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ELECTRICITY GENERATION AND DISTRIBUTION

Stats Brief, 4th Quarter 2016

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1.0 Preface

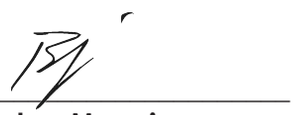
Amongst its duties, Statistics Botswana is mandated to compile data on industrial production in Botswana, hence electricity indices are only confined to electricity generated locally. However, importation and distribution volumes, and their percentage changes will be included as well. This is intended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

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 2005 to the fourth quarter of 2016. In subsequent sections of this report, emphasis will be given to the fourth quarter of 2016, as compared to the third quarter of the same year, and the corresponding quarter in 2015. This report uses 2013 as base year.

The release 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 367-1300. All Statistics Botswana outputs/publications are available on the website at **www.statsbots.org.bw** and also at Statistics Botswana Library (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
Acting Statistician General
March 2017

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

All figures in this report are not seasonally adjusted.

Summary key indicators of Electricity Generation from the first quarter of 2013 to the fourth quarter of 2016, are presented in **Table 1** below. During the fourth quarter of 2016, the Index of Electricity Generation **(IEG)** stood at 186.3.

The Index of Electricity Generation during the last quarter of 2016 shows an increase of 11.1 percent as compared to 167.8 during the corresponding quarter of the previous year (2015). As compared to the third quarter of the same year, the Index of Electricity Generation rose by 18.4 percent from 157.3 during the third quarter to 186.3 during the fourth quarter.

Table 1: Selected Key Indicators for Electricity Generation 2013 First Quarter to 2016 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	32.9
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	19.1
2016_Q1	105.5	(14.5)	(37.1)
Q2	115.7	(22.8)	9.6
Q3	157.3	11.7	36.0
Q4	186.3	11.1	18.4

Note: 1. () Indicates negative figures

2.1 Electricity Generation

Table 2 presents the physical volume of electricity generated locally and forms the basis for computation of indices of electricity generation as shown on **Table 3.** The Annual and Quarterly percentage changes are presented on tables **4** and **5** respectively.

This Sub-Section discusses the physical production of electricity generated locally as presented in **Table 2**. Calculation of percentage changes in the physical volume of production as well as in indices of the same physical volume of production yield the same figures. As a result it will be worth it to refer to tables that have figures of percentage changes in the Index of Electricity Generation as well (**Table1** and **Table 4**), when going through this Sub-Section.

The Physical Volume of Electricity Generation during the fourth quarter of 2016 stood at 783, 141 MWH, giving an increase of 11.1 percent (77, 940 MWH) as compared to generation of 705, 201 MWH during the fourth quarter of the previous year (2015). Comparison of the physical volume of electricity generated during the third and fourth quarters of 2016 gives an increase of 18.4 percent (121, 896 MWH) from 661, 245 MWH during the third quarter of 2016 to 783, 141 MWH during 2016 fourth quarter.

These increases were largely due to the on-going remedial works of the Morupule B Power Station, with the intension of meeting the nation`s electricity demand.

2.2 Imported Electricity

The discussion on this section is based on tables **6** and **7**.

Imported electricity declined by 32.0 percent (107, 388 MWH) from 335, 931 MWH imported during the fourth quarter of 2015 to 228, 543 MWH imported during the quarter under review **(Table 6)**.

Comparison of the volume of imported electricity during the fourth quarter of 2016 to that imported during the third quarter of the same year shows a decrease of 31.4 percent (104, 812 MWH), from 333, 355 MWH during the third quarter to 228, 543 MWH during the current quarter. This decrease was attributable to Botswana Power Corporation's focused efforts on the improvement of domestic electricity generation.

2.3 Distribution of Electricity

Tables **8**, **9** and **10** form the basis for the discussion under this Sub-Section. **Table 8** shows the physical volume of electricity distributed from 2005 to the fourth quarter of 2016 while **Table 9**, which is based on **Table 8**, presents annual percentage changes in the volume of electricity distributed from 2006 to 2016 fourth quarter. These tables can also be used as a guidance with regard to whether electricity distributed is improving, thereby alleviating the electricity shortages that the country has been facing for quite some time.

Year-on-Year comparison of distributed electricity during the fourth quarter of 2016 and the same quarter in 2015 depicts a decrease of 2.8 percent (29, 448 MWH), from 1,041,132 MWH during the fourth quarter of 2015 to 1,011,684 MWH distributed during the last quarter of 2016.

The quarter-on-quarter comparison of electricity distribution shows an increase of 1.7 percent (17, 084 MWH), from 994, 600 MWH during the third quarter of 2016 to 1, 011, 684 MWH during the quarter under review.

Table 10 gives electricity generation, importation and distribution as well as electricity generation as a percentage of electricity distribution. This table is intended to give guidance with regard to whether electricity generated locally is improving, thereby reducing dependency on importation.

The table shows that electricity generated locally contributed 77.4 percent to electricity distributed during the fourth quarter of 2016, as compared to 67.7 percent during the corresponding quarter in 2015, and 66.5 percent during the third quarter in 2016.

The above figures show an increase of 9.7 percentage points on 2016 fourth quarter local generation contribution (77.4 percent) to electricity distributed as compared to 2015 fourth quarter generation contribution of 67.7 percent. The contribution of electricity generated during the last quarter of 2016, to electricity distributed (77.4 percent) shows an increase of 10.9 percentage points over the contribution of locally generated electricity during the third quarter of the same year (66.5 percent) to electricity distributed during that quarter.

Table 2: Physical Volume of Electricity Generation (MWH): January 2005 – December 2016

Period	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Jan	81,040	80,089	56,291	53,926	33,922	44,442	39,195	26,574	110,960	137,802	158,907	206,381
Feb	63,304	57,774	56,291	49,732	37,890	38,641	32,847	16,938	80,410	77,067	180,520	127,975
Mar	67,654	73,826	57,521	51,072	46,413	55,401	20,079	67,761	88,358	102,377	179,400	109,272
Apr	79,507	79,764	56,127	49,313	38,987	40,872	29,593	34,069	94,011	151,675	195,568	112,765
May	64,802	71,473	49,358	61,558	49,464	41,943	15,762	39,826	140,454	252,235	206,905	179,837
Jun	81,897	75,929	49,358	58,334	20,132	30,676	23,045	48,928	137,414	321,453	227,503	193,586
Jul	82,891	63,899	61,290	54,588	38,103	33,156	27,814	81,013	158,120	318,627	240,314	213,841
Aug	65,513	62,379	62,544	47,278	48,795	39,594	24,536	11,205	223,420	296,036	177,052	219,402
Sep	73,052	51,072	52,235	39,890	36,522	35,177	21,063	97,177	218,222	201,802	174,617	228,002
Oct	78,323	55,444	41,183	42,689	32,361	37,746	27,166	77,236	32,183	71,243	301,913	299,002
Nov	59,405	62,900	38,502	40,367	26,443	20,894	23,044	113,384	203,228	244,723	213,798	213,303
Dec	69,227	59,723	44,046	38,538	34,885	38,430	19,231	89,101	194,717	186,915	189,490	269,893
Q1	211,998	211,689	170,103	154,730	118,225	138,485	92,120	111,274	279,728	317,245	518,828	443,628
Q2	226,206	227,166	154,844	169,206	108,584	113,491	68,400	122,823	371,879	725,363	629,976	486,188
Q3	221,456	177,350	176,068	141,756	123,420	107,927	73,413	189,395	599,762	816,465	591,983	661,245
Q4	206,955	178,066	123,731	121,594	93,689	97,070	69,441	279,721	430,128	502,881	705,201	783,141
TOTAL	**866,615**	**794,271**	**624,746**	**587,286**	**443,918**	**456,972**	**303,374**	**703,213**	**1,681,497**	**2,361,954**	**2,445,988**	**2,374,202**

Table 3: Indices of Physical Volume of Electricity Generation: January 2005 – December 2016

Period	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Jan	57.8	57.2	40.2	38.5	24.2	31.7	28.0	19.0	79.2	98.3	113.4	147.3
Feb	45.2	41.2	40.2	35.5	27.0	27.6	23.4	12.1	57.4	55.0	128.8	91.3
Mar	48.3	52.7	41.0	36.4	33.1	39.5	14.3	48.4	63.1	73.1	128.0	78.0
Apr	56.7	56.9	40.1	35.2	27.8	29.2	21.1	24.3	67.1	108.2	139.6	80.5
May	46.2	51.0	35.2	43.9	35.3	29.9	11.2	28.4	100.2	180.0	147.7	128.3
Jun	58.4	54.2	35.2	41.6	14.4	21.9	16.4	34.9	98.1	229.4	162.4	138.2
Jul	59.2	45.6	43.7	39.0	27.2	23.7	19.8	57.8	112.8	227.4	171.5	152.6
Aug	46.8	44.5	44.6	33.7	34.8	28.3	17.5	8.0	159.4	211.3	126.4	156.6
Sep	52.1	36.4	37.3	28.5	26.1	25.1	15.0	69.4	155.7	144.0	124.6	162.7
Oct	55.9	39.6	29.4	30.5	23.1	26.9	19.4	55.1	23.0	50.8	215.5	214.1
Nov	42.4	44.9	27.5	28.8	18.9	14.9	16.4	80.9	145.0	174.6	152.6	152.2
Dec	49.4	42.6	31.4	27.5	24.9	27.4	13.7	63.6	139.0	133.4	135.2	192.6
Q1	50.4	50.4	40.5	36.8	28.1	32.9	21.9	26.5	66.5	75.5	123.4	105.5
Q2	53.8	54.0	36.8	40.3	25.8	27.0	16.3	29.2	88.5	172.6	149.9	115.7
Q3	52.7	42.2	41.9	33.7	29.4	25.7	17.5	45.1	142.7	194.2	140.8	157.3
Q4	49.2	42.4	29.4	28.9	22.3	23.1	16.5	66.5	102.3	119.6	167.8	186.3
Year	**51.5**	**47.2**	**37.2**	**34.9**	**26.4**	**27.2**	**18.0**	**41.8**	**100.0**	**140.5**	**145.5**	**141.2**

Table 4: Annual Percentage Changes in the Indices of the Physical Volume of Electricity Generation: January 2006 – December 2016

Period	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Jan	(1.2)	(29.7)	(4.2)	(37.1)	31.0	(11.8)	(32.2)	317.5	24.2	15.3	29.9
Feb	(8.7)	(2.6)	(11.7)	(23.8)	2.0	(15.0)	(48.4)	374.7	(4.2)	134.2	(29.1)
Mar	9.1	(22.1)	(11.2)	(9.1)	19.4	(63.8)	237.5	30.4	15.9	75.2	(39.1)
Apr	0.3	(29.6)	(12.1)	(20.9)	4.8	(27.6)	15.1	175.9	61.3	28.9	(42.3)
May	10.3	(30.9)	24.7	(19.6)	(15.2)	(62.4)	152.7	252.7	79.6	(18.0)	(13.1)
Jun	(7.3)	(35.0)	18.2	(65.5)	52.4	(24.9)	112.3	180.9	133.9	(29.2)	(14.9)
Jul	(22.9)	(4.1)	(10.9)	(30.2)	(13.0)	(16.1)	191.3	95.2	101.5	(24.6)	(11.0)
Aug	(4.8)	0.3	(24.4)	3.2	(18.9)	(38.0)	(54.3)	1,893.9	32.5	(40.2)	23.9
Sep	(30.1)	2.3	(23.6)	(8.4)	(3.7)	(40.1)	361.4	124.6	(7.5)	(13.5)	30.6
Oct	(29.2)	(25.7)	3.7	(24.2)	16.6	(28.0)	184.3	(58.3)	121.4	323.8	(0.7)
Nov	5.9	(38.8)	4.8	(34.5)	(21.0)	10.3	392.0	79.2	20.4	(12.6)	(0.2)
Dec	(13.7)	(26.2)	(12.5)	(9.5)	10.2	(50.0)	363.3	118.5	(4.0)	1.4	42.4
Q1	(0.1)	(19.6)	(9.0)	(23.6)	17.1	(33.5)	20.8	151.4	13.4	63.5	(14.5)
Q2	0.4	(31.8)	9.3	(35.8)	4.5	(39.7)	79.6	202.8	95.1	(13.2)	(22.8)
Q3	(19.9)	(0.7)	(19.5)	(12.9)	(12.6)	(32.0)	158.0	216.7	2.5	(27.5)	11.7
Q4	(14.0)	(30.5)	(1.7)	(22.9)	3.6	(28.5)	302.8	53.8	16.9	40.2	11.1
TOTAL	**(8.3)**	**(21.3)**	**(6.0)**	**(24.4)**	**2.9**	**(33.6)**	**131.8**	**139.1**	**40.5**	**3.6**	**(2.9)**

Note:
1. () Indicates negative figures

Table 5: Quarter-on-Quarter Percentage Changes: 2005 –December 2016

Period	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Q1	0.0	2.3	(4.5)	25.1	(2.8)	47.8	(5.1)	60.2	0.0	(26.2)	3.2	(37.1)
Q2	6.7	7.3	(9.0)	9.4	(8.2)	(18.0)	(25.7)	10.4	32.9	128.6	21.4	9.6
Q3	(2.1)	(21.9)	13.7	(16.4)	14.0	(4.8)	7.3	54.2	61.3	12.6	(6.0)	36.0
Q4	(6.5)	0.4	(29.7)	(14.2)	(24.1)	(10.1)	(5.4)	47.7	(28.3)	(38.4)	19.1	18.4

Note:
1. () Indicates negative figures

Table 6: Physical Volume of Imported Electricity (MWH): January 2005 – December 2016

Period	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Jan	156,153	159,086	206,867	210,395	201,994	236,110	243,795	272,338	193,786	192,251	184,564	140,172
Feb	157,125	163,078	206,795	213,161	188,165	219,836	229,027	274,079	185,022	216,031	113,430	166,303
Mar	166,979	179,445	215,819	227,289	203,111	250,756	269,723	249,777	216,621	207,923	153,098	217,261
Apr	149,853	148,030	192,109	209,664	205,743	234,466	256,694	253,390	206,965	162,767	129,605	196,075
May	170,282	177,752	212,303	214,604	223,094	280,917	277,975	271,135	169,159	85,246	129,487	138,677
Jun	151,803	189,630	204,987	216,285	267,277	275,405	279,130	275,063	151,442	33,474	117,155	134,100
Jul	154,880	193,270	197,880	245,954	270,073	276,165	275,387	245,151	161,866	39,365	99,695	110,932
Aug	173,404	202,512	200,591	246,899	220,243	259,190	268,187	296,226	82,084	48,497	132,541	119,340
Sep	175,051	197,552	206,166	233,921	247,990	248,636	256,871	200,082	78,365	132,060	132,191	103,083
Oct	171,099	206,608	227,681	247,374	263,707	266,963	264,952	240,631	123,785	266,785	59,516	57,653
Nov	184,856	194,428	231,581	239,255	262,763	271,584	274,539	209,811	123,785	96,415	115,763	116,517
Dec	163,584	195,562	215,786	223,135	238,572	268,052	272,789	212,114	128,060	147,112	160,652	54,373
Q1	480,257	501,608	629,482	650,845	593,269	706,702	742,544	796,194	595,429	616,206	451,092	523,736
Q2	471,938	515,412	609,399	640,554	696,114	790,788	813,799	799,587	527,566	281,487	376,248	468,852
Q3	503,336	593,334	604,636	726,774	738,305	783,991	800,444	741,459	322,315	219,922	364,427	333,355
Q4	519,539	596,597	675,048	709,764	765,042	806,599	812,281	662,556	375,630	510,311	335,931	228,543
TOTAL	**1,975,069**	**2,206,951**	**2,518,565**	**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**

Table 7: Annual Percentage Changes in the Physical Volume of Imported Electricity: January 2006 – December 2016

Period	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Jan	1.9	30.0	1.7	(4.0)	16.9	3.3	11.7	(28.8)	(0.8)	(4.0)	(24.1)
Feb	3.8	26.8	3.1	(11.7)	16.8	4.2	19.7	(32.5)	16.8	(47.5)	46.6
Mar	7.5	20.3	5.3	(10.6)	23.5	7.6	(7.4)	(13.3)	(4.0)	(26.4)	41.9
Apr	(1.2)	29.8	9.1	(1.9)	14.0	9.5	(1.3)	(18.3)	(21.4)	(20.4)	51.3
May	4.4	19.4	1.1	4.0	25.9	(1.0)	(2.5)	(37.6)	(49.6)	51.9	7.1
Jun	24.9	8.1	5.5	23.6	3.0	1.4	(1.5)	(44.9)	(77.9)	250.0	14.5
Jul	24.8	2.4	24.3	9.8	2.3	(0.3)	(11.0)	(34.0)	(75.7)	153.3	11.3
Aug	16.8	(0.9)	23.1	(10.8)	17.7	3.5	10.5	(72.3)	(40.9)	173.3	(10.0)
Sep	12.9	4.4	13.5	6.0	0.3	3.3	(22.1)	(60.8)	68.5	0.1	(22.0)
Oct	20.8	10.2	8.6	6.6	1.2	(0.8)	(9.2)	(48.6)	115.5	(77.7)	(3.1)
Nov	5.2	19.1	3.3	9.8	3.4	1.1	(23.6)	(41.0)	(22.1)	20.1	0.7
Dec	19.5	10.3	3.4	6.9	12.4	1.8	(22.2)	(39.6)	14.9	9.2	(66.2)
Q1	4.4	25.5	3.4	(8.8)	19.1	5.1	7.2	(25.2)	3.5	(26.8)	16.1
Q2	9.2	18.2	5.1	8.7	13.6	2.9	(1.7)	(34.0)	(46.6)	33.7	24.6
Q3	17.9	1.9	20.2	1.6	6.2	2.1	(7.4)	(56.5)	(31.8)	65.7	(8.5)
Q4	14.8	13.1	5.1	7.8	5.4	0.7	(18.4)	(43.3)	35.9	(34.2)	(32.0)
TOTAL	**11.7**	**14.1**	**8.3**	**2.4**	**10.6**	**2.6**	**(5.3)**	**(39.3)**	**(10.6)**	**(6.2)**	**1.8**

Note:
1. () Indicates negative figures

Table 8: Physical Volume of Electricity Distribution (MHW): January 2005 – December 2016

Period	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Jan	237,193	239,174	263,158	264,322	235,916	280,552	282,990	298,912	304,746	330,053	343,471	346,553
Feb	220,429	220,852	263,086	262,893	226,055	258,477	261,873	291,017	265,432	293,098	293,950	294,278
Mar	234,633	253,271	273,340	278,361	249,524	306,157	289,801	317,538	304,979	310,300	332,498	326,533
Apr	229,360	227,794	248,236	258,978	244,730	275,338	286,287	287,459	300,976	314,442	325,173	308,840
May	235,084	249,225	261,661	276,163	272,558	322,860	293,737	310,961	309,613	337,481	336,392	318,514
Jun	233,699	265,559	254,346	274,619	287,410	306,081	302,176	323,990	288,856	354,927	344,658	327,686
Jul	237,771	257,169	259,169	300,542	308,176	309,321	303,201	326,165	319,986	357,992	340,009	324,773
Aug	238,917	264,891	263,134	294,177	269,037	298,784	292,723	307,431	305,504	344,533	309,593	338,742
Sep	248,104	248,624	258,402	273,811	284,512	283,813	277,934	297,258	296,587	333,861	306,808	331,085
Oct	249,422	262,052	268,864	290,063	296,067	304,709	292,118	317,867	155,968	338,027	361,429	357,598
Nov	244,261	257,327	270,083	279,622	289,206	292,478	297,584	323,195	327,013	341,138	329,561	329,820
Dec	232,811	255,285	259,832	261,673	273,458	306,482	292,020	301,215	322,777	334,027	350,142	324,266
Q1	692,255	713,297	799,584	805,576	711,494	845,186	834,665	907,468	875,157	933,451	969,920	967,364
Q2	698,144	742,578	764,243	809,759	804,698	904,279	882,199	922,411	899,445	1,006,850	1,006,224	955,040
Q3	724,792	770,684	780,705	868,531	861,725	891,918	873,857	930,854	922,077	1,036,387	956,410	994,600
Q4	726,494	774,664	798,779	831,358	858,731	903,669	881,721	942,277	805,758	1,013,192	1,041,132	1,011,684
Year	**2,841,685**	**3,001,223**	**3,143,311**	**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**

Table 9: Annual Percentage Changes for the Physical Volume of Electricity Distribution: January 2006 – December 2016

Period	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Jan	0.8	10.0	0.4	(10.7)	18.9	0.9	5.6	2.0	8.3	4.1	0.9
Feb	0.2	19.1	(0.1)	(14.0)	14.3	1.3	11.1	(8.8)	10.4	0.3	0.1
Mar	7.9	7.9	1.8	(10.4)	22.7	(5.3)	9.6	(4.0)	1.7	7.2	(1.8)
Apr	(0.7)	9.0	4.3	(5.5)	12.5	4.0	0.4	4.7	4.5	3.4	(5.0)
May	6.0	5.0	5.5	(1.3)	18.5	(9.0)	5.9	(0.4)	9.0	(0.3)	5.3
Jun	13.6	(4.2)	8.0	4.7	6.5	(1.3)	7.2	(10.8)	22.9	(2.9)	(4.9)
Jul	8.2	0.8	16.0	2.5	0.4	(2.0)	7.6	(1.9)	11.9	(5.0)	(4.5)
Aug	10.9	(0.7)	11.8	(8.5)	11.1	(2.0)	5.0	(0.6)	12.8	(10.1)	9.4
Sep	0.2	3.9	6.0	3.9	(0.2)	(2.1)	7.0	(0.2)	12.6	(8.1)	7.9
Oct	5.1	2.6	7.9	2.1	2.9	(4.1)	8.8	(50.9)	116.7	6.9	(1.1)
Nov	5.3	5.0	3.5	3.4	1.1	1.7	8.6	1.2	4.3	(3.4)	0.1
Dec	9.7	1.8	0.7	4.5	12.1	(4.7)	3.1	7.2	3.5	4.8	(7.4)
Q1	3.0	12.1	0.7	(11.7)	18.8	(1.2)	8.7	(3.6)	6.7	3.9	(0.3)
Q2	6.4	2.9	6.0	(0.6)	12.4	(2.4)	4.6	(2.5)	11.9	(0.1)	(5.1)
Q3	6.3	1.3	11.2	(0.8)	3.5	(2.0)	6.5	(0.9)	12.4	7.7	4.0
Q4	6.6	3.1	4.1	3.3	5.2	(2.4)	6.9	(14.5)	25.7	2.8	(2.8)
Year	**5.6**	**4.7**	**5.5**	**(2.4)**	**9.5**	**(2.0)**	**6.6**	**(5.4)**	**13.9**	**(0.4)**	**(1.1)**

Note:
1. () Indicates negative figures

Table 10: Generation of Electricity (MWH) as a Percentage of Distribution 2005 – December 2016

Year\ Utility	Electricity Generation	Imported Electricity	Electricity Distribution	% Contribution of Generated Electricity to Distributed
2005	866,615	1,975,069	2,841,685	30.5
2006	794,271	2,206,951	3,001,223	26.5
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
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

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:

$$R_i = \frac{P_{ic}}{P_{i0}} * 100$$

Where P_{ic} is the electricity generation of the current quarter and P_{i0} 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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