

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: December 21, 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	62.12	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	59.26	400kV THP - Malbase Line - III	142.72	
		Unit- V	77.56	400kV Malbase - Siliguri Line	39.86	
		Unit- VI	70.86	-	-	
		Total	207.68	Auxiliary Consumption & Transformation Losses at Generator end	1.37%	
2	720MW MHP	Unit-I	94.76	400kV MHP - Jigmeling Line - I	88.04	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	84.80	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	89.38	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	123.63	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-14.54	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-21.74	
		-	-	80MVA, 220/132kV ICT - I (HV)	9.55	
		-	-	80MVA, 220/132kV ICT - II (HV)	9.79	
		-	-	220kV Tsirang - Jigmeling Line	-43.22	
-	-	132kV Gelephu - Salakati Line	-10.02			
Total	179.56	Auxiliary Consumption & Transformation Losses at Generator end	1.19%			
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	-11.48	
		Unit- III	69.10	220kV CHP - Malbase Line- III	29.38	
		Unit- IV	65.32	220kV CHP - Semtokha Line- IV	86.03	
		-	-	220kV Malbase - Birpara Line	-42.08	
		-	-	66kV CHP - Chumdo Line	27.05	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	2.08	
Total	134.42	Auxiliary Consumption & Transformation Losses at Generator end	1.01%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	63.80	BHP(U/S) unit I on standby.
		Unit- II	8.26	66kV BHP - Lobeyasa Line	27.59	
		Total	8.26	220kV BHP - Tsirang Line	-66.34	
5	40MW BHP (L/S)	Unit- I	8.51	5MVA, 66/11kV TFR	0.73	BHP(U/S) unit I on standby.
		Unit- II	8.56	30MVA ICT, 220/66kV (HV)	20.70	
		Total	17.07	Auxiliary Consumption & Transformation Losses at Generator end	-1.78%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	27.65	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	27.91	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.01	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	27.91	Auxiliary Consumption & Transformation Losses at Gen. end	0.21%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	7.74	Unit- I under Shutdown. Unit- III on Standby.
		Unit-II	13.09	132kV KHP - Kilikhar Line	17.51	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.64	
		Unit- IV	13.13	132kV Motanga - Rangia Line	0.00	
		Total	26.22	Auxiliary Consumption & Transformation Losses at Generator end	1.26%	

Note: Generation-Load Summary (MW) for December 21, 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	395.34	390.14	386.33	48.42	3.81
2	Eastern Grid	205.78	208.86	206.39	-46.30	2.47
Total		601.12	599.00	592.72	2.12	6.28

Note: Generation-Load Summary for December 21, 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	430.75	371.76	366.20	113.16	5.56
2	Eastern Grid	156.95	92.90	90.81	9.88	2.09
Total		587.70	464.66	457.01	123.04	7.65

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 22, 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	101.00	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	131.00	400kV THP - Malbase Line - III	174.00	
		Unit- V	80.60	400kV Malbase - Siliguri Line	76.36	
		Unit- VI	71.00	-	-	
		Total	282.60	Auxiliary Consumption & Transformation Losses at Generator end	2.69%	
2	720MW MHP	Unit-I	74.79	400kV MHP - Jigmeling Line - I	79.97	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	79.85	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	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	73.15	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	109.93	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-11.64	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-17.39	
		-	-	80MVA, 220/132kV ICT - I (HV)	1.88	
		-	-	80MVA, 220/132kV ICT - II (HV)	1.99	
		-	-	220kV Tsirang - Jigmeling Line	-40.70	
-	-	132kV Gelephu - Salakati Line	-15.54			
Total	154.64	Auxiliary Consumption & Transformation Losses at Generator end	0.98%			
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	-16.50	
		Unit- III	49.73	220kV CHP - Malbase Line- III	21.33	
		Unit- IV	48.30	220kV CHP - Semtokha Line- IV	65.75	
		-	-	220kV Malbase - Birpara Line	-42.56	
		-	-	66kV CHP - Chumdo Line	22.90	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.50	
Total	98.03	Auxiliary Consumption & Transformation Losses at Generator end	3.11%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	67.70	U/S unit-I on standby
		Unit- II	8.50	66kV BHP - Lobeyasa Line	25.36	
		Total	8.50	220kV BHP - Tsirang Line	-68.25	
5	40MW BHP (L/S)	Unit- I	8.60	5MVA, 66/11kV TFR	0.69	U/S unit-I on standby
		Unit- II	8.30	30MVA ICT, 220/66kV (HV)	17.83	
		Total	16.90	Auxiliary Consumption & Transformation Losses at Generator end	-0.39%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	27.42	Unit-I under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	27.68	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.83	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	27.68	Auxiliary Consumption & Transformation Losses at Generator end	0.22%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	11.08	Unit-I under Shutdown. Unit-III on Standby.
		Unit-II	12.69	132kV KHP - Kilikhar Line	13.39	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.59	
		Unit- IV	12.71	132kV Motanga - Rangia Line	-6.90	
		Total	25.40	Auxiliary Consumption & Transformation Losses at Generator end	1.34%	

Note: Generation-Load Summary (MW) for December 22, 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	433.71	356.11	345.50	118.30	10.61
2	Eastern Grid	180.04	190.81	188.95	-51.47	1.86
Total		613.75	546.92	534.45	66.83	12.47

Note: Generation-Load Summary for December 22, 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)
1	Western Grid	397.48	331.08	329.06	95.95	2.02
2	Eastern Grid	163.23	78.55	76.70	55.13	1.85
Total		560.71	409.63	405.76	151.08	3.87

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