

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	May 13, 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	0.00	400kV THP - Siliguri Line - I	0.00	Unit-V under annual maintenance Unit-I & III on standby. 400kV THP-Siliguri line I & II under breakdown.
		Unit- II	103.73	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	135.65	
		Unit- IV	138.35	400kV THP - Malbase Line - III	212.01	
		Unit- V	0.00	400kV Malbase - Siliguri Line	122.59	
		Unit- VI	109.77	-	-	
		Total	351.85	Auxiliary Consumption & Transformation Losses at Generator end	1.19%	
2	720MW MHP	Unit-I	130.18	400kV MHP - Jigmeling Line - I	0.00	Unit- III under Shutdown. 400kV MHP-JLG Line I & 400kV MHP-JLG Line III on standby. 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	65.32	400kV MHP - Jigmeling Line - II	141.71	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	90.48	400kV MHP - Jigmeling Line - IV	142.14	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	152.11	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	51.22	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	77.60	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	22.85	
		-	-	80MVA, 220/132kV ICT - II (HV)	23.23	
		-	-	220kV Tsirang - Jigmeling Line	-97.26	
-	-	132kV Gelephu - Salakati Line	-1.65			
Total	285.98	Auxiliary Consumption & Transformation Losses at Generator end	0.74%			
3	336MW CHP	Unit- I	82.91	220kV CHP - Birpara Line- I	39.27	Unit-II & III on Standby. 220kV CHP_SEM Line under Emergency Shutdown.
		Unit- II	0.00	220kV CHP - Birpara Line- II	39.37	
		Unit- III	0.00	220kV CHP - Malbase Line- III	64.38	
		Unit- IV	87.21	220kV CHP - Semtokha Line- IV	0.00	
		-	-	220kV Malbase - Birpara Line	14.56	
		-	-	66kV CHP - Chumdo Line	22.22	
		-	-	66kV CHP - Gedu Line	2.87	
		-	-	3x3MVA, 66/11kV TFR	1.42	
Total	170.12	Auxiliary Consumption & Transformation Losses at Generator end	0.35%			
4	24MW BHP (U/S)	Unit- I	5.60	220kV BHP - Semtokha Line	100.10	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	66kV BHP - Lobeyasa Line	22.61	
		Total	5.60	220kV BHP - Tsirang Line	-106.79	
5	40MW BHP (L/S)	Unit- I	11.00	5MVA, 66/11kV TFR	0.61	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	17.76	
		Total	11.00	Auxiliary Consumption & Transformation Losses at Generator end	0.42%	
6	126MW DHP	Unit-I	19.72	220kV DHP - Tsirang Line	19.52	Unit-II on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	8.25	
		-	-	5MVA, 220/33kV TFR	0.15	
Total	19.72	Auxiliary Consumption & Transformation Losses at Gen. end	0.25%			
7	60MW KHP	Unit- I	13.45	132kV KHP - Nangkhoh Line	32.95	
		Unit-II	13.42	132kV KHP - Kilikhar Line	19.92	
		Unit- III	13.50	5MVA, 132/11kV TFR	0.56	
		Unit- IV	13.46	132kV Motanga - Rangia Line	24.95	
		Total	53.83	Auxiliary Consumption & Transformation Losses at Generator end	0.74%	

Note: Generation-Load Summary (MW) for May 13, 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	558.29	304.11	299.21	351.44	4.90
2	Eastern Grid	339.81	90.43	87.90	152.12	2.53
Total		898.10	394.54	387.11	503.56	7.43

Note: Generation-Load Summary for May 13, 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	831.61	236.16	228.37	576.65	7.79
2	Eastern Grid	366.21	60.61	58.12	324.40	2.49
Total		1,197.82	296.77	286.49	901.05	10.28

NOTE- BHP data collected from site.

- 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:	May 14, 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	0.00	400kV THP - Siliguri Line - I	0.00	Unit-V under annual maintenance Unit-I & III on standby. 400kV THP-Siliguri line I & II under breakdown.
		Unit- II	167.86	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	204.85	
		Unit- IV	139.04	400kV THP - Malbase Line - III	245.78	
		Unit- V	0.00	400kV Malbase - Siliguri Line	194.96	
		Unit- VI	148.58	-	-	
		Total	455.48	Auxiliary Consumption & Transformation Losses at Generator end	1.06%	
2	720MW MHP	Unit-I	140.97	400kV MHP - Jigmeling Line - I	0.00	Unit- III under Shutdown. 400kV MHP-JLG Line I & 400kV MHP- JLG Line III on standby. 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	119.70	400kV MHP - Jigmeling Line - II	202.50	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	150.50	400kV MHP - Jigmeling Line - IV	203.35	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	112.54	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	116.57	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	174.87	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	10.41	
		-	-	80MVA, 220/132kV ICT - II (HV)	10.62	
		-	-	220kV Tsirang - Jigmeling Line	84.07	
-	-	132kV Gelephu - Salakati Line	1.80			
Total	411.17	Auxiliary Consumption & Transformation Losses at Generator end	1.29%			
3	336MW CHP	Unit- I	76.61	220kV CHP - Birpara Line- I	52.20	Unit-III on Standby. 220kV CHP_SEM Line under Shutdown.
		Unit- II	75.94	220kV CHP - Birpara Line- II	52.18	
		Unit- III	0.00	220kV CHP - Malbase Line- III	101.39	
		Unit- IV	75.26	220kV CHP - Semtokha Line- IV	0.00	
		-	-	220kV Malbase - Birpara Line	7.76	
		-	-	66kV CHP - Chumdo Line	16.84	
		-	-	66kV CHP - Gedu Line	3.67	
		-	-	3x3MVA, 66/11kV TFR	0.93	
Total	227.81	Auxiliary Consumption & Transformation Losses at Generator end	0.26%			
4	24MW BHP (U/S)	Unit- I	5.60	220kV BHP - Semtokha Line	91.80	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	66kV BHP - Lobeyasa Line	19.49	
		Total	5.60	220kV BHP - Tsirang Line	-93.86	
5	40MW BHP (L/S)	Unit- I	12.10	5MVA, 66/11kV TFR	0.37	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	15.40	
		Total	12.10	Auxiliary Consumption & Transformation Losses at Generator end	-0.56%	
6	126MW DHP	Unit-I	20.19	220kV DHP - Tsirang Line	19.98	Unit-II on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	7.61	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	20.19	Auxiliary Consumption & Transformation Losses at Generator end	0.05%			
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhoh Line	62.82	
		Unit-II	16.50	132kV KHP - Kilikhar Line	2.31	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.43	
		Unit- IV	16.50	132kV Motanga - Rangia Line	19.66	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	0.66%	

Note: Generation-Load Summary (MW) for May 14, 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	721.18	125.16	119.80	511.95	5.36
2	Eastern Grid	477.17	248.34	242.58	312.90	5.76
Total		1,198.35	373.50	362.38	824.85	11.12

Note: Generation-Load Summary for May 14, 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	633.42	205.07	198.01	415.31	7.06
2	Eastern Grid	346.94	39.96	37.68	320.02	2.28
Total		980.36	245.03	235.69	735.33	9.34

NOTE-MHP, KHP & BHP data collected from Site.

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