

# TRANSMISSION COMPANY OF NIGERIA

To: Head (ISO), TCN - Abuja  
From: General Manager, NCC, Osogbo

## DAILY OPERATIONAL REPORT OF SUNDAY 08/07/2018

### FOR: EVENTS OF SATURDAY 07/07/2018

#### 1.0 EXECUTIVE OPERATIONS SUMMARY:

##### 1.1 GENERATION PROFILE: NATIONAL STATISTICS

DETAILS	MW	HRS	DATE
PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD)	22,330	21:00	07/07/2018
GENERATION CAPABILITY	7381.9	-00-	-00-
UNITS ON BARK CAPABILITY AT PEAK	4493.8	-00-	-00-
PEAK GENERATION	4088.1	-00-	-00-
LOWEST GENERATION	2702.2	15:00	07/07/2018
8-HOURLY DURATION PEAK	3933.9	0100-0800	-00-
	3370.9	0900-1600	-00-
	4089.1	1700-2400	-00-
PEAK GENERATION TO DATE	5222.3	21:00	18/12/2017
MAXIMUM AVAILABLE CAPACITY TO DATE	7652.6	08:00	14/04/2014
MAXIMUM ENERGY GENERATED (MWH) TO DATE	109,372.01	0000-2400	02/02/2016

##### 1.2 CRITICAL VOLTAGE

DETAILS	KV	STATION	HRS
NOMINAL VOLTAGE	330		
STATUTORY LIMITS	280.5 - 346.6		
HIGHEST VOLTAGE FOR THE DAY	362	Omotosho T/S	15:00
LOWEST VOLTAGE FOR THE DAY	297	Jos T/S	08:00

##### 1.3 FREQUENCY RANGE

DETAILS	HZ	HRS
NOMINAL FREQUENCY	50	
STATUTORY LIMITS	49.75 - 50.25	
HIGHEST FREQUENCY	50.30	03:40
LOWEST FREQUENCY	50.17	19:14

##### 1.4 SYSTEM COLLAPSE UP DATE

		No. of days since last total collapse: 29												No. of days since last partial collapse: 82														
		Highest No of days ever attained in-between total collapses: 134												Highest No of days ever attained in-between partial collapses: 240														
		Jan	Feb.	Mar.	Apr	May	Jun	Jul	Aug	Sep.	Oct	Nov	Dec	Total														
2010	Total	---	3	1	--	3	3	3	--	2	2	1	4	22														
	Partial	1	--	--	1	1	3	4	4	3	2	--	1	20														
2011	Total	--	--	--	--	4	3	1	1	1	2	1	--	13														
	Partial	--	1	--	--	--	--	--	1	--	1	2	--	6														
2012	Total	--	--	2	1	5	2	1	--	--	2	2	1	16														
	Partial	--	--	2	3	--	--	--	--	1	--	1	1	8														
2013	Total	--	1	2	2	3	4	1	1	1	1	4	2	22														
	Partial	--	--	--	--	--	--	--	--	2	--	--	2	2														
2014	Total	2			2	0	3	1	0	1	0	0	9															
	Partial			0	0	1	0	0	0	0	0	2	1	4														
2015	Total	1	0	1	0	2	0	1	0	0	0	1	0	6														
	Partial	--	--	1	0	2	0	0	0	1	0	0	0	4														
2016	Total	--	--	2	3	6	5	0	0	1	1	2	2	22														
	Partial	--	--	1	0	1	3	1	0	0	0	0	0	6														
2017	Total	5	3	0	3	1	1	0	0	1	1	1		15														
	Partial	1	0	1	0	0	0	1	0	3	3			9														
2018	Total	5	1	0	0	0	1							7														
	Partial	0	0	0	1	0								1														

##### 1.5 BREAKDOWN OF PEAK & OFF PEAK GENERATION (NATIONAL PEAK & OFF PEAK)

STATION	TURBINE	PEAK GEN. (MW)	OFF-PEAK GEN.(MW)		
1 KAINJI	HYDRO	172	91		
2 JEBBA	HYDRO	168	65		
3 SHIRORO	HYDRO	388	166		
4 EGBIN ST2 - 5	STEAM	445	398		
5 SAPELE	STEAM	44	0		
6 DELTA	GAS	605	253		
7 AFAM IV-V	GAS	75	75		
8 GEREGU GAS	GAS	132	89		
9 OMOTOSHO GAS	GAS	127.6	126.6		
10 OLORUNSOGO GAS	GAS	157	125.4		
11 GEREGU NIPP	GAS	127	70		
12 SAPELE NIPP	GAS	196.8	108.2		
13 ALAOJI NIPP	GAS	0	0		
14 OLORUNSOGO NIPP	GAS	0	0		
15 OMOTOSHO NIPP	GAS	208	153.8		
16 ODUKPAI NIPP	GAS	0	0		
17 IHOVBOR NIPP	GAS	102.9	79.4		
18 OKPAI	GAS	237	167		
19 AFAM VI	GAS	131	102		
20 IBOM POWER	GAS	103.4	73.6		
21 ASCO	GAS	0	0		
22 A.E.S	GAS	0	0		
23 OMOKU	GAS	77.7	66.7		
24 TRANS AMADI	GAS	57	49.3		
25 RIVERS IPP	(GAS)	0	0		
26 AZURA - EDO IPP	(GAS)	264	225		
27 EGBIN ST6	(GAS)	127	110		
28 PARAS ENERGY	(GAS)	69.4	67		
29 GBARAIN NIPP	GAS	84.3	61.2		
<b>TOTAL</b>		<b>4089.1</b>	<b>2702.2</b>		
1.6 ENERGY GENERATED/ENERGY SENT OUT:					
STATION	TURBINE	ENERGY GENERATED MWH	ENERGY GENERATED MWH/H	ENERGY SENT OUT MWH	ENERGY SENT OUT MWH/H
1 KAINJI	HYDRO	2833.00	118.04	2817.30	117.39
2 JEBBA	HYDRO	2671.00	111.29	2656.08	110.67
3 SHIRORO	HYDRO	5769.00	240.38	5744.23	239.34
4 EGBIN ST2 - 5	STEAM	9407.00	391.96	8949.90	372.91
5 SAPELE	STEAM	795.10	33.13	741.60	30.90
6 DELTA	GAS	11049.45	460.39	10803.40	450.14
7 AFAM IV-V	GAS	1799.00	74.96	1794.51	74.77
8 GEREGU GAS	GAS	3931.10	163.80	3907.28	162.80
9 OMOTOSHO GAS	GAS	3338.00	139.08	3307.10	137.80
10 OLORUNSOGO GAS	GAS	3459.69	144.15	3431.49	142.98
11 GEREGU NIPP	GAS	2663.13	110.96	2650.03	110.42
12 SAPELE NIPP	GAS	4110.64	171.28	4087.40	170.31
13 ALAOJI NIPP	GAS	0.00	0.00	0.00	0.00
14 OLORUNSOGO NIPP	GAS	0.00	0.00	0.00	0.00
15 OMOTOSHO NIPP	GAS	4380.80	182.53	4350.10	181.25
16 ODUKPAI NIPP	GAS	0.00	0.00	0.00	0.00
17 IHOVBOR NIPP	GAS	2120.00	88.33	2096.84	87.37
18 OKPAI	GAS	4323.00	180.13	4253.10	177.21
19 AFAM VI	GAS	2767.84	115.33	2726.66	113.61
20 IBOM	GAS	1870.24	77.93	1863.00	77.63
21 ASCO	GAS	0.00	0.00	0.00	0.00
22 AZURA - EDO IPP	GAS	6618.25	275.76	6601.50	275.06
23 A.E.S	GAS	0.00	0.00	0.00	0.00
24 OMOKU	GAS	1678.00	69.92	1646.29	68.60
25 TRANS AMADI	GAS	1218.70	50.78	1119.04	46.63
26 RIVERS IPP	GAS	0.00	0.00	0.00	0.00
27 EGBIN ST6	STEAM	3536.00	147.33	3349.70	139.57
28 PARAS ENERGY	GAS	1667.10	69.46	1662.50	69.27
29 GBARAIN NIPP	GAS	1689.30	70.39	1673.40	69.73
<b>TOTAL</b>		<b>83,695.34</b>	<b>3,487.31</b>	<b>82,232.45</b>	<b>3,426.35</b>

1.7A GENERATION POSITION AT 06:00HRS OF SUNDAY 08/07/2018

	STATIONS	NO OF INSTALLED UNITS	AVAILABLE UNITS	INSTALLED CAPACITY OF AVAILABLE UNITS(MW)	GENERATION CAPABILITY OF AVAILABLE UNITS(MW)	UNITS ON BAR	CAPABILITY OF UNITS ON BAR (MW)	GENERATION AT 06:00HRS (MW)	REMARKS	
PRIVATISED COMPANIES	KAINJI HYDRO	8	1G5, 11 & 12 3	340	195	1G5, 11 & 12 3	157	94	1G6 - Out on maintenance. 1G7 - Out on stator winding failure. 1G8 - Out due to oil leakage on governor runner head. 1G9 - Out due to burnt 7.5MVA 33/0.415kV & 183.6MVA 16/330kV station service transformer and generator transformer. 1G10 - Shut down due to thrust bearing temperature problem. Generation reduced due to low gross operating head.	
	JEBBA HYDRO	6	2G1 - 5 5	475	400	2G5 1	80	70	2G1 - 4 - Shut down on water management. 2G6 - Out due to burnt generator winding and AVR.	
	SHIRORO HYDRO	4	411G 2 - 4 3	440	375	411G2 - 4 3	375	170	411G1 - Out due to synchronization problem. Generation reduced on frequency management.	
	EGBIN STEAM	5	ST1, 2 & 4 3	660	410	ST1, 2 & 4 3	410	410	ST3 - Out on high vibration since 19th June 2017. ST5 - Out due to boiler tube leakage.	
	SAPELE (STEAM)	6	ST2 1	120	45	ST2 1	45	45	ST1 - Shut down due to alarm on inlet gas guide control trouble. ST3 - Out on stator winding problem. ST4 & 5 - Awaiting major overhaul. ST6 - Out on gas control valve not following reference point.	
	DELTA (GAS)	18	GT7, 9 - 13, 15, 16 & 18 - 20 11	635	620	GT7, 9 - 13, 15, 18 & 20 9	435	422	GT3 & 5 - Out due to generator winding fault. GT4 - Out on loss of excitation. GT6, 8 & 14 - Out on major overhaul. GT16 & 19 - Shut down on frequency management. GT17 - Tripped on bearing vibration than maximum.	
	AFAM IV & V (GAS)	8	GT18 1	75	75	GT18 1	75	75	GT1 - 12 - De-commissioned and scrapped. GT13 - 16 - Out on blade failure. GT17 - Out due to technical issues. GT19 & 20 - Awaiting major overhaul.	
	GEREGU GAS	3	GT11 - 13 3	435	435	GT11 1	145	120	GT12 - Out on frequency management. GT13 - Out due to gas constraint. Generation reduced on frequency management.	
	OMOTOSHO GAS	8	GT1 - 8 8	336	304	GT1, 2, 5 - 7 5	190	128.1	GT3, 4 & 8 - Out due to gas constraint. Generation reduced on frequency management.	
	OLORUNSOGO GAS	8	GT1 - 8 8	336	304	GT1, 2, 4, 6 & 8 5	190	157.5	GT3, 5 & 7 - Out due to gas constraint. Generation reduced on frequency management.	
	GEREGU NIPP	3	GT21 - 23 3	435	435	GT22 3	145	120	GT21 & 23 - Out due to gas constraint.	
	SAPELE NIPP	4	GT1 & 3 2	225	225	GT1 & 3 2	225	148.9	GT2 - Out due to high air inlet differential pressure. GT3 - Generation reduced due to filter problem. GT4 - Out due to high inlet differential pressure.	
	NIPP	ALAOJI NIPP GAS	4	GT1, 2 & 4 3	375	360	0 0	0	0	GT1, 2 & 4 - Out due to gas constraint. GT3 - Shut down due to lack of spare parts.
OLORUNSOGO NIPP		6	GT1 - 3 3	375	360	0 0	0	0	GT1 - 3 - Out due to gas constraint. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance.	
OMOTOSHO NIPP GAS		4	GT1, 2 & 4 3	375	360	GT2 & 4 2	240	182.7	GT1 - Out on frequency management. GT3 - Out due to oil leakage on the unit.	
ODUKPANI NIPP		5	GT4 & 5 2	240	230	0 0	0	0	GT1 - Out on fault. GT2 - Out due to malfunctioning gas regulating valve. GT3 - Out on high air inlet differential pressure. GT4 & 5 - Shut down due to work on gas pipe line equipment.	
IHOVBOR NIPP		4	GT1 & 3 2	225	225	GT3 1	70.1	70.1	GT1 - Out on frequency management. GT2 - Out on fault. GT3 - Manual adjustment to frequency. GT4 - Out on maintenance.	
GBARAIN NIPP GAS		1	GT2 1	112.5	112.5	0 0	0	0	GT2 - Tripped due to tripping of Owerri/Ahoada 132kV line 2.	
IPP		OKPAI GAS/STEAM	3	GT11 & 12 2	300	300	GT11 & 12 2	300	221	ST18 - Out due to water shortage. Generation reduced on frequency management.
		AZURA - EDO	3	GT11 - 13 3	461	461	GT11 & 12 2	306	150	GT13 - Out on frequency management. Generation reduced on frequency management.
		AFAM VI GAS/STEAM	4	GT11 - 13 & ST10 4	650	640	GT13 1	150	114	GT11 & ST10 - Out due to gas constraint. GT12 - Shut down on frequency management.
		IBOM POWER GAS	3	GT3 1	115	115	GT3 1	115	72.4	GT3 - Generation reduced due to line constraint.
	AES	0	0 0	0	0	0 0	0	0	Out of production since 27/09/2014.	
	ASCO	2	0 0	0	0	0 0	0	0	ST1 - Shut down due to leakage in the furnace.	
	OMOKU GAS	6	GT1, 2, 5 & 6 4	100	80	GT1, 2, 5 & 6 4	80	37.1	GT3 - Out due to gas leakage. GT4 - Awaiting major overhaul. Generation reduced due to load flow on Alaoji/Afam 132kV line 2.	
	TRANS-AMADI	4	GT1, 2 & 4 3	75	60	GT1, 2 & 4 3	60	57.2	GT3 - Out on fault. Generation reduced due to load flow on Alaoji/Afam 132kV line 2.	
	RIVERS	1	0 0	0	0	0 0	0	0	GT1 - Out on maintenance.	
	SUB TOTAL	131	82	7915.5	7126.5	51	3793.1	2865	Frequency = 50.49Hz.	

1.7B GENERATION POSITION AT 06:00HRS OF SUNDAY 08/07/2018 FOR UNITS ON BILATERAL AGREEMENT

FEEDER	UNIT	ST6		TOTAL (MWH)	REMARK	ST6		TOTAL (MWH)	REMARK	
		MAX LOAD (MW)	TIME (HRS)			MAX LOAD (MW)	TIME (HRS)			
EGBIN	1	1		220	110	1		110	Available unit on bar.	
		GT2 - 9				GT2 - 9				
PARAS ENERGY	8	8		67.8	67.8	8		67.8	Available units on bar.	
		8				8				
SUB TOTAL	9	9		287.8	177.8	9		177.8		
GRAND TOTAL	140	91		8203.3	7304.3	60		3,970.90	3,042.80	Frequency = 50.49Hz.

1.7C

BILATERAL AGREEMENT UNITS DISPATCH - SATURDAY 07/07/2018.  
EGBIN ST6 120MW GENERATION TO IKEJA ELECTRICITY DISTRIBUTION COMPANY

FEEDERS NAME	MAX. LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HRS IN SERVICE	TOTAL (MWH)	REMARK
OGBA	U-STEEL	ON	0100HRS		14		FAULT ON 132KV LINE
	PTCEXPRESS	7	0900HRS		14		FAULT ON 132KV LINE
	SANKYO	OUT	OUT		OUT		FAULT ON 132KV LINE
	FEEDER 8	12	1300HRS		14		FAULT ON 132KV LINE
IKORODU	PULK IT	2	1900HRS		24.00HRS		Nil
	INDUSTRIAL	18	1100HRS		2400HRS		Nil
	SPINTEX	11	0100HRS		2400HRS		Nil
	DANGOTE	1	0100HRS		2400HRS		Nil
	LAND CRAFT	17	0100HRS		24.00HRS		Nil
ALAUUSA	TR4 15MVA	4.6	10:00		24HRS		Nil
	TR5 -15MVA	3.7	10:00		24HRS		Nil
	ALAUUSA	12.5	10:00		24HRS		Nil
M/LAND	PTC (MARYLAND)	15	1100HRS		2400HRS		Nil
<b>TOTAL LOAD</b>	<b>103.8</b>						

BILATERAL AGREEMENT LOAD DISPATCH  
60MW PARAS ENERGY GENERATION TO CEB OF SATURDAY 07/07/018

FEEDER	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
Ikeja West/Sakete 330kV line	71	10:00	67	10:00	24	1656	NIL

BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI LOAD DISPATCH TO THE FOLLOWING COMPANIES OF: SATURDAY 07/07/2018

COMPANY NAME	VOL-TAGE LEVEL	CON-TRAC-TUAL LOAD (MW)	MAX LOAD (MW)	TIME (HRS)	MIN LOAD (MW)	TIME (HRS)	HOURS IN SERVICE	TOTAL (MWH)	REMARK
INNER GALAXY	132kV line	25	0.1	01:00	0.1	24:00	24	2.4	O
KAM STEEL		15.0							SUPPLY NOT INTERRUPTED
ASAKA CEMENT	33kV feeder	0	9.4	12:00	4.1	01:00	24	159.3	SUPPLY NOT INTERRUPTED
KAM INTEGRATED		15.0	4	10:00	1.5	01:00	24	58.5	SUPPLY NOT INTERRUPTED
OLAM FLOUR MILLS		3.0	2.1	10:00	0.7	01:00	24	33.9	SUPPLY NOT INTERRUPTED
LORDSMITH		3	0.1	24:00	0.1	01:00	0:00	1.9	E/F

**1.8 HYDROLOGICAL DATA: SUNDAY 08/07/2018**

	KAINJI	JEBBA	SHIRORO
HEAD WATER ELEVATION (METERS)	130.21	100.07	363.65
TAIL WATER ELEVATION (METERS)	101.98	72.60	270.00
GROSS OPERATING HEAD (METERS)	<b>28.23</b>	<b>27.47</b>	<b>93.65</b>
AVERAGE TURBINE DISCHARGE (M3/SEC)	433.00	473.00	313.00
AVERAGE SPILLAGE (M3/SEC)	0.00	0.00	0.00
AVERAGE TOTAL STATION DISCHARGE (M3/SEC)	<b>433</b>	<b>473</b>	<b>313</b>
COMPUTED INFLOW (M3/SEC)	762.00	653.00	896.00
STORAGE DIFFERENTIAL	<b>329.00</b>	<b>180</b>	<b>573</b>
MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT	141.73	103	382.5
MINIMUM LEVEL BELOW WHICH NO GENERATION	129	99	355

**1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT SATURDAY 07/07/2018**

DISCO	MAXIMUM LOAD(MW)	TIME(HRS)	ALLOCATED LOAD (MW)	MINIMUM LOAD(MW)	TIME(HRS)
ABUJA	486.0	21:00	486	871	06:00
EKO	0.0	0	0	0	0
<b>IKEJA</b>	<b>513.5</b>	<b>10:00</b>	<b>750.8</b>	<b>166.7</b>	<b>16:00</b>

**2.0 GAS POSITION: SUNDAY 08/07/2018**

STATION	SIGNED ACQ Annual Contracted Quantity MMSCF/D	INSTALLED CAPACITY OF THERMAL STATIONS (MW)	PREVIOUS DAY OFF-TAKE (MMSCF/D)	CAPABILITY OF UNITS ON BAR OF THERMAL STATIONS (MW)	DIFFERENCE (MW)
EGBIN P/S	376	1100		520	580
DELTA (GAS)	420	915		435	480
OMOTOSHO GAS	143	336.8		190	146.8
OMOTOSHO NIPP	148.9	500		240	290
OLORUNSOGO (GAS)	138.2	336		190	146
OLORUNSOGO NIPP	0	750		0	750
SAPELE NIPP	129.9	500		225	275
SAPELE STEAM	50	720		45	675
AFAM IV-V	75	300		75	225
AFAM VI	104	650		150	500
GEREGU GAS	180	435		290	145
GEREGU NIPP	100	435		145	290
OKPAI (GAS/STEAM)	185	480		300	180
ALAJU NIPP	0	504		0	504
IHOVOR NIPP	75.7	450		70.1	379.9
IBOM	77.6	198		115	83
ODUKPANI NIPP	0	625		0	625
<b>TOTAL</b>	<b>2203.3</b>	<b>9234.80</b>		<b>2990.1</b>	<b>6244.7</b>

1 MMSCF IS EQUIVALENT TO 3.79MW

**3.0 SPINNING RESERVE FOR : SATURDAY 07/07/2018**

	(MW)	TIME	FREQUENCY
Maximum (MW)			
Minimum (MW)			
AVERAGE (MW)			

**3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF SUNDAY 08/07/2018 = 0MW. FREQUENCY 50.49Hz.**

S/N	POWER STATION	UNIT ON SPINNING RESERVE	CONTRACTED RESERVE	ACTUAL RESERVE (MW)	TOTAL (MW)
1	Egbin	ST2	100	0	0
		ST4		0	
		ST5		0	
		ST6		0	
2	Delta	GT16	40	0	0
		GT17	40	0	
3	Olorunsogo NIPP	GT1	40	0	0
		GT2		0	
		GT3		0	
		GT4		0	
4	Geregu NIPP	GT22	35	0	0
		GT1		0	
5	Omotosho NIPP	GT2	40	0	0
		GT3		0	
		GT4		0	
<b>TOTAL (MW)</b>			<b>295</b>	<b>0</b>	<b>0</b>

**4.0 UNAVAILABLE GENERATION CAPABILITY**

The unavailable generation capability for Sunday 08/07/2018 as at 0600Hrs was = **3672MW**.

S/NO	STATION	ACTUAL GENERATION CAPABILITY (MW)	GENERATION AT 0600HRS (MW)	UNAVAILABLE GENERATION CAPABILITY (MW)	SUB-TOTAL
<b>4.1 DUE TO GAS CONSTRAINTS:</b>					
1	Alajo NIPP GT1, 2 & 4	360	0	360	1953
2	Olorunsogo Gas GT3, 5 & 7	114	0	114	
3	Geregu NIPP GT21 & 23	290	0	290	
4	Atam VI GT11 & ST10	340	0	340	
5	Olorunsogo NIPP GT1 - 3	360	0	360	
6	Odukpani NIPP GT4 & 5	230	0	230	
7	Omotosho Gas GT3, 4 & 8	114	0	114	
8	Geregu Gas GT13	145	0	145	
				0	
				0	
				0	
				0	
IT IS ENVISAGED WITH IMPROVED PLANT AVAILABILITY AND RELIEF FROM EXISTING POWER SYSTEM NETWORK RELATED CONSTRAINTS, ADDITIONAL <b>1665.25MMSCF</b> OF GAS (EQUIVALENT TO <b>6244.7MW</b> WILL BE REQUIRED WHEN ALL THERMAL UNITS ARE ON BAR.					
<b>4.2 DUE TO LINE CONSTRAINTS</b>					
1	Ibom Power GT3	115	72.4	42.6	172.6
2	Trans-Amadi GT1, 2 & 4	60	37.2	22.8	
3	Omoku GT1, 2, 5 & 6	80	37.1	42.9	
4	Gbarin NIPP GT2	84.3	0	84.3	
<b>4.3 DUE TO FREQUENCY MANAGEMENT OCCASIONED BY DISCOS' LOAD DEMAND</b>					
1	Omotosho NIPP GT1	120	0	120	1226.4
2	Shiroro 411G2 - 4	375	170	205	
3	Azura-Edo GT13	153	0	153	
4	Ihovor NIPP GT1	75	0	75	
5	Delta GT16 & 19	180	0	180	
6	Omotosho Gas GT1, 2, 5 - 7	190	128.1	61.9	
7	Olorunsogo Gas GT1, 2, 4, 6 & 8	190	157.5	32.5	
8	Atam VI GT12	150	0	150	
9	Geregu Gas GT11 & 12	290	120	170	
10	Okpai GT11 & 12	300	221	79	
				0	
				0	
				0	
<b>4.4 DUE TO WATER MANAGEMENT</b>					
1	Jebba ZG1 - 4	320	0	320	320
				0	
<b>Grand Total</b>					<b>3672</b>

5.0 **OUTAGES:**

5 (A) **FORCED OUTAGES (GENERATION):-**

1 21:06 through 24:00Hrs, Gbarin NIPP GT2 tripped on reverse power due to tripping of Owerri/Ahoada 132kV line 2. LHR = 84.3MW.

5(B) **FORCED OUTAGES (TRANSMISSION):-**

- 1 00:40 – 13:20Hrs, Ayede T/S 100MVA 132/33kV transformer T1 primary CB tripped on differential, REF, O/C Blue and Yellow phases. LHR = 37MW
- 2 03:37 - 16:15Hrs, Delta T/S 60MVA 132/33kV transformer T23 primary and secondary CBs tripped on differential Red and Yellow phases. LHR = 22MW
- 3 14:51 through 24:00Hrs, Ikeja West/Alimosho 132kV line 2 CB tripped at Ikeja West T/S on Siprotec relay- General trip , Red Phase zone 1 trip, 21 pickup AG, PU time = 75ms, trip time = 1ms, distance = 1km.  
Siemens relay – General trip, directional O/C Red Phase and pickup directional, O/C operated directional E/F pickup. LHR = 8MW.  
**Note:** Inspection revealed that Red Phase conductor pulled out on tower # 2.
- 4 17:31 through 24:00Hrs, Mando T/S 150MVA 330/132/33kV transformer T1A primary and secondary CBs tripped on differential and REF. LHR = 13MW.
- 5 21:05 – 21:29Hrs, Alaoji/Owerri 132kV lines 1 & 2 CBs tripped at Alaoji T/S on the following relay indications:  
**Line 1:** Optimho relay- zone 1 Phase B –N, location = 58.52km, period = 53ms.  
Siemens relay – relay trip, instantaneous trip ie >> Yellow 2 x 3 Phases trip , backup protection. LHR = 24MW.  
**Line 2:** Siemens relay – relay trip, instantaneous trip ie >> Yellow Phase, backup protection. LHR = 24MW.
- 6 21:06 - 21:35Hrs, Owerri/Ahoada 132kV line 2 CB tripped at Owerri T/S on DEF. LHR = 18.8MW.

5 (C) **PLANNED OUTAGES:-**

- 1 09:50 – 12:56Hrs, Mando/Kaduna town 2 132kV line 2 was taken out to carry out annual preventive maintenance on the CB and its associated equipment at Mando T/S. Load loss = 34.5MW.
- 2 09:55 - 17:29Hrs, Delta/Benin 330kV line (cct G3B) was taken out to cut dangerous trees on towers #23 - 25. No load interruption as ccts S4G, S3B and S4B were in service.
- 3 09:58 through 24:00Hrs, Katampe/Apo 132kV line 1 was taken out to replace defective CB and isolator with new ones at Apo T/S. No load loss as line 2 was in service.

5(D) **URGENT OUTAGES:**

- 1 14:02 – 15:07Hrs, New Haven /Oji 132kV line was taken out to top up low oil in the Yellow Phase CB pole to normal at New Haven T/S. Load loss = 6MW.
- 2 14:02 – 15:07Hrs, Nkalagu T/S 30MVA 132/33kV transformer T2A was taken out to build up low SF6 gas pressure of secondary GCB to normal. Load loss = 1.5MW.
- 3 17:20 – 18:45Hrs, Ganmo T/S 40MVA 132/33kV transformer T2A was taken out to treat hot spot on red Phase secondary isolator clamp. Load loss = 7.6MW.

9 **GENERATOR MERIT ORDER BASED ON SYSTEM RESPONSE AND GRID RELIABILITY**

GROUP 1 - HYDRO UNITS (LEAST COST) ON FREE GOVERNOR CONTROL AND ANCILLARY SERVICE .

GROUP 2A - UNITS FROM ODUKPANI, AZURA, SHELL AFAM VI AGIP OKPAI, OLORUNSOGO POWER PLC AND OMOTOSHO POWER PLC.

GROUP 2B - OTHER GENERATING UNITS IDENTIFIED TO BE ON FREE GOVERNOR CONTROL.

GROUP 3 - OTHER UNITS IDENTIFIED TO BE OFFERING REGULATORY RESERVE.

GROUP 4 - OTHER UNITS OFFERING SPINNING RESERVE (THE POWER PLANTS CONTRACTED FOR THE ANCILLARY SERVICE).

GROUP 5 - ALL PLANTS DISPATCHED SUBJECT TO TRANSMISSION CONSTRAINT (NOT YET IDENTIFIED).

GROUP 6 - ALL PLANTS PROVIDING VOLTAGE SUPPORT ABOVE STATUTORY LIMIT (NOT YET IDENTIFIED).

10 **COMMUNICATION MEDIA**

STATIONS	NO INSTALLED	NO. WORKING
PLC/PAX	37	27
OPTIC FIBRE	13	8
PLS	14	0

5 (E) **EMERGENCY OUTAGES:- NIL**

5 (F) **AUTOMATIC UNDER FREQUENCY OPERATION:- NIL.**

5 (G) **330KV LINES THAT ARE OUT ON VOLTAGE CONTROL:-** ccts A1K, U1A & A1S.

5 (H) **330KV LINES THAT ARE OUT ON BREAKER PROBLEM:- NIL.**

5 (I) **330KV LINES THAT ARE OUT ON PLANNED OUTAGE:- NIL**

5 (J) **330KV LINES THAT ARE OUT ON LINE FAULT:-** ccts K4U, J2H & S5B.

5 (K) **330KV LINES THAT ARE ON SOAK:-** ccts N4J & F1K.

6 **WEATHER REPORT:-** Rainfall reported at New Haven, Osogbo, Katampe, Lokoja, Alaoji, Ayede, Akangba,Ikeja West, Egbin, Ajah & Kumbotso.

7 **INTERNATIONAL LINES:-**

A **IKEJA WEST/SAKETE 330KV LINE(TCN+PARAS)**

Maximum load - 302MW at 21:00Hrs.  
Minimum load - 215MW at 08:00Hrs.

B **BIRNIN KEBBI/NAMEY 132KV LINE**

Maximum load - 105.0MW at 24:00Hrs.  
Minimum load - 74.0MW at 08:00Hrs.

C **KATSINA/GAZAOUA/MARADI 132KV LINE**

Maximum load - 36.8MW at 22:00Hrs.  
Minimum load - 26.3MW at 07:00Hrs.

8 **MISCELLANEOUS:-**

- 1 00:38Hrs, Jebba 2G2 was shut down on frequency management. Load loss = 75MW
- 2 01:15Hrs, Delta GT15 was shut down on frequency management. Load loss = 70MW
- 3 04:38Hrs, Jebba 2G5 was shut down on frequency management. Load loss = 60MW
- 4 04:45 - 20:41Hrs, Delta GT19 was shut down on frequency management. Load loss = 60MW
- 5 09:44Hrs, Delta P/S reduced generation by 120MW due to planned outage on cct G3B so as to reduce load flow on cct S4G.
- 6 09:50Hrs, Egbin ST1 was tied. The unit was out on fault.
- 7 12:45Hrs, Shiroro/Mando 330kV line 1 (cct R1M) was restored having rectified the optic fibre that was bridging the line on towers #110 - 112. No load loss as the line was out on fault.
- 8 14:35Hrs, Egbin P/S reduced generation by 55MW. Frequency was 50.63Hz.
- 9 14:43Hrs, Azura –Edo IPP reduced generation by 75MW. Frequency was 50.6Hz.
- 10 15:35Hrs, Azura –Edo IPP GT13 was shut down on frequency management. Load loss = 75MW.

11 **SCADA RTU STATUS**

STATIONS	NO. INSTALLED	NO OF RTU DISTURBED	NO OF RTU WORKING
POWER STATIONS	8	6	2
330kV	19	11	8
132kV	102	90	12

12(A) **UNAVAILABLE TRANSFORMERS/REACTORS:**

**SHIRORO REGION:**

- Birnin Kebbi 75MX Reactor R1.

**ABUJA REGION**

- Apo T/S 60MVA 132/33kV transformer TR3 - Burnt.

**KADUNA REGION:**

- Kumbotso 150MVA 330/132/33kV transformer T1A - Burnt control cables.

**BAUCHI REGION:**

- Gombe T/S -30MX Reactor R2A.

**ENUGU REGION:**

- Onitsha T/S 90MVA 330/132/13.8kV transformer 9T2 - Out due to differential fault.

**LAGOS REGION:**

- Oke-Aro T/S: 75MX Reactor R1.

**PORT HARCOURT REGION**

- Ikot-Ekpene T/S: No available reactor.

12 (B) **UNAVAILABLE BREAKERS/ISOLATORS**

**LAGOS REGION:**

- Akangba T/S. 132kV Bus Coupler CB - Serious Air leakage.(Undergoing repair)
- Egbin/Aja 330kV line 2 (cct N4J) - faulty breaker at Aja T/S
- Otta/Ogba 132kV line isolator - defective control shaft.
- Osogbo/Ikeja West and Olorunsogo/Ikeja West tie CB at Ikeja West T/S - defective pole .
- Oke-Aro/Ikeja West 330kV lines 1 & 2 tie CB at Ikeja West T/S - Defective pole.
- Jebba G.S/Jebba T.S 330kV line 2 CB at Jebba T/S.
- Omosho/Ikeja West 330kV line CB at Ikeja West T/S.

**BENIN REGION:**

- Omosho T/S 330kV, 2nd series 330kV CB #3322 out due to control circuit problem.

**ENUGU REGION:**

- New Haven/Yandev 132kV line CB - Faulty Red phase CB pole. Protection is transferred to the bus coupler CB.
- Abakaliki T/S 30MVA 132/33kV transformer T1A and 60MVA 132/33kV transformer T2 primary CBs - Breakers were not provided since commissioning but the transformers are protected by Nkalagu 132kV line CB.
- Oji River T/S 30MVA 132/33kV transformer T1A primary CB - The breaker is completely out of service and bypassed. The transformer is either protected by Onitsha/Oji 132kV line CB or New Haven/Oji 132kV line CB.
- Oturkpo/Yandev 132kV By pass isolator - Canibalized to repair the line isolator.

**SHIRORO REGION**

- Jebba T/S 75MX reactor 2R2 CB - exploded.

**PORT HARCOURT REGION**

- New Haven/Nkalagu 132kV line 2 ground switch - Canibalized Red phase female contact and canibalized Yellow phase male contact.

11 19:15Hrs, Delta GT16 was tied. The unit was out on frequency management

\*\*\*\*\* LACK OF REACTOR AND UNRELIABLE STATION SERVICE SUPPLY AT IKOT-EKPENE T/S ARE HINDERING SMOOTH OPERATION.

\*\*\*\*\* THE SCADA COVERAGE OF ONLY LIMITED AREAS IS NOT GOOD FOR THE SMOOTH OPERATION OF THE GRID.

12(D) **UNAVAILABLE CAPACITOR BANK:**

- (i) Ogba T.S, (ii) Maduguri T/S, (iii) Isolo T/S, (iv) Ado-Ekiti T/S, (v) Ilorin T/S, (vi) Akure T/S.

12(E) **UNAVAILABLE SKYWIRES**

**LAGOS REGION**

- Omosho/Ikeja West line (M5W) and Egbin/Ikeja West line 3 (N6W) - 21 spans.
- Ikeja West/Olorunsogo line (cct R1W) - 80 spans.
- 330kV Ikeja West/Osogbo line. - 95 spans.
- Ikeja West/Alimosho/Ogba 132kV lines 1 & 2 - 15 spans.
- Ikeja West/Akangba 330kV line 2 - 1 span.
- Ikeja West/ Ilupeju 132kV lines 1 & 2 - 8 spans.
- Akangba/Iire 132kV lines 1 & 2 - 1 span.
- Ikeja West/Agbara 132kV lines 1 & 2 - 61 spans.
- Ikeja West/Otta 132kV lines 1 & 2- 17 spans.

**SHIRORO REGION**

- Jebba T/S 330kV Osogbo lines 1 & 2 and Ganmo line - 9 spans
- Minna T/S 132kV Bida line - 32 spans
- Shiroro T/S 330kV Jebba line 2 - 28 spans

**ABUJA REGION**

- Apo T/S 132kV Keffi line - 36 spans

12 (F) **UNAVAILABLE SYNCHROSCOPES :**

- Benin, Ikeja West, Onitsha, Egbin, Ugwuaji, Osogbo, Kaduna, Jos, Gwagwalada & Alaaji T/S.

**FOR MORE INFORMATION: NCC Telephone Lines -**

- a PAX 09/300, 309, 303 & 305.
- b NCC GSM - 08074888524, 08069379367, 08023572651 & 08051401331. CUG Nos. 08129458488, 08129458489, 08129929806; 08036665323.
- c PLS - 622
- d GM (NCC) - 08036744641.
- e AGM (S/O) - 08056002757, CUG: 08129458475



