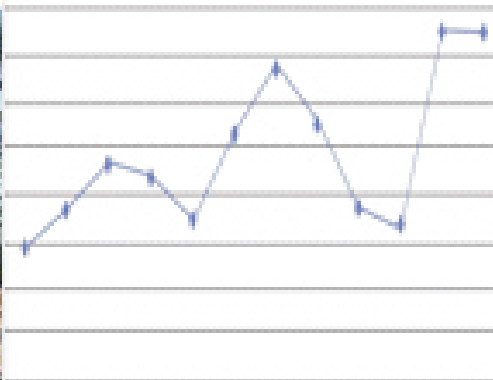


STATISTICAL BULLETIN

2013 and 2014



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OUR MANDATE

Our mandate is to regulate the energy sector in line with the provisions of the Energy Regulation (Amended) Act 2003.

OUR VISION

"A Zambia with universal access to reliable, safe and affordable energy products and services"

OUR MISSION

"To regulate the energy sector in a fair, transparent and predictable manner that safeguards the interests of all stakeholders"

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List of Abbreviations

ERB - Energy Regulation Board

GWh- Giga-watt hour (1,000MWh)

HFO – Heavy Fuel Oil

kV - Kilo Volt (1,000 volts)

kVA - kilo Volt amperes (1,000 amps)

kW – kilo watt

kWh - Kilo Watt Hour (1,000 Wh)

LFO – Light Oil Fuel

LHPC - Lunsemfwa Hydro Power Company Ltd

LPG – Liquefied Petroleum Gas

MW – Mega Watt

MWh - Mega watt hour (1,000 kWh)

NWEC – North Western Energy Corporation Ltd

NFT – Ndola Fuel Terminal

OMC –Oil Marketing Company

REA – Rural Electrification Authority

SAPP - Southern African Power Pool



Langiwe H. Lungu (Ms)
Executive Director

Foreword

This is the first issue of the Energy Regulation Board (ERB) Statistical Bulletin. Going forward, it will be a prominent feature in our effort to continually inform the general public on energy matters. The bulletin is a companion publication to the Energy Sector Report and the ERB annual reports as it provides complementary information source. It supplies the user with the data tables collated by the ERB from the information submitted by market players in the Energy sector. The bulletin provides information and statistical data in the Zambian energy sector.

This data covers areas on Licensing; Petroleum Production and Consumption; Electricity Generation, Transmission, Distribution and Supply; Exports and Imports. Further, the bulletin contains data and accompanying graphics that give detailed technical commentaries, notes and descriptions.

This edition of the bulletin covers the period 2013 and 2014, with snapshots of prior years between 2008 and 2012. In addition to the print version of the bulletin, a PDF file is available on our website.

This bulletin has been made possible by close collaboration between the ERB and allied stakeholders in the energy sector. I would therefore like to thank all the stakeholders who were consulted for their good cooperation in providing the data and information used in the Statistical Bulletin.

It is ERB sincere hope and trust that the general public for whom the bulletin is intended will find it valuable.

Langiwe H. Lungu

Executive Director

October 2014

1.0 LICENSING STATISTICS

The Energy Regulation Board (ERB) issues licenses to undertakings in order for them to conduct business in the energy sector. This is in accordance with the requirements as stipulated in the Energy Regulation Act. By virtue of section 8 of the Energy Regulation Act, Chapter 436 of the Laws of Zambia, it is an offence to operate an energy undertaking except in accordance with the provisions of the Act and under the authority of a license issued by the ERB. The types of licenses issued pertain to both the Electricity and Petroleum subsectors. The specific licenses for each subsector are as follows:

1.1 Electricity sub-sector licensing

During the period the period 2011 to October 2014, ERB issued 23 licenses in the electricity sub-sector and solar as shown in the Table 1.1.

Subsector	Type of License	Number of licenses issued			
		2011	2012	2013	2014
Electricity	Generation	0	0	1	0
	Transmission	0	0	0	0
	Supply	1	0	1	0
	Distribution	1	0	0	0
Solar	Manufacture, Supply , Installation and Maintenance	3	6	8	2
Total		5	6	10	2

Table 1.1: Licenses issued in the Electricity Subsector

During the period under review, the ERB issued twenty three (23) licenses in the electricity sub-sector as shown in the table 1.1. In 2011, a total of five (5) licenses were issued as follows; 1 license for distribution and 1 license for the supply of electricity issued to Lunsemfwa Hydro Power Company. In addition Dev Technology Limited, Samifran Construction Limited and Solar Tech were each issued with solar license.

In 2012 a total of six (6) solar provisional licenses were issued. The licenses were issued to Sunpower Limited, Norwood Enterprises Limited, Midrand Business Systems Limited, Share Mix Limited, Smartnet Networks Limited and Savenda Management Services.

Further in 2013 a total of ten (10) licenses were issued. One (1) standard license was issued for the generation of electricity to the Rural Electrification Authority, one (1) standard license for supply of electricity was issued to ZESCO and 8 solar standard licenses were issued to Midlands Business Systems Limited, Smartnet Networks Limited, Share Mix Limited, Sunpower Limited, Captain Electrical Limited, Electrical Maintenance Lusaka Limited, Savenda Management Limited and Chloride Zambia Limited.

In 2014, two (2) solar provisional licenses were issued to Riders Energy Limited and Reba Industrial Corporation Limited.

1.2 Petroleum Sub-sector licensing

During the period 2011 to 2014, the ERB issued licenses to 211 undertakings in the petroleum sub sector as shown in Table 1.2.

Subsector	Type of License	Number of licenses issued			
		2011	2012	2013	2014
Petroleum Sub-sector	Retail of Petroleum Products	11	16	12	4
	Importation of petroleum feedstock	0	1	0	0
	Importation of petroleum products	2	0	0	0
	Importation and Exportation of petroleum products	0	1	0	0
	Importation of lubricants	12	13	20	0
	Pipeline of transportation of petroleum feedstock	0	0	0	0
	Refining of petroleum feedstock	0	0	0	0
	Transportation of Petroleum products	7	26	47	8
	Terminal storage of petroleum products	0	0	0	0
	License to Distribute, Import & Export Petroleum Products	5	8	21	5
	Distribution of Petroleum Products	1	0	0	0
	Bulk Storage	0	0	0	0
Other	Transportation of Coal	1	0	0	0
Total		39	65	90	17

Table 1.2: Licenses issued in the Petroleum Subsector

2.0 ELECTRICITY SUBSECTOR STATISTICS

2.1 Generation capacity

By August 2014, there were five types of generation systems in Zambia namely; Hydro, Diesel, Heavy Fuel Oil (HFO), Gas Turbine and Solar systems with a combined capacity of 2,398.39 MW. The generation capacity was dominated by hydro with a total installed capacity of 2,257.5 MW (94%) as depicted in Figure 2.1 below.

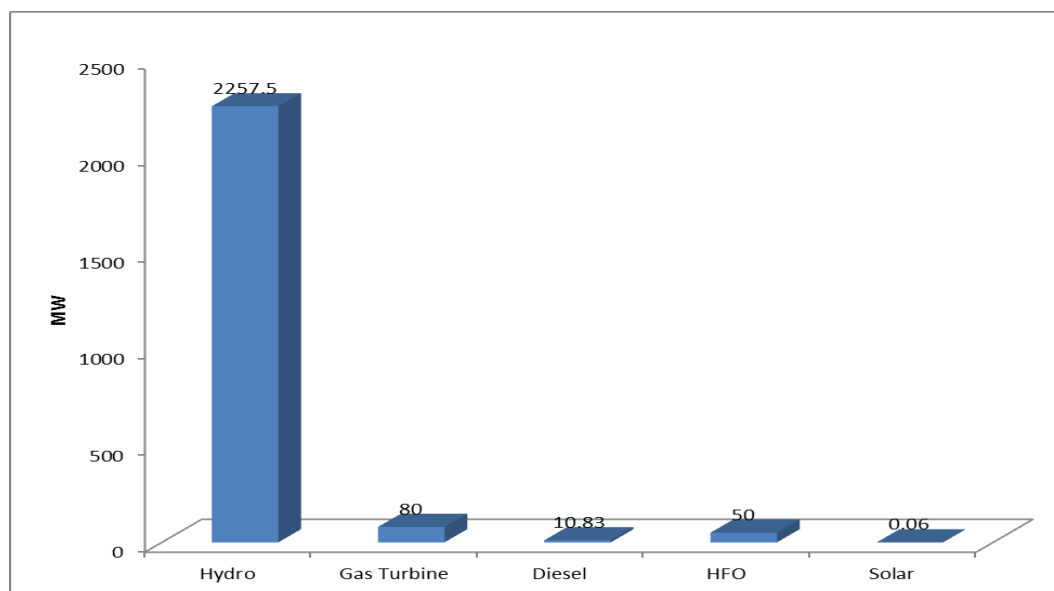


Figure 2.1: Installed Generation Capacity (MW) by Type of System

2.2 Electricity Generation by type and capacity

There were five (5) undertakings generating electricity as August 2014. Table 2.1 shows the generation stations according to the machine types and installed capacity of the licensed undertakings.

Undertaking	Station	Machine	Installed
		Type	Capacity
ZESCO Generation Stations			(MW)
	Kafue Gorge	Hydro	990
	Kariba North	Hydro	1080
	Victoria Falls	Hydro	108
	Lusiwasi	Hydro	12
	Musonda Falls	Hydro	5
	Chishimba Falls	Hydro	6

Table 2.1: Electricity Generation by type and capacity

Table 2.1: Electricity Generation by type and Capacity – Continued.

Undertaking	Station	Machine	Installed
		Type	Capacity
ZESCO	Lunzua River	Hydro	0.75
ZESCO	Shiwang'andu	Hydro	1
	Total Hydro		2,202.75
	DIESEL STATIONS (Isolated system)		
	Mwinilunga	Diesel	1.44
	Kabompo	Diesel	2
	Zambezi	Diesel	1.86
	Mufumbwe	Diesel	0.8
	Luangwa	Diesel	2.6
	Lukulu	Diesel	0.512
	Chama	Diesel	0.263
	Kaputa	Diesel	0.55
	Chavuma	Diesel	0.8
	Total Diesel		10.825
	Sub Total		2,213.58
Zengamina Generation Station	Ikelengi	Hydo	0.75
	Sub Total		0.75
Lusemfwa Generation Stations	Kabwe	Hydo	23.2
		Hydo	30.8
	Sub Total		54
Copperbelt Energy Generation Stations	Bancroft	Gas Turbine	20
	Luano		40
	Luanshya		10
	Mufulira		10
	Sub Total		80
Ndola Energy Generation Stations	Ndola	Heavy Fuel Oil	50
	Sub Total		50
Rural Electrification Authority Generation Stations	Samfya	Solar	0.06
	Sub Total		0.06
	Grand Total Installed capacity		2,398.39

2.3 Annual Total Generation

There was an increase in the total electricity generation capacity from 2011 to 2012 of about 4 MW (0.18%) from 1,949 MW to 1,952 MW. Meanwhile, there was an additional 266 MW installed between 2012 and 2013 mainly from the Kariba North Bank extension project of 210 MW and the new HFO powered plant in Ndola with a generation capacity of 50 MW. Figure 2.2 shows total installed generation capacity for the period 2011 to 2014.

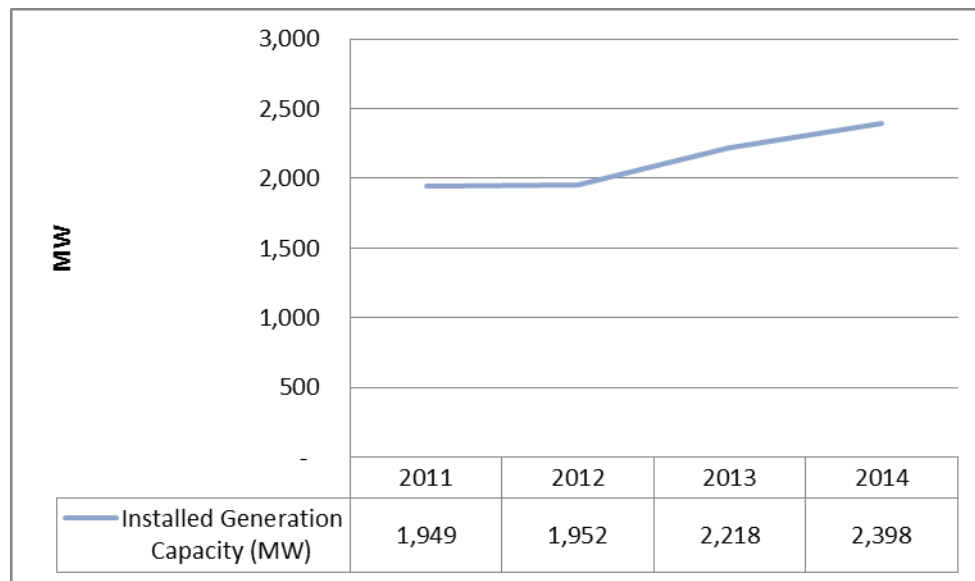


Figure 2.2: Total Installed Generation Capacity, 2011 to 2014

Several other generation projects were under construction and expected to be commissioned by 2019 as shown in figure 2.3.

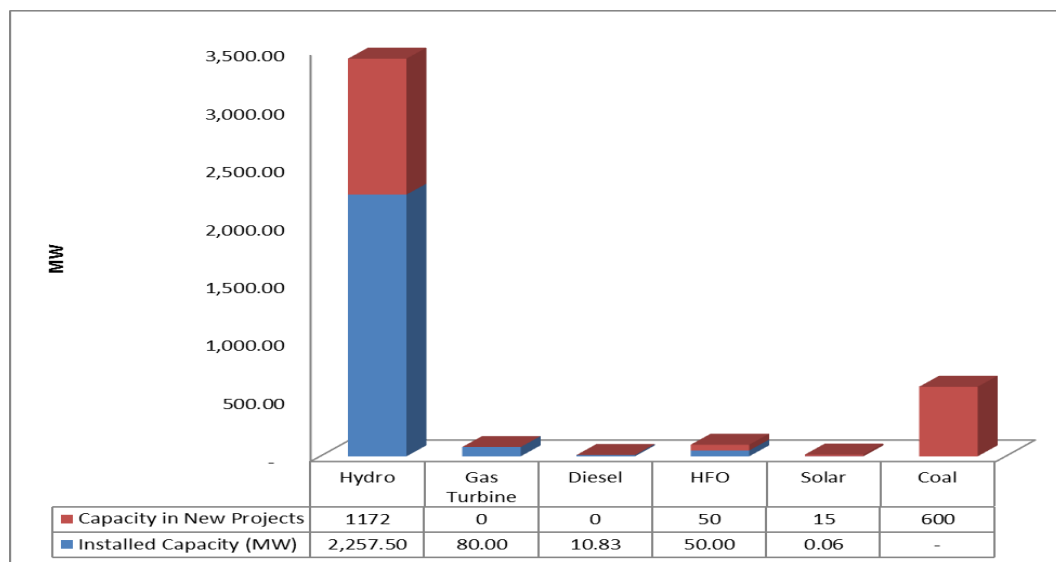


Figure 2.3: Expected generation Capacity by 2019

The new projects are expected to increase the installed generation capacity to 4,235.39 MW by 2019. Of the new projects expected, the majority will still be hydro (1,172MW) followed by Coal (600MW), HFO (50MW) and solar at 15MW. Figure 2.3 shows the current and expected generation by 2019.

2.4 Electricity Exports and Imports

ZESCO engages in cross border trading of electricity through the Southern African Power Pool (SAPP) and other bilateral markets. During the period 2012 to 2013, ZESCO recorded an increase in electricity exports by 11%, from 979.7GWh in 2012 to 1,083.4 GWh in 2013. However, electricity imports dropped by 55% in 2013, from 163GWh in 2012 to 72.9GWh in 2013. Table 2.4 shows the imports and exports for the period 2006 to 2013.

	2006	2007	2008	2009	2010	2011	2012	2013
Exports	552,283	416,720	95,843	589,078	578,040	28,902	979,700	1,083,400
Imports	45,609	274,828	263,706	9,877	12,870	119,691	163,000	72,900

Table 2.2: ZESCO Power Imports and Exports (GWh)

2.5 Customer Numbers

2.5.1 Electricity customers by tariff category

Electricity consumers are split into six (6) categories, for the purpose of pricing, namely; Commercial, large power, Mining, Residential, Services and Small Power. As at end of year 2013 there were a total of 611,302 electricity consumers. The majority of the

customers were residential, accounting for 93% (568,699) of the customer base. The commercial and small power users followed at 5% or (31,514) and 1% (6,448) respectively. The rest of the customer categories make up the remaining 1% (4,641) of the total customer base. Figure 2.4 shows the distribution of customers by tariff category.

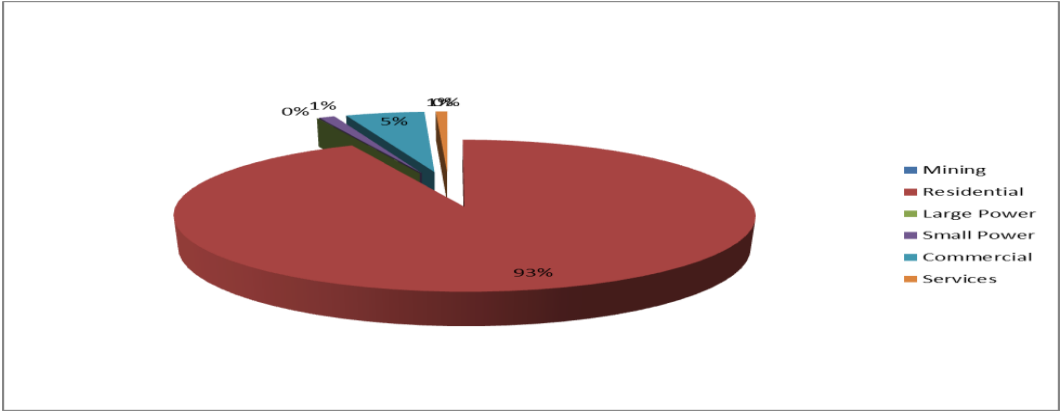


Figure 2.4: Distribution of Customers by Tariff Category

2.6 Electricity Consumption

2.6.1 Consumption by Sector

The major consumer of electricity in Zambia in 2013 was the mining sector with about 55% (5,600,000 MWh) of the total national consumption. Services (including residential customers) consumed about 31% (3,200,000 MWh) while the rest of the sectors shared 15% (1,600,000 MWh) of the national consumption as shown in Figure 2.5.

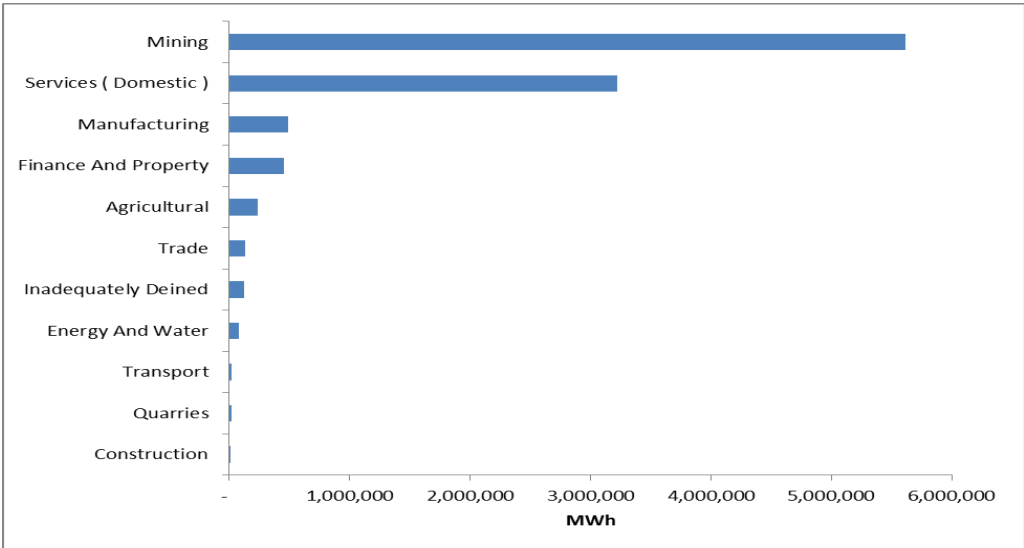


Figure 2.5: Electricity consumption by Sector – 2013

2.7 National Electrification Rate

Over the past 10 years, Zambia has experienced marginal increase in the electrification rates growing from 14.5% in 2004 to 25% in 2013. According to the Rural Electrification Master Plan (REMP,2008), the Government has put up an ambitious plan to increase rural electrification by 51% by 2030. This is contained in the Rural Electrification Authority electrification master plan. The implementation of the plan may see the country scoring higher on the electrification rate. Figure 2.6 shows the electrification rate from 2004 to 2012.

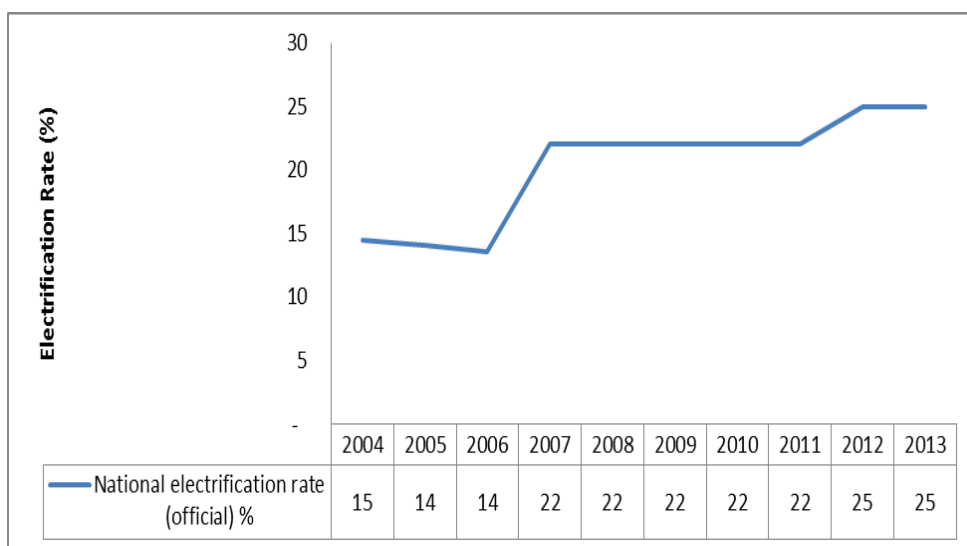


Figure 2.6: National Electrification Rate – 2004 to 2013

As depicted in figure 2.6, there was an increment in rural electrification between 2005 and 2007. Thereafter, the electrification rate stayed constant at 22% from 2007 to 2011 before moving to 25% in 2012. The official electrification rate was still at 25% in 2013.

2.8 Electricity Tariffs and Regional Comparison

2.8.1 Electricity Tariffs

Electricity tariffs are determined by the ERB after application by utility. During the period 2008 to 2014, there has been 5 tariff reviews. The tariffs vary across different customer categories. For tariff purposes, there are four tariff categories, namely; Residential, Commercial, Social Service and Maximum Demand. There are further sub categories in each of the four categories based on the levels of consumption. During the period 2008 to 2014, tariffs within the residential category migrated from 8 ngwee to 15 ngwee for R1 (consumption of upto 100Kwh), 13 ngwee to 31 ngwee for R2 (consumption between 101 and 400 Kwh) and 21 ngwee to 50 ngwee for R3 (consumption above 400 Kwh). The

annual increase for each residential customers during the period 2008 to 2014 was 20% for R1, 26% for R2 and R3. Table 2.5 shows evolution of tariffs approved for all customer categories for the period 2008 to 2014.

CATEGORY		2008	2009	2010	2013	2014
1. RESIDENTIAL (capacity 15 kVA)						
R1 - up-to 100kWh	Energy charge/kWh)	0.08	0.11	0.11	0.15	0.15
R2- 101 & 400 kWh	Energy charge/kWh)	0.13	0.18	0.18	0.25	0.31
R3 - above 400 kWh	Energy charge/kWh)	0.21	0.29	0.29	0.41	0.51
	Fixed Monthly Charge	7.41	10.38	10.38	14.63	18.23
2.COMMERCIAL TARIFFS (capacity 15kVA)						
Commercial	Energy charge/kWh)	0.17	0.21	0.21	0.27	0.31
	Fixed Monthly Charge	29.61	37.6	37.6	47.75	55.09
3.SOCIAL SERVICES						
Schools, Hospital, Orphanages, churches, water pumping & street lighting	Energy charge K/kWh	0.14	0.18	0.18	0.24	0.28
	Fixed Monthly Charge	24.97	31.22	31.22	41.51	47.91
4.MAXIMUM DEMAND TARIFFS						
MD1- Capacity between 16 - 300 kVA	MD charge/kVA/Month	8.07	10.17	10.17	11.69	13.97
	Energy charge /kWh	0.12	0.15	0.15	0.17	0.2
	Fixed Monthly Charge	79.02	99.56	99.56	114.5	136.82
MD2- Capacity 301 to 2,000 Kva	MD charge/kVA/Month	15.09	19.02	19.02	21.87	26.13
	Energy charge /kWh	0.1	0.12	0.12	0.14	0.17
	Fixed Monthly Charge	158.04	199.12	199.12	228.99	273.62
MD3- Capacity 2,001 to 7,500kVA	MD charge/kVA/Month	24.97	35.46	35.46	39.72	41.75
	Energy charge /kWh	0.08	0.11	0.11	0.13	0.14
	Fixed Monthly Charge	346.81	492.47	492.47	551.56	579.74
MD4-Capacity above 7500kVA	MD charge/kVA/Month	25.11	35.66	35.66	39.94	41.98
	Energy charge /kWh	0.07	0.09	0.09	0.1	0.12
	Fixed Monthly Charge	693.62	984.93	984.93	1,103.13	1,159.50

Table 2.3: ERB Approved Tariffs 2008 – 2014

During the period Commercial customers got an annual increment of 15% from 17 ngwee in 2008 to 30 ngwee per Kwh in 2014. On the other hand, social services customers got 19% increment per annum from 14 ngwee in 2008 to 28 ngwee in 2014. The customers under maximum demand (MD) got an increase of 14% per annum on maximum demand charge from K8.07 per kVA per month and 13% per annum on energy charge from 12

ngwee in 2008 to 20 ngwee per Kwh in 2014 for MD1 (consumption 16 to 300 kVA). On average, the MD customers (MD1 to MD4) got an annual increase of 14% on maximum demand charge and 13% per annum on energy charge.

2.8.2 Regional Comparison

Electricity tariffs differ from one country to another due to different factors which include the tariff structures, source of electricity etc. In April 2001, the Southern African Power Pool (SAPP) established the short Term Energy Market (STEM). The SAPP has twelve member Countries represented by their respective electricity Utilities organized through SADC. From January 2004, the SAPP started the development of the competitive electricity market for the SADC region. The new market is in form of a day-ahead market (DAM). As part of information sharing among the various member utilities, SAPP carried out a survey of the obtaining average tariffs in the Member Countries. Figure 2.7 shows how the regional tariffs compared using the SAPP model.

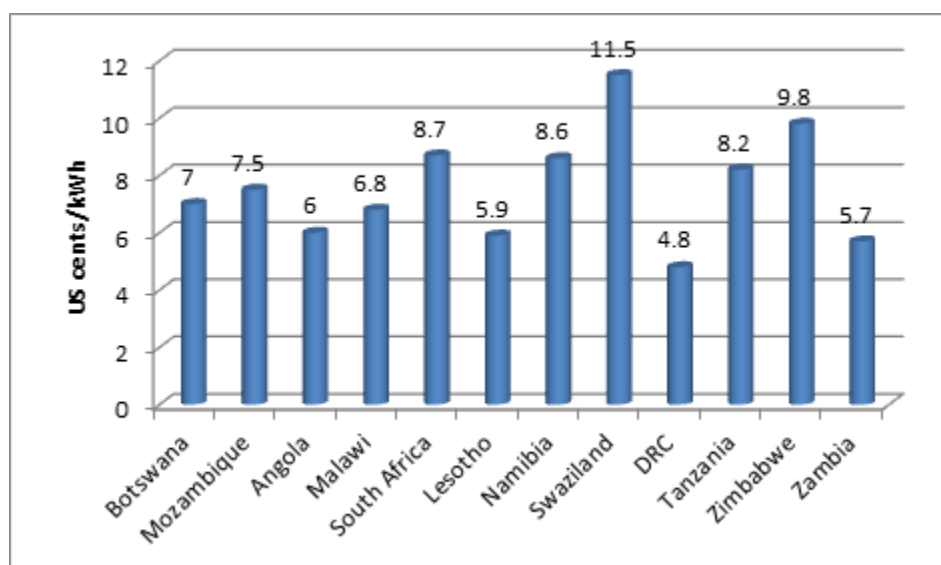


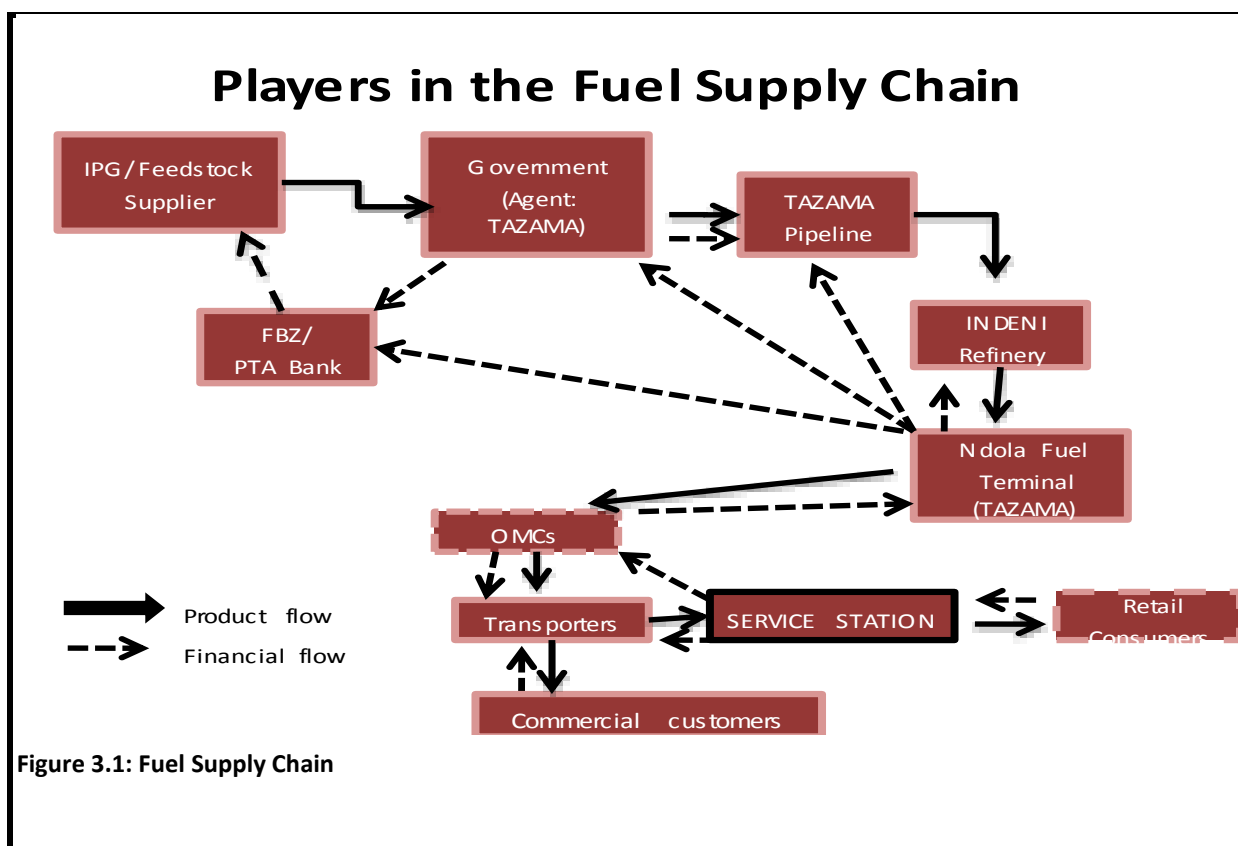
Figure 2.7: Regional average Tariffs

Source: SAPP 2012/2013 annual report.

The analysis showed that Swaziland had the highest average tariffs at USc11.5/kWh followed by Zimbabwe, South Africa and Namibia in that order at USc9.8/kWh, USc 8.7/kWh and US8.6/kWh respectively. The lowest average tariffs were recorded in DR Congo, Zambia, Lesotho and Angola in ascending order. Notably, even though SADC Countries, in 2008 undertook to migrate tariffs to cost reflective levels over a period of 5 year to 2013, none of the Members states have fully migrated tariffs to cost reflective levels for various reasons.

3.0 PETROLEUM SUBSECTOR STATISTICS

The petroleum subsector is one of the key drivers of the economy. The petroleum supply chain involves importation of comingled crude from Dar e salaam through the Tazama pipeline to Ndola at the Indeni refinery before distribution for consumption as illustrated in the figure 3.1. There is also a proportion of Unleaded Petrol and Diesel which is imported by road as finished product.



3.1 Retail Provincial Distribution

The retail consumers of petroleum products are serviced through a network of service stations around the country. There were 275 service stations in the country in 2013 with Lusaka and Copperbelt hosting 66% or (182) of the total number of service stations. Table 3.1 shows the provincial distribution of service stations by province.

Year	Lusaka	Copper belt	Sout hern	Cent ral	East ern	Luap ula	Muchi nga	North Western	North ern	West ern	Total
2011	90	70	23	19	11	8	0	8	8	7	244
2012	90	70	23	19	12	8	0	8	12	7	249
2013	99	83	22	19	14	10	7	7	7	7	275

Table 3.1: Retail service stations

Western, North Western Northern and Muchinga had the lowest number of service stations each with 7 in 2013. Over the period 2011 to 2013, Lusaka and Copperbelt had the highest number of new service stations with the rest of the provinces remaining almost static over the period. Lusaka and Copperbelt had 22 new service stations between 2011 and 2013 while the rest of the provinces had 9 new service stations over the same period. Table 3.1 shows the provincial distribution of service stations by province.

3.2 Petroleum Transportation

Transportation of petroleum products is an important component of the petroleum supply chain in Zambia. Most of the petroleum products are transported inland through roads except in isolated cases where the rail line is used. As at 30th June 2014, there were 441 road tankers licensed to transport petroleum products. The tankers had an average carrying capacity of 35,000 litres which translates into a national tank carrying capacity of 15,435,000 litres. Petroleum products were until 2013 uplifted 100% from Ndola Fuel Terminal (NFT). During the year 2013, the Lusaka depot was opened for uplifts and in 2014, the Mpika depot was also opened. During the year 2013, there were an average of 12 fuel (35 M³) tankers loaded with petrol and diesel per day from Lusaka depot and 73 tankers per day at the Ndola terminal. In 2014, the number of tankers loaded with petrol and diesel per day at the Lusaka depot increased to 21 while that for NFT reduced to 67. Table 3.2 to 3.5 shows the volumes and tankers loaded with petrol & diesel at NFT and Lusaka depot for 2013 and 2014.

Month (2013)	Petrol Loaded		Diesel Loaded		Combined Petrol And Diesel Loaded (Truck/Day)
	Volume In M ³	Average No Trucks/Day	Volume In M ³	Average No Trucks/Day	
Jan	-	-	3,757.48	3	3
Feb	-	-	5,626.92	6	6
Mar	-	-	3,429.78	3	3
Apr	1,127.09	1	1,568.46	1	3
May	2,934.89	3	2,733.04	3	5
Jun	1,753.74	2	500.53	0	2
Jul	6,477.48	6	6,624.13	6	12
Aug	10,735.38	10	10,057.00	9	19
Sep	11,446.76	11	11,617.57	11	22
Oct	10,744.52	10	14,292.23	13	23
Nov	10,721.25	10	13,834.65	13	23
Dec	11,117.39	10	15,381.95	14	24
Grand Total	67,058.50	5	89,423.72	7	12

Table 3.2: Actual Quantities Loaded at Lusaka Fuel Depot in 2013

At the beginning of the 2013, the average combined (Diesel & Petrol) tanker loads at the Lusaka depot was 3 per day and increased to 24 by end of year.

Month (2014)	Petrol Loaded		Diesel Loaded		Combined Petrol And Diesel Loaded (Truck/Day)
	Volume In M ³	Average No Trucks/Day	Volume In M ³	Average No Trucks/Day	
Jan	1,868.04	2	11,939.78	11	13
Feb	4,244.18	4	7,773.71	8	12
Mar	8,404.14	8	12,340.95	11	19
Apr	4,103.96	4	14,972.70	14	18
May	9,488.29	9	15,412.71	14	23
Jun	9,597.52	9	17,290.26	16	26
Jul	10,265.33	9	18,155.03	17	26
Aug	9,813.17	9	19,428.06	18	27
Grand Total	57,784.63	7	117,313.21	14	21

Table 3.3: Actual quantities loaded at Lusaka Fuel Depot in 2014

In 2014, the average combined tanker loads per day was 13 in January and increased steadily to 27 loads per day in August 2014. Under the prevailing shift structure at the Lusaka Depot, the maximum possible tanker loads per day was 30.

Month (2013)	Petrol Loaded		Diesel Loaded		Combined Petrol And Diesel Loaded (Truck/Day)
	Volume In M ³	Average No Trucks/Day	Volume In M ³	Average No Trucks/Day	
January	31,751.62	29	52,577.20	48	78
February	27,048.97	28	38,188.73	39	67
March	30,211.01	28	48,781.49	45	73
April	29,560.82	28	56,493.07	54	82
May	29,238.58	27	57,866.58	53	80
June	26,591.45	25	55,973.94	53	79
July	24,528.27	23	58,180.93	54	76
August	23,177.65	21	58,238.06	54	75
September	22,401.79	21	51,380.58	49	70
October	23,717.14	22	51,139.71	47	69
November	20,960.95	20	46,261.58	44	64
December	23,489.88	22	43,935.37	40	62
Grand Total	312,678.12	24	619,017.13	48	73

Table 3.4: Actual quantities loaded at Ndola Fuel Terminal in 2013

On the other hand, the NFT exhibited a declining trend in terms of loads per day. In January 2013, 78 tankers were loaded per day and reduced to 62 loads per day by December 2013.

Month (2014)	Petrol Loaded		Diesel Loaded		Combined Petrol And Diesel Loaded (Truck/Day)
	Volume In M³	Average No Trucks/Day	Volume In M³	Average No Trucks/Day	
Jan	31,342.42	29	37,575.03	35	64
Feb	26,510.07	27	38,596.73	39	66
Mar	22,988.69	21	40,491.81	37	59
Apr	30,356.47	29	40,236.71	38	67
May	26,146.78	24	48,330.82	45	69
Jun	23,985.83	23	47,399.40	45	68
Jul	26,951.08	25	49,634.53	46	71
Aug	25,731.88	24	50,447.64	46	70
Grand Total	214,013.22	25	352,712.66	41	67

Table 3.5: Actual Quantities Loaded at Ndola Fuel Terminal in 2014

The NFT opened the year 2014 with an average load per day of 64 tankers. Unlike in 2013, where the trend for the year was declining, 2014 showed a growing trend from 64 tankers per day in January to 70 by August.

3.3 Crude Imports

Zambia imports commingled crude oil which comprises Crude, Gas Oil, and Naphta. As at June 2014, the country received 374,517 MT of comingled crude in the following composition; 42% Crude, 45% Gas Oil and 13% Naphta. The amount of crude imported over the years has varied during the period 2010 to 2014¹ as shown in Figure 3.2.

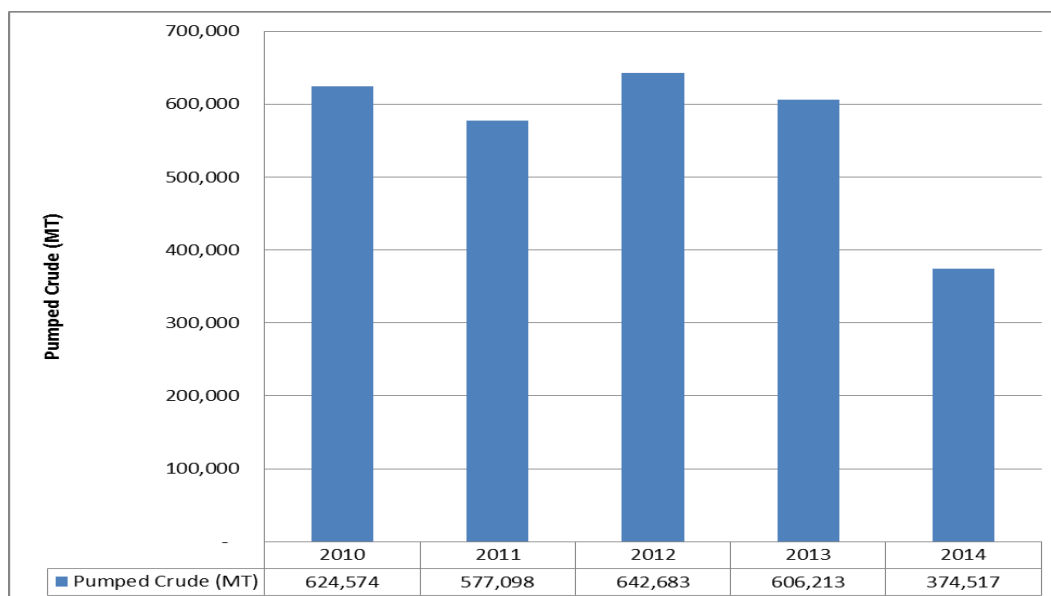


Figure 3.2: Imported Comingled Crude (MT)

The highest imports of crude of 642,883 MT were in 2012 followed by 624,574 in 2010. The lowest imports during the period were in 2011 with a total of 577,098 MT. This was because of the long shutdown of refinery after parts of the refinery were gutted. Similarly, the imports/pumped crude were lower in 2013 than 2012 due to refinery intermittent shutdowns (due to leakages caused by corrosion) in the first quarter of 2013. The total crude to be pumped/imported look set to heat the highest in this period at 374,517 in the middle of the year.

3.4 Consumption

3.4.1 National Consumption by Product

The petroleum products mainly consumed in Zambia are Diesel (low and High Sulphur), Unleaded Petrol, Kerosene and Jet A1. The consumption profiles of the products differ from one sector to the other. In general, more Diesel is consumed in the country compared to the other products. However, particularly, in the retail sector, more of Unleaded Petrol is consumed than the rest of the products. About 60% of the total consumed fuels through retail is Unleaded Petrol and 35% is Diesel. As at August 2014, 444 million litres of diesel were consumed of which 78 million litres

¹ 2014 imports upto June.

was low sulphur. 263 million litres of Unleaded Petrol was consumed while Jet A1 and Kerosene accounted for 36 million and 12 million litres respectively. This translated to a daily average consumption of 1.9 million litres for diesel, 1.1 million litres for unleaded petrol, 50 thousand litres for Kerosene and 150 thousand litres for Jet A1. Figure 3.3 shows the average daily consumption of the petroleum products for the period January to August 2014.

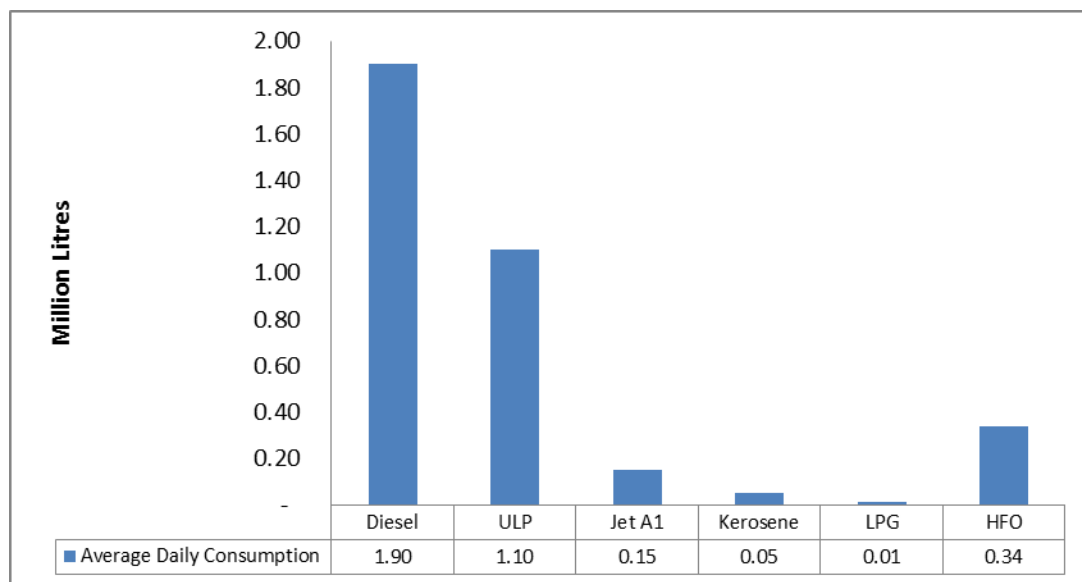


Figure 3.3: Average National Daily Consumption for the period January to August 2014

The average daily consumption for most of the petroleum products except for diesel showed an increasing trend during the years 2011 to 2014. Diesel average consumption was about 2 million litres per day throughout the period. On the other hand, Petrol showed a steady increase (17% per annum) during the period rising from 665, 000 litres per day in 2011 to 1.1 million per day in 2014 representing 61% increase. Petrol is mostly consumed at retail level and therefore the increase could be attributed to the increase in the number of motor vehicles. HFO recorded the highest consumption increase (136%) from 136 MT per day in 2011 to 320 MT per day in 2014. The commissioning of the Ndola Energy HFO powered plant contributed to the increase in HFO consumption. Table 3.6 summarizes the average national daily consumption for petroleum products during the period 2011 to 2014.

Product	Average Daily Consumption			
	2011	2012	2013	2014
Diesel (L)	1,862,484.91	2,178,101.78	2,179,138.33	1,861,633.15
Unleaded Petrol (L)	665,289.63	855,613.60	1,006,772.08	1,073,670.59
Kerosene (L)	68,143	50,236.91	42,296.83	45,637.44
Heavy Oil (KGs)	135,510	164,992.82	139,159.92	320,360.97
Jet A1 (L)	111,620.10	169,441.21	169,907.07	137,620.79
LPG (KGs)	6,641.45	1,801.71	8,278.04	7,306.58

Table 3.6: Evolution of average consumption per day for the period 2011 to 2014

Jet A1 consumption increased from 112,000 litres per day in 2011 to 170,000 in 2013 before slightly dropping to 138,000 litres in 2014. The drop in 2014 could be attributed to the high prices of Jet A1 in Zambia compared to the regional prices. The government has since removed duty on aviation fuel and this will see (by 2015) the final price of Jet A1 lower in Zambia relative to the regional prices. The increasing trend was also observed for LPG² rising by 10% from 6.6 MT per day in 2011 to 7 MT in 2014.

3.5 Provincial Distribution of White Products

Copperbelt and Lusaka have continued to be the leaders in petroleum consumption with a combined share of 63% (523 million litres as at August 2014) of the total national consumption in 2014 while North Western Province has 17% (142 million litres) of national consumption. The high consumption in the three provinces was reflective of high

² 2012 figures for LPG are incomplete as some players did not submit data.

economic activities, specifically driven by mining in Copperbelt and North Western Provinces.

The consumption of fuels has been consistently higher in Lusaka, Copperbelt and North Western province, in that order, during the period 2011 to 2014. During this period, Lusaka province consumed 37% of the total annual national consumption followed by Copperbelt and North Western with 26% and 16% respectively. The rest of the provinces each had less than 6% share of the total annual consumption with Muchinga and Luapula the lowest consumers with 1% each. Figure 3.6 shows average consumption pattern for all the provinces in percentage terms over the period 2011 to 2014.

Year	2011	2012	2013	2014	4 year average
Central	6%	3.5%	4%	5%	5%
Copperbelt	28%	27.1%	24%	27%	27%
Eastern	5%	3.4%	3%	4%	4%
Luapula	1%	1.2%	1%	2%	1%
Lusaka	35%	37.4%	37%	36%	36%
Muchinga		0.4%	1%	1%	1%
North Western	15%	18.2%	19%	17%	17%
Northern	2%	2.0%	2%	2%	2%
Southern	6%	5.2%	6%	5%	6%
Western	2%	1.7%	2%	2%	2%

Table 3.7: Provincial Distribution Of Petroleum Products 2011 - 2014

3.6 OMC Market Share

The distribution of petroleum products in Zambia is done by Oil Marketing Companies (OMCs). The number of ERB licensed OMCs increased from 33 in 2013 to 42 as at August 2014. The OMCs range from small to large based on the market share they control. In 2013, Puma and Total had equal market share of 27%. The next in the hierarchy was Engen with 8% followed by Mount Meru with 7%. Figure 3.4 shows the market share of OMCs in 2013.

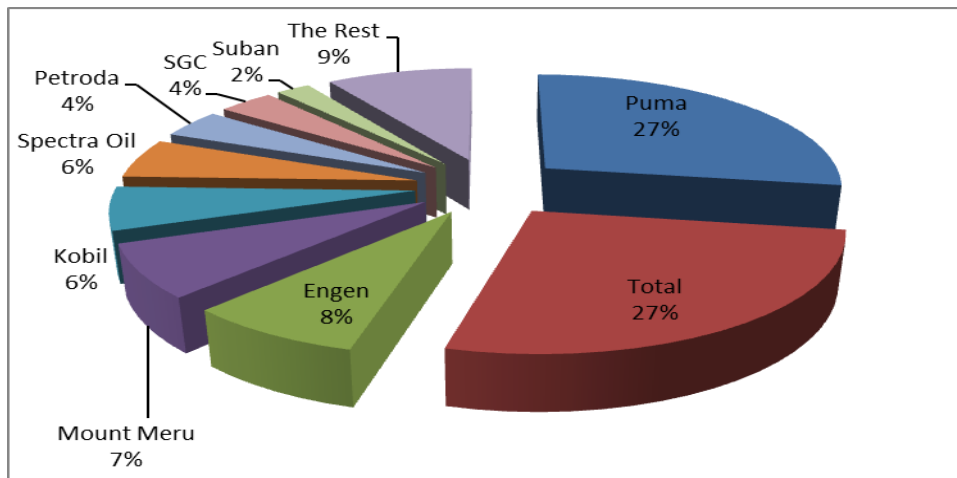


Figure 3.4: OMC petroleum industry market share-2013

Kobil and Spectra had equal share of 6% while Petroda and SGC also had 4% each. This was followed by Suban with 2% market share. The rest of the OMCs with each having less than 2% share had a combined market share of 9%.

Unlike in 2013 where Puma and Total had equal market shares, as August 2014, Puma was the market leader with 26% market share followed by Total with 23%. Puma and Total lost their market shares by 1 percentage point and 4 percentage points respectively. Engen and Mount Meru were the next in the hierarchy with 8% each. Mount Meru increased its market share by 1 percentage point from its 2013 market share. Figure 3.5 shows the market share of OMCs in 2014.

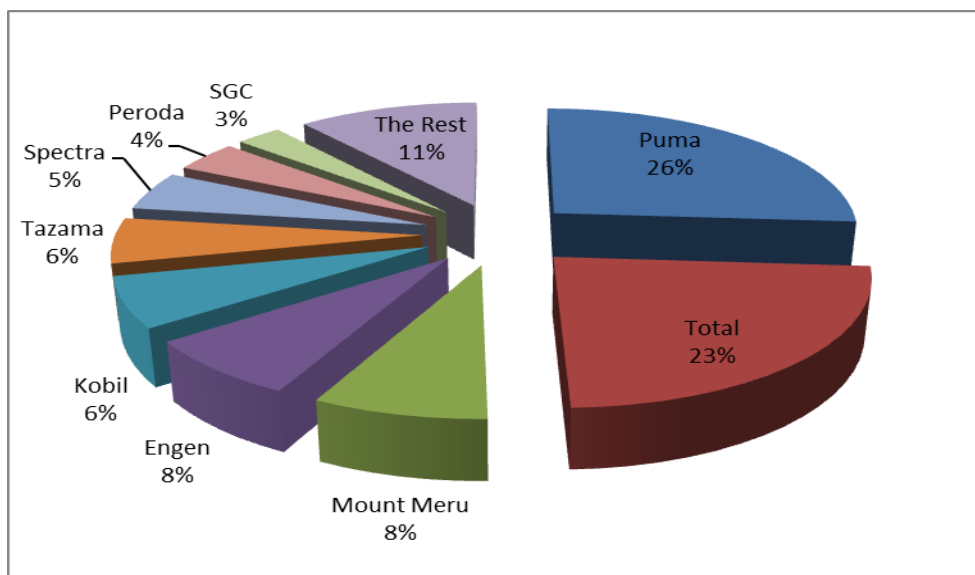


Figure 3.5: OMC petroleum industry market share – 2014

Kobil maintained its share at 6% while a new entrant, TAZAMA also had 6% share. TAZAMA was recently granted a licence to operate as an OMC but only for import of Diesel & Petrol and export of Heavy Fuel Oil and LPG. Spectra dropped its market share to 5% (1 percentage point) while Petroda maintained its 4% share. Further, SGC market share declined by 1 percentage point to 3%. The rest of the OMCs with market shares less than 2% had a combined share of 11% which included Suban whose market share dropped from 2.2% to 1.7%.

3.7 National Fuel Price and Regional Comparison

3.7.1 National Fuel Price

There has been an upward trend in the price of fuel over the period 2000 to 2008. This upward trend positively correlates to the exchange rate fluctuations in the country. However, there was a decline in fuel prices in 2009 and in 2012 but the upward trend continued in 2013 and 2014. There was some price stability between 2008 and 2009 as well as 2011 and 2012. Figure 3.6 depicts the trend in the national fuel prices for petrol, diesel and kerosene for the period 2000 to 2014.

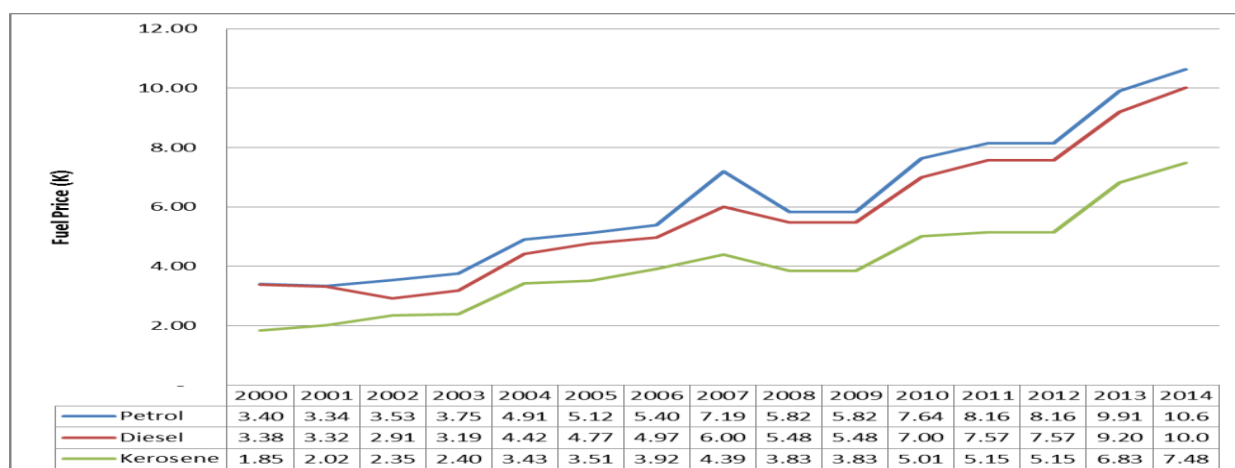


Figure 3.6: National Year-end Fuel Price Trend - 2000 to 2014

During the period 2000 to 2014, the price of petrol has been consistently higher than diesel and kerosene.

3.7.2 Regional Comparison

The regional prices of fuels range between 0.4 to 2.01 US dollars per litre. As at October 2014, Malawi had the highest prices for both diesel and petrol at 2.01 and 1.98 US dollars per litre respectively. The lowest in the region was Angola at 0.4 and 0.6 US dollars per litre for diesel and petrol respectively. The price of petrol was higher than that of diesel in all the countries in the region except for Malawi. Figure 3.7 shows average fuel prices of petrol and diesel as at October 2014.

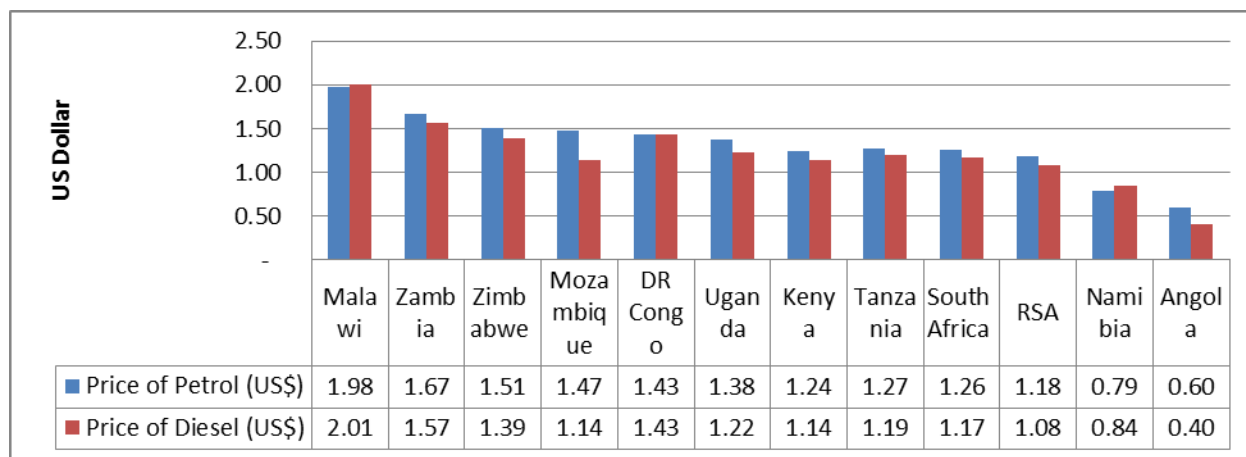


Figure 3.7: October 2014 Fuel Prices (US\$)

Zambia had the second highest prices of fuel out of 11 countries in the region. However, considering the geographical factors such as landlocked status and distance from the nearest port, the prices of fuel in Zambia were comparatively fair.
