

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	July 14, 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	185.79	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	183.31	400kV THP - Siliguri Line - II	308.51	
		Unit- III	79.00	400kV THP - Siliguri Line - IV	295.26	
		Unit- IV	80.45	400kV THP - Malbase Line - III	290.20	
		Unit- V	185.12	400kV Malbase - Siliguri Line	291.78	
		Unit- VI	186.62	-	-	
		Total	900.29	Auxiliary Consumption & Transformation Losses at Generator end	0.70%	
2	720MW MHP	Unit-I	170.19	400kV MHP - Jigmeling Line - I	250.79	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	165.17	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	252.52	
		Unit-IV	170.57	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)	74.11	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	104.72	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	158.62	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	158.74	
		-	-	80MVA, 220/132kV ICT - I (HV)	28.80	
		-	-	80MVA, 220/132kV ICT - II (HV)	29.40	
		-	-	220kV Tsirang - Jigmeling Line	22.97	
-	-	132kV Gelephu - Salakati Line	5.07			
Total	505.93	Auxiliary Consumption & Transformation Losses at Generator end	0.52%			
3	336MW CHP	Unit- I	91.42	220kV CHP - Birpara Line- I	47.66	Unit IV under Shutdown.
		Unit- II	91.33	220kV CHP - Birpara Line- II	47.72	
		Unit- III	91.10	220kV CHP - Malbase Line- III	104.66	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	51.71	
		-	-	220kV Malbase - Birpara Line	-3.13	
		-	-	66kV CHP - Chumdo Line	14.32	
		-	-	66kV CHP - Gedu Line	4.31	
		-	-	3x3MVA, 66/11kV TFR	1.41	
Total	273.85	Auxiliary Consumption & Transformation Losses at Generator end	0.75%			
4	24MW BHP (U/S)	Unit- I	7.79	220kV BHP - Semtokha Line	47.66	
		Unit- II	7.79	66kV BHP - Lobeyasa Line	23.06	
		Total	15.58	220kV BHP - Tsirang Line	-24.18	
5	40MW BHP (L/S)	Unit- I	15.67	5MVA, 66/11kV TFR	0.57	
		Unit- II	15.80	30MVA ICT, 220/66kV (HV)	8.00	
		Total	31.47	Auxiliary Consumption & Transformation Losses at Generator end	-0.13%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	49.18	DHP unit I on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	49.47	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	36.68	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	49.47	Auxiliary Consumption & Transformation Losses at Gen. end	0.18%			
7	60MW KHP	Unit- I	16.36	132kV KHP - Nangkhoh Line	40.63	
		Unit-II	16.53	132kV KHP - Kilikhar Line	24.20	
		Unit- III	16.58	5MVA, 132/11kV TFR	0.80	
		Unit- IV	16.51	132kV Motanga - Rangia Line	36.77	
		Total	65.98	Auxiliary Consumption & Transformation Losses at Generator end	0.53%	

Note: Generation-Load Summary (MW) for July 14, 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	1,270.66	259.89	251.48	987.80	8.41
2	Eastern Grid	571.91	130.96	127.99	463.92	2.97
Total		1,842.57	390.85	379.47	1,451.72	11.38

Note: Generation-Load Summary for July 14, 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	1,669.69	263.96	254.25	1,287.77	9.71
2	Eastern Grid	659.23	68.32	64.29	708.87	4.03
Total		2,328.92	332.28	318.54	1,996.64	13.74

NOTES:

- 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 15, 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	185.52	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	138.60	400kV THP - Siliguri Line - II	310.16	
		Unit- III	184.46	400kV THP - Siliguri Line- IV	298.98	
		Unit- IV	78.93	400kV THP - Malbase Line - III	294.72	
		Unit- V	184.37	400kV Malbase - Siliguri Line	295.79	
		Unit- VI	139.14	-	-	
		Total	911.02	Auxiliary Consumption & Transformation Losses at Generator end	0.79%	
2	720MW MHP	Unit-I	180.25	400kV MHP - Jigmeling Line - I	267.85	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	180.26	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	269.55	
		Unit-IV	180.43	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)	72.90	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	112.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	171.20	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	172.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	28.70	
		-	-	80MVA, 220/132kV ICT - II (HV)	30.30	
		-	-	220kV Tsirang - Jigmeling Line	28.70	
-	-	132kV Gelephu - Salakati Line	2.90			
Total	540.94	Auxiliary Consumption & Transformation Losses at Generator end	0.65%			
3	336MW CHP	Unit- I	91.37	220kV CHP - Birpara Line- I	48.49	Unit IV under Shutdown.
		Unit- II	91.20	220kV CHP - Birpara Line- II	48.60	
		Unit- III	90.90	220kV CHP - Malbase Line- III	109.84	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	48.30	
		-	-	220kV Malbase - Birpara Line	-4.74	
		-	-	66kV CHP - Chumdo Line	11.35	
		-	-	66kV CHP - Gedu Line	5.33	
		-	-	3x3MVA, 66/11kV TFR	0.89	
Total	273.47	Auxiliary Consumption & Transformation Losses at Generator end	0.24%			
4	24MW BHP (U/S)	Unit- I	7.74	220kV BHP - Semtokha Line	44.79	
		Unit- II	7.74	66kV BHP - Lobeyasa Line	21.42	
		Total	15.48	220kV BHP - Tsirang Line	-21.29	
5	40MW BHP (L/S)	Unit- I	14.88	5MVA, 66/11kV TFR	0.49	
		Unit- II	14.74	30MVA ICT, 220/66kV (HV)	6.40	
		Total	29.62	Auxiliary Consumption & Transformation Losses at Generator end	-0.69%	
6	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	51.64	Unit-I on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	51.98	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	43.40	
		-	-	5MVA, 220/33kV TFR	0.30	
Total	51.98	Auxiliary Consumption & Transformation Losses at Generator end	0.08%			
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhoh Line	41.70	
		Unit-II	16.50	132kV KHP - Kilikhar Line	23.40	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.47	
		Unit- IV	16.50	132kV Motanga - Rangia Line	38.10	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	0.65%	

Note: Generation-Load Summary (MW) for July 15, 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	1,281.57	255.59	248.03	997.28	7.56
2	Eastern Grid	606.94	139.44	135.47	496.20	3.97
Total		1,888.51	395.03	383.50	1,493.48	11.53

Note: Generation-Load Summary for July 15, 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	1,671.41	243.46	240.92	1,308.19	2.54
2	Eastern Grid	659.01	61.30	57.07	717.47	4.23
Total		2,330.42	304.76	297.99	2,025.66	6.77

NOTES:

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