

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	December 16, 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	82.35	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	88.56	400kV THP - Malbase Line - III	161.35	
		Unit- V	87.89	400kV Malbase - Siliguri Line	60.22	
		Unit- VI	69.93	-	-	
		Total	246.38	Auxiliary Consumption & Transformation Losses at Generator end	1.09%	
2	720MW MHP	Unit-I	104.71	400kV MHP - Jigmeling Line - I	121.42	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	104.78	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	86.14	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	123.57	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-0.73	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-1.72	
		-	-	80MVA, 220/132kV ICT - I (HV)	6.05	
		-	-	80MVA, 220/132kV ICT - II (HV)	6.30	
		-	-	220kV Tsirang - Jigmeling Line	-46.71	
-	-	132kV Gelephu - Salakati Line	-10.67			
Total	209.49	Auxiliary Consumption & Transformation Losses at Generator end	0.92%			
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	-10.36	
		Unit- III	65.53	220kV CHP - Malbase Line- III	23.87	
		Unit- IV	55.22	220kV CHP - Semtokha Line- IV	78.16	
		-	-	220kV Malbase - Birpara Line	-35.35	
		-	-	66kV CHP - Chumdo Line	26.67	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	2.08	
Total	120.75	Auxiliary Consumption & Transformation Losses at Generator end	0.27%			
4	24MW BHP (U/S)	Unit- I	9.10	220kV BHP - Semtokha Line	69.32	
		Unit- II	8.90	66kV BHP - Lobeysa Line	28.35	
		Total	18.00	220kV BHP - Tsirang Line	-71.51	
5	40MW BHP (L/S)	Unit- I	4.40	5MVA, 66/11kV TFR	0.79	
		Unit- II	4.20	30MVA ICT, 220/66kV (HV)	21.00	
		Total	8.60	Auxiliary Consumption & Transformation Losses at Generator end	-1.32%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	29.35	Unit-I under Shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	29.59	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	63.38	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	29.59	Auxiliary Consumption & Transformation Losses at Gen. end	0.14%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	5.71	Unit- I under Shutdown. Unit- IV on Standby.
		Unit-II	11.08	132kV KHP - Kilikhar Line	15.45	
		Unit- III	11.09	5MVA, 132/11kV TFR	0.79	
		Unit- IV	0.00	132kV Motanga - Rangia Line	-2.82	
		Total	22.17	Auxiliary Consumption & Transformation Losses at Generator end	0.99%	

Note: Generation-Load Summary (MW) for December 16, 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	423.32	373.17	370.47	96.86	2.70
2	Eastern Grid	231.66	200.89	198.74	-15.94	2.15
Total		654.98	574.06	569.21	80.92	4.85

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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	471.96	375.74	373.55	132.62	2.19
2	Eastern Grid	168.59	89.58	87.36	42.61	2.22
Total		640.55	465.32	460.91	175.23	4.41

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 17, 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	81.51	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	59.27	400kV THP - Malbase Line - III	152.25	
		Unit- V	107.03	400kV Malbase - Siliguri Line	59.06	
		Unit- VI	70.14	-	-	
		Total	236.44	Auxiliary Consumption & Transformation Losses at Generator end	1.13%	
2	720MW MHP	Unit-I	83.80	400kV MHP - Jigmeling Line - I	90.94	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	83.78	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	83.80	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	83.78	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	-4.36	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	-7.04	
		-	-	80MVA, 220/132kV ICT - I (HV)	4.39	
		-	-	80MVA, 220/132kV ICT - II (HV)	4.52	
		-	-	220kV Tsirang - Jigmeling Line	-31.28	
-	-	132kV Gelephu - Salakati Line	-8.52			
Total	167.58	Auxiliary Consumption & Transformation Losses at Generator end	-4.27%			
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	-2.74	
		Unit- III	62.74	220kV CHP - Malbase Line- III	29.58	
		Unit- IV	56.85	220kV CHP - Semtokha Line- IV	68.79	
		-	-	220kV Malbase - Birpara Line	-26.77	
		-	-	66kV CHP - Chumdo Line	22.38	
		-	-	66kV CHP - Gedu Line	0.00	
		-	-	3x3MVA, 66/11kV TFR	1.35	
Total	119.59	Auxiliary Consumption & Transformation Losses at Generator end	0.19%			
4	24MW BHP (U/S)	Unit- I	4.40	220kV BHP - Semtokha Line	60.26	
		Unit- II	4.20	66kV BHP - Lobeyasa Line	24.69	
		Total	8.60	220kV BHP - Tsirang Line	-58.13	
5	40MW BHP (L/S)	Unit- I	9.20	5MVA, 66/11kV TFR	0.56	
		Unit- II	9.40	30MVA ICT, 220/66kV (HV)	16.83	
		Total	18.60	Auxiliary Consumption & Transformation Losses at Generator end	-0.66%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	29.03	Unit-I under shutdown. 220kV DHP_Dagapela Line on Standby.
		Unit-II	29.30	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.03	
		-	-	5MVA, 220/33kV TFR	0.25	
Total	29.30	Auxiliary Consumption & Transformation Losses at Generator end	0.07%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	13.03	Unit-I under Shutdown. Unit-IV on Standby.
		Unit-II	13.08	132kV KHP - Kilikhar Line	12.06	
		Unit- III	13.01	5MVA, 132/11kV TFR	0.56	
		Unit- IV	0.00	132kV Motanga - Rangia Line	1.06	
		Total	26.09	Auxiliary Consumption & Transformation Losses at Generator end	1.69%	

Note: Generation-Load Summary (MW) for December 17, 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	412.53	332.75	330.00	111.06	2.75
2	Eastern Grid	193.67	181.25	187.97	-18.86	-6.72
Total		606.20	514.00	517.97	92.20	-3.97

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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	466.98	362.27	359.24	129.62	3.03
2	Eastern Grid	171.15	69.16	67.36	77.08	1.80
Total		638.13	431.43	426.60	206.70	4.83

Note:-

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