



## 1. Project Data

<b>Project ID</b> P161015	<b>Project Name</b> ESIP		
<b>Country</b> Benin	<b>Practice Area(Lead)</b> Energy & Extractives		
<b>L/C/TF Number(s)</b>	<b>Closing Date (Original)</b>	<b>Total Project Cost (USD)</b> 52,908,510.33	
<b>Bank Approval Date</b> 23-Jun-2017	<b>Closing Date (Actual)</b>		
	<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>	
Original Commitment	0.00	0.00	
Revised Commitment	0.00	0.00	
Actual	0.00	0.00	

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## 2. Project Objectives and Components

### a. Objectives

The Project development objective (PDO) as stated at appraisal (PAD dated June 2, 2017, p. 15 and Financing Agreement dated July 14, 2017, Schedule 1) was to improve SBEE's operational performance, expand electricity access in targeted areas, and promote community-based management of forest resources.

The PDO has three distinct parts as follows: (a) improve SBEE's (*Société Béninoise d'Énergie Électrique* – Benin Power Utility) operational performance; (b) expand electricity access in targeted areas; and (c) promote community-based management of forest resources. However, for efficacy analysis the ICR has parsed the



PDO into two parts by combining part (a) and part (b) to read: improve SBEE's operational performance and expand electricity access in targeted areas. The ICRR follows the same approach because the two parts were supported by broadly the same activities under Components 1 and 2 of the Project – Improvement of SBEE's Commercial Performance and Strengthening the Distribution Network in Targeted areas.

**b. Were the project objectives/key associated outcome targets revised during implementation?**

No

**c. Will a split evaluation be undertaken?**

No

**d. Components**

**Component 1: Improvement of SBEE's Commercial Performance** comprised preparation and implementation of a management improvement plan (MIP) for the SBEE and improvement of its customer service. Implementation of the MIP was expected to produce: (i) sustainable measures for prompt payment of bills for electricity consumption by government institutions, (ii) a metering and control system for the utility's high consuming customers' segment, (iii) an updated SBEE's customer database, (iv) an established and trained electricity theft detection and inspection team. The improvement of SBEE's customer service entailed: (i) the establishment and operationalization of a customer call center for customers to voice complaints and concerns and for SBEE to track responses, (ii) implementation of customer satisfaction surveys and the online publication of their results, and (iii) conducting of gender sensitive communications and awareness campaigns to regularize customer connections and to reduce electricity theft.

**Component 2: Distribution Network Strengthening in Targeted Areas.** The objective of this component was to improve on-grid access. This was to be achieved by: (a) expanding medium (MV) and low voltage (LV) networks in target areas to rebalance loads, regularize unmetered connections, and connect new consumers in selected underserved areas, (b) the acquisition and installation of prepaid meters and required spare parts in substations; (c) upgrading selected power stations to reduce power outages; and (d) promoting energy-efficient street lighting through the acquisition and installation of light emitting diode lights (LED) on selected streets and conducting a study on sustainable management of street lighting.

**Component 3: Community-Based Management of Wood Fuels.** This component's purpose was to improve community management of wood fuels by: (a) improving sustainable management of forest resources; and (b) developing improved cookstoves. Improvements in sustainable management of forest resources were to be supported in the Moyen and Oueme Haut regions through; (i) implementation of forest management plans in three selected municipalities, including provision of logistics support and training, (ii) preparing participatory forest management plans in five other municipalities, (iii) developing income-generating activities, such as bee-keeping; and (iv) provision of technical assistance for establishment of an inter-municipality association for the regulation of forest management bodies and wood fuel markets. The development of improved cookstoves was to be supported through; (i) a comprehensive quality assurance and value chain study of cook stove production and commercialization, (ii) development of a marketing and communication plan, and (iii) the upgrading of an improved cook stoves testing center through the provision of goods, training, and technical assistance.



**Component 4: Sector Development and Implementation Support.** The objective of this component was to improve sector governance and project implementation. Improvement in governance was to be supported through an assortment of relevant studies and through strengthening the capacities of key Government of Benin (GoB) institutions in the sector – Ministry of Energy, Water, and Mines (*Ministère de l’Energie, de l’Eau et des Mines, MEEM*), Benin Rural Electrification Agency (*Agence Beninoise de l’Electrification Rurale et de laMaitrise d’Energie, ABERME*), Renewable Energy Agency (*Agence Nationale de Développement des Energies Renouvelables, ANADER*), and National Authority for the Regulation of the Electricity Sector (*Autorité Nationale de Regulation du Secteur d’Electricité, ARE*) – to enable them to fulfill their respective roles in power development planning, program coordination and oversight, rural electrification program supervision, renewable energy development, and regulations development and enforcement. The range of studies included generation and transmission least-cost studies and plans, detailed feasibility studies for priority investments, an access scale up plan and other relevant analytical studies. Through the PIU the component supported project coordination, management, and monitoring, including financial and technical audits, periodic evaluations, and provision of relevant goods, training, and consulting services.

### Revised Project Components

There were two changes in project component 2. The first was the droppage of the rehabilitation of the Dassa MV/HV substation, one of three substations at the request of the GoB. The substation was dropped as it had been included under another project through which it could be implemented much more quickly. The droppage of the substation was handled through an exchange of letters with the GoB. The second change was the transfer of the rehabilitation of some distribution activities and construction of a transformer repair workshop to the Benin Electricity Access Scale-up Project (P173749) because they could not be completed within the original project implementation period. This change was implemented through a restructuring of the Project on December 22, 2023 which also included a cancellation of US\$7.95 million equivalent representing the corresponding cost of the transferred activities.

#### e. Comments on Project Cost, Financing, Borrower Contribution, and Dates

Total project cost at completion was US\$53.2 million (Implementation Completion and Results Report (ICR), p. 10 and Annex 3) compared to US\$61.0 million estimated at appraisal (PAD, p. 18). At appraisal the financing plan comprised an IDA Credit of US\$60.0 million and a GoB contribution of US\$1.0 million. At completion the IDA financing totaled US\$52.9 million, after considering a cancellation of US\$7.95 million approved during the project restructuring on December 22, 2023. The GoB contribution was US\$0.3 million compared to the expected US\$1 million. The cancellation of part of the IDA Credit was at the request of the GoB based on an assessment of the amount that could not be disbursed within the time available before Project closure.

**Dates:** The project was approved on June 23, 2017, and became effective on February 12, 2018. A mid-term review was conducted on November 9, 2020. The project was restructured once on December 22, 2023, to cancel US\$7.95 million that was likely to remain undisbursed by Project closure. In addition a reallocation of funds between disbursement categories was also made.

### 3. Relevance of Objectives



## Rationale

The Project's rating for relevance of objectives is High. The objectives were strongly aligned with the World Bank's Country Partnership Strategy (CPS) for FY2013-2017 which was in effect at project preparation and with the subsequent Country Partnership Framework (CPF) for FY2019-2023 at project completion. Increased access to quality infrastructure services, one of the expected outcomes of the FY2013-2017 CPS pillar on "sustainable growth, competitiveness, and employment" was directly supported by the project's electricity access expansion and quality of service objectives. The CPF reflected several aims of this project, including: (a) improving both generation capacity and administration of the system to improve performance and access; (b) maximizing finance for development for electricity generation; (c) producing greener energy through the implementation of community-based forest management; (d) building capacity for governance in the energy sector; and (e) supporting women's economic empowerment in the energy sector. The Project's support for improvements in electricity supply were also consistent with the objectives of the World Bank's Energy Directions Paper which advocates helping client countries to secure affordable, reliable, and sustainable energy supply needed to meet the twin goals of poverty reduction and shared prosperity.

The Project objectives were also aimed at addressing some key elements of the GoB Action Plan (2016-2021) for the sector, specifically those related to improving sector governance, increasing access to reliable quality electricity supply and enhancing SBEE's operational performance to create conditions for private sector participation and economic growth.

## Rating

Substantial

## 4. Achievement of Objectives (Efficacy)

### OBJECTIVE 1

#### Objective

To improve SBEE's operational performance and expand access in targeted areas.

#### Rationale

**Theory of Change (ToC):** The theory of change for the Project was not included in the PAD because the Bank's guidelines and procedures did not require one at the time of project preparation. For the evaluation, the ICR prepared a TOC (ICR, p. 3) based on the results framework in the PAD (Annex 3). The ToC shows causal links from project activities to outputs, intermediate indicators, outcomes, and the long-term goals of improving the performance of the country's energy sector and the livelihoods and economic productivity of the economy. The expected project outcomes were: (a) **PDO #1** – improvements in SBEE's operational performance and electricity access expansion; and (b) **PDO #2** – promotion of sustainable community-based management of forests.



**Achievement of PDO #1** – increased operational performance and access expansion outcomes – was to be measured by three PDO indicators as follows: (a) **PDO indicator #1** – percentage reduction in distribution losses; (b) **PDO indicator #2** – percentage increase in revenues from targeted high-consuming customers; and (c) **PDO indicator #3** – the number of people provided with new or improved electricity service under the project. In addition, there were 15 intermediate indicators to support tracking of the project's progress towards achievement of the PDO outcomes.

**Achievement of PDO #2** – promotion of sustainable community-based management of forest resources was to be measured by **PDO indicator #4** – the number of hectares of forest covered by community-based forest management plans. There were also three intermediate outcome indicators to support tracking of the project's progress towards achievement of PDO #2.

PDO indicators were appropriately aligned with the type of interventions supported by the Project and the targets were set at reasonable levels. However, there are some shortcomings in the TOC. First, there was uncertainty regarding the baseline and target values for the distribution losses reduction indicator (**PDO indicator #1**). This was due to the lack of accurate baseline data and of capacity (including software) in SBEE to model the impact of network strengthening activities on loss reduction. Second, while several aspects of the project correctly focused on revenue collection (revenue protection program (RPP), management information system development, theft detection and prevention prepaid metering, etc.) in addition to billing an indicator was not included to measure improvements in collection efficiency at the PDO or intermediate indicator level. The ICR correctly points the substantial improvement achieved in this regard in raising collection efficiency from 90 percent in 2017 to 95 percent in 2023. Third, no indicators were included at the PDO or intermediate level for some important activities such as the project's support for improved cookstoves and for tinter-municipality associations and local forestry management bodies. Fourth, in some cases the description of project activities lacked specificity. This was the case with component 2 which did not provide data on the physical quantities of MV/LV lines, or capacities of the substations/transformers planned for rehabilitation or construction. Such data would have been useful for tracking implementation of the progress and assessing the degree of project completion at project closure. The activities supported by the Project in furtherance of each objective, the related outputs/intermediate indicators and the resulting outcomes are summarized below under the relevant PDOs.

### **PDO #1: To improve SBEE's operational performance and expand access in targeted areas.**

#### **Activities**

1. Development and implementation of an MIP for SBEE – *Completed*
2. Acquisition and installation of smart meters for high revenue customers, and associated infrastructures & management information systems software – *RPP meters and systems completed.*
3. Establishment of a metering control center – *Completed.*
4. Installation and operationalization of a customer call center – *Completed.*
5. Construction of 60 MV/LV sub-stations and distribution networks (MV and LV) – *some activities were delayed and transferred to another project.*
6. Rehabilitation of 3 HV/MV stations – *One substation dropped.*
7. 50,000 new electricity connections – *Completed.*
8. Acquisition and installation of street lighting using diode (LED) lamps – *Completed.*
9. Installation of transformer repair workshop and associated spare parts – *Delayed and transferred to another operation.*



10. Acquisition a fault detection vehicle for SBEE – *Completed*
11. Development of prospectus and a least-cost generation and transmission plan – Completed but donor conference pending GoB decision.
12. Strengthening capacity of MEEM, its structures, and the actors of the sector – *Completed*

### Outputs/intermediate outcomes

1. Management Improvement Plan (MIP) developed, approved, and implemented – *Achieved*.
2. Average duration of power outages per year in HV/MV substations rehabilitated by the project (hours) – *Exceeded target (68 % reduction in average outage duration compared to target reduction of 50%)*
3. Implementation of a revenue protection program (RPP), 6,000 smart meters purchased of which 1,066 were for the high consuming MV customers and were installed as planned– *Completed*.
4. Call Center installed and running at SBEE as targeted– *Achieved and operational*.
5. SBEE customer satisfaction survey was conducted, and a report was prepared by SBEE on how to address customers' feedback as planned– *Achieved*.
6. Average annual voltage supplied to households in rehabilitated areas (*Achieved – average annual voltage improved to 216 compared to target of 210*)
7. MV/HV substations rehabilitated by the Project – *2 out of the targeted 3 substations completed, third was dropped*.
8. Investment Prospectus for scale-up access developed – *Developed but not submitted to a donors' conference as planned*.
9. Institutional strengthening study conducted, and capacity building plan implemented – *Achieved*.
10. Staff trained through the project – *target of 100 trained exceeded, actual was 357 persons*.
11. Households provided with access to electricity services under the project (grid or off grid) (*Actual was 52 909 compared to target of 10,000*)
12. Households provided with improved electricity connections (*actual 22,091 compared to target of 15,000*)
13. Female-headed households provided with new or improved electricity connection as a percentage of the total number of households connected (*Achieved – 16.2 percent compared to target of 10 percent*)
14. Prepaid meters installed in targeted project areas (*Achieved – 75,000 compared to 50,000*)
15. MV/LV sub-stations installed in the project areas (*Achieved – 99 compared to target of 60*)

### Outcomes

1. Reduction of losses (%) – *Partially achieved because losses were reduced from 24 percent to 22 percent instead of 21 percent as targeted*.
2. Increased revenues from targeted high-consuming customers – *increased by 14.3 percent compared to the target of 10 percent*.
3. People provided with new or improved electricity service (number) (Corporate Results Indicator) – *420,000 compared to the target of 125,000*.

PDO indicator #1 was partially achieved because losses were reduced by 2 percent instead of by 3 percent as targeted. In addition to the uncertainties regarding the baseline figure of 24 percent and the lack of a robust tool to model the impact of the distribution network investments on losses, the planned investments had not been fully completed at project closure. These are likely to have contributed to further loss reduction in 2024. The increase in revenues from high consuming customers and the number of people provided with





new or improved access (PDO indicators #s 2 and 3 and) were both substantially exceeded. Overall PDO #1 is rated **Substantial** for efficacy.

### Rating

Substantial

## OBJECTIVE 2

### Objective

To promote community-based management of forest resources.

### Rationale

**Theory of Change (ToC):** As described above.

### Activities

1. Implementation of community-based forest management plans covering 300,000 hectares (ha) prepared under the IAME Project. – **Completed**
2. Preparation of new participatory forest management plans covering 150,000 ha across three municipalities of the Ouémé Supérieur – **Completed**
3. Development of income generating activities - **Completed**.
4. Establishment of an inter-municipality association and installation of local forestry management bodies and rural wood markets – **Completed**.
5. Development of Quality Standards for Improved Cookstoves - **Completed**

### Outputs/intermediate outcomes

1. New participatory forest management plans covering 150,000 ha across three municipalities prepared compared to a target of 150,000 ha – **Achieved**.
2. Income generating activities developed – **Planned**: 8 honey production centers; 8 water boreholes; 800 beehives constructed; and 280 trained beekeepers: **Achieved**: 14 honey production centers; 14 water boreholes; 1,400 beehives constructed; and 140 trained beekeepers and 14,000 cashew plants produced and planted
3. Increased revenues from beneficiaries of income generating activities funded by the project – 30.5 percent increase compared to a target of 30 percent – **Achieved**.

### Outcomes

1. Hectares of forest covered by community-based forest management plans (number) - 300,000 ha compared to a target of 300,000 ha - **Achieved**.



PDO indicator #4 was fully achieved. PDO #2 is rated Substantial for efficacy because PDO #4 was fully achieved, but there was insufficient evidence on the impacts of the institutional and regulatory activities and of improved cooking stoves on sustainable wood fuel management.

**Rating**  
Substantial

## OVERALL EFFICACY

### Rationale

The overall Project efficacy rating is Substantial because of the four PDO indicators two exceeded their targets (increases in revenues from high consuming customers and the number of people provided with new or improved electricity services under the project), one achieved its target (the number of hectares covered by community-based management plans) and another was partially achieved (the percentage of loss distribution reduction).

### Overall Efficacy Rating

Substantial

## 5. Efficiency

The assessment of Efficiency considers administrative/implementation efficiency, and economic and financial efficiency.

**Operational/Implementation efficiency.** The project was implemented within the original timeframe of about 6 years from Board approval. About 86 percent of the original allocated funds or the 100 percent of the net commitment after cancellation of about US\$7.95 million was disbursed. The cancellation related to four major contracts which were transferred to another project as they could not be completed before the Project's closing date. Implementation of these contracts had been delayed by failed bidding process which was compounded by force majeure events (COVID-19 pandemic, and the earthquake in Türkiye) during its implementation timeline and a failed bidding process.

The cost associated with the postponement can be estimated as the difference in net present value (NPV) caused by the delay, which amounted to around US\$5 million.

**Economic and financial efficiency.** The ICR conducted economic and financial efficiency for the electricity and biomass components separately and did not aggregate the results.

**Electricity component.** The economic cost stream comprises capital and operating costs component 1 while the benefit stream consisted of the benefits of increased access and technical loss reduction. The economic





benefits of increased access were evaluated according to the willingness-to-pay (WTP) criterion assumed at US\$172 per user per year in Benin. The economic benefits of technical loss reduction were valued at the purchase price of energy purchased by SBEE from CEB, the bulk supplier to the regional distribution utilities. The results yielded a NPV of US\$91 million for project investment and operations costs, US\$37 million for loss reduction benefits, and US\$82 million for WTP benefits at an 8 percent discount rate. Consequently, the project generated net benefits of US\$28 million (in present value); the economic internal rate of return (EIRR) amounted to 14.4 percent, which is above the opportunity cost of 8 percent. For the financial efficiency, the NPV was estimated at US\$22 million and the FIRR at 14.6 percent. Both the economic and financial results are robust, as they limit the WTP benefits and the new sales benefits to those new users associated with the project, whereas the network investments are likely to support the connection of new users beyond project closure. These positive results are not surprising given that the project consists of sensible investments using proven technologies.

**Biomass component/ Forestry subcomponent:** The economic benefits of this component materialize with the organization of managed charcoal markets that generate resources that are shared among stakeholders. The forestry project had a cost of around US\$850,000 and generated benefits of around US\$1.5 million from 2020 to 2022, or around US\$500,000 per year. This indicates that the activities supported by the project for improved forest management are well justified. A comparison of the economic results with the appraisal values yields similarly high EIRRs of 50 percent at appraisal and 63 percent at ICR.

**Biomass component/enhanced revenues subcomponent.** The component seeking to improve the revenues of local populations through the support of honey-producing centers yielded a disappointing result, as the investment of US\$1.9 million resulted in a mere US\$44,000 per year in revenues. To justify the investment provided by ESIP, and assuming a 15-year lifetime, annual revenues of around US\$200,000 at an 8 percent discount rate are required. However, it is probable that, because the available data only cover recent years, honey production can be expected to grow rapidly in the next few years, thereby improving the economic and financial performance of the component.

The ICR concluded that the electricity components of the project—which account for the bulk of the investment of ESIP—and the forestry subcomponent yield efficiency indicators in line or above expectations, but the increased revenue activities did not yield the expected economic results, which appear to have been overestimated at appraisal.

The EIRRs in the table below refer to the electricity component which constituted the bulk of the project costs. Overall, the efficiency is rated as Substantial.

**Efficiency Rating**

Substantial

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

Rate Available?	Point value (%)	*Coverage/Scope (%)
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Appraisal	✓	15.00	81.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	14.40	78.00 <input type="checkbox"/> Not Applicable

\* Refers to percent of total project cost for which ERR/FRR was calculated.

## 6. Outcome

The Project’s outcome rating is Satisfactory based on a **High** rating for relevance of objectives and **Substantial** for both Efficacy and Efficiency. Project objectives were consistent with the Bank’s FY2019-2023 CPF for Benin and the Government’s priorities for strengthening energy sector governance and performance essential for economic growth and improvements in livelihoods. The SBEE operational performance and access expansion objective was almost fully achieved while the objective of promoting sustainable management of forests was achieved. Hence, the overall efficacy rating of Substantial. Overall administrative efficiency and economic/ financial efficiency of the project was good with minor shortcomings, hence a Substantial rating for Efficiency.

### a. Outcome Rating

Satisfactory

## 7. Risk to Development Outcome

The Project achieved significant operational efficiency improvements in the areas of revenue collection, loss reduction and in establishing community-based forest management systems. Reversal to these gains will arise if SBEE does the installation of prepaid meters purchased under the project is not continued or the smart meters installed for the RPP are not maintained and managed in accordance with the established systems. In addition, capacities of the sector agencies built under the project, especially in MEEM and SBEE will need to be maintained to ensure implementation of the generation and transmission investments and access scale-up plans in a least-cost manner.

The Bank’s continued engagement in the sector through BEAS and other operations and alongside other partners will help to manage the risks of reversals of outcomes achieved by the ESIP. The ICR notes that the risks to the gains achieved under the sustainable management of forests are substantial and will require continued support of donor in view of the financial fragility of the forest committees (p.24).

## 8. Assessment of Bank Performance

### a. Quality-at-Entry

The design of the project was responsive to the country and energy sector conditions in Benin which called for strengthening of the governance and operational performance of the sector, improvements in electricity access which at 29 percent was below the Sub-Saharan Africa average of 35 percent, and



enhancement of reliability of supply to support improvements in livelihoods and economic growth. The PDOs were, thus clear and consistent with country and sector needs. However, as discussed under the TOC there were some deficiencies in the selection of the indicators, the specificity of the project activities.

The project design was also closely coordinated with other development partners, especially the US Millennium Challenge Corporation which was planning to support SBEE through a management contract and the AFD which was supporting distribution system networks and distribution information systems.

Overall quality at entry was Satisfactory.

### **Quality-at-Entry Rating**

Satisfactory

#### **b. Quality of supervision**

The Project was supervised on a regular basis by the Bank's Headquarters and field-based staff. Over the six-year period Implementation Status and Results Reports (ISRs) were prepared every six months on average (12 ISRs in total). The ISRs, alongside mission aide memoires served to inform Bank management and senior GoB officials of critical issues affecting the project, thus providing a critical avenue for the task team to receive guidance.

The task team's field presence facilitated constant communication and supervision of the project even during the COVID-induced travel restrictions.

The focused supervision of the Project facilitated its high degree of completion, especially the completion of the RPP and the expansion of access at a level more than double that anticipated at appraisal the anticipated. Overall, Project supervision is rated Satisfactory

### **Quality of Supervision Rating**

Satisfactory

### **Overall Bank Performance Rating**

Satisfactory

## **9. M&E Design, Implementation, & Utilization**

### **a. M&E Design**

**Institutional design and responsibilities for the M&E system:** The monitoring of project implementation and of expected results and outcomes was vested in the PCU, which was expected to coordinate data collection from other agencies and to and consolidate it and issue progress reports. The results to be monitored, sources of data and frequency of collection and progress reporting were described in the detailed in the Project's Results Framework (PAD, Annex 3). Project outcomes related to service



improvement were to be assessed through surveys during and after project implementation. The PCU's M&E specialist was charged with implementing and coordinating all M&E activities under the project. The World Bank was expected to supervise the project over its lifetime and monitor its results and outcomes on a regular basis to evaluate the achievement of the PDO and implementation performance. In addition, the Bank were to conduct a project midterm review two to three years after project effectiveness to thoroughly assess the overall project performance in achieving the development objectives and ensure that lessons learned thus far are taken into consideration in implementation over the remaining period. Any adjustments were to be discussed, agreed, and implemented, as necessary.

**M&E content:** The results to be monitored, sources of data and frequency of collection and progress reporting were described in detail in the Project's Results Framework (PAD, Annex 3). Project outcomes related to service improvement were to be assessed through surveys during and after project implementation. In addition to monitoring PDO related indicators, the M&E system was also well designed to monitor the implementation of safeguards and fiduciary aspects.

To measure improvement in SBEE's operational performance and access expansion the three selected indicators were distribution loss reduction, increased revenues from high consuming customers due to the implementation of the RPP, and the number of people with new or improved electricity services under the Project. There were some shortcomings in that: (a) while loss reduction is an important efficiency metric SBEE had no capacity nor software to model the impact of planned investments on losses which made it difficult to set a credible target; (b) the ICR (p.20) also casts doubt on the use of the increased revenues from high consumers as outcomes rather than an intermediate indicator – it can also be argued that the indicator can be impacted by factors other than improved metering, billing and collection (e.g. electricity price changes unless indicator it adjusted it is adjusted for such changes); (c) an important indicator as the ICR observes would have been the collection ratio; and (d) at the intermediate level the project had limited indicators to measure the progress of physical implementation which are normally incorporated in M&E systems for electricity distribution projects.

## b. M&E Implementation

The M&E system as designed was well implemented and important issues were addressed during the missions. Over the duration of the project, 12 ISRs and aide memoires systematically reported on the status of the project implementation and Even during the COVID-19 pandemic the Bank's supervision activities, 2 ISRs were filed during 2020, and a mid-term review was completed in January 2021.

Furthermore, the Results Framework, which outlines the expected outcomes and indicators, was updated throughout the project's implementation. On the GoB side the PCU implemented the M&E system and distributed progress reports on a regular basis.

## c. M&E Utilization

The progress reports generated by the M&E system, the ISRs, aide memoires and the midterm review prepared by the Bank supervision missions were utilized to track the project's physical progress and trajectory towards meeting its expected outcomes. There were exogenous factors such as the COVID-19 pandemic, and the earthquake in Türkiye which impacted the utilization of the M&E because actions could not be taken quickly enough. This led to delays in implementation resulting in some contracts



having to be transferred to the BEAS project as they could not be completed before the closure of the Project.

## **M&E Quality Rating**

Substantial

## **10. Other Issues**

### **a. Safeguards**

The Project was assigned category B rating at appraisal because its impacts were expected to be small scale, localized, and manageable. Overall the project was expected to have positive environmental impacts because of energy savings from loss reduction, more efficient street lighting, and adoption of sustainable forest management practices. However, some environmental and social (E&S) issues could arise from civil works associated with network distribution subprojects, repair of transformer workshop, MV/LV substations, and implementation of community-based forest management plans. To guide appropriate management of such E&S environmental/social issues five policies were triggered as follows: OP/BP 4.01 - Environmental Assessment, OP/BP 4.04 - Natural Habitats, OP/BP 4.36 - Forests, OP/BP 4.11 - Physical Cultural Resources, and OP/BP 4.12 - Involuntary Resettlement.

Since the precise locations of the activities were unknown at appraisal an Environmental and Social Management Framework and a Resettlement Policy Framework (RPF) were prepared to guide the preparation, during implementation, of subproject specific environmental and social assessment impact (ESIA) and resettlement action plans, respectively.

The ICR notes that during project implementation the PIU prepared an E&S screening, a Social Impact ESIA, and a RAP (where applicable) for seven contracts related to network strengthening, the transformer workshop, and the implementation of public lighting LEDs. An ESIA was prepared for each of nine forest management plans, and an E&S screening together with an ESIA was prepared for the implementation of the honey production centers (boreholes and beehives). Other cross cutting instruments included a Complaint Management Mechanism, an action plan for sexual abuse or harassment a procedures action plan for the biomass component. In total of 39 safeguard instruments were produced.

The E&S safeguards were implemented by the PIU with support from the Benin Environmental Agency, the private sector contractors under the project, and the mayor's offices of the beneficiary communities.

The environmental safeguards remained in compliance throughout the project implementation period. During implementation, a total of 39 complaints were received and resolved. The project encountered challenges including a lack of proactivity in local committees regarding the management of complaints and opposition to the installation of transformers in two communities. Both instances were resolved satisfactorily.

At project closure, the final ISR rated compliance with safeguards as Satisfactory



## **b. Fiduciary Compliance**

### **Financial Management**

At appraisal responsibility for the project's financial management was assigned to MEEM's Project Coordination Unit (PCU). The financial management (FM) arrangements were based on the existing arrangements for the Increased Access to Modern Energy which were operating satisfactorily. The PCU's FM staff comprised a FM Specialist and an Accountant, who were both experienced in the implementation of World Bank-financed projects. Agreed measures to reinforce the PCU's FM capacity included: (a) hiring of an additional accountant; (b) recruitment of an experienced interim Internal Auditor conduct ex post reviews pending assignment of an internal auditor by MEEM's internal Audit Department; (c) recruitment of an external Financial Auditor to audit the project's financial statements yearly; and (d) the an updating of the current FM manual of procedures for the IAME Project to include the new project specific requirements.

The Bank's supervision missions were satisfied with the implementation of the fiduciary management arrangement which benefited from: (a) the installation of the project's FM software and user training, (b) the recruitment of an internal auditor, and (c) the regular performance of annual financial audits by an external audit firm.

At project closure, there were no outstanding audits and the final ISR rated FM performance as Satisfactory.

### **Procurement**

Procurement processing was initially slow because of long delays in obtaining no objections from the Benin National Directorate for the Control of Public Procurement and the Public Procurement Control Unit. The Procurement Plan was updated and approved via the Systematic Tracking of Exchanges in Procurement by the World Bank and the processing of procurement actions gradually improved reaching an average annual execution rate of above 80 percent. As of the project close, the status of implementation of the Procurement Plan showed an execution rate of 100 percent, with 70 contracts signed. However, a major setback occurred when the bidding process for four major contracts was unsuccessful due to the poor quality of the bids received. The relaunching of these contracts was delayed by the COVID-19 pandemic, and they were eventually signed in early 2022 when there was not enough time to complete their implementation before closure of the Project. The contracts were, thus, transferred to the BEAS Project. Excluding these contracts, due to the setback encountered the final ISR rated procurement as rated Moderately Satisfactory.

## **c. Unintended impacts (Positive or Negative)**

No unintended impacts were identified.

## **d. Other**

Gender





Component 2 included communication and awareness campaigns to sensitize women, particularly in female-headed households on opportunities for using electricity and for participating in surveys of electricity users. The results framework included a gender intermediate indicator to measure the percentage of female-headed household connected to electricity by the project. The actual percentage was 16.2 (or 12129 households) which exceeded the target of 10 percent.

No cases of gender-based violence were reported under the project’s grievance redress mechanism (ICR, p. 17).

## 11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	
Bank Performance	Satisfactory	Satisfactory	
Quality of M&E	Substantial	Substantial	
Quality of ICR	---	Substantial	

## 12. Lessons

The ICR contains important project design and implementation issues which have possible applicability for future operation in Benin and elsewhere. The following suggested lessons are meant to provide additional perspectives on the substantives lessons already provided by the ICR:

- Efficiency in procurement is critical for efficient project management and sector development and merits examination of a range of innovative management options, including bulk purchasing of materials (especially for the distribution sector), use of separate supply and install contracts, and procurement reforms to streamline procurement and contracting procedures.** In addition, simplified technical standards to reduce costs, the need for strong technical evaluation skills and sophisticated contractors may help to achieve improved efficiency in procurement.
- The robust design of results frameworks is critical for ensuring tracking of metrics that are most relevant to the expected outcomes such as revenue collection ratios in distribution sector operational efficiency improvement projects.** Thus, cash collection be the central indicator around which a range of efficiency indicators such as reduction of losses, increases in revenues, customer growth could be organized. As the distribution sector is the source of cash for the upstream segments of generation and transmission
- As was done during preparation of the project among the MCC, the AFD and the Bank a coordinated approach among development partners helps to ensure coherence for support to the client while also providing the scope for synergies.** The coordination yields better results when it is on an ongoing basis continuous at the sector level rather than when it limited to specific inventions



### 13. Assessment Recommended?

No

### 14. Comments on Quality of ICR

The ICR was detailed, analytic and substantive. The assessment of the project design shortcomings on selection of indicators was candid and convincing.

There were some moderate shortcomings, including:

- a. services which is based on only those who received new services in Table 2 while para. 98, p. 24 refers to both those who received new and improved services (296, 026 compared to 420,000). The Project team confirmed that the correct number of people provided with new and/or improved electricity services was 420,000 based on 75,000 connections made under the Project. There was also an internal inconsistency within the results framework in that the project planned to install 50,000 prepaid meters which would have meant an additional 250,000 people were to be served instead of the 125,000 target for PDO indicator #3. The 50,000 prepaid meters is higher than total of two other indicators for the number of households that were to be provided with new electricity services (10,000) and with improved services (15,000). The latter two indicators were correlated with the number of 125, 000 people which was the target for PDO indicator #3.
- b. the sometimes-unclear distinction between intermediate indicators expected outcomes in the TOC graphic, p. 4 (for example distribution system loss reductions were shown as both an intermediate indicator and as outcomes).

Overall, the quality of the ICR is rated **Substantial** because of its robust analysis and candidness

- a. **Quality of ICR Rating**  
Substantial