

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	July 26, 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	184.94	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I & II under breakdown.
		Unit- II	183.70	400kV THP - Siliguri Line - II	0.00	
		Unit- III	185.03	400kV THP - Siliguri Line- IV	557.96	
		Unit- IV	185.76	400kV THP - Malbase Line - III	545.88	
		Unit- V	184.82	400kV Malbase - Siliguri Line	549.68	
		Unit- VI	186.44	-	-	
		Total	1,110.69	Auxiliary Consumption & Transformation Losses at Generator end	0.62%	
2	720MW MHP	Unit-I	197.35	400kV MHP - Jigmeling Line - I	293.92	Unit III under shutdown. 400kV MHP-JLG line II & 400kV MHP-JLG Line IV on Standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby.
		Unit-II	197.74	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.58	
		Unit-IV	197.65	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)	29.74	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	134.53	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	206.98	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	205.91	
		-	-	80MVA, 220/132kV ICT - I (HV)	35.46	
		-	-	80MVA, 220/132kV ICT - II (HV)	36.09	
		-	-	220kV Tsirang - Jigmeling Line	-36.83	
-	-	132kV Gelephu - Salakati Line	11.80			
Total	592.74	Auxiliary Consumption & Transformation Losses at Generator end	0.55%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	47.09	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	47.25	
		Unit- III	91.45	220kV CHP - Malbase Line- III	135.11	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	23.92	
		-	-	220kV Malbase - Birpara Line	-27.39	
		-	-	66kV CHP - Chumdo Line	12.50	
		-	-	66kV CHP - Gedu Line	6.21	
		-	-	3x3MVA, 66/11kV TFR	1.27	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.39%			
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	73.40	
		Unit- II	12.10	66kV BHP - Lobeysa Line	25.90	
		Total	24.40	220kV BHP - Tsirang Line	-35.00	
5	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.60	
		Unit- II	21.30	30MVA ICT, 220/66kV (HV)	2.95	
		Total	41.90	Auxiliary Consumption & Transformation Losses at Generator end	2.11%	
6	126MW DHP	Unit-I	63.63	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	63.10	220kV DHP - Dagapela Line	126.11	
		-	-	220kV Jigmeling - Dagapela Line	-80.28	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	126.73	Auxiliary Consumption & Transformation Losses at Gen. end	0.33%			
7	60MW KHP	Unit- I	16.58	132kV KHP - Nangkhoh Line	38.17	
		Unit-II	16.62	132kV KHP - Kilikhar Line	25.03	
		Unit- III	14.98	5MVA, 132/11kV TFR	0.38	
		Unit- IV	16.00	132kV Motanga - Rangia Line	28.81	
		Total	64.18	Auxiliary Consumption & Transformation Losses at Generator end	0.93%	

Note: Generation-Load Summary (MW) for July 26, 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	1,578.13	360.09	350.36	1,174.59	9.73
2	Eastern Grid	656.92	112.34	108.50	588.03	3.84
Total		2,235.05	472.43	458.86	1,762.62	13.57

Note: Generation-Load Summary for July 26, 2021 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	1,123.50	208.97	206.66	817.43	2.31
2	Eastern Grid	641.72	82.79	79.57	656.03	3.22
Total		1,765.22	291.76	286.23	1,473.46	5.53

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:	July 27, 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	185.53	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	185.73	400kV THP - Siliguri Line - II	383.08	
		Unit- III	185.19	400kV THP - Siliguri Line- IV	365.47	
		Unit- IV	187.37	400kV THP - Malbase Line - III	359.83	
		Unit- V	185.32	400kV Malbase - Siliguri Line	361.13	
		Unit- VI	185.22	-	-	
		Total	1,114.36	Auxiliary Consumption & Transformation Losses at Generator end	0.54%	
2	720MW MHP	Unit-I	197.89	400kV MHP - Jigmeling Line - I	294.08	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	197.88	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.68	
		Unit-IV	197.84	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)	23.59	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	137.44	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	210.42	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	209.05	
		-	-	80MVA, 220/132kV ICT - I (HV)	36.42	
		-	-	80MVA, 220/132kV ICT - II (HV)	37.05	
		-	-	220kV Tsirang - Jigmeling Line	-28.61	
-	-	132kV Gelephu - Salakati Line	2.62			
Total	593.61	Auxiliary Consumption & Transformation Losses at Generator end	0.65%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	47.97	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	48.07	
		Unit- III	91.45	220kV CHP - Malbase Line- III	134.95	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	24.52	
		-	-	220kV Malbase - Birpara Line	-26.27	
		-	-	66kV CHP - Chumdo Line	10.40	
		-	-	66kV CHP - Gedu Line	6.25	
		-	-	3x3MVA, 66/11kV TFR	0.85	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.51%			
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	67.90	
		Unit- II	12.10	66kV BHP - Lobeyssa Line	25.27	
		Total	24.40	220kV BHP - Tsirang Line	-27.77	
5	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.23	
		Unit- II	21.30	30MVA ICT, 220/66kV (HV)	1.83	
		Total	41.90	Auxiliary Consumption & Transformation Losses at Generator end	1.01%	
6	126MW DHP	Unit-I	63.63	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	63.03	220kV DHP - Dagapela Line	126.05	
		-	-	220kV Jigmeling - Dagapela Line	-80.75	
		-	-	5MVA, 220/33kV TFR	0.58	
Total	126.66	Auxiliary Consumption & Transformation Losses at Generator end	0.02%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	-6.22	All units under shutdown(Dam Scouring).
		Unit-II	0.00	132kV KHP - Kilikhar Line	5.70	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.34	
		Unit- IV	0.00	132kV Motanga - Rangia Line	-15.10	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	0.00%	

Note: Generation-Load Summary (MW) for July 27, 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	1,581.73	350.14	342.06	1,179.45	8.08
2	Eastern Grid	593.61	101.32	97.29	544.43	4.03
Total		2,175.34	451.46	439.35	1,723.88	12.11

Note: Generation-Load Summary for July 27, 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	1,160.44	223.66	218.42	818.46	5.24
2	Eastern Grid	642.61	68.44	65.12	692.49	3.32
Total		1,803.05	292.10	283.54	1,510.95	8.56

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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