

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	December 9, 2022
Hours:	18:00 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	100.28	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	74.59	400kV THP - Malbase Line - III	194.90	
		Unit- V	151.46	400kV Malbase - Siliguri Line	71.42	
		Unit- VI	72.09	-	-	
		Total	298.14	Auxiliary Consumption & Transformation Losses at Generator end	0.99%	
2	720MW MHP	Unit-I	100.89	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	100.82	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	102.82	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	95.96	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	118.80	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-10.09	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-5.82	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	15.80	
		-	-	80MVA, 220/132kV ICT - II (HV)	15.50	
		-	-	220kV Tsirang - Jigmeling Line	24.35	
-	-	132kV Gelephu - Salakati Line	4.59			
Total	201.71	Auxiliary Consumption & Transformation Losses at Generator end	1.45%			
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	-1.26	
		Unit- III	76.38	220kV CHP - Malbase Line- III	21.28	
		Unit- IV	73.14	220kV CHP - Semtokha Line- IV	99.57	
		-	-	220kV Malbase - Birpara Line	-19.18	
		-	-	66kV CHP - Chumdo Line	27.42	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	2.20	
Total	149.52	Auxiliary Consumption & Transformation Losses at Generator end	0.21%			
4	24MW BHP (U/S)	Unit- I	4.70	220kV BHP - Semtokha Line	54.00	
		Unit- II	4.50	66kV BHP - Lobeyasa Line	26.70	
		Total	9.20	220kV BHP - Tsirang Line	-53.63	
5	40MW BHP (L/S)	Unit- I	9.80	5MVA, 66/11kV TFR	1.19	
		Unit- II	9.20	30MVA ICT, 220/66kV (HV)	6.79	
		Total	19.00	Auxiliary Consumption & Transformation Losses at Generator end	-0.21%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	31.01	Unit-I on Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	31.27	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.80	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	31.27	Auxiliary Consumption & Transformation Losses at Gen. end	0.19%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Line	6.14	Unit- I under Shutdown. Unit- II on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	18.56	
		Unit- III	12.88	5MVA, 132/11kV TFR	0.70	
		Unit- IV	12.90	132kV Motanga - Rangia Line	7.99	
		Total	25.78	Auxiliary Consumption & Transformation Losses at Generator end	1.47%	

Note: Generation-Load Summary (MW) for December 09, 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	507.13	331.52	328.25	151.26	3.27
2	Eastern Grid	227.49	255.17	251.86	-3.33	3.31
Total		734.62	586.69	580.11	147.93	6.58

Note: Generation-Load Summary for December 09, 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	539.00	366.32	361.12	172.68	5.20
2	Eastern Grid	187.12	94.88	92.88	92.24	2.00
Total		726.12	461.20	454.00	264.92	7.20

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 10, 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	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	101.15	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	75.97	400kV THP - Malbase Line - III	182.80	
		Unit- V	137.49	400kV Malbase - Siliguri Line	74.03	
		Unit- VI	72.13	-	-	
		Total	285.59	Auxiliary Consumption & Transformation Losses at Generator end	0.57%	
2	720MW MHP	Unit-I	99.77	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	84.77	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	100.89	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	82.27	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	102.01	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-0.73	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	-1.16	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	9.11	
		-	-	80MVA, 220/132kV ICT - II (HV)	9.33	
		-	-	220kV Tsirang - Jigmeling Line	-21.26	
-	-	132kV Gelephu - Salakati Line	-2.45			
Total	184.54	Auxiliary Consumption & Transformation Losses at Generator end	0.75%			
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	0.37	
		Unit- III	73.34	220kV CHP - Malbase Line- III	40.65	
		Unit- IV	68.18	220kV CHP - Semtokha Line- IV	76.88	
		-	-	220kV Malbase - Birpara Line	-29.97	
		-	-	66kV CHP - Chumdo Line	22.66	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.28	
Total	141.52	Auxiliary Consumption & Transformation Losses at Generator end	-0.23%			
4	24MW BHP (U/S)	Unit- I	4.70	220kV BHP - Semtokha Line	54.50	
		Unit- II	4.50	66kV BHP - Lobeyasa Line	23.85	
		Total	9.20	220kV BHP - Tsirang Line	-50.54	
5	40MW BHP (L/S)	Unit- I	9.90	5MVA, 66/11kV TFR	0.56	
		Unit- II	9.20	30MVA ICT, 220/66kV (HV)	15.57	
		Total	19.10	Auxiliary Consumption & Transformation Losses at Generator end	-0.25%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	30.75	Unit-I under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	30.98	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.61	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	30.98	Auxiliary Consumption & Transformation Losses at Generator end	0.10%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	14.16	Unit-I under Shutdown. Unit-II on Standby.
		Unit-II	0.00	132kV KHP - Kilikhar Line	15.14	
		Unit- III	15.13	5MVA, 132/11kV TFR	0.57	
		Unit- IV	15.17	132kV Motanga - Rangia Line	5.42	
		Total	30.30	Auxiliary Consumption & Transformation Losses at Generator end	1.42%	

Note: Generation-Load Summary (MW) for December 10, 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	486.39	362.07	360.79	145.58	1.28
2	Eastern Grid	214.84	192.50	190.69	1.08	1.81
Total		701.23	554.57	551.48	146.66	3.09

Note: Generation-Load Summary for December 10, 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	597.02	345.21	339.01	251.81	6.20
2	Eastern Grid	187.12	88.88	87.42	98.24	1.46
Total		784.14	434.09	426.43	350.05	7.66

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:
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