

**BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT**

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>September 17, 2021</b>
<b>Hours:</b>	<b>19:00 Hours</b>

<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown. 400kV MAL-Siliguri line IV tripped. THP took total plant shutdown at 00:07 Hrs (17.09.2021).
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	0.00		
		Unit- VI	0.00	-	-	-	
		<b>Total</b>	<b>0.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.000%</b>		
2	720MW MHP	Unit-I	170.14	400kV MHP - Jigmeling Line - I	338.14	+	400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby. (There is MW power difference of 14.15 MW between Total MHP generation & outgoing feeder at JLG end)
		Unit-II	170.11	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	170.86	400kV MHP - Jigmeling Line - III	340.02	+	
		Unit-IV	170.61	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-17.53	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	170.16	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	257.47	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	257.47	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	32.04	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	32.56	+	
-	-	220kV Tsirang - Jigmeling Line	84.79	+			
-	-	132kV Gelephu - Salakati Line	30.00	+			
		<b>Total</b>	<b>681.72</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.522%</b>		
3	336MW CHP	Unit- I	92.15	220kV CHP - Birpara Line- I	81.82	+	
		Unit- II	91.42	220kV CHP - Birpara Line- II	81.83	+	
		Unit- III	91.65	220kV CHP - Malbase Line- III	153.46	+	
		Unit- IV	91.73	220kV CHP - Semtokha Line- IV	30.32	+	
		-	-	220kV Malbase - Birpara Line	15.34	+	
		-	-	66kV CHP - Chumdo Line	9.75	+	
		-	-	66kV CHP - Gedu Line	6.42	+	
		-	-	3x3MVA, 66/11kV TFR	1.32	+	
		<b>Total</b>	<b>366.95</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.553%</b>		
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	86.30	+	
		Unit- II	12.30	66kV BHP - Lobeysa Line	8.95	+	
		<b>Total</b>	<b>24.70</b>	220kV BHP - Tsirang Line	-29.01	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	-15.35	-	
		<b>Total</b>	<b>41.80</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>-0.962%</b>		
6	126MW DHP	Unit-I	60.43	220kV DHP - Tsirang Line	117.93	+	220kV DHP_Dagapela Line on standby.
		Unit-II	58.07	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.80	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		<b>Total</b>	<b>118.50</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.228%</b>		
7	60MW KHP	Unit- I	16.45	132kV KHP - Nangkhoh Line	37.72	+	
		Unit-II	16.62	132kV KHP - Kilikhar Line	27.28	+	
		Unit- III	16.61	5MVA, 132/11kV TFR	0.46	+	
		Unit- IV	16.60	132kV Motanga - Rangia Line	41.41	+	
		<b>Total</b>	<b>66.28</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>1.239%</b>		

**Note: Generation-Load Summary (MW) for September 17, 2021 at 19:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW, %)	Auxiliary Consumption & Transformation Losses (MW) at Generator end.
1	Western Grid	551.95	288.17	288.31	178.99	-0.14
2	Eastern Grid	748.00	76.28	71.90	756.51	4.38
	<b>Total</b>	<b>1,299.95</b>	<b>364.45</b>	<b>360.21</b>	<b>935.50</b>	<b>4.24</b>

**Note: Generation-Load Summary for September 17, 2020 at 19:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,672.47	204.73	187.94	1,381.26	16.79
2	Eastern Grid	849.40	52.84	50.16	883.04	2.68
	<b>Total</b>	<b>2,521.87</b>	<b>257.57</b>	<b>238.10</b>	<b>2,264.30</b>	<b>19.47</b>

**NOTE-BHP and MHPA data collected from site**

- 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:
  - 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.
  - The clocks of all the locations are not synchronized.
- This report is generated to give an idea of the generation & load flow for the system at a particular instant.

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<b>Date:</b>	<b>September 18, 2021</b>
<b>Hours:</b>	<b>09:00 Hours</b>

<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown. THP took total plant shutdown at 00:07 Hrs.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	+	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	+	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	12.52	+	
		Unit- VI	0.00	-	-	-	
		<b>Total</b>	<b>0.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.000%</b>		
2	720MW MHP	Unit-I	197.83	400kV MHP - Jigmeling Line - I	391.57	+	400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby. (There is MW power difference of 15.31 MW between Total MHP generation & outgoing feeder at JLG end)
		Unit-II	196.63	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.86	400kV MHP - Jigmeling Line - III	393.41	+	
		Unit-IV	197.39	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-41.20	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	202.20	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	306.70	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	306.70	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	18.60	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	19.00	+	
		-	-	220kV Tsirang - Jigmeling Line	81.60	+	
-	-	132kV Gelephu - Salakati Line	20.00	+			
		<b>Total</b>	<b>789.71</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.599%</b>		
3	336MW CHP	Unit- I	91.49	220kV CHP - Birpara Line- I	79.69	+	
		Unit- II	91.09	220kV CHP - Birpara Line- II	79.57	+	
		Unit- III	91.64	220kV CHP - Malbase Line- III	176.94	+	
		Unit- IV	91.41	220kV CHP - Semtokha Line- IV	14.56	+	
		-	-	220kV Malbase - Birpara Line	-7.04	-	
		-	-	66kV CHP - Chumdo Line	6.42	+	
		-	-	66kV CHP - Gedu Line	6.74	+	
		-	-	3x3MVA, 66/11kV TFR	0.90	+	
		<b>Total</b>	<b>365.63</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.222%</b>		
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	96.40	+	
		Unit- II	12.10	66kV BHP - Lobeysa Line	6.30	+	
		<b>Total</b>	<b>24.30</b>	220kV BHP - Tsirang Line	-37.50	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	-16.99	-	
		<b>Total</b>	<b>41.80</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.030%</b>		
6	126MW DHP	Unit-I	61.45	220kV DHP - Tsirang Line	121.96	+	220kV DHP_Dagapela Line on standby.
		Unit-II	61.05	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		<b>Total</b>	<b>122.50</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.196%</b>		
7	60MW KHP	Unit- I	16.12	132kV KHP - Nangkhon Line	41.89	+	
		Unit-II	16.37	132kV KHP - Kilikhar Line	22.82	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	32.70	+	
		<b>Total</b>	<b>65.49</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.676%</b>		

**Note: Generation-Load Summary (MW) for September 18, 2021 at 09:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW) at Generator end.
1	Western Grid	554.23	307.89	307.82	164.74	0.07
2	Eastern Grid	855.20	68.50	63.33	868.30	5.17
	<b>Total</b>	<b>1,409.43</b>	<b>376.39</b>	<b>371.15</b>	<b>1,033.04</b>	<b>5.24</b>

**Note: Generation-Load Summary for September 18, 2020 at 09:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,668.73	196.31	180.77	1,399.97	15.54
2	Eastern Grid	777.51	38.24	34.15	811.72	4.09
	<b>Total</b>	<b>2,446.24</b>	<b>234.55</b>	<b>214.92</b>	<b>2,211.69</b>	<b>19.63</b>

**NOTE-BHP and MHPA data collected from site**

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  - 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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