

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	May 15, 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	88.84	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	115.65	
		Unit- IV	99.63	400kV THP - Malbase Line - III	199.80	
		Unit- V	0.00	400kV Malbase - Siliguri Line	100.70	
		Unit- VI	129.99	-	-	
		Total	318.46	Auxiliary Consumption & Transformation Losses at Generator end	0.95%	
2	720MW MHP	Unit-I	90.16	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	100.09	400kV MHP - Jigmeling Line - II	139.08	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	90.32	400kV MHP - Jigmeling Line - IV	139.31	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	93.44	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	72.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	108.70	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	23.00	
		-	-	80MVA, 220/132kV ICT - II (HV)	23.28	
		-	-	220kV Tsirang - Jigmeling Line	-38.84	
-	-	132kV Gelephu - Salakati Line	0.83			
Total	280.57	Auxiliary Consumption & Transformation Losses at Generator end	0.78%			
3	336MW CHP	Unit- I	51.52	220kV CHP - Birpara Line- I	21.58	Unit-IV on Standby.
		Unit- II	52.97	220kV CHP - Birpara Line- II	21.43	
		Unit- III	60.10	220kV CHP - Malbase Line- III	46.53	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	55.99	
		-	-	220kV Malbase - Birpara Line	-1.26	
		-	-	66kV CHP - Chumdo Line	12.66	
		-	-	66kV CHP - Gedu Line	4.62	
		-	-	3x3MVA, 66/11kV TFR	1.39	
Total	164.59	Auxiliary Consumption & Transformation Losses at Generator end	0.24%			
4	24MW BHP (U/S)	Unit- I	7.40	220kV BHP - Semtokha Line	50.89	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	66kV BHP - Lobeyasa Line	21.59	
		Total	7.40	220kV BHP - Tsirang Line	-50.82	
5	40MW BHP (L/S)	Unit- I	15.00	5MVA, 66/11kV TFR	0.63	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	14.93	
		Total	15.00	Auxiliary Consumption & Transformation Losses at Generator end	0.49%	
6	126MW DHP	Unit-I	21.99	220kV DHP - Tsirang Line	21.79	Unit-II on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	8.29	
		-	-	5MVA, 220/33kV TFR	0.19	
Total	21.99	Auxiliary Consumption & Transformation Losses at Gen. end	0.05%			
7	60MW KHP	Unit- I	14.48	132kV KHP - Nangkhoh Line	36.04	
		Unit-II	14.47	132kV KHP - Kilikhar Line	20.75	
		Unit- III	14.51	5MVA, 132/11kV TFR	0.55	
		Unit- IV	14.38	132kV Motanga - Rangia Line	23.34	
		Total	57.84	Auxiliary Consumption & Transformation Losses at Generator end	0.86%	

Note: Generation-Load Summary (MW) for May 15, 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	527.44	308.18	304.66	258.10	3.52
2	Eastern Grid	338.41	94.70	92.02	204.87	2.68
Total		865.85	402.88	396.68	462.97	6.20

Note: Generation-Load Summary for May 15, 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	473.54	211.92	205.11	240.01	6.81
2	Eastern Grid	255.84	61.20	59.26	216.25	1.94
Total		729.38	273.12	264.37	456.26	8.75

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 16, 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	90.72	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	133.95	
		Unit- IV	99.62	400kV THP - Malbase Line - III	183.40	
		Unit- V	0.00	400kV Malbase - Siliguri Line	123.45	
		Unit- VI	130.43	-	-	
		Total	320.77	Auxiliary Consumption & Transformation Losses at Generator end	1.07%	
2	720MW MHP	Unit-I	140.17	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	95.14	400kV MHP - Jigmeling Line - II	184.01	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	135.52	400kV MHP - Jigmeling Line - IV	184.33	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	69.74	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	117.44	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	175.48	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	13.49	
		-	-	80MVA, 220/132kV ICT - II (HV)	13.78	
		-	-	220kV Tsirang - Jigmeling Line	-34.84	
-	-	132kV Gelephu - Salakati Line	3.20			
Total	370.83	Auxiliary Consumption & Transformation Losses at Generator end	0.67%			
3	336MW CHP	Unit- I	82.43	220kV CHP - Birpara Line- I	21.43	Unit-III under AMP. Unit-IV on Standby.
		Unit- II	81.73	220kV CHP - Birpara Line- II	21.47	
		Unit- III	0.00	220kV CHP - Malbase Line- III	60.90	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	44.36	
		-	-	220kV Malbase - Birpara Line	-11.43	
		-	-	66kV CHP - Chumdo Line	10.65	
		-	-	66kV CHP - Gedu Line	3.85	
		-	-	3x3MVA, 66/11kV TFR	1.18	
Total	164.16	Auxiliary Consumption & Transformation Losses at Generator end	0.19%			
4	24MW BHP (U/S)	Unit- I	4.40	220kV BHP - Semtokha Line	51.83	
		Unit- II	4.20	66kV BHP - Lobeyasa Line	20.17	
		Total	8.60	220kV BHP - Tsirang Line	-47.92	
5	40MW BHP (L/S)	Unit- I	8.30	5MVA, 66/11kV TFR	0.47	
		Unit- II	7.50	30MVA ICT, 220/66kV (HV)	12.30	
		Total	15.80	Auxiliary Consumption & Transformation Losses at Generator end	-0.61%	
6	126MW DHP	Unit-I	21.50	220kV DHP - Tsirang Line	21.23	Unit-II on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	7.94	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	21.50	Auxiliary Consumption & Transformation Losses at Generator end	0.33%			
7	60MW KHP	Unit- I	16.54	132kV KHP - Nangkhoh Line	45.39	
		Unit-II	16.54	132kV KHP - Kilikhar Line	19.81	
		Unit- III	16.40	5MVA, 132/11kV TFR	0.53	
		Unit- IV	16.53	132kV Motanga - Rangia Line	20.90	
		Total	66.01	Auxiliary Consumption & Transformation Losses at Generator end	0.42%	

Note: Generation-Load Summary (MW) for May 16, 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	530.83	276.80	273.14	288.87	3.66
2	Eastern Grid	436.84	84.98	82.21	317.02	2.77
Total		967.67	361.78	355.35	605.89	6.43

Note: Generation-Load Summary for May 16, 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	439.20	205.30	198.82	223.90	6.48
2	Eastern Grid	286.49	47.39	46.00	249.10	1.39
Total		725.69	252.69	244.82	473.00	7.87

NOTE-BHP data collected from Site.

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