



Contact Statistician: Otsile Chelenyane
Industry Statistics Unit
Email: ochelenyane@statsbots.org.bw
Tel: (+267) 367 – 1300; Ext. 333

ELECTRICITY GENERATION AND DISTRIBUTION

Stats Brief, 1st Quarter 2018



STATISTICS BOTSWANA

Published by

STATISTICS BOTSWANA
Private Bag 0024, Gaborone
Tel: 3671300 Fax: 3952201
E-mail: info@statsbots.org.bw
Website: www.statsbots.org.bw

June 2018

Copyright © Statistics Botswana 2018





ELECTRICITY GENERATION AND DISTRIBUTION

Stats Brief, 1st Quarter 2018

Table of Contents

1.0	Preface.....	5
2.0	Summary of Findings of the Index of Electricity Generation (IEG).....	6
	2.1 Electricity Generation.....	7
	2.2 Imported Electricity.....	8
	2.3 Distribution of Electricity.....	9
3.0	Technical Notes.....	15
	3.1 Background.....	15
	3.2 Concepts and formula of the Index of Electricity Generation, Importation and Distribution.....	15
	3.3 Base Year.....	15

List of Tables

Table 1: Selected Key Indicators for Electricity Generation 2013 First Quarter to 2017 Fourth Quarter.....	6
Table 2: Physical Volume of Electricity Generation (MWH): January 2007 – December 2017.....	10
Table 3: Indices of Physical Volume of Electricity Generation: January 2007 – December 2017.....	10
Table 4: Annual Percentage Changes in the Indices of the Physical Volume of Electricity Generation: January 2007 – December 2017.....	11
Table 5: Quarter on Quarter Percentage Changes: 2007 to December 2017.....	11
Table 6: Physical Volume of Imported Electricity (MWH): January 2007 – December 2017.....	12
Table 7: Annual Percentage Changes in the Physical Volume of Imported Electricity: January 2007– December 2017.....	12
Table 8: Physical Volume of Electricity Distribution (MWH): January 2007 – December 2017.....	13
Table 9: Annual Percentage Changes for the Physical Volume of Electricity Distribution: January 2007 – December 2017.....	13
Table 10: Generation of Electricity (MWH) as a Percentage of Distribution 2007–December 2017.....	14

List of Figures

Figure 1: Index of Electricity Generation: 2013 First Quarter to 2017 Fourth Quarter.....	7
Figure 2: Physical Volume of Electricity Generation: 2013 First Quarter to 2017 Fourth Quarter.....	8
Figure 3: Physical Volume of Imported Electricity: 2013 First Quarter to 2017 Fourth Quarter.....	9

1.0 Preface


This statistical brief is intended to apprise on Electricity Generation, Importation and Distribution by presenting Monthly, Quarterly and Yearly Volumes as well as Indices for Electricity Generation in Botswana. Also included are Year-on-Year and Quarter-on-Quarter Percentage Changes in Indices of Electricity Generation from 2008 to the first quarter of 2018. In subsequent sections of this report, emphasis will be given to the first quarter of 2018, compared to the fourth quarter in 2017, and the corresponding quarter in 2017. This report uses 2013 as base year.

Statistics Botswana is mandated to compile data on industrial production in Botswana, hence electricity indices are only confined to electricity generated locally. However, importation and distribution volumes, and their percentage changes will be included as well. This is intended to shed light as to whether Botswana is managing, over time, in generating enough electricity to meet her demand. The data used on this brief is sourced from the Botswana Power Corporation.

The release further shows changes in the volume of electricity generation in a given period against the base year (2013), and hence provides a reflection of the trend in the local electricity sector. Seasonally adjusted estimates of the physical volume of generated and imported electricity are included.

For more information, contact the Directorate of Stakeholder Relations at 3671300. All Statistics Botswana outputs/publications are available on the website at www.statsbots.org.bw and also at Statistics Botswana Information Resource Centre (Head-Office, Gaborone).

I sincerely thank all stakeholders involved in the formulation of this brief, for their continued support, as we strive to better serve users of our services.



Dr Burton Mguni
Statistician General
June 2018

2.0 Summary of Findings of the Index of Electricity Generation (IEG)

All figures in this report are not seasonally adjusted.

Table 1 presents summarized key indicators of Electricity Generation for the current quarter (first quarter of 2018) and prior quarters since 2013. During the first quarter of 2018, the Index of Electricity Generation (**IEG**) stood at **162.3**, reflecting a decrease of 2.3 percent compared to 166.1 recorded during the same period in 2017. The quarter-on-quarter comparison shows a decrease of 9.4 percent from the index of 179.1 during the last quarter of 2017 to the current index of 162.3.

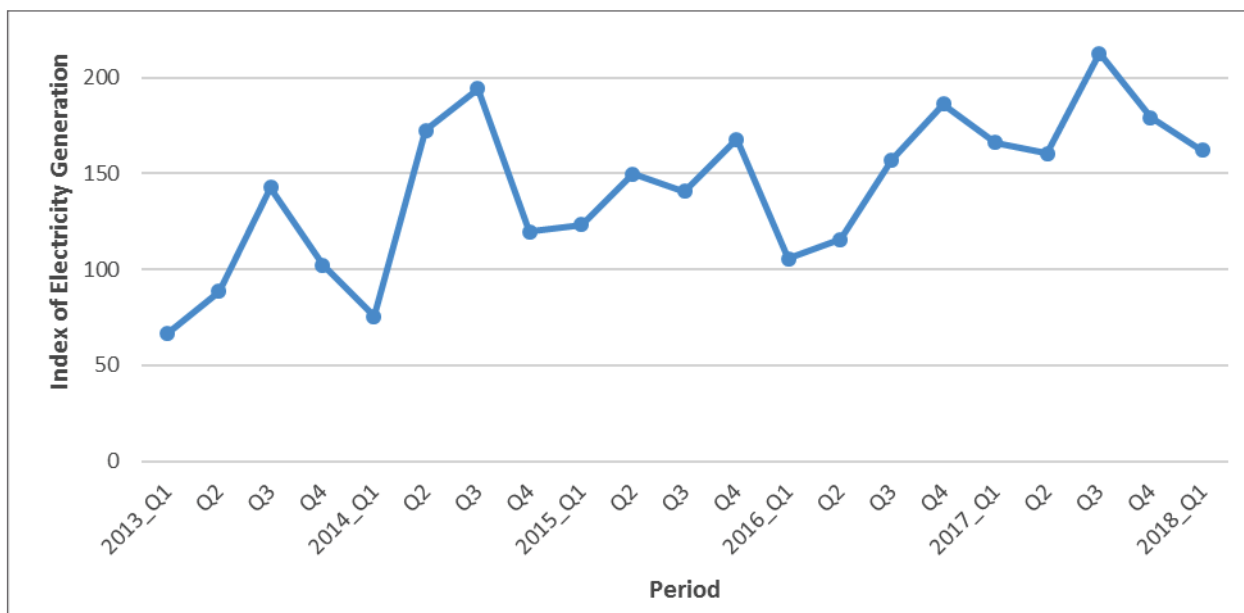
Table 1: Selected Key Indicators for Electricity Generation 2013 First Quarter to 2018 First Quarter

Period	Index of the Physical Volume of Electricity Generation	Year-on-Year Percentage Change	Quarter-on-Quarter Percentage Change
2013_Q1	66.5	151.4	0.0
Q2	88.5	202.8	33.1
Q3	142.7	216.7	61.3
Q4	102.3	53.8	(28.3)
2014_Q1	75.5	13.4	(26.2)
Q2	172.6	95.1	128.6
Q3	194.2	36.1	12.6
Q4	119.6	16.9	(38.4)
2015_Q1	123.4	63.5	3.2
Q2	149.9	(13.2)	21.4
Q3	140.8	(27.5)	(6.0)
Q4	167.8	40.2	19.2
2016_Q1	105.5	(14.5)	(37.1)
Q2	115.7	(22.8)	9.7
Q3	157.3	11.7	36.0
Q4	186.3	11.1	18.4
2017_Q1	166.1	57.4	(10.8)
Q2	160.6	38.8	(3.4)
Q3	212.6	35.2	32.4
Q4	179.1	(3.9)	(15.8)
2018_Q1	162.3	(2.3)	(9.4)

Note: 1. () Indicates negative figures

Figure 1 below presents the trend of the Index of Electricity Generation from the first quarter of 2013 to first quarter of 2018. Although the trend fluctuates, it shows that local electricity generation has been growing steadily from the first quarter of 2013 to the quarter under review.

Figure 1: Index of Electricity Generation: 2013 First Quarter to 2018 First Quarter



2.1 Electricity Generation

This Sub-Section discusses the physical volume of electricity generated locally as presented in **Table 2**. The table forms the basis for computation of indices of electricity generation as presented in **Table 3**. Year-on-year and Quarter-on-quarter percentage changes in the volume of electricity generated are presented in **Table 4** and **Table 5**, covering the period 2008 to 2018.

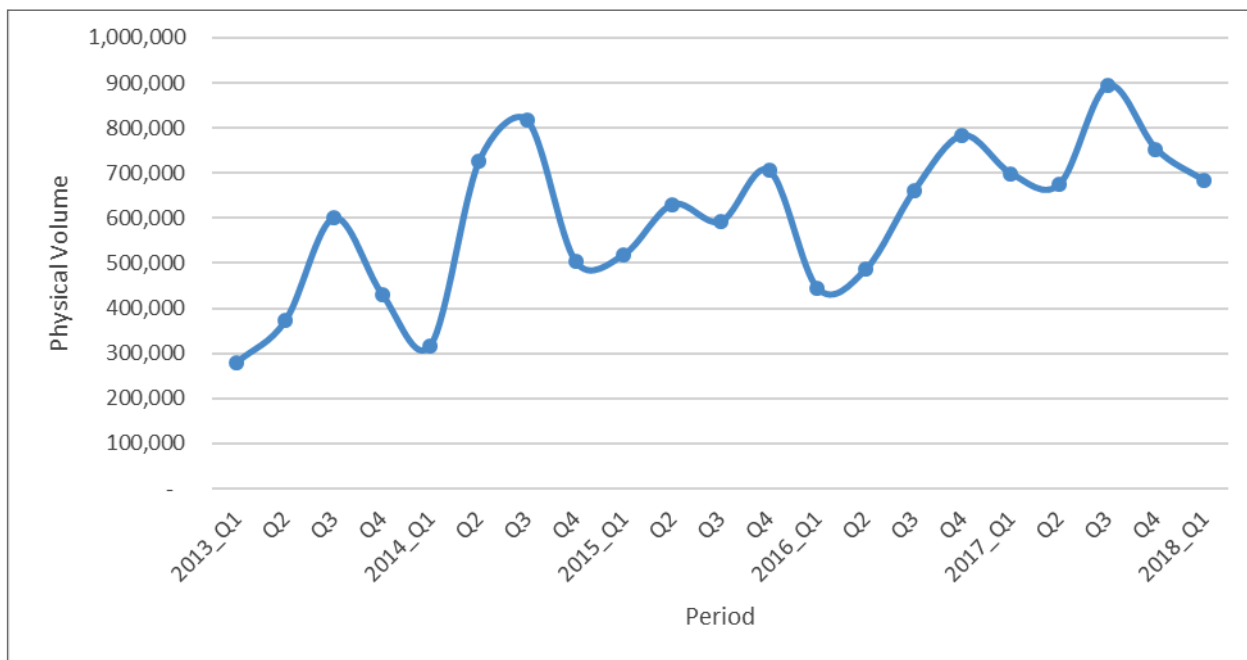
The Year-on-year comparison of generated electricity shows a decrease of 2.3 percent (16,071 MWH), from 698,451 MWH during the first quarter of 2017 to 682,380 MWH during the current quarter.

Considering the quarter-on-quarter perspective, the physical volume of generated electricity during the first quarter of 2018 shows a decrease of 9.4 percent (70,497 MWH) compared to the generation of 752,877 MWH during the fourth quarter of 2017 (**Table 2**). The decreases were mainly on account of operational challenges realized at the Morupule B Power Station.

Although experiencing operational challenges during the first quarter of 2018, Morupule B Power Station accounted for 98.1 percent of electricity generated locally, followed by Morupule A at 1.4 percent and Matshelagabedi Emergency Power Plant at 0.5 percent. The Orapa Emergency Power plant was not in operation during the period under review.

Figure 2 gives the graphical presentation of the physical volume of electricity generation from the first quarter of 2013 to the first quarter of 2018. It can be observed from this graph that even though there are fluctuations in electricity generation, in general it the trend shows a steady increase.

Figure 2: Physical Volume of Generated Electricity (MWH): 2013 First Quarter to 2018 First Quarter



2.2 Imported Electricity

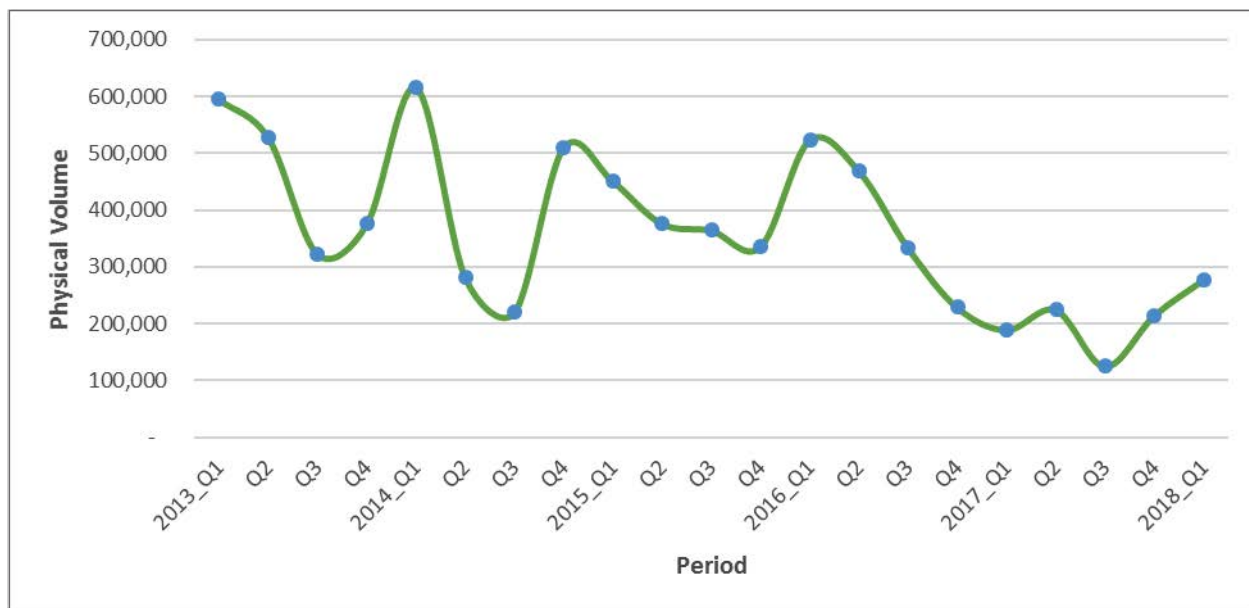
The discussions in this section are based on **Table 6** and **Table 7** as well as **Figure 3**.

During the first quarter of 2018, the physical volume of imported electricity increased by 46.7 percent (88,218 MWH), from 189,052 MWH during the first quarter of 2017 to 277,270 MWH during the first quarter of 2018. This increase is attributable to the need to supplement local production to meet domestic needs during the period under review.

Compared to the previous quarter, imported electricity during the first quarter of 2018 shows an increase of 29.5 percent (63,135 MWH), from 214,135 MWH during the fourth quarter of 2017 to 277,270 MWH during the period under review.

Figure 3 shows that even though there are fluctuations in the physical volume of electricity imported, in general importation was steadily decreasing during the period displayed in the graph. However, whenever there are operational challenges leading to reduction in production, importation is increased to supplement local production so that distribution is not adversely affected. This is evident in increased importation during the last quarter of 2017 and the first quarter of 2018.

Figure 3: Physical Volume of Imported Electricity (MWH): 2013 First Quarter to 2018 First Quarter



Botswana imported 28.9 percent (277,270 MWH) of total electricity distributed during the period under review. Southern African Power Pool, Eskom and Namibia Power Corporation are the main sources of imported electricity at 85.2, 12.4 and 2.5 percent respectively.

2.3 Distribution of Electricity

Tables 8, 9 and 10 form the basis for discussion under this subsection.

Table 8 shows the physical volume of electricity distributed from 2008 to the first quarter of 2018 while **Table 9** presents annual percentage changes in the volume of electricity distributed from 2008 to 2018 first quarter. These tables can also be used as guidance with regard to whether electricity distributed is improving, thereby addressing electricity shortages.

Comparison of electricity distributed during the reference period and the first quarter of 2017 depicts an increase of 8.1 percent (72,147 MWH), from 887,503 MWH during the first quarter of 2017 to 959,650 MWH during the current quarter.

The quarter-on-quarter comparison of distributed electricity gives a decrease of 0.8 percent (7,362 MWH), from 967,012 MWH during the fourth quarter of 2017 to 959,650 MWH during the quarter under review.

Electricity generation given as a percentage of electricity distributed is of paramount importance in assessing whether local generation is improving overtime to reduce reliance on imported electricity. This information is displayed in **Table 10**.

It can be observed from **Table 10** that electricity generated locally contributed 71.1 percent to electricity distributed during the first quarter of 2018, compared to a contribution of 78.7 percent during the same period in 2017. This shows a decrease of 7.6 percentage points in the contribution of electricity generated locally to electricity distributed during the two periods.

On the other hand, the quarter-on-quarter comparison shows that the contribution of electricity generated to electricity distributed during the current quarter decreased by 6.8 percentage points compared to the 77.9 percent contribution of locally generated electricity during the fourth quarter of 2017. The local power utility did not utilize its emergency diesel-fuelled Orapa Turbine Power Plant during the period under review, moreover, Morupule A Power Station accounted for only 1.4 percent (9,829 MWH) of electricity generated.

Table 2: Physical Volume of Electricity Generation (MWH): January 2008 – March 2018

Period	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Jan	53,926	33,922	44,442	39,195	26,574	110,960	137,802	158,907	206,381	245,598	209,333
Feb	49,732	37,890	38,641	32,847	16,938	80,410	77,067	180,520	127,975	216,264	227,955
Mar	51,072	46,413	55,401	20,079	67,761	88,358	102,377	179,400	109,272	236,589	245,092
Apr	49,313	38,987	40,872	29,593	34,069	94,011	151,675	195,568	112,765	195,073	-
May	61,558	49,464	41,943	15,762	39,826	140,454	252,235	206,905	179,837	205,705	-
Jun	58,334	20,132	30,676	23,045	48,928	137,414	321,453	227,503	193,586	273,639	-
Jul	54,588	38,103	33,156	27,814	81,013	158,120	318,627	240,314	213,841	311,655	-
Aug	47,278	48,795	39,594	24,536	11,205	223,420	296,036	177,052	219,402	315,552	-
Sep	39,890	36,522	35,177	21,063	97,177	218,222	201,802	174,617	228,002	266,623	-
Oct	42,689	32,361	37,746	27,166	77,236	32,183	71,243	301,913	299,002	234,090	-
Nov	40,367	26,443	20,894	23,044	113,384	203,228	244,723	213,798	213,303	296,547	-
Dec	38,538	34,885	38,430	19,231	89,101	194,717	186,915	189,490	269,893	222,240	-
Q1	154,730	118,225	138,485	92,120	111,274	279,728	317,245	518,828	443,628	698,451	682,380
Q2	169,206	108,584	113,491	68,400	122,823	371,879	725,363	629,976	486,188	675,047	-
Q3	141,756	123,420	107,927	73,413	189,395	599,762	816,465	591,983	661,245	893,831	-
Q4	121,594	93,689	97,070	69,441	279,721	430,128	502,881	705,201	783,141	752,887	-
TOTAL	587,286	443,918	456,972	303,374	703,213	1,681,497	2,361,954	2,445,988	2,374,202	3,020,206	652,380

Note:

1. – Indicates that data is not available
2. 2018* Data is based on Quarter 1 only

Table 3: Indices of Physical Volume of Electricity Generation: January 2008 – March 2018

Period	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Jan	38.5	24.2	31.7	28.0	19.0	79.2	98.3	113.4	147.3	175.3	149.4
Feb	35.5	27.0	27.6	23.4	12.1	57.4	55.0	128.8	91.3	154.3	162.7
Mar	36.4	33.1	39.5	14.3	48.4	63.1	73.1	128.0	78.0	168.8	174.9
Apr	35.2	27.8	29.2	21.1	24.3	67.1	108.2	139.6	80.5	139.7	-
May	43.9	35.3	29.9	11.2	28.4	100.2	180.0	147.7	128.3	146.8	-
Jun	41.6	14.4	21.9	16.4	34.9	98.1	229.4	162.4	138.2	195.3	-
Jul	39.0	27.2	23.7	19.8	57.8	112.8	227.4	171.5	152.6	222.4	-
Aug	33.7	34.8	28.3	17.5	8.0	159.4	211.3	126.4	156.6	225.2	-
Sep	28.5	26.1	25.1	15.0	69.4	155.7	144.0	124.6	162.7	190.3	-
Oct	30.5	23.1	26.9	19.4	55.1	23.0	50.8	215.5	214.1	167.1	-
Nov	28.8	18.9	14.9	16.4	80.9	145.0	174.6	152.6	152.2	211.6	-
Dec	27.5	24.9	27.4	13.7	63.6	139.0	133.4	135.2	192.6	158.6	-
Q1	36.8	28.1	32.9	21.9	26.5	66.5	75.5	123.4	105.5	166.1	162.3
Q2	40.3	25.8	27.0	16.3	29.2	88.5	172.6	149.9	115.7	160.6	-
Q3	33.7	29.4	25.7	17.5	45.1	142.7	194.2	140.8	157.3	212.6	-
Q4	28.9	22.3	23.1	16.5	66.5	102.3	119.6	167.8	186.3	179.1	-
Year	34.9	26.4	27.2	18.0	41.8	100.0	140.5	145.5	141.2	179.6	-

1. – Indicates that data is not available
2. 2018* Data is based on Quarter 1 only

**Table 4: Annual Percentage Changes in the Indices of the Physical Volume of Electricity Generation:
January 2008 – March 2018**

Period	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Jan	(4.2)	(37.1)	31.0	(11.8)	(32.2)	317.5	24.2	15.3	29.9	19.0	(14.8)
Feb	(11.7)	(23.8)	2.0	(15.0)	(48.4)	374.7	(4.2)	134.2	(29.1)	69.0	5.4
Mar	(11.2)	(9.1)	19.4	(63.8)	237.5	30.4	15.9	75.2	(39.1)	116.5	3.6
Apr	(12.1)	(20.9)	4.8	(27.6)	15.1	175.9	61.3	28.9	(42.3)	73.5	-
May	24.7	(19.6)	(15.2)	(62.4)	152.7	252.7	79.6	(18.0)	(13.1)	14.4	-
Jun	18.2	(65.5)	52.4	(24.9)	112.3	180.9	133.9	(29.2)	(14.9)	41.4	-
Jul	(10.9)	(30.2)	(13.0)	(16.1)	191.3	95.2	101.5	(24.6)	(11.0)	45.7	-
Aug	(24.4)	3.2	(18.9)	(38.0)	(54.3)	1,893.9	32.5	(40.2)	23.9	43.8	-
Sep	(23.6)	(8.4)	(3.7)	(40.1)	361.4	124.6	(7.5)	(13.5)	30.6	16.9	-
Oct	3.7	(24.2)	16.6	(28.0)	184.3	(58.3)	121.4	323.8	(0.7)	(22.0)	-
Nov	4.8	(34.5)	(21.0)	10.3	392.0	79.2	20.4	(12.6)	(0.2)	39.0	-
Dec	(12.5)	(9.5)	10.2	(50.0)	363.3	118.5	(4.0)	1.4	42.4	(17.7)	-
Q1	(9.0)	(23.6)	17.1	(33.5)	20.8	151.4	13.4	63.5	(14.5)	57.4	(2.3)
Q2	9.3	(35.8)	4.5	(39.7)	79.6	202.8	95.1	(13.2)	(22.8)	38.8	-
Q3	(19.5)	(12.9)	(12.6)	(32.0)	158.0	216.7	2.5	(27.5)	11.7	35.2	-
Q4	(1.7)	(22.9)	3.6	(28.5)	302.8	53.8	16.9	40.2	11.1	(3.9)	-
TOTAL	(6.0)	(24.4)	2.9	(33.6)	131.8	139.1	40.5	3.6	(2.9)	27.2	-

Note:

1. () Denotes negative numbers
2. - Indicates that data is not available
3. 2018* Data is based on Quarter 1 only

Table 5: Quarter-on-Quarter Percentage Changes: 2008 – March 2018

Period	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Q1	25.1	(2.8)	47.8	(5.1)	60.2	0.0	(26.2)	3.2	(37.1)	(10.8)	(9.4)
Q2	9.4	(8.2)	(18.0)	(25.7)	10.4	32.9	128.6	21.4	9.7	(3.4)	-
Q3	(16.4)	14.0	(4.8)	7.3	54.2	61.3	12.6	(6.0)	36.0	32.4	-
Q4	(14.2)	(24.1)	(10.1)	(5.4)	47.7	(28.3)	(38.4)	19.1	18.4	(15.8)	-

Note:

1. () Denotes negative numbers
2. - Indicates that data is not available
3. 2018* Data is based on Quarter 1 only

Table 6: Physical Volume of Imported Electricity MWH: January 2008 – March 2018

Period	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Jan	210,395	201,994	236,110	243,795	272,338	193,786	192,251	184,564	140,172	57,679	124,148
Feb	213,161	188,165	219,836	229,027	274,079	185,022	216,031	113,430	166,303	56,951	77,257
Mar	227,289	203,111	250,756	269,723	249,777	216,621	207,923	153,098	217,261	74,422	75,865
Apr	209,664	205,743	234,466	256,694	253,390	206,965	162,767	129,605	196,075	88,783	-
May	214,604	223,094	280,917	277,975	271,135	169,159	85,246	129,487	138,677	92,379	-
Jun	216,285	267,277	275,405	279,130	275,063	151,442	33,474	117,155	134,100	43,156	-
Jul	245,954	270,073	276,165	275,387	245,151	161,866	39,365	99,695	110,932	34,746	-
Aug	246,899	220,243	259,190	268,187	296,226	82,084	48,497	132,541	119,340	35,332	-
Sep	233,921	247,990	248,636	256,871	200,082	78,365	132,060	132,191	103,083	54,534	-
Oct	247,374	263,707	266,963	264,952	240,631	123,785	266,785	59,516	57,653	83,734	-
Nov	239,255	262,763	271,584	274,539	209,811	123,785	96,415	115,763	116,517	36,094	-
Dec	223,135	238,572	268,052	272,789	212,114	128,060	147,112	160,652	54,373	94,307	-
Q1	650,845	593,269	706,702	742,544	796,194	595,429	616,206	451,092	523,736	189,052	277,270
Q2	640,554	696,114	790,788	813,799	799,587	527,566	281,487	376,248	468,852	224,318	-
Q3	726,774	738,305	783,991	800,444	741,459	322,315	219,922	364,427	333,355	124,612	-
Q4	709,764	765,042	806,599	812,281	662,556	375,630	510,311	335,931	228,543	214,135	-
TOTAL	2,727,938	2,792,730	3,088,080	3,169,068	2,999,797	1,820,940	1,627,926	1,527,697	1,554,486	752,117	277,270

Note:

1. – Indicates that data is not available
2. 2018* Data is based on Quarter 1 only

Table 7: Annual Percentage Changes in the Physical Volume of Imported Electricity: January 2008 – March 2018

Period	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Jan	1.7	(4.0)	16.9	3.3	11.7	(28.8)	(0.8)	(4.0)	(24.1)	(58.9)	115.2
Feb	3.1	(11.7)	16.8	4.2	19.7	(32.5)	16.8	(47.5)	46.6	(65.8)	35.7
Mar	5.3	(10.6)	23.5	7.6	(7.4)	(13.3)	(4.0)	(26.4)	41.9	(65.7)	1.9
Apr	9.1	(1.9)	14.0	9.5	(1.3)	(18.3)	(21.4)	(20.4)	51.3	(54.7)	-
May	1.1	4.0	25.9	(1.0)	(2.5)	(37.6)	(49.6)	51.9	7.1	(33.4)	-
Jun	5.5	23.6	3.0	1.4	(1.5)	(44.9)	(77.9)	250.0	14.5	(67.8)	-
Jul	24.3	9.8	2.3	(0.3)	(11.0)	(34.0)	(75.7)	153.3	11.3	(68.7)	-
Aug	23.1	(10.8)	17.7	3.5	10.5	(72.3)	(40.9)	173.3	(10.0)	(70.4)	-
Sep	13.5	6.0	0.3	3.3	(22.1)	(60.8)	68.5	0.1	(22.0)	(47.1)	-
Oct	8.6	6.6	1.2	(0.8)	(9.2)	(48.6)	115.5	(77.7)	(3.1)	45.2	-
Nov	3.3	9.8	3.4	1.1	(23.6)	(41.0)	(22.1)	20.1	0.7	(69.0)	-
Dec	3.4	6.9	12.4	1.8	(22.2)	(39.6)	14.9	9.2	(66.2)	73.4	-
Q1	3.4	(8.8)	19.1	5.1	7.2	(25.2)	3.5	(26.8)	16.1	(63.9)	46.7
Q2	5.1	8.7	13.6	2.9	(1.7)	(34.0)	(46.6)	33.7	24.6	(52.2)	-
Q3	20.2	1.6	6.2	2.1	(7.4)	(56.5)	(31.8)	65.7	(8.5)	(62.6)	-
Q4	5.1	7.8	5.4	0.7	(18.4)	(43.3)	35.9	(34.2)	(32.0)	(6.3)	-
TOTAL	8.3	2.4	10.6	2.6	(5.3)	(39.3)	(10.6)	(6.2)	1.8	(51.6)	-

Note:

1. () Denotes negative numbers
2. – Indicates that data is not available
3. 2018* Data is based on Q1 only

Table 8: Physical Volume of Electricity Distribution (MWH): January 2008 – March 2018

Period	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Jan	264,322	235,916	280,552	282,990	298,912	304,746	330,053	343,471	346,553	303,277	333,481
Feb	262,893	226,055	258,477	261,873	291,017	265,432	293,098	293,950	294,278	273,215	305,212
Mar	278,361	249,524	306,157	289,801	317,538	304,979	310,300	332,498	326,533	311,011	320,957
April	258,978	244,730	275,338	286,287	287,459	300,976	314,442	325,173	308,840	284,486	-
May	276,163	272,558	322,860	293,737	310,961	309,613	337,481	336,392	318,514	298,084	-
Jun	274,619	287,410	306,081	302,176	323,990	288,856	354,927	344,658	327,686	316,795	-
Jul	300,542	308,176	309,321	303,201	326,165	319,986	357,992	340,009	324,773	346,401	-
Aug	294,177	269,037	298,784	292,723	307,431	305,504	344,533	309,593	338,742	350,884	-
Sep	273,811	284,512	283,813	277,934	297,258	296,587	333,861	306,808	331,085	321,157	-
Oct	290,063	296,067	304,709	292,118	317,867	155,968	338,027	361,429	357,598	317,824	-
Nov	279,622	289,206	292,478	297,584	323,195	327,013	341,138	329,561	329,820	332,641	-
Dec	261,673	273,458	306,482	292,020	301,215	322,777	334,027	350,142	324,266	316,547	-
Q1	805,576	711,494	845,186	834,665	907,468	875,157	933,451	969,920	967,364	887,503	959,650
Q2	809,759	804,698	904,279	882,199	922,411	899,445	1,006,850	1,006,224	955,040	899,365	-
Q3	868,531	861,725	891,918	873,857	930,854	922,077	1,036,387	956,410	994,600	1,018,442	-
Q4	831,358	858,731	903,669	881,721	942,277	805,758	1,013,192	1,041,132	1,011,684	967,012	-
Year	3,315,223	3,236,648	3,545,052	3,472,442	3,703,010	3,502,437	3,989,880	3,973,685	3,928,688	3,772,322	959,650

Note:

1. - Indicates that data is not available
2. 2018* Data is based on Q1 only

Table 9: Annual Percentage Changes for the Physical Volume of Electricity Distribution: January 2008 – March 2018

Period	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018*
Jan	0.4	(10.7)	18.9	0.9	5.6	2.0	8.3	4.1	0.9	(12.5)	10.0
Feb	(0.1)	(14.0)	14.3	1.3	11.1	(8.8)	10.4	0.3	0.1	(7.2)	11.7
Mar	1.8	(10.4)	22.7	(5.3)	9.6	(4.0)	1.7	7.2	(1.8)	(4.8)	3.2
Apr	4.3	(5.5)	12.5	4.0	0.4	4.7	4.5	3.4	(5.0)	(7.9)	-
May	5.5	(1.3)	18.5	(9.0)	5.9	(0.4)	9.0	(0.3)	5.3	(6.4)	-
Jun	8.0	4.7	6.5	(1.3)	7.2	(10.8)	22.9	(2.9)	(4.9)	(3.3)	-
Jul	16.0	2.5	0.4	(2.0)	7.6	(1.9)	11.9	(5.0)	(4.5)	6.7	-
Aug	11.8	(8.5)	11.1	(2.0)	5.0	(0.6)	12.8	(10.1)	9.4	3.6	-
Sep	6.0	3.9	(0.2)	(2.1)	7.0	(0.2)	12.6	(8.1)	7.9	(3.0)	-
Oct	7.9	2.1	2.9	(4.1)	8.8	(50.9)	116.7	6.9	(1.1)	(11.1)	-
Nov	3.5	3.4	1.1	1.7	8.6	1.2	4.3	(3.4)	0.1	0.9	-
Dec	0.7	4.5	12.1	(4.7)	3.1	7.2	3.5	4.8	(7.4)	(2.4)	-
Q1	0.7	(11.7)	18.8	(1.2)	8.7	(3.6)	6.7	3.9	(0.3)	(8.3)	8.1
Q2	6.0	(0.6)	12.4	(2.4)	4.6	(2.5)	11.9	(0.1)	(5.1)	(5.8)	-
Q3	11.2	(0.8)	3.5	(2.0)	6.5	(0.9)	12.4	7.7	4.0	2.4	-
Q4	4.1	3.3	5.2	(2.4)	6.9	(14.5)	25.7	2.8	(2.8)	(4.4)	-
Year	5.5	(2.4)	9.5	(2.0)	6.6	(5.4)	13.9	(0.4)	(1.1)	(4.0)	-

Note:

1. () Denotes negative numbers
2. - Indicates that data is not available
3. 2018* Data is based on Q1 only

**Table 10: Generation of Electricity (MWH) as a Percentage of Distribution
2008 – March 2018**

Year \ Utility	Electricity Generation	Imported Electricity	Electricity Distribution	% Contribution of Generated Electricity to Distributed
2008	587,286	2,727,938	3,315,223	17.7
2009	443,918	2,792,730	3,236,648	13.7
2010	456,972	3,088,080	3,545,052	12.9
2011	303,374	3,169,068	3,472,442	8.7
2012	703,213	2,999,797	3,703,010	19.0
2013	1,681,497	1,820,940	3,502,437	48.0
2014	2,361,954	1,627,925	3,989,879	59.2
2015	2,445,988	1,527,697	3,973,685	61.6
2016	2,374,202	1,554,486	3,928,688	60.4
2017	3,020,206	752,117	3,772,322	80.1
2013_Q1	279,728	595,429	875,157	32.0
Q2	371,879	527,566	899,445	41.3
Q3	599,762	322,315	922,077	65.0
Q4	430,128	375,630	805,758	53.4
2014_Q1	317,245	616,206	933,451	34.0
Q2	725,363	281,487	1,006,850	72.0
Q3	816,465	219,922	1,036,387	78.8
Q4	502,881	510,311	1,013,192	49.6
2015_Q1	518,828	451,092	969,920	53.5
Q2	629,976	376,248	1,006,224	62.6
Q3	591,983	364,427	956,410	61.9
Q4	705,201	335,931	1,041,132	67.7
2016_Q1	443,628	523,736	967,364	45.9
Q2	486,188	468,852	955,040	50.9
Q3	661,245	333,355	994,600	66.5
Q4	783,141	228,543	1,011,684	77.4
2017_Q1	698,451	189,052	887,503	78.7
Q2	675,047	224,318	899,365	75.1
Q3	893,831	124,612	1,018,442	87.8
Q4	752,877	214,135	967,012	77.9
2018*_Q1	682,380	277,270	959,650	71.1

Note:

1. 2018* Data is based on Q1 only

3.0 Technical Notes

3.1 Background

The generation of electricity in Botswana started in 1985 with a coal fired thermal power station at Morupule operating at a capacity of 132 MWH. Prior to this period, most of Botswana's electricity was imported from South Africa's power utility, Eskom. In 2008 South Africa's electricity demand started to exceed its supply, resulting in the South African government restricting power exports. As a result, Botswana and the entire Southern African region experienced massive power shortages because of the reduced electricity exports from South Africa (http://en.wikipedia.org/wiki/Energy_in_Botswana).

To avert the situation, Botswana Government opted for alternative ways of sourcing electricity for the country; hence the plan to increase local generation of electricity at Morupule Power Station. The Morupule Power A plant of capacity 132 MWH was augmented with Morupule Power B which is to have a capacity of 600 MWH upon completion (BPC Annual Report, 2010).

3.2 Concepts and formula of the Index of Electricity Generation, Importation and Distribution

The Index of Electricity Generation is a Laspeyres index. The weighted average for electricity generation equals one because there are no various electricity products. The index is thus calculated using the formula;

$$I = \frac{\sum R_i * W_i}{\sum W_i}$$

Where;

- I is the index
- R is the electricity generation relative
- W is the weight

The electricity generation relative for the quarter has been calculated by using the formula:

$$R_i = \frac{P_{ic}}{P_{io}} * 100$$

Where P_{ic} is the electricity generation of the current quarter and P_{io} is the generation of electricity of the base year.

The calculation of the monthly generation indices is based on the volume of electricity units produced.

3.3 Base Year

The base year, also referred to as **reference period** used in this brief is 2013, which is set at 100. The selection of the reference period was informed by the availability of relevant data and synchronization of data with other sectors within the industry.



Contact Statistician: Otsile Chelenyane
Industry Statistics Unit
Email: ochelenyane@statsbots.org.bw
Tel: (+267) 367 – 1300; Ext. 333