

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: November 10, 2022
Hours: 18:00 Hours

Date	Time	Load(MW)
7-Nov-22	18:11hrs	609.06

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	178.68	Unit-I under Shutdown. Unit-II & IV on Standby. 400kV Tala-Malbase line under Shutdown. 400kV THP- Siliguri Line- II on Standby.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	
		Unit- III	128.34	400kV THP - Siliguri Line- IV	173.30	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	126.95	400kV Malbase - Siliguri Line	-76.36	
		Unit- VI	99.50	-	-	
		Total	354.79	Auxiliary Consumption & Transformation Losses at Generator end	0.79%	
2	720MW MHP	Unit-I	100.24	400kV MHP - Jigmeling Line - I	0.00	Unit-IV on standby. Unit-III under shutdown. 400kV MHP-JLG Line I, II & IV on Standby. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Direct line II Standby. 400kV JLG_ALI Line II (Interim) on Standby.
		Unit-II	90.23	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	98.79	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	90.67	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	95.77	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.58	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	1.28	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	14.45	
		-	-	80MVA, 220/132kV ICT - II (HV)	14.72	
		-	-	220kV Tsirang - Jigmeling Line	-9.91	
-	-	132kV Gelephu - Salakati Line	4.99			
Total	190.47	Auxiliary Consumption & Transformation Losses at Generator end	0.53%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	9.06	Unit-I under Shutdown.
		Unit- II	65.33	220kV CHP - Birpara Line- II	8.85	
		Unit- III	68.41	220kV CHP - Malbase Line- III	52.66	
		Unit- IV	55.11	220kV CHP - Semtokha Line- IV	87.25	
		-	-	220kV Malbase - Birpara Line	-22.40	
		-	-	66kV CHP - Chumdo Line	22.28	
		-	-	66kV CHP - Gedu Line	6.11	
		-	-	3x3MVA, 66/11kV TFR	1.77	
Total	188.85	Auxiliary Consumption & Transformation Losses at Generator end	0.46%			
4	24MW BHP (U/S)	Unit- I	6.80	220kV BHP - Semtokha Line	53.80	
		Unit- II	6.50	66kV BHP - Lobeyasa Line	27.79	
		Total	13.30	220kV BHP - Tsirang Line	-42.70	
5	40MW BHP (L/S)	Unit- I	13.00	5MVA, 66/11kV TFR	0.81	
		Unit- II	13.50	30MVA ICT, 220/66kV (HV)	15.61	
		Total	26.50	Auxiliary Consumption & Transformation Losses at Generator end	0.25%	
6	126MW DHP	Unit-I	44.40	220kV DHP - Tsirang Line	44.15	
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.96	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	44.40	Auxiliary Consumption & Transformation Losses at Gen. end	0.11%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	32.05	Unit I on Standby. Unit-III tripped at 17:53hrs.
		Unit-II	16.50	132kV KHP - Kilikhar Line	-0.02	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.60	
		Unit- IV	16.49	132kV Motanga - Rangia Line	7.36	
		Total	32.99	Auxiliary Consumption & Transformation Losses at Generator end	1.09%	

Note: Generation-Load Summary (MW) for November 10, 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	627.84	366.62	362.79	271.13	3.83
2	Eastern Grid	223.46	199.34	197.97	14.21	1.37
Total		851.30	565.96	560.76	285.34	5.20

Note: Generation-Load Summary for November 10, 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	909.82	348.17	346.08	553.59	2.09
2	Eastern Grid	271.33	90.07	87.96	189.32	2.11
Total		1,181.15	438.24	434.04	742.91	4.20

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: November 11, 2022
Hours: 09:00 Hours

Date: 7-Nov-22 **Time:** 18:11hrs **Load(MW):** 609.06

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	180.27	Unit-I & II under Shutdown. Unit-IV on Standby. 400kV Tala-Malbase line under Shutdown. 400kV THP- Siliguri Line- II on Standby.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	
		Unit- III	128.32	400kV THP - Siliguri Line- IV	173.09	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	127.09	400kV Malbase - Siliguri Line	-48.70	
		Unit- VI	99.06	-	-	
		Total	354.47	Auxiliary Consumption & Transformation Losses at Generator end	0.31%	
2	720MW MHP	Unit-I	118.22	400kV MHP - Jigmeling Line - I	0.00	Unit-IV on standby. Unit-III under shutdown. 400kV MHP-JLG Line I, II & IV on Standby. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Direct line II Standby. 400kV JLG_ALI Line II (Interim) on Standby.
		Unit-II	109.81	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	148.82	
		Unit-IV	0.00	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	78.07	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	76.93	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	27.89	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	42.19	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	8.57	
		-	-	80MVA, 220/132kV ICT - II (HV)	8.76	
		-	-	220kV Tsirang - Jigmeling Line	9.91	
-	-	132kV Gelephu - Salakati Line	1.84			
Total	228.03	Auxiliary Consumption & Transformation Losses at Generator end	0.50%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	14.28	Unit-I under shutdown.
		Unit- II	69.13	220kV CHP - Birpara Line- II	14.00	
		Unit- III	71.27	220kV CHP - Malbase Line- III	76.12	
		Unit- IV	54.78	220kV CHP - Semtokha Line- IV	64.87	
		-	-	220kV Malbase - Birpara Line	-30.72	
		-	-	66kV CHP - Chumdo Line	17.48	
		-	-	66kV CHP - Gedu Line	6.49	
		-	-	3x3MVA, 66/11kV TFR	1.14	
Total	195.18	Auxiliary Consumption & Transformation Losses at Generator end	0.41%			
4	24MW BHP (U/S)	Unit- I	6.40	220kV BHP - Semtokha Line	56.70	
		Unit- II	6.40	66kV BHP - Lobeyasa Line	24.57	
		Total	12.80	220kV BHP - Tsirang Line	-41.60	
5	40MW BHP (L/S)	Unit- I	13.42	5MVA, 66/11kV TFR	0.41	
		Unit- II	13.54	30MVA ICT, 220/66kV (HV)	12.30	
		Total	26.96	Auxiliary Consumption & Transformation Losses at Generator end	-0.80%	
6	126MW DHP	Unit-I	44.69	220kV DHP - Tsirang Line	44.45	Unit-II on Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.64	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	44.69	Auxiliary Consumption & Transformation Losses at Generator end	0.09%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	19.11	Unit-I on Stanby.
		Unit-II	11.70	132kV KHP - Kilikhar Line	15.07	
		Unit- III	11.72	5MVA, 132/11kV TFR	0.42	
		Unit- IV	11.71	132kV Motanga - Rangia Line	6.49	
		Total	35.13	Auxiliary Consumption & Transformation Losses at Generator end	1.50%	

Note: Generation-Load Summary (MW) for November 11, 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	634.10	321.97	320.34	302.22	1.63
2	Eastern Grid	263.16	194.66	192.99	78.41	1.67
Total		897.26	516.63	513.33	380.63	3.30

Note: Generation-Load Summary for November 11, 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	866.44	329.07	331.81	521.57	-2.74
2	Eastern Grid	273.47	76.18	75.33	213.09	0.85
Total		1,139.91	405.25	407.14	734.66	-1.89

NOTE-

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