Kingdom Of Lesotho

Bureau of Statistics

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2017 Energy Report

Bureau of Statistics
P.O. Box 455
Maseru 100
Lesotho
Tel: +266 22 323 852/22 326 393
Fax: +266 22 310 177
E-mail: ees@bos.gov.ls
Website: www.bos.gov.ls

Mission: To coordinate the National Statistical System (NSS) and produce accurate, timely and reliable culturally relevant and internationally comparable statistical data for evidence-based planning, decision making, research, policy, program formulation and monitoring and evaluation to satisfy the needs of users and producers.

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1.0 Introduction

"Energy is the capability of some substances, resulting from their physico-chemical properties, to do work or produce heat.

Energy statistics refers to collecting, compiling, analyzing and disseminating data on commodities such as coal, crude oil, natural gas, electricity, or renewable energy sources (biomass, geothermal, wind or solar energy), when they are used for the energy they contain".https://en.wikipedia.org/wiki/Energy_statistics.

"All power to Lesotho was supplied by ESKOM in South Africa in 1995. However, the Muela hydroelectric power station, built during phase 1A of the Lesotho Highlands Water Project (LHWP), opened in September 1998. The resulting electricity production reduced Lesotho's previous dependence on imported electricity from South Africa". http://www.mbendi.com/notices/copyright.htm.

Lesotho does not have any natural gas, oil or coal reserves, there are no foreign oil and gas companies in Lesotho conducting exploration or refinement; rather they focus on the marketing of refined products imported from South Africa.

1.1 Coverage and scope

This report comprises secondary data for grid electricity from Lesotho Highlands Development Authority (LHDA) and Lesotho Electricity Company (LEC). It includes petroleum fuels from Petroleum Fund and Mission Aviation Fellowship (MAF) and data on Liquefied Petroleum Gas (LPG) from Department of Energy. It also includes primary data on households' distribution in the use of energy sources for cooking, lighting and space heating.

2.0 Results

Electricity generation data from LHDA is for the years 2012 to 2016 and electricity distribution from LEC is for the financial years 2012/2013 to 2016/2017. LEC data also includes electricity generation from mini hydro electric power stations and diesel powered generator for the financial year 2016/2017. Petroleum fuels from Petroleum Fund and aviation data is for the years 2015 and 2016.

3.0 Electricity

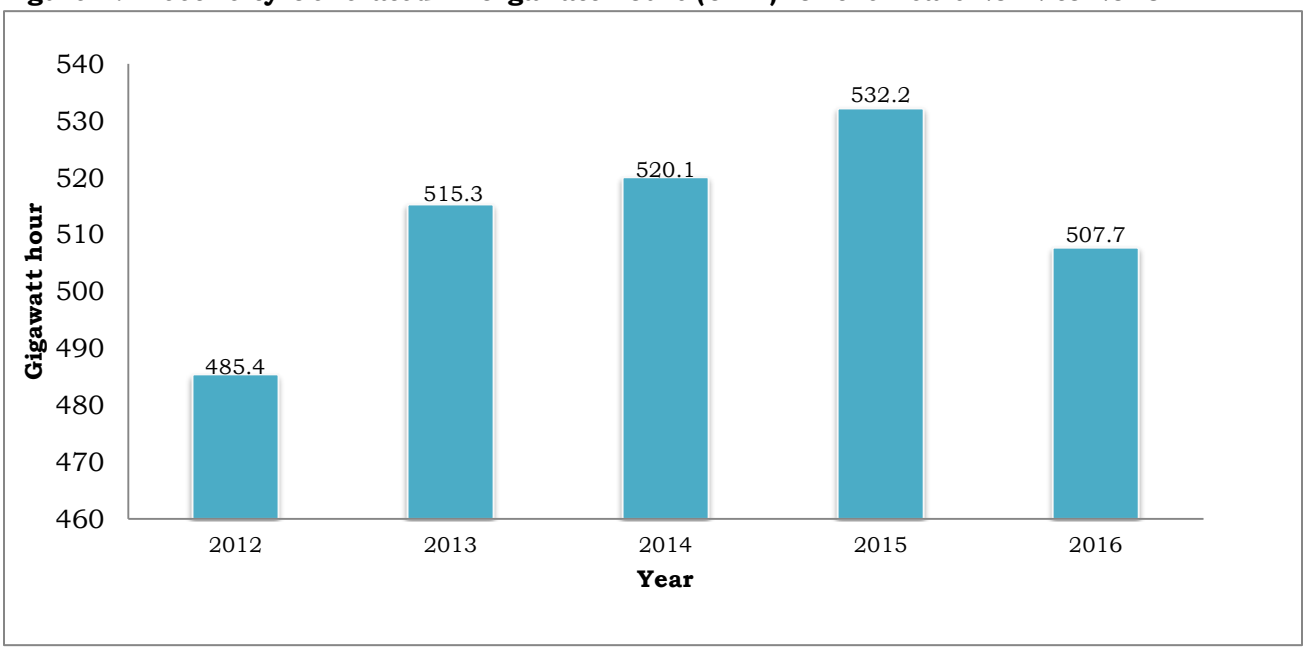
'The electricity supply industry in Lesotho is dominated by two state owned entities, namely the Lesotho Electricity Company (LEC), which is the monopoly transmitter, distributor and supplier of electricity, and the Lesotho Highlands Development Authority (LHDA), which is the main generator of electricity through its 'Muela Hydro Power Station. The generating station is part of the Lesotho Highlands Water Project'. http://www.lewa.org.ls/sectors/default.php

3.1 Generated Electricity

"Electricity in Lesotho is supplied by Muela's hydroelectric power station (72MW), with some small hydro projects also providing generation capacity. However, peak demand has reached up to 140 MW in the past, forcing Lesotho to meet the deficit with more expensive imports from Mozambique and South Africa".https://www.usaid.gov/powerafrica/lesotho.

Figure 1 illustrates electricity generated in Gigawatt hours for the years 2012 to 2016. There was an increase in generated electricity from 2013 to 2015 after a drop in production was experienced in 2012. From 2014 to 2015 there has been an increase of 2.3 percent (520.1GWh to 532.2 GWh). The highest generation was observed in 2015 with 532.2GWh. There was also a decline of 4.6 percent in 'Muela generated electricity from 2015 to 2016.

Figure 1: Electricity Generated in Gigawatt hours (GWh) for the Years 2012 to 2016



Source: Lesotho Highlands Development Authority

3.1.1 Mini-Hydro Electric Power Generation

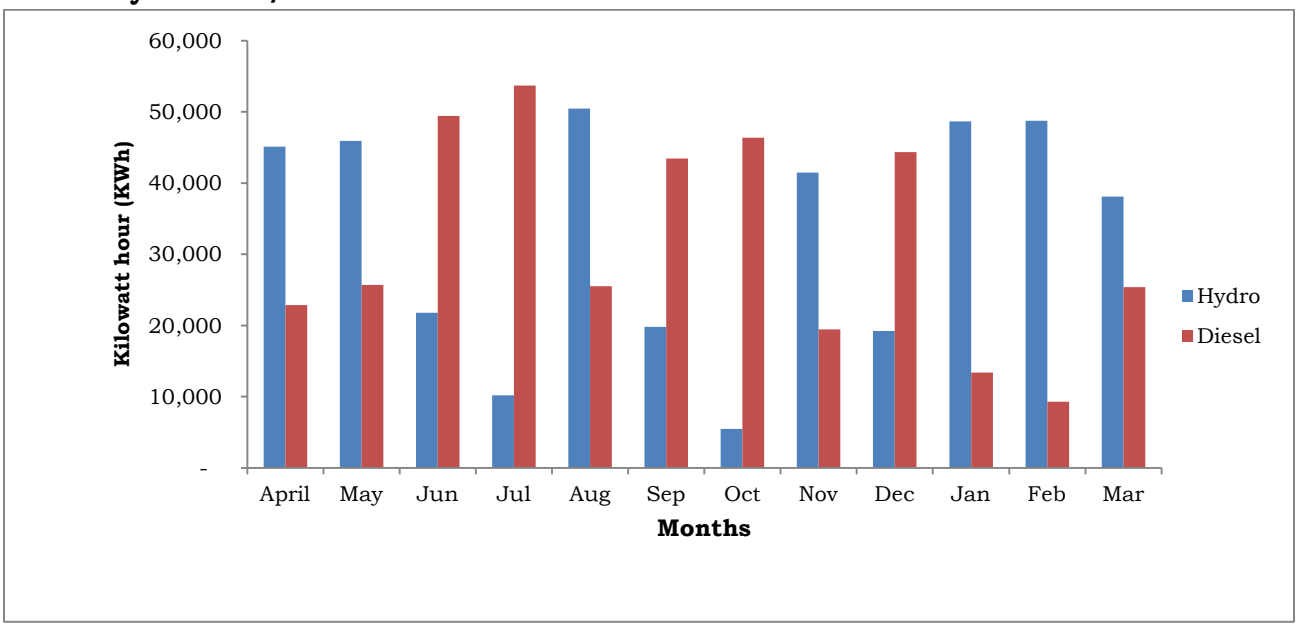
"The role of the mini hydro power plants is to reduce the dependence on diesel generators in the remote areas and to supply rural areas with electricity in isolated networks from the National Grid. Generation of electricity falls outside the scope of the LEC business, hence it is done at a very small scale in Semonkong and Mantšonyane. Initially LEC had four small mini hydro-power stations in the mountainous areas of Semonkong, Mantšonyane, Tlokoeng (Mokhotlong) and Tsoelike (Qacha's Nek).

The two stations of Tsoelike and Tlokoeng have been decommissioned because of both technical and operational problems".https://www.lec.co.ls/generation

Figure 2 portrays electricity generated from Semonkong mini hydro power station in kilowatt hours (KWh) for the financial year 2016/2017. It is observed that hydro generation

was high in August (50,481 KWh)) and lowest in October (5,456 KWh). The highest production using diesel was in July with 53,702 KWh while the lowest was in February with 9,289 KWh. Peak production is observed in July (53,702 KWh) with use of diesel and the lowest in October (5,456 KWh) using water.

Figure 2: Electricity Generated from Semonkong Mini Hydro Power Station in KWh for the financial year 2016/2017



Source: Lesotho Electricity Company

3.1.2 Total Electricity Generated

The amount of electricity produced by 'Muela and the mini hydro power plants of Semonkong and Mantsonyane contribute to the total electricity produced in the country.

Table 1 represents Electricity Generated from 'Muela, Semonkong and Mantsonyane in Megawatt hours (MWh) for the financial year 2016/2017. The highest electricity generation was in July with 51,565.29 MWh, followed by August and May with 51,438.77 MWh and 49,068.08 respectively. The lowest generation was in January with 34,022.97 MWh. There was no electricity generated in Mantsonyane in the months of April, May and October 2016.

Table 1: Electricity Generated from 'Muela, Semonkong and Mantsonyane in MWh for the Financial Year 2016/2017

Months	Muela	Semonkong	Mantsonyane	Total
April-16	42,988.07	68.00	-	43,056.07
May	48,996.47	71.61	-	49,068.08
June	48,720.24	71.22	96.11	48,887.57
July	51,494.89	63.87	6.53	51,565.29
August	50,987.35	76.01	375.41	51,438.77
September	44,191.77	63.25	37.58	44,292.61
October	45,373.15	51.82	-	45,424.97
November	41,153.55	60.96	1,044.26	42,258.76
December	34,252.56	63.57	59.50	34,375.64
January-17	33,488.70	62.03	472.24	34,022.97
February	34,757.52	58.06	753.72	35,569.30
March	38,484.11	63.49	158.66	38,706.26
Total	**514,888.37**	**773.89**	**3,004.01**	**518,666.27**

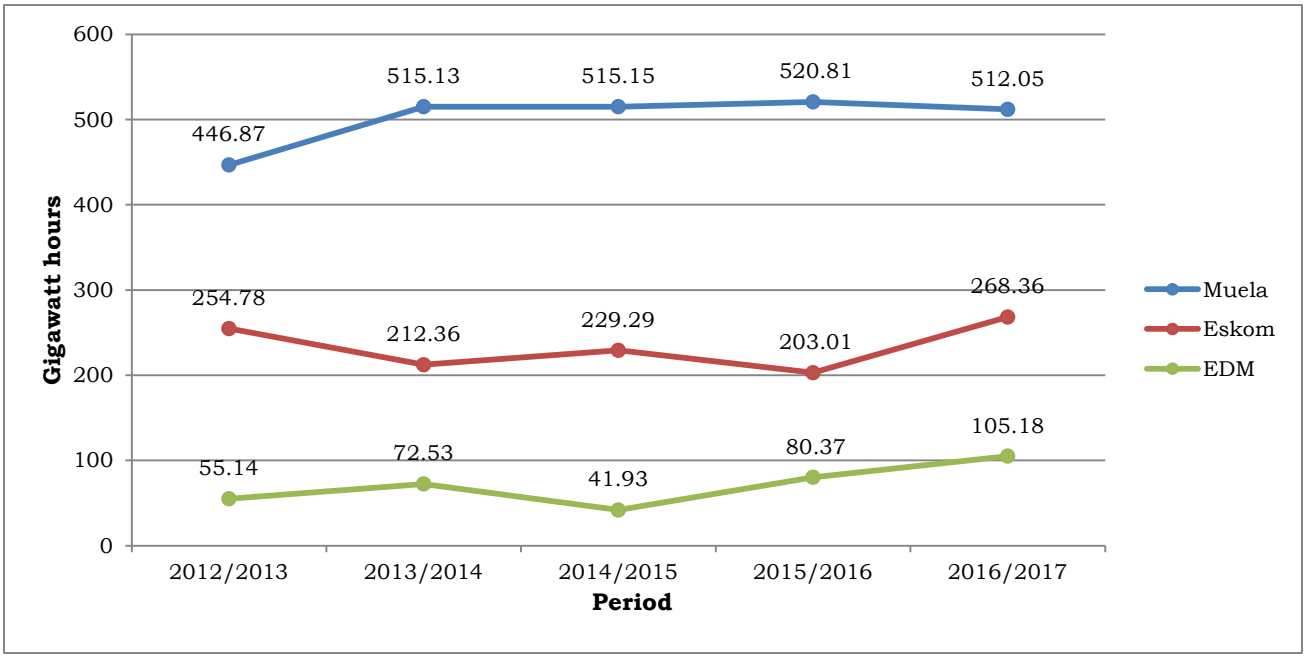
Source: Lesotho Electricity Company

3.2 Electricity Purchased

"Lesotho Electricity Company (LEC) generates, transmits, and distributes electricity. The company also owns and operates hydro power stations". https://energypedia.info/wiki/Lesotho_Energy_Situation

Figure 3 describes electricity purchased in Gigawatt hours from 'Muela, Eskom and EDM by LEC for the period 2012/2013 to 2016/2017. The highest purchases made from 'Muela were 520.81 GWh in 2015/2016, while the lowest were 446.87 GWh in 2012/2013. LEC purchased more electricity from Eskom in 2016/2017 with 268.36 GWh and the least in 2015/2016 with 203.01 GWh. The highest and lowest purchases from EDM were made in 2016/2017 and 2014/2015 with 105.18 and 41.93 GWh respectively.

Figure 1: Electricity purchased in GWh from 'Muela, Eskom and EDM by LEC for the period 2012/2013 to 2015/2016



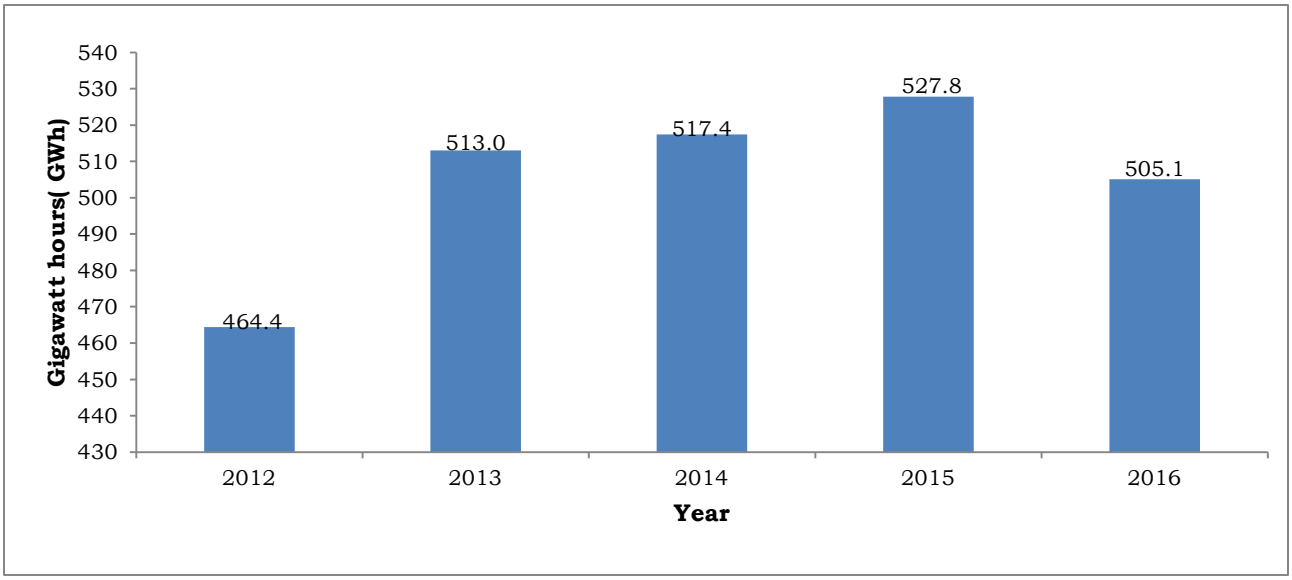
Source: Lesotho Electricity Company

3.3 Electricity Sales to LEC

'Muela generates electricity for Lesotho. It then sells to Lesotho Electricity Company, which is the monopoly transmitter and distributor.

Figure 4 depicts electricity sales from 'Muela to LEC in GWh for the years 2012 to 2016. More sales were in 2015 with 527.8 GWh while the lowest sales were in 2012 (464.4 GWh). The highest percentage sales increase was 10.5 percent from 2012 to 2013 while the slight increase of 0.9 percent was observed from 2013 to 2014. From 2014 to 2015, the sales increased by 2.0 percent. Electricity sales decreased from 2015 to 2016 by 4.3 percent.

Figure 4: Electricity Sales from Muela to LEC in Gigawatt hours for the years 2012 to 2016



Source: Lesotho Highlands Development Authority

3.4 Electricity Imports and Exports

Lesotho exports excess electricity produced by 'Muela Hydropower station to Eskom, when electricity demand is low since electricity cannot be stored. It also imports electricity from Eskom and EDM to meet its high electricity demand.

Table 2 shows total electricity imports and exports for the period 2012 to 2016. Highest electricity imports were observed in 2016 with 372.6 GWh followed by 2014 with 335.5 GWh while the lowest were in 2015 with 260.6 GWh. The highest exports were recorded in 2012 and the lowest in 2013 with 21.0 and 2.2 GWh respectively.

Table 2: Total Electricity Imports and Exports for the period 2012 to 2016

Year	Total Imports (GWh)	Total Exports (GWh)
2012	284.2	21.0
2013	280.8	2.2
2014	335.5	2.8
2015	260.6	4.4
2016	372.6	2.6
Total	**1,533.7**	**33.0**

Source: Lesotho Highlands Development Authority

3.5 Electricity Distribution

"The role of Transmission and Distribution (T&D) is to provide safe and reliable electricity supply to Lesotho residents and businesses as a whole. The Transmission network evacuates power from the generation sources namely 'Muela Hydropower

(LHDA), Eskom (South Africa) and EDM (Mozambique) to LEC load centres".https://www.lec.co.ls/transmission

3.5.1 LEC Customers

LEC customers include anyone who is supplied with electricity by LEC. They are classified into different categories depending on their electricity needs. It is important to note the number of LEC customers and how much they consume as this can help assess the electricity needs of the country.

Table 3 presents the Number of LEC Customers by Sector for the period 2012/2013 to 2016/2017. It is observed that Prepaid Domestic contributes a greater share of LEC customers, followed by Prepaid General Purpose throughout the years. Domestic Customers have been constant (5). This is because their metering system is not prepaid, they are charged according to the reading on the meter boxes. The table further shows that General Purpose customers have been decreasing from 2012/2013 to 2015/2016 and were constant in 2016/2017. The highest increase of LEC customers was from 2013/2014 to 2014/2015 by 15.4 percent. There was also an increase of 7.6 percent from 2015/2016 to 2016/2017.

Table 3: Number of LEC Customers by Sector for the period 2012/2013 to 2016/2017

Sector	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017
Domestic Consumers	5	5	5	5	5
General Purpose	30	27	26	24	24
Commercial HV	38	39	40	40	41
Commercial LV	166	191	200	199	200
Industrial HV	30	35	40	39	45
Industrial LV	120	137	152	162	172
LHDA	9	10	9	10	9
Prepaid Domestic	130,021	149,034	172,795	186,658	200,770
Pre-Paid General Purpose	8,102	8,652	9,179	9,966	10,821
Street Lights	-	128	130	133	133
Total	**138,521**	**158,258**	**182,576**	**197,236**	**212,220**

Source: Lesotho Electricity Company

3.5.2 Electricity Consumed

Electricity consumed is the amount of electricity that is used by all LEC customers. It includes electricity purchased locally and imports from other countries.

Table 4 shows the Percentage Distribution of the amount of Electricity Consumed by LEC customer for the period 2015/2016 and 2016/2017. In 2015/2016, Prepaid Domestic

customers consumed the greatest share of electricity which constituted 33.5 percent, followed by Industrial High Voltage (27.3 percent). The highest consumption in 2016/2017 was for Prepaid Domestic customers with 32.7 percent and the lowest for Domestic Customers with 0.1 percent. Industrial High Voltage consumption increased by 1.8 percent from 2015/2016 to 2016/2017.

Table 4: Percentage Distribution of the amount of Electricity Consumed by LEC customers for the period 2015/2016 and 2016/2017

Sector	2015/2016	2016/2017
Domestic Consumers	0.1	0.1
General Purpose	0.3	0.3
Commercial HV	11.9	10.8
Commercial LV	7.9	7.8
Industrial HV	27.3	29.1
Industrial LV	6.4	5.9
LHDA	1.1	1.0
Pre-Paid Domestic	33.5	32.7
Pre-Paid General Purpose	11.2	12.0
Street Lights	0.2	0.3
Total	**100.0**	**100.0**

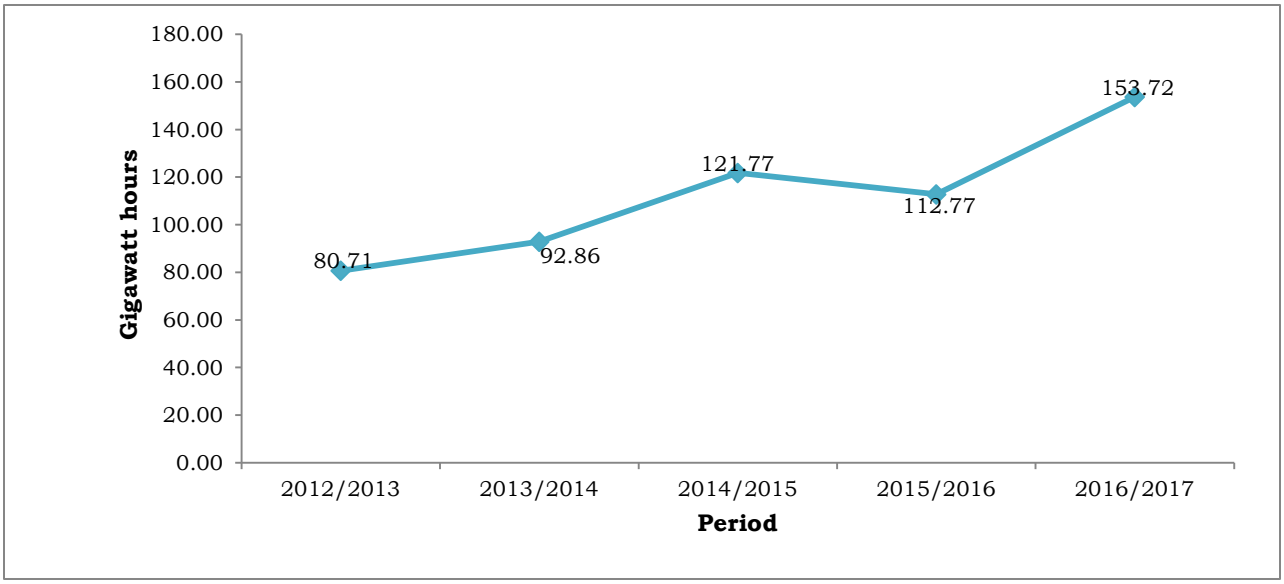
Source: Lesotho Electricity Company

3.5.3 Distribution losses

These are electricity losses incurred by LEC in the distribution of electricity to its customers. They are technical losses due to energy dissipated in the conductors, equipment used for transmission line, transformer, sub-transmission line and distribution line and magnetic losses in transformers.

Figure 5 depicts Distribution Losses for the period 2012/2013 to 2016/2017. It is observed that most losses were incurred in 2016/2017 (153.72 GWH). The losses increased every year except from 2014/2015 to 2015/2016 where there was a decline from 121.77 to 112.77GWh.

Figure 5: Distribution Losses for the period 2012/2013 to 2016/2017



Source: Lesotho Electricity Company

4.0 Petroleum Fuel

"Petroleum is a thick, flammable, yellow to black mixture of gaseous, liquid and solid hydrocarbons that occurs naturally beneath the earth's surface, can be separated into fractions including natural gas, gasoline, naphtha, kerosene, fuel and lubricating oils, paraffin wax and asphalt and is used as raw material for a wide variety of derivatives products", http://www.thefreedictionary.com/Petroleum-based+fuel.

4.1 Petroleum Fuel Costs

"Crude oil prices have risen dramatically over the last few years, driven by strong global demand, limited spare oil production capacity, and continuing political instability in certain oil producing regions. This is the greatest single factor influencing petroleum prices. Market place forces of supply, demand and competition also have a significant effect on the price of petroleum "(http://www.thepriceoffuel.com/).

Table 5 portrays Petroleum Fuel costs in Maluti per liter for the years 2015 and 2016. In 2015, the highest costs of petroleum fuels were M10.90 (Petrol (Unleaded (UL) and Lead Replacement Petrol (LRP)), M10.55 (Diesel 500ppm), M10.80 (Diesel 50ppm) and M7.50 for Illuminating Paraffin (IP). The least prices were for Petrol and Paraffin observed in February with M8.35 and M6.35 respectively. In 2016, the highest price was observed for Diesel 50ppm (M10.70) while the lowest price was observed for Illuminating paraffin with M5.75.

Table 5: Petroleum Fuel cost in Maluti per liter for the years 2015 and 2016

	UL &LRP		Diesel 500ppm		Diesel 50ppm		Illuminating Paraffin	
Months	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**
January	9.35	9.35	10.10	8.80	10.35	9.05	7.30	6.20
February	8.35	9.40	9.05	8.35	9.05	8.60	6.35	5.75
March	9.25	8.60	9.75	8.40	9.25	8.65	7.05	5.90
April	9.80	9.35	9.90	8.95	9.90	9.20	7.05	6.35
May	9.95	9.60	10.00	9.20	10.25	9.45	7.05	6.30
June	10.55	10.30	10.55	10.20	10.80	10.45	7.50	7.05
July	10.90	10.25	10.55	10.45	10.55	10.70	7.50	7.30
August	10.30	9.25	9.65	9.65	9.90	9.90	6.75	6.65
September	9.60	9.20	9.35	9.30	9.60	9.55	6.40	6.35
October	9.80	9.60	9.95	9.55	10.20	9.80	6.95	6.55
November	9.50	9.95	9.70	10.15	9.95	10.40	6.80	7.00
December	9.50	9.50	9.70	9.60	9.95	9.85	6.80	6.60

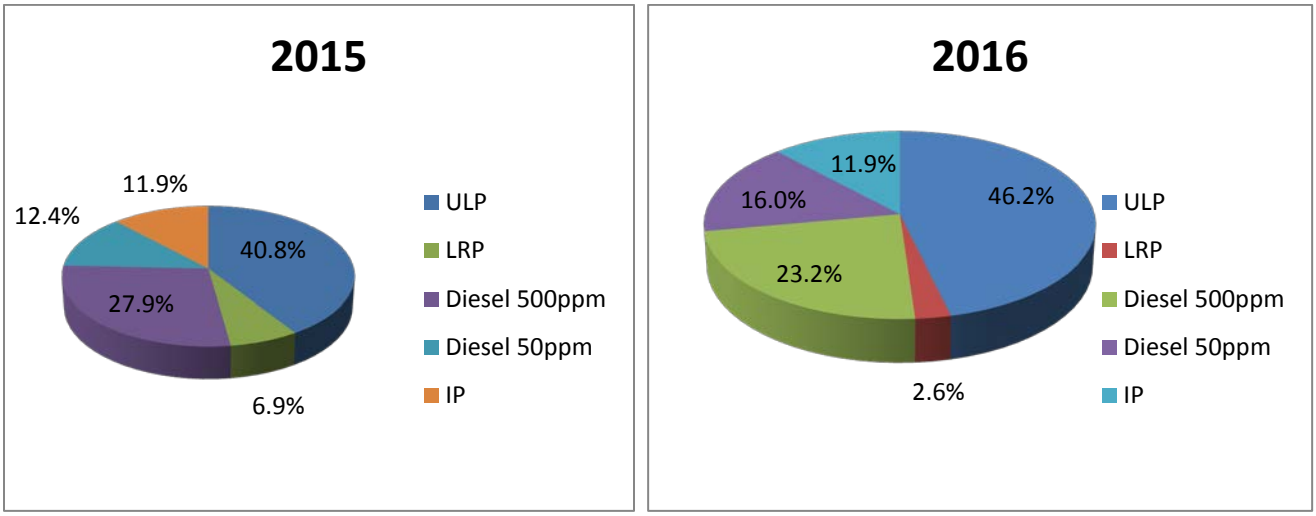
Source: Petroleum Fund

4.2 Petroleum Fuel sales

The Lesotho Petroleum Fund (LPF) is a parastatal that manages fuel retailing.

Figure 6 displays Percentage Distribution of Petroleum Fuel Sales for the Years 2015 and 2016. In 2015, Unleaded Petrol constituted the greatest percentage sales of 40.8 percent followed by Diesel 500ppm with 27.9 percent. Diesel 50ppm and Paraffin constituted a percentage share of 12.4 and 11.9 percent respectively, and LRP was the lowest with 7.0 percent. In 2016 Unleaded Petrol share increased to 46.2 percent and Diesel 50ppm to 16.0 percent. Diesel 500ppm and Lead Replacement Petrol decreased to 23.2 and 2.6 percent respectively.

Figure 6: Percentage Distribution of Petroleum Fuel sales for the Years 2015 and 2016



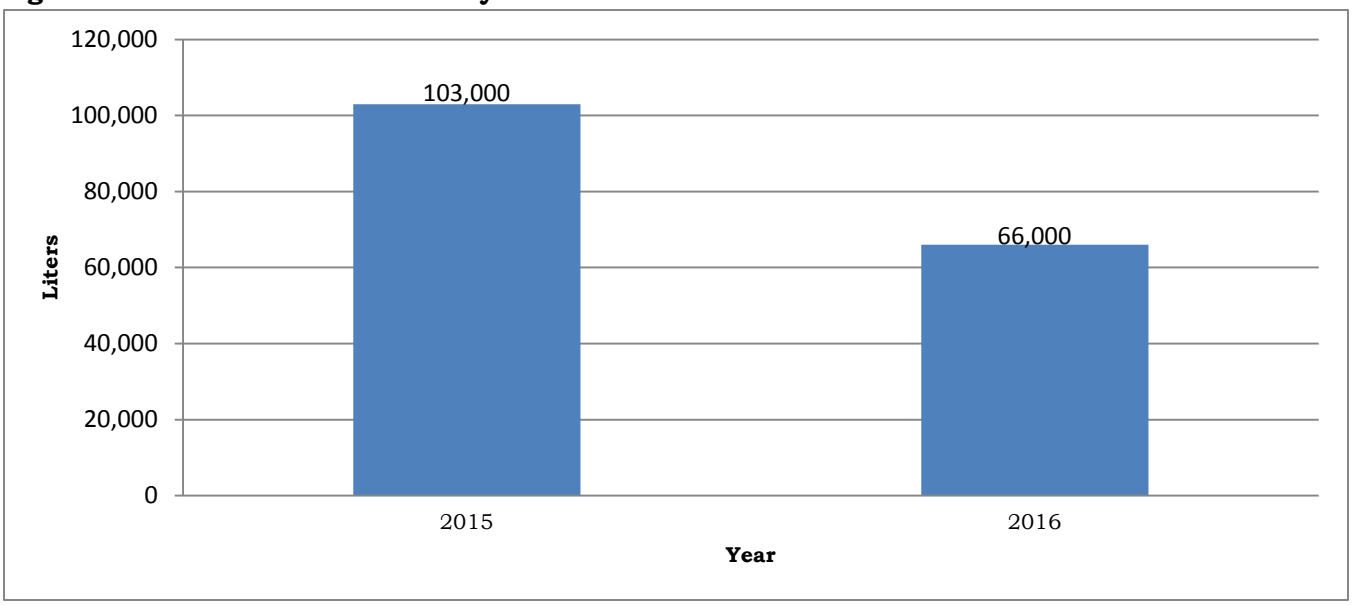
Source: Petroleum Fund

4.3 Aviation Fuel Purchase

"Aviation fuel is a specialized type of petroleum-based fuel used to power aircraft" (*en.wikipedia.org/wiki/Aviation fuel).*

Figure 7 presents aviation fuel purchase by Mission Aviation Fellowship (MAF) for the years 2015 and 2016. The figure displays that more imported fuel was purchased in 2015 (103,000) than in 2016 (66,000). Fuel purchase declined by 35.9 percent from 2015 to 2016.

Figure 7: Aviation Fuel Purchase by MAF in Liters for the Years 2015 and 2016

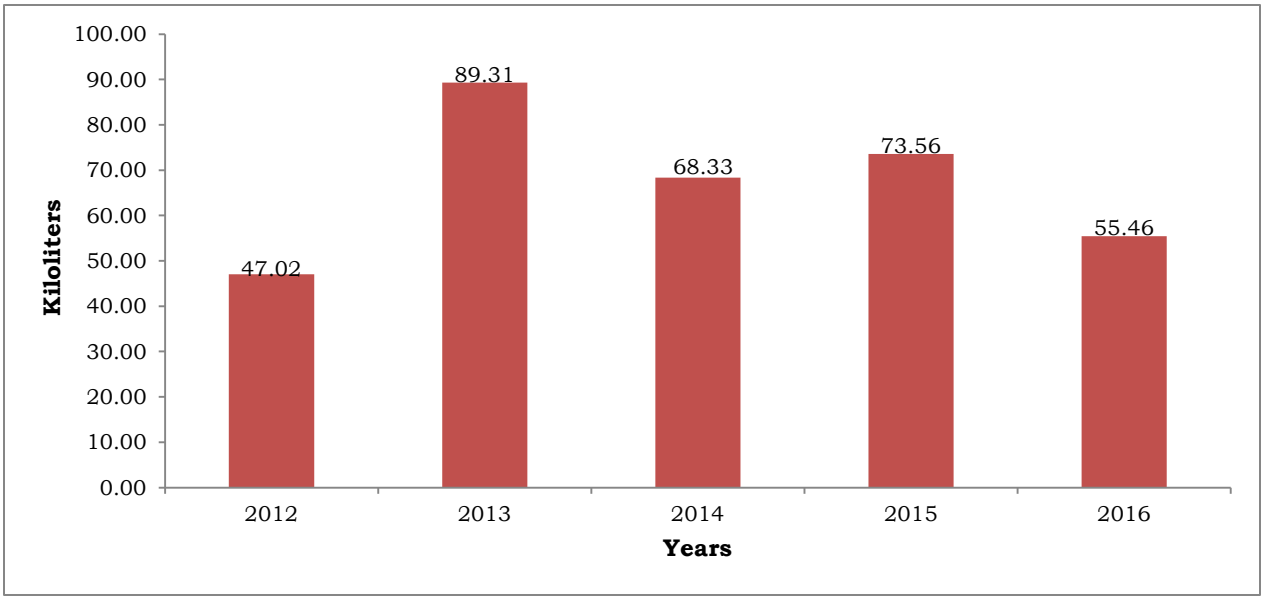


Source: Mission Aviation Fellowship

4.4 Aviation Fuel Consumption

Figure 8 demonstrates Aviation Fuel Consumption by MAF in kiloliters for the years 2012 to 2016. It is examined that MAF consumed more fuel in 2013 (89.31 kiloliters) and consumed less (47.02 kiloliters) in 2012. Aviation fuel consumption decreased by 24.6 percent from 2015 to 2016. In 2016 consumption was 55.46 kiloliters.

Figure 8: Aviation Fuel consumption by MAF in Kiloliters for the years 2012 to 2016



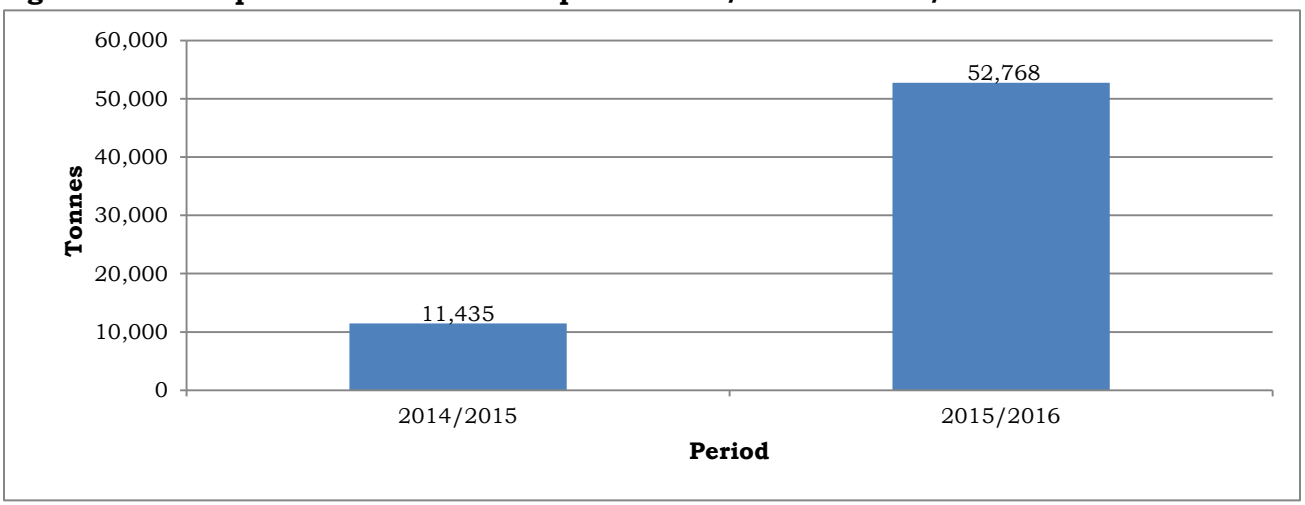
Source: Mission Aviation Fellowship

4.5 Liquefied Petroleum Gas

Liquefied Petroleum Gas (LPG) is a mixture of light gaseous hydrocarbons (ethane, propane, butane, etc) made liquid by pressure and used as fuel.

Figure 9 illustrates LPG imports in tonnes for the period 2014/2015 to 2015/2016. There were more imports in 2015/2016 (52,768 tonnes) than in 2014/2015 (11,435 tonnes). LPG imports increased by 41,333 tonnes from 2014/2015 to 2015/2016.

Figure 9: LPG Imports in tonnes for the period 2014/2015 to 2015/2016



Source: Department of Energy

5.0 Households Uses of Energy sources

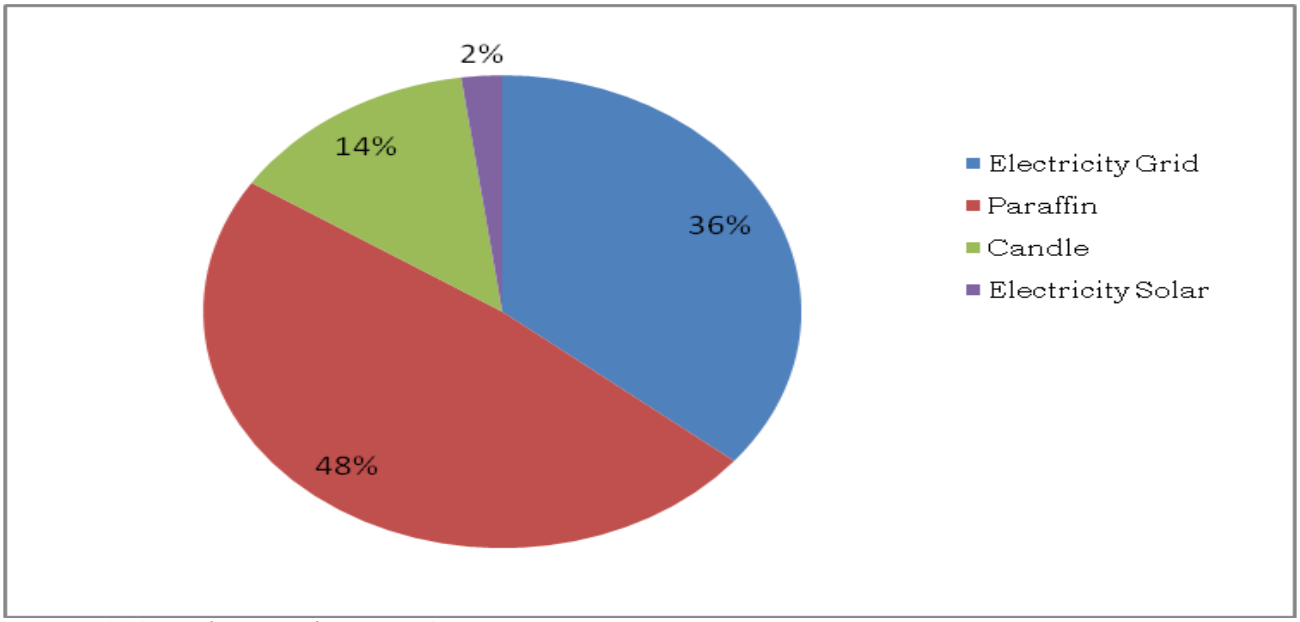
The 2016 Population and Housing Census gathered information on the main source of fuels used for lighting, heating, and cooking. The information on various types of fuels is vital in assessing energy planning decisions, energy conservation programs and in developing marketing strategies. It is also useful in monitoring supply and demand requirements for alternative fuels (Population and Housing Census, 2016).

5.1 Main Energy Source for Lighting

Human have been able to create and control light for thousands of years. The earliest form of lighting was with fire such as burning wood, candles, gas or oil. Candles were made out of beeswax or tallow (animal fat). Oil lamps used plant or animal oil and a wick to burn. Now the most convinient source of artificial light is electric light.

Figure 10 displays percentage share of households by main energy source for lighting for the year 2016. The observation is that the highest share (48.0 percent) of households used Paraffin as their main source for lighting follwed by Electricity Grid with 36.0 percent. Households using Electricity solar have the lowest share of 2.0 percent.

Figure 10: Percentage Share of Households by Main Energy Source for Lighting for the year 2016



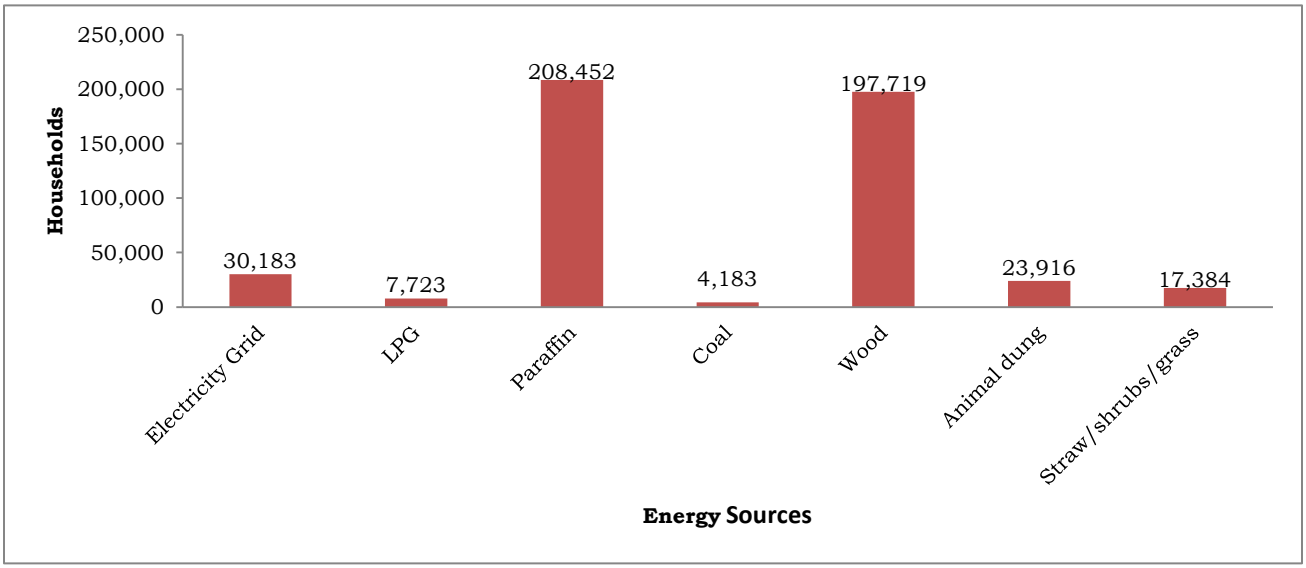
Source: 2016 Population and Housing Census

5.2 Main Energy Source for Heating

While most African countries need fuel primarily for cooking, in Lesotho it is essential for space heating, and is used in large quantities for this purpose by the majority of rural households. Lesotho is a very cold and mountainous country with some of localities residing at altitude of 1,800 meters or more with temperatures often falling below freezing point during winter (Population and Housing Census, 2016).

Figure 11 depicts number of households by type of energy source used for heating for the year 2016. Paraffin and Wood are used by most households for heating with 208,452 and 197,719 respectively. LPG (7,723) and Coal (4,183) are used by a least number of households for this purpose.

Figure 11: Number of Households by Type of Energy source used for Heating for the Year 2016



Source: 2016 Population and Housing Census

5.3 Main Energy Source for Cooking

More than two billion people rely on wood fuel as the main source of fuel for cooking, particularly in households in developing countries. It represents the only available and affordable source of energy (FAO, 2014).

Table 6 indicates number of households by districts and energy sources for cooking for the year 2016. The table shows that majority (94,113) of households used wood for cooking with 17,069 of them residing in Thaba Tseka district. Straw/shrubs/grass was used mostly in Mohale's Hoek with 5,651 households while LPG and Paraffin were used by the same number (177) of households in Mafeteng. Electricity Grid has the least number compared to all other energy sources with 1,000 households.

Table 6: Number of Households by Districts and Energy Sources for Cooking for the Year 2016

	Energy Sources					
Districts	**Electricity Grid**	**LPG**	**Paraffin**	**Wood**	**Animal dung**	**Straw/shrubs/grass**
Botha-Bothe	149	384	399	8,807	292	583
Leribe	240	784	603	13,724	225	244
Berea	62	261	257	7,602	102	317
Maseru	187	667	480	13,423	412	850
Mafeteng	26	177	177	3,544	228	63
Mohale'shoek	18	355	251	4,970	75	5,651
Quthing	95	465	321	8,490	299	134
Qacha's Nek	130	380	271	6,596	794	39
Mokhotlong	68	671	456	9,888	2,967	2,730
Thaba-Tseka	25	748	477	17,069	1,639	4,862
Total	**1,000**	**4,892**	**3,692**	**94,113**	**7,033**	**15,473**

Source: 2016 Population and Housing Census

6.0 Summary

The main generator of electricity is the Lesotho Highlands Development Authority with its 'Muela hydro electric power station and it contributes more to the national grid. In 2015 it generated the highest amount of electricity (532.2 GWh) and generated 507.7 GWh in 2016. Generated electricity from 'Muela increased by 2.3 percent from 2014 to 2015 and then dropped by 4.6 percent in 2016. There is also electricity generation by Mini hydro- power stations providing electricity in Mantsonyane (3,004 MWh) and Semonkong (773.89 MWh) and are isolated from the national grid.

The national grid is supplemented by electricity imports from Eskom and EDM which increased to 372.6 GWh in 2016. When there is excess generated, it is exported to South Africa. Exports recorded 4.4 GWh in 2015 and declined to 2.6 GWh in 2016. Distribution losses were highest in 2016/2017 (153.72 GWh). Prepaid Domestic customers increase every year, (186,658 in 2015/2016 increased to 200,770 in 2016/2017). Unleaded Petrol sales increased from 40.8 percent in 2015 to 46.2 percent in 2016 while LRP decreased from 6.9 percent to 2.6 percent from 2015 to 2016. MAF imported 66,000 liters of aviation fuel and consumed 55.46 kiloliters in 2016. LPG imported in 2015/2016 was 52,768 tonnes. Most households (48.0 percent) used paraffin for lighting followed by electricity with 36.0 percent. Paraffin is also mostly used for space heating (208,452 households). Majority (94,113) of households used wood for cooking.

ANNEX

Table 1: Electricity Generation and sales to LEC in Gigawatt hours

Year	Generation	Sales to LEC
2012	485.4	464.4
2013	515.3	513.0
2014	520.1	517.4
2015	532.2	527.8
2016	507.7	505.1

Source: Lesotho Highlands Development Authority

Table 2: Electricity Purchases by LEC in MWh from 'Muela, Eskom and EDM, 2015/2016 and 2016/2017

Period	Months	Muela	Eskom	EDM	Total Purchases
2015/2016	April-15	43,475.8	13,942.0	6,755.0	64,172.9
	May	49,632.0	12,828.2	8,190.0	70,650.2
	June	51,136.5	20,052.3	6,055.0	77,243.7
	July	52,729.5	19,162.1	7,425.0	79,316.6
	August	50,140.2	17,358.2	6,395.0	73,893.4
	September	43,212.0	16,600.9	8,780.3	68,593.1
	October	43,883.2	13,207.8	6,480.0	63,570.9
	November	42,940.1	13,100.4	4,640.0	60,680.5
	December	44,098.5	9,899.9	3,280.0	57,278.4
	January-16	33,227.7	23,733.2	7,012.0	63,972.9
	February	31,010.9	23,025.4	5,984.0	60,020.3
	March	35,319.1	20,097.8	9,370.0	64,786.9
	Total	**520,805.4**	**203,008.1**	**80,366.3**	**804,179.8**
2016/2017	April-16	42,804.00	16,027.78	9,055.0	67,886.78
	May	48,344.15	18,022.42	9,021.00	75,387.56
	June	48,484.75	19,352.04	15,225.00	83,061.79
	July	51,239.30	18,587.39	15,500.00	85,326.68
	August	50,760.36	16,835.17	15,680.00	83,275.53
	September	43,717.89	17,063.33	10,915.00	71,696.21
	October	45,006.69	34,418.77	9,255.00	88,680.46
	November	40,970.50	20,961.75	5,410.00	67,342.25
	December	34,252.56	28,800.76	3,230.00	66,283.33
	January-17	33,453.53	29,130.86	3,720.00	66,304.39
	February	34,574.36	23,738.96	3,360.00	61,673.32
	March	38,444.59	25,420.85	4,805.00	68,670.44
	Total	**512,052.66**	**268,360.07**	**105,176.00**	**885,588.73**

Source: Lesotho Electricity Company

Table 3: Electricity Purchases in GWh from 'Muela, Eskom and EDM by LEC

GWh	Muela	Eskom	EDM	Total
2012/2013	446.87	254.78	55.14	756.79
2013/2014	515.13	212.36	72.53	800.01
2014/2015	515.15	229.29	41.93	786.36
2015/2016	520.81	203.01	80.37	804.18
2016/2017	512.05	268.36	105.18	885.59

Source: Lesotho Electricity Company

Table 4: Electricity Generated from 'Muela, Semonkong and Mantsonyane in MWh for the Financial Year 2016/2017

Months	Muela	Semonkong	Mantsonyane	Total
16-Apr	42,988.07	68.00	-	43,056.07
May	48,996.47	71.61	-	49,068.08
June	48,720.24	71.22	96.11	48,887.57
July	51,494.89	63.87	6.53	51,565.29
August	50,987.35	76.01	375.41	51,438.77
September	44,191.77	63.25	37.58	44,292.61
October	45,373.15	51.82	-	45,424.97
November	41,153.55	60.96	1,044.26	42,258.76
December	34,252.56	63.57	59.50	34,375.64
17-Jan	33,488.70	62.03	472.24	34,022.97
February	34,757.52	58.06	753.72	35,569.30
March	38,484.11	63.49	158.66	38,706.26
Total	**514,888.37**	**773.89**	**3,004.01**	**518,666.27**

Source: Lesotho Electricity Company

Table 5: Total Electricity Imports and Exports for the period 2012 to 2016

Year	Total Imports (GWh)	Total Exports (GWh)
2012	284.2	21.0
2013	280.8	2.2
2014	335.5	2.8
2015	260.6	4.4
2016	372.6	2.6
Total	**1,533.7**	**33.0**

Source: Lesotho Highlands Development Authority

Table 6: Number of LEC customers by sector for the period 2012/2013 to 2016/2017

Sector	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017
Domestic Consumers	5	5	5	5	5
General Purpose	30	27	26	24	24
Commercial HV	38	39	40	40	41
Commercial LV	166	191	200	199	200
Industrial HV	30	35	40	39	45
Industrial LV	120	137	152	162	172
LHDA	9	10	9	10	9
Prepaid Domestic	130,021	149,034	172,795	186,658	200,770
Pre-Paid General Purpose	8,102	8,652	9,179	9,966	10,821
Street Lights	-	128	130	133	133
Total	**138,521**	**158,258**	**182,576**	**197,236**	**212,220**

Source: Lesotho Electricity Company

Table 7: Consumption of LEC customers in Kilowatt hours for the period 2015/2016 and 2016/2017

Sector	2015/2016	2016/2017
Domestic Consumers	569,626.40	597,104.80
General Purpose	1,820,061.90	2,115,356.60
Commercial HV	82,439,712	78,681,123
Commercial LV	54,955,403.20	57,153,285
Industrial HV	189,227,720	212,839,737
Industrial LV	44,539,014.10	43,407,296
LHDA	7,581,320	7,487,513
Pre-Paid Domestic	232,310,592.80	239,613,195
Pre-Paid General Purpose	77,968,763.90	87,641,699
Street Lights	1,654,179.70	2,336,229.70
Total	**693,066,394**	**731,872,539.10**

Source: Lesotho Electricity Company

Table 8: Distribution losses in Gigawatt hours for the period 2012/2013 to 2016/2017

Period	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017
Gigawatt hours	80.71	92.86	121.77	112.77	153.72

Source: Lesotho Electricity Company

Table 9: Petroleum Fuel cost in Maluti per liter for the years 2015 and 2016

	UL &LRP		Diesel 500ppm		Diesel 50ppm		Illuminating Paraffin	
Months	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**	**2015**	**2016**
January	9.35	9.35	10.10	8.80	10.35	9.05	7.30	6.20
February	8.35	9.40	9.05	8.35	9.05	8.60	6.35	5.75
March	9.25	8.60	9.75	8.40	9.25	8.65	7.05	5.90
April	9.80	9.35	9.90	8.95	9.90	9.20	7.05	6.35
May	9.95	9.60	10.00	9.20	10.25	9.45	7.05	6.30
June	10.55	10.30	10.55	10.20	10.80	10.45	7.50	7.05
July	10.90	10.25	10.55	10.45	10.55	10.70	7.50	7.30
August	10.30	9.25	9.65	9.65	9.90	9.90	6.75	6.65
September	9.60	9.20	9.35	9.30	9.60	9.55	6.40	6.35
October	9.80	9.60	9.95	9.55	10.20	9.80	6.95	6.55
November	9.50	9.95	9.70	10.15	9.95	10.40	6.80	7.00
December	9.50	9.50	9.70	9.60	9.95	9.85	6.80	6.60

Source: Petroleum Fund

Table 10: Petroleum fuel consumption in cubic meters for the years 2015 and 2016

Period	ULP	LRP	Diesel 500ppm	Diesel 50ppm	IP	Monthly Total
January-15	7,329.74	1,789.25	5,628.99	1,619.02	1,371.33	17,738.33
February	6,962.44	1,748.94	5,093.00	2,139.56	1,759.54	17,703.48
March	7,904.24	1,950.64	5,516.98	2,023.25	2,477.38	19,872.49
April	7,979.62	1,730.50	5,659.78	2,436.90	2,374.39	20,181.20
May	7,186.94	1,470.08	5,607.69	2,551.16	2,868.22	19,684.08
June	8,136.68	1,536.64	5,304.53	2,582.05	4,468.56	22,028.44
July	8,150.25	1,546.45	5,774.87	2,613.72	4,011.74	22,097.03
August	8,063.02	1,410.67	5,427.23	2,893.36	3,329.04	21,123.34
September	8,583.04	1,613.17	5,923.59	2,485.07	1,898.56	20,503.44
October	8,454.09	1,207.14	5,928.47	3,027.85	1,438.24	20,055.79
November	8,847.78	825.43	5,796.57	2,588.69	1,370.89	19,429.35
December	11,321.85	1,155.86	5,908.64	3,011.62	1,562.16	22,960.12
Total	**98,919.69**	**16,828.91**	**67,570.35**	**29,972.24**	**28,930.03**	**242,221.22**
January-16	8,881.66	773.16	4,893.50	2,691.12	1,336.28	18,575.72
February	8,646.42	761.35	5,187.82	2,879.08	1,586.72	19,061.39
March	10,161.53	983.75	5,292.32	3,101.38	2,382.70	21,921.68
April	9,354.07	826.93	4,525.84	3,966.11	2,949.21	21,622.16
May	9,552.98	859.45	4,398.46	4,093.10	4,274.30	23,178.29
June	9,428.42	865.83	4,552.02	3,592.62	4,065.06	22,503.94
July	8,858.33	796.98	4,289.98	3,216.80	3,503.27	20,665.35
August	10,561.78	845.38	4,811.51	4,047.29	3,861.38	24,127.34
September	10,224.48	119.54	4,756.25	3,561.40	1,889.28	20,550.95
October	10,699.63	-	6,638.94	3,313.48	1,602.52	22,254.57
November	10,332.61	-	5,546.41	3,623.82	1,700.59	21,203.43
December	12,898.42	-	5,206.87	3,203.58	1,720.01	23,028.89
Total	**119,600.32**	**6,832.37**	**60,099.92**	**41,289.78**	**30,871.33**	**258,693.71**

Source: Petroleum Fund

Table 11: Aviation Fuel Purchase by MAF in Liters for the Years 2015 and 2016

Months	2015	2016
January	33,000	
February		
March		
April		
May		33,000
June	35,000	
July		
August		
September		
October		
November		33,000
December	35,000	
Total	**103,000**	**66,000**

Mission Aviation Fellowship

Table 12: Aviation fuel consumption in kiloliters for the period 2012 to 2016

Period	2012	2013	2014	2015	2016
Kiloliters	47.02	89.31	68.33	73.56	55.46

Source: Mission Aviation Fellowship

Table 13: LPG imports in tonnes for the period 2014/2015 and 2015/2016

Period	LPG (Tonnes)
2014/2015	11,435
2015/2016	52,768
Total	**64,203**

Source: Department of Energy

Table 14: Households Distribution by Main Type of energy source used for Lighting, heating and Cooking by District- 2016 PHC

Energy source	Botha-Bothe	Leribe	Berea	Maseru	Mafeteng	Mohale'shoek	Quthing	Qacha's Nek	Mokhotlong	Thaba-Tseka
Lighting										
No Energy used	7	19	25	43	16	16	7	7	6	19
Electricity Grid	6,954	32,674	29,006	80,669	15,836	8,858	5,555	6,389	2,971	2,962
Electricity Generator	11	29	23	54	3	10	14	16	7	8
Electricity Solar	611	1,401	1,224	2,303	705	1,012	563	343	1,384	2,213
Battery	77	260	165	263	96	119	66	37	139	111
LPG	33	118	122	354	134	42	28	16	22	17
Paraffin	15,282	38,872	27,316	60,035	23,503	26,179	17,061	9,133	16,334	24,499
Candle	7,188	16,929	12,108	14,048	6,260	4,477	3,036	1,632	3,475	3,698
Other	0	3	1	5	2	1	1	1	0	7
Wood	6	8	9	36	8	42	14	10	24	22
Total	30,169	90,313	69,999	157,810	46,563	40,756	26,345	17,584	24,362	33,556
Heating										
Electricity Grid	1,078	4,620	4,808	15,389	1,454	872	598	496	386	482
Electricity Generator	3	9	8	89	1	0	0	2	3	1
Electricity Solar	7	35	18	38	11	3	1	4	7	8
LPG	230	1,680	1,043	3,024	618	391	249	118	148	222
Biogas	79	241	266	759	101	45	24	9	20	42
Paraffin	8,719	35,305	29,744	85,278	16,690	11,922	7,422	4,321	4,168	4,883
Coal	419	1,071	642	1,041	242	197	192	149	82	148
Wood	16,385	37,662	26,734	32,006	16,934	15,275	15,426	9,342	10,519	17,436
Animal dung	777	1,041	514	1,227	5,846	1,242	791	1,611	5,701	5,166
Crop waste	18	82	69	34	171	28	17	3	104	65
Straw/shrubs/grass	503	392	644	1,224	462	8,157	149	37	2,188	3,628
Other	1	9	0	4	0	3	0	1	1	3
No energy used	1,950	8,166	5,509	17,697	4,033	2,621	1,476	1,491	1,035	1,472
Total	**30,169**	**90,313**	**69,999**	**157,810**	**46,563**	**40,756**	**26,345**	**17,584**	**24,362**	**33,556**

Cooking										
Electricity Grid	149	240	62	187	26	18	95	130	68	25
Electricity Generator	1	4	0	67	1	0	2	0	6	6
Electricity Solar	1	2	0	5	0	0	3	0	8	5
LPG	384	784	261	667	177	355	465	380	671	748
Biogas	123	101	42	88	53	34	44	54	116	211
Paraffin	399	603	257	480	177	251	321	271	456	477
Coal	30	70	36	72	7	8	27	24	21	61
Wood	8,807	13,724	7,602	13,423	3,544	4,970	8,490	6,596	9,888	17,069
Animal dung	292	225	102	412	228	75	299	794	2,967	1,639
Crop waste	14	18	6	18	19	7	20	1	62	83
Straw/shrubs/grass	583	244	317	850	63	5,651	134	39	2,730	4,862
Other	1	1	0	0	0	0	0	0	1	1
None	1	0	1	4	0	2	4	0	0	0
Total	**10,785**	**16,016**	**8,686**	**16,273**	**4,295**	**11,371**	**9,904**	**8,289**		**25,187**

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