Electricity sector organization and performance in Burundi

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Electricity sector in Burundi
Motivation

• To investigate the organization of the electricity sector in Burundi and its impact on the performance

• This study, then, is the first attempt at investigating the quality of service and reliability of the sector.

• Secondly, the study relies on a strong dataset collected from the various departments of the REGIDESO.

• Hence, this paper, which analyzes the state of electricity in Burundi, initiates benchmarking performance of the sector in East Africa.
Performance of electricity sector in Burundi

**Generation**
- Installed capacity: **82.1 MW**
- Power projects: 400 MW

**Transmission**
- HV lines: 210 km of 110 kV, 112 km of 70 kV
- 30 kV used as transmission lines

**Distribution**
- MV lines: 1396.47 km including 30 kV lines
- LV lines: 610.19 km
Performance of electricity sector in Burundi: electricity access

Figure 1. Electricity access in East Africa % (2017)

- more than 90% of the Burundian population had no access to electricity in 2017.
- Electricity Access benefits urban areas (61.8%) far more than rural ones (2%).
- Electricity access remains very low compared to other countries.
- Under-consumption compared to Subsaharan country: 20 vs 486 kWh per capita
Performance of electricity sector in Burundi:

Quality of service

4a. Interruption frequency

High interruption frequency

4b. Interruption Duration in hours

High interruption duration
More than a month without electricity
Performance of electricity sector in Burundi: Reliability index

<table>
<thead>
<tr>
<th>Year</th>
<th>SAIFI</th>
<th>SAIDI</th>
<th>CAIDI</th>
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</thead>
<tbody>
<tr>
<td>2014</td>
<td>122.94</td>
<td>571.84</td>
<td>4.65</td>
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<tr>
<td>2015</td>
<td>102.15</td>
<td>549.68</td>
<td>5.38</td>
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<tr>
<td>2016</td>
<td>79.00</td>
<td>405.95</td>
<td>5.14</td>
</tr>
<tr>
<td>2017</td>
<td>111.43</td>
<td>777.27</td>
<td>6.98</td>
</tr>
</tbody>
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- 79 to 123 interruptions per year
- Interruption duration from 405 to 777 hours a year
- It takes 4 to 7 hours to restore the service
Quality of service and reliability

- Higher unpaid bills, especially from the public sector
- The unpaid bills exceed the sales since 2014
- Unpaid bills are the high components of electricity losses
Challenges

• Cyclical challenges:

• Structural challenges:
  ✓ Low level of wealth: GDP per capita below US$300
  ✓ Poor governance
  ✓ Low attraction of private investments
  ✓ High charges
Recommandation

• Liberalize the REGIDESO and reorganize the electricity sector
• Diversify the energy mix
• Prioritize the regional projects for generation, transmission and distribution
• Thanks
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