MWENGA POWER SERVICES LIMITED

Application for Tariff Adjustment

February 2021

Top sheet

Registered name of the applicant	Mwenga Power Services Limited (MPL)
Full address of the applicant	RVE Offices Ifupira Village (opposite church), Mufindi P.O. Box 555 Mafinga, Iringa Tel: +255 685 739999 Email: info.rvetz@riftvalley.com
Authorized officer	Mr. Deograsias Massawe Financial Manager Tel: +255 787 978485 Email: deograsias@riftvalley.com
Applicant's distribution license	EDL-DT-2015-002
Succinct statement of regulatory action being requested	Mwenga Power Services Ltd (MPL) requests that EWURA approves the proposed tariff structure for MPL's sale of electricity and service line fees as specified in Table 1 and 2 of this application. These proposed tariffs are aligned to the National uniform tariffs, and compliant with the tariff policy directive given by the Minister of Energy in July 2020. It is proposed that the new tariff and rates be effective from 01 July 2021.
Signature of the authorized officer	18-Feb-2021

1. Executive summary

Mwenga Power Services Limited (MPL) is the Licensed Distribution company of the Mwenga Hydro and Rural Electrification Project (MHREP) and the Luponde Hydro and Rural Electrification Project (LHREP), which currently distributes hydro-generated power to approximately 5,200 rural customers, SMEs and selected semi-industrial off-takers in the Mufindi and Njombe Districts.

MPL had its operating tariffs approved as part of the Permanent Distribution License award procedure in 2012, and has operated at these same tariff levels (D1 TZS 60, T1 TZS 234) ever since. At that time the tariffs were approved, they were the same as the TANESCO tariffs. TANESCO subsequently increased their tariffs twice since then. MPL applied twice to increase their tariffs to align with the new TANESCO tariffs, but each time has had its tariff applications rejected by EWURA.

As part of the latest tariff increase rejection, MPL was instructed by EWURA to conduct suitable marketing programs to significantly increase the number of connections. MPL has since done so, and the number of connections has increased from 750 in 2013, to 5200 today.

In the same tariff increase rejection, MPL was also instructed to conduct a Cost of Services study. When MPL applied to EWURA for permission to commence this study, MPL was informed that EWURA would conduct this exercise, in the same manner as it does for TANESCO. To date a Cost of Services study has not been performed on MPL by EWURA. However, we now have four consecutive years of audited financial statements for MPL, from which the appropriate financial data can be transparently extracted, and the cost reflective average tariff requirement calculated. Based on the audited 2020 financial statements, this current average tariff requirement is TZS 561 per kWhr.
It should also be noted that if official annual inflation was applied each year to the 2012 approved tariffs (in line with the related tariff setting regulations), the D1 tariff would have since increased to TZS 92, and the T1 tariff would have increased to TZS 358.

MPL recognizes the July 2020 policy directive from the Minister of Energy for mini grid operators to charge no higher than the TANESCO tariffs, and is therefore once again applying to adjust its tariffs to match the current National Uniform TANESCO tariffs (of D1 tariff TSZ 100, T1 tariff TSZ 292).

2. The applicant

Mwenga Power Services Limited (MPL), the applicant, is part of the Rift Valley Energy Group, which is a privately owned infrastructure development company, dedicated to develop and operate renewable energy infrastructure projects in East Africa (including Tanzania).

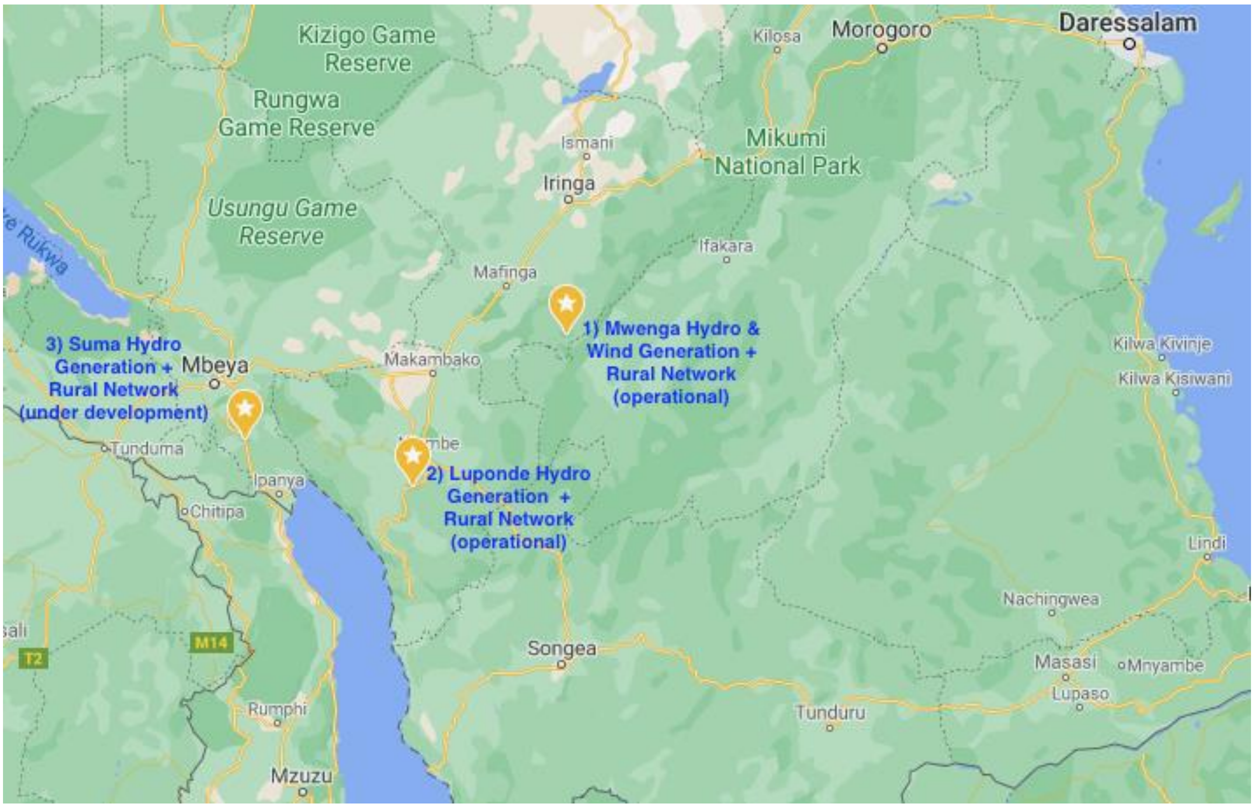
MPL Shareholder Structure:

	Shareholder Structure	Nationality	Number of Shares
1.	Rift Valley Energy Tanzania Limited	Tanzanian	99
2.	Rift Valley Energy Limited	Mauritian	1

As a rural distribution company, MPL buys electricity from the two (RVE owned) generation companies of Mwenga Hydro Ltd and Luponde Hydro Ltd, and subsequently distributes this electricity into the relevant networks, currently supplying about 5,200 customers across 38 villages within the Mufindi and Njombe districts.

1. Mwenga Hydro Ltd (MHL) owns and operates the 4 MW hydro generation facility as well as the 2.5MW wind generation facility in the Mufindi district, Iringa region. MPL owns a valid Distribution License for this area.
2. Luponde Hydro Ltd (LHL), owns and operates a 1 MW hydro facility in the Njombe district, Njombe region. The respective Distribution area has been successfully registered with EWURA in December 2018.

The Rift Valley Energy Group is also currently developing the 4 MW Suma Hydro and Rural Electrification Project (SHREP), where we plan to connect two more villages with an additional 740 connections, near Tukuyu town, Rungwe District, Mbeya region. The respective Distribution area has also been successfully registered with EWURA in December 2018.



Map 1: Locations of the 3 RVE generation and rural distribution projects (of which 2 are operational, and 1 is under development) in Southern Tanzania.

3. MPL rural distribution business plan - summary

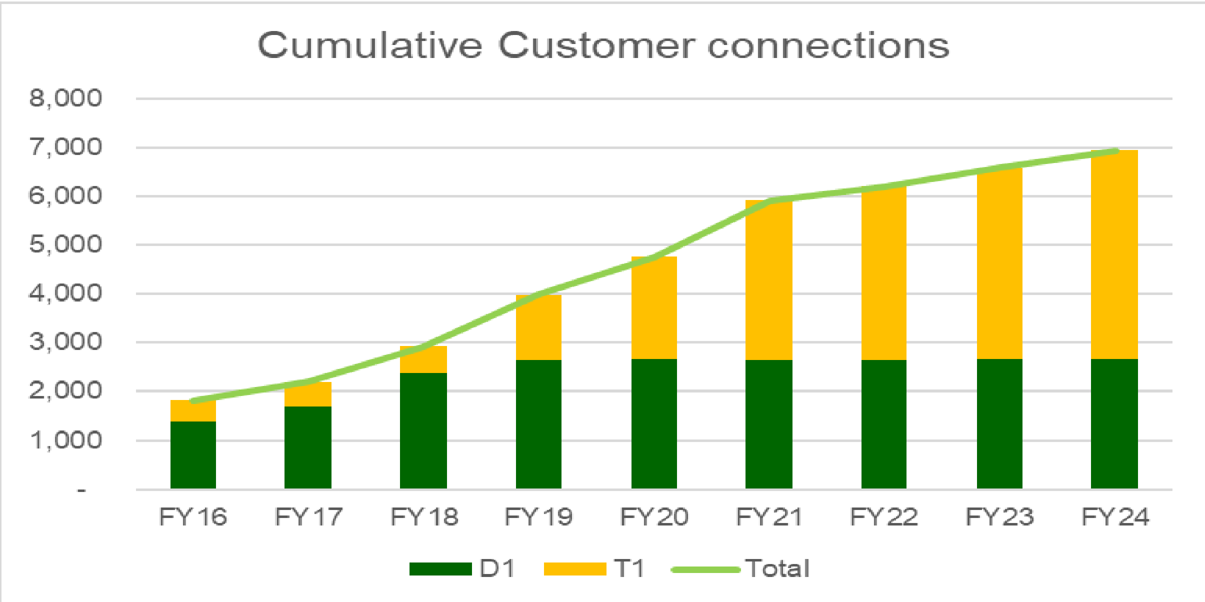
Rift Valley Energy incorporated Mwenga Power Services Ltd (MPL) in 2008 (at the time the company was named Rural Power Development Ltd, which was later renamed into Mwenga Power Services Ltd). MPL was designed as a rural distribution company, designated to provide first-class electricity services to its rural customers, and so contribute to the long-term socio-economic development of the Mufindi District.

To support industrialization efforts in the Mufindi district, MPL has put a strong focus on supplying industrial and light industrial customers, through the stimulation of "productive use of electricity", as well as providing access to finance for customers to invest in commercial and domestic appliances. MPL became operational only on 01st February 2016, when the company obtained all the required licenses, which included the business license, VAT registration and its Distribution License (via transfer from Mwenga Hydro Limited on 24 August 2015). Since that time MPL has been reliably supplying electricity to its rural customer base, buying bulk electricity from Mwenga Hydro Limited (and later also Luponde Hydro Limited), and then retailing this to its rural customers, using its EWURA approved tariff scheme.

The strategic objective of MPL is to grow the distribution offtake such that, in the medium to long term, up to 50% of the available generation volumes from the various generation companies are retailed, thus providing both a payment risk mitigant for the generation companies, and an improved average blended tariff price.

As MPL's distribution area(s) are located in remote areas, and are very widespread, the vending of electricity is predominantly done by using a cell-phone based, pre-paid mobile-money vending system. This system has eliminated the need for customers to travel long distances to purchase electricity. Customers can however also purchase bulk electricity directly from our vending desk at our offices if they choose to do so.

MPL is currently operating 2 rural networks of approximately 475 km of medium and low voltage electricity lines, supplying 5,200 connections (including households, various SMEs and village institutions as well as semi-industrial customers) with grid quality green electricity. A total of 2,000 additional connections are planned to be completed in the areas where MPL has been licensed, within the next 2 years.



In order to achieve an economically sustainable network operation, a few commercial initiatives will need to implemented within the MPL rural network operations, which include:

1) increasing sales revenues through a more cost-reflective tariff scheme (the application for a rural tariff increase is the primary reason for this application),
2) increasing electricity consumption through a specific marketing and "productive use" campaign, which is currently under implementation by MPL.
3) increasing connection rates through a planned drop in T1 connection fees (another reason for this application)

4. MPL Rural Distribution Tariff - Historical Developments.

In 2012 (when the Mwenga Hydro and Rural Electrification Project was commissioned), Mwenga Hydro Limited (MHL), the former holder of the distribution license, applied with EWURA for its first rural tariffs scheme which was then approved by EWURA in July 2012. The tariff was not set at a cost reflective level, due to the absence of any operating history, but was instead set at about the same level as the TANESCO tariff, in order to be attractive for new customers. These tariff levels were sub-economical due to a combination of reasons:

1. slower than anticipated uptake of connections,
2. lower than expected per customer sales volumes and
3. high associated maintenance costs for the network.

In order to be able to run its distribution business on an economically sustainable basis (for the very specific economic reasons mentioned above, which were also clearly pointed out in the relevant tariff increase application submitted to EWURA in January 2014), MHL applied in 2014 for a rural tariff increase.

In July 2014 EWURA replied to this tariff increase application, denying the requested increase, and instead requesting MHL to increase marketing efforts to boost connection numbers, as well as to submit to EWURA a "Costs of Services Study". Marketing and further network construction efforts were implemented which significantly increased customer numbers. After conducting a competitive selection process, MHL also proposed that the 'Cost of Services Study' would be conducted by PricewaterhouseCoopers (as an independent consultant). EWURA subsequently indicated in various meetings that it would prefer to conduct this "Costs of Services Study" themselves, in the same way in which they do for TANESCO, but to date unfortunately has not made any progress on this exercise.

Since the Distribution License was transferred from Mwenga Hydro Ltd to MPL in 2015, MPL has been transparently operated as a pure distribution company. As MPL has now a four-year record of independently audited accounts (which will form part of the application), the company has now decided to consequently re-reapply for this important tariff increase, utilizing (instead of the 'Cost of Services Study') the independently audited financial statements as the necessary clear and transparent source information on its underlying costs structure.

Schedule of significant events related to previous tariff applications:

1. Original MHL Tariff Application, dated 26th January 2012, received by EWURA on 3rd February 2012 (1st Tariff application)
2. EWURA Government Notice, from July 2012 (Tariff Approval)
3. MHL Tariff Increase Application (dated 24th January 2014), received by EWURA on

27th January 2014
4. Public consultation procedure with EWURA/CCC (emails received from EWURA on the 16th and 17th of April, plus MHL response letters to EWURA dated 11th, 25th, 28th of April and 5th March 2014).
5. EWURA Government Notice from 1st July 2014 (unsigned order to boost marketing efforts and conduct and submit to EWURA a "cost of services study").
6. MHL letters to EWURA: dated 8th September 2014, plus related follow up letter, dated 17th March 2015 (request to EWURA to approve PricewaterhouseCoopers as independent consultant to conduct "cost of services study").
7. 24th August 2015: MPL obtains its Distribution License via transfer from Mwenga Hydro Ltd and starts operating as a stand-alone rural distribution business with transparent cost structures.

5. MPL – Tariff Adjustment Application

As already mentioned above, MPL has been requesting to adjust its economically unsustainable tariffs since 2012. In order for MPL to prove that a private, regulated and grid connected rural distribution network can operate in an economically sustainable manner, whilst continuing to increase both connection numbers and the consumption rate of electricity per customer, MPL is requesting EWURA to approve MPL's new tariff scheme, as follows:

Tariff definition

Domestic Low Usage Tariff (D1)	This category covers domestic customers who on average have a consumption pattern of less than 50 kWhr. The first 50 kWhr are effectively subsidized. Under this category any monthly electricity sales exceeding 50 kwh is charged at a higher tariff rate. Any user who exceeds a monthly usage of 50 kWhr for more than three months of a calendar year will be automatically upgraded to the T1 tariff. In this tariff category, power is supplied at a low voltage, single phase (230 V).
General usage Tariff (T1)	This segment is applicable for customers who use power for general purposes: including larger scale residential consumers (more than 50 kWhrs per month), all commercial and light industrial use, public lighting, and billboards. Power is provided at low voltage single phase (230V), as well as three phase (400V).

Table 1 (proposed tariffs for the next 3 years):

Customer Category	Component	Unit	Current Tariff	Proposed Tariff	Proposed Tariff	Proposed Tariff
			2020/2021	2021/2022	2022/2023	2023/2024
D1	Basic Charge	TZS/Month	-	-	-	-
	Energy Charge (0-50kWhrs/month)	TZS/kWhr	60.00	100.00	100.00	100.00
	Energy Charge (Above 50kWhrs/month)	TZS/kWhr	273.00	350.00	350.00	350.00
T1	Energy Charge	TZS/kWhr	234.04	292.00	292.00	292.00

Note: All the charges above exclude any VAT, REA, EWURA and other official government surcharges that may be charged from time to time.

With these amendments, in exchange for the tariff increases, MPL is also offering to abandon application fees and reduce the connection fee for all T1 customers below the 30m range, thereby removing a key barrier for poorer customers to be connected. It is anticipated that this offer will increase the overall connectivity to electricity, while - at the same time - the tariff restructuring will improve the long-term economic situation of the distribution business.

Table 2:

	Current Rates	Proposed New Rates
Application Fees	TZS	TZS
All new applications	5,000.00	0
New service line charges		
A) Overhead service lines-single phase (30 m)		
D1 with M-LUKU meter	150,000.00	150,000.00
T1 with M-LUKU meter	150,000.00	25,000.00
B) Overhead service line – three phase (30 m)		
T1 with LUKU meter (16 mm^2 cable)	380,000.00	150,000.00
C) Single phase 70 m route		
Single phase 70m route length – including 1 pole (LUKU)	850,000.00	850,000.00
D) Three -phase 70 m route		
Three- phase 70 m route length-including 1 pole (LUKU)	1,300,000.00	1,300,000.00

Note: Prices are exclusive of VAT and any other official government surcharges.

Key points on the proposed MPL Tariff Structure:

- It is generally accepted by the MPL customer base, that amongst the reasons to the customers failing connect are the high connection fees[1], together with the application fees. Hence, if application fees will be eliminated and connection fees reduced, the main barrier for many of our customers will be lowered, which will automatically lead to a steeper increase in connections and an accelerated access to electricity.
- Coupled with MPL's "Productive Use of Electricity (PUE)" initiative, which provides eligible customers access to finance (to invest into commercial appliances) will lead to an improved sustainable industrial and social development of the Mufindi and Njombe areas, while assisting MPL to meet its prudent operational costs.[2] and so establish a sustainable distribution business.
- In this context it should be noted, that MPL does not use a fixed monthly "service fee" structure within its tariffs (due to the difficulty of charging this under a pre-paid metering management system). Additionally, MPL does not charge any maximum demand tariffs.

The EWURA approval of these tariffs will allow MPL to keep serving the community with an affordable, efficient and reliable source of electricity, which in turn improves the value chain for agriculture goods grown in this productive area (tea, timber, etc.) by facilitating their industrial processing. The use of these tariffs is expected to be sustainable over the longer term and can serve as a role model for economically sustainable private sector activity, in this important infrastructure service.

6. Legal & financial assessments

I. Affirmation on contractual agreements

It is hereby affirmed that all contractual agreements, that may have impact on the proposed tariffs are included in the application.

Annexure 1: PPA between MHL and MPL

Annexure 2: PPA between LHL and MPL

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[1] MPL has run a promotion by reducing the connection fee option to TZS 25,000 for customers below 30m away from our network, and noticed a sharp increase in connection uptake on this option since then.

[2] MPL's Productive Use of Electricity (PUE financing) activities are currently stalled, through the introduction of a new legislation (Microfinancing Act), which requires project developers, who provide financing mechanisms for customers to invest into commercial appliance, to get licensed. We are currently in communication with the Bank of Tanzania, to get the PUE initiative excluded from this requirement, in order to faster increase (T1) energy consumption, and make rural networks economically more sustainable.

II. Conditions imposed in the previous Order (1st July 2014) and status of each condition:

a) The company should design and undertake a marketing strategy to attract more customers to its network.

Customer numbers have been increased from 750 in 2013 to 5200 today.

b) The company shall submit to EWURA its financial and technical reports on annual basis two months after the expiry of its financial year.

The status of this condition has been fulfilled by submission of the required reports to EWURA.

c) The company, before submission of a future tariff application, shall conduct and submit to EWURA a cost of service study for its electrical system to establish the actual bulk supply charge necessary to serve its distribution network at the point of delivery and the actual cost of service necessary to serve the rural customers as per Rule 12 of the Electricity Tariff Setting Rules, 2013;

EWURA subsequently indicated that it would conduct the Cost of Service study, in the same manner as this is done for TANESCO. Unfortunately a Cost of Service study was then not performed. However, the status of this condition can be considered as fulfilled, as the applicant is now able to provide 4 years of audited financials for MPL, from which the required information can now be transparently extracted.

III. Demand/load forecast

The Company expects to meet its growing customer demands by available power generated by Mwenga Hydro Limited and Luponde Hydro Limited.

- The demand forecast is based on the trend analysis of the historical sales and based on whilst assuming the growth of the SME's and customer appetite overtime.

- The financial and economic assumptions used in the determination of demand and customer numbers are from the billing reports, the customer survey information.

- The customer demand forecasting model is liner customer appetite growth and based on the increased commercial activities in the area including the timber processing through the use of electricity that triggers for increased electricity consumption.

The demand forecast per customer category for the period from 2017/2018 to 2023/2024 is shown in the table below, as has been extracted from our financial models associated with this tariff application.

Table 1: Demand Schedule (kWhrs)

Financial Year	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
D1	455,293	511,151	396,388	523,444	495,671	517,089	539,535
T1	981,835	1,151,614	1,382,871	1,535,593	2,090,788	2,403,291	2,909,441
Total	1,437,128	1,662,765	1,779,259	2,059,037	2,586,460	2,920,380	3,448,975

Table 2: Cumulative number of customers

Financial Year	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
D1	2,375	2,656	2,682	2,645	2,650	2,662	2,667
T1	548	1334	2088	3273	3556	3,932	4,275
Total	2,923	3,990	4,770	5,918	6,206	6,594	6,942

IV. Revenue requirement

As MPL distribution business is essentially an “electricity trading business” and based on the following facts:

- RVE generation companies own all generation, transmission and HV distribution assets (related to their respective projects) as well as a significant portion of the LV distribution assets, and meets all the costs for the O&M of the HV, and most of the LV distribution networks.
- Hence MPL doesn’t own any significant assets.
- MPL buys electricity from generation companies on the basis of a Power Purchase Agreement (PPA).
- MPL onward sells the electricity as per EWURA approved tariffs, collects (electricity sales) revenues from its rural customers.

As one can see from previous tariff applications, MPL’s revenue requirement is higher than originally anticipated, due to the low average tariff per unit compared to (higher) average cost per unit. It is expected that this will improve over the long run.

Table 3: Revenue Requirement (Amounts are in TZS '000,000)

Financial Year	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
O&M	769	850	886	959	1,209	1,304	1,440
Depreciation	21	47	50	50	50	50	50
Tax	3	2	2	2	-	-	-
WACC	17%	17%	17%	17%	17%	17%	17%
RAB	320	394	349	382	452	522	592
Revenue Requirement	848	965	998	1,075	1,336	1,443	1,590

Increase/(decrease) in revenue requirement (in TZS and %)

Financial year	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
TZS millions	186	118	32	77	261	107	147
%	28%	14%	3%	8%	24%	8%	10%

MPL's approved tariffs to date, were not based on a "cost reflective model" and hence were not based on MPL's revenue requirement. The main drivers of the increased revenue requirement compared to previous period are:

- The increased power purchase resulted from customer growth and development.
- Increased marketing and distribution cost to sensitize the customers on the Productive Use of Energy.

V. Budgeting and accounting assumptions

The model is based on various assumptions from the economic overview, historical customer trends, industry performance as well based on the 4-year operating history of MPL that is demonstrated in the audited accounts, and the billing system records.

- It is assumed that the inflation will remain within manageable level due to the country's economic stability.
- Customer consumption pattern will grow steadily as the productive use of electricity campaign is implemented.
- Customer connections will grow in line with powerline construction and network densification.

The model is prepared in accordance to the International Financial Reporting Standards across all years.

VI. Operations, maintenance and administration expense

The main drivers for the costs and related trends are:

- Employee costs: This includes mainly the service electricians and customer service team.
- Power purchase cost: This is attributed by increased demand which results into increased the power purchase cost.
- Billing system administration costs: This is a fixed outsourced service, and is expected to decrease after the planned upgrade, and further scaling of the business.
- There are no financing costs involved.

All the assumptions for these drivers are included in the financial model.

VII. Cost of capital

- The Company is entirely financed by shareholders and thus there is no cost of debt to a third party. The cost of equity required by the shareholders is 21%

VIII. Annexures

Annexure 1: Power Purchase Agreement (PPA) between Mwenga Hydro Limited and Mwenga Power Services Limited

Annexure 2: Power Purchase Agreement (PPA) between Luponde Hydro Limited and Mwenga Power Services Limited.

Annexure 3: Original MHL Tariff Application, dated 26th January 2012, received by EWURA on 3rd February 2012 (1st Tariff application)

Annexure 4: EWURA Government Notice, from July 2012 (Tariff Approval)

Annexure 5: MHL Tariff Increase Application (dated 24th January 2014), received by EWURA on 27th January 2014

Annexure 6: EWURA letter to MHL (dated 7th February 2014

Annexures 7-12: (Public consultation procedure with EWURA/CCC) Emails received from EWURA on the 16th and 17th of April, 2014 plus MHL response letters to EWURA dated 11th, 25th, 28th of April and 5th March 2014).

Annexure 13: EWURA Government Notice from 1st July 2014 (order to conduct and submit to EWURA a "cost of services study").

Annexure 14: MHL letters to EWURA: dated 8th September 2014, plus related follow up letter, dated 17th March 2015 (request to EWURA to approve PWC as independent consultant to conduct "cost of services study").