

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

**Coincidental Maximum Load**

**Date:** January 13, 2022  
**Hours:** 18:00 Hours

**Date**      **Time**      **Load(MW)**  
 12-Jan-22      18:00hrs      492.25

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00	THP under total shutdown.
		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	-71.63	
		Unit- VI	0.00	-	-	
		<b>Total</b>	<b>0.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.00%</b>	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	229.10	Unit-I & II on Standby. 400kV MHP-JLG Line II, III & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) under Shutdown. 400kV JLG_ALI Line I (Direct) on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	140.46	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	90.19	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)	114.78	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	43.83	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	67.06	
		-	-	80MVA, 220/132kV ICT - I (HV)	28.78	
		-	-	80MVA, 220/132kV ICT - II (HV)	29.18	
		-	-	220kV Tsirang - Jigmeling Line	-40.40	
-	-	132kV Gelephu - Salakati Line	0.02			
<b>Total</b>	<b>230.65</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.67%</b>			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I on Standby, Unit-III under Annual Maintenance 220kV CHP_Birpara Line I & II under breakdown.
		Unit- II	86.39	220kV CHP - Birpara Line- II	0.00	
		Unit- III	0.00	220kV CHP - Malbase Line- III	57.35	
		Unit- IV	81.17	220kV CHP - Semtokha Line- IV	83.37	
		-	-	220kV Malbase - Birpara Line	-25.36	
		-	-	66kV CHP - Chumdo Line	21.85	
		-	-	66kV CHP - Gedu Line	2.60	
		-	-	3x3MVA, 66/11kV TFR	1.66	
<b>Total</b>	<b>167.56</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.44%</b>			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	60.40	U/S unit-I and L/S Unit-I under maintenance.
		Unit- II	8.90	66kV BHP - Lobeyasa Line	29.05	
		<b>Total</b>	<b>8.90</b>	<b>220kV BHP - Tsirang Line</b>	<b>-63.88</b>	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	1.07	U/S unit-I and L/S Unit-I under maintenance.
		Unit- II	17.70	30MVA ICT, 220/66kV (HV)	21.48	
		<b>Total</b>	<b>17.70</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.15%</b>	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	29.73	Unit-I under Annual Maintenance. 220kV DHP-Dagapela Line on standby.
		Unit-II	29.96	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	16.64	
		-	-	5MVA, 220/33kV TFR	0.20	
<b>Total</b>	<b>29.96</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.10%</b>			
7	60MW KHP	Unit- I	15.09	132kV KHP - Nangkhoh Line	9.59	Unit-III on standby Unit-IV under Annual Maintenance.
		Unit-II	15.12	132kV KHP - Kilikhar Line	19.32	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.63	
		Unit- IV	0.00	132kV Motanga - Rangia Line	7.90	
		<b>Total</b>	<b>30.21</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>2.22%</b>	

**Note: Generation-Load Summary (MW) for January 13, 2022 at 18:00hrs.**

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)
1	Western Grid	224.12	361.51	360.79	-96.99	0.72
2	Eastern Grid	260.86	101.65	99.43	118.81	2.22
<b>Total</b>		<b>484.98</b>	<b>463.16</b>	<b>460.22</b>	<b>21.82</b>	<b>2.94</b>

**Note: Generation-Load Summary for January 13, 2021 at 18:00hrs.**

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)
1	Western Grid	332.37	259.30	259.76	61.03	-0.46
2	Eastern Grid	132.04	71.16	70.27	72.92	0.89
<b>Total</b>		<b>464.41</b>	<b>330.46</b>	<b>330.03</b>	<b>133.95</b>	<b>0.43</b>

**NOTE- BHP load collected from site.**

1. The Instantaneous load balance, 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**

**Coincidental Maximum Load**

**Date:** January 14, 2022  
**Hours:** 09:00 Hours

Date	Time	Load(MW)
12-Jan-22	18:00hrs	492.25

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	0.00	THP under total shutdown.
		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	-68.38	
		Unit- VI	0.00	-	-	
		<b>Total</b>	<b>0.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.00%</b>	
2	720MW MHP	Unit-I	80.14	400kV MHP - Jigmeling Line - I	219.91	Unit-II & IV on Standby. 400kV MHP-JLG Line II, III & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) under Shutdown. 400kV JLG_ALI Line I (Direct) on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	141.80	400kV MHP - Jigmeling Line - III	0.00	
		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)	99.25	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	46.41	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	70.96	
		-	-	80MVA, 220/132kV ICT - I (HV)	25.22	
		-	-	80MVA, 220/132kV ICT - II (HV)	25.55	
		-	-	220kV Tsirang - Jigmeling Line	-33.06	
-	-	132kV Gelephu - Salakati Line	3.05			
<b>Total</b>	<b>221.94</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.91%</b>			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I on Standby. Unit-III under Annual Maintenance. 220kV CHP_Birpara Line-I & II under breakdown..
		Unit- II	84.88	220kV CHP - Birpara Line- II	0.00	
		Unit- III	0.00	220kV CHP - Malbase Line- III	64.15	
		Unit- IV	82.68	220kV CHP - Semtokha Line- IV	79.95	
		-	-	220kV Malbase - Birpara Line	-21.32	
		-	-	66kV CHP - Chumdo Line	19.70	
		-	-	66kV CHP - Gedu Line	2.07	
		-	-	3x3MVA, 66/11kV TFR	1.56	
<b>Total</b>	<b>167.56</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.08%</b>			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	55.00	U/S unit-I and L/S Unit-I under maintenance.
		Unit- II	8.10	66kV BHP - Lobeyasa Line	26.77	
		<b>Total</b>	<b>8.10</b>	<b>220kV BHP - Tsirang Line</b>	<b>-58.57</b>	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.63	
		Unit- II	15.50	30MVA ICT, 220/66kV (HV)	19.42	
		<b>Total</b>	<b>15.50</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.97%</b>	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	28.76	Unit-I under Annual Maintenance. 220kV DHP_Dagapela Line on standby.
		Unit-II	28.97	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	15.57	
		-	-	5MVA, 220/33kV TFR	0.20	
<b>Total</b>	<b>28.97</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.03%</b>			
7	60MW KHP	Unit- I	15.06	132kV KHP - Nangkhoh Line	13.41	Unit III on standby. Unit-IV under Annual Maintenance.
		Unit-II	15.02	132kV KHP - Kilikhar Line	15.72	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.67	
		Unit- IV	0.00	132kV Motanga - Rangia Line	4.76	
		<b>Total</b>	<b>30.08</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.93%</b>	

**Note: Generation-Load Summary (MW) for January 14, 2022 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)
1	Western Grid	220.13	342.89	342.98	-89.70	-0.09
2	Eastern Grid	252.02	93.78	91.47	125.18	2.31
<b>Total</b>		<b>472.15</b>	<b>436.67</b>	<b>434.45</b>	<b>35.48</b>	<b>2.22</b>

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1	Western Grid	333.08	244.42	240.21	78.25	4.21
2	Eastern Grid	136.54	56.37	56.13	90.56	0.24
<b>Total</b>		<b>469.62</b>	<b>300.79</b>	<b>296.34</b>	<b>168.81</b>	<b>4.45</b>

**NOTE-BHP 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.
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