The Rate of Rural Electrification: Will the National Development Plan targets be realised?

OVERVIEW

The National Development Plan (NDP) II, 2015/16 – 2019/20, is the second in a series of six 5-year plans with the aim of achieving the national vision statement of "*A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years*."

The NDP II target is to have 30% of the proportion of households both urban and rural accessing power from the national grid by 2020. Currently, about 18% of the rural population have access to electricity compared to 29% of the general population that accesses electricity.

The Government of Uganda initiated the Rural Electricity Strategic Plan II (RESP II) in line with the NDP II to focus more on rural electricity with the aim of increasing the percentage of rural population accessing electricity to 26% by 2022.

The NDP II has aimed at investing in infrastructure including energy and rural electrification grid extensions. It is noted however that a small percentage of originally projected customers get connected to these new power lines.

This policy brief gives interventions undertaken, and impediments faced in meeting the rural electrification target.

KEY ISSUES

- High electricity connection costs, and high cost of house wiring limits the rural population from connecting to the grid.
- The dispersed rural settlement patterns make grid extensions difficult.

Background

Rural electrification is an essential component to the Government of Uganda's goal of promoting national economic and social development and integration. The Rural Electrification Strategic Plan II (RESP II) and the Energy Sector Development Plan were thus initiated by the Government as interventions to focus more on rural electrification. These plans are in line with the NDP II objective of propelling the country towards middle income status by 2020 through strengthening the country's competitiveness for sustainable wealth creation, employment and inclusive growth.

The Rural Electricity Strategic Plan II was developed for a ten-year period: 2013-2022 with a primary objective of achieving an accelerated pace of electricity access and service penetration to meet national development goals during the planning period and beyond.

The Government has been implementing grid extensions and connection interventions through the Rural

Electrification Agency (REA) in partnership with some service providers.

These include; Umeme, Uganda Electricity Distribution Company (UEDCL), Bundibugyo Energy Cooperative Society (BECS), Kilembe Investment Limited (KIL), West Nile Rural Electrification Company (WENRECO), Kyegegwa Rural Electricity Cooperative Society (KRECS), Pader Abim Community Multipurpose Electric Cooperative Society Limited (PACMECS), and Kalangala Infrastructure Services Limited (KIS).

Key Interventions

There are three main interventions for rural electrification. These include:

1. **The Output Based Aid (OBA) Project**

This was a four-year project and commenced in the FY 2013/14 with an expected completion timeline of FY 2016/17. The funding was mainly drawn from the World Bank.

It subsidised the connection cost to low income Ugandan households. These households could not afford to pay the initial cost of connection for a no-pole service in the different service territories given the fact that their houses were not connected despite being near a completed distribution line for over 18 months. Customers were required to pay for only inspection. This inspection fee was reimbursed in terms of energy consumption units after connection. The project added over 106,000 customers to the grid, although it originally had a target of 132,500. All customers were connected onto the prepayment meter billing system so they can pay for energy consumption units when they can afford.

2. **Energy for Rural Transformation Projects**

The World Bank approved the Energy for Rural Transformation (ERT) programme as a three phase Adaptable Program Loan to develop Uganda's energy, and Information and Communications Technology (ICT) sectors. Two phases - ERT I and ERT II were concluded. The third phase, ERT III implementation is yet to start with a projected project cost of USD 168.20 million.

The ERT II project commenced on 25th November, 2009 and was completed on 30th June, 2016. The total project cost was USD 109 million. It improved the percentage of rural population with access to electricity by 7% benefiting over 1,614,954 people and 269,159 households.

3. **The Rural Electrification Project**

The project commenced in FY 2013/14 and is scheduled to end in FY 2019/20. It continues to be implemented in the regions of Northern, West Nile, Eastern, Central and Western Uganda.

Some schemes that extended the grid for both medium voltage and low voltage lines and were completed include; Andruvu, Ogayi, Ociba and Alengo communities in Arua District, Kisanja-Kichubanyombo, Kinuma and Bujenje in Masindi District, Mgahinga in Kisoro District along with various schemes in Mbale, Tororo, Bukwo, Budaka, Ntungamo, Rukungiri and Kanungu districts.

Todate, the Government has contributed Ug shs 182.003 billion as counterpart funding. The project performance was good. In FY 2015/16, 2,884 Kms and 2,733 Kms of medium voltage (Mv) and low voltage (Lv) lines were constructed respectively against a target of 3,262 and 2,954 Kms respectively.

In the first half of FY 2017/18, 310 and 290 Kms of medium voltage and low

voltage lines were constructed respectively representing 40% progress.

Since project inception, over 4,000 Kms of Mv and Lv Lines have been added to the existing grid.

A customer connected to a commissioned REA line in Sironko District under the Rural Electrification Project

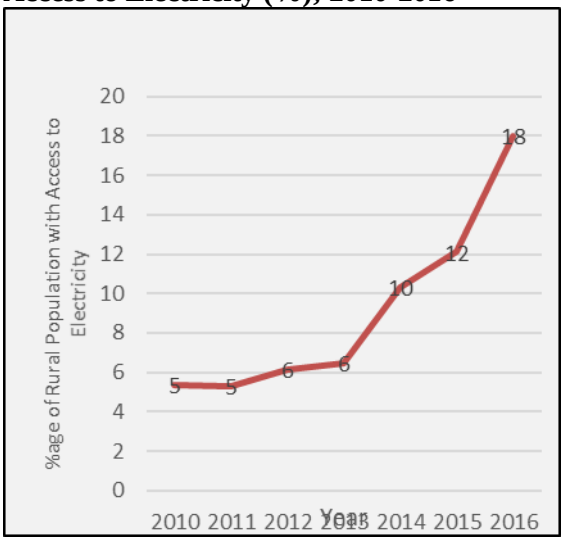
Grid extension works in Bokwe, Masindi District in January 2018

Although the rate of rural electrification has been improving over the years, there are various bottlenecks that are hindering progress.

Household Connections

The rural population connected to the grid is consistently increasing (Figure 1).

Figure 1: Trend of Rural Population with Access to Electricity (%); 2010-2016



Source: World Bank, REA

There has been an improvement in the percentage of people accessing electricity in rural areas from 5.38% in 2010 to 18% in 2016. The trend is on course for achieving the 26% target by 2022.

A total of 113 out of 117 district headquarters are now connected to the grid, in addition to several health centres, schools, farms, households and small industries countrywide.

The Impediments

Connection to the grid in rural areas has three main challenges, namely:

- ✓ **High electricity connection costs for rural communities**

The cost of connection is still high and is not affordable by the rural communities with Umeme being the least expensive at Ug shs 98,000 and Ug shs 326,000 for a no-pole and pole connection respectively (Table 1). A customer has to meet the inspection and connection charges before connection. The average inspection charge across the service territories remains at an average of Ug shs 30,000. Therefore, the completed REA lines remain underutilised and the value of the infrastructure investment has not been realised.

Table 1: Connection costs across service territories as at January 2018

Service provider	Connection fees	
	No-pole	One-pole
UEDCL	597,020	1,200,000
UMEME	98,000	326,000
WENRECO	546,400	2,200,000
KIL	420,000	1,200,000
KRECS	391,400	1,200,000

Source: ERA, REA

✓ **Dispersed settlement patterns**

These make grid extensions challenging as the projects become less cost effective, hence the need to employ other forms of energy such as solar power which are not cost friendly.

✓ **High cost of house wiring**

The cost of wiring a house before connection is high. The technical standards that have to be met during house wiring are set by the Electricity Regulatory Authority (ERA) - regulator of Uganda's energy sector. These standards specify the size of wiring and type of materials to be used. According to the Rural Electrification Agency, the average cost of wiring a house stands at USD 90 (Ug shs 335,700), yet the average monthly income of rural households is USD 50 (Ug shs 186,500).

Conclusion

The current access to rural electricity is at 18%, on course to achieving the Rural Electricity Strategic Plan target of 26% by 2022, and hence contributing to the NDP II target of 30% by FY 2019/20. The impact of electricity in transforming the lives of rural Ugandans cannot be under estimated. The progress on rural electrification has been hindered majorly by the high upfront cost of connection. There is need to extend the grid more to rural communities while ensuring that connection is affordable.

Recommendations

- ❖ Ready boards should be promoted and rolled out by the REA and other agencies, and the Government can also lower taxes on materials required for house wiring.
- ❖ The Government should implement more initiatives and subsides for connection costs such as the Output Based Aid scheme that attract more connection to the grid by the rural communities.
- ❖ The Government should harmonize costs of connection across all platforms of service providers to make connection more uniform and affordable. The Government should also initiate subsidies to attract people to get connected to the grid since prices will be reduced. This can boost the rate of last mile connections.
- ❖ The number of connections of rural consumers should be a deliverable for the rural electrification projects.

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