

Reasons why tariff should be increased



Lesotho Electricity Company (PTY) Ltd

Tariff Application 2016-17

Submitted to LEC Board of Directors

**Corporate Planning
11-26-2015**

Contents

1.0 Introduction.....	2
2.0 Background.....	2
3.0 Methodology.....	2
4.0 Challenges.....	3
5.0 The drivers of price increases	5
5.1 Bulk purchases	5
5.2 Repairs and Maintenance	6
5.3 Return on Assets	6
5.4 Operating Expenses.....	6
5.5 Impact of the asset valuation exercise on return on assets and depreciation.....	7
6.0 Revenue Requirement.....	7

1.0 Introduction

One of the licence conditions prescribes that LEC must submit an application to the regulator when it needs to increase tariffs. The application tables the revenue requirement that LEC needs to provide reliable and safe electricity to the economy, along with the tariff levels proposed per customer category expected to yield the required revenue requirement. This application is driven by the increase in bulk supply tariffs from EDM and Eskom, together with inherent increase in operational cost of the company.

2.0 Background

LEWA continuously emphasizes compliance with the QOSSS standards by LEC and adoption to efficiency programs in running the business. Historically, there are many issues tied to aging infrastructure, including greater failure rates, decreased network efficiency, and high maintenance costs. Combined together, these developments have created new risks and challenges for the company. LEC is required to submit tariff review at least once a year to the regulator with estimates that forecast demand and identify resources to meet such a demand. Bulk purchases, operations, maintenance and other compliance costs form components of costs to be recovered from the tariff including return on asset. On the other hand, regulator's responsibility is to allow LEC revenue that corresponds to its level of risk to enable and ensure safe and reliable service at reasonable costs to consumers.

3.0 Methodology

Tariff setting methodology is based on revenue requirement for a single year. Once the process is sufficiently established, it will be prudent to consider a multi-year approach. The revenue requirement is based on the overall level of costs for the regulated entity. This encompasses the determination of relevant costs incurred by the business, plus an allowed investment return and depreciation. The projected costs are based on a forecast for the year under review.

In the light of allocating costs in a transparent manner, the proposal under review follows the cost of allocation manual (CAM). This manual describes a set of generic cost allocation procedures to be followed by the company in order to allocate shared or common costs among regulatory business units accordingly. Each type of cost among business units will be separated into direct and indirect costs, accordingly. Direct attribution is applied for those costs that are incurred exclusively in

relation to one business unit. On the other hand indirect attribution is applied where some resource is used for more than one licensed activity and the portions of the resource that each business unit uses cannot be directly established. In the case of indirect costs, a cost driver must be identified and used to distribute the costs of the activity to the business units that cause the cost to be incurred. At some future date, when the chart of accounts is amended, direct attribution will be possible for substantially more cost items than now.

4.0 Challenges

The company is faced with challenges that are sectorial and those that generic. In specific terms, evolution of the sector is sluggish in real terms and active in relative terms. The challenges emanate from a number of factors, lack of funding for capital projects, including increasing customers, technological advancement, regulatory environment, demand side management (DSM); government programs to electrify non-economic villages and growing economic growth trends. Taken together, these factors are potential “game changers” to the Lesotho electricity sector, and are likely to dramatically impact on customers, employees, investors, and capital to fund future investment.

LEC is under increased pressure to build new infrastructure that will drive better performance and returns for decades. A capital expenditure requirement in the company is expected to exceed M300 Million annually, which is largely composed of new infrastructure driven by operations on the ground and the nature of the industry. There is also replacement of antiquated equipment on the network and system improvements. In terms of providing the magnitude of the problem LEC is faced with capital investments programme for the next four years of M288 million for refurbishment only and the programme for year 2016/17, the estimated costs are M135 million, and it has been a mission to source funding for this type of infrastructure, as most banks especially commercial have a lending period threshold of 10 years, whilst given the current return on assets, allowance given to LEC it can only be in a position to take up these loans if repaid beyond 20 years.

The need to attract energy financing comes at a time when money is tight. Banks and other investors are increasingly risk averse and become less aggressive than in the past. Debt of all kinds costs significantly more than before the global financial crisis. Lenders have cut down on their healthy appetites for owning stake in electricity sector given the current less cost reflective tariffs within the sector. As such, lenders concern is of the borrower’s ability to pay over the life of the loan. For

instance, payback for electrification projects in the country is over 40 years. In the light of this, the company will in the financial year under review, revert to new and diverse suppliers of capital like sovereign fund managers and export credit agencies. Both suppliers of capital are eyeing the long term, stable return offered by the energy sector and currently canvassing such a doctrine around the world.

It is widely accepted that affordability stands out as one of the paramount requirements of electricity pricing in developing countries. Electricity has the potential to substantially improve the quality of life by bringing convenience and dignity to the ordinary households while unlocking the potential for a wider array of business activities. It must be recognized, however, that affordability does not necessarily mean a very low electricity price. The process of generation, transmission, distribution and supply of electricity has certain costs associated with it and these should be reflected in the price of the product to send the correct consumption signals to customers. In general terms, in order for the electricity supply industry to be sustainable, average tariff levels must reflect the cost of supply. Affordability may, nonetheless, necessitate clearly identified subsidies or cross-subsidies targeted towards specific consumers. That is why the company is currently under the pressure of introducing time of use and other associated pricing methodologies.

To ensure the long-term viability of the company, LEWA should permit LEC to set prices that generate sufficient revenue to cover total costs. This is the amount that the regulator has determined that the regulated entity requires to maintain and develop its networks, serve customers, and to provide a reasonable rate of return. The reasonable return to the company is determined so that that it is able to fund its ongoing investments in new or upgraded infrastructure. It is important to recognize that tariffs that are set below the true cost of supply are the greatest hindrance to a viable, sustainable and growing power sector that is able to consistently meet customer demand and provide reliable supply.

Over the years the company has concentrated its efforts in expanding the network even to the most remote parts of the country. However, less attention, as a result of meager financial resources has been paid to improve electricity accessibility since the advent of sales agents. In its attempt to address such an issue the company invited private sector innovation to come up with different technologies to arrest such a situation. Different presentations and pilot projects were made together

with their cost-benefits analysis as a result, cellphone vending was born. This is a new method of buying prepaid electricity units using a cellphone. It is a proactive measure responding to the growing number of customers using prepaid meters and a quest to give our customers a wide range of vending options, while minimizing cost of commission for efficiency purposes.

5.0 The drivers of price increases

5.1 Bulk purchases

The biggest drivers of electricity increase are bulk purchases and operating expenditure for the LEC transmission and distribution businesses. These increases are driven by growth in the demand for electricity, replacement of ageing network assets, enhanced reliability and performance standards. With regard to bulk, this rapid rate of growth is envisaged to continue. The trend in bulk prices over time is uncertain given the large scale expansion program and construction of generating plants in RSA. According to Eskom MYPD, bulk purchases are expected to hike by 8% margin on average. That is to say, there are some Eskom tariff components which will rise by far more than the average margin. Based on the history and anticipated level of growth, natural growth of 6% on energy was applied. In the current financial year, the non-firm contract which has been prevailing in the past between EDM and LEC has been firmed up, with a take or pay condition of 90 GWh, hence load shedding was averted in 2015/16. It is worth mentioning that the recent unpredictable behavior of Loti towards Rand has exposed the company to foreign exchange risk. The total bulk cost for the next financial year is reflected in the table 1 below;

Table 1 Bulk Summary Table

MHP	506 000 000.00	63 412 056.74
QACHA	6 688 483.36	6 177 152.55
EDM	90 635 000.000	135 523 673.50
CLARENCE	79 210 140.15	61 138 427.58
MSU BULK	106 037 177.54	100 907 567.64
TOTAL ENERGY	788 570 801.06	367 158 878.01

5.2 Repairs and Maintenance

The growth in capital expenditure also results in increased costs associated with maintaining the significantly increased asset base and a safe operating environment. LEC transmits and distributes electricity to consumers in the country. This involves but not limited to diagnosis and addressing of problems with electrical equipment such as substations, distribution and transmission transformers, breakers and switch gears. The target is to inspect, maintain, test and repair electrical equipment to improve its reliability. However, if the equipment happens to fail, there is a need to analyze it and evaluate replacement needs. That is why it is important for the company to keep sufficient amounts of strategic stocks for emergency purposes. On the other hand, taking a proactive approach will greatly reduce costly electrical outages, equipment damage and unexpected shutdown.

5.3 Return on Assets

Determining a just and adequate ROA has been a challenge to the company since the commencement of the regulatory era. This has been attributed to variety of factors but out dated asset register was flagged by the regulator as point of departure. However, in the current financial year, the company embarked on the valuation exercise of the overall company assets. The basis for the valuation is that the company had not done valuation in six years. It is the requirement of regulation for assets to be valued annually, in order to reflect the true costs of replacing the assets. Given the lag time towards the valuation, revaluation reserves is M731 million, which increased the asset value from M1.7 billion to M2.5 billion. As a result of the increased asset value the return on assets, which is calculated on the regulated asset base has increase to M157 million.

5.4 Operating Expenses

The operating expenses covers the staff costs, expenses related to meeting the company operations and the depreciation charge. The main drivers behind the operating expenses is growth in the number of customers, the length of the network, and inflation. Consequently as the customer base grows more human capital costs increases, together with related resources that are essential to rendering undisturbed service to customers. Another major problem with Lesotho that largely increases operational costs is the topography and limited to no settlement planning. Where households are scattered all making backbone construction of lines very expensive hence maintaining it.

5.5 Impact of the asset valuation exercise on return on assets and depreciation

Following an asset valuation exercise done in the current financial year, the asset valuation reserve of M756m was realized. The same valuation reserve had impact on return on assets as it rose to M157million and depreciation consequently became M128 million. In the same application the company is making the regulator aware of the impact of the valuation exercise on these two components, which invariably affect the revenue requirement thus the financial viability of LEC. However this impact is not reflected in the revenue requirement in order to allow for the negative publicity hanging over LEC to dissolve. The intention is to bring to the fore the losses from the return on assets and depreciation that LEC is experiencing which impede financial capability on securing equipment to improve the continuity of supply to existing customers.

6.0 Revenue Requirement

The total revenue requirement for the next financial year is estimated at, M 819 544 992 broken down as follows;

Cost of Sales	M 367 158 878.00
<ul style="list-style-type: none">• Purchases	M 367 158 878.00
Total Operating expenses	M 373 755 066.00
<ul style="list-style-type: none">• Operational Expenses• Depreciation	M 273 749 861.00 M 100 005 205.00
Return on assets	M 78 631 048.00

This revenue requirement is envisaged to be financed by a nominal increase of 25.40 % on energy and 25.40 % on maximum demand. Proposed new tariffs are therefore as follows;

Table 2 Energy Charges

Customer Category	Current Tariff	Proposed Tariff	Cents increase
Industrial HV	0.1595	0.2000	0.0405
Industrial LV	0.1766	0.2215	0.0449
Commercial HV	0.1595	0.2000	0.0405
Commercial LV	0.1766	0.2215	0.0449
General Purpose	1.3043	1.6356	0.3313
Domestic	1.1539	1.4470	0.2931
Lighting	0.655	0.8214	0.1664

Table 3 Maximum Demand charge

Industrial HV	224% 213.24	267.4152	54.1752
Industrial LV	262.45 249.07	312.3415	63.2715
Commercial HV	213.24	267.4152	54.1752
Commercial LV	249.07	312.3415	63.2715

Recommendation

It is therefore recommended that LEC board approves tariff increase in the order of 25.40% to cover total revenue requirement of M 819 544 992 for the financial year 2016/17.

	LEC tariff (excl. levies) kWh charge	MD charge	Total revenue to LEC
Industrial HV	25.4%	25.4%	25.8%
Industrial LV	25.4%	25.4%	25.7%
Commercial HV	25.4%	25.4%	25.8%
Commercial LV	25.4%	25.4%	25.7%
General Purpose	25.4%		23.0%
Domestic	25.4%		22.7%
Lighting	25.4%		20.9%

Actual 2015/16 (From Budget 2015/16)				LEC Forecast 2016/17 (From Budget 2016/17)			
	kWh	Maloti	M/kWh	kWh	Maloti	M/kWh	
Domestic	119 559 965.10	141 806 130.75	1.186	229 175 113.86	288 294 242.49	1.258	
General Purpose	38 131 520	50 600 634	1.327	74 534 796.35	106 439 089.10	1.428	
LHDA	4 543 275	3 234 318	0.712	7 426 174.54	5 698 271.16	0.767	
LV Commercial	32 470 348	34 044 534	1.048	56 725 900.69	63 151 321.69	1.113	
LV Industrial	22 476 672	35 611 171	1.584	45 333 527.91	67 708 325.84	1.494	
MV Commercial	46 378 596	36 450 774	0.786	88 306 126.38	74 955 541.78	0.849	
MV Industrial	94 739 597	58 814 325	0.621	188 952 108.17	126 685 550.50	0.670	
SP Domestic	416 112	480 152	1.154	652 794.10	813 519.83	1.246	
SP General Purpose	1 191 070	1 553 516	1.304	2 036 242.37	2 868 340.63	1.409	
Total	359 907 156	362 595 554	1.007	693 142 784	736 614 203	1.063	
Total domestic	119 976 078	142 286 282	1.186	229 827 908	289 107 762	1.258	

Sales (2016/17)	Category	Number customers	Tariff	Energy forecast (kWh)	Billable demand per year	Avg. billable demand/ month
Industrial HV		35	Two Part	188 952 108	397 804	33 150
Industrial LV		155	Two Part	45 333 528	196 483	16 374
Commercial HV		41	Two Part	88 306 126	225 327	18 777
Commercial LV		205	Two Part	56 725 901	172 878	14 407
General Purpose		10 454	One Part	76 571 039		0
Domestic		195 612	One Part	229 827 908		0
Lighting		140	One Part	2 036 243		0
LHDA		11		7 426 175	18 075	1 506
Total		206 653		695 179 027		84 214

Sales (2015/16)

Category	Number of customers	Tariff	Energy outturn (kWh)	Billable demand per year	Avg. billable demand/ month
Industrial HV	33	Two Part	94 739 597	393 865	32 822
Industrial LV	148	Two Part	22 476 672	190 760	15 897
Commercial HV	40	Two Part	46 378 596	223 096	18 591
Commercial LV	195	Two Part	32 470 348	167 843	13 987
General Purpose	9 956	One Part	39 322 590		0
Domestic	186 297	One Part	119 976 078		0
Lighting	133	One Part			0
LHDA	11		4 543 275	17 549	1 462
Total	196 813		359 907 156		82 759

Revenue simulation

	2016/17				Total revenue to LEC
	Tariff	Customer levy	Electricity levy	Total	Revenue
Industrial HV	M/kWh	M/kWh	M/kWh	M/kVA/ month	Maloti
Industrial LV	0.2000	0.0360	0.0350	0.2710	157 588 362
Commercial HV	0.2215	0.0360	0.0350	0.2925	74 628 241
Commercial LV	0.2000	0.0360	0.0350	0.2710	84 188 414
General Purpose	0.2215	0.0360	0.0350	0.2925	70 587 294
Domestic	1.6356	0.0360	0.0200	1.6916	129 530 763
Lighting	1.4470	0.0360	0.0200	1.5030	345 439 253
LHDA	0.8214	0.0360	0.0200	0.8774	1 786 589
Total					0
Levies					863 748 916
					44 203 925
					819 544 991

WACC Model

Regulatory Asset Base

2 Property, plant and equipment

	M	M	M	M	M	M	M	M	M	M	M
	Land	Buildings	Plant and machinery	Motor vehicles	equipment	IT equipment	Generation, Transmission and Distribution Plant	Capital Work in Progress	Total		
Year ended 31st March 2014											
Closing carrying amount	6 735 204	53 106 682	6 899 238	10 784 835	5 865 089	5 987 221	1 468 010 382	105 290 001	1 662 678 651		
Year ended 31st March 2014											
Opening carrying amount	6 735 204	51 707 861	7 125 007	10 799 678	6 558 362	4 500 513	1 394 079 859	184 428 799	1 665 935 283		
Additions / Acquisitions		2 523 082	991 543	5 930 661	923 708	4 091 590	138 672 618	60 836 362	213 969 564		
Disposal				-450 211				-139 975 160	-140 425 371		
Adjustments									0		
Depreciation charge		-1 124 260	-1 217 312	-5 495 292	-1 616 981	-2 604 882	-64 742 095		-76 800 822		
Closing carrying amount	6 735 204	53 106 684	6 899 238	10 784 836	5 865 089	5 987 221	1 468 010 382	105 290 001	1 662 678 651		
At 31st March 2014											
Cost	6 735 204	58 454 440	17 112 965	49 536 522	13 562 147	29 183 522	1 835 328 587	105 290 001	2 115 203 389		
Accumulated depreciation	0	-5 347 758	-10 213 727	-38 751 687	-7 697 058	-23 196 303	-367 318 205	0	-452 524 738		
Closing carrying amount	6 735 204	53 106 682	6 899 238	10 784 835	5 865 089	5 987 219	1 468 010 382	105 290 001	1 662 678 651		
Year ended 31st March 2015											
Opening carrying amount	6 735 203.81	53 106 682.01	6 899 238.38	10 784 835.44	5 865 089.03	5 987 218.92	1 468 010 381.95	105 290 001.49	1 662 678 651.03		
Additions / Acquisitions	0	560 655	3 172 385	10 518 839	849 792	1 553 401	140 079 202	186 772 932	343 507 207		
Disposal	0	0	-90 256	-409 256	-52 472	0	0	-140 079 202	-140 631 186		
Acc. Depreciation	0	0							0		
Revaluation Reserve	41 942 196	19 246 693	3 492 368	22 399 566	966 140	3 165 180	640 369 379	0	731 581 523		
Depreciation charge	0	-1 181 452	-1 372 730	-6 151 906.42	-1 386 331.06	-3 053 490	-69 656 972	0	-82 802 882		
Closing carrying amount	48 677 400	71 732 578	12 101 006	37 142 078	6 242 217	7 652 311	2 178 801 991	151 983 731	2 514 333 312		
At 31st March 2015											
Cost	48 677 400.00	71 732 578.65	20 041 612.36	52 188 059.31	14 395 725.35	30 736 922.44	2 344 323 307.03	151 983 731.19	2 734 079 336.33		
Accumulated depreciation	0	0	-7 940 606	-15 045 982	-8 153 508	-23 084 612	-165 521 316	0	-219 746 023		
Balance before revaluation	6 735 204	52 485 886	8 608 638	14 742 511	5 276 077	4 487 131	1 538 432 612	151 983 731	1 782 751 789		
Revaluation Reserve	41 942 196	19 246 693	3 492 368	22 399 566	966 140	3 165 180	640 369 379	0	731 581 523		
Closing carrying amount	48 677 400	71 732 579	12 101 006	37 142 077	6 242 217	7 652 311	2 178 801 991	151 983 731	2 514 333 312		

Cost Allocation Sheet

[illegible]

Other depreciation costs to be allocated									
Depreciation - LEC buildings									
Depreciation - Generation Plant		1 734 480		25 337		789 754		911 314	8 074
Depreciation- Transmission		1 123 594		1 123 594					
Depreciation- Distribution		2 465 811				2 465 811			
Depreciation- Network Mgt Systems		66 624 505						66 624 505	
Depreciation- Tools		7 685 232				7 685 232			
Depr - Office Equipment		2 368 034		34 593		1 078 228		1 244 190	11 024
Depr - Telecommunications		1 850 741		27 036		842 691		972 399	8 616
Depr - Hardw/Softw/Networks		641 100		9 365		291 910		336 841	2 984
Depr - Vehicles		8 209 338		119 923		3 737 926		4 313 273	38 216
		7 302 370		106 674		3 324 960		3 836 742	33 994
Other operating costs to be allocated									
net financing cost	Staff nos.	5 603 381		92 520		699 038		3 424 027	1 387 796
Subtotals									
Operating costs									
Depreciation									
		273 749 861		3 510 762		46 484 550		159 496 209	64 258 340
		100 005 205		8 592 887		27 362 878		85 385 629	7 249 274

WACC

10.64%

Revised assets at start of year (1/4/15)
 Estimated depreciation during year
 Estimated net additions during year
 Estimated assets at end of year (31/3/15)

1 318 490 140	31 799 885	132 809 004	1 143 747 529	10 133 722
124 558 215	10 493 068	6 987 520	99 712 824	7 364 803
319 412 000	7 032 040	120 304 506	191 918 856	161 498
1 513 343 925	28 338 857	246 125 990	1 235 948 660	2 930 417

Average depreciation rate, %pa of starting assets

9.45% 27.0% 2.8% 7.5% 71.5%

Estimated RAB									
Return on capital									
		1 478 196 140	35 315 905	192 961 258	1 239 704 507	10 214 471			
		78 631 048	1 878 591	10 264 366	65 944 743	543 348			
Working capital calculation									
Working capital									
	#weeks of opex.								
	Separately calculated	3 945 446	116 961	1 066 324	2 762 161	-			
Grand total of costs to be recovered from tariff revenues		452 386 113	13 982 240	84 111 793	310 826 581	72 050 961			

Revenue Simulation

Tariff Simulation

