

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	July 25, 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	185.35	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I & II under breakdown.
		Unit- II	184.45	400kV THP - Siliguri Line - II	0.00	
		Unit- III	183.79	400kV THP - Siliguri Line- IV	557.12	
		Unit- IV	184.48	400kV THP - Malbase Line - III	546.69	
		Unit- V	186.80	400kV Malbase - Siliguri Line	549.26	
		Unit- VI	185.15	-	-	
		Total	1,110.02	Auxiliary Consumption & Transformation Losses at Generator end	0.56%	
2	720MW MHP	Unit-I	197.82	400kV MHP - Jigmeling Line - I	293.88	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	197.86	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.62	
		Unit-IV	197.67	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)	57.62	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	128.71	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	195.98	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	197.13	
		-	-	80MVA, 220/132kV ICT - I (HV)	33.26	
		-	-	80MVA, 220/132kV ICT - II (HV)	33.86	
		-	-	220kV Tsirang - Jigmeling Line	-32.67	
-	-	132kV Gelephu - Salakati Line	8.75			
Total	593.35	Auxiliary Consumption & Transformation Losses at Generator end	0.65%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	46.35	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	46.37	
		Unit- III	91.45	220kV CHP - Malbase Line- III	127.95	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	31.31	
		-	-	220kV Malbase - Birpara Line	-23.29	
		-	-	66kV CHP - Chumdo Line	13.12	
		-	-	66kV CHP - Gedu Line	5.73	
		-	-	3x3MVA, 66/11kV TFR	1.23	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.86%			
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	69.60	
		Unit- II	12.10	66kV BHP - Lobeyssa Line	26.50	
		Total	24.40	220kV BHP - Tsirang Line	-31.07	
5	40MW BHP (L/S)	Unit- I	21.20	5MVA, 66/11kV TFR	0.60	
		Unit- II	21.30	30MVA ICT, 220/66kV (HV)	2.77	
		Total	42.50	Auxiliary Consumption & Transformation Losses at Generator end	1.90%	
6	126MW DHP	Unit-I	63.63	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	63.27	220kV DHP - Dagapela Line	126.29	
		-	-	220kV Jigmeling - Dagapela Line	-42.55	
		-	-	5MVA, 220/33kV TFR	0.30	
Total	126.90	Auxiliary Consumption & Transformation Losses at Gen. end	0.24%			
7	60MW KHP	Unit- I	16.49	132kV KHP - Nangkhoh Line	38.17	
		Unit-II	16.62	132kV KHP - Kilikhar Line	26.31	
		Unit- III	15.90	5MVA, 132/11kV TFR	0.37	
		Unit- IV	16.46	132kV Motanga - Rangia Line	34.82	
		Total	65.47	Auxiliary Consumption & Transformation Losses at Generator end	0.95%	

Note: Generation-Load Summary (MW) for July 25, 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	1,578.23	392.54	382.40	1,175.81	10.14
2	Eastern Grid	658.82	103.31	98.84	565.39	4.47
Total		2,237.05	495.85	481.24	1,741.20	14.61

Note: Generation-Load Summary for July 25, 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	1,130.72	193.94	189.91	821.09	4.03
2	Eastern Grid	459.63	62.85	60.82	512.47	2.03
Total		1,590.35	256.79	250.73	1,333.56	6.06

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 26, 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	184.85	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I & II under breakdown.
		Unit- II	185.16	400kV THP - Siliguri Line - II	0.00	
		Unit- III	185.85	400kV THP - Siliguri Line- IV	557.32	
		Unit- IV	184.75	400kV THP - Malbase Line - III	547.17	
		Unit- V	184.89	400kV Malbase - Siliguri Line	550.28	
		Unit- VI	185.08	-	-	
		Total	1,110.58	Auxiliary Consumption & Transformation Losses at Generator end	0.55%	
2	720MW MHP	Unit-I	197.30	400kV MHP - Jigmeling Line - I	293.90	Unit III under shutdown. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby
		Unit-II	197.90	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.80	
		Unit-IV	197.70	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)	2.40	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	142.50	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	216.70	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	217.90	
		-	-	80MVA, 220/132kV ICT - I (HV)	24.90	
		-	-	80MVA, 220/132kV ICT - II (HV)	25.30	
		-	-	220kV Tsirang - Jigmeling Line	-32.00	
-	-	132kV Gelephu - Salakati Line	7.20			
Total	592.90	Auxiliary Consumption & Transformation Losses at Generator end	0.54%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	51.13	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	51.39	
		Unit- III	91.45	220kV CHP - Malbase Line- III	131.70	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	22.03	
		-	-	220kV Malbase - Birpara Line	-18.05	
		-	-	66kV CHP - Chumdo Line	10.42	
		-	-	66kV CHP - Gedu Line	6.31	
		-	-	3x3MVA, 66/11kV TFR	0.15	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.47%			
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	69.99	
		Unit- II	12.10	66kV BHP - Lobeysa Line	25.03	
		Total	24.40	220kV BHP - Tsirang Line	-29.56	
5	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.38	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	1.60	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	0.39%	
6	126MW DHP	Unit-I	63.66	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	63.15	220kV DHP - Dagapela Line	126.14	
		-	-	220kV Jigmeling - Dagapela Line	-80.40	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	126.81	Auxiliary Consumption & Transformation Losses at Generator end	0.37%			
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhoh Line	40.60	
		Unit-II	16.50	132kV KHP - Kilikhar Line	22.20	
		Unit- III	15.00	5MVA, 132/11kV TFR	0.30	
		Unit- IV	15.90	132kV Motanga - Rangia Line	28.00	
		Total	63.90	Auxiliary Consumption & Transformation Losses at Generator end	1.25%	

Note: Generation-Load Summary (MW) for July 26, 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	1,577.90	337.43	329.33	1,192.07	8.10
2	Eastern Grid	656.80	92.90	88.90	612.30	4.00
Total		2,234.70	430.33	418.23	1,804.37	12.10

Note: Generation-Load Summary for July 26, 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	1,130.69	206.31	200.86	823.48	5.45
2	Eastern Grid	655.30	69.60	67.92	686.60	1.68
Total		1,785.99	275.91	268.78	1,510.08	7.13

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.