ELECTRICITY REGULATORY AUTHORITY

TARIFF REVIEW REPORT FOR 2018

DECEMBER 2017

KAMPALA, UGANDA

1. INTRODUCTION

1.1 Background

Before the end of each Tariff Year, the Electricity Regulatory Authority ("the Authority") undertakes an annual Tariff Review for the subsequent Tariff Year. In accordance with the Tariff methodologies in the respective Licenses, the Tariff Review Adjustment Methodology, and the Electricity (Application for Permit, License and Tariff Review) Regulations, 2007, the Authority has undertaken the Tariff Review for 2018.

1.2 2018 Tariff and Budget Submissions

At the end of October 2017, Umeme Limited submitted its proposal for the 2018 Tariff Review in accordance with the provisions of its Licenses for Supply and Distribution of Electricity. In November 2017, Eskom Uganda Limited (Eskom) submitted its proposals for the 2018 Tariff Review in accordance with the provisions of its License. Uganda Electricity Transmission Company Limited (UETCL) submitted its application as provided for in the Multi-Year Tariff for the period 2017 to 2019 in accordance with the provisions of the Bulk Supply License. Uganda Electricity Generation Company Limited (UEGCL) and Uganda Electricity Distribution Company Limited (UEDCL) submitted their budgets in accordance with the provisions of their Licenses. The specific dates of submission of the applications are indicated in Table 1.

Table 1: Licensee Dates of Submission of 2018 Tariff Applications

Company/Licensee	Date of submission
Umeme Limited	31st October 2017
Eskom Uganda Limited	2nd November 2017
UEGCL	6th November 2017
UEDCL	8th November 2017
UETCL	14th November 2017

Whereas the companies submitted information on the dates stated in Table 1, there was need to revert to the companies on a number of occasions for clarification, additional information and verification. After receipt of all the relevant information, the Tariff Review process commenced.

1.3 Review Process

The review process commenced with the publication of the applications in the New Vision newspaper on 13th November 2017. Key stakeholders and the general public were invited to view the applications and submit their comments. During the 15 days publication period, the applications were available for public scrutiny.

On 30th November 2017, the Authority advertised in the Daily Monitor newspaper and the ERA website, a notice inviting key stakeholders and the general public to the Public Hearing/consultation that was held on 17th December 2017 at Imperial Royale Hotel with respect to the 2018 Tariff applications. During the Public Hearing, the Licensees made presentations of their 2018 Tariff applications to key stakeholders and the general public.

As part of the 2018 Tariff Review, the Authority undertook additional stakeholder consultations with; the Ministry of Energy and Mineral Development, Uganda Manufacturers Association and the Media. These consultations were mainly aimed at explaining to stakeholders the drivers underlying the Tariff determination for 2018.

In arriving at the Tariff determination, the Authority took into account the views and submissions from all stakeholders including licensees, who submitted written comments and individuals/institutions that who participated in the public consultations.

1.4 Tariff Review major assumptions

The 2018 Annual Tariff Review has been undertaken in consideration of the following major factors/assumptions:

a) The Quarterly Tariff Reviews implemented by the Authority since 2014 that provide for adjustment of the Base Tariffs for changes in the macroeconomic factors of inflation, exchange rate and fuel prices will continue to be implemented in 2018.

b) The Government of Uganda will continue paying capacity payments to the Thermal Plants in 2018 estimated at Ush 56.8 Billion. Relatedly, debt service of UEGCL, UETCL and UEDCL will not be financed through the Tariff.

c) Electricity demand is expected to grow at an annual rate of 6.8% in 2018. The total energy purchased by UETCL is expected to increase from 3,641.5GWh in 2017 to 3,901 GWh in 2018.

d) The average water release at Nalubaale and Kiira generation complex is projected at 900 Cubic meters per second (Cumecs) for 2018, translating into an average generation capacity of 150 MW from Nalubaale and Kiira and 173.5 MW from Bujagali Energy Limited.

e) The Uganda Shilling has depreciated by 0.96% against the United States Dollar, from Ush/US$ 3,600.38 used in the determination of the Retail Tariffs for the fourth quarter of 2017 to Ush/US$ 3,634.92 by 30th November 2017. The exchange rate has an effect on the Electricity Supply Industry financing and the resultant Tariffs for 2018.

f) Umeme Limited's gross capital investments that qualify to earn a return on investments have increased by US$ 60.0 Million from US$ 345.1 Million in 2017 to US$ 405.1 Million in 2018.

g) Eskom's Generation Operations and Maintenance Costs have reduced from US$ 9.286 Million in 2017 to US$ 9.211 Million in 2018.

h) The Budget for Uganda Electricity Distribution Company Limited has increased from Ush 5,591 Million in 2017 to Ush 6,177 Million in 2018 mainly to cater for 5% inflationary adjustment and capital expenditure for procurement of motor vehicles and distribution planning software.

i) The Budget for Uganda Electricity Generation Company Limited has increased from Ush 6,519 Million in 2017 to Ush 11,202.5 Million in 2018.

j) The average monthly capacity payment for Bujagali Energy Limited (BEL) Limited has increased to US$ 13.84 Million in 2018 from US$ 13.23 Million in 2017. Included in this figure is a provision of US$ 5.973 Million on account of debt refinancing transaction costs.

k) No claw back has been undertaken in respect of the reconciliations for excess energy sales for the Tariff Year 2018. The revenue from excess energy sales will be utilized by Umeme Limited to finance investments as provided for in the Amendment No. 5 of Umeme Limited's Licence for Supply of Electricity.

l) The Extra-Large Industries customer category has been reviewed to ascertain customers that have qualified to be included in this customer category and those that do not qualify to remain in the category as per the classification approved by the Authority during the 2017 Tariff Review.

m) Umeme Limited's target Overall Distribution Loss Factor (LF) and the Total Un-collected Debt Factor (TUCF) for 2018 is 14.7% and 1.5% respectively, compared to 15.7% and 1.8% for 2017.

n) Provision of Ush 947.3 Million for the Electricity Supply Industry skills development program approved by the Authority for Umeme Limited, UETCL, UEGCL, UEDCL, Eskom and BEL.

o) A provision has been made for Ush 20,057.83 Million on account of Power Supply Price (PSP) reconciliations for the period ended 30th October 2017 bringing the total PSP amounts to Ush 56,627.33 Million.

p) Project costs for UETCL and UEGCL are treated as development costs funded by the Government and not through the Tariff.

1.5 Purpose and structure of this Report

The purpose of this report is to present the results of the Authority's review of the Licensees' 2018 Tariff submissions and to set out the determinations and the reasons informing the determinations.

This report is divided into six (6) sections. The first four (4) sections of the report after this introduction focus on (i) review of the demand and generation from power plants, (ii) review of the; Tariff submissions by UETCL, Eskom Uganda Limited, UEGCL, Umeme, and UEDCL, (iii) review of the resultant revenue requirement, (iv) review of the resultant capacity price, Bulk Supply Tariff and Retail Tariff.

The last section of the report presents the 2018 resultant approved Tariffs.

2. DEMAND ASSUMPTIONS.

2.1. Maximum Demand

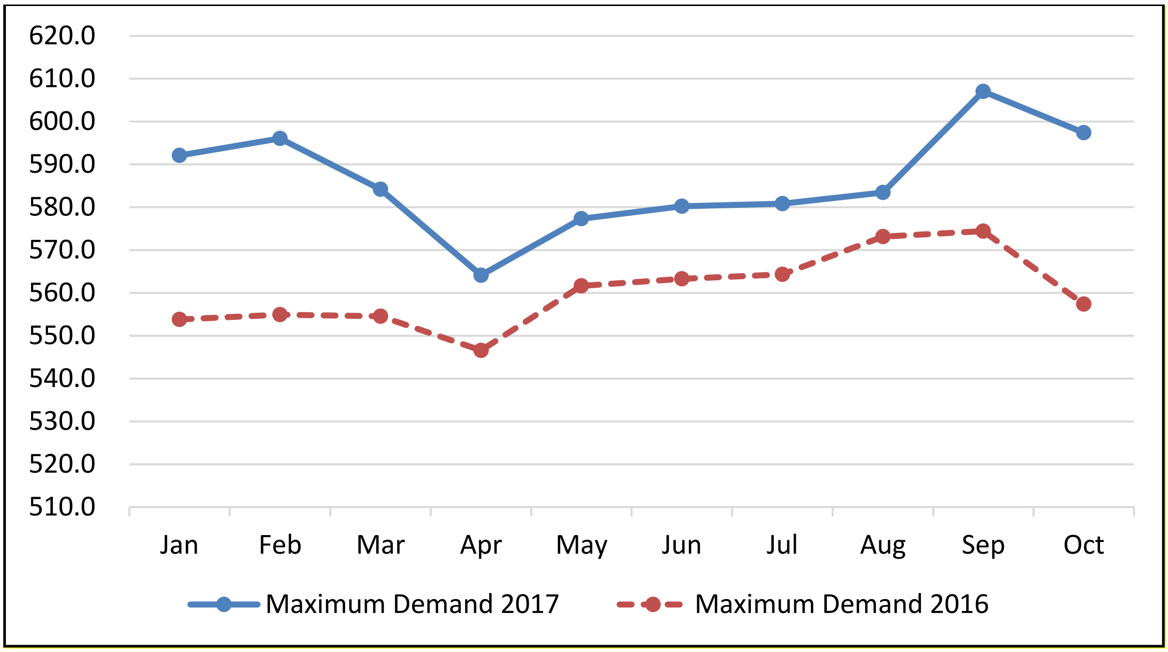
As per the system summary reports submitted by UETCL to the Authority, maximum demand (including exports) registered by UETCL as shown in Figure 1 increased from 557.4 MW in October 2016 to 597.4 MW as of October 2017. This growth represents a 7.2% increase in demand. This is mainly attributed to increased request for dispatch from Kenya. Domestic demand on the other hand grew by 3% from 524 MW recorded in October 2016 to 540 MW as of October 2017. This slowdown in growth of domestic demand is attributed to;

a) The low macro-economic performance with the Gross Domestic Product (GDP) growth rate reducing from 4.7% in 2015/16 to 4.0% in 2016/17 as reported by Uganda Bureau of Statistics.

b) Energy Loss reduction. Notably, there has been a steady reduction in energy losses by Umeme Limited leading to saving of more energy.

c) Constrained distribution network infrastructure and transformation capacity for manufacturers especially in the industrial parks have limited the capacity of industries to use more power.

Figure 1: Maximum Demand (MW) January to October (2016 Vs 2017)



2.2. Energy purchases by UETCL

During the year 2017, a total of **3,811.8 GWh** is expected to be purchased by UETCL from the generation plants compared to **3,535.41 GWh** purchased in 2016, representing a growth of about 7.8%. This growth however includes approximately 4% of growth in purchases due to exports to Kenya. This export to Kenya is not expected to last over the entire 2018 and therefore the expected reduced dispatch to Kenya has been taken into consideration in the determination of the demand forecast for the Tariff Year 2018.

2.2.1. Strategies for GDP Growth

In an effort to build momentum of economic growth in the country as well as private sector borrowing and activity, Bank of Uganda in October 2017 reduced the Central Bank Rate (CBR) from 10.0% to 9.5%. This is expected to send a market signal to reduce the cost of credit in order to enhance private sector-led growth. The country is thus expected to gather momentum to boost national performance and enhance effective demand.

2.2.2. Measures to increase demand for electricity

There has been significant investment in generation capacity in Uganda. The Authority has studied demand growth measures intended to increase power utilization to avoid unutilized capacity. Failure to utilize the generation capacity (which is being paid for) will lead to increase in Tariffs. The more we utilize the power generation plants to their maximum installed capacity, the lower the Tariff will be. The following additional demand growth measures once implemented shall contribute to Tariff reduction.

2.2.2.1. Industrial Parks

The implementation of the planned 25 industrial parks will provide opportunities for industries to set up, which will consume a significant amount of energy. It is expected that the first four Industrial park substations of Luzira, Mukono, Iganga and Namanve which are under construction will be commissioned at the end of 2018. Once complete these industrial parks are expected to increase demand by 500 MW by the end of 2018.

2.2.2.2. Osukuru Demand

The Osukuru industrial complex in Tororo District is expected to consume 200 MW (starting with 60 MW in 2018 and ramping up to 200 MW after the full commissioning of the complex).

2.2.2.3. Regional Power Trade

Power trade within the region presents an opportunity to increase the uptake of planned installed capacity in the medium term. The export potential stands at 690 MW. This includes export to Burundi, Rwanda, Democratic Republic of Congo and South Sudan. To fully benefit from the regional energy market, regional interconnection projects are being fast-tracked and their implementation aligned with the commissioning dates of the power plants.

The Government of Uganda signed a Memorandum of Understanding with Democratic Republic of Congo and South Sudan for the two countries to purchase power from Uganda.

2.2.2.4. Household Electrification

The Ministry of Energy and Mineral Development through the Rural Electrification Agency (REA) plans to implement free universal electrification. This is expected to make 300,000 connections per year that will translate into 10 MW to 15 MW of additional demand per year from households.

2.2.2.5. Financial Requirement to Grow Demand

In order for the grid to be able to evacuate and distribute all the generation capacity, there is need to reinforce and expand the transmission and distribution network infrastructure. This will require investments amounting to US$ 4,510 Million as shown in Table 2.

Table 2: Investment Plan to Absorb Additional Generation

Utility	**Cost US$ (X1000)**
Evacuation	
UETCL	1,492,870
Umeme Limited	36,910.72
REA	13,980.00
Sub-Total	**1,543,761**
Expansion	
UETCL	1,665,028
Umeme Limited	177,166.88
Sub-Total	**1,842,194.88**
Industrial Park	
UETCL	547,151
Umeme Limited	7,394
Sub-Total	**554,545**
Re-investment	
UETCL	527,000
Umeme Limited	42,600
Sub-Total	**569,600**
Grand Total	**4,510,101**

The Investment requirement will be financed by both the private sector and Government. The Authority has engaged the Ministry of Finance, Planning and Economic Development on the possibility of Government providing part of the financing requirement through the National Budget.

Based on the foregoing power demand growth projections in the 2018 Tariffs Review, it is assumed that energy demand will grow at a rate of 6.8%.

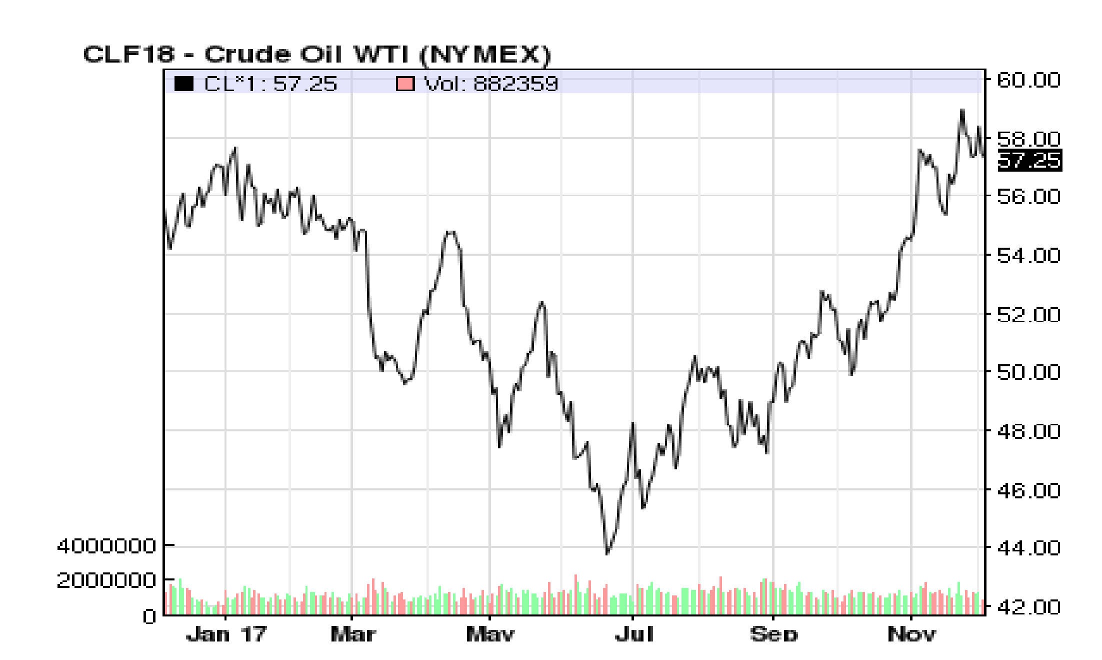
3. GENERATION ASSUMPTIONS

3.1 Oil Price Assumptions

In the 2017 Base Tariffs, the cost of crude oil assumed in the Tariff determination was US$ 43.22 per barrel – translating into US$ 329.63 per metric ton of Heavy Fuel Oil (HFO). The international price of Crude Oil used in the determination of the Retail Tariff was US$ 60.74 per barrel as informed by the Organization of Petroleum Exporting Countries (OPEC) as at the end of November 2017.

According to OPEC, Crude Oil prices are expected to continue increasing to above US$ 60.74 per barrel in the year 2018, mainly bolstered by rising global demand and expectations that OPEC and other producing countries will extend a deal to adjust output. As shown in Figure 2, the oil prices jumped significantly from August 2017 to November 2017.

Figure 2: Trend of crude oil prices January to November 2017



Source: http://www.nasdaq.com/markets/crude-oil.aspx?timeframe=1y

For the 2018 Annual Tariff Review, and based on the OPEC average price of Crude Oil in 2017, the cost of crude oil is estimated at US$ 60.74 per barrel. Specifically, for Heavy Fuel Oil that is used for electricity generation in Uganda, the price of US$ 451.96 per metric ton is used in the 2018 Base Tariffs.

3.2 Energy purchases by UETCL from the Generation Power Plants

3.2.1 Eskom Uganda Ltd (380 MW)

UETCL projects that Eskom Uganda Limited will generate 1,530.57 GWh from the Nalubaale and Kiira Hydro Power Complex in 2017. In 2018, the water release at the Nalubaale and Kiira complex is expected to be maintained at 1000 Cumecs for the greater part of the year.

Considering an average water release of 900 Cumecs in the year 2018, Eskom Uganda Limited will operate on a capacity of 150 MW translating into 1,500.1 GWh in 2018. UETCL, however, retains the option to request for approval from the Directorate of Water Resources Management (DWRM) for a higher water release at Nalubaale and Kiira Hydro Power Complex in case the need arises.

The annualized power purchase costs for Eskom Uganda Limited are expected to increase from Ush 60.8 Billion in 2017 to Ush 68.6 Billion in 2018. The increase is mainly on account of additional investments into the Regulatory Asset Base, and increase in the UEGCL budget for 2018.

3.2.2 Bujagali Energy Limited (250 MW)

The plant in 2017 is expected to dispatch 1,662.7 GWh. This generation is as a result of the water release from the Eskom complex at 900 Cumecs. Bujagali Energy Limited conducts its annual maintenance shutdowns from August to December every year, at the rate of one unit each month. Considering the plant maintenance schedule and expected water release, the generation has been projected up to 1,521.4 GWh. This translates into an average capacity of 173.5 MW for the year.

The power purchase costs for BEL are expected to increase from Ush 583.1 Billion in 2017 to Ush 603.7 Billion in 2018. The increase in the purchase costs for BEL is attributed to provision for debt refinancing transaction costs of US$ 5.973 Million and step up of subordinate loans in the year 2018.

In a bid to manage the Tariff at more affordable levels, the Government of Uganda is negotiating refinancing of the debt component of the BEL project. When achieved, the debt refinancing will help smoothen the Tariff trajectory of the Bujagali Hydro Power Plant in the short to medium term. Bujagali Energy Limited contributes more than 65% of the overall energy purchase cost.

3.2.3 Africa EMS Mpanga Ltd (18 MW)

The projected generation from Africa EMS Mpanga is 43.5 GWh by the end of 2017. Unfavorable hydrology conditions remain the major constraint leading to lower generation. It is expected that hydrology will improve in 2018. The plant will generate an average of 7.4 MW translating into total energy of 64.8 GWh in 2018.

The power purchase costs are expected to increase from the estimated Ush 10.8 Billion in 2017 to Ush 15.7 Billion in 2018. The increase is mainly on account of the expected increase in generation and depreciation of the Uganda Shilling against the United States Dollar.

3.2.4 Bugoye Limited Power Ltd – Bugoye (13 MW)

Bugoye Power Limited is expected to generate 21.6 GWh by the end of 2017. The lower generation is as a result of rapture of the penstock of the plant.

In February 2017, the plant developed a mechanical breakdown when the penstock burst. The plant was consequently switched off on 13th February 2017 to enable the company conduct repairs. The repairs on the penstock were completed in August 2017. The company reported that the plant was back to full capacity and is expected to operate normally in 2018. The plant is therefore expected to generate 80.6 GWh in 2018.

In accordance with the Tariff Adjustment Methodology in the Licence, the effective Tariff for Bugoye Power Limited has been adjusted from a base/reference Tariff of US cents 7.3/kWh to US cents 8.92/kWh for 2018.

Accordingly, the power purchase costs for Bugoye Power are expected to increase from Ush 6.9 Billion in 2017 to an estimated Ush 47.3 Billion in 2018. The reason for the increase in costs is due to additional energy sales, upward adjustment of the generation Tariff, and depreciation of the Uganda Shilling against the United States Dollar.

3.2.5 Kasese Cobalt Company Ltd – KCCL (10.5 MW)

The power plant is expected to generate 63.1 GWh in 2018 compared to 58.5 GWh in 2017. The increase in generation is on account of the expected improvement in hydrology around the power plant catchment area.

In accordance with the Tariff Adjustment Methodology in the Licence, the effective Tariff for Kasese Cobalt Company Limited has been adjusted from a base/reference Tariff of US cents 5.3/kWh to US cents 5.4/kWh for 2018.

The resultant power purchase costs by UETCL are expected to increase from Ush 11.5 Billion in 2017 to Ush 12.42 Billion in 2018. This increase in cost is due to the additional generation from the plant compared to 2017, the adjustment of the Tariff for movement in the US Producer Price Indexation, and the depreciation of the Uganda Shilling against the United States Dollar.

3.2.6 Tibet Hima Limited – KML (5 MW)

Tibet Hima Limited is expected to generate 25.4 GWh by the end of 2017. The plant is expected to generate 26.3 GWh in 2018 translating into an average capacity of 3 MW.

The average approved Tariff for Tibet Hima Limited is Ush 87.8/kWh. The generation tariff is denominated in Uganda Shillings and is not adjusted for movement in the Producer Price Index.

UETCL power purchase costs for Tibet Hima are expected to increase from Ush 2.2 Billion in 2017 to Ush 2.3 Billion in 2018. This increase is on account of expected increased generation from the power plant.

3.2.7 Eco Power – Ishasha (6.5 MW)

Eco Power Ishasha Power Plant is estimated to generate 15.5 GWh by the end of 2017. The plant reported some power evacuation challenges which constrained the level of dispatch. Nonetheless, more rehabilitation works have been undertaken by Umeme Limited to ensure improved network reliability. The plant is projected to dispatch at an average of 3.0 MW translating into 26.3 GWh from the plant in 2018.

The approved and licensed Tariff for Eco–Power Limited for the Tariff Year 2018 is US cents 7.25/kWh. The approved Tariff is not subject to adjustment for changes in the United States Consumer Price Index.

The power purchase costs are expected to increase from Ush 4.6 Billion in 2017 to Ush 6.9 Billion in 2018. The increase in power purchase costs is on account of increased generation from the power plant and depreciation of Uganda Shilling against the foreign currencies.

3.2.8 Hydromax Limited – Buseruka (9 MW)

The plant is expected to dispatch 39.0 GWh by the end of 2017. The Power Plant has experienced suboptimal generation on account of the constraints in the power evacuation line. UETCL is expected to complete some construction works on Fort Portal-Hoima and Nkenda-Fort Portal transmission lines in 2018. This is expected to further enhance the evacuation infrastructure for Buseruka Hydro Power Plant. It is, therefore, projected that the plant will dispatch at an average of 5 MW translating into 43.8 GWh in Tariff Year 2018.

The approved and licensed tariff for Hydromax Limited – Buseruka for Tariff Year 2018 is US cents 9.5/kWh. The approved Tariff is not subject to adjustment for changes in the United States Consumer Price Index.

The power purchase costs for Hydromax are expected to increase from Ush 13.7 Billion in 2017 to Ush 15.1 Billion in 2018. The increase in the power purchase costs is on account of the increase in energy generation and depreciation of the Uganda Shilling against the United States Dollar.

3.2.9 Muvumbe Hydro Power Plant (6.5 MW)

The plant was commissioned in March 2017. For the year 2017, Muvumbe Hydro Plant is expected to generate 14.2 GWh. The plant will generate for all the months in 2018 and is therefore expected to generate 25.4 GWh translating into approximately 2.9 MW.

In accordance with the Tariff Adjustment Methodology in the Licence, the effective Tariff for Muvumbe Power Plant has been adjusted from a base/reference Tariff of US cents 9.4/kWh to US cents 9.41/kWh for 2018.

UETCL is expected to incur power purchase costs amounting to Ush 4.7 Billion in 2017 arising from energy purchases from Muvumbe Hydro Power Plant. The energy purchase cost are expected to increase to Ush 8.7 Billion based on additional generation and indexation of the generation Tariff.

3.2.10 Siti 1 Hydro Power Plant (5 MW)

Siti 1 Hydro Power Plant achieved Commercial Operations Date in April 2017. In 2017, 9.4 GWh of energy is expected to be supplied to the grid from the Power Plant. This low generation is due to the fact that the plant commissioned during the 2017 Tariff Year and was faced with challenges on the evacuation of the power. The plant is projected to generate 21.9 GWh in 2018.

In accordance with the Tariff Adjustment Methodology in the Licence, the effective Tariff for Siti 1 Power Plant has been adjusted from a base/reference Tariff of US cents 10.00/kWh to US cents 10.01/kWh for 2018.

UETCL is expected to incur power purchase costs amounting to Ush 2.8 Billion arising from energy purchases from Siti 1 Hydro Power Plant in 2017. The cost is expected to increase to Ush 7.9 Billion when the plant operate for the entire year in 2018.

3.2.11 Nyamwamba Hydro Power Plant (9 MW)

Nyamwamba Hydro Power Plant is expected to be commissioned by January 2018. The plant is expected to generate 39.42 GWh in 2018 based on installed capacity, the plant factor and expected days of generation in 2018.

Nyamwamba Hydro Power Plant will sell energy to UETCL at US cents 8.5/kWh. According to the Tariff Methodology in the Licence, the Licensed Tariff is not adjusted for movement in the United States Producer Price Index in that year the power plant achieves Commercial Operations Date. There is, therefore, no adjustment of the Licensed Tariff for the Tariff Year 2018. This implies that UETCL will incur power purchase costs of Ush 12.2 billion in 2018.

3.2.12 Rwimi Hydro Power Plant (5.5 MW)

Rwimi Hydro Power Plant was commissioned in October 2017. The plant is expected to generate 2.1 GWh in 2017. In 2018, the generation from Rwimi Hydro Power Plant will increase to 24.0 GWh.

In accordance with the Tariff Adjustment Methodology in the Licence, the effective Tariff for Rwimi Hydro Power Plant has been adjusted from a base/reference Tariff of US cents 9.80/kWh to US cents 9.802/kWh for 2018.

UETCL is expected to incur Ush 0.8 Billion as power purchase costs for the Rwimi Hydro Power Plant in 2017. UETCL will incur power purchase costs of Ush 8.6 Billion in 2018. The increase in energy purchase costs is on account of additional generation from Rwimi for the 12 months of 2018.

3.2.13 Lubilia Hydro Power Plant (5.4 MW)

Lubilia Hydro Power Plant is expected to be commissioned in January 2018. The plant is expected to generate 23.6 GWh in 2018 based on installed capacity, the plant factor and expected days of generation in 2018.

Lubilia Hydro Power Plant is expected to sell energy to UETCL at US cents 9.9/Kwh. According to the Tariff Methodology in the Licence, the Licensed Tariff is not adjusted for movement in the United States Producer Price Index in the year that the power plant achieves Commercial Operations Date. There is therefore no adjustment of the Licensed Tariff for the Tariff Year 2018.
This therefore implies UETCL will incur power purchase costs of Ush 8.5 Billion in 2018 from buying power from Lubilia Hydro Power Plant.

3.2.14 Mahoma Hydro Power Plant (3.2 MW)

Mahoma Hydro Power Plant is expected to be commissioned in May 2018. It is expected to generate 8.2 GWh in 2018 based on installed capacity, the plant factor and expected days of generation in 2018.

Mahoma Hydro Power Plant is expected to sell energy to UETCL at US cents 10.9/Kwh. According to the Tariff Methodology in the Licence, the Licensed Tariff is not adjusted for movement in the United States Producer Price Index in the year that the power plant achieves Commercial Operations Date. There is, therefore, no adjustment of the licensed Tariff for the Tariff Year 2018.

UETCL will incur power purchase costs of Ush 3.2 Billion in 2018 from buying power from Mahoma Hydro Power Plant.

3.2.15 Kakira Sugar Limited (32 MW)

The plant is expected to generate 108.6 GWh by the end of 2017. This generation is noted to have dropped from 148 GWh in 2016. The drop was mainly attributed to drop in access to cane/fuel due to competition for cane with other new sugar manufacturing companies in the same area.

The company, however, indicated a deliberate effort to increase cane production and thus is expected to increase generation moving forward. Generation is expected to increase to 175.2 GWh in 2018. The applicable adjusted weighted generation Tariff for Power Purchase Agreement 1(PPA 1), Power Purchase Agreement 2 (PPA 2) and Power Purchase Agreement 3 (PPA 3) is US cents 9.5/kWh as shown in Table 3.

Table 3: 2018 Adjusted generation Tariff for KSL

2015 Approved Tariffs (US cents /KWh)	O&M Weight	Adjusted Tariff	PPA Share	Total
PPA 1 - 4.96	22.65%	5.05	4.7%	0.2
PPA 2 - 9.66	22.65%	9.83	32.8%	3.2
PPA 3- 9.5	22.65%	9.66	62.5%	6.0
	Weighted Average Tariff – US cents/kWh			9.5

UETCL's power purchase costs for Kakira Sugar Limited energy are expected to increase from Ush 36.1 Billion in 2017 to Ush 60.5 Billion in 2018. The increase in power purchase costs is on account of increased generation from KSL, upward adjustment of the generation Tariff for Producer Price Index, and depreciation of the Uganda Shilling against the United States Dollar.

3.2.16 Kinyara Sugar Ltd (7.5 MW)

The plant is estimated to sell 8.3 GWh to the National Grid by the end of 2017. The power evacuation challenges faced by the plant are expected to be addressed in 2018/19. The plant is expected to increase generation to 8.8 GWh in 2018.

The approved and Licensed Tariff for Kinyara Sugar Limited for Tariff Year 2018 is US cents 8.1/kWh. The approved Tariff is not subject to adjustment for changes in the United States Consumer Price Index.

The Kinyara power purchase costs are expected to increase from Ush 2.4 billion in 2017 to Ush 2.6 billion in 2018 on account of increased in dispatch from the power plant and depreciation of the Uganda Shilling against the United States Dollar.

3.2.17 Sugar and Allied Industries Limited – SAIL (11.9 MW)

SAIL is expected to supply 14.4 GWh to the national grid by the end of 2017. In 2017, Sugar and Allied Industries Limited experienced power evacuation challenges as well as scarcity of cane. It is projected that the plant will supply the National Grid at an average capacity of 2.0 MW, translating into 17.5 GWh of energy.

In accordance with the Tariff Adjustment Methodology in the Licence, the effective Tariff for the Sugar and Allied Power Plant has been adjusted from a base/reference Tariff of US cents 9.5/kWh to 9.58/kWh for 2018.

The Sugar And Allied Power Purchase costs are expected to increase from Ush 5.0 Billion in 2017 to Ush 6.10 Billion in 2018 on account of increased generation from the Power Plant, adjustment of the Tariff for United States Producer Price Index and depreciation of the Uganda Shilling against the United States Dollar.

3.2.18 Electro-Maxx Limited – Tororo (33.6 MW)

In 2017, the generation from Electro-maxx was at an average capacity of 18.3 MW, translating into 160.7 GWh. This generation was mainly for support to the Kenya National Grid. Electro-maxx acquired a License extension with a consideration of an increased minimum dispatch from 7 MW to 10 MW effective October 2018 at US cents 8/kWh. The plant is expected to generate 66.4 GWh in 2018. This reflects a reduction in generation as a result of less dispatch to Kenya and commissioning of other renewable sources.

The power purchase costs are expected to reduce from Ush 97.0 billion in 2017 to Ush 48.3 billion in 2018. This is due to the expected reduced generation from the power plant despite the increase in the international fuel prices.

3.2.19 Jacobsen Uganda Power Plant Ltd – Namanve (50 MW)

The plant is estimated to generate 91.7 GWh by the end of 2017. The plant is projected to generate 66.4 GWh in 2018. The power purchase costs are expected to reduce from Ush 50.9 Billion in 2017 to Ush 43.3 Billion in 2018. The decrease in power purchase cost is on account of reduced generation, despite the increase in international fuel prices and depreciation of Uganda shilling against the foreign currencies.

3.2.20 Access Solar TSK - Soroti (10 MWp)

The plant was procured through a competitive bidding process under the Global Energy Transfer Feed in Tariff (GETFiT) Program with a total capacity of 10 MWp and plant factor of 23%. It was commissioned in 2016. The plant generated 16.4 GWh in 2017 and is expected to generate 20.1 GWh in 2018.

In accordance with the Tariff Adjustment Methodology in the Licence, the effective Tariff for the Access Solar Power Plant has been adjusted from a base/reference Tariff of US cents 11.0/kWh to 11.04/kWh for 2018. The power purchase costs are expected to increase from Ush 6.5 Billion in 2017 to Ush 8.08 Billion in 2018.

3.2.21 Tororo Solar North (10 MWp)

The plant was procured through a competitive bidding process under the GETFiT Program with a total capacity of 10 MWp and plant factor of 23%. It was commissioned in 2017. The plant generated 4.3 GWh in 2017 and is expected to generate 20.1 GWh in 2018 since it is now in full operation.

In accordance with the Tariff Adjustment Methodology in the Licence, the effective Tariff for the Tororo Solar North Power Plant has been adjusted from a base/reference Tariff of US cents 11.0/kWh to US cents 11.04/kWh. The power purchase costs are expected to increase from Ush 1.7 Billion in 2017 to Ush 8.08 Billion in 2018.

3.2.22 Nkusi Hydro Power Plant (9.6 MW)

Nkusi Hydro Power Plant is expected to be commissioned in April 2018. It is expected to generate 35.2 GWh in 2018 based on installed capacity (9.6 MW), the plant factor and expected days of generation in 2018.

Nkusi Hydro Power Plant is expected to sell energy to UETCL at US cents 9.5/Kwh. According to the Tariff Methodology in the Licence, the Licensed Tariff is not adjusted for movement in the United States Producer Price Index in the year that the power plant achieves Commercial Operations Date. There is, therefore, no adjustment of the licensed Tariff for the Tariff Year 2018.

UETCL will incur power purchase costs of Ush 10.9 Billion in 2018 for buying power from Nkusi Hydro Power Plant.

3.2.23 Agago-Achwa – PACSPA Hydro Power Plant (42MW)

Agago-Achwa Hydro Power Plant is expected to be commissioned in October 2018. It is expected to generate 35.3 GWh in 2018 based on installed capacity, the plant factor and expected days of generation in 2018.

Agago-Achwa Hydro Power Plant is expected to sell energy to UETCL at US cents 9.83/Kwh. According to the Tariff Methodology in the Licence, the Licensed Tariff is not adjusted for movement in the United States Producer Price Index in the year that the power plant achieves Commercial Operations Date. There is therefore no adjustment of the licensed Tariff for the Tariff Year 2018.

3.2.24 Isimba Hydro Power Plant

Isimba Hydro Power Plant is expected to be commissioned in December 2018. It is expected to generate 1.5 GWh in 2018 based on installed capacity, the plant factor and expected days of generation in 2018.

Isimba Hydro Power Plant is expected to sell energy to UETCL at US cents 4.16/Kwh. According to the Tariff Methodology in the Licence, the Licensed Tariff is not adjusted for movement in the United States Producer Price Index in that the year the power plant achieves Commercial Operations Date. There is, therefore, no adjustment of the licensed Tariff for the Tariff Year 2018.

UETCL will incur power purchase costs of Ush 0.2 Billion in 2018 from buying power from the Isimba Hydro Power Plant.

3.2.25 Imported Power

In 2017, UETCL is estimated to import 12.7 GWh from Kenya and Rwanda mainly for system stability. In 2018, UETCL is projected to import 21.1 GWh from Kenya Power and Lighting Company and Rwanda Energy Group Limited. The cost of importing power is expected to increase from Ush 6.6 Billion in 2017 to Ush 10.6 Billion in 2018.

The breakdown of the power purchase costs and the energy dispatch from the various generation sources is shown in Table 4.

Table 4: Projected Energy Purchases by UETCL

Generation Plant	Energy (GWh)	Cost (Ush Bn)	Energy (GWh)	Cost (Ush Bn)
	2017 Actual		Q1 2018 - Q4 2018 Forecast	
Eskom	1,541.7	60.81	1,500.1	68.68
Bujagali	1,662.7	583.1	1,521.4	603.7
KCCL	58.5	11.5	63.1	12.42
Tibet Hima	25.4	2.2	26.3	2.307
Bugoye-Tronder	21.6	6.9	80.6	47.3
Mpanga	43.5	10.8	64.8	15.7
Electro-maxx	160.7	97.0	66.4	48.3
Jacobsen - Namanve	91.7	50.9	66.4	43.3
Ishasha Eco Power	15.5	4.6	26.3	6.926
Kakira SW	108.6	36.1	175.2	60.5
Kinyara	8.3	2.4	8.8	2.58
Sugar and Allied	14.4	5.0	17.5	6.10
Tororo Solar	4.3	1.7	20.1	8.1
Access Solar	16.4	6.5	20.1	8.08
Muvumbe	14.2	4.7	25.4	8.7
Nyamwamba	-	-	39.4	12.2

Generation Plant	Energy (GWh)	Cost (Ush Bn)	Energy (GWh)	Cost (Ush Bn)
Rwimi	2.1	0.8	24.0	8.6
Nkusi	-	-	35.2	10.9
Siti 1	9.4	2.8	21.9	8.0
Isimba	-	-	1.5	0.2
Agago- Achwa	-	-	-	-
Mahoma	-	-	8.2	3.2
Lubilia	-	-	23.6	8.5
Buseruka Hydromax	39.0	13.7	43.8	15.1
Import KPLC - Kenya	9.0	5.5	17.4	9.5
Import Rwanda	3.8	1.1	3.6	1.1
Total	**3,850.8**	**908.2**	**3,901.50**	**1,020.0**

4 ENERGY SALES BY UETCL

The energy purchased by UETCL is adjusted for transmission losses and sold to different distribution companies and/or exported. Based on the forecast, UETCL will sell 92.9 percent of the energy to Umeme Limited, 5.5% percent of energy will be exported and the rest (1.6 %) will be sold to the small distribution companies in Uganda.

Table 5: Energy Sales by UETCL in 2018

Distribution Licensee	Energy Annual Sales by UETCL (GWh)	%age sales
UMEME LIMITED	3,500.5	92.9%
KIL	5.6	0.1%
BECS	2.8	0.1%
PACMECS	2.1	0.1%
KRECS	3.4	0.1%
UEDCL	46.8	1.2%
EXPORT	208.8	5.5%
TOTAL	**3,770.0**	**100.0%**

4. UETCL TARIFF PROPOSALS FOR 2018

UETCL is currently regulated under the incentive-based Multi-Year Tariff (MYT) regime. In 2017, pursuant to the license for Bulk Power Supply issued to UETCL, the Authority approved Tariff performance parameters under the Multi-Year Tariff regime for the period 2017-2019.

Further to the above, Annex A of the License for Bulk Power Supply issued to UETCL provides for adjustment of the approved Transmission Operation and Maintenance costs for changes in the macro economic factors of; the exchange rate of the Uganda Shilling against the United States Dollar, and the movement in the Consumer Price Index for the local currency content of the approved Transmission Operation and Maintenance Costs. The approved Transmission Operation and Maintenance costs for the Multi-Year period 2017 – 2019 are indicated in Table 6.

Table 6: Approved Transmission Operation and Maintenance Costs in Ush

	2017	2018	2019
Total Operation and Maintenance Costs	84,877	84,844	86,053
Less: Other Income	(15,480)	(15,484)	(15,484)
Net Total Capex and Transmission Costs in Uganda Shillings	69,397	69,360	70,569
Exchange rate of the Uganda Shilling against the United States Dollar	3,357	3,357	3,357
Net Total Capex and Transmission Costs in United States Dollar	20.672	20.661	21.021

Under the incentive-based MYT regime, UETCL is fully compensated for any unfavorable changes in operation costs arising from changes in macro-economic factors including exchange rate, inflation, international fuel prices and changes in the energy supply mix.

The exchange rate of the Uganda Shilling against the United States Dollar has depreciated from the base rate of Ush 3,357/US$ to Ush 3,634.92/US$ as at 30th November 2017 as published by the Bank of Uganda.

The Consumer Price Index has moved from the base rate of 159.4 to 164.2 as published by Uganda National Bureau of Statistics for the month of November 2017.

UETCL has not applied for change in the local currency content of 72% of the Transmission Operation and Maintenance Costs as approved by the Authority. At a local currency content of 72%, the effective Transmission Operation and Maintenance Costs for the Tariff Year 2018 is Ush 89,016 million before adjustment for other revenue/income.

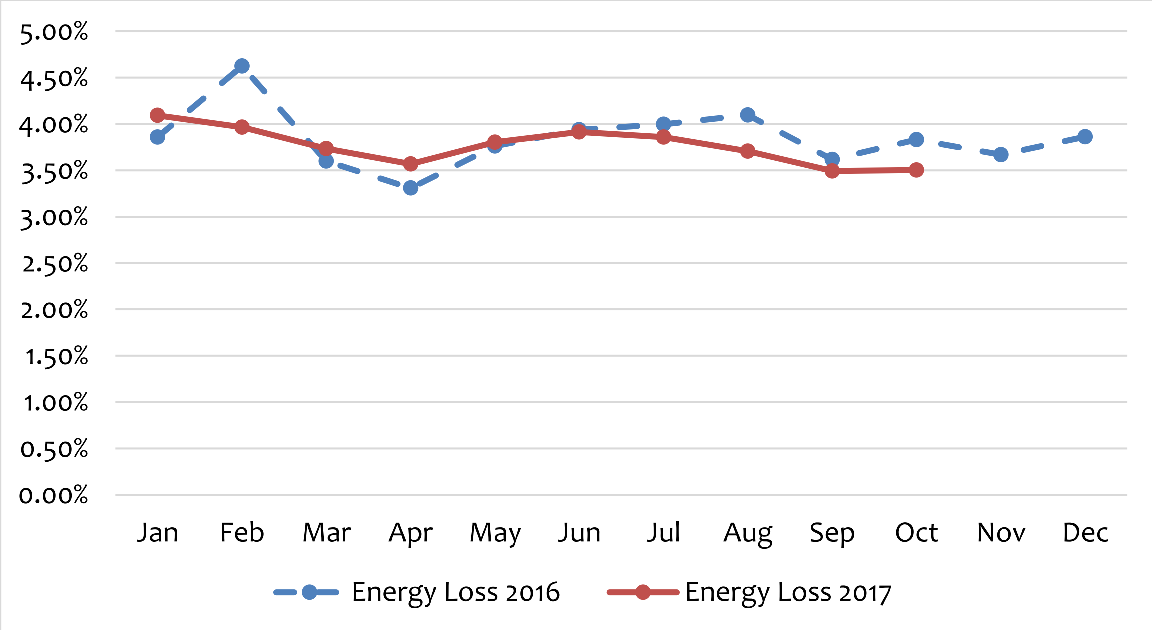
In 2017, UETCL officially requested the Authority and requested the Authority to review and reconsider its decision regarding the approved Transmission Operation and Maintenance Costs (TOMC), specifically to provide additional allowance for network investments to unlock suppressed demand and provide for staff enhancement.

For the purpose of computation of the Base Bulk Supply Tariff for the Tariff Year 2018, the effective Transmission Operation and Maintenance Costs (after adjustment for Consumer Price Index and Exchange Rate) have been applied.

4.1 Transmission Losses

For the Tariff Year 2017, the Authority set an overall Transmission Energy Loss Factor (TLF) of 3.38% under the 2017 – 2019 Multi-Year Tariff regime. UETCL has reported an outturn of 3.76% for the period January to October 2017 as shown in Figure 3. The company explained that the higher than expected energy losses are on account of delayed transmission lines whose capacity had been used in the energy loss simulations.

Figure 3: Overall Transmission Energy Losses for 2016 – 2017



The applicable Transmission Loss Factor for 2018 as approved by the Authority under Multi-year tariff is 3.37%. In line with the approved three year MYT, the Energy Loss trajectory for 2017 - 209 is summarized in Table 7.

Table 7. Transmission Loss Factor Trajectory 2017 – 2019

Year	**2017**	**2018**	**2019**
Transmission Loss Factor	3.38%	3.37%	3.38%

For the purpose of determining the Bulk Supply Tariff for 2018, a Transmission Energy Loss Factor of 3.37% has been applied.

4.2 Local Currency Split of Operation and Maintenance Cost

In the application for the Multi-Year Tariff, UETCL applied for adjustment of the foreign currency content of the Operation and Maintenance costs from 25% during the previous Multi-Year Period to 28% in 2016. In the Tariff application for the year 2018, UETCL did not apply for adjustment of the Tariff forex component. The target for local currency component as included in the company's MYT has been maintained at 72% as previously approved by the Authority.

During the determination of the Bulk Supply Tariff for 2018, the Operation and Maintenance cost split has been maintained at 72% local currency content and 28% foreign currency content.

4.2.1 High Voltage load profile

In 2017, the Authority approved a High Voltage Load Profile by UETCL of 28% peak, 51% shoulder and 21% off peak.

During the Tariff Year 2018, the High Voltage Load Profile has been adjusted to reflect the load profile reported by UETCL and Umeme Limited.

For purposes of computation of the Bulk Supply Tariff for the Tariff Year 2018, the High Voltage Load Profile of; 26.84% peak, 50.92% shoulder and 22.24% off peak has been considered.

5. ESKOM UGANDA LIMITED 2018 TARIFF PROPOSALS

5.1 Background

Eskom Uganda Limited is licensed (License No. 018) to generate electricity from the Nalubaale and Kiira Hydropower Complex and sell it to the National Grid.

Effective 1st April 2015, the Authority approved Eskom Uganda Limited four-year (April 2015 to March 2019) Generation Operation and Maintenance Costs (GOMC). Eskom Uganda Limited's approved GOMC includes staff costs, core Operation and Maintenance costs, Administration costs, Management Fee, Director Fees and None Core Assets/depreciation as indicated in Table 8.

Table 8: Eskom Uganda Limited Approved GOMC for the four years 2015-2018 (Ush '000')

Cost Item	2015	2016	2017	2018
Staff Costs	10,348,824	9,689,494	9,644,404	9,533,710
Core Operation & Maintenance Costs	5,148,712	5,049,416	6,561,039	4,802,699
Administration costs	3,495,397	3,340,010	3,336,095	3,345,315
Management Fee	840,000	840,000	840,000	840,000
Directors Fees	372,400	372,400	372,400	372,400
Non-core Assets/ Depreciation	6,385,375	3,425,278	5,865,525	7,510,293
Total in UGX	**26,590,708**	**22,716,599**	**26,619,463**	**26,404,417**
Exchange Rate	2,867	2,867	2,867	2,867
Total in USD	**9,275**	**7,924**	**9,286**	**9,211**

Eskom Uganda Limited's License No. 018 as amended, as well as the 2014 approved Quarterly Tariff Adjustment Methodology provide for adjustment of GOMC Base parameters for changes in exchange rate and inflation as measured by the Consumer Price Index (CPI). The base Consumer Price Index is 213.95 (reference CPI of 144.29, re-based) and the exchange rate of 2,866.77/US$ for the purpose of adjustment of the Generation Operation and Maintenance Cost for Eskom Uganda Limited.

5.2 Eskom Uganda Limited 2018 Tariff Submission

Eskom Uganda Limited requested the Authority to approve a Capacity Price of Ush 43,798.6 per MWh in 2018 based on the following assumptions:

(i) The investment assets added by ESKOM to the power plant in 2016 amounted to US$ 2,503,672.34 and all the funds were from Eskom's internally generated funds;

(ii) A weighted average depreciation rate of 16.16% per annum for all investment assets;

(iii) 10% increase in concession fees, regulatory fees of US$ 900,000, Royalties remain at Ush 292/MWh;

(iv) Operation and Maintenance costs split of 62.32% local currency and 37.68% foreign currency (US Dollar).

(v) ESKOM estimated average energy generation of 176.9 MW per hour based on the Directorate of Water Resources Management water release of 1,000 Cumecs with an average daily auxiliary consumption of 0.25 MWh; and,

(vi) 2018 project investments of US$ 20,221,066.

5.3 Review and Analysis

The Authority has undertaken a review of each of ESKOM's assumptions and determined as follows:

5.3.1 Capital Investment by Eskom (IN)

In its application, Eskom Uganda Limited indicated that the company has invested US$ 2,503,672.34 in 2017 that qualify for a return on investment. This bring the total gross investment by Eskom Uganda Limited to US$ 24.575 Million. The investments undertaken by Eskom Uganda Limited in 2017 have been allowed in the determination of the Capacity Price for Eskom Uganda Limited for 2018 pending the verification of the Investments. Once the investment verification exercise is complete, and the verified and approved amount is different from US$ 2,503,672.34, reconciliation will be undertaken and any variances clawed back. The amount applied for as project investment costs (to be executed in 2018) of US$ 20,221,066 has not been included in the 2018 Base Tariff.

5.3.2 Depreciation / Capital Recovery (DPR_y)

Eskom Uganda Limited in its submission applied for a weighted average depreciation rate of 16.16%. The Company indicated that the application for an increased capital Recovery Rate of

16.16% compared to 5% for the previous years was in consideration of the remaining period of the concession.

Based on the foregoing, a capital recovery rate of 16.16% resulting into depreciation costs of US$ 3,971,000 for 2018 and has been used in the computation of the Capacity Price for Eskom Uganda Limited.

5.3.3 Regulatory Fees

The Electricity (License Fees) (Amendment) (No. 3) Regulations 2014 prescribes US$ 112,500 per 50MW or part thereof to be paid by every large generator (200 MW and above). Eskom Uganda Limited is operating Nalubaale and Kiira power plants with a combined installed capacity of 380 MW. The License fees that ESKOM will pay in 2018, therefore, amount to USD 900,000 and this has been considered in the determination of the 2018 Capacity Price for Eskom Uganda Limited.

5.3.4 Royalties

In its application, Eskom Uganda Limited requested for Royalties at Ush 292/MWh in 2018. The Authority approved regulation for the determination of royalties based on the expected generation from Eskom Uganda Limited of 1,500.12 GWh, Ush 438.0 Million has been allowed as royalties in the determination of the Capacity Price for Eskom Uganda Limited for 2018.

5.3.5 Operation and Maintenance costs

The Authority approved Operations and Maintenance costs of US$ 9.211 Million for 2018 pursuant to Amendment No. 2 of Eskom Uganda Limited's License.

The License provides for adjustment of the Operation and Maintenance costs for movement in exchange rate and Consumer Price Index.

The Consumer Price Index (CPI) used in the escalation of the 2018 approved GOMC is the November 2015 CPI of 164.2

compared to the 2015 reference CPI of 144.29 (re-based). The exchange rate used in the adjustment of the 2017 approved GOMC is the 30th November 2017 midrate of 3,634.92 compared to the January 2015 reference midrate of 2,866.77.

5.3.6 Split of the Operation and Maintenance cost for Local and foreign content

Eskom Uganda Limited's license (as amended) states that at the end of each year and based on actual costs incurred, the Licensee will submit its computation of Operation and Maintenance costs split into local currency and foreign currency to the Authority for its review and approval. In the 2018 Tariff application, Eskom Uganda Limited applied for Local currency content of 62.32% on the approved Operation and Maintenance costs based on actual expenditure.

For the purpose of computation of the Eskom Uganda Limited Capacity Price for 2018, effective Generation Operation and Maintenance Costs of Ush 31,458 Million has been applied.

5.3.7 2017 Investments by Eskom Uganda Limited

Eskom Uganda Limited's Investments for the period 2015-2018 were considered during the review of the Tariff performance parameters in Amendment Number Two of the Generation License. The Authority considered that Eskom Uganda Limited would re-present the investments for re-consideration if the assumptions had significantly changed.

In the 2018 Tariff application, Eskom Uganda Limited stated that its planned investments of US$ 20,221,066 in the Nalubaale and Kiira Power Plants in 2018 were based on what Eskom Uganda Limited and Uganda Electricity Generation Company Limited (the asset owner) had agreed upon.

The planned 2018 investments were not considered in the determination of the Capacity Price for 2018. The investment-related costs will be recovered through the Tariff after the investments have been executed.

5.3.8 Return on Investment

In accordance with the provisions of the Generation License, Eskom Uganda Limited is entitled to 12 percent return on the net investment (US$ 13.13 Million for 2018). The return on investment for 2018 based on the net investment undertaken by Eskom Uganda Limited at the end of 2017 is US$ 1.575.74 Million.

5.3.9 Eskom Uganda Limited Investment reconciliations

In the determination of the Capacity Price for 2017, Eskom Uganda Limited indicated that the company had invested US$ 1,931,243. In 2017, verification of the investments was undertaken, and the Authority approved US$ 2,035,520 as investments executed in 2016 that qualified for a return on investment.

Following the conclusion of the investment verification exercise, the Authority has undertaken a reconciliation. Based on the reconciliation, Eskom Uganda Limited under-recovered Ush 83.238 Million in 2017 arising from applying a lower amount of qualifying investments than the Authority-approved investments after the verification exercise as shown in Table 9.

Table 9: Summary of ESKOM 2017 Investment reconciliation

	2017					
Taxes Rate	30.0%	30.0%	30.0%	30.0%		
Capital Recovery	5.00%	5.00%	5.00%	5.00%		
ROI	12.0%	12.0%	12.0%	12.0%		
Submitted Investments 2017	**US$ 1,931,242.59**					
Gross Investments	1,931,243					
Accum - CR	-					
Net Investments	1,931,243					
	Capital Recovery	**ROI**	**Taxes**	**Total -US$**	**Average Ex Rate**	**Total - Ush**
2017 Under Recovery	96,562	231,749	99,321	427,632	3,605	**1,541,605,845**
Verified Investments 2017	**US$ 2,035,520**					
Gross Investments	2,035,520					
Accum - CR	-					
Net Investments	2,035,520					
	Capital Recovery	**ROI**	**Taxes**	**Total -US$**	**Average Ex Rate**	**Total - Ush**
2017 Under-recovery	101,776	244,262	104,684	450,722	3,605	**1,624,844,826**
				Under / Over-recovery		**83,238,981**

The under-recovered amount of Ush 83.238 Million has been added to the Investment-related costs and applied in the computation of the Eskom Uganda Limited Capacity Price for 2018.

5.3.10 Tested Generation Capacity (TC)

In 2017, a capacity test for Nalubaale and Kiira Hydro Power Stations generated a maximum of 309.2 MW with an average of 178.4 MW. In 2018, the plant is projected to generate an average of 150 MW based on the projected water release of 900 Cumecs at Nalubale and Kiira Complex. A tested Capacity of 150 MW has been applied in the computation of the Eskom Uganda Limited Capacity Price for the Tariff Year 2018.

5.3.11 Target Availability

Pursuant to the Eskom Uganda Limited Generation License, for the period commencing with the transfer date, until and including the 31st December 2002, the target availability shall be equal to 95% and for the three-year period, commencing 1st January 2004, the target availability shall be equal to 96%. The target availability for each subsequent three-year period shall be determined and set thereafter by the Authority, but in no event shall it be less than 94% or more than 97% in any period. Based on the inspection done by the Authority and submission by Eskom Uganda Limited, the availability in 2017 was 95.71 percent.

For the purpose of this review, Target availability as determined in amendment number two the Eskom License i.e. 97.0% and the same has been used in the computation of the capacity price for 2018.

6. ANNUAL BUDGETS FOR UEGCL

The Authority has reviewed and approved Ush 10,764 Million to cater for Uganda Electricity Generation Company Limited's budget for the period 2018, increasing from Ush 6,519.7 Million approved and applied for the determination of the 2017 Base Tariffs.

The approved UEGCL budget has been applied in the computation of the Capacity Price for Tariff Year 2018.

7. DISTRIBUTION ASSUMPTIONS

7.1. Umeme Investment

Umeme Limited in its 2018 Tariff submission indicated that the company completed US$ 65.35 Million as investments in 2017 to qualify for return on Investment in Tariff Year 2018.

Following additional information submitted as part of the Tariff Review process, Umeme Limited reduced the 2017 investments to US$ 60.0 Million.

Based on the foregoing, US$ 60 Million has been included in the Regulatory Asset Base. This amount has been tentatively applied in the computation of the 2018 Distribution Price pending the investment verification exercise. Following the conclusion of the investment verification, a reconciliation shall be undertaken in the event that the verified amount is different from the US$ 60 Million provisional investment amount.

The Authority-approved investments for Umeme Limited applied in the determination of the Distribution Price for the period 2011 – 2018 are indicated in Table 10.

Table 10: Verified and Approved Investments for Umeme Limited

Tariff Year	Investment implementation Year	Amount in Regulatory Asset Base - US$ Million
2011	2010	18.87
2012	2011	25.23
2013	2012	25.22
2014	2013	39.49
2015	2014	57. 51
2016	2015	67.47
2017	2016	45.92
2018	2017	60* pending verification

7.2. Capital Recovery/ Depreciation (CRy)

Umeme Limited in its application requested for a depreciation / capital recovery rate of 9.5 percent. Umeme Limited stated that the company had reviewed the capital recovery rate to align the same to the accounting depreciation rate.

The Authority reviewed the justification provided by Umeme Limited for a capital recovery rate of 9.5% and noted the following;

a) It is expected that the capital recovery rate should change based on the remaining period of the concession and the useful life of the investment assets installed on the distribution network,

b) It is not expected for the capital recovery rate to reduce as the remaining period of the concession reduces,

c) The company does not an incentive for accelerated depreciation because; there may not be alternative investment with higher return on investment, and the company will be exposing itself to re-investment risks.

7.2.1.Impairment Charges

In its application, Umeme Limited requested for impairment charges amounting to US$ 3,805,512 Million in respect of different assets that were written off between 2012 and 2015 and replaced prior to expiry of their useful life. As part of the application, Umeme Limited submitted a spreadsheet showing the impaired assets, the location of the assets, the Net book Value (un-depreciated impaired value), and the capital recovery by the company at the time of impairment.

Having reviewed the submission by Umeme Limited and the impaired assets, the Authority notes that it is not prudent for Umeme Limited to continue earning a return on assets that are impaired and not yielding benefit to the electricity consumers, as the assets are not used and useful. Elimination of impaired assets from the Regulatory Asset Base is undertaken/effected through increased capital recovery charge/rate.

When the capital recovery charge of 9.5% is added to the impairment recovery of Ush 13,830.87 Million (US$ 3.805 Million), the weighted average capital recovery for 2018 is 10.2%.

Based on the foregoing, a capital recovery rate of 10.23% has been used in the computation of the Distribution Price for 2018.

7.3. Umeme Limited Performance Parameters for 2018

The Overall Distribution Loss Factor, Distribution Operating and Maintenance Costs (DOMC), Distribution Efficiency, Days Lag, and Uncollected Debt Factor as set and approved by the Authority for Tariff Year 14 (2018) for Umeme Limited are summarized in Table 11:-

Table 11: Summary of the parameters for 2016 - 2018

Parameters	2016	2017	2018
Overall Distribution Loss Factor	17.1%	15.9%	14.7%
DOMC (US$ 000)	47,433	49,033	51,100
Distribution Efficiency DEF (%)	0%	0%	0%
Days Lag (DY)	0	0	0
Target Uncollected Debt Factor (TUCF)	2.1%	1.85%	1.5%

Umeme Limited has reported that the Energy Loss outturn for the period January to October 2017 is 17.2% and the Total Uncollected Debt Factor is less than 1.9%.
The performance targets as approved by the Authority have been used in the determination of the Distribution Price.

7.4. Annual Budgets for UEDCL

For the Tariff Year 2017, the Authority considered Ush 5,917 billion for UEDCL budget. The Authority reviewed the 2018 UEDCL budget and approved Ush 6,177 Million. This amount (Ush 6,177 Million) has been used for the computation of Umeme Limited's Distribution Price for 2018.

7.5. Customer Numbers

Umeme Limited has increased the customer numbers in 2017 and is estimated to add 164,048 new connections by the end of December 2017. The customers by category are summarized below in Table 12.

Table 12: Cumulative Customer connections from 2011 to 2017

Year	Domestic	Commercial	Medium Industrial	Large Industrial	XL Industrial	Street Lights	Total
2011	389,820	33,569	1,547	358		253	425,547
2012	422,589	37,991	1,853	349		293	463,075
2013	504,439	48,189	2,076	395		360	555,459
2014	589,415	58,075	2,267	468		348	650,573
2015	738,488	69,219	2,404	495		317	810,923
2016	821,505	75,974	2,470	535		305	900,789
2017	973,623	87,960	2,495	469	38	252	1,064,837

7.6. Time of Use Factors by Customer Class

In the application, Umeme Limited requested the load profile to be adjusted based on actual sales per Time of Use in 2017. The Authority has recomputed and studied the load profile based on reporting by the company for the nine months ending September 2017; and approved that the load profiles be adjusted as indicated in Table 13.

Table 13: Time of Use Profile

		Customer Category					
		Domestic	Commercial	Small Industrial	Large Industrial	TX Large Industrial	Street Lighting
		Code 10.1	Code 10.2	Code 20	Code 30		Code 50
2016	Peak	36.0%	24.5%	24.3%	24.4%		60.0%
	Shoulder	44.0%	55.8%	59.0%	52.0%		0.0%
	Off-peak	20.0%	19.7%	16.7%	23.6%		40.0%
2017	Peak	36.0%	20.0%	23.0%	22.5%	23.0%	60.0%
	Shoulder	44.0%	65.0%	60.0%	53.0%	51.5%	0.0%
	Off-peak	20.0%	15.0%	17.0%	24.5%	25.5%	40.0%

7.7. Time of Use Weighting Factors

Following the commissioning of the Bujagali Energy Limited Power Plant in 2012 and elimination of load shedding, the Authority in 2014 approved an adjustment of the Time of Use weighting factor to 120%. In order to further incentivize electricity consumers to shift consumption from peak to off-peak and shoulder Time of Use, the Authority in 2015 further adjusted the Time of Use weighting factor to 130%.

Following the adjustment of the Time of Use weighting factor, Commercial, Medium Industrial and Large Industrial consumers have changed the load profile as shown in Table 13.

The Authority has studied the consumption pattern and profile of Industrial consumers and noted that most industries have their consumption concentrated at off-peak, and may not have the capacity to increase consumption during this period.

The Authority considered and approved that the time of use weighting factor be maintained at 130% as shown in Table 15. The Authority will increase sensitization of Industrial consumers in 2018 to incentivize reduction of consumption at peak and increased consumption at off-peak for industries that have capacity to change consumption patterns.

Table 14: Time of Use Weighting Factor

Status	BST-Peak	HV-Peak	HV-Shoulder	LV-Peak	LV-Shoulder
Current	130%	130%	100%	130%	100%
Approved 2018	130%	130%	100%	130%	100%

7.8. Maximum Demand Charge (KVA Sales)

In 2012, the Authority approved a maximum demand charge for Medium Industries – code 20 of Ush 16,644 per kVA per month, and Ush 11,096 per kVA per month up to 2,000kW and Ush 5,548 per kVA per month for the large industries – code 30. These charges were also applied to industries reclassified to code 40 during the Tariff Review of 2017 Base Tariffs. For the twelve-month period ending September 2017, Umeme sold 1,910,675 units to Medium Industries, 2,627,069 units to Large Industries and 1,393,006 units to the Extra-Large Industries. These sales have been considered for the computation of the Distribution Price for the respective customer categories. Umeme Limited has not applied for adjustment of the maximum demand charge and the approved charges have been maintained in 2018.

The Authority is undertaking a Cost of Service study that is expected to inform any adjustment to the maximum demand charge going forward.

The maximum demand charge of Ush 16,644 per kVA per month and, Ush 11,096 per kVA per month up to 2,000kW for Medium Industries – code 20 and Ush 5,548 per kVA per month for the large industries – code 30 have been used in the determination of the Distribution Price in 2018.

7.9. Reactive Power Tariff

The Authority approved a Reactive Energy Charge of Ush 40 per kVArh per month and Reactive Energy Reward of Ush 20 per kVArh per month with the objective of ensuring efficient power utilization by Medium and Large Industrial consumers through reactive energy compensation initiatives.

Umeme Limited in its application proposed the removal of the Reactive Energy Charge from the computation of the End User (Retail) Tariffs citing challenges in its application with more customers being penalized than those being rewarded and notable delays in payments by the penalized clients. The Authority reviewed the submission by Umeme Limited and noted that;

(i) During the 2015 Annual Tariff Review, Umeme Limited indicated that the company was undertaking a study regarding reactive power which was expected to be concluded in the first quarter of 2015. To date, the Authority has not received the findings of the study.

(ii) Umeme Limited has not submitted the proposed alternative mechanism for correction of Power Factor after cessation of the Reactive Energy Tariff.

(iii) In respect to the effect on the company's cash flow, Umeme Limited did not demonstrate how the Reactive Energy Tariff billing and revenue collection mechanism differs from that applied for normal energy billing by the company.

For the period October 2016 to September 2017, Umeme Limited rewarded Ush 3,811.9 Million and penalized Ush 3,956 Million resulting into a net reward/deficit of Ush 144.9 Million. This amount Ush 144.9 Million has been considered in the computation of the Distribution Price.

The Authority considered and approved a Reactive Energy Charge of Ush 40 per kVArh per month and Reactive Energy

Reward of Ush 20 per kVArh per month. These charges shall apply pending the conclusion of the Cost of Service study.

7.10. Percentage of Local and Foreign Content for DOMC

In 2017, the Authority approved a Local currency content of DOMC at 67%. Umeme Limited applied to maintain the Local currency content at 67%. Umeme Limited stated that the company profiled its operating expenditure for 2017 and noted that 33% of its operating expenditure was incurred in foreign currency. The Authority reviewed the submission and noted the following;

(i) Umeme Limited did not submit the strategies adopted by the company towards the implementation of the Buy Uganda Build Uganda Government of Uganda Policy.
(ii) Umeme Limited did not submit the strategies to reduce the foreign currency content of the Distribution Operation and Maintenance Costs from the current levels.
(iii) Umeme Limited did not demonstrate how raising capital for financing Capital Investment requirements through; local currency loans, local currency internal financing and listing on the Securities exchange, had helped the company to manage the Investment-related foreign currency exposure.

The Authority considered and approved the foreign and local currency content to be maintained at 33% and 67% respectively for the purpose of determination of the distribution price for 2018.

7.11. RECONCILIATIONS

7.11.1. INCOME TAXES

The Umeme Limited License for Supply of Electricity requires that reconciliation is undertaken comparing the Income Tax allowance/provision used in the computation of the Distribution Price and the actual outturn paid in the Retail Tariff Year based on the company's reporting and the Audited Financial Statements.

The income tax allowance in the 2016 Tariff Year was Ush 70,485.87 Million compared to income tax paid of Ush 26,529.00 Million as included in the Audited Financial Statement for the year 2016. The reconciliation therefore on account of Income taxes is **Ush 43,956.87 Million** before adjustment for investment reconciliation, and **Ush 32,747.16 Million** after adjustment for investment reconciliation as shown in Table 15.

Table 15: Income Taxes Reconciliation

	Amount Allowed (US$ Million)	**Exchange rate**	**Amount Allowed (Ush Million)**
Q1 2016	5.24	3,357.12	17,589.25
Q2 2016	5.24	3,348.55	17,556.95
Q3 2016	5.24	3,364.52	17,640.68
Q4 2016	5.24	3,375.64	17,698.99
A	**13.94**		**70,485.87**
B		**Income Tax Paid**	**26,529.00**
C	Income Tax Reconciliation		43,956.87
D	Adjustment for Investment Recon		(11,209.71)
E	**Total Income Tax Recon (A-B+D)**		**32,747.16**

Income Tax reconciliation of Ush 32,747.16 Million has been considered in the determination of the Distribution Price for 2018.

7.11.2. INVESTMENTS RECONCILIATIONS

Following the conclusion of the investment verification exercise for investments undertaken by Umeme Limited during the Tariff Year 2016, the decisions of the Authority regarding the qualifying investments 2016 were communicated, vide letter Ref:- FIN/9/11/1 of 13th November 2017. Consequently, the Authority has undertaken the reconciliation for the 2016 verified investments.

In 2017, the provisional amount that was allowed by the Authority for the determination of the Distribution Price subject to conclusion of the Investment verification exercise was US$ 72,500,000. Following the conclusion of the verification process/exercise, US$ 45,921,761 was approved as the investments made by Umeme Limited qualifying to be added to the Regulatory Asset Base for purposes of return on investment.

Consequent to the above, the Authority has carried out a reconciliation of the surplus revenue earned by Umeme Limited from January 2017 to December 2017 amounting to **US$ 10.31 Million (Ush 37,178.80 Million)** as shown in Table 16.

Table 16: Reconciliation for 2016 investments

	Amount in US $ Million	**Exchange Rate**	**Amount in Ush Million**
Capital Recovery	2.72	3,604.98	9,803.37
Return on Investment	5.32	3,604.98	19,162.80
Income Taxes	2.28	3,604.98	8,212.63
Total	**10.31**	3,604.98	**37,178.80**

Investment reconciliation of Ush 37,178.8 Million has been considered in the determination of the Distribution Price for 2018.

7.11.3. POWER SUPPLY PRICE RECONCILIATION

7.11.3.1. Application

In October 2017, Umeme Limited submitted an application for a Power Supply Price reconciliation (Rq) amount of Ush 87,736 Million (net of Rq previously allowed) for the period January 2010 to June 2017.

7.11.3.2. Context

According to the Tariff Methodology, in the computation of the Retail (End-User) Tariff charged by Umeme Limited, the Distribution Price is added onto the Power Supply Price. The computation of the Power Supply Price takes into consideration the Bulk Supply Tariff (Tariff at which Umeme Limited purchases power from UETCL) and adjusts the same for Distribution Losses, and how the power is sold to the different customer categories. In other words, the PSP is the adjusted Bulk Supply Tariff adjusted for Energy Losses.

In addition, the computation of the PSP recognizes that the distribution company may have factors outside its control that affect under/over-recovery of the power purchase costs. Therefore, in order to shield the licensee/consumer from under/over-recovery (by licensee) of power purchase costs, there is an adjustment incorporated into PSP computation known as the PSP (Rq reconciliation).

According to Licence No. 048 for Supply of Electricity held by Umeme Limited, ***Rq is the cumulative amount required to reconcile power supply costs and the related revenues equal to: (a) power supply costs incurred by Licensee from UETCL or any other suppliers and self-generators (including related wheeling charges) less (b) revenues billed to retail customers by applying the Power Supply Price to retail kilowatt-hour sales, as such amounts are recorded in the Licensee's accounts over the period commencing on the Transfer Date ending on the last day of the month for which actual data is available prior to any quarter "q"***.

7.11.3.3. Considerations

In the determination of the Power Supply Price reconciliation (Rq), the Authority noted that there can only be a PSP reconciled amount under the following circumstances;-

(a) When the Distribution Loss Factor target approved by the Authority is different from the outturn.

(b) When the Loss allocation per customer category assumed when setting the Tariff is different from the outturn.

(c) When the percentage of total energy consumed by the different customer categories assumed at setting of the Tariff is different from the outturn.

(d) When the load profile per customer category used for Tariff setting is different from the outturn.

The reconciled amount should be ZERO when all the parameters used for Tariff setting are the same as the outturn.

The Authority has noted that over the years, Umeme Limited reported that the company had failed to achieve the regulatory Tariff Performance Targets with respect to; Overall Distribution Loss Factor, Target Uncollected Debt Factor, and overspent on the Distribution Operation and Maintenance Costs in comparison to the targets approved by the Authority and as used in the determination of the Distribution Price.

In the same periods, Umeme Limited continued to claim Power Supply Price reconciliations for among other reasons failure to achieve; the energy loss target set by the Authority, load profile, and energy sales per customer category used/assumed in the determination of the Distribution Price.

The Authority notes that despite the reported failure by Umeme Limited to achieve the Regulatory Tariff Performance Targets;

a) The company's effective Return on Investment (ROI) as reported in the Audited Financial Statements is higher than the allowed ROI included in the Tariff Model and used in the determination of the Distribution Price for the Tariff Years 2014 – 2016.

b) Umeme Limited has been able to achieve an effective ROI similar to the ROI used in determination of the Distribution Price.

c) Umeme Limited reports a gross profit (in the Audited Financial Statements) higher than the distribution revenue requirement used in the determination of the Distribution Price.

Based on the above background, the Authority undertook an analysis of the financial and commercial performance of Umeme Limited for the Tariff Years 2014, 2015 and 2016. This review took into consideration the assumptions used for Tariff determination, the reporting by the company to the Authority, and the Audited Financial Statements for the years ended 31st December 2014, 31st December 2015 and 31st December 2016.

In determination of the applicable PSP reconciliation amount, the Authority notes that;

a) In the computation by the Authority, Rq is undertaken to ensure that the licensee recoups the intended revenue on account of power purchase costs even if the licensee fails to achieve distribution targets.
b) In the methodology applied by Umeme Limited, the company has failed to demonstrate circumstances where the Rq would result into a zero (net reconciliation is zero). For any reconciliation, the resultant amounts may be positive, negative or zero under ideal circumstances (where all model inputs turn out as assumed).

   Given that the Tariff is set to recover costs including costs of power purchase, the revenues that Umeme Limited generates from Power Supply Prices should be able to cover costs of power purchase. Therefore, if all Tariff setting parameters affecting PSP turn out as assumed, the PSP revenue (Ex-post Revenue) should be just enough to cover the actual costs of power purchase which would also equal to the power purchase costs planned at Tariff setting (Ex-Ante).

Therefore, from the Tariff Methodology, the only reason why Ex-Post revenue would turn out different from Ex-Ante revenue on account of deviations of the outturn from the target parameters for; loss factor, sales per customer category and the load profile.

The Ex-Post revenue and, therefore, the Rq is affected by the actual figures Umeme Limited reports for Energy Loss factor, sales per customer category and the load profile. The computation of actual loss, actual load profile and actual sales per customer category is within the control of Umeme Limited, which is the only party that can guarantee their authenticity.

Given that there is a difference between Power Purchase Cost and computation of the Ex-Ante revenue, it signals inconsistency in Ex-Post revenue reported on account of actual loss factor, sales per customer category and the load profile. Since the power supply costs are projected on the basis of power supply price adjusted for respective parameters, it is reasonable to evaluate ex-post performance on the performance of the same parameters (loss factors, sales per customer class and Time of Use) as opposed to the result (BST).
It is reasonable to believe that the inconsistency between the power purchase costs and Ex-ante revenues and the actual power supply costs is caused by data estimation/measurement issues which the company has control over.

c) The Authority has, in the past, allowed Umeme Limited a total of Ush 43,135.93 Million for Rq, following a determination covering the period January 2010 to June 2016.

d) From the computation undertaken by the Authority, the total Rq reconciliation amount from January 2010 to June 2017 amounts to Ush 56,627.33 Million, out of which the only outstanding amount to be allowed to Umeme Limited is Ush 13,491.40 Million relating to the period from July 2016 to June 2017.

e) The Authority has undertaken reconciliation for an additional four-months' period from July to October 2017 and computed an amount of Ush 5,098.14 Million.

f) The total PSP reconciliations due to Umeme Limited for the cumulative period of January 2017 to October 2017 is Ush 62,227.81 Million out of which Ush 20,057.83 Million relating to the period July 2016 to October 2017 is still outstanding.

7.11.3.4. PSP Reconciliation Approval

An amount of Ush 20,057.83 Million has been approved and allowed in the computation of the Distribution Price for 2018 on account of the Power Supply Price reconciliation for Umeme Limited covering the period of July 2016 to October 2017.

7.11.4. OTHER REVENUES (OR_Y)

In accordance with the License for Supply of Electricity, the Authority has undertaken reconciliation for Other Revenues by comparing the amount used in the computation of the distribution Price for 2017 with the amount reported in the Financial Statements for the year ended 31st December 2016. The amount used in the computation of the Tariff was Ush 4,964 Million compared to the outturn of Ush 7,087 Million leading to an over recovery of **Ush 2,123 Million** as shown in Table 17.

Table 17: Reconciliation for other revenues

Other Income	**Ush**
Amount used in computation of the 2016 Tariff	(4,964,000,000)
Amount in Financial Statements	**7,087,000,000**
a)Reconnection fees	230,000,000
b) Meter/ Transformer test	1,000,000
c) Inspection	6,089,000,000
d) Sale of Scrap	89,000,000
e)Fines and other Income	424,000,000
f) OBA Income	254,000,000
Reconciliation Amount	**2,123,000,000**

In October 2017, Umeme Limited requested the Authority to reconsider and review its decision to reconcile Ush 4,163 Million in respect to refinancing income received by Umeme Limited under the Output Based Aid (OBA) scheme.

The Authority has reviewed, the additional information submitted by Umeme Limited, the list of customers connected under the Output Based Aid scheme, and the Output Based Aid scheme Agreement signed between Umeme Limited and the Rural Electrification Agency.

Under the Agreement, Umeme Limited is entitled to refinancing income for the period between making a new Output Based Aid connection and when Umeme Limited is reimbursed the connection charge after the verification process. Based on the review, Umeme Limited in addition to the connection charges included inspection fees during the computation of the refinancing charge. The inspection fees are paid by the new customer and not Umeme Limited. This would therefore not qualify for refinancing charges.

The refinancing cost relating to the connection charges is Ush 1,464,826,718. This amount has been considered in the reconciliation of other revenues for 2018.

For the computation of the Distribution Price for 2018, other revenue reconciliation of Ush 658,173,282 has been considered.

7.11.5. HVE RECONCILIATION

The Authority has undertaken the HVE reconciliation for the period October 2016 to September 2017. The over recovery by Umeme Limited as a result of the HVE reconciliation is **Ush 30,397.7 Million** as shown in Table 18**.**

Table 18: HVE reconciliation

	Projected UETCL Bulk Purchases Used in model (GWh)	Energy Loss Target 2016 and 2017	Energy Sales (GWh)	Actual UETCL Bulk Purchases (GWh) 2016/2017	Expected Energy Sales (GWh)	Energy Sales Variance (GWh)	Average Distribution Price in the model (Ush/kWh)	HVE Reconciliation (Ush Million)
Q4 2016	754.8	17.1%	625.5	809.7	671.0	45.5	174.4	7,934.5
Q1 2017	782.6	15.9%	658.2	820.30	689.9	31.7	182.0	5,766.3
Q2 2017	782.6	15.9%	658.2	810.4	681.6	23.3	180.5	4,214.1
Q3 2017	782.6	15.9%	658.2	862.1	725.0	66.8	186.8	12,482.9
TOTAL Reconciliation								**30,397.7**

For the period October 2015 to September 2016 (as part of the 2017 Annual Tariff Review), the Authority approved an excess revenue reconciliation amount of **Ush 23,732.7 Million.** Amendment Number Five (5) of the Umeme Limited Licence for Supply of Electricity (that operationalized the consent judgement) was issued later in 2017. Although Umeme Limited was expected to utilize the reconciled amounts for investments approved by the Authority at zero return on investment, the company may not have had sufficient time to plan and execute the investment after issuance of Amendment Number Five (5).

During the Tariff Year 2018, Umeme Limited will be required to invest **Ush 54,130.4 Million (Ush 23,732.7 Million for 2016 and Ush 30,397.7 Million for 2017)** at zero return on investment in accordance with Amendment Number Five (05).

7.11.6. REACTIVE ENERGY CHARGE

The Authority has undertaken a reconciliation regarding Reactive Energy Charges by comparing the Reactive Energy Charge and Reactive Energy Reward. Based on the information submitted by Umeme Limited, the company over recovered Ush 144.93 Million between October 2016 and September 2017, on account of revenue from Reactive Energy Penalties being higher than the payments for Reactive Energy Rewards. This is shown in Table 19.

Table 19: Reactive energy charge/reward

Month	Penalty Revenue - Ush	Reward Revenue - Ush	Reconciliation -Ush
Oct-16	315,366,646	(425,412,865)	(110,046,219)
Nov-16	311,289,300	(229,653,365)	81,635,935
Dec-16	315,209,880	(308,995,029)	6,214,851
Jan-17	366,194,820	(336,209,440)	29,985,380
Feb-17	312,711,556	(287,368,390)	25,343,166
Mar-17	321,049,533	(322,957,970)	(1,908,437)

Month	Penalty Revenue - Ush	Reward Revenue - Ush	Reconciliation -Ush
Apr-17	338,451,207	(296,563,570)	41,887,637
May-17	333,563,800	(314,438,820)	19,124,980
Jun-17	288,924,660	(306,806,490)	(17,881,830)
Jul-17	375,076,520	(323,459,690)	51,616,830
Aug-17	334,323,644	(341,536,250)	(7,212,606)
Sep-17	344,709,700	(318,541,720)	26,167,980
Total	**3,956,871,266**	**(3,811,943,599)**	**144,927,667**

For the computation of the Distribution Price for 2018, Reactive Energy Charge/Reward reconciliation of Ush 144,927,667 has been considered.

7.11.7. NON NETWORK ASSETS

In 2017, the Authority finalized the verification of the Non network assets for Umeme Limited for the period 2013 - 2016. The decision of the Authority was communicated vide letter dated 13th November 2017 ref; FIN/9/11/1.

The Authority has undertaken a reconciliation comparing the amount used in the computation of the Tariff, the amounts approved as part of the Investment Plan, and the approved/verified amount in respect to non-network assets. The excess revenue by Umeme Limited for the period 2013 – 2017 is Ush **9,712 Million** as shown in Table 20.

Table 20: Non-network assets

	Provisional Approval	Final Approval	Variance	FX rate	Amount in Ush
Q1 2013	875,000	504,522	370,478	2,688	995,981,269
Q2 2013	875,000	504,522	370,478	2,646	990,821,384
Q3 2013	875,000	504,522	370,478	2,595	984,504,942
Q4 2013	875,000	504,522	370,478	2,590	983,978,012
TOTAL	**3,500,000**	**2,018,089**	**1,481,911**		**3,955,285,608**
	Provisional Approval	**Final approval**	**Variance**	**FX rate**	**Amount in Ush**
Q1 2014	941,250	180,467	760,783	2,524	1,920,585,272
Q2 2014	941,250	180,467	760,783	2,538	1,923,994,645
Q3 2014	941,250	180,467	760,783	2,558	1,928,929,197
Q4 2014	941,250	180,467	760,783	2,617	1,943,810,683
TOTAL	**3,765,000**	**721,868**	**3,043,132**		**7,717,319,797**
	Provisional Approval	**Final approval**	**Variance**	**FX rate**	**Amount in Ush**
Q1 2016	75,000	249,994	(174,994)	3,357	(489,852,051)
Q2 2016	75,000	249,994	(174,994)	3,349	(489,357,151)
Q3 2016	75,000	249,994	(174,994)	3,365	(490,279,386)
Q4 2016	75,000	249,994	(174,994)	3,376	(490,921,543)
TOTAL	**300,000**	**999,975**	**(699,975)**		**(1,960,410,130)**

				Total	**9,712,195,274**

For the computation of the Distribution Price for 2018, non-network assets reconciliation of Ush 9,712,195,274 has been considered.

7.12. MANAGEMENT FEE

Pursuant to Amendment No. 5 of Umeme Limited's Licence No. 048, the company was allowed to utilize Excess Energy revenues to undertake investments on which no rate of return would apply. The Amendment to the Supply Licence provides for the company to be allowed a Management Fee at a rate of 4% of the undertaken investments or any other rate as may be approved by the Authority.
In its application for Tariff Year 2018, Umeme Limited has applied for a Management Fee of 10% of the total value of investments executed. In support of its application, Umeme Limited submitted a spreadsheet composed of the staff and transport needs of executing the investments.

Amendment Number Five of the Umeme Limited Licence for Supply of Electricity provides that a Management Fee shall be paid/allowed to Umeme Limited following the execution of the approved investments using the excess energy revenue.

At the time of determination of the Distribution Price for 2018, Umeme Limited had not executed the required investments using the excess energy revenue. The determination and allowance for the Management Fee is therefore not applicable for the 2018 Annual Tariff Review.

No management Fee amount has been considered in the determination of the distribution Price for 2018.

8. NON-CORE ASSETS/ NON NETWORK ASSETS

In accordance with the Licence for Supply of Electricity issued to Umeme Limited, investments in non-core assets which do not directly improve or expand the distribution network shall not be classified as investments for the purposes of computing the Return on Investment. These shall be classified as Distribution Operation and Maintenance Costs.

As part of the 2018 Tariff application and 2018 Investment Plan, Umeme Limited applied for US$ 14 Million to cater for Non network assets such as Information Communications Technology equipment, replacement of old fleet and fleet requirements for 2018 to cater for the Umeme Limited Non-network Assets Plan for 2018.

The Authority is still undertaking the review of the Umeme Limited Non-network Assets Plan. Pending the Authority's review of the submitted Non network Asset Plan and the justification therein by the company, a tentative allowance of US$ 2,500,000 has been considered in the computation of the Distribution Price for 2018.

In the event that the approved Non network Asset Plan is different from the provisional amount of US$ 2,500,000, a reconciliation shall be undertaken.

9. ENERGY INDUSTRIAL REBATE POLICY

In a bid to facilitate industrial connections and, therefore, grow demand, funds have been provided for partial offset of monthly bills of Industrial consumers that finance connections that have a potential to benefit third party customers. The Authority approved a Rebate Policy Framework through which Industrial consumers can recover costs for installing electrical works privately although these have the potential to benefit third party consumers.

The framework for operationalization of the approved energy Industrial Rebate Policy will be communicated to Umeme Limited.

For the computation of the Distribution Price for 2018, a provision of **Ush 10,332 Million** has been provided to benefit industrial customers under the rebate framework.

10. TESTING OF UMEME LIMITED METERS

Uganda National Bureau of Standards (UNBS) developed and gazetted 'The Weights and Measures (Electricity Meter) Rules, 2015'.

The Authority determined that, in order to streamline the integrity, quality, standards and accuracy of electricity metering equipment in Uganda, with effect from 12th of June 2017, all electricity meters provided for measurement of electricity delivered to the consumers must be verified and sealed by the Uganda National Bureau of Standards and bear a valid verification mark or sticker of UNBS.

The weights and measures rules further task every licensee to submit a meter to an inspector for reverification at least once every five years.
The meter test fees prescribed in the Weights and Measures (Electricity Meter) Rules, 2015 schedule 4 are 8,000/- for new meters and 25,000/- for in-service meters. However, this cost of testing the both new and in-service meters is not allocated under approved Distribution Operation and Maintenance Costs for Umeme Limited.

In order to ensure compliance with the Weights and Measures (Electricity Meter) Rules, an amount of Ush 250,000,000 is allocated in the Tariff Year 2018 to test 10,000 existing meters (in-service meters).

11. SKILLS DEVELOPMENT IN THE ELECTRICITY SUPPLY INDUSTRY

The Authority in December 2016, approved the Skills Development Program in the Electricity Supply Industry. The

Authority approved an allowance of Ush 980,000,000 for the program as indicated in Table 21.

Table 21: Approved Skill Development budget 2017

Company	Amount – Ush
UETCL	368,000,000
Umeme Limited	392,000,000
Eskom Uganda Limited	122,000,000
Bujagali Energy Limited	49,000,000
UEGCL	49,000,000
Total	**980,000,000**

During the Tariff Year 2017, UETCL, Eskom Uganda Limited, Bujagali Energy Limited and UEGCL implemented the program. Umeme Limited delayed with the recruitment process and only finalized the recruitment in December 2017. Umeme Limited therefore only utilized a one (1) month's allowance (Ush 32.7 Million) for the Skills Development with Ush 359.3 million carried forward.

Based on the foregoing, the Authority considered and approved the allowance for Skills Development in 2018 as shown in Table 22.

Table 22: Approved Skills Development budget 2018

Company	Amount – Ush
UETCL	368,000,000
Umeme Limited	392,000,000
Eskom Uganda Limited	122,000,000
Bujagali Energy Limited	49,000,000
UEGCL	49,000,000
Total	**980,000,000**

For the computation of the retail tariff for 2018, Skill Development allowance of Ush 620,700,000 has been considered as shown in Table 23.

Table 23: Approved Skill Development allowance for 2018

Company	Amount – Ush
UETCL	368,000,000
Umeme Limited	32,700,000
Eskom Uganda Limited	122,000,000
Bujagali Energy Limited	49,000,000
UEGCL	49,000,000
Total	**620,700,000**

12. OTHER CHARGES NOT PROVIDED IN THE RETAIL TARIFF

12.1. Monthly Service Charge

In the 2017 Tariff application, Umeme Limited indicated that the current monthly service fees may not reflect changes in the macroeconomic variables since the last adjustment in 2012.

Umeme Limited, however, did not submit proposals for adjustment of the monthly service fees including the underlying assumptions and justifications for consideration by the Authority.

The Authority is undertaking a Cost of Service study that is expected to inform the reasonable levels of the monthly service charges by customer category.

Pending the conclusion of the Cost of Service study, the monthly service charges have remained unchanged in the computation of the Retail Tariff for 2018.

12.2. PREPAYMENT FLAT RATE AND LIFELINE TARIFF

In its application, Umeme Limited proposed review of the Lifeline Tariff to Ush 200/kWh from the current Ush 150/kWh; and review of the standing charges and the KVA charges to take into account escalation of inflation and increase in the fixed costs.

In the Tariff application, Umeme Limited requested that customers on prepayment metering be charged a flat rate. The company explained that a single flat rate would address complaints from customers concerning the interpretation of the vending receipts owing to the many lines reflected on the receipts.

As part of the application and additional information, Umeme Limited did not submit;

a) Detailed justification/analysis (Cost of Service study) of the proposed adjustment of the Lifeline Tariff, the KVA rates and standing charges including but not limited to; the current lifeline consumption, consumers affected, impact on the surcharge paid by consumers above the lifeline,

b) Cost benefit analysis illustrating how benefits of implementing a unified rate would exceed the social benefit of implementing a Lifeline Tariff for low-income earners, and

c) Information on how the proposal for unified rates would resonate with the Tariff setting principle that requires recovery of fixed costs through a fixed charge.

Pending the conclusion of the Cost of Service study, the monthly service charges, Lifeline charge and lifeline units have remained unchanged in the computation of the Retail Tariff for 2018.

13. EXTRA LARGE CONSUMER CATEGORY

The Authority approved a set of consumers to constitute the Extra-Large customer category based on consumption levels above 1,500 kVA. It was also a prerequisite that qualifying customer accounts are those relating to manufacturing activity. In that regard, the 38 largest manufacturing consumers were selected to constitute the Extra-Large Tariff category.

Table 24: Approved customer categories

Code 10.1 Domestic Customers Low voltage single phase supplied at 240 volts
Code 10.2 Commercial Customers Three phase low voltage load not exceeding 100 Amperes
Code 20 Medium Industries Low voltage 415V, with maximum demand up to 500kVA
Code 30 Large Industries High Voltage 11,000V or 33,000V, with maximum demand exceeding 500kVA but up to 1,500 kVA
Code 40 Extra Large Industries High Voltage 11,000V or 33,000V, with maximum demand exceeding 1,500kVA and dealing in Manufacturing.

Given the need to closely monitor adherence to the terms and conditions of belonging to this Tariff category, the right to change the customer list in this category was retained by the Authority.

Analysis of the Large Industrial consumers for the period January to September 2017 indicated that a total of three (3) customers no longer met the criteria to be classified under the Extra-Large Tariff category. Four (4) other customers who, hitherto, did not meet the Extra-Large Industrial criteria had qualified following the analysis of their system demand during the year 2017.

The customers that no longer qualify include;

(i) Nile Agro-Industries
(ii) Tembo Steel Mills
(iii) Nile Breweries Ruharo

The following consumers were not included in 2017 but their current consumption pattern qualifies them to join the Extra-Large Tariff category;

(i) Steel and Tube Industries
(ii) Mbale Industrial Area Millers Association
(iii) Best Pack Industries Limited
(iv) Landy Industries Limited

13.1. EXTRA-LARGE CUSTOMER LIST

The full list of customers qualifying for the Extra-Large Tariff category is as follows:

Table 25: Extra Large Industrial consumer category for 2018

SN	ACCOUNT NO.	NAME
1	205573054	TORORO CEMENT LTD
2	205573011	ROOFINGS ROLLING MILLS LTD
3	205572866	TEMBO STEEL WORKS
4	205391125	STEEL AND TUBE INDUSTRIES
5	205572950	HIMA CEMENT 2
6	205573022	ROOFINGS ROLLING MILLS LTD 2
7	205573002	TEMBO STEELS UGANDA LIMITED
8	205572931	PRAMUK STEEL
9	205572813	GREAT STEEL LIMITED
10	205573029	TIAN TANG
11	205572943	HIMA CEMENT FACTORY (199
12	205572990	TEMBO STEELS UGANDA LIMITED
13	205572984	KAMPALA CEMENT COMPANY
14	205572923	YOGI STEELS LTD
15	205573070	MAYUGE SUGAR INDUSTRIES LTD STEEL DIVISION
16	205572798	BAKHRESA GRAIN MILLING UGANDA LTD
17	205573058	HARISS INTERNATIONAL LTD
18	205572806	BAKHRESA GRAIN MILLING (U) LTD
19	205572887	NILE BREWERIES LTD
20	205572820	NILE FIBREBOARD LIMITED
21	205572867	BIDCO OIL (U) LIMITED
22	205572810	CENTURY BOTTLING CO LTD

SN	ACCOUNT NO.	NAME
23	205574903	MMI STEEL MILLS
24	205572953	UGANDA BREWERIES
25	205572935	MUKWANO INDUSTRIES
26	205428533	MBALE INDUSTRIAL AREA MAIZE MILLERS ASSOCIATION
27	205572791	CROWN BEVERAGES LTD
28	205573051	ROOFINGS LTD
29	205365677	PAKASA MANAGEMENT SERVICES
30	205572895	SOUTHERN RANGE NYANZA
31	205572962	LANDY INDUSTRIES LTD
32	205572956	A.K. PLASTICS
33	205573061	LUUKA PLASTICS LIMITED
34	205573043	RWENZORI BOTTLING CO. LTD
35	205572913	NILE PLYWOODS (U) LTD
36	205572873	MADHVANI GROUP LIMITED STEEL DIVISION
37	200921485	LANDY INDUSTRIES LIMITED
38	205381996	BEST PACK INDUSTRIES LIMITED
39	205572972	SUGAR CORP. OF UGANDA LTD

The Authority will communicate to Umeme Limited the industrial consumers to be categorized under the Extra-Large Industrial category for the Tariff Year 2018.

14. MACROECONOMIC ASSUMPTIONS

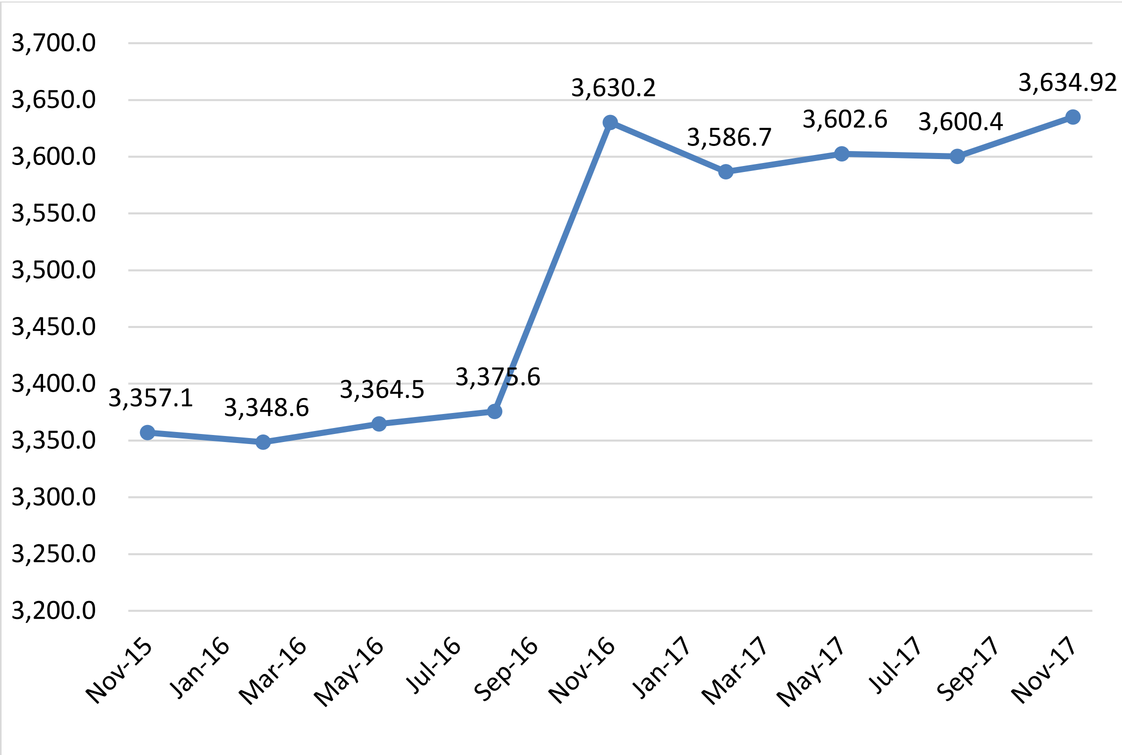
The key macroeconomic indicators that drive the Tariff include the exchange rate, domestic inflation (Consumer Price Index) and the US Producer Price Index (PPI).

14.1. Exchange Rate:

The Uganda Shilling depreciated against the United States Dollar between November 2017 and November 2016. The exchange rate as at the end of November 2017 was Ush 3,634.92/US$ compared to Ush 3,630.2/US$ at the end of November 2016. The trend of the exchange rate for the period under review is shown in Figure 4. This movement represents a 0.1% depreciation of the Shilling against the United States Dollar as at the end of November 2016.

During the year 2017, the Uganda shilling was relatively stable against other major currencies, mainly due to improved foreign currency inflows and relaxed Central Bank Monetary Policy and investments in Treasury Bills, Government Bonds and infrastructure investment requirement together with continued Government Policy for promotion of local content in the Buy Uganda Build Uganda Policy.

Figure 4: Exchange Rate – Uganda Shilling against US Dollar Movement for November 2015 to November 2017



14.2. Inflation

The annual Consumer Price Index for the month ending November 2017 was 164.15 compared to 159.4 in November 2016. The annual underlying inflation rate reduced from 4.6% in November 2016 to 3.9% in November 2017. This reduction is largely attributed to improved Agricultural production during the second half of the year and contained foreign exchange rate pressure amidst a tight Monetary Policy regime exercised by Bank of Uganda in 2017.

Bank of Uganda continuously eased Monetary Policy by reducing the Central Bank Rate (CBR) from 13% in October 2016 to 9.5% in October 2017.

14.3. Producer Price Index (PPI)

The US PPI increased marginally from 196.4 in November 2016 to 200.7 in November 2017, representing a 1.93% increment. This was mainly attributed to finished consumer goods and crude material.

15. REVENUE REQUIREMENT, TARIFF AND SUBSIDY IMPLICATIONS

15.1. Revenue Requirement

As a result of the assumptions considered, the annualized revenue requirement of Eskom Uganda Limited increased from Ush 55,524 Million in the fourth quarter of 2017 to a base of Ush 68,682 Million in 2018.

The annualized revenue requirement of UETCL (excluding the power acquisition costs and the dispatch stabilization fund) increased from Ush 124,977 Million in 2017 to Ush 139,348 Million in 2018. This is mainly on account of the increase in the Rural Electrification Levy due to increase in Power purchase costs, and adjustment of UETCL operations and maintenance costs.

The annualized power acquisition costs (excluding the capacity payments to all Thermal Generators) increased from Ush 949,456 Million in 2017 to Ush 1,020,031 Million in 2018. The increment is on account of increased power purchase costs following the anticipated dispatch from the Thermal Plants to meet the increased demand beyond what the current renewable energy capacity can meet and provision for Deemed Energy.

Umeme Limited's annualized revenue requirement increased from Ush 571,279 Million in 2017 to Ush 591,005 million in 2018, mainly on account of the increase in investment-related costs and the depreciation of the Uganda Shilling against the United States Dollar in the fourth quarter of 2017.

Table 26: Summary of Revenue Requirements

Summary of Revenue Requirement														
	Eskom Generation				Transmission				Other power purchases	Export revenues	Distribution			
	Total	Asset related	O&M	Lease fee	**Total**	Asset related	O&M	Levies & Funds	**Total**	**Total**	**Total**	Asset related	O&M	Lease fee
Q4 2017	55,524	12,904	35,205	7,415	124,977	-	94,875	30,101	949,456	183,380	571,279	404,451	160,962	5,866
Q1 2018	68,682	22,701	35,167	10,814	139,348	-	103,830	35,518	1,020,031	128,456	591,005	418,799	166,071	6,136

15.2. Resultant Tariffs

15.2.1. Capacity Price for Eskom Uganda Limited

The Capacity Price as shown in Table 27 increases from Ush 43,970 per MW per hour in 2017 to Ush 53,886 per MW per hour in 2018. The increase is attributed to increase in investment-related costs (capital recovery) , increase in UEGCL budget, increased investments by Eskom Uganda Limited that qualify for a return by Eskom Uganda Limited, and adjustment of the Generation Operation and Maintenance Cost for Consumer Price Index.

Table 27: Capacity Price for Eskom Uganda Limited

	Average Capacity Price	Total costs	Investment component	Capital recovery charges	Return on investment	Net accumulated investment	Income taxes payable	O&M component	USh-portion of O&M	US$-portion of O&M	Concession fee	
			IN y, q	CR y	RT y	NI y	TX y	OM y, q=1	LOM y, q	EOM y, q	LP y, q=1	LP y, q
	CP y.q	USh mill	USh mill	US$ thous	US$ thous	US$ thous	US$ thous	Ush mill	Ush mill	Ush mill	US$ thous	Ush mill
	Ushs/ MW											
Q4 2017	43,970	55,524	12,904	1,098	1,740	14,500	746	35,205	18,598	12,942	7,415	
Q1 2018	53,886	68,682	22,701	3,971	1,576	13,131	675	35,167	18,842	12,616	10,814	

15.2.2. Bulk Supply Tariff

The annualized Bulk Supply costs increase from Ush 1,102,430 Million in 2017 to Ush 1,173,567 Million in 2018. The expected bulk energy sales to Umeme Limited excluding exports are projected at 3,500 GWh.

The resultant Base Bulk Supply Tariffs in 2017 increase to Ush 376.5/kWh, Ush 289.6/kWh, and Ush 185.4/kWh at Peak, Shoulder and Off-peak periods respectively; from Ush 3277.0/kWh, Ush 251.5/kWh, and Ush 158.5/kWh at Peak, Shoulder and Off-peak for the respective Time of Use periods in the first quarter of 2018, as shown in Table 28.

Table 28: Bulk Supply Costs and Resultant Bulk Supply Tariffs

	Bulk Supply Costs and Resultant Bulk Supply Tariff (BST)												
	Peak price	**Shoulder price**	**Off-peak price**		**distrib-utors**	**Total costs**		**Purchase Costs**		**mission costs**	**asset related**	**Total O&M component**	**Other**
	USh/kWh	USh/kWh	USh/kWh		GWh	USh mill		USh mill		USh mill	Ush mill	**Ush mill**	**Ush mill**
Q4 2017	327.0	251.5	158.5		3,465	1,102,430		977,454		124,977	6,360	88,516	30,101
Q1 2018	376.5	289.6	185.4		3,500	1,173,567		1,055,934		117,633	-	82,116	35,518

16. END-USER TARIFFS.

In accordance with the Amendment Number Two (2) of the Umeme Limited License for Supply of Electricity, the Retail Tariff charges for electric service shall be subject to automatic fuel cost charges, foreign exchange rate fluctuation adjustment, and an inflation adjustment that will be calculated in accordance with such formulae as determined by the Authority. In 2014, the Authority approved a Quarterly Tariff Review Methodology to be used in the computation of the Tariff Adjustments on a quarterly basis. The proposed End-User Tariffs for Q1 2018 are as shown in Table 29. The Q1 2018 Tariffs will be the 2018 Base Tariffs upon which the quarterly adjustment factor shall be applied;-

Table 29: Approved Electricity End-User Tariffs for Q1 2018

	End-User Retail Electricity Tariffs (Ush/kWh)						
	Domestic	Commercial	Medium Industrial	Large Industrial	Extra Large	Street Lights	Weighted average
2017 Base Tariff	696.9	629.0	577.8	376.3	372.8	679.7	513.2
Q2 2017 Approved Tariff	687.1	620.9	569.7	370.2	366.9	671.2	505.8
Q3 2017 Approved Tariff	686.0	619.6	568.8	369.0	365.8	670.0	504.6
Q4 2017 Approved Tariff	685.6	619.1	568.0	368.1	364.6	669.5	503.8
2018 Approved Base Tariffs	718.9	648.3	592.5	375.5	371.1	701.9	520.3
Percentage Change from Q4 2017	4.9%	4.7%	4.3%	2.0%	1.8%	4.8%	3.3%

The resultant Tariff at the different Time of Use periods are shown below;

2018
Base

Q1

Capacity fee	53,886	Shs/MW per hour		
	Peak	Shoulder	Off-peak	
BST	376.5	289.6	185.4	Shs/kWh

	Code 10.1	Code 10.2/10.3	Code 20	Code 30	Code 40	Code 50
	Domestic	Commercial	Medium Industrial	Large Industrial	Tx large Industrial	Street-lights
Standing & max demand charges						
Monthly fee	3,360	3,360	22,400	70,000	70,000	-
Max demand 1			16,644	11,096	11,096	
Max demand 2				5,548	5,548	
Power supply (Shs/kWh)						
Average	388.1	341.71	341.52	337.95	319.5	349.2
Peak		441.6	440.5	448.6	425.0	
Shoulder		339.7	338.9	345.1	326.9	
Off-peak		216.7	216.2	220.2	208.6	
Distrib charge (Shs/kWh)						
Average	328.7	304.7	249.1	36.4	50.5	350.6
Peak		396.1	323.8	47.3	65.7	
Shoulder		304.7	249.1	36.4	50.5	
Off-peak		182.82	147.97	26.36	36.87	
Tariff relief						
Government tariff relief	-	-	-	-	-	-
Generation levy						
Generation levy	2.1	1.9	1.9	1.2	1.1	2.0
Total energy tariff (Shs/kWh)						
Average	718.9	648.3	592.5	375.5	371.1	701.9
Peak		839.6	766.2	497.1	491.8	
Shoulder		646.3	589.8	382.6	378.5	
Off-peak		401.4	366.1	247.7	246.5	