## BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

| Maximum Load/Demand till Date | | |
|---|---|---|
| **Date** | **Time** | **Load(MW)** |
| 27-Dec-18 | 18:18hrs | 399.35MW |

| | |
|---|---|
| **Date:** | **March 25, 2021** |
| **Hours:** | **19:00 Hours** |

| Sl. No. | Hydropower Plant | Unit | MW | Transmission Lines and Elements | Load (MW) | Sign | Remarks |
|---|---|---|---|---|---|---|---|
| 1 | **1020MW THP** | Unit- I | 147.64 | 400kV THP - Siliguri Line - I | 0.00 | | Unit-III,II on standby. Unit-IV,V & VI under AM/PTW 400kV THP-SIL Line I on standby. 400kV THP-SIL Line IV under AMP. |
| | | Unit- II | 0.00 | 400kV THP - Siliguri Line - II | 33.97 | + | |
| | | Unit- III | 0.00 | 400kV THP - Siliguri Line- IV | 0.00 | | |
| | | Unit- IV | 0.00 | 400kV THP - Malbase Line - III | 112.85 | + | |
| | | Unit- V | 0.00 | 400kV Malbase - Siliguri Line | 13.59 | + | |
| | | Unit- VI | 0.00 | - | | - | |
| | | **Total** | **147.64** | **Error at Station/Auxiliary Consumption/Losses** | **0.555%** | | |
| 2 | **720MW MHP** | Unit-I | 0.00 | 400kV MHP - Jigmeling Line - I | 0.00 | | Unit- I on standby. Unit-II under maintenance. Unit-III under breakdown. 400kV MHP-JLG Line I ,II & III on standby. 400kV JLG_ALI line II on Standby. 132kV MHP_Yurmoo lines not in service. |
| | | Unit-II | 0.00 | 400kV MHP - Jigmeling Line - II | 0.00 | | |
| | | Unit-III | 0.00 | 400kV MHP - Jigmeling Line - III | 0.00 | | |
| | | Unit-IV | 150.58 | 400kV MHP - Jigmeling Line - IV | 149.81 | + | |
| | | - | - | 132kV MHP - Yurmo Line - I | 0.00 | | |
| | | - | - | 132kV MHP - Yurmo Line - II | 0.00 | | |
| | | - | - | 500MVA , 400/220kV ICT at Jigmeling (HV) | 100.40 | | |
| | | - | - | 400kV Jigmeling - Alipurduar Line - I | 47.20 | + | |
| | | - | - | 400kV Jigmeling - Alipurduar Line - II | 0.00 | | |
| | | - | - | 80MVA, 220/132kV ICT - I (HV) | 31.40 | + | |
| | | - | - | 80MVA, 220/132kV ICT - II (HV) | 31.40 | | |
| | | - | - | 220kV Tsirang - Jigmeling Line | | + | |
| | | **Total** | **150.58** | **Error at Station/Auxiliary Consumption/Losses** | **0.511%** | | |
| 3 | **336MW CHP** | Unit- I | 45.92 | 220kV CHP - Birpara Line- I | 10.63 | + | Unit-III & 220kV CHP-BIR line II on Standby. Unit-IV under AMP. |
| | | Unit- II | 46.21 | 220kV CHP - Birpara Line- II | 0.00 | | |
| | | Unit- III | 0.00 | 220kV CHP - Malbase Line- III | 45.38 | + | |
| | | Unit- IV | 0.00 | 220kV CHP - Semtokha Line- IV | 16.97 | + | |
| | | - | - | 220kV Malbase - Birpara Line | -17.83 | - | |
| | | - | - | 66kV CHP - Chumdo Line | 12.00 | + | |
| | | - | - | 66kV CHP - Gedu Line | 5.07 | + | |
| | | - | - | 3x3MVA, 66/11kV TFR | 1.57 | + | |
| | | **Total** | **92.13** | **Error at Station/Auxiliary Consumption/Losses** | **0.554%** | | |
| 4 | **24MW BHP (U/S)** | Unit- I | 0.00 | 220kV BHP - Semtokha Line | 36.80 | + | U/S on Total Shutdown. L/S Unit-II on standby |
| | | Unit- II | 0.00 | 66kV BHP - Lobeysa Line | 13.40 | + | |
| | | **Total** | **0.00** | 220kV BHP - Tsirang Line | -47.66 | - | |
| | **40MW BHP (L/S)** | Unit- I | 3.40 | 5MVA, 66/11kV TFR | 0.80 | + | |
| | | Unit- II | 0.00 | 30MVA ICT, 220/66kV | | | |
| | | **Total** | **3.40** | **Error at Station/Auxiliary Consumption/Losses** | **1.765%** | | |
| 5 | **126MW DHP** | Unit-I | 16.47 | 220kV DHP - Tsirang Line | 16.21 | + | Unit-II AMP |
| | | Unit-II | 0.00 | 220kV DHP - Dagapela Line | 0.00 | | |
| | | - | - | 220kV Jigmeling - Dagapela Line | 2.50 | + | |
| | | - | - | 5MVA, 220/33kV TFR | | | |
| | | **Total** | **16.47** | **Error at Station/Auxiliary Consumption/Losses** | **1.579%** | | |
| 6 | **60MW KHP** | Unit- I | 0.00 | 132kV KHP - Nangkhor Line | 8.17 | + | Unit-I standby. Unit-III under AMP. |
| | | Unit-II | 14.08 | 132kV KHP - Kilikhar Line | 19.12 | + | |
| | | Unit- III | 0.00 | 5MVA, 132/11kV TFR | 0.54 | + | |
| | | Unit- IV | 14.07 | 132kV Gelephu - Salakati Line | -2.37 | - | |
| | | - | - | 132kV Motanga - Rangia Line | 22.96 | + | |
| | | **Total** | **28.15** | **Error at Station/Auxiliary Consumption/Losses** | **1.130%** | | |

**Note: Generation-Load Summary (MW) for March 25, 2021 at 19:00hrs.**

| Sl. No | Region | Total Generation (MW) | Total Load [Generation - Export (MW)] | Total Load [Feeder Summation (MW)] | Total Export/Import (MW) | Load Balance (MW) |
|---|---|---|---|---|---|---|
| 1 | **Western Grid** | 259.64 | 219.28 | 220.13 | 40.36 | -0.85 |
| 2 | **Eastern Grid** | 178.73 | 110.94 | 109.85 | 67.79 | 1.09 |
| **Total** | | **438.37** | **330.22** | **329.98** | **108.15** | **0.24** |

**Note: Generation-Load Summary for March 25, 2020 at 19:00hrs.**

| Sl. No | Region | Total Generation (MW) | Total Load [Generation - Export (MW)] | Total Load [Feeder Summation (MW)] | Total Export/Import (MW) | Load Balance (MW) |
|---|---|---|---|---|---|---|
| 1 | **Western Grid** | 358.26 | 270.99 | 264.25 | **72.04** | 6.74 |
| 2 | **Eastern Grid** | 136.24 | 63.02 | 61.55 | **88.45** | 1.47 |
| **Total** | | **494.50** | **334.01** | **325.80** | **160.49** | **8.21** |

**NOTE- KHP,MHP & BHP data collected from site.**

1. The Instantaneous load balance is calculated as (Total generation - (Total export-Import ) - Total domestic load) do not tend towards zero. This could be due to the following reasons:

   i) Not all the meters are digital and nor are all the meter at all locations can be read at same time (say 9:00hrs) due to many meter to be read manually.

   ii) The clocks of all the locations are not synchronized.

2. This report is generated to give an idea of the generation & load flow for the system at a particular instant.

## BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

| Maximum Load/Demand till Date | | |
|---|---|---|
| **Date** | **Time** | **Load(MW)** |
| 27-Dec-18 | 18:18hrs | 399.35MW |

| | |
|---|---|
| **Date:** | **March 26, 2021** |
| **Hours:** | **09:00 Hours** |

| Sl. No. | Hydropower Plant | Unit | MW | Transmission Lines and Elements | Load (MW) | Sign | Remarks |
|---|---|---|---|---|---|---|---|
| 1 | **1020MW THP** | Unit- I | 80.39 | 400kV THP - Siliguri Line - I | 0.00 | | Unit-III on standby. Unit-IV,V & VI under AM/PTW 400kV THP-SIL Line I on standby. 400kV THP-SIL Line IV under AMP. |
| | | Unit- II | 78.91 | 400kV THP - Siliguri Line - II | 35.31 | + | |
| | | Unit- III | 0.00 | 400kV THP - Siliguri Line- IV | 0.00 | | |
| | | Unit- IV | 0.00 | 400kV THP - Malbase Line - III | 119.18 | + | |
| | | Unit- V | 0.00 | 400kV Malbase - Siliguri Line | 16.16 | + | |
| | | Unit- VI | 0.00 | - | - | - | |
| | | **Total** | **159.30** | **Error at Station/Auxiliary Consumption/Losses** | **3.019%** | | |
| 2 | **720MW MHP** | Unit-I | 18.12 | 400kV MHP - Jigmeling Line - I | 0.00 | | Unit-II under maintenance. Unit-III under breakdown. 400kV MHP-JLG Line I ,II & III on standby. 400kV JLG_ALI line II on Standby. 132kV MHP_Yurmoo lines not in service. |
| | | Unit-II | 0.00 | 400kV MHP - Jigmeling Line - II | 0.00 | | |
| | | Unit-III | 0.00 | 400kV MHP - Jigmeling Line - III | 0.00 | | |
| | | Unit-IV | 160.58 | 400kV MHP - Jigmeling Line - IV | 178.11 | + | |
| | | - | - | 132kV MHP - Yurmo Line - I | 0.00 | | |
| | | - | - | 132kV MHP - Yurmo Line - II | 0.00 | | |
| | | - | - | 500MVA , 400/220kV ICT at Jigmeling (HV) | 0.00 | | |
| | | - | - | 400kV Jigmeling - Alipurduar Line - I | 177.80 | + | |
| | | - | - | 400kV Jigmeling - Alipurduar Line - II | 0.00 | | |
| | | - | - | 80MVA, 220/132kV ICT - I (HV) | 7.10 | + | |
| | | - | - | 80MVA, 220/132kV ICT - II (HV) | 7.10 | | |
| | | | | 220kV Tsirang - Jigmeling Line | 15.40 | + | |
| | | **Total** | **178.70** | **Error at Station/Auxiliary Consumption/Losses** | **0.330%** | | |
| 3 | **336MW CHP** | Unit- I | 39.36 | 220kV CHP - Birpara Line- I | -7.60 | - | Unit-II under Standby. Unit IV & 220kV CHP-BIR line II Standby |
| | | Unit- II | 39.47 | 220kV CHP - Birpara Line- II | 0.00 | - | |
| | | Unit- III | 0.00 | 220kV CHP - Malbase Line- III | 34.60 | + | |
| | | Unit- IV | 0.00 | 220kV CHP - Semtokha Line- IV | 36.90 | - | |
| | | - | - | 220kV Malbase - Birpara Line | -38.50 | - | |
| | | - | - | 66kV CHP - Chumdo Line | 9.33 | + | |
| | | - | - | 66kV CHP - Gedu Line | 3.79 | + | |
| | | - | - | 3x3MVA, 66/11kV TFR | 1.10 | + | |
| | | **Total** | **78.83** | **Error at Station/Auxiliary Consumption/Losses** | **0.901%** | | |
| 4 | **24MW BHP (U/S)** | Unit- I | 4.30 | 220kV BHP - Semtokha Line | 2.90 | + | U/S on Total Shutdown. L/S Unit-II on standby |
| | | Unit- II | 0.00 | 66kV BHP - Lobeysa Line | 10.00 | + | |
| | | **Total** | **4.30** | 220kV BHP - Tsirang Line | 1.45 | - | |
| | **40MW BHP (L/S)** | Unit- I | 11.00 | 5MVA, 66/11kV TFR | 0.89 | + | |
| | | Unit- II | 0.00 | 30MVA ICT, 220/66kV | | | |
| | | **Total** | **11.00** | **Error at Station/Auxiliary Consumption/Losses** | **0.392%** | | |
| 5 | **126MW DHP** | Unit-I | 15.85 | 220kV DHP - Tsirang Line | 15.65 | + | Unit-II under AMP |
| | | Unit-II | 0.00 | 220kV DHP - Dagapela Line | 0.00 | | |
| | | - | - | 220kV Jigmeling - Dagapela Line | 1.10 | + | |
| | | - | - | 5MVA, 220/33kV TFR | | | |
| | | **Total** | **15.85** | **Error at Station/Auxiliary Consumption/Losses** | **1.262%** | | |
| 6 | **60MW KHP** | Unit- I | 0.00 | 132kV KHP - Nangkhor Line | 10.64 | + | Unit-III under AMP. Unit-I standby. |
| | | Unit-II | 12.12 | 132kV KHP - Kilikhar Line | 12.93 | + | |
| | | Unit- III | 0.00 | 5MVA, 132/11kV TFR | 0.39 | + | |
| | | Unit- IV | 12.13 | 132kV Gelephu - Salakati Line | -25.86 | - | |
| | | - | - | 132kV Motanga - Rangia Line | 12.13 | + | |
| | | **Total** | **24.25** | **Error at Station/Auxiliary Consumption/Losses** | **1.212%** | | |

**Note: Generation-Load Summary (MW) for March 26, 2021 at 09:00hrs.**

| Sl. No | Region | Total Generation (MW) | Total Load [Generation - Export (MW)] | Total Load [Feeder Summation (MW)] | Total Export/Import (MW) | Load Balance (MW) |
|---|---|---|---|---|---|---|
| 1 | **Western Grid** | 269.28 | 248.51 | 243.83 | 5.37 | 4.68 |
| 2 | **Eastern Grid** | 202.95 | 54.28 | 53.40 | 164.07 | 0.88 |
| **Total** | | **472.23** | **302.79** | **297.23** | **169.44** | **5.56** |

**Note: Generation-Load Summary for March 26, 2020 at 09:00hrs.**

| Sl. No | Region | Total Generation (MW) | Total Load [Generation - Export (MW)] | Total Load [Feeder Summation (MW)] | Total Export/Import (MW) | Load Balance (MW) |
|---|---|---|---|---|---|---|
| 1 | **Western Grid** | 239.57 | 226.70 | 221.76 | **3.75** | 4.94 |
| 2 | **Eastern Grid** | 157.69 | 50.33 | 48.13 | **116.48** | 2.20 |
| **Total** | | **397.26** | **277.03** | **269.89** | **120.23** | **7.14** |

**NOTE- MHP, BHP data collected from site**

1. The Instantaneous load balance is calculated as (Total generation - (Total export-Import ) - Total domestic load) do not tend towards zero. This could be due to the following reasons:

   i) Not all the meters are digital and nor are all the meter at all locations can be read at same time (say 9:00hrs) due to many meter to be read manually.

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