

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

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>November 15, 2021</b>
<b>Hours:</b>	<b>19:00 Hours</b>

<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
11-Nov-21	19:00hrs	445.49 MW

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		Unit-I under AMP. Unit-V under standby. 400kV THP-Siliguri line I under breakdown. 400kV THP-MAL line under Annual Maintenance .
		Unit- II	120.00	400kV THP - Siliguri Line - II	241.00	+	
		Unit- III	120.00	400kV THP - Siliguri Line- IV	231.00	+	
		Unit- IV	120.00	400kV THP - Malbase Line - III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	-48.00	-	
		Unit- VI	120.00	-	-	-	
		<b>Total</b>	<b>480.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>1.667%</b>		
2	720MW MHP	Unit-I	96.06	400kV MHP - Jigmeling Line - I	111.64	+	Unit-II on Standby. Unit IV under Annual Maintenance. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby. JLG_ALI Line II (Direct) opened (Both end).
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	130.36	400kV MHP - Jigmeling Line - III	112.72	+	
		Unit-IV	0.00	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)	53.40	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	67.27	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	102.09	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	21.80	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	22.10	+	
		-	-	220kV Tsirang - Jigmeling Line	0.80	+	
-	-	132kV Gelephu - Salakati Line	-0.30	-			
<b>Total</b>	<b>226.42</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.910%</b>				
3	336MW CHP	Unit- I	81.22	220kV CHP - Birpara Line- I	30.90	+	Unit-IV standby.
		Unit- II	76.84	220kV CHP - Birpara Line- II	31.00	+	
		Unit- III	78.63	220kV CHP - Malbase Line- III	88.90	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	59.00	+	
		-	-	220kV Malbase - Birpara Line	-17.00	-	
		-	-	66kV CHP - Chumdo Line	18.70	+	
		-	-	66kV CHP - Gedu Line	3.80	+	
		-	-	3x3MVA, 66/11kV TFR	1.88	+	
		<b>Total</b>	<b>236.69</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>1.060%</b>		
4	24MW BHP (U/S)	Unit- I	8.00	220kV BHP - Semtokha Line	67.10	+	Unit-IV standby.
		Unit- II	7.80	66kV BHP - Lobeysa Line	29.46	+	
		<b>Total</b>	<b>15.80</b>	220kV BHP - Tsirang Line	-51.75	-	
5	40MW BHP (L/S)	Unit- I	15.00	5MVA, 66/11kV TFR	0.68	+	Unit-IV standby.
		Unit- II	15.00	30MVA ICT, 220/66kV (HV)	14.84	+	
		<b>Total</b>	<b>30.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.677%</b>		
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	56.29	+	Unit I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	56.50	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	10.60	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		<b>Total</b>	<b>56.50</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.018%</b>		
7	60MW KHP	Unit- I	13.08	132kV KHP - Nangkor Line	19.80	+	Unit-IV on standby.
		Unit-II	13.08	132kV KHP - Kilikhar Line	18.70	+	
		Unit- III	13.08	5MVA, 132/11kV TFR	0.33	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	8.21	+	
		<b>Total</b>	<b>39.24</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>1.045%</b>		

**Note: Generation-Load Summary (MW) for November 15, 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	818.99	349.29	349.06	468.90	0.23
2	Eastern Grid	265.66	89.19	86.72	177.27	2.47
	<b>Total</b>	<b>1,084.65</b>	<b>438.48</b>	<b>435.78</b>	<b>646.17</b>	<b>2.70</b>

**Note: Generation-Load Summary for November 15, 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	618.58	214.61	208.97	362.00	5.64
2	Eastern Grid	226.04	56.55	55.00	211.46	1.55
	<b>Total</b>	<b>844.62</b>	<b>271.16</b>	<b>263.97</b>	<b>573.46</b>	<b>7.19</b>

**NOTE-All except KHP 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.

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<b>Hours:</b>	<b>09:00 Hours</b>

<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
11-Nov-21	19:00hrs	445.49 MW

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		Unit-I under AMP. Unit-V under standby. 400kV THP-Siliguri line I under breakdown. 400kV THP-MAL line under Annual Maintenance .
		Unit- II	119.60	400kV THP - Siliguri Line - II	231.00	+	
		Unit- III	100.20	400kV THP - Siliguri Line- IV	222.00	+	
		Unit- IV	101.10	400kV THP - Malbase Line - III	0.00		
		Unit- V	0.00	400kV Malbase - Siliguri Line	-45.00	-	
		Unit- VI	140.60	-	-	-	
		<b>Total</b>	<b>461.50</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.842%</b>		
2	720MW MHP	Unit-I	80.79	400kV MHP - Jigmeling Line - I	104.56	+	Unit-II on Standby. Unit-IV under Annual Maintenance. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby. JLG_ALI Line II(Direct) opened (Both end).
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	130.61	400kV MHP - Jigmeling Line - III	105.06	+	
		Unit-IV	0.00	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)	35.04	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	68.66	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	103.58	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	18.40	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	18.65	+	
		-	-	220kV Tsirang - Jigmeling Line	11.51	+	
-	-	132kV Gelephu - Salakati Line	4.00	+			
<b>Total</b>	<b>211.40</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.842%</b>				
3	336MW CHP	Unit- I	76.50	220kV CHP - Birpara Line- I	31.70	+	Unit-IV under AMP.
		Unit- II	77.21	220kV CHP - Birpara Line- II	31.65	+	
		Unit- III	78.10	220kV CHP - Malbase Line- III	98.48	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	45.83	+	
		-	-	220kV Malbase - Birpara Line	-26.00	-	
		-	-	66kV CHP - Chumdo Line	23.90	+	
		-	-	66kV CHP - Gedu Line	4.40	+	
		-	-	3x3MVA, 66/11kV TFR	1.00	+	
		<b>Total</b>	<b>231.81</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-2.222%</b>		
4	24MW BHP (U/S)	Unit- I	7.90	220kV BHP - Semtokha Line	60.90	+	
		Unit- II	7.70	66kV BHP - Lobeysa Line	25.83	+	
		<b>Total</b>	<b>15.60</b>	220kV BHP - Tsirang Line	-41.58	-	
5	40MW BHP (L/S)	Unit- I	15.00	5MVA, 66/11kV TFR	0.37	+	
		Unit- II	15.20	30MVA ICT, 220/66kV (HV)	11.11	+	
		<b>Total</b>	<b>30.20</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.611%</b>		
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	55.72	+	Unit I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	55.96	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	9.85	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		<b>Total</b>	<b>55.96</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.071%</b>		
7	60MW KHP	Unit- I	12.10	132kV KHP - Nangkhoh Line	20.86	+	Unit-IV on standby.
		Unit-II	12.12	132kV KHP - Kilikhar Line	14.74	+	
		Unit- III	12.09	5MVA, 132/11kV TFR	0.23	+	
		Unit- IV	0.00	132kV Motanga - Rangia Line	7.22	+	
		<b>Total</b>	<b>36.31</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.322%</b>		

**Note: Generation-Load Summary (MW) for November 16, 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	795.07	338.21	344.39	445.35	-6.18
2	Eastern Grid	247.71	75.76	73.50	183.46	2.26
	<b>Total</b>	<b>1,042.78</b>	<b>413.97</b>	<b>417.89</b>	<b>628.81</b>	<b>-3.92</b>

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1	Western Grid	571.74	190.11	183.92	350.05	6.19
2	Eastern Grid	231.16	47.78	46.00	214.96	1.78
	<b>Total</b>	<b>802.90</b>	<b>237.89</b>	<b>229.92</b>	<b>565.01</b>	<b>7.97</b>

**NOTE-All data collected from site.**

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- 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.

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