



**ELECTRICITY REGULATORY AUTHORITY
DETERMINATION OF TARIFF ADJUSTMENT FACTORS FOR THE FOURTH
QUARTER (OCTOBER TO DECEMBER) OF 2016**

**OCTOBER 2016
KAMPALA, UGANDA**

1. INTRODUCTION

In January 2014, the Electricity Regulatory Authority (ERA) approved and published in the Uganda Gazette, the Quarterly Tariff Review Methodology. The methodology was implemented effective January 2014. The Quarterly Tariff Review Methodology provides for adjustment of the Electricity annual Base Tariffs for changes in the following:-

- (i) Inflation rate leading to Inflationary Adjustment Factor (IRAF);
- (ii) Exchange rate leading to Exchange Rate Adjustment Factor (FERAF); and
- (iii) Fuel prices at the International Market leading to Fuel Price Adjustment Factor (FPAF).

The tariff review for the fourth quarter of 2016 (Q4 2016) has been undertaken in accordance with the approved Quarterly Tariff Review Methodology and the licenses issued by the Authority to Umeme Limited, Uganda Electricity Transmission Company Limited (UETCL), and Eskom Uganda Limited.

This review has taken into account changes in; the consumer price index, exchange rate of the Uganda Shilling (Ush) against the United States Dollar (US\$), international fuel prices, and the energy generation mix from the assumptions used in the determination of the 2016 Base Tariffs as well as Umeme Limited and Eskom Uganda Limited verified investments. More specifically;

- (i) The Uganda Shilling has depreciated by 0.55% against the US Dollar, from Ush 3,357.1/US\$ in November 2015 to Ush 3,375.6/US\$ as at 31st August 2016.
- (ii) The International fuel price for crude oil as at the end of August 2016 was US\$ 43.10 per barrel compared to US\$ 44.30 per barrel used in the determination of the 2016 Base Tariffs. This represents a decrease in international fuel prices by 2.71% from the base period.
- (iii) Adjustment of Umeme Limited 2012 and 2013 investments that qualify for inclusion in the Regulatory Asset Base.
- (iv) Adjustment of Eskom Uganda Limited 2014 and 2015 investments that qualify for inclusion in the Regulatory Asset Base.

The detailed assumptions that form the basis of the Tariff Review for the fourth quarter of 2016 are contained in the subsequent sections of this report.

2. ELECTRICITY END-USER 2016 BASE TARIFFS

In accordance with the Quarterly Tariff Review Methodology, the Authority at its 256th meeting held on 18th December 2015 approved the 2016 Base Tariffs shown in Table 1. The quarterly adjustment factors are applied to the approved Base Tariffs, to determine the applicable end-user (retail) tariffs for each of the quarters.

Table 1: 2016 Base Electricity End-User Tariffs

	Electricity End-User (Retail) Tariffs (Ush/kWh)					
	Domestic	Commercial	Medium Industrial	Large Industrial	Street-lights	Weighted average
2016 Base Tariff	651.0	587.0	544.9	369.4	628.4	491.7

During the determination of the Base Tariffs, the Authority approved the Base Macroeconomic Parameters for 2016, which are presented in the second column in Table 2.

Table 2: Macroeconomic Parameters Used in Determination of 2016 Base Tariffs and the Adjustment Factors for Q4 2016

Macroeconomic Parameters	Q1 2016	Q3 2016	Q4 2016	%age Change Q1 to Q4 2016	%age Change Q 3 to Q4 2016
	Base Parameters				
Exchange rate US\$/Ush	3,357.10	3,364.52	3,375.64	0.55%	0.33%
Core Consumer Price Index	152.3	156.41	157.69	3.54%	0.82%
US Producer Price Index	193.2	194.8	194.7	0.78%	-0.05%
International Price of Fuel (US\$ per barrel)	44.3	46.8	43.1	-2.71%	-7.91%

Source: Bank of Uganda for exchange rate, Uganda Bureau of Statistics for Consumer Price Index, US Bureau of Labour Statistics for US Producer Price Index, and Organization of Petroleum Exporting Countries for International Fuel Prices.

Note: The exchange rate is the average rate of the buying and selling rates on the last day of the applicable month. That is November 2015 for Q1 2016, and August 2016 for the fourth quarter of 2016.

The base macroeconomic factors which were the basis for the 2016 Base Tariffs (for the month of November 2015) are stated in Table 2. As of August 2016, these parameters had changed as shown in column 4 of Table 2. The detailed analysis of each of the macroeconomic factors is contained in the subsequent section.

3. DETERMINATION OF THE ADJUSTMENT FACTORS FOR THE FOURTH QUARTER OF 2016

3.1 Foreign Exchange Rate Adjustment Factor (FERAF)

The movement in the exchange rate of the Uganda Shilling against major currencies directly affects the costs for companies involved in the Electricity Supply Industry because a significant portion of these companies' costs is incurred in foreign currency yet the retail tariffs are charged and revenues collected in Uganda Shillings.

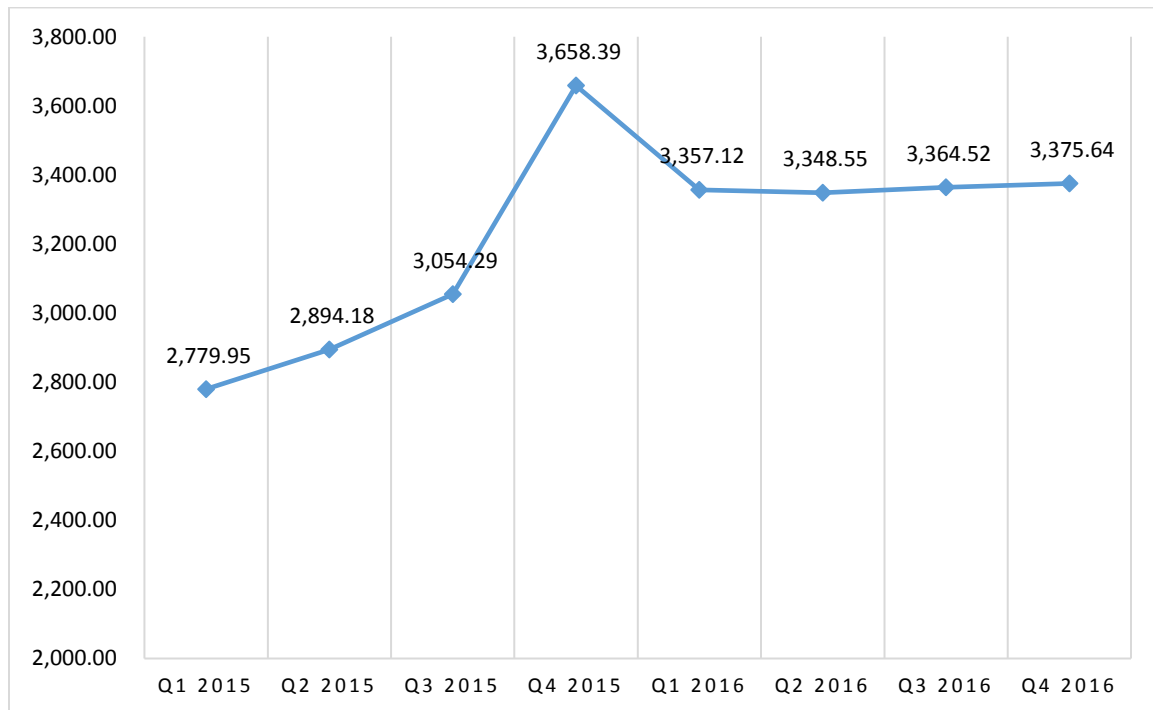
During the third quarter of 2016, there has been an increase in the Uganda Shilling equivalent of the cost incurred in foreign currency on account of the depreciation of the Uganda Shilling against the United States Dollar.

During the determination of the 2016 Base Retail Tariffs, the Authority approved the foreign currency content of the Operation and Maintenance (O&M) Costs of 35.4% for Eskom Uganda Limited, 25.0% for UETCL, and 33.0% for Umeme Limited. UETCL also incurs over 99% of the power purchase costs in foreign currency as Power Purchase Agreements are either executed in United States Dollars or are pegged on the United States Dollar, except for the Power Purchase Agreement with Tibet Hima Mining Co. Limited. In addition, the investment costs for Umeme Limited including capital recovery, and return on Investment are recovered in United States Dollars. Therefore, the depreciation of the Uganda Shilling against the United States Dollar increases the shilling equivalent of the electricity industry costs required in foreign currency.

Between Q1 2016 and Q3 2016, the Uganda Shilling has remained relatively stable compared to the same period in 2015. The exchange rate used in determination of the fourth quarter of 2016 tariffs is Ush. 3,375.6 Per US\$ compared to Ush. 3,357.1¹ at the end of November 2015, which was used in the determination of the base tariffs. This represents a depreciation of 0.55%. The trend of the exchange rate of the Uganda Shilling against the United States Dollar is shown in Figure 1.

¹ https://www.bou.or.ug/bou/rates_statistics/statistics.html

Figure 1: Movement in Ush/US\$ exchange rate up to August 2016



Like many other emerging and frontier markets, the fall in export commodity prices and low demand in key export markets has continued to weaken many currencies against the United States Dollar. The likely increase by the Federal Reserve of the interest rate still poses a downward risk to the stability of Uganda's exchange rate in the next six months.

The depreciation of the Uganda Shilling has a substantial impact on Electricity Supply Industry costs and consequently the end-user tariffs. The Authority's review indicates that the depreciation of the Uganda Shilling in the fourth quarter of 2016 increased the sector annualized revenue requirement by Ush 4,024 million and subsequently increased the end-user tariffs by a weighted average of Ush 4.6/kWh as shown in Table 3.

Table 3: Foreign Exchange Rate Adjustment Factor (FERAF)

	Electricity End-User (Retail) Tariffs (Ush/kWh)					
	Domestic	Commercial	Medium Industrial	Large Industrial	Street-lights	Weighted Adjustment Factor
FERFAF	6.0	4.9	5.1	3.6	5.2	4.6

3.2 Inflation Rate Adjustment Factor (IRAF)

3.2.1 Rebasing of CPI by UBOS

Following UBOS' rebasing of the CPI in Dec 2015, ERA is also obliged to use the CPI values published by UBOS to adjust the local currency component of the Operation and Maintenance costs for Umeme Limited, Eskom Uganda Limited, and UETCL in line with the respective tariff methodologies in the licenses.

Table 4 shows the original base CPI values used when determining medium term Operation and Maintenance costs and other parameters for Umeme Limited, Eskom Uganda Limited, and UETCL on one hand and the alternative periodic CPI values as provided by UBOS to adjust for movements in purchasing power. Going forward, the ERA has implemented the rebased CPI in the tariff model.

Table 4: Original and rebased CPI figures by UBOS

Licensee	Base year in tariff model	Old CPI (2005/06 = 100)	Rebased CPI (2009/10 = 100)
Eskom Uganda Limited	January 2015	213.95	144.25
UETCL	November 2013	208.23	139.08
Umeme Limited	February 2012	189.63	128.46
Base CPI for 2016 Base Tariffs	November 2015	227.27	152.29

Source: UBOS

3.2.2 Effect of inflation on the tariff

The inflation adjustment is applied only to the local currency component of the Operation and Maintenance costs for Eskom Uganda, UETCL, and Umeme Limited. This is based on the local currency content approved by the Authority at the time of determination of the 2016 Base Tariffs (i.e. 64.6% for Eskom, 75.0% for UETCL and 67.0% for Umeme Limited).

The IRAF is based on the composite Consumer Price Index (CPI) for the second month in the preceding quarter to which the adjustment tariff relates as published by the Uganda Bureau of Statistics. For the fourth quarter of 2016, the applicable CPI is 157.69 (August 2016) representing an increase of 3.54% compared to the CPI of November 2015, of 152.29.

The United States (US) Producer Price Index (PPI) is used to adjust the Operation and Maintenance costs denominated in United States Dollars (US\$) to cater for changes in prices of imported supplies. In the period under review, the US PPI increased from 193.2 in November 2015 (Base US PPI) to 194.7 in August 2016, representing an increase of 0.78%.

The movement in the Consumer Price Index and the United States Producer Price Index increased the sector annualized revenue requirement by Ush 1,415 million and subsequently increased the electricity retail tariffs is Ush 1.8/kWh on a weighted average basis across consumer categories as indicated in Table 5.

Table 5: Inflation Rate Adjustment Factor (IRAF)

	End-User (Retail) Electricity Tariffs (Ush/kWh)					
	Domestic	Commercial	Medium Industrial	Large Industrial	Street-lights	Weighted Adjustment Factor
IRAF	2.5	2.1	2.2	1.1	2.2	1.8

3.3 Fuel Price Adjustment Factor (FPAF)

The Fuel Price Adjustment Factor includes adjustment for changes in the International fuel prices and changes in the generation mix from the assumptions used in the determination of the Base Tariffs.

Movement in fuel prices at the International market affects the cost of generation for thermal generation plants; Jacobsen Uganda Power Plant

Company Limited and Electro-Maxx Uganda Limited. This in turn affects the power purchase costs incurred by UETCL.

Similarly, the changes in the generation mix from the assumptions used in determination of the Base tariffs affect UETCL’s revenue requirement.

In the 2016 Base Tariffs, the cost of fuel assumed in the tariff determination was US\$ 44.3 per barrel. According to the Organization of Petroleum Exporting Countries (OPEC); as at end of August 2016, the international price of Heavy Fuel Oil (HFO) was US\$ 43.10 per barrel. For purposes of the fourth quarter of 2016 tariff adjustment, the price of Heavy Fuel Oil that was used for electricity generation in Uganda, was assumed to be US\$ 320.7 per metric ton for determination of the fourth quarter of 2016 tariffs compared to Ush 331.9 per Metric ton used in the 2016 base tariffs.

The decrease in the International price of fuel used for the Q4 2016 tariffs compared to the Q1 2016 tariffs resulted in an increase in the projected power purchase costs for UETCL from thermal plants in the fourth quarter of 2016. This leads to a weighted average fuel adjustment factor of Ush -0.3 /kWh for the fourth quarter of 2016 as shown in Table 6.

Table 6: Fuel Price Adjustment Factor (FPAF)

	Electricity End-User (Retail) Tariffs (Ush/kWh)					
	Domestic	Commercial	Medium Industrial	Large Industrial	Street-lights	Weighted Adjustment Factor
(FPAF)	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)

3.4 Generation Mix

The fuel adjustment factor includes the adjustment for changes in the dispatch of the generation plants or the generation mix relative to the assumptions made in the determination of the Base Tariffs. The changes in the generation mix affect energy generated from the respective generation plants and the respective costs. The change in the dispatch for each of the generation plants from the base assumptions is shown in Figures 2 and 3. Details of the generation plants dispatch are discussed in Annex 1.

Figure 2: Energy Purchases by UETCL from Large hydro plants

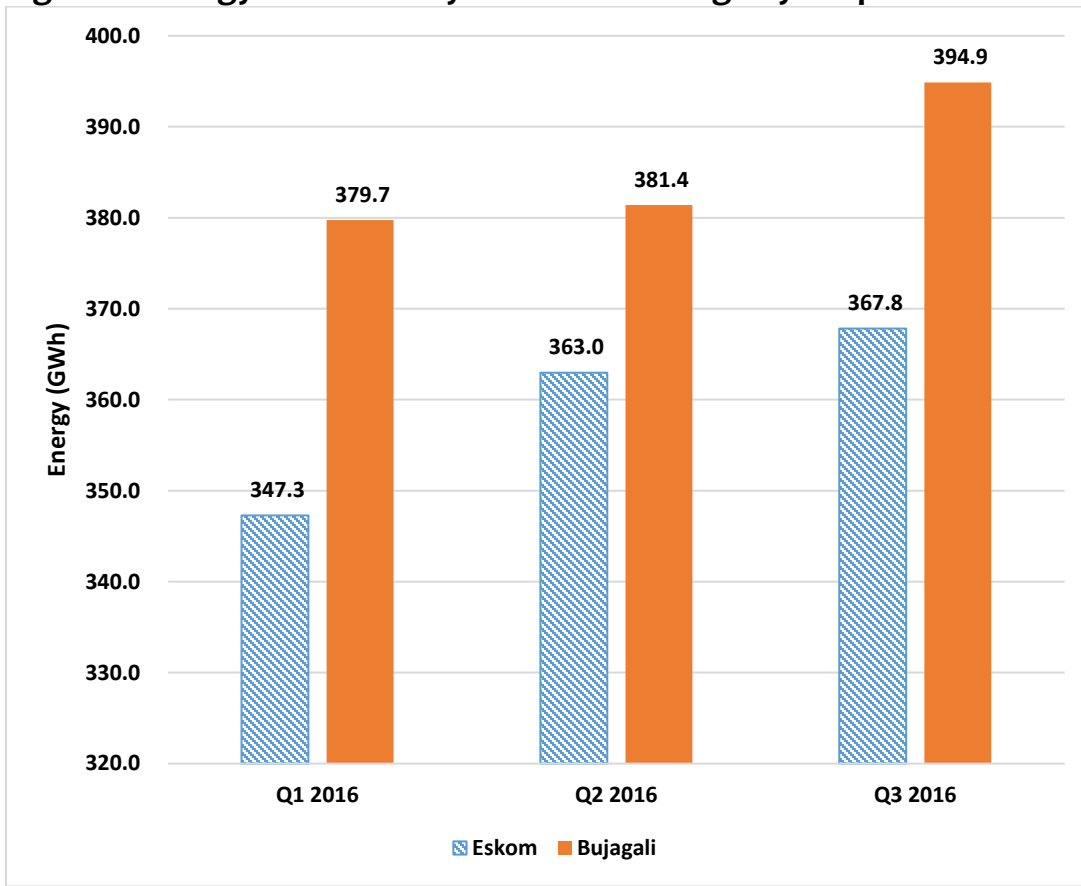
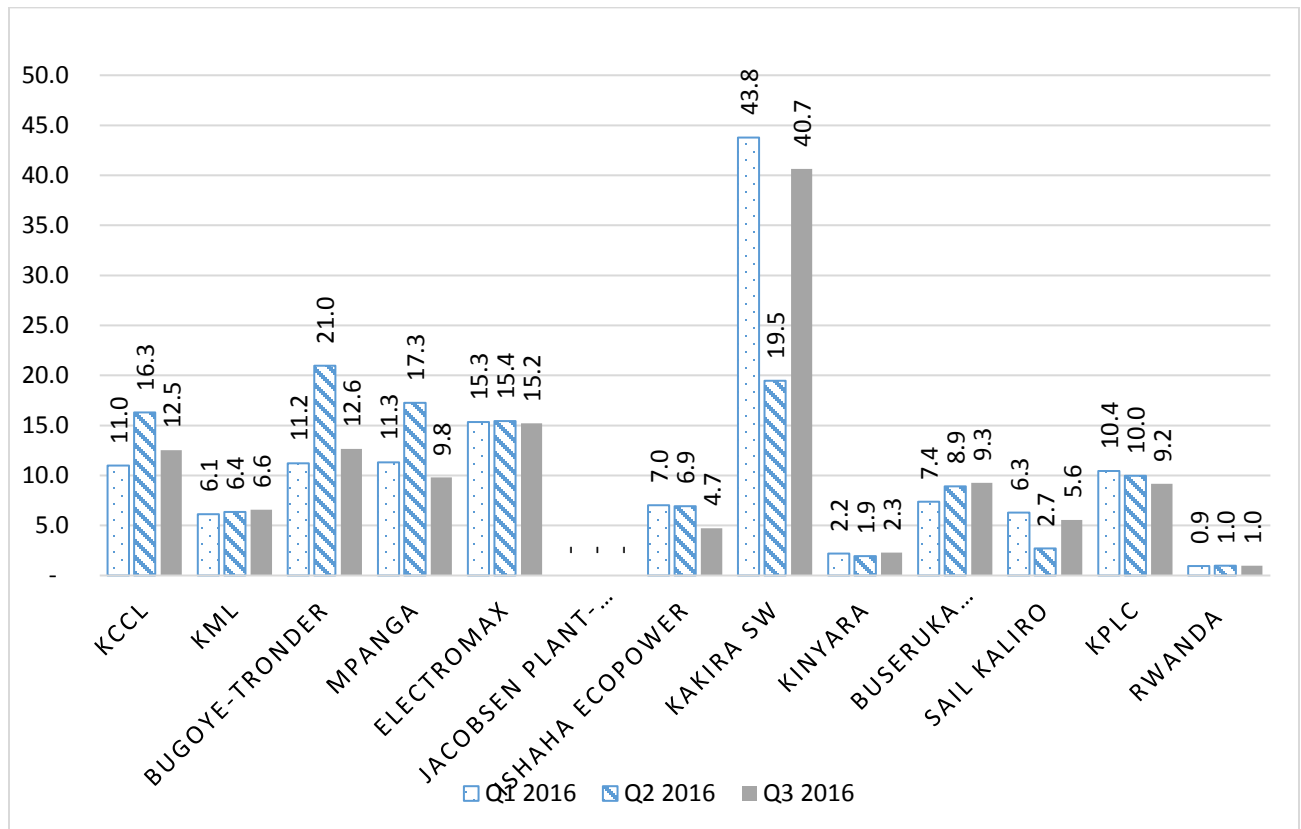


Figure 3: Energy Purchases by UETCL from Small Hydros, Thermal and Co-generation plants



The variance between the forecast in the generation mix and the outturn for Q3 2016 is attributed mainly to;

- (i) The changes in hydrological conditions which affected generation from mini hydro power plants.
- (ii) Increased generation from co-generation bagasse plants on account of increased supply of cane from out growers. The reduction in supply from out growers had affected generation from Kakira Sugar Limited in the second quarter of 2016.
- (iii) Increased dispatch from large hydro power plants to bridge the deficit created by reduced dispatch from mini-hydro plants and co-generation bagasse.

The detailed discussion is presented in **Annex 1** to this report.

The impact of the change in the generation mix is a downward adjustment of the electricity end-user tariffs by a weighted average of -36.8 Ush /KWh relative to the Base Tariffs as shown in Table 7.

Table 7: Generation Mix/Dispatch Adjustment Factor

	Electricity End-User (Retail) Tariffs (Ush/kWh)					Weighted Adjustment Factor
	Domestic	Commercial	Medium Industrial	Large Industrial	Street-lights	
Generation Mix	(35.5)	(28.6)	(28.9)	(26.7)	(29.3)	(29.4)

3.5 Other Adjustments

3.5.1 Umeme Limited Investments for 2012 and 2013

The Authority on 18th December 2015 considered and approved Investments for Umeme Limited of US\$ 25,219,101 for 2012 and US\$ 39,491,406 for 2013. In the second quarter of 2016, the Authority implemented the decision of the Authority. The approved investments for Umeme Limited have been applied in the determination of the Distribution Price for the fourth quarter of 2016.

3.5.2 Power Supply Price (PSP) reconciliation

Umeme Limited requested that the Power Supply Price reconciliation be considered in the subsequent tariff reviews by the Authority following a decision by the Authority to defer the reconciliation on account of failure by Umeme Limited to submit the required justification and information to aid decision making.

The ERA has held meetings with Umeme Limited, and brought to the attention of the company the limitations of the submitted data and the clarification needed, including but not limited to the following;

- a) The data submitted for the years before 2013 was not in the prescribed format as contained in the letter by the Electricity Regulatory Authority of 9th December 2015.
- b) Umeme Limited did not submit in the prescribed format the revenue data requested vide the ERA letter of 1st September 2015.

- c) Umeme Limited was requested to submit clarification regarding customers that are on prepayment metering and consume below the lifeline units over a period of time i.e. if balances of energy not consumed are accrued, and for what period.
- d) Umeme Limited was requested to provide clarification in respect of prepaid energy units that are carried over from one month to another and how these are treated in computation of energy loss and company revenue.

Umeme Limited has not submitted the requested information and clarification. On the basis of the above, the PSP reconciliation has not been considered in the determination of the retail tariff for the fourth quarter of 2016.

3.5.3 ESKOM Uganda Limited Investments for 2014 and 2015

During the consideration of the 2016 base Capacity Price for Eskom Uganda Limited, the Authority approved tentative investments of US\$ 2.625 million for 2014, and US\$ 1.628 million for 2015 for Eskom Uganda Limited, subject to verification.

During the third quarter of 2016, the Authority concluded the investment verification of Eskom Uganda Limited and at its 265th meeting held on 3rd August 2016 approved US\$ 3,354,643 as investments completed in 2014 for purposes of earning a return and US\$ 1,648,497 as investments completed in 2015 for purpose of earning a return.

Accordingly, the verified investments of US\$ 3,354,643 for 2014 and US\$ 1,648,497 for 2015 have been applied in the determination of the Capacity Price for Eskom Uganda Limited in the fourth quarter of 2016.

During the period 2015 and 2016, Eskom Uganda experienced a reduction in revenue amounting to Ush 865.775 million, on account of the verified investments being more than the tentative investments used in the determination of the Capacity Price for 2015 and 2016. The computation of the reduction in revenue is shown in Table 8.

Table 8: Under recovery by Eskom Uganda Limited

2014			
	Under recovered amount in US \$ 000	Exchange Rate	Under recovered amount in Ush 000
Capital Recovery	(63.76)	3,208.1	(204,554.2)
Return on Investment	(142.10)	3,204.7	(455,376.3)
Income Taxes	(60.90)	3,204.7	(195,161.3)
Total	(266.75)		(855,091.8)
2015			
Capital Recovery	(0.75)	3,360.4	(2,509.5)
Return on Investment	(1.70)	3,360.4	(5,721.6)
Income Taxes	(0.73)	3,360.4	(2,452.1)
Total	(3.18)	3,360.4	(10,683.3)
TOTAL			(865,775.0)

The under recovery amounting to Ush 865.775 million has been considered in the computation of the Capacity Price for Eskom Uganda Limited in the fourth quarter of 2016 through the exchange rate adjustment factor.

3.6 Impact of Adjustment and other factors on the revenue requirement

On the basis of the foregoing discussion of adjustment factors considered in the tariff for the fourth quarter of 2016, the impact of each of the factors on the revenue requirement for the electricity industry is discussed and shown in Table 9.

Table 9: IMPACT OF PARAMETERS ON REVENUE REQUIREMENT

Adjustment Factor parameter	Impact on Annualized Revenue Requirement (Ush million)	%age change from Q3 2016 annualized Revenue Requirement
Exchange Rate	4,024	0.30%
Inflation - CPI	1,285	0.09%
US PPI	(29)	0.00%
Fuel Prices	(1,576)	-0.12%
Export Sales	(14,898)	-1.09%
Generation Mix	39,062	2.86%
Deemed Energy	(1,852)	-0.14%
Eskom Investment	4,179	0.31%
TOTAL	30,195	2.21%
Annual Energy sales to Umeme Q3	3,154	kWh
Annual Energy sales to Umeme Q4	3,283	kWh
Percentage Change	4.08%	

The overall effect of adjustments included in determination of tariffs for Q4 2016 is an increase in the annualized revenue requirement of the electricity industry by Ush 30,195 million from the Q3 2016 levels.

Changes in the generation mix had the largest impact on the annualized revenue requirement leading to an increase of Ush 39,062 million from the costs of the third quarter of 2016. The depreciation of the Uganda Shilling against the United States Dollar led to an increase in the annualized revenue requirement by Ush 4,024 million while a decrease in fuel prices led to a decrease in annualized revenue requirement by Ush 1,576 million.

On the other hand, decrease in the US PPI led to a reduction in the annualized revenue requirement by Ush 29 million, while increase in the local CPI between February 2016 and August 2016 increased the annualized revenue requirement by Ush 1,285 million.

Overall Tariff Adjustment Factor

The applicable tariff adjustment factor for Q4 2016 is the sum of the Exchange Rate Adjustment Factor, Inflation Adjustment Factor and Fuel Price Adjustment Factor. The adjustment factors for Q4 2016 are as shown in Table 10.

Table 10: Total Tariff Adjustment Factors for Q4 2016

	End-User Retail Electricity Tariffs (Ush/kWh)					
	Domestic	Commercial	Medium Industrial	Large Industrial	Street-lights	Weighted average
2016 Base Tariff	651.0	587.0	544.9	369.4	628.4	491.7
Q2 2016 Approved Tariff	640.2	578.3	536.1	361.1	619.5	484.6
Q3 2016 Approved Tariff	626.0	566.9	524.7	349.5	608.0	472.4
	Tariff Adjustment Factors (Ush/kWh) for Q4 2016					
Inflation Rate Adjustment Factor (IRAF)	2.5	2.1	2.2	1.1	2.2	1.8
Exchange Rate Adjustment Factor (FERFAF)	6.0	4.9	5.1	3.6	5.2	4.6
Fuel Price Adjustment Factor (FPAF)	(35.9)	(28.9)	(29.2)	(27.0)	(29.6)	(29.7)
Fuel Price Adjustment Factor	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Energy Mix Adjustment factor	(35.5)	(28.6)	(28.9)	(26.7)	(29.3)	(29.4)
Total Tariff Adjustment	(27.4)	(21.9)	(21.9)	(22.3)	(22.2)	(23.3)
Approved Q4 2016 Tariff	623.6	565.1	523.0	347.1	606.2	470.2
Percentage Change from Q3 2016	-0.4%	-0.3%	-0.3%	-0.7%	-0.3%	-0.5%

3.7 Demand Assumptions

During the first quarter of 2016, UETCL purchased 860.02 GWh from the generation plants. In the second quarter of 2016, UETCL purchased 871.6 GWh, representing growth of about 1%. In the third quarter of 2016, UETCL purchased 892.08 GWh representing an increase of 2.3% from the second quarter of 2016.

In terms of capacity, the registered total peak demand including exports in August 2016 was 573.14 MW compared to 564.35 MW in July 2016. The growth in peak demand is partly attributed to increased exports to Kenya.

According to Bank of Uganda, as domestic demand picks up, the economy is projected to grow more strongly in the financial year 2016/2017, at about 5.5 percent compared to the preliminary estimate of 4.6 percent for the financial year 2015/2016.

4 REVENUE REQUIREMENT, TARIFF AND SUBSIDY IMPLICATIONS

4.1 Revenue Requirement Implications

The annualized revenue requirement for the electricity industry is shown in Table 11.

Table 11: Summary of Revenue Requirement

	Eskom Generation				Transmission			Other power purchases	Export revenues	Distribution			
	Total	Asset related	O&M	Lease fee	Total	O&M	Levies & Funds	Total	Total	Total	Asset related	O&M	Lease fee
	USh mill	USh mill	USh mill	USh mill	USh mill	USh mill	USh mill	USh mill	USh mill	USh mill	USh mill	USh mill	USh mill
Q3 2016	48,207	10,738	28,823	8,646	100,602	68,806	31,795	796,544	74,397	493,099	340,863	146,636	5,599
Q4 2016	52,412	14,754	28,984	8,675	102,953	69,274	33,679	833,316	89,585	495,153	341,990	147,545	5,618

In the determination of tariffs for Q4 2016, the annualized revenue requirement for Eskom Uganda Limited is projected to increase to Ush 52,412 million in Q4 2016 from Ush 48,207 million in Q3 2016. The increase is largely driven by;

- (i) Adjustment for Consumer Price Index leading to an increase in the local content of the Operation and Maintenance costs;

- (ii) Depreciation of the Uganda Shilling against the United States Dollar leading to increase in the Uganda Shilling equivalent asset-related costs; and,
- (iii) Provision for under recovery following the conclusion of the Investment verification exercise.

Due to the changes in the generation mix mainly attributed to the reduction in dispatch from mini-hydros being compensated by capacity plants (Eskom and Bujagali), increase dispatch from Kakira Sugar Limited and reduction in the International oil prices in Q3 2016, the annualized power acquisition costs (excluding the capacity payments to all thermal generators) increased from Ush 796,544 million in Q3 2016 to Ush 833,316 million in Q4 2016.

The annualized revenue requirement for Umeme Limited has increased from Ush 493,099 million provided for in the tariff for Q3 2016 to Ush 495,153 million in Q4 of 2016, mainly on account of adjustment for Consumer Price Index for the local content of the Operation and Maintenance Costs. There was an increase in the annualized asset-related costs from Ush 340,863 million in Q3 2016 to Ush 341,990 million in Q4 2016 on account of the depreciation of the Uganda Shilling against the United States Dollar during the third quarter of 2016.

4.1.1 Capacity Price for Eskom (U) Limited

The Capacity Price for Eskom (U) Limited will increase from Ush 41,413 per MW per hour in Q3 2016 to Ush 45,025 per MW per hour in Q4 2016 as shown in Table 12. The increase is attributed to increased costs on account of adjustment of local content Operation and Maintenance costs for Consumer Price Index, and depreciation of the Uganda Shilling against the United States Dollar affecting the Investment-related costs.

Table 12: Eskom Capacity Price for Q4 2016

5,618	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
	CP y,q	USh mill	USh mill	US\$ thous	US\$ thous	US\$ thous	US\$ thous	USh mill	USh mill	USh mill	US\$ thous
	Ushs/ MW										
Q3 2016	41,413	48,207	10,738	964	1,559	12,992	668	28,823	15,906	9,438	8,646
Q4 2016	45,025	52,412	14,754	1,002	1,640	13,667	703	28,984	16,037	9,469	8,675

4.1.2 Bulk Supply Tariff (BST)

The annualized bulk supply costs have increased from Ush 844,751 million in Q3 2016 to Ush 865,258 million in Q4 2016 however, there was also an

increase in the annualized energy sales to Umeme from 3,154 GWh in Q3 to 3,283 GWh in Q4 2016. As a result, the Bulk Supply Tariffs have reduced from Ush 340.5/kWh, Ush 261.9/kWh, and Ush 159.2/kWh at Peak, Shoulder and Off-peak periods respectively, to Ush 337.2/kWh, Ush 259.4/kWh, and Ush 157.7/kWh for the respective Time of Use periods in Q4 2016, as shown in Table 13.

Table 13: BULK SUPPLY COSTS AND RESULTANT BULK SUPPLY TARIFFS (BST)

	Peak price	Shoulder price	Off-peak price		Sales to distributors	Total costs		Power Purchase Costs		Transmission costs	Total O&M component	Other
	USh/kWh	USh/kWh	USh/kWh		GWh	USh mill		USh mill		USh mill	Ush mill	Ush mill
Q3 2016	340.5	261.9	159.2		3,154	945,353		844,751		100,602	68,806	31,795
Q4 2016	337.2	259.4	157.7		3,283	988,682		885,729		102,953	69,274	33,679

The reduction in the Bulk Supply Tariff is on account of 2.51% increase in annualized bulk supply costs between Q3 2016 and Q4 2016 compared to a 4.08% increase in sales to distributors over the same period.

5 RETAIL TARIFFS

In accordance with Amendment No. 2 of the Umeme Limited Licence No. 48 for Supply of electricity, the retail tariff charges for electric service shall be subject to and liable for automatic fuel cost adjustment, foreign exchange rate fluctuation adjustment, and an automatic adjustment for inflation that will be calculated in accordance with such formulae as determined by the Authority.

The quarterly adjustment factors and the resulting end-user tariffs across the customer categories for Q4 2016 are as shown in Table 14.

Table 14: Q4 2016 Adjustment Factors and resultant End-User Tariffs

	End-User Retail Electricity Tariffs (Ush/kWh)					
	Domestic	Commercial	Medium Industrial	Large Industrial	Street-lights	Weighted average
2016 Base Tariff	651.0	587.0	544.9	369.4	628.4	491.7
Q2 2016 Approved Tariff	640.2	578.3	536.1	361.1	619.5	484.6
Q3 2016 Approved Tariff	626.0	566.9	524.7	349.5	608.0	472.4
	Tariff Adjustment Factors (Ush/kWh) for Q4 2016					
Inflation Rate Adjustment Factor (IRAF)	2.5	2.1	2.2	1.1	2.2	1.8
Exchange Rate Adjustment Factor (FERFAF)	6.0	4.9	5.1	3.6	5.2	4.6
Fuel Price Adjustment Factor (FPAF)	(35.9)	(28.9)	(29.2)	(27.0)	(29.6)	(29.7)
Fuel Price Adjustment Factor	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)
Energy Mix Adjustment factor	(35.5)	(28.6)	(28.9)	(26.7)	(29.3)	(29.4)
Total Tariff Adjustment	(27.4)	(21.9)	(21.9)	(22.3)	(22.2)	(23.3)
Approved Q4 2016 Tariff	623.6	565.1	523.0	347.1	606.2	470.2
Percentage Change from Q3 2016	-0.4%	-0.3%	-0.3%	-0.7%	-0.3%	-0.5%

ANNEX 1: ENERGY DISPATCH AND GENERATION MIX

a) Energy purchase

In Q3 2016, Uganda Electricity Transmission Company Limited purchased 892.08 GWh compared to 871.6 GWh for Q2 2016. This represents an increase in energy purchase of approximately 2.3%. The base energy purchase that was projected for Q3 2016 was 905.7 GWh. This represents a shortfall of 1.5% on the actual outturn for the sales. This less than anticipated demand can be attributed to a slowdown in economic activity in the country.

b) Mini Hydro Generation

The total generation from mini hydro plants increased from 54.0 GWh in Q1 2016 to 76.7 GWh in Q2 2016, and 55.5 GWh in Q3 2016. These mini hydro plants include Mpanga, Bugoye, Kasese Cobalt Company Limited, Kilembe Mines Limited, Eco Power and Hydromax. The decrease in generation is mainly attributed to the unfavorable hydrology in the country following the end of the rainy season in June 2016.

c) Large Hydro Generation

The generation from the large hydro power plants, Bujagali Energy Limited and Eskom Uganda Limited has been on an increasing trend since the first quarter of 2016. The increase in generation has been attributed to the improved water release at 950 Cumecs and the need to cover energy shortfall caused by the reduced dispatch from mini hydro power plants.

The energy generation from Bujagali Energy Limited and Eskom Uganda Limited is expected to be maintained at the current levels until the end of 2016.

d) Co-generation

In Q3 2016, the Kakira co-generation Plant increased its generation by up to 109% compared to Q2 of 2016. The low generation in the second quarter of 2016 was as a result of plant shutdown from May to mid-June 2016 for annual maintenance, and limited supply of cane from out growers. The plant is however expected to increase generation to full capacity in the fourth quarter of 2016 following completion of maintenance and increased supply from outgrows.

During the same period, the Kaliro-based SAIL co-generation plant doubled generation from 2.7 GWh in Q2 2016 to the 5.6 GWh in Q3 2016. This increase is associated with increased supply of cane. We note that there is a general increased challenge of sugar cane supply among cogeneration plants which is likely to affect energy generation given the increasing competition for cane among sugar manufacturers.

e) Thermal Generation

Electro-Maxx Power Plant generated 15.2 GWh in Q3 2016, this is in line with the Authority decision to dispatch the HFO plants; Jacobsen and Electro-Maxx at a minimum of 15 GWh each in the respective quarters of 2016. Jacobsen Power Plant, however, did not dispatch any energy in this quarter. The License for Jacobsen expired on 14th September 2016. The company applied for License renewal. The application is currently being processed through the legal procedural requirements. The company is expected to commence generation in the fourth quarter of 2016.

We expect that in quarter four of 2016, the minimum capacity dispatch at 7 MW or 15 GWh will be maintained.

f) Imported Power

In Q3 2016, the actual energy imported by UETCL was 10.1 GWh. This is generally close to the baseline projected import of 9.7 GWh which was generally intended for system stability across Kenya and Uganda or tie line capacity. Table A1 shows the energy purchases by UETCL from the respective plants.

Table A1: Energy Purchases by UETCL

Generation Plant	Energy (GWh)	Cost (Ush Bn)	Energy (GWh)	Cost (Ush Bn)	Energy (GWh)	Cost (Ush Bn)	Energy (GWh)	Cost (Ush Bn)
	2016 Base Assumptions		Q1 2016 outturn		Q2 2016 outturn		Q3 2016 outturn	
Eskom Uganda Limited	337.8	12	347.3	12.1	361.7	12.2	367.8	13.3
Bujagali Energy Limited	372.4	139.5	379.7	138.7	375.9	138	394.9	153.6
KCCL	14.2	2.7	11	2	17.2	3.1	12.5	2.4
KML	5.3	0.5	6.1	0.5	6.3	0.6	6.6	0.6
Bugoye-Tronder	17.5	5.1	11.2	3.2	23.3	6.7	12.6	3.7
Mpanga	19.7	6	11.3	3.4	18.5	5.6	9.8	3.0
Electro-Maxx	15.3	8.7	15.3	6.6	15.5	7	15.2	7.6
Jacobsen Plant- Namanve	21	11.4	-	-	-	-	-	-
Ishasha Eco power	6.6	1.6	7	1.9	7.4	1.9	4.7	1.3
Kakira Sugar Limited	52.6	16.9	43.8	13.9	17.6	5.3	40.7	12.3
Kinyara Sugar Limited	4.4	1.2	2.2	0.6	2.1	0.6	2.3	0.6
Sugar and Allied	12.8	4.1	6.3	2	2	0.6	5.6	1.7
Mayuge Sugar Limited	7.6	2.4	-	-	-	-	-	-
Buseruka Hydromax	8.8	2.8	7.4	2.5	8.4	2.6	9.3	3.0
Import KPLC -Kenya	8.8	8	10.5	5.1	10	4.6	9.2	5.5
Import Rwanda	0.9	0.3	0.9	0.3	1	0.3	1.0	0.3
Total	905.7	223.2	860	192.8	866.9	189.1	892.1	208.8

Document Quality Control Process

Name	Name & Designation	Signature
Paper Authored by:	Innocent Naswali	IN
Reviewed by (Immediate Supervisor):	Vianney Mutyaba	VM
Reviewed by Head Communication:	Julius Wandera	JJW
Final Review Done by Head of Department	Dr. Geoffrey Okoboi	GO
Approved for posting by the CEO:		