

TRANSMISSION COMPANY OF NIGERIA

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

DAILY OPERATIONAL REPORT OF SATURDAY 02/02/2019

FOR: EVENTS OF FRIDAY 01/02/2019

1.0 EXECUTIVE OPERATIONS SUMMARY:

1.1 GENERATION PROFILE: NATIONAL STATISTICS

| DETAILS | MW | HRS | DATE |
|--|------------|-----------|------------|
| PEAK DEMAND FORECAST (CONNECTED + SUPPRESSED LOAD) | 23,020 | 21:15 | 02/02/2019 |
| GENERATION CAPABILITY | 5690.2 | -do- | -do- |
| UNITS ON BAR CAPABILITY AT PEAK | 5291.1 | -do- | -do- |
| PEAK GENERATION | 4987.2 | -do- | -do- |
| LOWEST GENERATION | 3874.0 | 08:00 | 01/02/2019 |
| 8-HOURLY DURATION PEAK | 4360 | 0100-0800 | -do- |
| | 4180.7 | 0900-1600 | -do- |
| | 4987.2 | 1700-2400 | -do- |
| PEAK GENERATION TO DATE | 5222.3 | 21:00 | 18/12/2017 |
| MAXIMUM AVAILABLE CAPACITY TO DATE | 7652.6 | 06:00 | 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 | 344 | Birnin-Kebbi T/S | 22:00 |
| LOWEST VOLTAGE FOR THE DAY | 290 | Gombe T/S | 20:00 |

1.3 FREQUENCY RANGE

| DETAILS | HZ | HRS |
|-------------------|-------------|-------|
| NOMINAL FREQUENCY | 50 | |
| STATUTORY LIMITS | 49.75-50.25 | |
| HIGHEST FREQUENCY | 50.35 | 11:33 |
| LOWEST FREQUENCY | 49.97 | 21:17 |

1.4 SYSTEM COLLAPSE UP DATE

| Date of last total collapse: 25th Jan., 2019 | | No. of days since last total collapse: 08 | | | | | | | | | | | | |
|--|---------|--|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-------|--|
| Date of last partial collapse: 12th April, 2018 | | No. of days since last partial collapse: 295 | | | | | | | | | | | | |
| Highest No of days ever attained in-between total collapses: 134 | | Highest No of days ever attained in-between partial collapses: 241 | | | | | | | | | | | | |
| | Jan | Feb. | Mar. | Apr | May | Jun | Jul | Aug | Sep. | Oct | Nov | Dec | Total | |
| 2010 | Total | --- | 3 | 1 | -- | 3 | 3 | -- | 2 | 2 | 1 | 4 | 22 | |
| | Partial | 1 | -- | -- | 1 | 3 | 4 | 4 | 3 | 2 | -- | 1 | 20 | |
| 2011 | Total | -- | -- | -- | -- | 4 | 3 | 1 | 1 | 2 | 1 | -- | 13 | |
| | Partial | -- | 1 | 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 | 4 | 2 | 22 | |
| | Partial | -- | | -- | -- | -- | -- | -- | 2 | | | | 2 | |
| 2014 | Total | 2 | | | 2 | 0 | 3 | 1 | 0 | 0 | 1 | 0 | 9 | |
| | Partial | | | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 4 | |
| 2015 | Total | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 6 | |
| | Partial | -- | -- | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | |
| 2016 | Total | -- | -- | 2 | 3 | 6 | 5 | 0 | 0 | 1 | 2 | 2 | 22 | |
| | Partial | -- | -- | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 6 | |
| 2017 | Total | 5 | 3 | 0 | 3 | 1 | 1 | 0 | 0 | 1 | 1 | | 15 | |
| | Partial | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 3 | | 9 | |
| 2018 | Total | 5 | 1 | 0 | 0 | 0 | 1 | 1 | | | | 1 | 11 | |
| | Partial | 0 | 0 | 0 | 1 | 0 | 0 | | 2 | | | | 1 | |
| 2019 | Total | 4 | | | | | | | | | | | 4 | |
| | Partial | | | | | | | | | | | | 0 | |

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

| STATION | TURBINE | PEAK GEN. (MW) | OFF-PEAK GEN.(MW) |
|--------------|-----------------|----------------|-------------------|
| 1 | KAINJI | 411 | 380 |
| 2 | JEBBA | 373 | 251 |
| 3 | SHIRORO | 422 | 104 |
| 4 | EGBIN ST2 - 5 | 362 | 429 |
| 5 | SAPELE | STEAM | 0 |
| 6 | DELTA | GAS | 248 |
| 7 | AFAM IV-V | GAS | 0 |
| 8 | GEREGU GAS | GAS | 208 |
| 9 | OMOTOSHO GAS | GAS | 128.3 |
| 10 | OLORUNSOGO GAS | GAS | 206.3 |
| 11 | GEREGU NIPP | GAS | 223 |
| 12 | SAPELE NIPP | GAS | 88.2 |
| 13 | ALAOJI NIPP | GAS | 73.7 |
| 14 | OLORUNSOGO NIPP | GAS | 0 |
| 15 | OMOTOSHO NIPP | GAS | 103.4 |
| 16 | ODUKPANI NIPP | GAS | 184.6 |
| 17 | IHOVBOR NIPP | GAS | 85.6 |
| 18 | OKPAI | GAS | 230 |
| 19 | AFAM VI | GAS | 132 |
| 20 | IBOM POWER | GAS | 86.8 |
| 21 | ASCO | GAS | 0 |
| 22 | A.E.S | GAS | 0 |
| 23 | OMOKU | GAS | 58 |
| 24 | TRANS AMADI | GAS | 0 |
| 25 | RIVERS IPP | (GAS) | 122 |
| 26 | AZURA - EDO IPP | (GAS) | 225 |
| 27 | EGBIN ST6 | (GAS) | 153 |
| 28 | PARAS ENERGY | (GAS) | 64 |
| 29 | GBARAIN NIPP | GAS | 90.1 |
| TOTAL | | 4987.2 | 3874 |

1.6 ENERGY GENERATED/ENERGY SENT OUT:

| STATION | TURBINE | ENERGY GENERATED | | ENERGY SENT OUT | | AV. ENERGY SENT OUT | |
|--------------|-----------------|-------------------|-----------------|-------------------|-----------------|---------------------|--|
| | | MWH | MWH/H | MWH | MWH/H | | |
| 1 | KAINJI | 9428.00 | 392.83 | 9412.30 | 392.18 | | |
| 2 | JEBBA | 7555.00 | 314.79 | 7531.96 | 313.83 | | |
| 3 | SHIRORO | 5831.00 | 242.96 | 5799.88 | 241.66 | | |
| 4 | EGBIN ST2 - 5 | 12959.00 | 539.96 | 12297.50 | 512.40 | | |
| 5 | SAPELE | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 6 | DELTA | 5946.40 | 247.77 | 5885.40 | 245.23 | | |
| 7 | AFAM IV-V | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 8 | GEREGU GAS | 5762.40 | 240.10 | 5734.86 | 238.95 | | |
| 9 | OMOTOSHO GAS | 3036.00 | 126.50 | 3012.20 | 125.51 | | |
| 10 | OLORUNSOGO GAS | 5449.32 | 227.06 | 5418.43 | 225.77 | | |
| 11 | GEREGU NIPP | 5723.38 | 238.47 | 5703.77 | 237.66 | | |
| 12 | SAPELE NIPP | 2301.84 | 95.91 | 2267.39 | 94.47 | | |
| 13 | ALAOJI NIPP | 1723.31 | 71.80 | 1721.57 | 71.73 | | |
| 14 | OLORUNSOGO NIPP | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 15 | OMOTOSHO NIPP | 2540.80 | 105.87 | 2524.20 | 105.18 | | |
| 16 | ODUKPANI NIPP | 4975.25 | 207.30 | 4943.05 | 205.96 | | |
| 17 | IHOVBOR NIPP | 2200.00 | 91.67 | 2176.30 | 90.68 | | |
| 18 | OKPAI | 6137.00 | 255.71 | 6006.20 | 250.26 | | |
| 19 | AFAM VI | 4143.94 | 172.66 | 4021.00 | 167.54 | | |
| 20 | IBOM | 2198.86 | 91.62 | 2190.00 | 91.25 | | |
| 21 | ASCO | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 22 | AZURA - EDO IPP | 7574.75 | 315.61 | 7550.17 | 314.59 | | |
| 23 | A.E.S | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 24 | OMOKU | 1099.30 | 45.80 | 1065.72 | 44.41 | | |
| 25 | TRANS AMADI | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 26 | RIVERS IPP | 3289.60 | 137.07 | 3284.00 | 136.83 | | |
| 27 | EGBIN ST6 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 28 | PARAS ENERGY | 1587.90 | 66.16 | 1580.30 | 65.85 | | |
| 29 | GBARAIN NIPP | 2262.40 | 94.27 | 2250.40 | 93.77 | | |
| TOTAL | | 103,725.45 | 4,321.89 | 102,376.60 | 4,265.69 | | |

1.7A GENERATION POSITION AT 06:00HRS OF SATURDAY 02/02/2019

| | STATIONS | NO OF UNITS INSTALLED | 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) AT 50.21Hz. | REMARKS |
|----------------------|-------------------|-----------------------|----------------------------|---|--|----------------------------|---------------------------------|---|---|
| PRIVATISED COMPANIES | KAINJI HYDRO | 8 | 1G5, 6, 11 & 12 4 | 440 | 440 | 1G5, 6, 11 & 12 4 | 440 | 390 | 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. |
| | JEBBA HYDRO | 6 | 2G1 - 4 4 | 360 | 360 | 2G1, 3 & 4 3 | 270 | 261 | 2G2 - Out due to low load demand by the Discos. 2G5 - Out for annual maintenance. 2G6 - Out due to burnt generator winding and AVR. |
| | SHIRORO HYDRO | 4 | 411G1, 2 & 4, 3 | 450 | 450 | 411G2 & 3 2 | 300 | 200 | 411G1 & 4 - Out due to water management. 411G2 - Generation reduced due to low load demand by the Discos. |
| | EGBIN STEAM | 6 | ST2, 5 & 6 3 | 880 | 513 | ST2, 5 & 6 3 | 513 | 513 | ST1 - Out due to the unit transformer problem. ST3 - Out on high vibration since 19th June 2017. ST4 - Shut down due to oil leakage. |
| | SAPELE (STEAM) | 6 | 0 0 | 0 | 0 | 0 0 | 0 | 0 | ST1 & 2 - Tripped on high vibration. ST3 - Tripped on low water drum level. ST4 - Out on fault. ST5 - Awaiting major overhaul. |
| | DELTA (GAS) | 18 | GT7, 10 - 13, 19 & 20 7 | 310 | 310 | GT7, 10 - 13, 19 & 20 7 | 310 | 240 | GT2 - Tripped on transformer differential lockout. GT3 & 5 - Out on generator winding fault. GT4 - Out on loss of excitation. GT6 - Shut down due to oil leakage. GT8 & 14 - Out on major overhaul. GT9, 15 & 16 - Out due to gas constraint. GT17 - Tripped on bearing vibration more than maximum. GT18 - Out due to generator lockout problem. |
| | AFAM IV & V (GAS) | 8 | 0 0 | 0 | 0 | 0 0 | 0 | 0 | GT11 - 12 - De-commissioned and scrapped. GT13, 14 & 16 - Out on blade failure. GT17 - Out due to oil leakage on the bearing compartment. GT18 - Out due to gas constraint. GT19 & 20 - Awaiting major overhaul. |
| | GEREGU GAS | 3 | GT11 & 12 2 | 290 | 290 | GT12 & 13 2 | 290 | 264 | GT11 - Tripped on air flow ventilation valve trip. |
| | OMOTOSHO GAS | 8 | GT1, 2, 6 & 7 4 | 168 | 152 | GT1, 2, 6 & 7 4 | 132.2 | 132.2 | GT3, 4, 5 & 8 - Out due to gas constraint. |
| | OLORUNSOGO GAS | 8 | GT1 - 8 8 | 336 | 304 | GT1 - 6 & 8 7 | 230.3 | 230.3 | GT7 - Out due to low load demand by the Discos. |
| NIPP | GEREGU NIPP | 3 | GT21 & 23 2 | 290 | 290 | GT21 & 23 2 | 290 | 264 | GT22 - Out on maintenance. |
| | SAPELE NIPP | 4 | GT2 1 | 112.5 | 112.5 | GT2 1 | 112.5 | 93.1 | GT1 - Out due to gas constraint. GT3 & 4 - Out due to high air filter differential pressure. |
| | ALAOJI NIPP GAS | 4 | GT2 1 | 120 | 120 | GT2 1 | 71.8 | 71.8 | GT1 - Out due to high air inlet differential pressure. GT3 - Shut down due to lack of spare part. GT4 - Tripped on over voltage lockout relay trip. |
| | OLORUNSOGO NIPP | 6 | 0 0 | 0 | 0 | 0 0 | 0 | 0 | GT1 - 3 - Shut down due to low gas pressure. GT4 - Out due to ignition failure and control relay failure alarm. ST13 & ST23 - Out on maintenance. |
| | OMOTOSHO NIPP GAS | 4 | GT2 1 | 125 | 115 | GT2 1 | 115 | 107.4 | GT1, 3 & 4 - Out due to gas constraint. |
| | ODUKPANI NIPP | 5 | GT2, 3, 4 & 5 4 | 460 | 460 | GT3 & 4 2 | 230 | 196.2 | GT1 - Out on fault. GT2 & 5 - Out due to low load demand by the Discos. |
| | IHOVBOR NIPP | 4 | GT1 1 | 112.5 | 112.5 | GT1 1 | 112.5 | 90.4 | GT2 & 4 - Out due to gas constraint. GT3 - Tripped on high vibration. |
| | GBARAIN NIPP GAS | 1 | GT2 1 | 112.5 | 112.5 | GT2 1 | 112.5 | 92.4 | Available unit on bar. |
| IPP | OKPAI GAS/STEAM | 3 | GT11, 12 & ST18 3 | 370 | 370 | GT11, 12 & ST18 3 | 370 | 228 | GT11 - Generation reduced due to low load demand by the Discos. ST18 - Generation limited due to boiler problem. |
| | AZURA - EDO | 3 | GT11 - 13 3 | 461 | 461 | GT11 - 13 3 | 461 | 287 | GT11 & 12 - Generation reduced due to low load demand by the Discos. |
| | AFAM VI GAS/STEAM | 4 | GT11 & 13 2 | 300 | 300 | GT11 & 13 2 | 300 | 274 | GT11 - On reliability test. GT13 - Generation reduced due to low load demand by the Discos. ST10 & GT12 - Out due to gas constraint. |
| | IBOM POWER GAS | 3 | GT3 1 | 120 | 115 | GT3 1 | 115 | 97.4 | GT1 & 2 - Out due to fire outbreak on the control panel. GT3 - On manual adjustment to frequency. |
| | AES | 9 | 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 & 5 2 | 50 | 40 | GT1 & 5 2 | 35 | 35 | GT2 - Tripped on high vibration. GT3 - Out on maintenance. GT4 - Out on major overhaul. GT6 - Out on maintenance. |
| | TRANS-AMADI | 4 | 0 0 | 0 | 0 | 0 0 | 0 | 0 | GT1 & 2 - Out due to low gas pressure. GT3 - Out on fault. GT4 - out on maintenance. |
| | RIVERS | 1 | GT1 1 | 180 | 160 | GT1 1 | 160 | 90 | Generation reduced due to low load demand by the Discos. |
| | SUB TOTAL | 141 | 58 | 6047.5 | 5587.5 | 53 | 4970.8 | 4157.2 | Frequency = 50.21Hz. |

| 1.7B GENERATION POSITION AT 06:00HRS OF SATURDAY 02/02/2019 FOR UNITS ON BILATERAL AGREEMENT | | | | | | | | | |
|--|--------------|-----|---------|--------|--------|---------|----------|----------|-------------------------|
| | PARAS ENERGY | 8 | GT3 -10 | 70 | 64.8 | GT3 -10 | 64.8 | 64.8 | Available units on bar. |
| | | | 8 | | | 8 | | | |
| | SUB TOTAL | 8 | 8 | 70 | 64.8 | 8 | 64.8 | 64.8 | |
| | GRAND TOTAL | 149 | 66 | 6117.5 | 5652.3 | 61 | 5,035.60 | 4,222.00 | Frequency = 50.21Hz |

| 1.7C BILATERAL AGREEMENT UNITS DISPATCH - FRIDAY 01/02/2019 | | | | | | | | | |
|--|-------------------|----------------|------------|---------------|------------|----------------|-------------|--------------------------------------|--|
| EGBIN ST6 5MW 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 | | | 21 | | OPENED DUE TO POOR SYSTEM FRIQUENCY. | |
| | PTC EXPRESS | ON | 0100HRS | | | 21 | | OPENED DUE TO POOR SYSTEM FRIQUENCY. | |
| | SANKYO | 2 | 0200HRS | | | 23 | | OPENED DUE TO POOR SYSTEM FRIQUENCY. | |
| | FEEDER 8 | 10.5 | 1100HRS | | | 21 | | OPENED DUE TO POOR SYSTEM FRIQUENCY. | |
| IKORODU | PULK IT | 4 | 1800HRS | | | 9 | | PLANNED OUTAGE BY IKEJA ELECTRIC | |
| | INDUSTRIAL | 8 | 0800HRS | | | 17 | | TRIPPED ON O/C-A&B | |
| | SPINTEX | 12 | 0400HRS | | | 24 | | NIL | |
| | DANGOTE | 2 | 1200HRS | | | 24 | | NIL | |
| | LAND CRAFT | 19 | 0300HRS | | | 24 | | NIL | |
| ALAUUSA | TR4 15MVA | 7.4 | 1800HRS | | | 24 | | NIL | |
| | TR5 -15MVA | 4.6 | 1900HRS | | | 24 | | NIL | |
| | ALAUUSA | 16.6 | 1300HRS | | | 18 | | FD & PD | |
| M/LAND | PTC (MARYLAND) | 21 | 0900HRS | | | 24 | | NIL | |
| | TOTAL LOAD | | | | | | | | |

| BILATERAL AGREEMENT LOAD DISPATCH | | | | | | | | | |
|--|----------------|-------------------------|---------------|------------|------------------|-------------|------------------|-------------|---|
| 60MW PARAS ENERGY GENERATION TO CEB OF FRIDAY 01/02/2019 | | | | | | | | | |
| FEEDER | MAX LOAD (MW) | TIME (HRS) | MIN LOAD (MW) | TIME (HRS) | HOURS IN SERVICE | TOTAL (MWH) | REMARK | | |
| Ikeja West/Sakete 330kV line | 68 | 20:00 | 64 | 08:00 | 24 | 1582 | NIL | | |
| BILATERAL AGREEMENT MAIN STREAM ENERGY KAINJI FRIDAY 01/02/2019 | | | | | | | | | |
| COMPANY NAME | VOL-TAGE LEVEL | CON-TRAC-TUAL LOAD (MW) | MAX LOAD (MW) | TIME | MIN LOAD (MW) | TIME | HOURS IN SERVICE | TOTAL (MWH) | REMARK |
| INNER GALAXY | 132kV line 2 | 0 | 46 | 23:00 | 20 | 04:00 | 24 | 460 | SUPPLY NOT INTERRUPTED |
| KAM STEEL | | 25.0 | 0.9 | 12:00 | 0.3 | 01:00 | 24 | 11.3 | SUPPLY NOT INTERRUPTED |
| ASHAKA CEMENT | | 0 | 5.9 | 02:00 | 2.7 | 13:00 | 24 | 102.8 | SUPPLY NOT INTERRUPTED |
| XING 1 | 33kV feeder | 0 | 20.3 | 04:00 | 8.7 | 07:00 | 24 | 364.8 | SUPPLY NOT INTERRUPTED |
| XING 2 | | 0 | 16.48 | 11:00 | 5.8 | 08:00 | 24 | 346.4 | SUPPLY NOT INTERRUPTED |
| KAM INTEGRATED | | 15 | 5.8 | 12:00 | 2.4 | 22:00 | 23 | 83 | THE LINE CB TRIPPED, E/F RELAY FLAGGED. |
| OLAM FLOUR MILLS | | 3 | 1.8 | 01:00 | 0.3 | 19:00 | 24 | 16.7 | SUPPLY NOT INTERRUPTED |
| LORDSMITH | | 3 | .07 | 01:00 | 0.6 | 09:00 | 24 | 15.2 | SUPPLY NOT INTERRUPTED |

1.8 HYDROLOGICAL DATA: SATURDAY 02/02/2019

| | KAINJI | JEBBA | SHIRORO |
|--|----------------|----------------|---------------|
| HEAD WATER ELEVATION (METERS) | 141.69 | 103.16 | 374.45 |
| TAIL WATER ELEVATION (METERS) | 105.2 | 73.8 | 270.2 |
| GROSS OPERATING HEAD (METERS) | 36.49 | 29.36 | 104.25 |
| AVERAGE TURBINE DISCHARGE (M3/SEC) | 1174.00 | 1140.00 | 270.00 |
| AVERAGE SPILLAGE (M3/SEC) | 516.00 | 0.00 | 0.00 |
| AVERAGE TOTAL STATION DISCHARGE (M3/SEC) | 1690.00 | 1140.00 | 270.00 |
| COMPUTED INFLOW (M3/SEC) | 1690.00 | 1661.00 | 72.00 |
| STORAGE DIFFERENTIAL | 0.00 | 521.00 | -198 |
| MAXIMUM LEVEL FOR SPILLAGE COMMENCEMENT | 141.73 | 103 | 382.50 |
| MINIMUM LEVEL BELOW WHICH NO GENERATION | 130 | 99 | 355.00 |

1.9 MAXIMUM/ALLOCATED LOAD/MINIMUM LOADS FOR ABUJA AND LAGOS AS AT FRIDAY 01/02/2019

| | MAXIMUM LOAD (MW) | TIME (HRS) | ALLOCATED LOAD (MW) | MINIMUM LOAD (MW) | TIME (HRS) |
|-------|-------------------|------------|---------------------|-------------------|------------|
| ABUJA | 528.9 | 16:00 | 532.65 | 426.4 | 07:00 |
| EKO | | | | | |
| IKEJA | 546.5 | 21:00 | 716.5 | 355 | 14:00 |

2.0 GAS POSITION: SATURDAY 02/02/2019

| 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 | 582 | 1100 | | 513 | 587 |
| DELTA (GAS) | 266 | 915 | | 310 | 605 |
| OMOTOSHO GAS | 127.9 | 336.8 | | 127.9 | 208.9 |
| OMOTOSHO NIPP | 107 | 500 | | 120 | 380 |
| OLORUNSOGO (GAS) | 233.1 | 336 | | 233.1 | 102.9 |
| OLORUNSOGO NIPP | 0 | 750 | | 0 | 750 |
| SAPELE NIPP | 87.8 | 500 | | 112.5 | 387.5 |
| SAPELE STEAM | 0 | 720 | | 0 | 720 |
| AFAM IV-V | 0 | 300 | | 0 | 300 |
| AFAM VI | 136 | 650 | | 150 | 500 |
| GEREGU GAS | 268 | 435 | | 290 | 145 |
| GEREGU NIPP | 252 | 435 | | 290 | 145 |
| OKPAI (GAS/STEAM) | 236 | 480 | | 370 | 110 |
| ALAOJI NIPP | 72.8 | 504 | | 0 | 504 |
| IHOV/BOR NIPP | 92.4 | 337.5 | | 112.5 | 225 |
| IBOM | 93.6 | 198 | | 115 | 83 |
| ODUKPANI NIPP | 199.1 | 625 | | 230 | 395 |
| TOTAL | 2753.7 | 9122.30 | | 2974 | 6148.3 |

1 MMSCF IS EQUIVALENT TO 3.75MW

3.0 SPINNING RESERVE FOR : FRIDAY 01/02/2019

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

3.1 SYSTEM SPINNING RESERVE AS AT 0600HRS OF SATURDAY 01/02/2019 = 0MW, FREQUENCY 50.21Hz.

| 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 |
| 5 | Omotosho NIPP | GT1 | 40 | 0 | 0 |
| | | GT2 | | 0 | |
| | | GT3 | | 0 | |
| | | GT4 | | 0 | |
| TOTAL (MW) | | | 295 | 0 | 0 |

4.0 UNAVAILABLE GENERATION CAPABILITY

| The unavailable generation capability for Saturday 02/02/2019 as at 0600Hrs was = 1205MW. | | | | | |
|---|---------------------|-----------------------------------|----------------------------|--|-------------|
| S/N | STATION | ACTUAL GENERATION CAPABILITY (MW) | GENERATION AT 0600HRS (MW) | UNAVAILABLE GENERATION CAPABILITY (MW) | SUB -TOTAL |
| 4.1 DUE TO LINE CONSTRAINTS | | | | | |
| | | | | 0 | 0 |
| | | | | 0 | |
| | | | | 0 | |
| | | | | 0 | |
| 4.2 DUE TO LOW LOAD DEMAND BY THE DISCOS | | | | | |
| | | | | | 905 |
| 1 | Shiroro 411G1 & 2 | 300 | 115 | 185 | |
| 2 | Jebba 2G2 | 90 | 0 | 90 | |
| 3 | Olorunsogo Gas GT7 | 38 | 0 | 38 | |
| 4 | Azura-Edo GT11 & 12 | 307 | 150 | 157 | |
| 5 | Odukpani GT2 & 5 | 230 | 0 | 230 | |
| 6 | Okpai GT11 | 150 | 55 | 95 | |
| 7 | Afam VI GT13 | 150 | 110 | 40 | |
| 8 | Rivers GT1 | 160 | 90 | 70 | |
| | | | | 0 | |
| 4.3 DUE TO WATER MANAGEMENT: | | | | | |
| 1 | Shiroro 411G1 & 4 | 300 | 0 | 300 | 300 |
| Grand Total | | | | | 1205 |

5.0 OUTAGES:

5 (A) FORCED OUTAGES (GENERATION): NIL

5 (B) FORCED OUTAGES (TRANSMISSION): NIL

5 (C) PLANNED OUTAGES:-

- 1 10:37 – 15:12Hrs, New Haven T/S 150MVA 330/132/33kV transformer T1A was taken out to check and rectify why the primary isolator failed to respond to local and remote operation. No load loss as 150MVA 330/132/33kV transformer T2A was in service.
- 2 11:30 - 17:22Hrs, Benin/Egbin 330kV line (cct B6N) was taken out to stop air pressure leakage on the compressor of the line CB. Load loss = 54MW.
- 3 14:07 – 17:40Hrs, Aba T/S 60MVA 132/33kV transformer T1B was taken out to enable maintenance crew repair the secondary CB that was tripping free. No load loss as the transformer was on soak.

5 (D) URGENT OUTAGES:-

- 1 11:55Hrs, Egbin ST4 was shut down due to oil leakage of TGV left mechanisms. Load loss = 111.0MW.

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).

5 (E) EMERGENCY OUTAGES:- NIL

5 (F) AUTOMATIC UNDER FREQUENCY OPERATION:- Nil.

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

5 (H) 330KV LINES THAT ARE OUT ON BREAKER PROBLEM:- cct A1K.

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

5 (J) 330KV LINES THAT ARE OUT ON LINE FAULT:- ccts D3T, J2H & K4U

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

6 WEATHER REPORT:-

7 INTERNATIONAL LINES:-

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

Maximum load - 283MW at 12:00Hrs.

Minimum load - 247MW at 09:00Hrs.

B BIRNIN KEBBI/NIAMEY 132KV LINE

Maximum load - 80MW at 16:00Hrs.

Minimum load - 58.0MW at 04:00Hrs.

C KATSINA/GAZAOUA/MARADI 132KV LINE

Maximum load - 30.2MW at 20:00Hrs.

Minimum load - 14.1MW at 11:00Hrs.

8 MISCELLANEOUS:-

1 00:07 - 09:45Hrs, Shiroro 411G4 was shut down for water management. Load loss = 50MW.

2 00:36 – 10:24Hrs, Jebba 2G2 was shut down due to low load demand by the Discos. Load loss = 77MW.

3 03:08 through 24:00Hrs, Odukpani NIPP GT5 was shut down due to low load demand by the Discos. Load loss = 93.3MW.

4 08:53Hrs, Afam VI GT11 was tied to swap with GT13.

5 09:18 - 20:25Hrs, Afam VI GT13 was shut down. No load loss as 132MW was transferred to GT11.

6 16: 07Hrs, Odukpani GT3 was tied to swap with GT5.

7 16:20 through 24:00Hrs, Odukpani GT2 was shut down. No load loss as 90MW was transferred to GT2.

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

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

10 COMMUNICATION MEDIA

| STATIONS | NO INSTALLED | NO. WORKING |
|-------------|--------------|-------------|
| PLC/PAX | 38 | 34 |
| OPTIC FIBRE | 13 | 0 |
| PLS | 14 | 4 |

11 SCADA RTU STATUS

| STATIONS | NO. INSTALLED | NO OF RTU DISTURBED | NO OF RTU WORKING |
|----------------|---------------|---------------------|-------------------|
| POWER STATIONS | 8 | 4 | 4 |
| 330kV | 19 | 5 | 14 |
| 132kV | 102 | 76 | 28 |

12(A) UNAVAILABLE TRANSFORMERS/REACTORS:

SHIRORO REGION:

- 1 Birnin Kebbi 75MX Reactor R1.

ABUJA REGION

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

KADUNA REGION:

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

BAUCHI REGION:

- 1 Gombe T/S -30MX Reactor R2A.

ENUGU REGION:

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

LAGOS REGION:

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

PORT HARCOURT REGION

- 1 Ikot-Ekpene T/S: No reactor installed.

12 (B) UNAVAILABLE BREAKERS/ISOLATORS

LAGOS REGION:

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

BENIN REGION:

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

ENUGU REGION:

- 1 New Haven/Yandev 132kV line CB - Faulty Red phase CB pole. Protection is transferred to the bus coupler CB.
- 1 Abakaliki T/S 30MVA 132/33kV transformer T1A and 60MVA 132/33kV transformer T2 primary CBs - Breakers were not provided since commissioning but the
- 3 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.
- 4 Oturkpo/Yandev 132kV By pass isolator - Canibalized to repair the line isolator.
- 5 New Haven/Nkalagu 132kV line 2 ground switch - Canibalized Red phase female contact and canibalized Yellow phase male contact.

SHIRORO REGION

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

12(D) UNAVAILABLE CAPACITOR BANK:

- 1 (i) Ogba T.S, (ii) Maiduguri 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

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

SHIRORO REGION

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

ABUJA REGION

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

12 (F) UNAVAILABLE SYNCHROSCOPES :

- 1 Ikeja West, Onitsha, Egbin, Ugwuaji, Jos, Gwagwalada & Alaoji 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

