

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

**Coincidental Maximum Load**

<b>Date:</b>	<b>December 27, 2022</b>
<b>Hours:</b>	<b>18:00 Hours</b>

<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
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	71.67	Unit-I, II & III under Shutdown. 400kV THP- Siliguri Line II on Standby 400kV Tala-Siliguri line IV under 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	59.83	400kV THP - Malbase Line - III	157.31	
		Unit- V	111.04	400kV Malbase - Siliguri Line	48.57	
		Unit- VI	59.68	-	-	
		<b>Total</b>	<b>230.55</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.68%</b>	
2	720MW MHP	Unit-I	84.82	400kV MHP - Jigmeling Line - I	80.56	Unit-III & IV under shutdown. 400kV MHP-JLG Line II, III & IV on Standby. 132kV MHP_Yurmo Line- I not in service. 400kV JLG_ALI line- I (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	84.84	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	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	87.39	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	130.33	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-18.91	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-29.41	
		-	-	80MVA, 220/132kV ICT - I (HV)	6.24	
		-	-	80MVA, 220/132kV ICT - II (HV)	6.44	
		-	-	220kV Tsirang - Jigmeling Line	-52.71	
-	-	132kV Gelephu - Salakati Line	-13.50			
<b>Total</b>	<b>169.66</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.01%</b>			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-I & Unit-II on Standby. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-18.74	
		Unit- III	59.79	220kV CHP - Malbase Line- III	25.85	
		Unit- IV	56.66	220kV CHP - Semtokha Line- IV	79.11	
		-	-	220kV Malbase - Birpara Line	-49.72	
		-	-	66kV CHP - Chumdo Line	27.67	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	2.12	
<b>Total</b>	<b>116.45</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.38%</b>			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	69.77	BHP(U/S) Unit-I on Standby.
		Unit- II	8.00	66kV BHP - Lobeyasa Line	27.89	
		<b>Total</b>	<b>8.00</b>	<b>220kV BHP - Tsirang Line</b>	<b>-74.09</b>	
5	40MW BHP (L/S)	Unit- I	8.40	5MVA, 66/11kV TFR	0.81	BHP(U/S) Unit-I on Standby.
		Unit- II	7.70	30MVA ICT, 220/66kV (HV)	20.87	
		<b>Total</b>	<b>16.10</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-1.16%</b>	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	26.24	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	26.50	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.55	
		-	-	5MVA, 220/33kV TFR	0.20	
<b>Total</b>	<b>26.50</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Gen. end</b>	<b>0.23%</b>			
7	60MW KHP	Unit- I	12.65	132kV KHP - Nangkhoh Line	6.63	Unit-III under Shutdown. Unit-IV on Standby.
		Unit-II	12.64	132kV KHP - Kilikhar Line	17.55	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.77	
		Unit- IV	0.00	132kV Motanga - Rangia Line	-5.00	
		<b>Total</b>	<b>25.29</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.34%</b>	

**Note: Generation-Load Summary (MW) for December 27, 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	397.60	398.53	396.74	51.78	1.79
2	Eastern Grid	194.95	209.06	207.01	-66.82	2.05
<b>Total</b>		<b>592.55</b>	<b>607.59</b>	<b>603.75</b>	<b>-15.04</b>	<b>3.84</b>

**Note: Generation-Load Summary for December 27, 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	432.72	357.47	356.02	101.18	1.45
2	Eastern Grid	157.93	87.90	86.67	44.10	1.23
<b>Total</b>		<b>590.65</b>	<b>445.37</b>	<b>442.69</b>	<b>145.28</b>	<b>2.68</b>

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:** December 28, 2022  
**Hours:** 09:00 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	75.96	Unit-I, II & III under Shutdown. 400kV THP- Siliguri Line II on Standby 400kV Tala-Siliguri line IV under 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	60.78	400kV THP - Malbase Line - III	160.76	
		Unit- V	117.91	400kV Malbase - Siliguri Line	49.71	
		Unit- VI	60.47	-	-	
		<b>Total</b>	<b>239.16</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.02%</b>	
2	720MW MHP	Unit-I	74.84	400kV MHP - Jigmeling Line - I	67.09	Unit-III & IV under shutdown. 400kV MHP-JLG Line II, III & IV on Standby. 132kV MHP_Yurmo Line- I not in service. 400kV JLG_ALI line- I (Direct) on Standby. 400kV JLG_ALI Line- I (Interim) on Standby.
		Unit-II	79.88	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	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	86.03	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	119.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-20.36	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-31.07	
		-	-	80MVA, 220/132kV ICT - I (HV)	7.72	
		-	-	80MVA, 220/132kV ICT - II (HV)	7.99	
		-	-	220kV Tsirang - Jigmeling Line	-41.46	
-	-	132kV Gelephu - Salakati Line	-11.74			
<b>Total</b>	<b>154.72</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.03%</b>			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	0.00	Unit-II & III on Standby. 220kV CHP_Birpara Line I & 66kV CHP_GED Line on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	-13.53	
		Unit- III	64.82	220kV CHP - Malbase Line- III	31.74	
		Unit- IV	54.85	220kV CHP - Semtokha Line- IV	74.32	
		-	-	220kV Malbase - Birpara Line	-46.19	
		-	-	66kV CHP - Chumdo Line	25.18	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.41	
<b>Total</b>	<b>119.67</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.46%</b>			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	63.63	U/S unit-I on Standby
		Unit- II	7.70	66kV BHP - Lobeyasa Line	25.18	
		<b>Total</b>	<b>7.70</b>	220kV BHP - Tsirang Line	-65.18	
5	40MW BHP (L/S)	Unit- I	8.30	5MVA, 66/11kV TFR	0.58	U/S unit-I on Standby
		Unit- II	7.90	30MVA ICT, 220/66kV (HV)	18.11	
		<b>Total</b>	<b>16.20</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>-1.30%</b>	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	26.22	Unit-I under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	26.47	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.55	
		-	-	5MVA, 220/33kV TFR	0.20	
<b>Total</b>	<b>26.47</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>0.19%</b>			
7	60MW KHP	Unit- I	13.49	132kV KHP - Nangkhoh Line	9.44	Unit-III under Shutdown. Unit-I on Standby.
		Unit-II	13.51	132kV KHP - Kilikhar Line	16.39	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.75	
		Unit- IV	0.00	132kV Motanga - Rangia Line	3.49	
		<b>Total</b>	<b>27.00</b>	<b>Auxiliary Consumption &amp; Transformation Losses at Generator end</b>	<b>1.56%</b>	

**Note: Generation-Load Summary (MW) for December 28, 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	409.20	384.71	381.98	65.95	2.73
2	Eastern Grid	181.72	199.94	197.92	-59.68	2.02
<b>Total</b>		<b>590.92</b>	<b>584.65</b>	<b>579.90</b>	<b>6.27</b>	<b>4.75</b>

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<b>Total</b>		<b>590.65</b>	<b>445.37</b>	<b>442.69</b>	<b>145.28</b>	<b>2.68</b>

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