

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: August 12, 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	185.18	400kV THP - Siliguri Line - I	258.72	
		Unit- II	185.96	400kV THP - Siliguri Line - II	257.33	
		Unit- III	186.09	400kV THP - Siliguri Line - IV	250.55	
		Unit- IV	186.09	400kV THP - Malbase Line - III	338.03	
		Unit- V	185.14	400kV Malbase - Siliguri Line	229.82	
		Unit- VI	185.39	-	-	
		Total	1,113.85	Auxiliary Consumption & Transformation Losses at Generator end	0.83%	
2	720MW MHP	Unit-I	155.15	400kV MHP - Jigmeling Line - I	202.23	400kV MHP-JLG Line IV under breakdown. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on Standby. 400kV JLG_ALI Line II (Direct) on Standby.
		Unit-II	155.20	400kV MHP - Jigmeling Line - II	202.78	
		Unit-III	135.43	400kV MHP - Jigmeling Line - III	197.60	
		Unit-IV	160.64	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)	82.32	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	205.16	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	307.85	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	42.98	
		-	-	80MVA, 220/132kV ICT - II (HV)	43.74	
		-	-	220kV Tsirang - Jigmeling Line	-21.07	
-	-	132kV Gelephu - Salakati Line	18.35			
Total	606.42	Auxiliary Consumption & Transformation Losses at Generator end	0.63%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	64.14	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	64.20	
		Unit- III	91.45	220kV CHP - Malbase Line- III	83.93	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	38.96	
		-	-	220kV Malbase - Birpara Line	40.61	
		-	-	66kV CHP - Chumdo Line	13.04	
		-	-	66kV CHP - Gedu Line	5.44	
		-	-	3x3MVA, 66/11kV TFR	1.45	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	1.18%			
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	59.15	
		Unit- II	12.20	66kV BHP - Lobeyssa Line	24.96	
		Total	24.60	220kV BHP - Tsirang Line	-19.05	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.54	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	2.31	
		Total	41.70	Auxiliary Consumption & Transformation Losses at Generator end	1.06%	
6	126MW DHP	Unit-I	40.88	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	41.51	220kV DHP - Dagapela Line	81.98	
		-	-	220kV Jigmeling - Dagapela Line	-26.03	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	82.39	Auxiliary Consumption & Transformation Losses at Gen. end	0.25%			
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhoh Line	38.77	
		Unit-II	16.55	132kV KHP - Kilikhar Line	26.27	
		Unit- III	16.58	5MVA, 132/11kV TFR	0.38	
		Unit- IV	16.56	132kV Motanga - Rangia Line	37.23	
		Total	66.19	Auxiliary Consumption & Transformation Losses at Generator end	1.16%	

Note: Generation-Load Summary (MW) for August 12, 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	1,536.95	366.62	353.24	1,165.37	13.38
2	Eastern Grid	672.61	108.98	104.40	568.59	4.58
Total		2,209.56	475.60	457.64	1,733.96	17.96

Note: Generation-Load Summary for August 12, 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	520.51	298.19	295.39	157.32	2.80
2	Eastern Grid	658.97	72.07	61.00	651.90	11.07
Total		1,179.48	370.26	356.39	809.22	13.87

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 13, 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	184.81	400kV THP - Siliguri Line - I	262.73	
		Unit- II	184.70	400kV THP - Siliguri Line - II	262.29	
		Unit- III	184.01	400kV THP - Siliguri Line- IV	254.98	
		Unit- IV	183.68	400kV THP - Malbase Line - III	320.08	
		Unit- V	185.78	400kV Malbase - Siliguri Line	239.41	
		Unit- VI	184.04	-	-	
		Total	1,107.02	Auxiliary Consumption & Transformation Losses at Generator end	0.63%	
2	720MW MHP	Unit-I	164.88	400kV MHP - Jigmeling Line - I	210.38	400kV MHP-JLG Line IV under breakdown. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II(Interim) on Standby. 400kV JLG_ALI Line II(Direct) on Standby
		Unit-II	164.78	400kV MHP - Jigmeling Line - II	210.65	
		Unit-III	135.42	400kV MHP - Jigmeling Line - III	205.29	
		Unit-IV	165.18	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)	52.96	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	227.01	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	340.93	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	24.49	
		-	-	80MVA, 220/132kV ICT - II (HV)	24.94	
		-	-	220kV Tsirang - Jigmeling Line	-27.39	
-	-	132kV Gelephu - Salakati Line	18.81			
Total	630.26	Auxiliary Consumption & Transformation Losses at Generator end	0.63%			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	62.42	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	62.38	
		Unit- III	91.45	220kV CHP - Malbase Line- III	102.77	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	26.85	
		-	-	220kV Malbase - Birpara Line	21.35	
		-	-	66kV CHP - Chumdo Line	10.69	
		-	-	66kV CHP - Gedu Line	6.08	
		-	-	3x3MVA, 66/11kV TFR	0.81	
Total	274.41	Auxiliary Consumption & Transformation Losses at Generator end	0.88%			
4	24MW BHP (U/S)	Unit- I	20.46	220kV BHP - Semtokha Line	66.32	
		Unit- II	21.07	66kV BHP - Lobeyssa Line	24.37	
		Total	41.53	220kV BHP - Tsirang Line	-26.02	
5	40MW BHP (L/S)	Unit- I	11.86	5MVA, 66/11kV TFR	0.39	
		Unit- II	11.86	30MVA ICT, 220/66kV (HV)	2.30	
		Total	23.72	Auxiliary Consumption & Transformation Losses at Generator end	0.29%	
6	126MW DHP	Unit-I	40.36	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	40.03	220kV DHP - Dagapela Line	79.96	
		-	-	220kV Jigmeling - Dagapela Line	-24.75	
		-	-	5MVA, 220/33kV TFR	0.30	
Total	80.39	Auxiliary Consumption & Transformation Losses at Generator end	0.16%			
7	60MW KHP	Unit- I	16.55	132kV KHP - Nangkhoh Line	41.47	
		Unit-II	16.54	132kV KHP - Kilikhar Line	23.80	
		Unit- III	16.60	5MVA, 132/11kV TFR	0.80	
		Unit- IV	16.54	132kV Motanga - Rangia Line	43.25	
		Total	66.23	Auxiliary Consumption & Transformation Losses at Generator end	0.24%	

Note: Generation-Load Summary (MW) for August 13, 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	1,527.07	364.15	354.48	1,165.56	9.67
2	Eastern Grid	696.49	63.85	59.75	630.00	4.10
Total		2,223.56	428.00	414.23	1,795.56	13.77

Note: Generation-Load Summary for August 13, 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	1,632.48	290.43	279.49	1,258.17	10.94
2	Eastern Grid	659.05	65.82	62.42	677.11	3.40
Total		2,291.53	356.25	341.91	1,935.28	14.34

NOTE:

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