

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	July 27, 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	184.72	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I & II under breakdown.
		Unit- II	184.98	400kV THP - Siliguri Line - II	347.75	
		Unit- III	185.58	400kV THP - Siliguri Line- IV	332.81	
		Unit- IV	184.00	400kV THP - Malbase Line - III	421.52	
		Unit- V	185.50	400kV Malbase - Siliguri Line	311.50	
		Unit- VI	184.92	-	-	
		Total	1,109.70	Auxiliary Consumption & Transformation Losses at Generator end	0.69%	
2	720MW MHP	Unit-I	197.83	400kV MHP - Jigmeling Line - I	294.02	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	197.67	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.89	
		Unit-IV	197.73	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)	16.31	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	138.90	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	212.16	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	213.22	
		-	-	80MVA, 220/132kV ICT - I (HV)	37.31	
		-	-	80MVA, 220/132kV ICT - II (HV)	38.32	
		-	-	220kV Tsirang - Jigmeling Line	-20.43	
-	-	132kV Gelephu - Salakati Line	15.93			
Total	593.23	Auxiliary Consumption & Transformation Losses at Generator end	0.56%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	64.13	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	64.12	
		Unit- III	91.45	220kV CHP - Malbase Line- III	80.92	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	44.83	
		-	-	220kV Malbase - Birpara Line	42.96	
		-	-	66kV CHP - Chumdo Line	14.22	
		-	-	66kV CHP - Gedu Line	4.22	
		-	-	3x3MVA, 66/11kV TFR	1.34	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.23%			
4	24MW BHP (U/S)	Unit- I	11.95	220kV BHP - Semtokha Line	56.38	
		Unit- II	11.95	66kV BHP - Lobeyasa Line	26.35	
		Total	23.90	220kV BHP - Tsirang Line	-17.66	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.58	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	3.10	
		Total	41.50	Auxiliary Consumption & Transformation Losses at Generator end	-0.38%	
6	126MW DHP	Unit-I	63.57	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	63.28	220kV DHP - Dagapela Line	126.10	
		-	-	220kV Jigmeling - Dagapela Line	-79.92	
		-	-	5MVA, 220/33kV TFR	0.70	
Total	126.85	Auxiliary Consumption & Transformation Losses at Gen. end	0.04%			
7	60MW KHP	Unit- I	16.49	132kV KHP - Nangkhor Line	39.16	
		Unit-II	16.47	132kV KHP - Kilikhar Line	25.54	
		Unit- III	16.47	5MVA, 132/11kV TFR	0.30	
		Unit- IV	16.44	132kV Motanga - Rangia Line	32.00	
		Total	65.87	Auxiliary Consumption & Transformation Losses at Generator end	1.32%	

Note: Generation-Load Summary (MW) for July 27, 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	1,576.36	353.60	345.55	1,163.27	8.05
2	Eastern Grid	659.10	106.38	102.19	612.21	4.19
Total		2,235.46	459.98	447.74	1,775.48	12.24

Note: Generation-Load Summary for July 27, 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	1,139.61	208.95	205.47	826.86	3.48
2	Eastern Grid	658.81	80.86	77.96	681.75	2.90
Total		1,798.42	289.81	283.43	1,508.61	6.38

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 28, 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	185.94	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I under breakdown.
		Unit- II	186.09	400kV THP - Siliguri Line - II	350.87	
		Unit- III	184.62	400kV THP - Siliguri Line - IV	334.62	
		Unit- IV	183.96	400kV THP - Malbase Line - III	417.71	
		Unit- V	185.16	400kV Malbase - Siliguri Line	314.58	
		Unit- VI	186.06	-	-	
		Total	1,111.83	Auxiliary Consumption & Transformation Losses at Generator end	0.78%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	MHP Units under shutdown(Dam scouring). 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	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	0.00	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)	-51.93	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	10.91	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	18.69	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	20.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	18.13	
		-	-	80MVA, 220/132kV ICT - II (HV)	18.43	
		-	-	220kV Tsirang - Jigmeling Line	16.25	
-	-	132kV Gelephu - Salakati Line	-4.80			
Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	0.00%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	56.26	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	56.16	
		Unit- III	91.45	220kV CHP - Malbase Line- III	73.72	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	68.09	
		-	-	220kV Malbase - Birpara Line	35.93	
		-	-	66kV CHP - Chumdo Line	12.29	
		-	-	66kV CHP - Gedu Line	4.33	
		-	-	3x3MVA, 66/11kV TFR	0.77	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	1.02%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	23.15	
		Unit- II	12.20	66kV BHP - Lobeyasa Line	23.41	
		Total	24.60	220kV BHP - Tsirang Line	18.53	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.37	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	-0.03	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	1.27%	
6	126MW DHP	Unit-I	58.37	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	58.96	220kV DHP - Dagapela Line	116.81	
		-	-	220kV Jigmeling - Dagapela Line	-70.91	
		-	-	5MVA, 220/33kV TFR	0.50	
Total	117.33	Auxiliary Consumption & Transformation Losses at Generator end	0.02%			
7	60MW KHP	Unit- I	16.55	132kV KHP - Nangkhoh Line	44.22	
		Unit-II	16.56	132kV KHP - Kilikhar Line	20.75	
		Unit- III	16.56	5MVA, 132/11kV TFR	0.34	
		Unit- IV	16.52	132kV Motanga - Rangia Line	18.44	
		Total	66.19	Auxiliary Consumption & Transformation Losses at Generator end	1.33%	

Note: Generation-Load Summary (MW) for July 28, 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	1,569.87	334.29	322.01	1,148.42	12.28
2	Eastern Grid	66.19	90.11	89.23	63.24	0.88
Total		1,636.06	424.40	411.24	1,211.66	13.16

Note: Generation-Load Summary for July 28, 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	1,140.04	216.65	209.18	818.65	7.47
2	Eastern Grid	659.90	75.89	71.35	688.75	4.54
Total		1,799.94	292.54	280.53	1,507.40	12.01

NOTE:

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 - 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.
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