

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	July 18, 2022
Hours:	19:00 Hours

Date	Time	Load(MW)
12-Jan-22	18:00hrs	492.25

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	146.96	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	78.10	400kV THP - Siliguri Line - II	213.51	
		Unit- III	120.11	400kV THP - Siliguri Line - IV	205.26	
		Unit- IV	99.17	400kV THP - Malbase Line - III	276.89	
		Unit- V	87.41	400kV Malbase - Siliguri Line	183.36	
		Unit- VI	169.67	-	-	
		Total	701.42	Auxiliary Consumption & Transformation Losses at Generator end	0.82%	
2	720MW MHP	Unit-I	140.12	400kV MHP - Jigmeling Line - I	208.54	Unit III under shutdown. 400kV MHP-JLG line II & 400kV MHP-JLG Line IV on Standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby.
		Unit-II	140.16	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	210.06	
		Unit-IV	140.53	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	86.61	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	79.99	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	123.10	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	121.79	
		-	-	80MVA, 220/132kV ICT - I (HV)	30.89	
		-	-	80MVA, 220/132kV ICT - II (HV)	31.50	
		-	-	220kV Tsirang - Jigmeling Line	21.97	
-	-	132kV Gelephu - Salakati Line	1.54			
Total	420.81	Auxiliary Consumption & Transformation Losses at Generator end	0.53%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	54.72	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	54.29	
		Unit- III	91.45	220kV CHP - Malbase Line- III	86.55	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	56.81	
		-	-	220kV Malbase - Birpara Line	21.06	
		-	-	66kV CHP - Chumdo Line	13.30	
		-	-	66kV CHP - Gedu Line	4.72	
		-	-	3x3MVA, 66/11kV TFR	1.10	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	1.06%			
4	24MW BHP (U/S)	Unit- I	7.70	220kV BHP - Semtokha Line	41.35	
		Unit- II	7.10	66kV BHP - Lobeysa Line	21.86	
		Total	14.80	220kV BHP - Tsirang Line	-21.11	
5	40MW BHP (L/S)	Unit- I	14.10	5MVA, 66/11kV TFR	0.61	
		Unit- II	14.00	30MVA ICT, 220/66kV (HV)	0.08	
		Total	28.10	Auxiliary Consumption & Transformation Losses at Generator end	0.44%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	48.64	DHP unit I on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	48.98	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	46.04	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	48.98	Auxiliary Consumption & Transformation Losses at Gen. end	0.29%			
7	60MW KHP	Unit- I	16.51	132kV KHP - Nangkhoh Line	39.45	
		Unit-II	16.58	132kV KHP - Kilikhar Line	25.58	
		Unit- III	16.51	5MVA, 132/11kV TFR	0.40	
		Unit- IV	16.55	132kV Motanga - Rangia Line	26.81	
		Total	66.15	Auxiliary Consumption & Transformation Losses at Generator end	1.09%	

Note: Generation-Load Summary (MW) for July 18, 2022 at 19:00hrs.

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	1,067.71	313.54	304.53	732.20	9.01
2	Eastern Grid	486.96	155.70	152.77	353.23	2.93
Total		1,554.67	469.24	457.30	1,085.43	11.94

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1	Western Grid	1,673.54	264.58	254.75	1,289.09	9.83
2	Eastern Grid	659.69	76.81	72.55	702.77	4.26
Total		2,333.23	341.39	327.30	1,991.86	14.09

NOTES: BHP Generation data collected from site.

- 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:	July 19, 2022
Hours:	09:00 Hours

Date	Time	Load(MW)
12-Jan-22	18:00hrs	492.25

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	147.16	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	77.89	400kV THP - Siliguri Line - II	209.06	
		Unit- III	119.50	400kV THP - Siliguri Line - IV	199.46	
		Unit- IV	69.42	400kV THP - Malbase Line - III	255.91	
		Unit- V	88.32	400kV Malbase - Siliguri Line	184.71	
		Unit- VI	169.59	-	-	
		Total	671.88	Auxiliary Consumption & Transformation Losses at Generator end	1.11%	
2	720MW MHP	Unit-I	197.30	400kV MHP - Jigmeling Line - I	293.51	Unit III under shutdown. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby
		Unit-II	197.20	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.25	
		Unit-IV	197.40	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	74.62	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	124.35	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	188.64	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	189.73	
		-	-	80MVA, 220/132kV ICT - I (HV)	29.53	
		-	-	80MVA, 220/132kV ICT - II (HV)	30.12	
		-	-	220kV Tsirang - Jigmeling Line	30.85	
-	-	132kV Gelephu - Salakati Line	7.93			
Total	591.90	Auxiliary Consumption & Transformation Losses at Generator end	0.53%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	57.21	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	57.04	
		Unit- III	91.45	220kV CHP - Malbase Line- III	99.87	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	41.16	
		-	-	220kV Malbase - Birpara Line	16.69	
		-	-	66kV CHP - Chumdo Line	11.26	
		-	-	66kV CHP - Gedu Line	4.92	
		-	-	3x3MVA, 66/11kV TFR	0.89	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.75%			
4	24MW BHP (U/S)	Unit- I	10.10	220kV BHP - Semtokha Line	34.38	L/S both Units got trip at 08:59hrs
		Unit- II	9.60	66kV BHP - Lobeyasa Line	22.89	
		Total	19.70	220kV BHP - Tsirang Line	-38.18	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.39	L/S both Units got trip at 08:59hrs
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	3.78	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	1.12%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	51.69	Unit-I on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	51.97	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	45.57	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	51.97	Auxiliary Consumption & Transformation Losses at Generator end	0.15%			
7	60MW KHP	Unit- I	16.57	132kV KHP - Nangkhoh Line	41.73	
		Unit-II	16.54	132kV KHP - Kilikhar Line	23.47	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.50	
		Unit- IV	16.48	132kV Motanga - Rangia Line	26.80	
		Total	66.09	Auxiliary Consumption & Transformation Losses at Generator end	0.59%	

Note: Generation-Load Summary (MW) for July 19, 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	1,017.96	262.94	253.13	724.17	9.81
2	Eastern Grid	657.99	151.39	147.86	537.45	3.53
Total		1,675.95	414.33	400.99	1,261.62	13.34

Note: Generation-Load Summary for July 19, 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	1,681.92	283.93	271.86	1,276.62	12.07
2	Eastern Grid	599.95	62.56	57.21	658.76	5.35
Total		2,281.87	346.49	329.07	1,935.38	17.42

NOTES:

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