support GDP growth reaching 4.5% in 2013. The International Monetary Fund (IMF) projects a medium term average growth rate of 4.7%, especially as Suriname's oil refinery capacity will expand by 2015. Global economy, but particularly the Euro-zone (an important trade area for Suriname), the United States, and the Caribbean region, and commodity price trends may affect these projections.

1.2 Robust export performance supports the sustainability of the current account balance. In 2010 and 2011, exports grew faster than imports, resulting in current account surpluses of 6.4% and 5.5% of GDP, respectively. For similar reasons, the current account surplus was around 6% of GDP in 2012. New investment projects in the public and private sectors may drive a weakening of the current account, as Suriname will temporarily import more services and capital goods. The current account balance may decline to -3% of GDP in 2013 and reach a low of -6 % in 2014 before returning to positive territory of 5% by 2017. Gross International Reserves (GIR), exceed US$1 billion or 5.6 months of imports, and are expected to grow over the medium term to US$1.973 billion or 8.4 months of imports by 2017. GIR are also more than seven times the short and long-term debts coming due within a year and, as a share of M2[1], are estimated to be 0.43 (about average for the Caribbean). Consequently, reserves appear high enough to act as an adequate buffer over the next 12 to 24 months.

1.3 The Government of Suriname (GOS) is carefully managing public finances and implementing prudent and well-timed tax policies, while it is steadily tweaking its public financial management processes with support from the Inter-American Development Bank (IDB). A weakening of this position in late 2012 resulted due to a 10% increase in public sector wages and a substantially restrained demand in capital expenditure and goods and services. GOS indicates that it is committed to reigning in current expenditures further in the future. Revenues grew over the last two years, in nominal terms, as the authorities increased taxes on alcohol, tobacco, and fuel. Debt remains low and sustainable at around 19% of GDP. In August 2012, credit rating firms[2] upgraded Suriname's long-term foreign-currency rating to BB-, BB-, and Ba3, respectively. The GOS is conscious of carefully managing its risks to fiscal sustainability, which is moderate, given the volatility of non-tax revenues (commodities), and institutional challenges

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[1] The amount of money in circulation in notes and coin plus non-interest-bearing bank deposits, building-society deposits, and National Savings accounts.

[2] Standard &Poor, Fitch, and Moody's.

associated with public financial management. The GOS established an interim Sovereign Wealth Fund (SWF) with US$20 million in 2012. The GOS will legally formalize the SWF during 2013, and is collaborating with IMF, IDB, Caribbean Regional Technical Assistance Centre (CARTAC), and other bilateral partners in overcoming its obstacles in public financial management. In addition, the IDB and the GOS have begun discussions about further institutionalizing fiscal discipline through fiscal rules. As absorptive capacity grows, the GOS is pushing large-scale capital investment projects that will enhance the transportation, energy, and housing sectors. Some of these activities are being pursued within the context of a public-private partnership framework. The GOS projected in its latest budget statement a gross financing gap of approximately US$197 million, of which this operation will disburse the equivalent of 5 percent. The medium-term fiscal balance is expected to remain at less than -3% of GDP[3].

1.4 Sound monetary policy facilitates Suriname's exchange rate remaining in line with fundamentals and on-par with its trading rate in the parallel market. The GOS is giving some consideration to moving to a more flexible exchange rate regime over the medium-term. The Consumer Price Index (CPI) remains sensitive to developments in global food and fuel prices. The GOS commits to further fiscal tightening and strengthening of its capacity to manage monetary policy through future open market operations. Food accounts for approximately 40% of the CPI basket but explains approximately 37% of headline inflation over the last 36 months. The financial sector remains insulated mainly because of its limited external exposure to risky financial instruments and investments. The authorities continue to reform the financial sector with support from the IDB.

1.5 The macroeconomic framework appears stable and conducive for policy-based lending, while IMF and rating agencies concur that Suriname's real sector outlook remains favorable. Therefore, the GOS and IDB have ample room to continue with their collaborations on reforms to revamp public financial management, modernize the financial sector, create a sustainable energy framework, enhance productivity of the agriculture sector, and others. In the event of any significant deterioration of commodity prices a revision of this outlook will be required.

1.6 **Electricity Sector.** The responsibility of the electricity sector resides in the Ministry of Natural Resources (MNH). No specific legislation exists to govern the electricity sector's activities, such as a sector Act, license, regulatory code or dedicated policy or regulatory institutions. The electricity sector organization is based on contractual arrangements between the GOS and public and private companies. The electricity system is operated by *Energiebedrijven Suriname* (EBS), which is a state-owned utility company under the MNH. The GOS also owns *Staatsolie Maatschappij Suriname N.V.* (Staatsolie), the oil company, which besides is a power supplier through a 15-MegaWatt (MW) thermal power plant.

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[3] The rest of the financing gap will be covered by disbursements from other IDB operations (61%), China (20%), India (3%), AFD (4%), and others (9%). With its improved sovereign ratings, Suriname is exploring the possibility to issue it first international bond in 2013, thus diversifying it debt strategy going forward.

1.7 EBS has supplied electricity for the last forty years under the terms of a fifty-year countrywide concession, which covers transmission, distribution and commercialization. EBS largely depends on the GOS for its energy supplies. Electricity is produced by the *Afobaka* Hydropower Plant (Afobaka HPP), under the terms of an agreement with Suriname Aluminum LLC. (Suralco)[4], an aluminum producer that built and operates Afobaka HPP. Other contractual arrangements rule the supply of electricity between EBS and the GOS (1972 and 1985) and concession of the electricity service by the GOS to EBS (1973).

1.8 The EBS system comprises several non-connected systems: (i) Electricity Supply *Paramaribo* and Surroundings (EPAR); (ii) *Electricity Nieuw Nickerie* (ENIC), in West Suriname; and (iii) smaller networks. The interior is supplied by the *Dienst Electrificatievoorziening* (DEV), Department for Rural Energy of the MNH.

1.9 The EPAR has the largest demand with a peak load of approximately 200-MW in 2012. Electricity usage was: 48% residential, 34% industrial, and 18% other sectors (i.e., small commercial and public lighting). Overall energy losses in the system are approximately 8.2%, which is not critical.[5] The growth of the electricity demand over the past 12 years averaged 6.3%, without accounting relatively small consumption in the Hinterlands. Energy demand growth rates are forecasted[6] at approximately 7.0% for EPAR and ENIC and 6.0% for the Districts.[7]

1.10 Power generation is provided to EBS by Afobaka HPP[8] (189-MW), diesel-fired generation from EBS (82-MW), Staatsolie (15-MW) and Suralco (78-MW).[9] Afobaka HPP is connected to the EPAR through a two-circuit 161-kiloVolt (kV) 74-kilometer (km) long transmission line to *Paranam*, where an aluminum smelter was located; and from there to *Paramaribo* through a 26-km line.

1.11 Currently, the EPAR zone is critically dependent on the line from Afobaka, which since 1999, when the smelter at *Paranam* was decommissioned, increased its capacity availability from an average of 50-MW (in 1996) to 120-MW (in 2007). The power grid needs to improve its current layout, including the interconnection between the EPAR and other non-integrated zones. As electricity demand increases, all new capacity is thermal-based, increasing the marginal generation cost, while tariffs remain unchanged. EBS has been able to maintain low and

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4 SURALCO is involved in bauxite and alumina mining and refining. It was founded in 1916, it is based in Suriname and it operates as a subsidiary of Alcoa World Alumina LLC. The *Brokopondo* Agreement (1957) is the mainstay of Suriname's electricity supply and it is based on the concession for bauxite mining to Suralco.

5 Electricity losses in Latin America and the Caribbean average approximately 17% ("Meeting the Balance of Electricity Supply and Demand in Latin America and the Caribbean", World Bank, 2011).

6 Future EPAR demand comprises the specific loads of the oil refinery expansion and the housing programs. Incremental demand of the gold industries (*Rosebel* and *Newmont*) will need to be estimated separately. (For a detailed demand analysis and forecast see "Economic Analysis Annex", optional electronic link).

7 Historic and forecast data as presented in the study "Technical and Cost Benefit Assessment of the Power System Expansion II", A. Brugman, August 2013 (see "Economic Analysis Annex" optional electronic link).

8 Afobaka HPP's performance diminishes over time, since sedimentation in the reservoir is reducing its average capacity. Recent rich hydrological periods enable EBS to rely largely on hydropower.

9 "Suriname Power Sector Overview", Lecaros, November 2011.

affordable tariffs because the purchase price from Afobaka HPP has been relatively low when compared to thermal-based generation. This scenario is the main financial factor for EBS to consistently show net operational losses.

1.12 While in 2009 EBS's operational losses were less than US$1 million, due to favorable hydrological conditions, in 2010 operational losses amounted to approximately US$41 million, equal to 45% of sales. Fossil fuel consumption costs nearly doubled from US$23 million, in 2009, to US$43 million in 2010. While the average tariff remained below US$0.08 per kiloWatt-hour (kWh) with an increased average generation cost estimated at US$0.20/kWh.[10]

1.13 Other technical, operational, and institutional challenges have been identified through a corporate assessment[11] and include: (i) the need for an organizational strategy and policy objectives; (ii) the need to address complex organizational structure; (iii) unclear roles of board and management; (v) need to improve transparency in cost estimates and resource allocation; (vi) need to review a model of supply contract; (vii) need for improvement in productivity; (viii) gaps in the degree of automation of its information management; and (ix) weak performance monitoring practices.

1.14 **Rural Electrification.** MNH responsibility in the sector also includes rural electrification through its agency DEV. DEV owns and operates diesel engines installed for electricity generation in approximately 130 villages in the interior of Suriname, of which about 100 are supplied with diesel-fuel on a monthly basis.

1.15 The population in the Hinterlands served by diesel generators with a capacity of 4,512-kiloWatts (kW) is estimated at approximately 30,000 people, with a monthly fuel demand of 150,000 liters.[12] Fuel transport to remote villages is done by boat or airplane, while communities closer to Paramaribo can be reached by land. The villages in the Hinterlands receive electricity subsidized by the GOS with an estimated cost of US$3.66 million/year. The average cost of diesel-generated electricity is estimated at US$0.63/kWh, of which US$0.41/kWh corresponds to diesel fuel; while in remote locations with over-sized diesel systems, costs may be above US$1.0/kWh.

1.16 Conventional energy electrification projects are too costly to be operated and maintained by local communities. DEV and the *Fonds Ontwikkeling Binnenland* (FOB, Fund for the Development of the Interior of Suriname), participate in electrification projects; however, the operation and maintenance of existing diesel generators limit their ability to extend energy coverage and affect their financial resources. The infrastructure (i.e., generators and isolated grids) is held by the GOS but there is no policy towards asset management or replacement.

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10 Financial Analysis, Gattelet, February 2012; "Suriname Power Sector Overview", Lecaros, November 2011.

11 EBS quick scan corporate assessment, 2012.

12 According to MNH, 96 villages received a total of 724 barrels of diesel fuel (144,800 liter) in May 2012 to supply units ranging from 7-kW to 132-kW. Typical diesel capacities are 30-kW to 60-kW per village. This information is consistent with previous annual figures.

1.17 A preliminary appraisal of both qualitative and quantitative variables, carried out during the due diligence process, generated the following questions that identify the power sector's most relevant uncertainties: (i) what is the likely evolution of power demand in Suriname? (ii) what are the options for supplying the load in the short, medium and long-term? (iii) what is the likely magnitude of investment required to supply load growth? (iv) how is EBS performing financially? (v) what are the main obstacles to maintaining an adequate quality of service, including the adequacy of tariffs? and (vi) what are the strategic considerations to be taken into account for addressing the obstacles, particularly the institutional aspects? These questions constituted the main guide to the rationale for the problem in the sector and, consequently, to the structure of this Operation.

1.18 **Problem.** Several challenges delay the development of the energy sector. The absence of a sector legal and institutional framework hinders decision-making processes and therefore the design and implementation of adequate and timely investments. This weakness is particularly critical in the power sector, where planning is dispersed and the allocation of responsibilities is unclear. A sector framework is also desirable to rule and facilitate the design and implementation of tariff regulations and to foster economic and financial sustainability.

1.19 The sector could handle small demand in the past and the relatively abundant supply of hydropower generation relegated the need for planning and managing complex technical and financial scenarios. The expansion of the electricity system is now more dependent on thermal power in the short to medium-term, while base supply is still contingent on variable hydrological cycles.

1.20 The MNH has scarce resources to undertake policy and regulatory tasks; and EBS, which is an essential piece of the sector, faces financial constraints and difficulties to meet demand and deals with critical infrastructure liabilities, including the need for strengthening its corporate capabilities and to update its management tools and practices in order to face the growing demand.

1.21 The GOS fully subsidizes the electricity supply in the Hinterlands, requiring significant fiscal effort but also inducing inefficiencies and limited quality of supply. The implementation of new sustainable solutions in the Hinterlands calls for strategic planning and experienced execution. It is necessary to improve capacity and coordination among stakeholders to implement sustainable rural electrification projects and to promote the rational use of energy.

1.22 Suriname's power sector cannot benefit from economies of scale due to its small size in absolute terms. This is also the case in the neighboring economies of Guyana, French Guiana and the nearest regions of Brazil, and therefore regional integration has the potential to bring efficient solutions to the sector in the medium to long-term, but benefiting from integration will require sector capabilities in planning, management and decision making[13].

[13] The IDB approved the Technical Cooperation "Pre-Feasibility Study for the "Arco Norte" Interconnection Project" ATN/MR-13825-RG on May 29th 2013. This operation will assess the potential development of an

1.23 The power sector requires the current configuration to be rethought in order to maximize its efficiency, to request the GOS's support only for specific activities and to capitalize the sector with private investment. From a macroeconomic standpoint, power sector subsidies constitute an increasing financial demand to the GOS that may crowd out other sectors which have a structural need for government support. The section "Electricity Sector" exemplifies on the relative financial impact of the most relevant factors (paragraphs 1.12; 1.15).

1.24 **Solution.** The GOS has included among its main priorities the need to strengthen the electricity sector as a key step toward implementing a Sustainable Energy Framework for Suriname (SEFS), in economic, financial and environmental terms. Specific goals include the implementation of adequate regulations and management practices to: (i) reduce operation and maintenance costs of the system; (ii) review the current tariff structure; (iii) draft a model contract for the purchase of electricity from third party generators; (iv) assess the potential of low-carbon energy technologies; (v) improve access to sustainable and quality energy; and (vi) foster an increase of the electricity coverage in Suriname.

1.25 To this extent and due to the institutional and regulatory nature of the identified challenges, in 2012, the GOS and IDB agreed to support the reform efforts. Since such ample reform requires achieving numerous definitions and consensus in order to implement it in a sustainable manner, the programmatic approach can provide the necessary flexibility to respond to implementation developments in a sector that is taking its first steps to build its regulatory structure and institutional capacity. The "Support to the Institutional and Operational Strengthening of the Energy Sector Program" (The Program) was envisioned as a set of three individual lending operations, Policy Based Programmatic (PBP), that would be correlated with the progress in the reform process[14]. The three lending operations (SU-L1022, SU-L1035 and SU-L1036) are independent of one another but they are technically coherent and contribute to specific institutional and policy goals to be met in 2012, 2013, and 2014. The first operation (SU-L1022, US$15 million) was approved and disbursed in 2012 and its overall objective was to support the GOS in commencing the process of policy and legislation formulation. It is expected that the value of the third PBP operation (SU-L1036) will be similar to the one currently being proposed, but may be adjusted depending on Suriname's financing needs and availability of allocated resources at the time of approval.

1.26 The IDB is also supporting the power sector in Suriname with other instruments that contribute to the ultimate goal of achieving a SEFS. The investment loan SU-L1009, "Support to Improve Sustainability and Accessibility of the Electricity

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electrical interconnection among Suriname, Guyana, French Guiana and the northern Brazilian (cities of Boa Vista in the State of Roraima and Macapá in the State of Amapá).

14 The Program is consistent with the basic conditions advocated by IDB's Policy concerning public utility services (OP-708), specifically by fostering separate government roles as regulator and entrepreneur, an efficient sector structure including competition as possible, transparent policy mechanisms to rule tariffs and subsidies, regulatory and legal framework, and governance. Lastly the Program itself makes evident the existence of a firm government commitment with the objectives of the Policy.

Service"[15] will contribute to: (i) improve EBS's operation; (ii) enhance the reliability and cost-effectiveness of energy supply in selected rural areas by expanding the network and incorporating non-conventional Renewable Energy Technologies (RETs); and (iii) rehabilitate critical infrastructure required for the effective operation of the electricity system.

1.27 The IDB/Global Environmental Facility (GEF) operation (SU-G1001), approved on May 11, 2013, also contributes to a SEFS by promoting the use of non-conventional Renewable Energy (RE) and energy-efficient technologies and promoting access to sustainable energy in the Hinterlands. The IDB/Multilateral Investment Fund (MIF) operation (SU-M1019), approved on September 12, 2012, contributes to operation SU-G1001 by providing resources to develop sustainable management schemes for rural electrification systems in the Hinterland through the empowerment of local communities. An Operational Support (OS) instrument, ATN/OC-13446-SU was approved in 2012 to support the preparation and implementation of the SEFS. Lessons learned from other IDB PBPs have demonstrated: (i) the importance of contemplating a gradual phasing of the reform process; (ii) the inclusion of ample consultation mechanisms; and (iii) the need to focus the efforts on the most significant policy targets. In Peru, the "New Sustainable Energy Matrix Program" (NUMES) was implemented through four consecutive PBP loans, between 2009 and 2012, and it has supported the implementation of a National Energy Policy, sector plans and regulatory instruments, execution of Environmental Strategic Assessments (ESA), and a large number of specific policy measures. In Guyana the "Power Sector Support Program" supported: (i) the drafting of the Power Sector Policy and its implementation strategy; (ii) the reform of all sector related legal and regulatory instruments; (iii) the reform of the utility bylaws and the adoption of a Corporate Governance Code; and (iv) specific measures to improve sector governance and transparency.

1.28 **The Results of the Previous PBP Operation.** Among its numerous outputs, the first operation (SU-L1022) of the Program included:[16]

a. The preparation of the "Suriname Electrical Power Sector Final Draft Policy Green Paper" (Green Paper) which identifies the main sector issues and proposes orientation for sector reform, is an essential step towards building an institutional and regulatory structure for the sector. The Green Paper defines its objective as to "outline the priorities regarding the safeguarding of energy security in Suriname on the short, medium and long-term. These priorities cover judicial, institutional and conceptual aspects of the energy sector."

b. The Green Paper also includes the main guidelines for drafting an Electricity Act and addresses the need to define the roles and responsibilities of

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[15] The investment loan SU-L1009 adheres to the IDB's policy concerning public utility services (OP-708), specifically by fostering economic efficiency, long-term sustainability and increased accessibility; and by stimulating the adoption of enhanced governance modes for rural electricity services.

[16] Report of Compliance with Conditions Prior to Disbursement of the Financing IDBDOCS#38044841 and Policy Matrix.

various stakeholders in the electrical power sector and to assign responsibilities and mandates to an Energy Authority, among other recommendations.

c. The design of an EBS Business Plan (EBS Plan) that proposes a tariff structure for EBS and a schedule for its implementation until the year 2016. In order to develop such a tariff structure, EBS adopted a set of basic principles that include the concepts of cost recovery, economic costs of energy according to demand segments, utility profit allowance, energy efficiency and environmental impacts. Under the EBS Plan, EBS lays out the principles for its Public Grid Expansion, Organization Development, Investment Regime, Financial Analysis and its implementation through Change Management.

d. A corporate assessment that addresses several technical, operational and institutional challenges to respond to the increasing demand in an efficient and economic manner (¶1.13).

e. Environmental and social sustainability principles in the sector have been considered as part of the EBS Plan and the Green Paper.

1.29 **Government Strategy.** The GOS expects to address the main sector constraints and challenges with a comprehensive strategy. In the institutional and regulatory area, it is taking steps to implement an energy authority drafting basic legal instruments to define a framework[17]. The GOS is also committed to improving EBS's management and operations capacities and to address its financial sustainability through adequate economic compensation of the electricity service consistently through prudent social and macroeconomic management. GOS´s firm decision to carry on the sector reform is supported by its determination to enhance its regulatory framework, improve fiscal sustainability, promote regional partnerships (¶1.22), and also by EBS´s commitment to improve its corporate capabilities and sustainability.

1.30 **IDB's Strategy.** The Program supports a reform agenda consistent with IDB's Country Strategy (CS)[18]. The CS intends to assist Suriname with transitioning to a more structurally sustainable economy through better governance, strong growth rates, increased living standards, improved human capital and equity. The CS identified seven priority areas with energy being one of them.

1.31 The CS, with respect to energy as one of its priorities, focuses on: (i) revamping the regulatory framework; (ii) strengthening operational efficiency in EBS, including corporate governance; (iii) modernizing and expanding generation (introducing lower carbon intensity technology, including hydro, solar photovoltaic, and co-generation); (iv) improving the capacity of the transmission and distribution network to reduce operational costs and improve reliability in the delivery of power; and (v) increasing the use of efficient technologies for conventional fuel. In the long-term, this strategy should contribute to mitigating

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17 These issues are currently discussed in the draft "Suriname Power System Green Paper" which is undergoing a public consultation process.

18 "IDB Country strategy with the Republic of Suriname (2011-2015)", GN-2637-3; and also "2012 Operational Program Report", GN-2661-4, Annex I, page 18.

dependence on oil, and expand coverage of isolated locations where access to the transmission network is not cost-effective.

1.32 The Program directly addresses the issues identified in (i) and (ii) through its Components II and III related to sector framework and corporate capabilities; while it contributes to issues in (iii), (iv), and (v), by supporting stronger managerial and planning capacity of EBS and at the level of policy decisions.

1.33 In Suriname, the IDB applied Technical Cooperation (TC) resources to finance a comprehensive power sector assessment[19] that consolidated sector knowledge, developed thorough analysis, and supported discussions on sector policy and system expansion options. Much of the work supported in the final study, the "Suriname Power Sector Assessment," set the basis for stakeholder discussions in Suriname and contributed to the preparation of the Operation.

1.34 **Ninth General Capital Increase (GCI-9).** The Program is also consistent with the following lending and sectorial priorities of the Ninth General Capital Increase (GCI-9): (i) lending to a small and vulnerable countries, (ii) climate change, sustainable (including renewable) energy, and environmental sustainability, and (iii) infrastructure for competitiveness and social welfare, by expanding electricity service coverage.

1.35 **Consistency with other IDB's operations and other Multilateral Development Banks (MDBs).** IDB's operations in preparation and execution (¶1.25 and 1.26), are the only lending operations in the energy sector proposed by a Multilateral Development Bank (MDB) in Suriname for 2013. These operations are complemented by parallel inputs from operations SU-G1001 and SU-M1019, with contribution from GEF and MIF respectively, which focus on increasing electricity coverage and service sustainability to the rural population. These two operations consistently contribute to the overall sustainability of the sector[20].

B. Objective, Components and Cost

1.36 **Program Objectives and Expected Results.** The general objective of the Program is to increase the efficiency, transparency, sustainability and accountability of the power sector. The specific objectives are to develop an institutional and regulatory framework and to strengthen the corporate capabilities of the sector to supply electricity in an economic, efficient and sustainable manner. The Operation will continue supporting the ambitioned sector reform and institutional structure strategy. The Program's objective and ultimate policy targets remain as originally established in the first operation[21], while some policy

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19 ATN-SF-9038-SU, financed the "Suriname Power Sector Assessment and Alternatives for its Modernization", developed by KEMA Consultants and completed in December 2008.

20 The Bank is currently coordinating with AFD and working on the potential leverage of CIF funds. These funds would be allocated to provide additional support to activities comprised under component II, Sustainable Rural Electrification, of the investment operation SU-L1009.

21 The envisioned Triggers for the Third Operation (Policy Matrix) remain unchanged from previous operation,

goals in this Operation have been adapted to be consistent with the reform path followed by the GOS, as explained when describing the following components:[22]

1.37 **Component I. Macroeconomic Stability.** Component I seeks to ensure the consistency of the macroeconomic framework with the objectives of the Program.

1.38 **Component II. Development of a Sustainable Power Sector Framework.** Component II will continue to support the development of a sector framework by promoting the progressive evolution from preliminary draft policy papers for public discussion to the establishment of basic regulatory norms and an institutional structure, including sector legal instruments and institutions. Component II has the following sub-components:

a. **Regulatory and Legal Framework.** This sub-component will contribute to a more effective power sector with increased efficiency, transparency and accountability by: (i) developing and presenting for consideration to Council of Ministers (CM) the first draft of a Policy document that addresses the main guidelines for sector reform and the basic institutional structure for the power sector; and (ii) taking steps towards the drafting of the legal instruments that will regulate the organization and functioning of the Electricity Sector. Although in the first operation it was initially expected to develop both policy and regulatory instruments in parallel, the GOS opted for consolidating basic agreements on sector policy first, prior to launching the preparation of regulatory draft documents. Building such consensus as a condition to commence the design of a sector framework requires a more extended process. Based on this approach, the policy condition for this operation was adjusted to reflect this more gradual sequence and therefore recognizes the steps taken towards preparation of the legal framework.

b. **Implementation of Sector Institutions.** The Program, through this sub-component, supports the development of instruments, mechanisms and necessary organizational arrangements to enable a commercially-based operation and clear social, economic and financial incentives to achieve efficiency. In this regard, the Operation has set up the following policy conditions for this sub-component: (i) a proposal to assign the roles and responsibilities to a sector office for the coordination of the Energy Sector's affairs has been presented for consideration of and approval by the CM; and (ii) a tariff structure proposal, that includes a revision of the subsidy levels, has been submitted to the CM for consideration. With regard to the first condition, the GOS examined the complexity and cost of implementing a sector agency and concluded that in the short term this effort could hinder the effective implementation of the reform. As part of its approach to first consolidate basic agreements, the GOS decided to improve the role of focal point assigned to the Energy Desk to that of an Energy Office within the GOS with dedicated staff, attributes and resource allocation as a first step, while evaluating the most suitable scope and structure of a dedicated area or entity. This measure has the merit of rapidly creating a relevant sector institution that

[22] Changes in the Policy Matrix are presented in "Evolution of Policy Matrix" IDBDOCS#38077239

will help GOS to articulate the initial steps to transition to a new regulatory body. The second condition recognizes that a new tariff structure implies policy definitions on subsidies and impacts on GOS fiscal strategy in order to secure financial sustainability of the utility, as well as on macroeconomic variables. As a result the envisioned approval of a proposal requires an extended range of consensus that goes beyond sector stakeholders and thorough analysis within the GOS, all of which were necessary before submitting it for consideration by the CM.

c. **Preparation of an Expansion Strategy to Improve Supply Efficiency.** This sub-component seeks to improve the economic and technical efficiency of EBS's energy purchases. More specifically, the Operation will support: (i) the development and adoption by EBS of a new contract model for Power Purchase Agreements (PPA) as guideline for future transactions; (ii) the inclusion of basic environmental and social sustainability principles within the sector expansion plan; and (iii) the approval by the GOS of the financing for the implementation of the Program with RETs, in support of a sustainable rural electrification.

1.39 **Component III. Strengthen Sector Corporate Capabilities.** Following up on the actions taken during the first PBP, Component III of the operation aims to support efforts to strengthen EBS' corporate governance, transparency and accountability by focusing on the subcomponent below:

a. **Strengthen EBS's capabilities to Operate by Improving Corporate Governance, Transparency and Accountability.** This sub-component will support EBS in addressing several operational and financial challenges aimed at: (i) optimizing production costs; (ii) addressing financial sustainability issues; (iii) improving corporate capacities; and (iv) addressing the issue of supply of electricity with new investments and through the establishment of an adequate contract model for the purchase of reliable electricity. For these reasons, EBS and the GOS will strength EBS's capacities to facilitate an adequate development of the power sector with a view of having a commercially-based operation of the electricity service, with clear economic and financial incentives. To that end, the Operation supports EBS to engage in: (i) applying its expansion plan; (ii) defining specific actions to address fundamental technical recommendations from corporate assessment[23]; and (iii) carrying out a study to strengthen its corporate structure, governance, transparency and accountability; and making public its operational statistics, preferably on the Web.

C. Key Results Indicators

1.40 The Program will benefit the total population of Suriname, through a more efficient and sustainable power supply. Gains in efficiency will benefit the economy and boost confidence in the capacity of the power sector to supply to an

[23] As part of the policy goal of the first operation of the Program (SU-L1022), a corporate assessment of EBS was prepared to identify upgrade requirements and areas of improvement. Based on these findings EBS followed up hiring an international consultancy to develop specific action plans to improve each of several of those key areas. The scope of this set of plans is fully consistent with the concept of an action plan for EBS as originally envisioned in the Policy Matrix (SU-L1022).

increasing demand, fostering growth of commerce and industry. The GOS will benefit from a reduction in financial transfers to the sector when tariffs increase their contribution facilitating cost recovery, when PPA contracts are improved, and cost efficiency in the purchase of energy is increased.

1.41 The main results expected from the implementation of the Program are: (i) a policy and legal framework to implement a sustainable power sector framework; (ii) technical capacity to implement this framework, including alternative power sources; (iii) readiness to invest in rural electrification; and (iv) a power utility (EBS) that is more financially sound and operationally efficient.

1.42 The sustainability of the reform process is expected to be reflected in the following indicators: (i) electricity Law or an equivalent instrument approved by Parliament; (ii) improvements in EBS's net operating results; (iii) an Energy Sector agency in place; (iv) a new model of contract is used for the purchase of additional power; (v) an increase in energy sold per employee; and (vi) new Generation Capacity (MW) installed. More details about the outcomes and outputs of the Program are included in the Policy Matrix, Result Framework Matrix and Verification Matrix.

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financial Instruments and Contractual Conditions

2.1 This Operation is the second of a series of three PBP loans. The subsequent and final operation is planned for 2014. This Operation will draw upon the resources of the IDB's Ordinary Capital for an amount of up to US$10 million, upon execution of the respective contract and fulfillment of the policy matrix conditions agreed upon with the GOS and included in the Policy Matrix and Verification Matrix.

B. Environmental and Social Safeguard Risks

2.2 In accordance with Directive B.13 on Environment and Safeguards Compliance Policy (OP-703), this Operation is not classified within an environmental category. The policy and institutional changes supported by this Operation in the energy sector may have potentially significant effects on Suriname environmental and natural resources, specifically through the impacts related to development of large-scale power generation projects, particularly hydropower. The Program provides an opportunity to help Suriname minimize those impacts through consideration of environmental and social factors in the planning stage (e.g., expansion strategies), and thereafter throughout the project cycle.

2.3 The Policy Matrix reflects the phased approach agreed with the GOS in order to incorporate environmental and social sustainability criteria for assessment and comparison of sustainable power development options as part of the Sustainable Energy Framework.

2.4 **Fiduciary Risk.** No acquisitions are contemplated to be specifically financed with the Operation and therefore no fiduciary risks have been identified.

2.5 **Execution Risk.** The set of policy measures are consistent with the general objective of the Program and it is anticipated that all policy measures considered in this Operation will be completed prior to its submission for Board consideration; therefore no execution risks are anticipated. Regarding the implementation of the Program, the availability of financial and knowledge resources through lending instruments and TC will mitigate execution risks associated with the eventual lack of timely dedicated resources, while the commitment of the GOS is expected to mitigate risks associated with coordination and continuity of the initiatives.

2.6 **Other Risks.** A energy sector reform, requires frequent and coordinated engagement with stakeholders involved in the process. This is necessary to empower the different actors involved in the process to discuss the issues with sufficient depth and to come up with workable solutions that are applicable to Suriname's reality. Therefore, there is some risk of a lack of coordination between the different stakeholders in the sector. To mitigate this risk, the Operation is accompanied by the technical cooperation ATN/OC-13446-SU that includes financing for dedicated technical support, which may be based in the relevant GOS office to contribute to technical coordination. This technical support will help manage several of the Program's initiatives in order to carry them out effectively and may eventually continue to serve within the GOS or help tutor and enhance existing administrative and technical resources.

2.7 **Cost Benefit Analysis (CBA).** For this operation, an update of the Cost Benefit Analysis (CBA) for the Program was carried out during the preparation of the first PBP operation of the Program (SU-L1022). The CBA was prepared taking into account scenarios with and without Program execution and under the assumption that without the Program it would not be possible to supply additional power sales with acceptable reliability after 2012. For the purpose of this CBA, the entire Surinamese power system was modeled using specialized software.[24]

2.8 The CBA's results indicate that, with the Program, the EBS expansion plan would produce US$497 million of net benefits (present value estimated at 12% discount rate). The economic return would be 23.3%. A sensitivity analysis for the CBA was carried out considering variations in the main assumptions. The results illustrate that a lower demand forecast (5% yearly growth), 20% increase in fuel prices, 20% increase in investment costs or 20% decrease in the benefits estimates will still permit significant net economic benefits. Opposite changes in those parameters will significantly improve its economic indicators.

[24] The software Stochastic Dual Dynamic Programming (SDDP) is a commercial hydrothermal dispatch model with representation of the transmission network and used for short, medium and long-term operation studies. The model calculates the least-cost stochastic operating policy of a hydrothermal system. It is currently used in more than 30 countries.

III. IMPLEMENTATION AND MANAGEMENT PLAN

A. Summary Implementation Arrangements

3.1 **Borrower and Executing Agency (EA).** The Borrower is the Republic of Suriname and the Executing Agency (EA) will be the Ministry of Finance (MoF). The MNH, as head of the energy sector, will be the entity with technical responsibility to contribute compliance of the agreed policy conditions of the Program. The Energy Desk within the MNH is a focal point to the energy sector, and some agents are tasked to support it; the Permanent Secretary coordinates and overviews these activities. The size of institutional resources and legal provisions to manage the energy sector is crucial for the design of the Program.

3.2 The MoF will have the following responsibilities: (i) provide evidence that the conditions have been met and any other reports that the IDB may need to approve the disbursement; (ii) support the actions required to fulfill the Third PBP loan; and (iii) once the disbursement of the Program is completed, gather and prepare the required information and performance indicators so that the IDB and the GOS can follow up, measure and evaluate the results of the Program.

B. Summary of Arrangements for Monitoring Results

3.3 The commitments identified in the Policy Matrix, Verification Matrix and the indicators in the Result Framework Matrix establish the key parameters for the supervision and evaluation of program results. A comprehensive monitoring and evaluation system will be applied to assess the Program's results. The IDB project team will be monitoring the Program both from the IDB Country Office in Suriname (CSU) and the Energy Division (ENE), which will be responsible for the follow-up of the Program. The monitoring and impact evaluation plan presents the evaluation methodology, the indicators to be assessed, the institutions data collection instruments, milestone timeline and budget. The MNH and EBS are responsible for the compilation, analysis and delivery of verification reports.

3.4 The borrower and the IDB agreed to quarterly meetings to conduct Program monitoring, to identify progress and anticipate changes that may be required to achieve the goals of the results matrix. The annual sequence of the Program operations contributes to the regularity and consistency of such monitoring.

3.5 In compliance with IDB policies, a Project Completion Report (PCR), to be funded by the IDB, will be prepared six months after the last phase of the Program has been fully disbursed. The PCR will evaluate results obtained by the Program and will include an ex-post CBA.

IV. POLICY LETTER

4.1 The IDB and GOS have agreed on the macroeconomic and sector policies to be supported by the Program, including a Policy Letter, presented by the MoF, describing the main components of the GOS's strategy for the Program and reaffirming its commitment to implement the agreed activities with the IDB.

Development Effectiveness Matrix			
Summary			
I. Strategic Alignment			
1. IDB Strategic Development Objectives	**Aligned**		
Lending Program	**i) Lending to small and vulnerable countries, and ii) Lending to support climate change initiatives, renewable energy and environmental sustainability.**		
Regional Development Goals	**i) Percent of households with electricity, and ii) Stabilization of CO2 equivalent emissions (metric tons per habitant).**		
Bank Output Contribution (as defined in Results Framework of IDB-9)			
2. Country Strategy Development Objectives	**Aligned**		
Country Strategy Results Matrix	**GN-2637-3**	**i) Increased financial sustainability of power supply for interior locations, ii) Improved institutional and policy setting environment for energy in Suriname, and iii) Improved financial sustainability and governance of EBS.**	
Country Program Results Matrix	**GN-2696**	**The intervention is included in the 2013 Country Program Document.**	
Relevance of this project to country development challenges (If not aligned to country strategy or country program)			
II. Development Outcomes - Evaluability	**Highly Evaluable**	**Weight**	**Maximum Score**
	9.2		**10**
3. Evidence-based Assessment & Solution	**10.0**	**33.33%**	**10**
4. Ex ante Economic Analysis	**10.0**	**33.33%**	**10**
5. Monitoring and Evaluation	**7.5**	**33.33%**	**10**
III. Risks & Mitigation Monitoring Matrix			
Overall risks rate = magnitude of risks*likelihood	**Low**		
Identified risks have been rated for magnitude and likelihood	**Yes**		
Mitigation measures have been identified for major risks	**Yes**		
Mitigation measures have indicators for tracking their implementation	**Yes**		
Environmental & social risk classification	**B.13**		
IV. IDB´s Role - Additionality			
The project relies on the use of country systems (VPC/PDP criteria)			
The project uses another country system different from the ones above for implementing the program			
The IDB's involvement promotes improvements of the intended beneficiaries and/or public sector entity in the following dimensions:			
Gender Equality			
Labor			
Environment	**Yes**	**The project will contribute to the promotion of sustainable management practices.**	
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	**Yes**	**ATN/OC-13446-SU to support the preparation of the Sustainable Energy Framework.**	
The ex-post impact evaluation of the project will produce evidence to close knowledge gaps in the sector that were identified in the project document and/or in the evaluation plan			

The document presents clearly the energy sector issues that the Government of Suriname faces, and builds upon the diagnostic analysis presented in the first tranche for this programmatic loan (SU-L1022). This operation is the second of three loans in the series. The proposed solution is consistent with the diagnosis, which in turn is entirely consistent with the solid original analysis in the first loan of the series.

The results matrix is clear. The expected policy measures included in the policy matrix will result in an improved regulatory framework and tariff structures in addition to improved sector corporate capabilities. These results will in turn provide a basis for the attainment of the expected impacts: increased electricity coverage and improved financial sustainability.

The document includes a comprehensive economic analysis which is an update of the cost-benefit analysis carried out during the preparation of the first operation of the series. In this process, the entire Surinamese power sector was modeled using specialized software.

For evaluation purposes, a proposed ex-post cost-benefit analysis is included. The ex-post CBA will follow the same methodology and model (SDDP) used for the ex-ante CBA. The base scenario, sensitivities and critical variables associated with the economic impact, will be updated based on the information provided in the progress reports.

POLICY MATRIX

Issues	Objective	Policy Conditions 1st Operation	Policy Conditions 2nd Operation	Triggers 3rd Operation
I. Macroeconomic Stability				
	Maintain a stable general Macroeconomic Framework	Macroeconomic framework is consistent with the objectives of the program and with policy letter	Macroeconomic framework is consistent with the objectives of the program and with policy letter	Macroeconomic framework is consistent with the objectives of the program and with policy letter
II. Development of a Sustainable Power Sector Framework				
Lack of an integrated policy and regulatory framework to regulate sector activity.	Define the regulatory and legal framework to contribute to a more effective power sector with increased efficiency, transparency and accountability.	A diagnostic assessment that includes an identification of the main issues and initial proposals for sector reform has been developed and presented for stakeholders consultations.	The first draft of a Policy document that addresses the main guidelines for sector reform and the basic institutional structure for the power sector has been submitted to the Council of Ministers.	The Power Sector Policy that establishes the basic principles for a sustainable growth of the energy sector, consistently with its new legal and institutional structure has been approved.
		Guidelines to draft the legal framework that will regulate the energy sector have been developed and presented for stakeholder consultations.	Steps towards the drafting of the legal instruments that will regulate the organization and functioning of the Electricity Sector have been taken.	The proposed draft legislation to regulate the Energy sector is presented to Parliament for its approval.
High level of subsidies from the government to the utility due to low electricity tariffs. Lack of proper price signals to consumers and inefficient operation of the utility.	Implement institutions with a view to having a commercially-based operation and clear social, economic and financial incentives to achieve efficiency.	A specific office within the MNH has been created to serve as a focal point for sector dialogue and coordination of the reform process.	A proposal to assign the roles and responsibilities to a sector office for the coordination of the Energy Sector's affairs has been presented for consideration of and approval by the Council of Ministers.	An Energy Sector entity to regulate and manage the sector affairs has been created.
		A set of basic principles to establish a new tariff structure has been identified and a proposal of a new tariff schedule based on such principles has been prepared by EBS.	A tariff structure proposal, that includes a revision of the subsidy levels, has been submitted to the Council of Ministers for consideration.	Price setting principles are reflected in the tariff schedule implemented by EBS.
A significant increase in power demand due to new residential, commercial and industrial projects.	Update the expansion strategy of the sector to improve supply efficiency.	The EBS has initiated the process to adopt a new mechanism to improve the economic and technical efficiency of its energy purchases through updated power purchase agreements (PPAs).	A revised draft model of PPA contract was developed by EBS as guideline.	The new contract model has already been used for the purchase of additional power by EBS.

Issues	Objective	Policy Conditions 1st Operation	Policy Conditions 2nd Operation	Triggers 3rd Operation
		A decision to promote the incorporation of environmental and social sustainability principles in the sector has been adopted to support the initiation of sector assessments on environmental issues.	The sector expansion plan included basic environmental and social sustainability principles.	Environmental and social sustainability principles are being implemented throughout the project cycle (planning to execution).
		A program to pilot the implementation of a sustainable electrification scheme using on-grid and off-grid Renewable Energies has been designed and endorsed by the Borrower.	The Government of Suriname has approved the financing for the implementation of the Program with Renewable Energy Technologies (RETs).	At least one feasibility study for the implementation of RETs to increase energy access has been completed.
III. Strengthen sector corporate capabilities				
EBS faces several operational and financial challenges including: (i) production costs; (ii) financial sustainability; (iii) electricity rates; and (iv) increase of electricity demand with new investments or through contracts for the purchase of reliable supply.	Strengthen utility's capabilities to operate by contributing to improvements in technical tools and corporate governance, transparency and accountability.	A review of the expansion plan of the Generation and Transmission System has been carried out by EBS to analyze alternatives and their technical and economic outcomes	EBS Board has approved the expansion plan.	The EBS expansion plan is being executed.
		A corporate assessment of EBS has been completed to identify upgrade requirements and areas of improvement and a report has been issued with the corresponding results.	EBS has developed specific action plans to address fundamental technical recommendations from corporate assessment.	Fundamental technical recommendations from corporate assessment are being implemented.
		Basic principles to strengthen EBS's corporate structure to enhance its governance, transparency and accountability have been identified by EBS.	EBS is carrying out a study to strengthen its corporate structure to enhance its governance, transparency and accountability. EBS is making public its operational statistics, preferably on the web.	EBS is undertaking an update of its corporate and operational instruments, codes and laws, according to findings from corporate internal assessments.