

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: August 10, 2022
Hours: 19:00 Hours

Date **Time** **Load(MW)**
 8-Aug-22 19:33 hrs 513.31

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	185.15	400kV THP - Siliguri Line - I	259.70	
		Unit- II	185.01	400kV THP - Siliguri Line - II	258.56	
		Unit- III	185.44	400kV THP - Siliguri Line- IV	249.90	
		Unit- IV	185.72	400kV THP - Malbase Line - III	337.34	
		Unit- V	185.66	400kV Malbase - Siliguri Line	229.95	
		Unit- VI	186.07	-	-	
		Total	1,113.05	Auxiliary Consumption & Transformation Losses at Generator end	0.68%	
2	720MW MHP	Unit-I	197.83	400kV MHP - Jigmeling Line - I	243.12	400kV MHP-JLG Line IV under breakdown. 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	243.65	
		Unit-III	135.50	400kV MHP - Jigmeling Line - III	237.51	
		Unit-IV	197.66	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)	65.01	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	160.71	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	244.44	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	244.26	
		-	-	80MVA, 220/132kV ICT - I (HV)	42.13	
		-	-	80MVA, 220/132kV ICT - II (HV)	42.90	
		-	-	220kV Tsirang - Jigmeling Line	-17.72	
-	-	132kV Gelephu - Salakati Line	13.85			
Total	728.87	Auxiliary Consumption & Transformation Losses at Generator end	0.63%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	60.29	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	60.21	
		Unit- III	91.45	220kV CHP - Malbase Line- III	83.50	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	47.17	
		-	-	220kV Malbase - Birpara Line	34.20	
		-	-	66kV CHP - Chumdo Line	14.21	
		-	-	66kV CHP - Gedu Line	5.02	
		-	-	3x3MVA, 66/11kV TFR	1.34	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.97%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	54.00	
		Unit- II	12.20	66kV BHP - Lobeyasa Line	26.46	
		Total	24.60	220kV BHP - Tsirang Line	-16.27	
5	40MW BHP (L/S)	Unit- I	20.48	5MVA, 66/11kV TFR	0.67	
		Unit- II	20.99	30MVA ICT, 220/66kV (HV)	3.25	
		Total	41.47	Auxiliary Consumption & Transformation Losses at Generator end	1.83%	
6	126MW DHP	Unit-I	45.32	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	45.98	220kV DHP - Dagapela Line	90.79	
		-	-	220kV Jigmeling - Dagapela Line	-37.49	
		-	-	5MVA, 220/33kV TFR	0.30	
Total	91.30	Auxiliary Consumption & Transformation Losses at Gen. end	0.23%			
7	60MW KHP	Unit- I	16.57	132kV KHP - Nangkhor Line	38.94	
		Unit-II	16.49	132kV KHP - Kilikhar Line	26.17	
		Unit- III	16.53	5MVA, 132/11kV TFR	0.49	
		Unit- IV	16.47	132kV Motanga - Rangia Line	31.61	
		Total	66.06	Auxiliary Consumption & Transformation Losses at Generator end	0.70%	

Note: Generation-Load Summary (MW) for August 10, 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	1,544.83	372.25	360.61	1,152.81	11.64
2	Eastern Grid	794.93	119.83	114.78	694.87	5.05
Total		2,339.76	492.08	475.39	1,847.68	16.69

Note: Generation-Load Summary for August 10, 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	513.73	283.05	280.73	168.58	2.32
2	Eastern Grid	658.85	80.61	76.63	640.34	3.98
Total		1,172.58	363.66	357.36	808.92	6.30

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: August 11, 2022
Hours: 09:00 Hours

Date **Time** **Load(MW)**
 8-Aug-22 19:33 hrs 513.31

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	185.68	400kV THP - Siliguri Line - I	263.92	
		Unit- II	186.41	400kV THP - Siliguri Line - II	261.49	
		Unit- III	185.08	400kV THP - Siliguri Line- IV	255.49	
		Unit- IV	185.72	400kV THP - Malbase Line - III	326.34	
		Unit- V	185.24	400kV Malbase - Siliguri Line	237.05	
		Unit- VI	185.27	-	-	
		Total	1,113.40	Auxiliary Consumption & Transformation Losses at Generator end	0.55%	
2	720MW MHP	Unit-I	197.62	400kV MHP - Jigmeling Line - I	243.32	400kV MHP-JLG Line IV under breakdown. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I(Interim) on Standby.
		Unit-II	197.69	400kV MHP - Jigmeling Line - II	243.49	
		Unit-III	135.41	400kV MHP - Jigmeling Line - III	237.32	
		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)	39.61	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	168.71	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	254.62	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	253.52	
		-	-	80MVA, 220/132kV ICT - I (HV)	32.46	
		-	-	80MVA, 220/132kV ICT - II (HV)	32.74	
		-	-	220kV Tsirang - Jigmeling Line	-14.91	
-	-	132kV Gelephu - Salakati Line	12.98			
Total	728.39	Auxiliary Consumption & Transformation Losses at Generator end	0.58%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	60.02	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	60.12	
		Unit- III	91.45	220kV CHP - Malbase Line- III	95.27	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	39.74	
		-	-	220kV Malbase - Birpara Line	25.43	
		-	-	66kV CHP - Chumdo Line	11.31	
		-	-	66kV CHP - Gedu Line	5.47	
		-	-	3x3MVA, 66/11kV TFR	0.96	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.55%			
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	53.90	
		Unit- II	12.10	66kV BHP - Lobeyssa Line	24.58	
		Total	24.40	220kV BHP - Tsirang Line	-13.50	
5	40MW BHP (L/S)	Unit- I	20.40	5MVA, 66/11kV TFR	0.36	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	1.03	
		Total	41.60	Auxiliary Consumption & Transformation Losses at Generator end	1.00%	
6	126MW DHP	Unit-I	48.35	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	47.04	220kV DHP - Dagapela Line	94.84	
		-	-	220kV Jigmeling - Dagapela Line	-41.62	
		-	-	5MVA, 220/33kV TFR	0.54	
Total	95.39	Auxiliary Consumption & Transformation Losses at Generator end	0.01%			
7	60MW KHP	Unit- I	16.53	132kV KHP - Nangkhoh Line	39.70	
		Unit-II	16.59	132kV KHP - Kilikhar Line	25.46	
		Unit- III	16.53	5MVA, 132/11kV TFR	0.57	
		Unit- IV	16.52	132kV Motanga - Rangia Line	37.39	
		Total	66.17	Auxiliary Consumption & Transformation Losses at Generator end	0.66%	

Note: Generation-Load Summary (MW) for August 11, 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	1,549.20	358.97	350.62	1,163.52	8.35
2	Eastern Grid	794.56	94.05	89.35	727.22	4.70
Total		2,343.76	453.02	439.97	1,890.74	13.05

Note: Generation-Load Summary for August 11, 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	513.96	260.22	258.57	183.54	1.65
2	Eastern Grid	659.10	58.96	56.19	670.34	2.77
Total		1,173.06	319.18	314.76	853.88	4.42

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.
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