



GHANA WHOLESAL ELEC TRICIT Y MARKET BULLETIN

MARKET WATCH

Monthly Market Data Analysis

ISSUE NO. 7: 1st July 2016 to 31st July 2016

This Bulletin covers major developments in the Wholesale Electricity Market (WEM) of Ghana from 1st July 2016 to 3rd July 2016. It analyses the performance of the key WEM indicators against their benchmarks, and examines the likely implications of any discernable trends for the future of the market. This edition of the monthly WEM Bulletin also discusses the mid year performance of the power sector in respect of electricity generation and supply.

The Energy Commission (EC) would very much appreciate and welcome comments from readers on the Bulletin. Reasonable care has been taken to ensure that the information contained in this Bulletin is accurate at the time of publication, but nevertheless, regrets any errors, omissions or inaccuracies therein.

HIGHLIGHTS OF THE MONTH

Electricity supply reduces further in July 2016

According to the Electricity Supply Plan (ESP) developed for the year 2016, projected electricity supply for July 2016 was 1,370 GWh but the outturn was 966.93 GWh which was 29.4% lower than projected. The total electricity supply of 966.9 GWh in July 2016 was made up of 928.7 GWh produced domestically and imports of 38.2 GWh from La Cote D'Ivoire. The imports of electricity increased from 26.12 GWh in June 2016 to 38.2 GWh in July 2016 representing an increase of about 46.25% even though it was projected at the beginning of the year that Ghana would not need to import electricity in July 2016. It is important to note that even with the increased electricity imports, the country was not able to meet the projected demand for the month of July 2016. Table 1 shows a comparison of the projected and actual electricity demand and supply for July 2016.

The Ghana peak load of 1,743.3 MW recorded in July 2016 was lower than the projected peak load of 2,283 MW representing a deviation of over 500 MW. It also represented a drop of about 142.2 MW compared to the peak load of 1,885.5 MW recorded in June 2016. The low water levels in the Akosombo dam and unavailability of fuel were largely responsible for the inadequate generation at peak time in July 2016. Basically peak load was constrained by how much electricity could be generated in the system.

Table 1 Projected and Actual Outturn of electricity supply and demand in July 2016

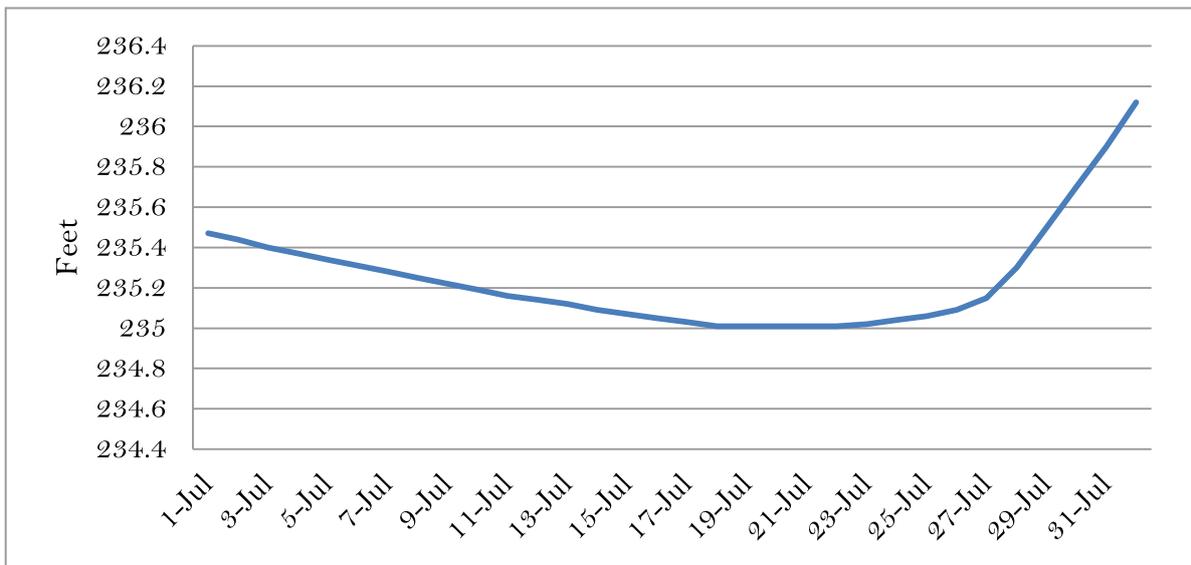
	July 2016	
	Projected	Actual Outturn
Total Demand (GWh)	1,370.0	966.9
Supply by Power Plant (GWh)		
Akosombo	278.0	251.2
Kpong	53.0	52.0
Bui	86.0	35.6
TAPCO	174.0	55.1
TICO	104.0	169.7
Sunon Asogli - Phase I	115.0	-
Sunon Asogli - Phase II	114.0	-
CENIT	53.0	27.9
TT1PP	15.0	28.7
TT2PP	-	-
MRP	-	-
KTPP	90.0	54.7
Ameri Energy	154.0	93.5
Karpowership	134.0	160.3
Trojan	-	-
Total Electricity Generation		928.8
Imports	-	38.2
Total Supply	1,370.0	966.9
Deficit/Over supply		(403.1)
% Reduction in Supply		29.4%
Peak Load (MW)	2,283.0	1,743.3

HIGHLIGHTS OF THE MONTH

Akosombo dam water level begun to recover in July 2016 but still below 2015 levels

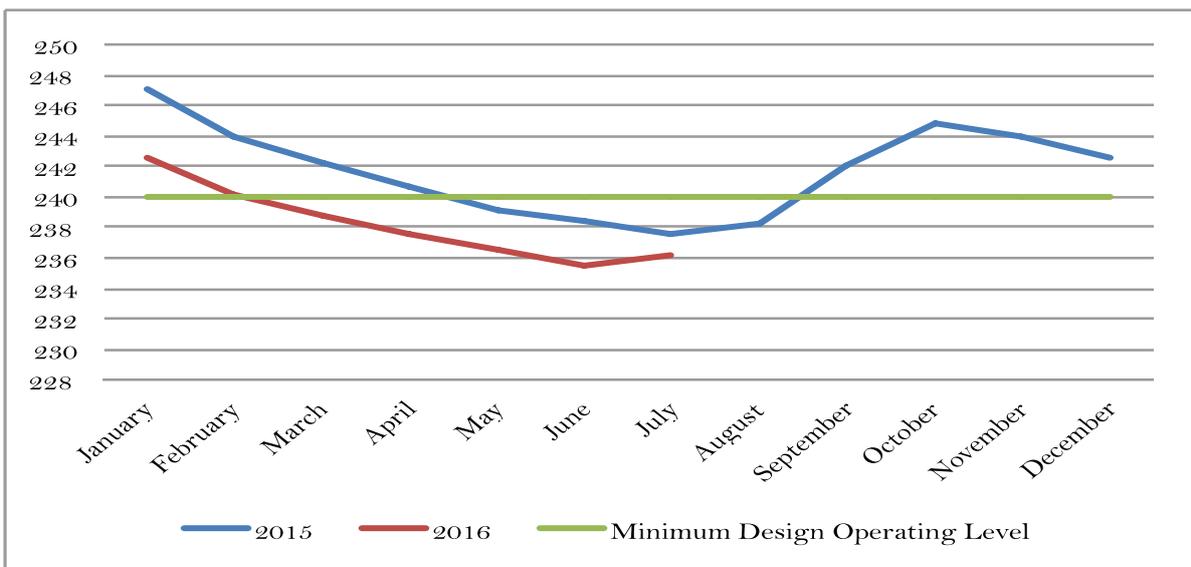
The water level of the Akosombo dam stabilized and began rising steeply in July 2016. The Akosombo hydro power plant however continued to operate below the minimum design operating level of 240 feet reaching 236.12 feet at the end of July 2016 compared to the level of 235.47 feet at the end of June 2016. The steep rise in the water level may be attributed primarily to reduction in electricity generation from the power plant coupled with increased water inflow into the lake.

Figure 1: Actual trajectory of Akosombo dam in July 2016



Even though the level rose in July 2016 it was 2.82 feet lower than the level at the same time last year. Figure 2 shows comparative trajectory of the Akosombo dam for 2015 and 2016.

Figure 2: Month-End Water Level for Akosombo Dam for 2015 and 2016



The Akosombo power plant generated 251.2 GWh of electricity in July 2016 compared to 278 GWh projected under the 2016 ESP (i.e. 9.6% lower than projected). Indeed, electricity generation in July 2016 was 23% below the monthly average generation of 325.6 GWh in the first half of the year. Electricity generation in July 2016 was also lower than in June 2016 (290.8 GWh). On the average, daily electricity production in July 2016 (8.1 GWh/day) was lower than in June 2016 (9.69 GWh/day) representing a reduction of about 18.55% between June 2016 and July 2016.

HIGHLIGHTS OF THE MONTH

Bui Power Plant increases electricity generation in July 2016 as water level rises

Electricity production from the Bui Power Plant increased from 19.65 GWh in June 2016 to 35.6 GWh in July 2016, representing an increase of 75%, based on the daily average production in the two months. Electricity generation in July 2016 was however significantly lower than the projected figure of 86 GWh under the 2016 ESP. The water level of the Bui dam continued to rise, reaching 554.02 feet at the end of July 2016, 3.02 feet above the minimum operating level of 551 feet.

Sunon Asogli Power Plant available but did not generate electricity in July 2016

The difficulties with natural gas supplies from WAGP worsened in July 2016 resulting in the Sunon Asogli Power Plant (SAPP) not generating any electricity even though the power plant was available to do so. Natural gas supplies from Nigeria continued to be the bane of electricity generation by power plants in Tema and Kpone as shortages normally result in the curtailment of power generation from the SAPP, TT2PP and MRP because they are operated solely on natural gas. The absence of natural gas in the Tema Power Enclave will therefore curtail over 300 MW of capacity from these power plants and could result in severe reduction in power supply leading to load shedding.

CENIT operated for half of the month of July 2016

CENIT Power Plant operated for half of the month generating a total of 27.9 GWh in July 2016 which is below its projected generation of 53 GWh under the 2016 ESP as well as its generation of 56 GWh in June 2016. The lower generation is attributable to shortage in fuel supplies.

Ameri Energy Power Plant operated throughout July 2016

The power plant generated a total of 93.54 GWh of electricity in July 2016 compared to 149 GWh in June 2016, a reduction of 55.6 GWh between June and July 2016. It was also lower than the 134 GWh projected for the month under the 2016 ESP. The lower electricity generation in July 2016 was largely as a result of inadequate supply of natural gas from the Atuabo Gas processing Plant. For a larger part of July 2016 the Ameri Energy Power Plant operated below its maximum capacity owing to low gas supplies to the Aboadze Power Enclave. The Ameri Energy power plant contributed 188 MW to meet peak demand of 1,743 MW for the month of July 2016 compared to its maximum capacity of 250 MW if fuel supplies were adequate.

KTPP decreased generation in July 2016

The Kpone Thermal Power Plant (KTPP) generated a total of 54.7 GWh in July 2016 compared to 90 GWh projected under the 2016 ESP. This represented a variance of about 39.2% of the projected and a reduction of about 13.5% on the 63.24 GWh it generated in June 2016. The KTPP operated virtually as a base load plant on one unit in July 2016 except for two (2) days when it was not operated. The power plant contributed 104 MW at peak representing about 6% of peak demand in July 2016.

Karpowership decreased generation marginally in July 2016 as HFO price remain stable

The Karpowership power plant generated 160.32 GWh in July

2016 compared to 157.4 GWh it generated in June 2016 and well above the projected generation of 134 GWh under the 2016 ESP. The power plant also contributed its full capacity of 225.5 MW to meet the system peak demand of 1,743.3 MW in the month of July 2016. The cost of electricity generated from the power plant remained unchanged as the price of Heavy Fuel Oil (HFO) dropped marginally from US\$ 244.87 per metric tonne in June 2016 to US\$244.13 per metric tonne in July 2016. The fuel cost in the total cost of electricity production was US cents 4.45/kWh in July 2016.

TICO operated at maximum capacity in July 2016

The TICO power plant operated at its maximum combined cycle mode capacity of 346 MW for most part of July 2016 thus generating 169.7 GWh, its highest since the beginning of the year except for January 2016 when it generated about 199 GWh. In July 2016, TICO generated more than the 104 GWh projected under the 2016 ESP. The TICO power plant operated largely on natural gas with some little LCO.

TAPCO continued to generate at half capacity

Owing to technical challenges, TAPCO continued to operate at half capacity throughout July 2016 generating 55.1 GWh compared to the 174 GWh projected under the 2016 ESP. Generation in July 2016 represented a deviation of about 68% from the projected. It operated largely on LCO with occasional use of natural gas.

TT1PP operational after undergoing mandatory maintenance

The Tema Thermal 1 Power Plant, (TT1PP) operated for 13 days in July 2016 after undergoing mandatory maintenance in May and June 2016. The power plant generated 28.7 GWh in July 2016 compared to 78 GWh it would have generated if it were to operate through out the month. It however generated 15 GWh more than what was projected for the month of July 2016 under the 2016 ESP.

Natural Gas supplies remained low at Aboadze Power Enclave in July 2016

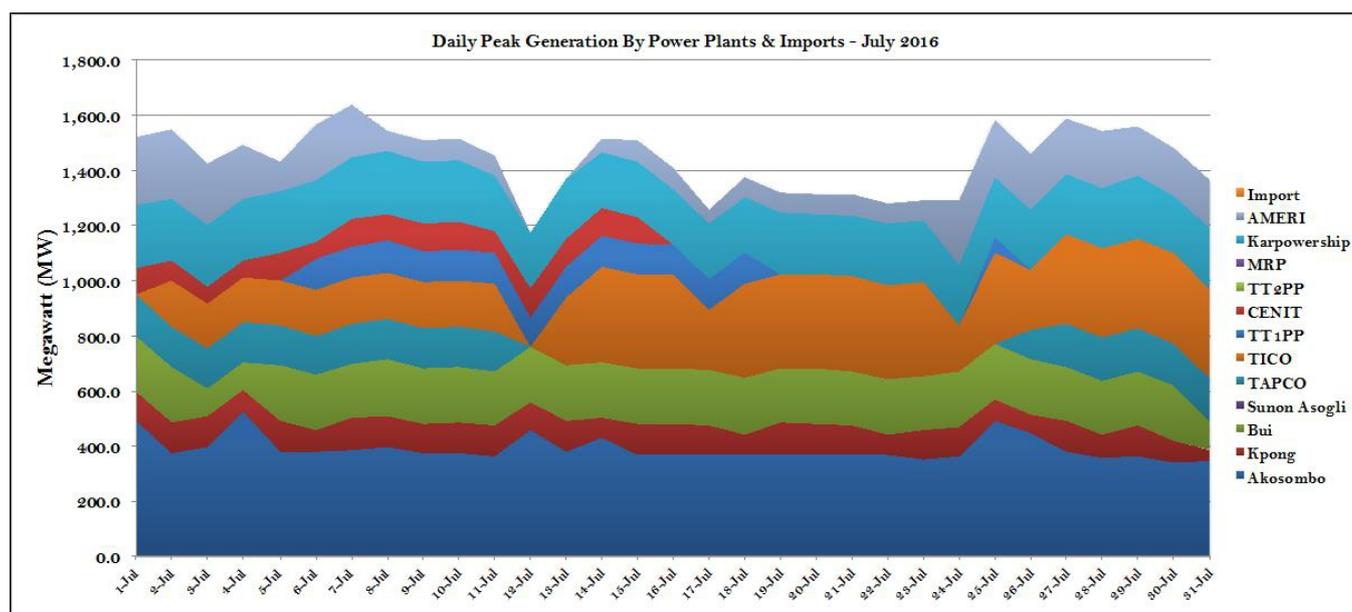
Natural gas supplies from the Atuabo Gas Processing Plant to the Aboadze Power Enclave remained lower than the potential maximum capacity of 100 MMscf averaging 62 MMscf per day in July 2016. Natural gas supply in July 2016 was however higher than the average of 46.1 MMscf per day delivered in June 2016. Of the total 1,755 MMscf natural gas consumed in July 2016 in the Aboadze Power Enclave, TICO and Ameri power plants consumed 47% and 45.8% respectively with 7.2% being consumed by TAPCO which operated largely on LCO in July 2016. Natural gas supplies to the Aboadze Power Enclave are expected to increase in the month of August 2016 thus ensuring increased power generation from the Enclave.

Electricity imports increases in July 2016

Electricity imports from La Cote D'Ivoire increased from 18.6 GWh in May 2016 to 26.1 GWh in June 2016 and then rose further to 38.2 GWh in July 2016. The increasing amount of imports of electricity is an indication of the shortages in domestic electricity generation which the country is facing currently. While electricity imports are helping to stem the supply challenges, this is not enough to close the existing gap in projected requirements to meet demand.

OPERATIONAL FACT SHEET

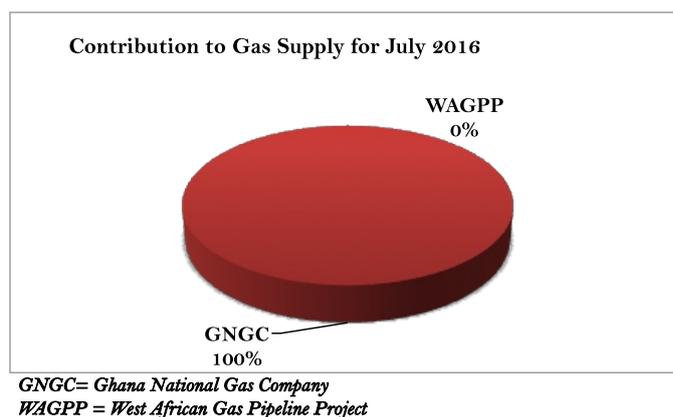
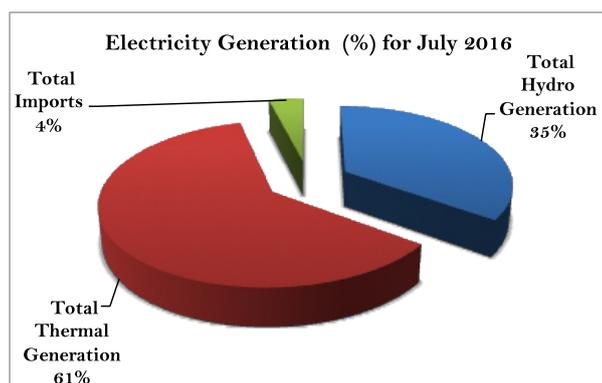
Peak Generation (MW) - July 2016						
Source of Supply	Week 1	Week 2	Week 3	Week 4	Maximum Non-Coincident Peak Generation	Generation at System Coincident Peak
Akosombo	526.0	458.0	370.0	493.0	526.0	387.0
Kpong	115.0	114.0	114.0	115.0	115.0	113.0
Bui	200.0	204.0	205.0	200.0	205.0	198.0
Sunon Asogli	-	-	-	-	-	-
TAPCO	148.0	146.0	-	155.0	155.0	145.0
TICO	171.0	346.0	344.0	344.0	346.0	170.0
TT1PP	112.0	113.0	110.0	60.0	113.0	112.0
CENIT	102.0	102.0	99.0	-	102.0	100.0
KTPP	105.0	105.0	104.0	90.0	105.0	104.0
TT2PP	-	-	-	-	-	-
MRP	-	-	-	-	-	-
AMERI Energy	250.9	78.3	77.1	237.9	250.9	188.8
Karpowership	225.9	225.5	220.0	226.1	226.1	225.5
Import	-	-	-	-	-	-
Trojan Power	-	-	-	-	-	-
Total Supply including imports	1,955.8	1,891.8	1,643.1	1,921.0	2,144.0	1,743.3
Total Generation without imports	1,955.8	1,891.8	1,643.1	1,921.0	2,144.0	1,743.3



Ghana Electricity Demand for July 2016		
Maximum Peak Generation	MW	1,743.30
Minimum Peak Generation	MW	1,277.40
Average Peak Generation	MW	1,526.27
Total Energy Generated	GWh	928.75
Load Factor (LF)	%	71.6%

OPERATIONAL FACT SHEET

Weekly Generation (GWh) - July 2016					
Power Plant	Week 1	Week 2	Week 3	Week 4	Total
Akosombo	60.08	57.79	56.06	77.24	251.17
Kpong	12.42	12.16	12.08	15.38	52.04
Bui	7.31	8.67	9.81	9.79	35.58
Sunon Asogli	-	-	-	-	-
TAPCO	23.82	13.74	-	17.56	55.12
TICO	22.55	29.45	52.41	65.28	169.69
TT1PP	2.01	15.94	10.17	0.62	28.74
CENIT	11.94	13.39	2.53	-	27.86
KTPP	10.18	17.20	13.46	13.85	54.69
TT2PP	-	-	-	-	-
MRP	-	-	-	-	-
AMERI Energy	33.12	8.89	11.61	39.92	93.54
Karpowership	37.49	36.08	34.73	52.02	160.32
Import	7.76	9.82	9.39	11.22	38.19
Trojan Power	-	-	-	-	-
Total Supply including imports	228.68	223.13	212.25	302.88	966.94
Total Generation without imports	220.92	213.31	202.86	291.66	928.75

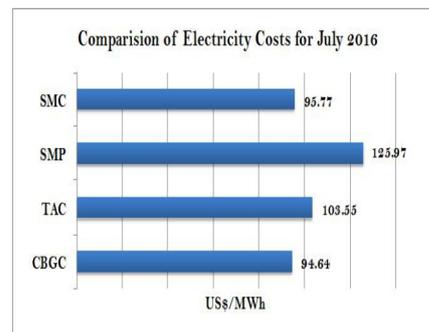


Average Gas Flow (mmscfd) - July 2016					
Location	Week 1	Week 2	Week 3	Week 4	Monthly Average
Etoki	-	0.67	-	-	0.15
Tema	-	-	-	-	-
Aboadze	66.52	42.36	70.11	66.86	61.99

Water Level (ft) - July 2016					Change in water level
Hydro Dam	Week 1	Week 2	Week 3	Week 4	(feet)
Akosombo	235.47	235.25	235.07	236.12	0.65
Bui	552.25	552.38	552.42	554.02	1.77
Akosombo Minimum Design Operating	240.00	240.00	240.00	240.00	
Akosombo Maximum Level	278.00	278.00	278.00	278.00	

ECONOMIC FACT SHEET

Month at a Glance				
	Units	July 2016	June 2016	Change
Average Market Energy Cost	US\$/MWh	74.70	84.71	(10.01)
Average Market Capacity Charge (AMCC)	US\$/MWh	28.84	21.72	7.12
Total Average Market Cost (TAC)	US\$/MWh	103.55	106.43	(2.88)
System Marginal Cost (SMC)	US\$/MWh	95.77	143.79	(48.02)
System Marginal Capacity Charge (SMCC)	US\$/MWh	30.20	30.87	(0.67)
Spot Market Price (SMP)	US\$/MWh	125.97	174.66	(48.69)
Composite Bulk Generation Charge (CBGC)	US\$/MWh	94.64	94.64	(0.00)
Deviation of TAC from CBGC	US\$/MWh	(8.91)	(11.79)	2.88
Deviation of SMP from CBGC	US\$/MWh	(31.33)	(80.02)	48.69



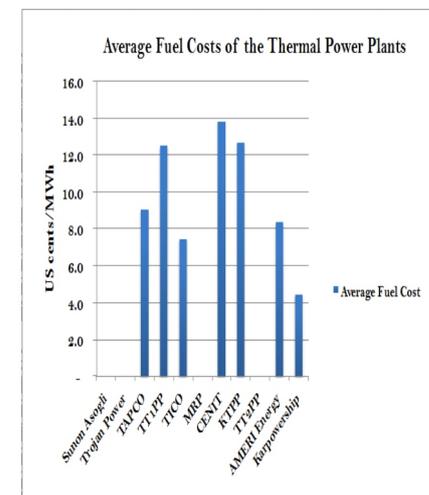
CBGC = Composite Bulk Generation Charge; SMC = System Marginal Cost; SMP = Spot Market Price

Power Plant	Maximum Non-Coincident Peak Generation (MW)	Plant Utilisation Factor (%)	Electricity Generation (GWh)	Gas Consumption (MMBTU)	LCO Consumption (MMBTU)	HFO Consumption (MMBTU)
Akosombo	526.00	64.18	251.17	-	-	-
Kpong	115.00	60.82	52.04	-	-	-
Sunon Asogli	-	-	-	-	-	-
Bui	205.00	23.33	35.58	-	-	-
Trojan Power	-	-	-	-	-	-
TAPCO	155.00	47.80	55.12	147,111.00	307,244.26	-
TT1PP	113.00	34.18	28.74	-	306,000.53	-
TICO	346.00	65.92	169.69	958,138.32	383,271.31	-
MRP	-	-	-	-	-	-
CENT	102.00	36.71	27.86	-	328,318.96	-
KTPP	105.00	70.01	54.69	-	-	-
TT2PP	-	-	-	-	-	-
AMERI Energy	250.90	50.11	93.54	922,561.64	-	-
Imports	-	-	38.19	-	-	-
Karpowership	226.10	92.00	160.32	-	-	1,315,281.31
Total	2,144.00		966.94	2,027,810.96	1,324,835.06	1,315,281.31



Spot Market Price = SRMC of Energy + SRMC of Capacity

	July 2016	June 2016	Change
Total Thermal Power Plants Fuel Cost	US\$ 46,868,098.31	55,537,728.15	(8,669,629.84)
Average Thermal Power Plants Fuel Cost	US\$/MWh 74.61	84.71	(10.10)

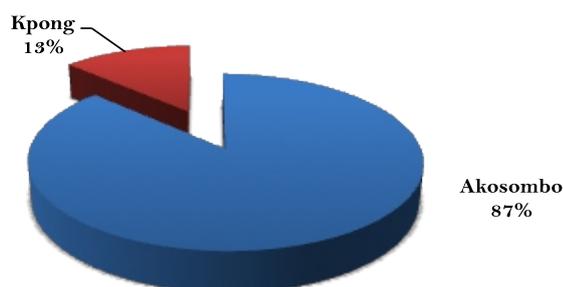


Legacy Hydro Windfall Revenue for June 2016				
Power Plant	Average Cost (US\$/MWh)	Average SMP (US\$/MWh)	Difference (US\$/MWh)	Windfall Revenue (US\$)
Akosombo	33.10	126.18	93.08	23,379,182.46
Kpong	59.20	126.18	66.98	3,485,696.98
Total				26,864,879.44

SMP = Spot Market Price

Average Fuel Prices		
Fuel Type	Unit	Delivered Cost
Natural Gas	US\$/MMBTU	8.51
LCO	US\$/BBL	63.77
HFO	US\$/Tonne	244.13
DFO	US\$/Tonne	405.12

Contribution to Legacy Hydro Windfall Revenue - July 2016



Other Market News and Trends

1. Review of mid-year performance of electricity generation and supply

A review of the half-year results in respect of electricity generation and supply reveals that, the power sector performance was weak as almost all projections were missed. The supply of electricity in the half-year was lower than what was projected in the 2016 Electricity Supply Plan (ESP) resulting in frequent electricity curtailment to all classes of consumers. This was despite the fact that 650 MW additional capacity of thermal power was available in the first half of the year. The additional capacity included the 250 MW Ameri Energy power plant, 2 x110 MW from the KTPP and 180 MW from the Sunon Asogli Phase II project. The contribution of the additional capacity was subdued owing to fuel supply challenges which pushed the managers of the power sector to generate more electricity from the hydro power plants than projected even though they were substantially distressed.

The total electricity supplied in the first half of the year was 6,666.2 GWh as against a projected amount of 8,353 GWh representing a shortfall of 1,686.8 GWh or 20.2% of projected figures. Of the total electricity supplied in the first half of 2016, generation from hydro sources accounted for 44.51%, thermal power plants accounted for 54.80% and import accounted for 0.69% as against a projection of 28.27% from hydro sources, 66.99% from thermal power plants and 4.74% from imports within the same period. The Akosombo and Bui hydro-electric power plants generated in excess of their projections even though they had lost substantial capability to generate owing to the low water levels. Table 1.1 shows the half-year monthly supply of electricity by source as well a comparison of the total actual electricity supply against what was projected under the 2016 ESP.

Table 1.1: Half-year monthly supply of electricity by source

Power Plants	Half-year Generation and Supply of Electricity by Source (GWh)							Actual Total	Projected Total
	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16			
Akosombo	257.27	277.90	361.07	397.70	368.70	290.83		1,953.47	1,632.00
Kpong	53.28	55.70	71.03	77.50	74.50	57.18		389.19	311.00
Bui	115.11	122.90	158.65	165.30	42.70	19.65		624.31	418.00
TAPCO	174.99	170.70	135.22	49.00	102.50	96.89		729.30	968.00
TICO	199.64	112.00	105.01	160.50	116.40	100.05		793.60	1,089.00
Sunon Asogli I	96.27	69.90	55.90	44.50	36.30	9.00		311.87	590.00
Sunon Asogli II	-	-	-	-	-	-		-	519.00
CENIT	56.27	51.50	32.08	66.50	52.80	56.80		315.95	361.00
TT1PP	0.43	0.30	-	-	-	-		0.73	246.00
TT2PP	7.18	3.30	5.65	7.30	2.20	-		25.63	13.00
MRP	0.55	0.20	1.19	-	-	-		1.94	-
KTPP	-	-	-	9.60	36.70	63.24		109.54	298.00
Ameri	6.94	127.10	90.87	-	92.20	146.16		463.27	678.00
Karpowership	154.49	135.40	147.63	149.90	156.20	157.38		901.00	834.00
Total Electricity Generation	1,122.42	1,126.90	1,164.30	1,127.80	1,081.20	997.18		6,619.80	7,957.00
Imports	1.66	-	-	-	18.60	26.12		46.38	396.00
Total Supply (GWh)	1,124.08	1,126.90	1,164.30	1,127.80	1,099.80	1,023.30		6,666.18	8,353.00

It was projected that the bulk (95.3%) of the demand for electricity in the first half of the year will be met from domestic electricity generating resources with the rest (4.7%) met from imports which was to be procured for only the months of January and February 2016 when it was expected that there would not be enough generation to meet demand. Subsequently, imports would not be required for the rest of the year as there would be enough generating capacity to provide for the needed demand. These projections were based on the optimism following the efforts that had been made to increase generating resources in order to fix the crisis in 2015. The outcome was different. Our review reveals that the optimism did not materialize as domestic generation of electricity dipped. Even though there was enough thermal generating capacity available, the actual electricity generated dipped below projections owing primarily to fuel supply challenges. Similarly, planned imports in January and February 2016 did not happen as only 1.66 GWh of electricity imports was recorded in January 2016 against the planned imports of 396 GWh in January and February 2016. Imports were rather elevated in May 2016 and June 2016 to close the supply and demand gap and ameliorate the negative impacts of the increased power supply curtailments.

Against good industry practice and decades of local experience with hydro power operations, electricity generation from the hydro power facilities was elevated beyond projections to make up for the shortfalls from domestic thermal generation as well as imports. The excessive generation resulted in the Akosombo dam being operated continuously below the minimum design operating level. Unlike Akosombo hydro power plant, even though the Bui hydro power plant was over-drafted above projections for the period to meet generation shortfalls it was operated marginally above its minimum design operating level.

The outturn of fuel supply to the thermal power plants in the half-year sums up the challenges facing the power sector currently. Table 1.2 shows the detailed outturn of fuels supplied against what was projected under the 2016 ESP.

Table 1.2: Comparison of fuel supply to power plants against projections for first half of 2016

	Comparison of fuel supply against projected: January - June 2016											
	Actual	Projected	Deviation	Actual	Projected	Deviation	Actual	Projected	Deviation	Actual	Projected	Deviation
	GAS (MMBtu)	GAS (MMBtu)	GAS (MMBtu)	LCO (BBLs)	LCO (BBLs)	LCO (BBLs)	DFO (BBLs)	DFO (BBLs)	DFO (BBLs)	HFO (BBLs)	HFO (BBLs)	HFO (BBLs)
SEAP	3,167,247.00	9,342,601.00	(6,175,354.00)	-	-	-	-	-	-	-	-	-
TAPCO	2,913,374.00	1,892,298.00	1,021,076.00	617,515.00	1,117,502.00	(499,987.00)	653.37	29,919.00	(29,265.63)	-	-	-
TT1PP	10,640.00	-	10,640.00	-	427,159.00	(427,159.00)	1,576.00	25,432.00	(23,856.00)	-	-	-
TICO	2,525,574.00	7,035,177.00	(4,509,603.00)	765,726.98	243,194.00	522,532.98	949.44	-	949.44	-	-	-
MRP	44,094.00	-	44,094.00	-	-	-	-	-	-	-	-	-
CENIT	-	-	-	671,750.03	877,521.00	(205,770.97)	-	-	-	-	-	-
KTPP	-	1,285,383.00	(1,285,383.00)	-	-	-	237,203.34	535,641.00	(298,437.66)	-	-	-
TT2PP	366,303.00	292,016.00	74,287.00	-	-	-	-	-	-	-	-	-
Ameri	5,153,894.00	6,891,176.00	(1,737,282.00)	-	-	-	-	-	-	-	-	-
Karpowership	-	-	-	-	-	-	-	-	-	1,224,069.00	1,644,443.00	(420,374.00)
Total	14,181,126.00	26,738,651.00	(12,557,525.00)	2,054,992.01	2,665,376.00	(610,383.99)	240,382.16	590,992.00	(350,609.84)	1,224,069.00	1,644,443.00	(420,374.00)

By converting all fuels into a common unit (Btu) it is observed that, of the total of 63.25 Trillion BTU of fuel required to generate the electricity projected, 55.14 Trillion BTU was supplied thus representing an overall shortage in fuel supply of 20.7%.

Natural Gas supply was lower than projected by 47% primarily because of non-supply from Nigeria and lower than projected supply from the Atuabo Gas Processing Plant owing to difficulties with gas production from the FPSO at the Jubilee Oil and Gas field. Light Crude Oil supplies dipped by 22.9% largely due to financial difficulties emanating from the somber financial position of the distribution utilities. Diesel Fuel Oil (DFO) supplies required to operate the newly commissioned KTRP also suffered the same fate as DFO supply dropped below 59% of the projections. The supply of HFO reduced by 25.6% over the projections under the 2016 ESP. The shortages in electricity generation are clearly attributable to fuel supply difficulties. Natural gas supplies were lower by 47%, LCO by 22.9%, DFO by 59.3% and HFO by 25.6% compared to what was projected. The inadequate supply of fuel as against what was projected resulted from inadequate financial resources to procure fuel and technical difficulties as well as force majeure situations that affected supplies from both Nigeria and the FPSO at the Jubilee Oil & Gas Filed in Ghana.

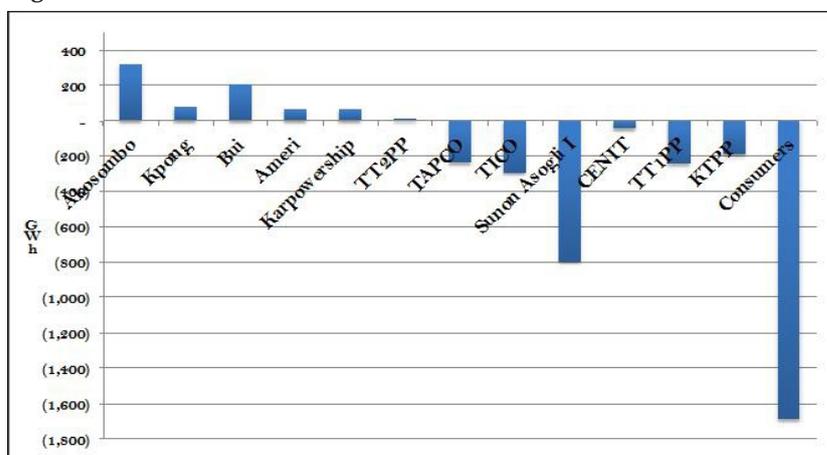
The issues relating to potential fuel supply difficulties were known right from the beginning of the year. The issues regarding the rationalization of electricity tariffs and other funding mechanisms to resolve the problem of funding fuel supplies were well known and indeed, there were proposals on the table to deal with the issues. The platform for implementing the proposals was not established. Generally, institutional inertia to policy implementation was weak in the first half of 2016 as “political paranoia” took over the best of the sector intentions as the required actions were difficult to roll out.

2. Power sector Half-year Review – “Gainers” and “Losers” Scorecard

The difficulty in generating adequate electricity to meet projected demand in the first half of the year resulted in “gainers” and “losers” among the power plant as well as consumers. When demand and supply are in balance there is stability leading to a “win, win” situation. When demand and supply are not in balance there is market distortion which leads to “gainers” and “losers”. Based on the assumption that the projections under 2016 ESP were optimal, then any deviations are going to result in suboptimal states that departs from a “win, win” situation into a state of “gainers” and “loser”. In this submission, “Gainers” represent those power plants that were able to generate more electricity than had been projected under the 2016 ESP while “Losers” are those that were not able to generate electricity as projected. At the global level, imbalances between supply and demand results in either a “gain” or a “loss” for consumers in general. Figure 2.1 shows the “scorecard” for “gainers” and “losers” in respect of ability to meet projections.

The biggest “losers” were consumers in general who lost about 1,686.8 GWh of projected electricity which was not supplied. On the supply side, Karpowership and TT2PP were “gainers” among the thermal power plants with 67 GWh and 12.6 GWh above projections. The rest of the thermal power plants were losers with SAPP being the biggest “loser” being unable to generate as much as 797.1 GWh of its projected electricity generation for the first half of the year. All the hydro power plants emerged as “gainers” with Akosombo being the biggest “gainer” by producing 321.5 GWh over what it was projected to produce in the half-year. Bui power gained 206.3 GWh and then Kpong recorded 78.2 GWh above projections.

Figure 2.1: Gainers and Loser Scorecard



Acronyms

Btu = British Thermal Units

DFO = Distillate Fuel Oil

ECG = Electricity Company of Ghana

HFO = Heavy Fuel Oil

GWh = Giga-watt Hours

KTRP = Kpone Thermal Power Plant

LCO = Light Crude Oil

MRP = Mines Reserve Plant

MWh = Mega-watt hours

SAPP = Sunon Asogli Power Plant

TICO = Takoradi International Company

TT2PP = Tema Thermal 2 Power Plant

WAGP = West African Gas Pipeline

CBGC = Composite Bulk Generation Charge (gazetted by the PURC)

EC = Energy Commission

ESP = Electricity Supply Plan

GHp = Ghana Pesewa

IPP = Independent Power Producer

kWh = Kilo-watt hours

Mmscf = Million Standard Cubic Feet

MW = Megawatt

PURC = Public Utilities Regulatory Commission

TAPCO = Takoradi Power Company

TT1PP = Tema Thermal 1 Power Plant

VRA = Volta River Authority

WEM = Wholesale Electricity Market

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