

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

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>October 8, 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	138.17	400kV THP - Siliguri Line - I	0.00		Unit-II on Standby. 400kV THP-Siliguri line I under breakdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	186.50	+	
		Unit- III	79.38	400kV THP - Siliguri Line- IV	178.21	+	
		Unit- IV	137.41	400kV THP - Malbase Line - III	262.83	+	
		Unit- V	137.40	400kV Malbase - Siliguri Line	157.26	+	
		Unit- VI	140.19	-	-	-	
		<b>Total</b>	<b>632.55</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.792%</b>		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	179.22	+	Unit-I on Standby. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo lineI & II not in service. 400kV JLG_ALI Line I (Interim) on standby. 132kV Gelephu_Salakati line under shutdown.
		Unit-II	99.18	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	130.60	400kV MHP - Jigmeling Line - III	180.61	+	
		Unit-IV	130.56	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)	-8.08	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	90.17	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	136.39	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	136.39	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	20.31	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	20.54	+	
		-	-	220kV Tsirang - Jigmeling Line	51.65	+	
-	-	132kV Gelephu - Salakati Line	0.00				
<b>Total</b>	<b>360.34</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.142%</b>				
3	336MW CHP	Unit- I	80.33	220kV CHP - Birpara Line- I	76.53	+	66kV CHP_Gedu line opened at 10:01hrs to regulate 66kV voltage.
		Unit- II	80.34	220kV CHP - Birpara Line- II	76.62	+	
		Unit- III	82.43	220kV CHP - Malbase Line- III	91.71	+	
		Unit- IV	81.72	220kV CHP - Semtokha Line- IV	50.77	+	
		-	-	220kV Malbase - Birpara Line	54.22	+	
		-	-	66kV CHP - Chumdo Line	26.92	+	
		-	-	66kV CHP - Gedu Line	0.00		
		-	-	3x3MVA, 66/11kV TFR	1.42	+	
<b>Total</b>	<b>324.82</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.262%</b>				
4	24MW BHP (U/S)	Unit- I	10.30	220kV BHP - Semtokha Line	33.52	+	Lobeysa Line
		Unit- II	10.10	66kV BHP - Lobeysa Line	32.60	+	
		<b>Total</b>	<b>20.40</b>	220kV BHP - Tsirang Line	-8.18	-	
5	40MW BHP (L/S)	Unit- I	17.90	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	18.00	30MVA ICT, 220/66kV (HV)	10.63	+	
		<b>Total</b>	<b>35.90</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>-4.494%</b>		
6	126MW DHP	Unit-I	33.29	220kV DHP - Tsirang Line	62.82	+	220kV DHP_Dagapela Line on standby.
		Unit-II	30.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.23	+	
		-	-	5MVA, 220/33kV TFR	0.49	+	
		<b>Total</b>	<b>63.32</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.016%</b>		
7	60MW KHP	Unit- I	16.55	132kV KHP - Nangkhoh Line	37.97	+	
		Unit-II	16.53	132kV KHP - Kilikhar Line	26.90	+	
		Unit- III	16.53	5MVA, 132/11kV TFR	0.41	+	
		Unit- IV	16.54	132kV Motanga - Rangia Line	51.27	+	
		<b>Total</b>	<b>66.15</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>1.320%</b>		

**Note: Generation-Load Summary (MW) for October 08, 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	1,076.99	296.00	294.89	729.34	1.11
2	Eastern Grid	426.49	63.92	62.54	414.22	1.38
	<b>Total</b>	<b>1,503.48</b>	<b>359.92</b>	<b>357.43</b>	<b>1,143.56</b>	<b>2.49</b>

**Note: Generation-Load Summary for October 08, 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	1,355.91	198.78	185.58	1,070.74	13.10
2	Eastern Grid	551.61	52.15	50.48	585.85	1.67
	<b>Total</b>	<b>1,907.52</b>	<b>250.93</b>	<b>236.16</b>	<b>1,656.59</b>	<b>14.77</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.

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

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>October 9, 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	135.55	400kV THP - Siliguri Line - I	0.00		Unit-II on standby. 400kV THP-Siliguri line I under breakdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	195.81	+	
		Unit- III	79.19	400kV THP - Siliguri Line- IV	187.78	+	
		Unit- IV	140.08	400kV THP - Malbase Line - III	241.92	+	
		Unit- V	137.72	400kV Malbase - Siliguri Line	171.88	+	
		Unit- VI	139.37	-	-	-	
		<b>Total</b>	<b>631.91</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.013%</b>		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	195.60	+	Unit-I on standby. 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. 132kV Gelephu_Salakati line under shutdown.
		Unit-II	130.01	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	130.54	400kV MHP - Jigmeling Line - III	196.20	+	
		Unit-IV	130.50	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)	-28.34	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	106.17	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	162.88	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	162.88	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	140.60	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	14.24	+	
-	-	220kV Tsirang - Jigmeling Line	59.13	+			
-	-	132kV Gelephu - Salakati Line	0.00				
		<b>Total</b>	<b>391.05</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.192%</b>		
3	336MW CHP	Unit- I	81.19	220kV CHP - Birpara Line- I	68.40	+	66kV CHP_Gedu line opened at 10:01hrs to regulate 66kV voltage.
		Unit- II	79.90	220kV CHP - Birpara Line- II	68.67	+	
		Unit- III	79.44	220kV CHP - Malbase Line- III	112.73	+	
		Unit- IV	80.37	220kV CHP - Semtokha Line- IV	49.69	+	
		-	-	220kV Malbase - Birpara Line	24.93	+	
		-	-	66kV CHP - Chumdo Line	20.04	+	
		-	-	66kV CHP - Gedu Line	0.00		
		-	-	3x3MVA, 66/11kV TFR	0.80	+	
		<b>Total</b>	<b>320.90</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.178%</b>		
4	24MW BHP (U/S)	Unit- I	10.20	220kV BHP - Semtokha Line	30.30	+	
		Unit- II	10.00	66kV BHP - Lobeyssa Line	25.80	+	
		<b>Total</b>	<b>20.20</b>	220kV BHP - Tsirang Line	-2.10	-	
5	40MW BHP (L/S)	Unit- I	17.90	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	18.10	30MVA ICT, 220/66kV (HV)	8.49	+	
		<b>Total</b>	<b>36.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>2.331%</b>		
6	126MW DHP	Unit-I	34.32	220kV DHP - Tsirang Line	62.85	+	220kV DHP_Dagapela Line on standby.
		Unit-II	28.98	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.02	+	
		-	-	5MVA, 220/33kV TFR	0.29	+	
		<b>Total</b>	<b>63.30</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.253%</b>		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhoh Line	42.08	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	23.17	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.31	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	33.38	+	
		<b>Total</b>	<b>66.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.667%</b>		

**Note: Generation-Load Summary (MW) for October 09, 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	1,072.31	295.71	289.29	717.47	6.42
2	Eastern Grid	457.05	50.87	51.18	465.31	-0.31
	<b>Total</b>	<b>1,529.36</b>	<b>346.58</b>	<b>340.47</b>	<b>1,182.78</b>	<b>6.11</b>

**Note: Generation-Load Summary for October 09, 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	1,310.72	202.98	188.83	1,017.61	14.15
2	Eastern Grid	455.84	40.49	37.90	505.48	2.59
	<b>Total</b>	<b>1,766.56</b>	<b>243.47</b>	<b>226.73</b>	<b>1,523.09</b>	<b>16.74</b>

**NOTE-BHP & 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.
  - 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.