

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

**Coincidental Maximum Load**

**Date:** December 12, 2022  
**Hours:** 18:00 Hours

**Date:** 17-Nov-22      **Time:** 18:39:09hrs      **Load(MW):** 616.55

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	Unit-I, II & III under Shutdown. 400kV THP- Siliguri Line I & 400kV Tala-Siliguri line IV on Standby
		Unit- II	0.00	400kV THP - Siliguri Line - II	83.95	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	99.06	400kV THP - Malbase Line - III	180.10	
		Unit- V	98.60	400kV Malbase - Siliguri Line	56.85	
		Unit- VI	72.88	-	-	
		<b>Total</b>	<b>270.54</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>2.40%</b>	
2	720MW MHP	Unit-I	109.78	400kV MHP - Jigmeling Line - I	0.00	Unit-III & IV under shutdown. 400kV MHP-JLG Line I & II under Shutdown. 400kV MHP-JLG Line III on Standby. 132kV MHP_Yurmo Line-I not in service. 400kV JLG_ALI line- II (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	84.85	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	100.19	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	92.75	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	120.48	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-7.27	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-12.42	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	13.66	
		-	-	80MVA, 220/132kV ICT - II (HV)	13.98	
		-	-	220kV Tsirang - Jigmeling Line	22.43	
-	-	132kV Gelephu - Salakati Line	4.29			
<b>Total</b>	<b>194.63</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.87%</b>			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I under Shutdown. Unit-II on Standby. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-8.81	
		Unit- III	76.79	220kV CHP - Malbase Line- III	21.93	
		Unit- IV	62.01	220kV CHP - Semtokha Line- IV	96.48	
		-	-	220kV Malbase - Birpara Line	-31.47	
		-	-	66kV CHP - Chumdo Line	27.08	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	2.33	
<b>Total</b>	<b>138.80</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-0.15%</b>			
4	24MW BHP (U/S)	Unit- I	4.32	220kV BHP - Semtokha Line	53.14	
		Unit- II	4.32	66kV BHP - Lobeyasa Line	27.79	
		<b>Total</b>	<b>8.64</b>	220kV BHP - Tsirang Line	-54.84	
5	40MW BHP (L/S)	Unit- I	9.10	5MVA, 66/11kV TFR	0.77	
		Unit- II	8.60	30MVA ICT, 220/66kV (HV)	20.40	
		<b>Total</b>	<b>17.70</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-1.97%</b>	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	30.24	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	30.51	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.99	
		-	-	5MVA, 220/33kV TFR	0.25	
<b>Total</b>	<b>30.51</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.07%</b>			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	6.68	Unit- I under Shutdown. Unit- II on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	16.46	
		Unit- III	12.13	5MVA, 132/11kV TFR	0.87	
		Unit- IV	12.14	132kV Motanga - Rangia Line	1.90	
		<b>Total</b>	<b>24.27</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.07%</b>	

**Note: Generation-Load Summary (MW) for December 12, 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	466.19	343.24	337.46	100.52	5.78
2	Eastern Grid	218.90	254.83	252.88	-13.50	1.95
<b>Total</b>		<b>685.09</b>	<b>598.07</b>	<b>590.34</b>	<b>87.02</b>	<b>7.73</b>

**Note: Generation-Load Summary for December 12, 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	487.56	377.80	373.86	135.70	3.94
2	Eastern Grid	174.51	100.73	98.37	47.84	2.36
<b>Total</b>		<b>662.07</b>	<b>478.53</b>	<b>472.23</b>	<b>183.54</b>	<b>6.30</b>

**Note:-**

- 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:
  - 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**

**Coincidental Maximum Load**

**Date:** December 13, 2022  
**Hours:** 09:00 Hours

**Date**      **Time**      **Load(MW)**  
 17-Nov-22    18:39:09hrs    616.55

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	Unit-I, II & III under Shutdown. 400kV THP- Siliguri Line I & 400kV Tala-Siliguri line IV on Standby
		Unit- II	0.00	400kV THP - Siliguri Line - II	78.90	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	89.91	400kV THP - Malbase Line - III	167.31	
		Unit- V	87.73	400kV Malbase - Siliguri Line	51.30	
		Unit- VI	69.84	-	-	
		<b>Total</b>	<b>247.48</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.51%</b>	
2	720MW MHP	Unit-I	79.83	400kV MHP - Jigmeling Line - I	0.00	Unit-III & IV under shutdown. 400kV MHP-JLG Line I & II under Shutdown. 400kV MHP-JLG Line III on Standby. 132kV MHP_Yurmo Line-I not in service. 400kV JLG_ALI line- II (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	90.20	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	88.98	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	79.73	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	105.27	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-5.82	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-9.68	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	10.10	
		-	-	80MVA, 220/132kV ICT - II (HV)	10.30	
		-	-	220kV Tsirang - Jigmeling Line	22.43	
-	-	132kV Gelephu - Salakati Line	3.24			
<b>Total</b>	<b>170.03</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.78%</b>			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I under Shutdown. Unit-II on Standby. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-8.53	
		Unit- III	64.00	220kV CHP - Malbase Line- III	24.63	
		Unit- IV	60.25	220kV CHP - Semtokha Line- IV	82.83	
		-	-	220kV Malbase - Birpara Line	-32.50	
		-	-	66kV CHP - Chumdo Line	23.69	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.40	
<b>Total</b>	<b>124.25</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.19%</b>			
4	24MW BHP (U/S)	Unit- I	9.40	220kV BHP - Semtokha Line	52.32	
		Unit- II	9.09	66kV BHP - Lobeysa Line	25.03	
		<b>Total</b>	<b>18.49</b>	220kV BHP - Tsirang Line	-50.46	
5	40MW BHP (L/S)	Unit- I	4.32	5MVA, 66/11kV TFR	0.59	
		Unit- II	4.32	30MVA ICT, 220/66kV (HV)	16.90	
		<b>Total</b>	<b>8.64</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-1.29%</b>	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	30.04	Unit-I under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	30.29	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.90	
		-	-	5MVA, 220/33kV TFR	0.20	
<b>Total</b>	<b>30.29</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.17%</b>			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	11.07	Unit-I under Shutdown. Unit-II on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	13.21	
		Unit- III	12.72	5MVA, 132/11kV TFR	0.63	
		Unit- IV	12.56	132kV Motanga - Rangia Line	4.15	
		<b>Total</b>	<b>25.28</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.46%</b>	

**Note: Generation-Load Summary (MW) for December 13, 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	429.15	317.55	316.35	89.17	1.20
2	Eastern Grid	195.31	225.85	224.16	-8.11	1.69
<b>Total</b>		<b>624.46</b>	<b>543.40</b>	<b>540.51</b>	<b>81.06</b>	<b>2.89</b>

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1	Western Grid	507.43	353.17	350.81	166.00	2.36
2	Eastern Grid	190.80	85.13	83.53	93.93	1.60
<b>Total</b>		<b>698.23</b>	<b>438.30</b>	<b>434.34</b>	<b>259.93</b>	<b>3.96</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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