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# ELECTRICITY GENERATION AND DISTRIBUTION

Stats Brief, Quarter 4, 2017



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## 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 2007 to the fourth quarter of 2017. In subsequent sections of this report, emphasis is on the fourth quarter of 2017, as compared to the third quarter in 2017, and the corresponding quarter in 2016. 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 are included as well. This is intended to shed light as to whether Botswana, over time, is generating enough electricity to meet her demand. The data used in 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.

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](http://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 products and services.



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**A. N. Majelantle**  
**Statistician General**  
**March 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 summarised key indicators of Electricity Generation for the current quarter (fourth quarter of 2017) and prior quarters since 2013. During the fourth quarter of 2017, the Index of Electricity Generation (IEG) stood at **179.1**.

**Figure 1** presents both the Quarter-on-Quarter and Year-on-Year percentage changes in relation to the locally generated electricity. In comparison with the fourth quarter of 2016, the Year-on-Year percentage change reflects a decline of **3.9 percent** in the index of electricity generation from 186.3 during 2016 fourth quarter to 179.1 during the quarter under review. From a Quarter-on-Quarter perspective, the Index of Electricity Generation during the fourth quarter of 2017 shows a decrease of 15.8 percent from 212.6 during the third quarter of 2017 to 179.1 during the period under review.

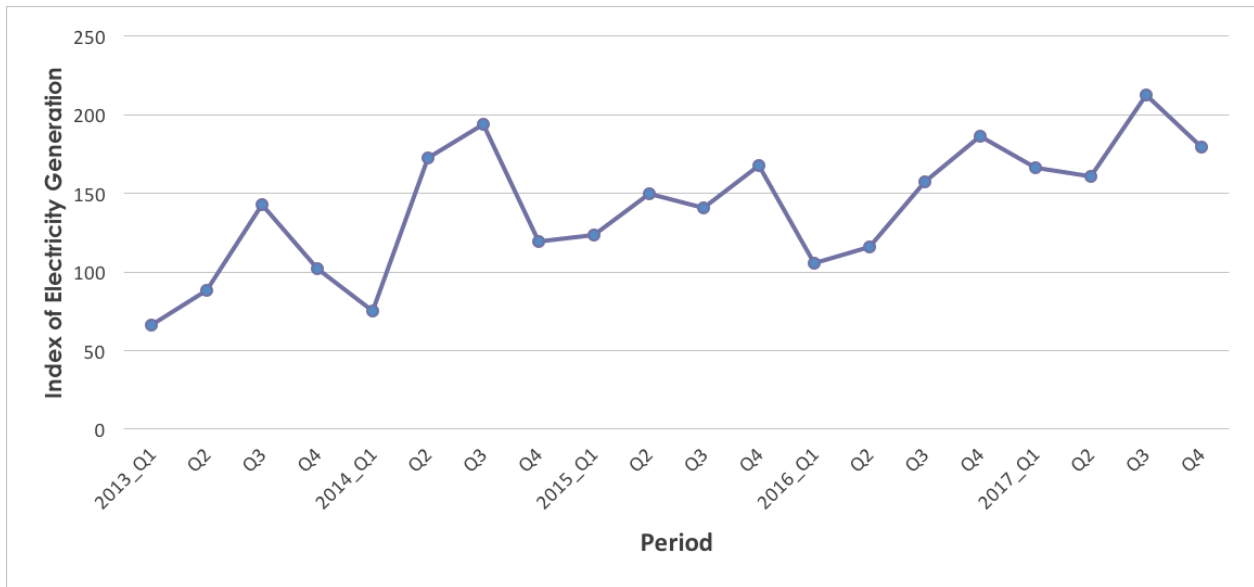
**Table 1: Selected Key Indicators for Electricity Generation 2013  
First Quarter to 2017 Fourth Quarter**

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)

Note: 1. () Indicates negative figures

**Figure 1** gives a graphical presentation of the Index of the Physical Volume of Electricity Generation and is based on **Table 1**. Though there are fluctuations in the movement of the index over the period, a general upward trend is observable, with the index having started at just around 60 during the first quarter of 2013 and ending at around 170 during the fourth quarter of 2017. This is an indication that the physical volume of electricity generation is growing over time even though the growth is at a slow rate.

**Figure 1: Index of Electricity Generation: 2013 First Quarter to 2017 Fourth Quarter**



## 2.1 Electricity Generation

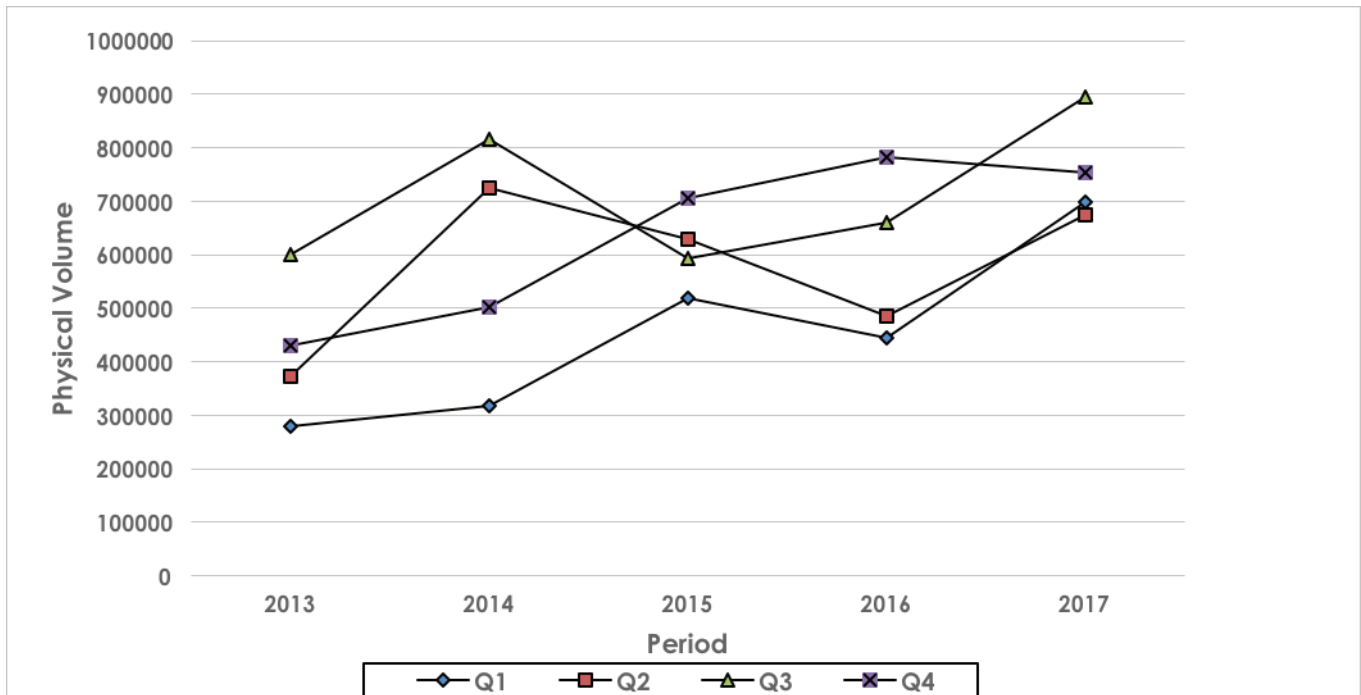
This Sub-Section discusses the physical volume of electricity generated locally as presented in [Table 2](#). The table forms the basis for computation of indices of electricity generation as shown on [Table 3](#). It is worth noting that the percentage changes in the indices of the physical volume of electricity generation and percentage changes in the associated physical volume of electricity generation yield the same figures. 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 2007 to 2017.

During the fourth quarter of 2017, the physical volume of electricity generated stood at 752,877 MWH, representing an annualized decrease of 3.9 percent (30,264 MWH) when compared to 783,141 MWH generated during the corresponding quarter in 2016 ([Figure 2](#)).

Similarly, comparison of the physical volume of electricity generated during the fourth quarter of 2017 and the previous quarter shows a decrease of 15.8 percent (140,954 MWH), from 893,831 MWH during the third quarter of 2017 to 752,877 MWH during the current quarter. This decrease was attributable to remedial works at Morupule B power station.

[Figure 2](#) gives a graphical presentation of electricity generation from the first quarter of 2013 to the fourth quarter of 2017. Each line represents a year-on-year comparison, comparing movement over the same quarter from 2013 to 2017. In general, an upward trend in the physical volume of electricity generation is observable.

Figure 2: Physical Volume of Electricity Generation: 2013 First Quarter to 2017 Fourth Quarter



## 2.2 Imported Electricity

The discussions on this section are based on [Table 6](#), [Table 7](#) and [Figure 3](#).

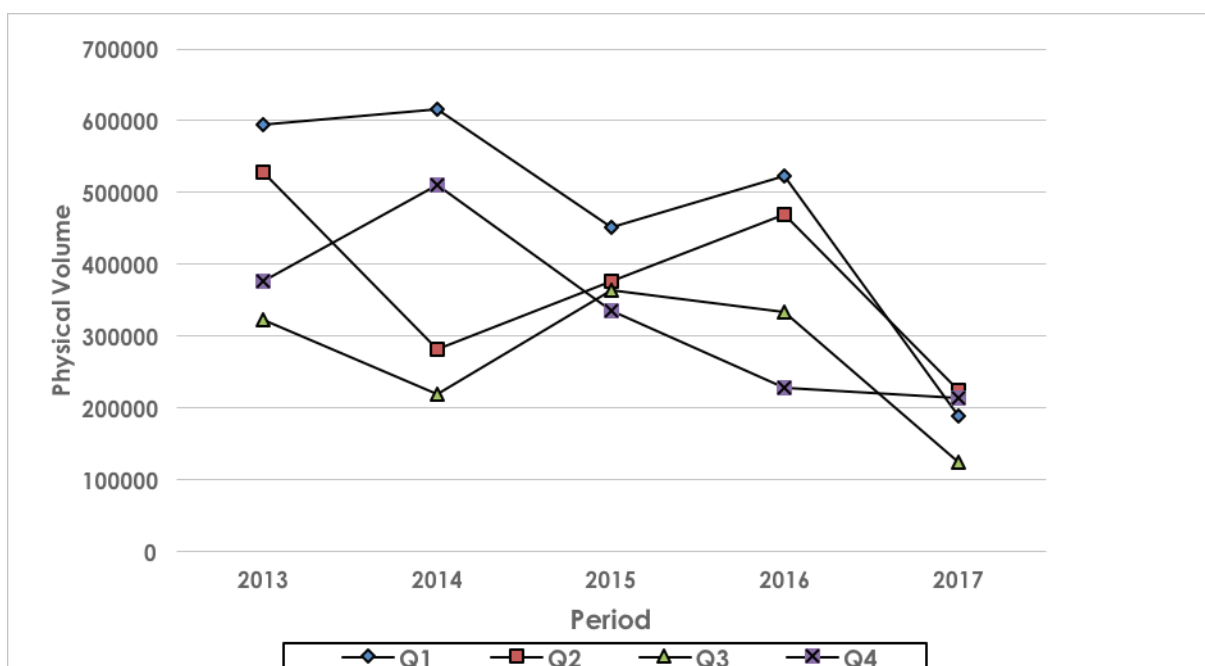
The physical volume of imported electricity stood at 214,135 MWH during the fourth quarter of 2017, representing a decrease of 6.3 percent (14,408 MWH) when compared to the corresponding quarter in 2016 (228,543 MWH).

From a quarter-on-quarter perspective, the physical volume of imported electricity shows an increase of 71.8 percent (89,523 MWH), from 124,612 MWH during the third quarter of 2017, to 214,135 MWH during the quarter under review. This increase was attributable to efforts to cater for the decrease realized in local production as a result of remedial works.

The local power utility imported 22.1 percent (214,135 MWH) of total electricity distributed during the period under review. The imports were predominantly from the Southern African Power Pool at 81.5 percent, Eskom at 15.3 percent and Namibia Power Corporation at 3.2 percent of total electricity imported during the quarter. Though there are fluctuations in the physical volume of electricity imported over time, it can be observed from [Figure 3](#) that in general, importation of electricity is decreasing as the country increases on local generation.



**Figure 3: Physical Volume of Imported Electricity: 2013 First Quarter to 2017 Fourth Quarter**



### 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 2007 to the fourth quarter of 2017 while Table 9 presents annual percentage changes in the volume of electricity distributed from 2007 to 2017 fourth quarter. These tables can also be used as guidance with regard to whether electricity distribution is improving, thereby addressing electricity shortages.

The physical volume of electricity distributed shows a decrease of 4.4 percent (44,672 MWH), from 1,011,684 MWH during the fourth quarter of 2016 to 967,012 MWH during the current quarter.

The quarter-on-quarter comparison of distributed electricity gives a decrease of 5.0 percent (51,430 MWH), from 1,018,442 MWH during the third quarter of 2017 to 967,012 MWH during the current quarter.

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 77.9 percent to electricity distributed during the fourth quarter of 2017, compared to a contribution of 77.4 percent during the same period in 2016. This shows an increase of 0.5 of a percentage point in the contribution of electricity generated locally to electricity distributed, when making comparison between the two quarters.

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 9.9 percentage points from 87.8 percent in the third quarter of 2017 to 77.9 percent

**Table 2: Physical Volume of Electricity Generation (MWH): January 2007 – December 2017**

Period	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Jan	56,291	53,926	33,922	44,442	39,195	26,574	110,960	137,802	158,907	206,381	245,598
Feb	56,291	49,732	37,890	38,641	32,847	16,938	80,410	77,067	180,520	127,975	216,264
Mar	57,521	51,072	46,413	55,401	20,079	67,761	88,358	102,377	179,400	109,272	236,589
Apr	56,127	49,313	38,987	40,872	29,593	34,069	94,011	151,675	195,568	112,765	195,073
May	49,358	61,558	49,464	41,943	15,762	39,826	140,454	252,235	206,905	179,837	205,705
Jun	49,358	58,334	20,132	30,676	23,045	48,928	137,414	321,453	227,503	193,586	273,639
Jul	61,290	54,588	38,103	33,156	27,814	81,013	158,120	318,627	240,314	213,841	311,655
Aug	62,544	47,278	48,795	39,594	24,536	11,205	223,420	296,036	177,052	219,402	315,552
Sep	52,235	39,890	36,522	35,177	21,063	97,177	218,222	201,802	174,617	228,002	266,623
Oct	41,183	42,689	32,361	37,746	27,166	77,236	32,183	71,243	301,913	299,002	234,090
Nov	38,502	40,367	26,443	20,894	23,044	113,384	203,228	244,723	213,798	213,303	296,547
Dec	44,046	38,538	34,885	38,430	19,231	89,101	194,717	186,915	189,490	269,893	222,240
Q1	170,103	154,730	118,225	138,485	92,120	111,274	279,728	317,245	518,828	443,628	698,451
Q2	154,844	169,206	108,584	113,491	68,400	122,823	371,879	725,363	629,976	486,188	675,047
Q3	176,068	141,756	123,420	107,927	73,413	189,395	599,762	816,465	591,983	661,245	893,831
Q4	123,731	121,594	93,689	97,070	69,441	279,721	430,128	502,881	705,201	783,141	752,887
<b>TOTAL</b>	<b>624,746</b>	<b>587,286</b>	<b>443,918</b>	<b>456,972</b>	<b>303,374</b>	<b>703,213</b>	<b>1,681,497</b>	<b>2,361,954</b>	<b>2,445,988</b>	<b>2,374,202</b>	<b>3,020,206</b>

**Table 3: Indices of Physical Volume of Electricity Generation: January 2007 – December 2017**

Period	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Jan	40.2	38.5	24.2	31.7	28.0	19.0	79.2	98.3	113.4	147.3	175.3
Feb	40.2	35.5	27.0	27.6	23.4	12.1	57.4	55.0	128.8	91.3	154.3
Mar	41.0	36.4	33.1	39.5	14.3	48.4	63.1	73.1	128.0	78.0	168.8
Apr	40.1	35.2	27.8	29.2	21.1	24.3	67.1	108.2	139.6	80.5	139.7
May	35.2	43.9	35.3	29.9	11.2	28.4	100.2	180.0	147.7	128.3	146.8
Jun	35.2	41.6	14.4	21.9	16.4	34.9	98.1	229.4	162.4	138.2	195.3
Jul	43.7	39.0	27.2	23.7	19.8	57.8	112.8	227.4	171.5	152.6	222.4
Aug	44.6	33.7	34.8	28.3	17.5	8.0	159.4	211.3	126.4	156.6	225.2
Sep	37.3	28.5	26.1	25.1	15.0	69.4	155.7	144.0	124.6	162.7	190.3
Oct	29.4	30.5	23.1	26.9	19.4	55.1	23.0	50.8	215.5	214.1	167.1
Nov	27.5	28.8	18.9	14.9	16.4	80.9	145.0	174.6	152.6	152.2	211.6
Dec	31.4	27.5	24.9	27.4	13.7	63.6	139.0	133.4	135.2	192.6	158.6
Q1	40.5	36.8	28.1	32.9	21.9	26.5	66.5	75.5	123.4	105.5	166.1
Q2	36.8	40.3	25.8	27.0	16.3	29.2	88.5	172.6	149.9	115.7	160.6
Q3	41.9	33.7	29.4	25.7	17.5	45.1	142.7	194.2	140.8	157.3	212.6
Q4	29.4	28.9	22.3	23.1	16.5	66.5	102.3	119.6	167.8	186.3	179.1
<b>Year</b>	<b>37.2</b>	<b>34.9</b>	<b>26.4</b>	<b>27.2</b>	<b>18.0</b>	<b>41.8</b>	<b>100.0</b>	<b>140.5</b>	<b>145.5</b>	<b>141.2</b>	<b>179.6</b>

**Table 4: Year-on-Year Percentage Changes in the Indices of the Physical Volume of Electricity Generation: January 2007 – December 2017**

Period	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Jan	(29.7)	(4.2)	(37.1)	31.0	(11.8)	(32.2)	317.5	24.2	15.3	29.9	19.0
Feb	(2.6)	(11.7)	(23.8)	2.0	(15.0)	(48.4)	374.7	(4.2)	134.2	(29.1)	69.0
Mar	(22.1)	(11.2)	(9.1)	19.4	(63.8)	237.5	30.4	15.9	75.2	(39.1)	116.5
Apr	(29.6)	(12.1)	(20.9)	4.8	(27.6)	15.1	175.9	61.3	28.9	(42.3)	73.5
May	(30.9)	24.7	(19.6)	(15.2)	(62.4)	152.7	252.7	79.6	(18.0)	(13.1)	14.4
Jun	(35.0)	18.2	(65.5)	52.4	(24.9)	112.3	180.9	133.9	(29.2)	(14.9)	41.4
Jul	(4.1)	(10.9)	(30.2)	(13.0)	(16.1)	191.3	95.2	101.5	(24.6)	(11.0)	45.7
Aug	0.3	(24.4)	3.2	(18.9)	(38.0)	(54.3)	1,893.9	32.5	(40.2)	23.9	43.8
Sep	2.3	(23.6)	(8.4)	(3.7)	(40.1)	361.4	124.6	(7.5)	(13.5)	30.6	16.9
Oct	(25.7)	3.7	(24.2)	16.6	(28.0)	184.3	(58.3)	121.4	323.8	(0.7)	(22.0)
Nov	(38.8)	4.8	(34.5)	(21.0)	10.3	392.0	79.2	20.4	(12.6)	(0.2)	39.0
Dec	(26.2)	(12.5)	(9.5)	10.2	(50.0)	363.3	118.5	(4.0)	1.4	42.4	(17.7)
Q1	(19.6)	(9.0)	(23.6)	17.1	(33.5)	20.8	151.4	13.4	63.5	(14.5)	57.4
Q2	(31.8)	9.3	(35.8)	4.5	(39.7)	79.6	202.8	95.1	(13.2)	(22.8)	38.8
Q3	(0.7)	(19.5)	(12.9)	(12.6)	(32.0)	158.0	216.7	2.5	(27.5)	11.7	35.2
Q4	(30.5)	(1.7)	(22.9)	3.6	(28.5)	302.8	53.8	16.9	40.2	11.1	(3.9)
TOTAL	(21.3)	(6.0)	(24.4)	2.9	(33.6)	131.8	139.1	40.5	3.6	(2.9)	27.2

Note:

1. () Indicates negative figures

**Table 5: Quarter-on-Quarter Percentage Changes: 2007 – December 2017**

Period	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Q1	(4.5)	25.1	(2.8)	47.8	(5.1)	60.2	0.0	(26.2)	3.2	(37.1)	(10.8)
Q2	(9.00)	9.4	(8.2)	(18.0)	(25.7)	10.4	32.9	128.6	21.4	9.7	(3.4)
Q3	13.7	(16.4)	14.0	(4.8)	7.3	54.2	61.3	12.6	(6.0)	36.0	32.4
Q4	(29.7)	(14.2)	(24.1)	(10.1)	(5.4)	47.7	(28.3)	(38.4)	19.1	18.4	(15.8)

Note:

1. () Indicates negative figures

**Table 6: Physical Volume of Imported Electricity MWH: January 2007 – December 2017**

Period	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Jan	206,867	210,395	201,994	236,110	243,795	272,338	193,786	192,251	184,564	140,172	57,679
Feb	206,795	213,161	188,165	219,836	229,027	274,079	185,022	216,031	113,430	166,303	56,951
Mar	215,819	227,289	203,111	250,756	269,723	249,777	216,621	207,923	153,098	217,261	74,422
Apr	192,109	209,664	205,743	234,466	256,694	253,390	206,965	162,767	129,605	196,075	88,783
May	212,303	214,604	223,094	280,917	277,975	271,135	169,159	85,246	129,487	138,677	92,379
Jun	204,987	216,285	267,277	275,405	279,130	275,063	151,442	33,474	117,155	134,100	43,156
Jul	197,880	245,954	270,073	276,165	275,387	245,151	161,866	39,365	99,695	110,932	34,746
Aug	200,591	246,899	220,243	259,190	268,187	296,226	82,084	48,497	132,541	119,340	35,332
Sep	206,166	233,921	247,990	248,636	256,871	200,082	78,365	132,060	132,191	103,083	54,534
Oct	227,681	247,374	263,707	266,963	264,952	240,631	123,785	266,785	59,516	57,653	83,734
Nov	231,581	239,255	262,763	271,584	274,539	209,811	123,785	96,415	115,763	116,517	36,094
Dec	215,786	223,135	238,572	268,052	272,789	212,114	128,060	147,112	160,652	54,373	94,307
<b>Q1</b>	<b>629,482</b>	<b>650,845</b>	<b>593,269</b>	<b>706,702</b>	<b>742,544</b>	<b>796,194</b>	<b>595,429</b>	<b>616,206</b>	<b>451,092</b>	<b>523,736</b>	<b>189,052</b>
<b>Q2</b>	<b>609,399</b>	<b>640,554</b>	<b>696,114</b>	<b>790,788</b>	<b>813,799</b>	<b>799,587</b>	<b>527,566</b>	<b>281,487</b>	<b>376,248</b>	<b>468,852</b>	<b>224,318</b>
<b>Q3</b>	<b>604,636</b>	<b>726,774</b>	<b>738,305</b>	<b>783,991</b>	<b>800,444</b>	<b>741,459</b>	<b>322,315</b>	<b>219,922</b>	<b>364,427</b>	<b>333,355</b>	<b>124,612</b>
<b>Q4</b>	<b>675,048</b>	<b>709,764</b>	<b>765,042</b>	<b>806,599</b>	<b>812,281</b>	<b>662,556</b>	<b>375,630</b>	<b>510,311</b>	<b>335,931</b>	<b>228,543</b>	<b>214,135</b>
<b>TOTAL</b>	<b>2,518,565</b>	<b>2,727,938</b>	<b>2,792,730</b>	<b>3,088,080</b>	<b>3,169,068</b>	<b>2,999,797</b>	<b>1,820,940</b>	<b>1,627,926</b>	<b>1,527,697</b>	<b>1,554,486</b>	<b>752,117</b>

**Table 7: Annual Percentage Changes in the Physical Volume of Imported Electricity: January 2007 – December 2017**

Period	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Jan	30.0	1.7	(4.0)	16.9	3.3	11.7	(28.8)	(0.8)	(4.0)	(24.1)	(58.9)
Feb	26.8	3.1	(11.7)	16.8	4.2	19.7	(32.5)	16.8	(47.5)	46.6	(65.8)
Mar	20.3	5.3	(10.6)	23.5	7.6	(7.4)	(13.3)	(4.0)	(26.4)	41.9	(65.7)
Apr	29.8	9.1	(1.9)	14.0	9.5	(1.3)	(18.3)	(21.4)	(20.4)	51.3	(54.7)
May	19.4	1.1	4.0	25.9	(1.0)	(2.5)	(37.6)	(49.6)	51.9	7.1	(33.4)
Jun	8.1	5.5	23.6	3.0	1.4	(1.5)	(44.9)	(77.9)	250.0	14.5	(67.8)
Jul	2.4	24.3	9.8	2.3	(0.3)	(11.0)	(34.0)	(75.7)	153.3	11.3	(68.7)
Aug	(0.9)	23.1	(10.8)	17.7	3.5	10.5	(72.3)	(40.9)	173.3	(10.0)	(70.4)
Sep	4.4	13.5	6.0	0.3	3.3	(22.1)	(60.8)	68.5	0.1	(22.0)	(47.1)
Oct	10.2	8.6	6.6	1.2	(0.8)	(9.2)	(48.6)	115.5	(77.7)	(3.1)	45.2
Nov	19.1	3.3	9.8	3.4	1.1	(23.6)	(41.0)	(22.1)	20.1	0.7	(69.0)
Dec	10.3	3.4	6.9	12.4	1.8	(22.2)	(39.6)	14.9	9.2	(66.2)	73.4
<b>Q1</b>	<b>25.5</b>	<b>3.4</b>	<b>(8.8)</b>	<b>19.1</b>	<b>5.1</b>	<b>7.2</b>	<b>(25.2)</b>	<b>3.5</b>	<b>(26.8)</b>	<b>16.1</b>	<b>(63.9)</b>
<b>Q2</b>	<b>18.2</b>	<b>5.1</b>	<b>8.7</b>	<b>13.6</b>	<b>2.9</b>	<b>(1.7)</b>	<b>(34.0)</b>	<b>(46.6)</b>	<b>33.7</b>	<b>24.6</b>	<b>(52.2)</b>
<b>Q3</b>	<b>1.9</b>	<b>20.2</b>	<b>1.6</b>	<b>6.2</b>	<b>2.1</b>	<b>(7.4)</b>	<b>(56.5)</b>	<b>(31.8)</b>	<b>65.7</b>	<b>(8.5)</b>	<b>(62.6)</b>
<b>Q4</b>	<b>13.1</b>	<b>5.1</b>	<b>7.8</b>	<b>5.4</b>	<b>0.7</b>	<b>(18.4)</b>	<b>(43.3)</b>	<b>35.9</b>	<b>(34.2)</b>	<b>(32.0)</b>	<b>(6.3)</b>
<b>TOTAL</b>	<b>14.1</b>	<b>8.3</b>	<b>2.4</b>	<b>10.6</b>	<b>2.6</b>	<b>(5.3)</b>	<b>(39.3)</b>	<b>(10.6)</b>	<b>(6.2)</b>	<b>1.8</b>	<b>(51.6)</b>

Note:

1. () Indicates negative figures

**Table 8: Physical Volume of Electricity Distribution (MWH): January 2007 – December 2017**

Period	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Jan	263,158	264,322	235,916	280,552	282,990	298,912	304,746	330,053	343,471	346,553	303,277
Feb	263,086	262,893	226,055	258,477	261,873	291,017	265,432	293,098	293,950	294,278	273,215
Mar	273,340	278,361	249,524	306,157	289,801	317,538	304,979	310,300	332,498	326,533	311,011
April	248,236	258,978	244,730	275,338	286,287	287,459	300,976	314,442	325,173	308,840	284,486
May	261,661	276,163	272,558	322,860	293,737	310,961	309,613	337,481	336,392	318,514	298,084
Jun	254,346	274,619	287,410	306,081	302,176	323,990	288,856	354,927	344,658	327,686	316,795
Jul	259,169	300,542	308,176	309,321	303,201	326,165	319,986	357,992	340,009	324,773	346,401
Aug	263,134	294,177	269,037	298,784	292,723	307,431	305,504	344,533	309,593	338,742	350,884
Sep	258,402	273,811	284,512	283,813	277,934	297,258	296,587	333,861	306,808	331,085	321,157
Oct	268,864	290,063	296,067	304,709	292,118	317,867	155,968	338,027	361,429	357,598	317,824
Nov	270,083	279,622	289,206	292,478	297,584	323,195	327,013	341,138	329,561	329,820	332,641
Dec	259,832	261,673	273,458	306,482	292,020	301,215	322,777	334,027	350,142	324,266	316,547
<b>Q1</b>	<b>799,584</b>	<b>805,576</b>	<b>711,494</b>	<b>845,186</b>	<b>834,665</b>	<b>907,468</b>	<b>875,157</b>	<b>933,451</b>	<b>969,920</b>	<b>967,364</b>	<b>887,503</b>
<b>Q2</b>	<b>764,243</b>	<b>809,759</b>	<b>804,698</b>	<b>904,279</b>	<b>882,199</b>	<b>922,411</b>	<b>899,445</b>	<b>1,006,850</b>	<b>1,006,224</b>	<b>955,040</b>	<b>899,365</b>
<b>Q3</b>	<b>780,705</b>	<b>868,531</b>	<b>861,725</b>	<b>891,918</b>	<b>873,857</b>	<b>930,854</b>	<b>922,077</b>	<b>1,036,387</b>	<b>956,410</b>	<b>994,600</b>	<b>1,018,442</b>
<b>Q4</b>	<b>798,779</b>	<b>831,358</b>	<b>858,731</b>	<b>903,669</b>	<b>881,721</b>	<b>942,277</b>	<b>805,758</b>	<b>1,013,192</b>	<b>1,041,132</b>	<b>1,011,684</b>	<b>967,012</b>
<b>Year</b>	<b>3,143,311</b>	<b>3,315,223</b>	<b>3,236,648</b>	<b>3,545,052</b>	<b>3,472,442</b>	<b>3,703,010</b>	<b>3,502,437</b>	<b>3,989,880</b>	<b>3,973,685</b>	<b>3,928,688</b>	<b>3,772,322</b>

**Table 9: Annual Percentage Changes for the Physical Volume of Electricity Distribution: January 2007 – December 2017**

Period	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Jan	10.0	0.4	(10.7)	18.9	0.9	5.6	2.0	8.3	4.1	0.9	(12.5)
Feb	19.1	(0.1)	(14.0)	14.3	1.3	11.1	(8.8)	10.4	0.3	0.1	(7.2)
Mar	7.9	1.8	(10.4)	22.7	(5.3)	9.6	(4.0)	1.7	7.2	(1.8)	(4.8)
Apr	9.0	4.3	(5.5)	12.5	4.0	0.4	4.7	4.5	3.4	(5.0)	(7.9)
May	5.0	5.5	(1.3)	18.5	(9.0)	5.9	(0.4)	9.0	(0.3)	5.3	(6.4)
Jun	(4.2)	8.0	4.7	6.5	(1.3)	7.2	(10.8)	22.9	(2.9)	(4.9)	(3.3)
Jul	0.8	16.0	2.5	0.4	(2.0)	7.6	(1.9)	11.9	(5.0)	(4.5)	6.7
Aug	(0.7)	11.8	(8.5)	11.1	(2.0)	5.0	(0.6)	12.8	(10.1)	9.4	3.6
Sep	3.9	6.0	3.9	(0.2)	(2.1)	7.0	(0.2)	12.6	(8.1)	7.9	(3.0)
Oct	2.6	7.9	2.1	2.9	(4.1)	8.8	(50.9)	116.7	6.9	(1.1)	(11.1)
Nov	5.0	3.5	3.4	1.1	1.7	8.6	1.2	4.3	(3.4)	0.1	0.9
Dec	1.8	0.7	4.5	12.1	(4.7)	3.1	7.2	3.5	4.8	(7.4)	(2.4)
<b>Q1</b>	<b>12.1</b>	<b>0.7</b>	<b>(11.7)</b>	<b>18.8</b>	<b>(1.2)</b>	<b>8.7</b>	<b>(3.6)</b>	<b>6.7</b>	<b>3.9</b>	<b>(0.3)</b>	<b>(8.3)</b>
<b>Q2</b>	<b>2.9</b>	<b>6.0</b>	<b>(0.6)</b>	<b>12.4</b>	<b>(2.4)</b>	<b>4.6</b>	<b>(2.5)</b>	<b>11.9</b>	<b>(0.1)</b>	<b>(5.1)</b>	<b>(5.8)</b>
<b>Q3</b>	<b>1.3</b>	<b>11.2</b>	<b>(0.8)</b>	<b>3.5</b>	<b>(2.0)</b>	<b>6.5</b>	<b>(0.9)</b>	<b>12.4</b>	<b>7.7</b>	<b>4.0</b>	<b>2.4</b>
<b>Q4</b>	<b>3.1</b>	<b>4.1</b>	<b>3.3</b>	<b>5.2</b>	<b>(2.4)</b>	<b>6.9</b>	<b>(14.5)</b>	<b>25.7</b>	<b>2.8</b>	<b>(2.8)</b>	<b>(4.4)</b>
<b>Year</b>	<b>4.7</b>	<b>5.5</b>	<b>(2.4)</b>	<b>9.5</b>	<b>(2.0)</b>	<b>6.6</b>	<b>(5.4)</b>	<b>13.9</b>	<b>(0.4)</b>	<b>(1.1)</b>	<b>(4.0)</b>

Note:

1. () Indicates negative figures

**Table 10: Generation of Electricity (MWH) as a Percentage of Distribution 2005 – December 2017**

Year \ Utility	Electricity Generation	Imported Electricity	Electricity Distribution	% Contribution of Generated Electricity to Distributed
2007	624,746	2,518,565	3,143,311	19.9
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

### 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](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.

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