

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

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>July 28,2021</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	97.70	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I & II under breakdown.
		Unit- II	98.31	400kV THP - Siliguri Line - II	0.00		
		Unit- III	108.10	400kV THP - Siliguri Line- IV	275.91	+	
		Unit- IV	99.79	400kV THP - Malbase Line - III	321.30	+	
		Unit- V	97.62	400kV Malbase - Siliguri Line	260.56	+	
		Unit- VI	98.56	-	-	-	
		<b>Total</b>	<b>600.08</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.478%</b>		
2	720MW MHP	Unit-I	197.84	400kV MHP - Jigmeling Line - I	294.03	+	Unit-III under Restoration . 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II(Interim) under shutdown.
		Unit-II	197.40	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.66	+	
		Unit-IV	197.85	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)	-42.39	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	156.50	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	234.71	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	233.58	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	36.21	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	36.24	+	
		-	-	220kV Tsirang - Jigmeling Line	114.58	+	
-	-	132kV Gelephu - Salakati Line	24.38	+			
<b>Total</b>	<b>593.09</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.573%</b>				
3	336MW CHP	Unit- I	92.10	220kV CHP - Birpara Line- I	102.77	+	
		Unit- II	90.47	220kV CHP - Birpara Line- II	102.87	+	
		Unit- III	92.35	220kV CHP - Malbase Line- III	131.99	+	
		Unit- IV	92.16	220kV CHP - Semtokha Line- IV	12.64	+	
		-	-	220kV Malbase - Birpara Line	66.18	+	
		-	-	66kV CHP - Chumdo Line	8.63	+	
		-	-	66kV CHP - Gedu Line	5.53	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
		<b>Total</b>	<b>367.08</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.395%</b>		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	46.50	+	
		Unit- II	12.10	66kV BHP - Lobeysa Line	26.19	+	
		<b>Total</b>	<b>24.40</b>	220kV BHP - Tsirang Line	-7.70	-	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	2.68	+	
		<b>Total</b>	<b>41.50</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.030%</b>		
6	126MW DHP	Unit-I	63.63	220kV DHP - Tsirang Line	126.38	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.22	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.50	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		<b>Total</b>	<b>126.85</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.134%</b>		
7	60MW KHP	Unit- I	16.57	132kV KHP - Nangkhoh Line	36.64	+	
		Unit-II	16.46	132kV KHP - Kilikhar Line	28.46	+	
		Unit- III	16.48	5MVA, 132/11kV TFR	0.90	+	
		Unit- IV	16.61	132kV Motanga - Rangia Line	54.96	+	
		<b>Total</b>	<b>66.12</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.181%</b>		

**Note: Generation-Load Summary (MW) for July 28,2021 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	1,159.91	237.04	234.03	808.29	3.01
2	Eastern Grid	659.21	69.66	66.14	704.13	3.52
	<b>Total</b>	<b>1,819.12</b>	<b>306.70</b>	<b>300.17</b>	<b>1,512.42</b>	<b>6.53</b>

**Note: Generation-Load Summary for July 28,2021 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	1,678.21	227.81	210.85	1,352.58	16.96
2	Eastern Grid	659.93	53.48	51.61	704.27	1.87
	<b>Total</b>	<b>2,338.14</b>	<b>281.29</b>	<b>262.46</b>	<b>2,056.85</b>	<b>18.83</b>

**NOTE-BHP & MHP 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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**Maximum Load/Demand till Date**

<b>Date:</b>	<b>July 29, 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	117.28	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under breakdown.
		Unit- II	97.90	400kV THP - Siliguri Line - II	212.35	+	
		Unit- III	108.30	400kV THP - Siliguri Line- IV	202.76	+	
		Unit- IV	99.88	400kV THP - Malbase Line - III	224.76	+	
		Unit- V	97.85	400kV Malbase - Siliguri Line	194.80	+	
		Unit- VI	121.91	-	-	-	
		<b>Total</b>	<b>643.12</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.505%</b>		
2	720MW MHP	Unit-I	197.89	400kV MHP - Jigmeling Line - I	294.40	+	Unit-III under Restoration. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line II (Interim) under standby.
		Unit-II	197.78	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.89	+	
		Unit-IV	197.88	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)	-49.50	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	158.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	237.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	237.00	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	23.63	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	23.60	+	
		-	-	220kV Tsirang - Jigmeling Line	98.47	+	
		-	-	132kV Gelephu - Salakati Line	20.87	+	
<b>Total</b>	<b>593.55</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.549%</b>				
3	336MW CHP	Unit- I	92.10	220kV CHP - Birpara Line- I	97.44	+	
		Unit- II	90.47	220kV CHP - Birpara Line- II	97.19	+	
		Unit- III	92.35	220kV CHP - Malbase Line- III	147.09	+	
		Unit- IV	92.16	220kV CHP - Semtokha Line- IV	9.23	+	
		-	-	220kV Malbase - Birpara Line	45.37	+	
		-	-	66kV CHP - Chumdo Line	6.16	+	
		-	-	66kV CHP - Gedu Line	5.61	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
		<b>Total</b>	<b>367.08</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.997%</b>		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	44.30	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	25.60	+	
		<b>Total</b>	<b>24.50</b>	220kV BHP - Tsirang Line	-4.76	-	
5	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.91	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	1.99	+	
		<b>Total</b>	<b>41.70</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.227%</b>		
6	126MW DHP	Unit-I	53.39	220kV DHP - Tsirang Line	105.96	+	220kV DHP_Dagapela Line on standby.
		Unit-II	53.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.10	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		<b>Total</b>	<b>106.42</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.150%</b>		
7	60MW KHP	Unit- I	16.54	132kV KHP - Nangkor Line	41.49	+	
		Unit-II	16.51	132kV KHP - Kilikhar Line	23.93	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.10	+	
		Unit- IV	16.58	132kV Motanga - Rangia Line	33.81	+	
		<b>Total</b>	<b>66.13</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.921%</b>		

**Note: Generation-Load Summary (MW) for July 29, 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	1,182.82	234.44	228.32	849.91	6.12
2	Eastern Grid	659.68	71.47	67.60	686.68	3.87
	<b>Total</b>	<b>1,842.50</b>	<b>305.91</b>	<b>295.92</b>	<b>1,536.59</b>	<b>9.99</b>

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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	1,680.28	216.65	195.98	1,387.19	20.67
2	Eastern Grid	659.93	41.90	38.28	694.47	3.62
	<b>Total</b>	<b>2,340.21</b>	<b>258.55</b>	<b>234.26</b>	<b>2,081.66</b>	<b>24.29</b>

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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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