Power Grid Improvement Project (P149599)

Key Dates

Key Project Dates
- Bank Approval Date: 23-Jun-2015
- Planned Mid Term Review Date: 05-Feb-2018
- Original Closing Date: 31-Mar-2020
- Effectiveness Date: 30-Dec-2015
- Actual Mid-Term Review Date: 26-Feb-2018
- Revised Closing Date: 31-Mar-2021

Project Development Objectives

Project Development Objective (from Project Appraisal Document)
- The project development objective is to help improve efficiency and reliability of power distribution in the selected load areas served by EDL.

Has the Project Development Objective been changed since Board Approval of the Project Objective?
- No

Components Table
- Smart metering, distribution improvement and distribution losses reduction; (Cost $19.00 M)
- Electric utility information system; (Cost $6.00 M)
- Institutional capacity building and project implementation support; (Cost $5.00 M)
- Contingent emergency response

Overall Ratings

<table>
<thead>
<tr>
<th>Name</th>
<th>Previous Rating</th>
<th>Current Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progress towards achievement of PDO</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>Overall Implementation Progress (IP)</td>
<td>Satisfactory</td>
<td>Moderately Satisfactory</td>
</tr>
<tr>
<td>Overall Risk Rating</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

Implementation Status and Key Decisions

Progress towards achieving the PDO is on track. The PDO, to help improve efficiency and reliability of power distribution in the selected load areas served by EDL, continues to be relevant and the progress against the PDO is largely achieved. Major services and goods contracts to help improve efficiency and reliability of power distribution in the Xaythany District have been procured and most technical assistance packages have been completed. Various training sessions were carried out to strengthen EdL institutional capacity to utilize new technologies in addressing distribution losses and improving power grid efficiency.

Closing Date Extension. On March 27, 2020 the project closing date was extended by 12 months from March 31, 2020 to March 31, 2021: (a) to ensure completion of remaining project activities that are already under implementation, including the installation of the AMI meters, the delivery of safety equipment and the HR payroll module; and (b) to take account of uncertainties associated with the COVID-19 outbreak.
## Risks

### Systematic Operations Risk-rating Tool

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Rating at Approval</th>
<th>Previous Rating</th>
<th>Current Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political and Governance</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Macroeconomic</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Sector Strategies and Policies</td>
<td>Substantial</td>
<td>Substantial</td>
<td>Substantial</td>
</tr>
<tr>
<td>Technical Design of Project or Program</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Institutional Capacity for Implementation and</td>
<td>Substantial</td>
<td>Substantial</td>
<td>Substantial</td>
</tr>
<tr>
<td>Sustainability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiduciary</td>
<td>Substantial</td>
<td>Substantial</td>
<td>Substantial</td>
</tr>
<tr>
<td>Environment and Social</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Other</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Overall</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

## Results

### PDO Indicators by Objectives / Outcomes

**Improve efficiency and reliability of power distribution in selected load areas served by EDL**

**Average interruption frequency per year in the project area (Number, Custom)**

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Actual (Previous)</th>
<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value</strong></td>
<td>19.14</td>
<td>10.30</td>
<td>10.30</td>
<td>17.23</td>
</tr>
<tr>
<td><strong>Date</strong></td>
<td>31-Dec-2018</td>
<td>04-Oct-2019</td>
<td>10-Mar-2020</td>
<td>31-Mar-2021</td>
</tr>
<tr>
<td><strong>Comments:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The baseline for the average interruption frequency in the project area is 19.14 times per customer. The calculation is based on a 12 months basis (from January to December 2018). Previously the baseline for the average interruption frequency in the project area was reported at 12.30 times per customer as the calculation is based on a six month basis (from January to June 2018). The average interruption frequency was measured at 10.306 times is calculated based on (January to December 2019).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Customers served in the project area (Number, Custom Supplement)**
### Baseline vs. Actual (Previous) vs. Actual (Current) vs. End Target

<table>
<thead>
<tr>
<th>Component</th>
<th>Baseline</th>
<th>Actual (Previous)</th>
<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity losses per year in the project area (Percentage, Custom)</td>
<td>24.00</td>
<td>16.00</td>
<td>15.31</td>
<td>14.00</td>
</tr>
<tr>
<td>Comments:</td>
<td>This calculation is for the 12 months of 2019 (From Jan 2019 to Dec 2019). The average electricity loss in 2018 (19%), in 2017 (22%), in 2016 (24%), and in 2015 (more than 24%) Total power injected for 2019 (Jan-Dec 2019) is 362,669 MWh (in 2018 was 318,120 MWh, and in 2017 was 303,334 MWh)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total net injected generation (Megawatt hour (MWh), Custom Supplement)</td>
<td>239,100.00</td>
<td>303,334.00</td>
<td>362,669.00</td>
<td>335,500.00</td>
</tr>
<tr>
<td>Direct project beneficiaries (Number, Custom)</td>
<td>207,000.00</td>
<td>298,004.00</td>
<td>306,666.00</td>
<td>297,000.00</td>
</tr>
<tr>
<td>Comments:</td>
<td>It includes total 70,268 (68,148 residential and 2,120 non residential). Residential household customers times assumed average 4.5 persons per household (68,148 x 4.5 hh)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female beneficiaries (Percentage, Custom Supplement)</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
<td>50.00</td>
</tr>
</tbody>
</table>

### Intermediate Results Indicators by Components

**Smart metering, distribution improvement and distribution losses reduction**

<table>
<thead>
<tr>
<th>Component</th>
<th>Baseline</th>
<th>Actual (Previous)</th>
<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential electric meters installed (Number, Custom)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>15,000.00</td>
</tr>
</tbody>
</table>
The installation of the AMIS was expected by the end of March 2020 following the delivery of the equipment in early 2019. However, the commencement of the installation was delayed since EDL did not anticipate that the meters should be submitted to the Ministry of Science and Technology for verification and certification before installation. It is estimated that an additional 8-9 months of implementation period would be required to complete the certification and installation. Hence, the completion of the installation should be completed by the end of CY2020.

### Non-residential electric meters installed (Number, Custom)

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Actual (Previous)</th>
<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>1,500.00</td>
</tr>
</tbody>
</table>

**Comments:**
The installation of the AMIS was expected by the end of March 2020 following the delivery of the equipment in early 2019. However, the commencement of the installation was delayed since EDL did not anticipate that the meters should be submitted to the Ministry of Science and Technology for verification and certification before installation. It is estimated that an additional 8-9 months of implementation period would be required to complete the certification and installation. Hence, the completion of the installation should be completed by the end of CY2020.

### Distribution lines rehabilitated under the project (Kilometers, Custom)

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Actual (Previous)</th>
<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>366.00</td>
<td>366.00</td>
<td>300.00</td>
</tr>
</tbody>
</table>

**Comments:**
22 kV Conductor Replacement (150 mm2 & 240 mm2): 127 Km and 0.4 kV Conductor Replacement (ABC 4x9.5 mm2) 239 Km
The rehabilitation includes-Changing conductors, Reclosers, Load break switches, Capacitors Banks and add/upgrade transformers.

### Average duration of outages in the project area (Hours, Custom)

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Actual (Previous)</th>
<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.35</td>
<td>1.00</td>
<td>1.00</td>
<td>2.12</td>
</tr>
</tbody>
</table>

**Comments:**
The baseline of 141.34 minutes (2.35 hours) per customer (for a period of 12 months calculation from January to December2018) was calculated by the technical team of EDL. Previous data not available. Work that will further improve the average duration of outages in the project area is still under implementation.

SAIDI: Minutes per customer per year in 2018 was 141.34 minutes, this year from Jan 2019 June 2019 is 56 minutes, calculated by the technical team of EDL.

### Electric utility information system

**Number of months to issue financial statements (Number, Custom)**
<table>
<thead>
<tr>
<th>Baseline</th>
<th>Actual (Previous)</th>
<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>9.00</td>
<td>12.00</td>
<td>12.00</td>
</tr>
</tbody>
</table>

**Comments:**
FMIS is just completed, EDL staff is still testing and transferring data. The time of issuing financial statements is expected to reduce in future. However, the duration for issuing the "audited financial statement" in 4 months was unrealistic due to external factors such as lengthy process to get confirmation on loan amount from the MOF, delay in responses from IPPs, suppliers on Account Receivables, Account Payables etc..

<table>
<thead>
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<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**Comments:**
The 3rd Financial Action Plan (FAP3) has been endorsed by MEM and EDL since May 2019; however, pending endorsement from the Ministry of Finance (MOF).

### Institutional capacity building and project implementation support

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Actual (Previous)</th>
<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>0.00</td>
<td>154.00</td>
<td>183.00</td>
</tr>
</tbody>
</table>

**Comments:**
Various technical training and other capacity building activities have been carried out to strengthen EdL institutional capacity to utilize new technologies in addressing distribution losses and improving power grid efficiency and support project implementation. Number of staff undergo training includes latest trainings attended by EDL staff in 2018 including 1 trainings on procurement, 1 training on STEP and 1 training on project management, in EDL. 3 staff also trained on new client connection system by the World Bank. More staff have received training on distribution equipment and SAP module under the FMIS.

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Actual (Previous)</th>
<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Comments:**
Project Annual Progress report and Project MTR report are available. No reported issues of impacted households.

<table>
<thead>
<tr>
<th>Baseline</th>
<th>Actual (Previous)</th>
<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

**Comments:**

- Updated financial action plan for financial sustainability (Number, Custom)
- EDL publishing summary reports of impacted household feedback received during project implementation (Yes/No, Custom)
- EDL publishing reports on grievance redress mechanism and how issues were resolved (Yes/No, Custom)
<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
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<th>Actual (Current)</th>
<th>End Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Comments: Project Annual Progress report and Project MTR report are available. No reported grievance issues.

Data on Financial Performance

Disbursements (by loan)

<table>
<thead>
<tr>
<th>Project</th>
<th>Loan/Credit/TF</th>
<th>Status</th>
<th>Currency</th>
<th>Original</th>
<th>Revised</th>
<th>Cancelled</th>
<th>Disbursed</th>
<th>Undisbursed</th>
<th>% Disbursed</th>
</tr>
</thead>
<tbody>
<tr>
<td>P149599</td>
<td>IDA-56750</td>
<td>Effective</td>
<td>USD</td>
<td>30.00</td>
<td>30.00</td>
<td>0.00</td>
<td>22.69</td>
<td>7.17</td>
<td>76%</td>
</tr>
</tbody>
</table>

Key Dates (by loan)

<table>
<thead>
<tr>
<th>Project</th>
<th>Loan/Credit/TF</th>
<th>Status</th>
<th>Approval Date</th>
<th>Signing Date</th>
<th>Effectiveness Date</th>
<th>Orig. Closing Date</th>
<th>Rev. Closing Date</th>
</tr>
</thead>
</table>

Cumulative Disbursements

[Graph showing cumulative disbursements with markers for original, formally revised, and actual amounts.]

4/17/2020
Restructuring History

Level 2 Approved on 27-Mar-2020

Related Project(s)

There are no related projects.