BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	June 23, 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	185.70	400kV THP - Siliguri Line - I	0.00	Unit VI on Standby. 400kV THP-Siliguri line I & II under breakdown.
		Unit- II	148.18	400kV THP - Siliguri Line - II	0.00	
		Unit- III	97.93	400kV THP - Siliguri Line- IV	393.07	
		Unit- IV	168.31	400kV THP - Malbase Line - III	387.62	
		Unit- V	185.35	400kV Malbase - Siliguri Line	389.58	
		Unit- VI	0.00	-	-	
		Total	**785.47**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.61%**	
2	720MW MHP	Unit-I	197.61	400kV MHP - Jigmeling Line - I	195.59	Unit III under shutdown. Unit IV on Standby. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby
		Unit-II	197.66	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	197.00	
		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)	42.68	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	86.64	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	128.39	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	129.65	
		-	-	80MVA, 220/132kV ICT - I (HV)	32.25	
		-	-	80MVA, 220/132kV ICT - II (HV)	32.69	
		-	-	220kV Tsirang - Jigmeling Line	59.77	
		-	-	132kV Gelephu - Salakati Line	3.63	
		Total	**395.27**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.68%**	
3	336MW CHP	Unit- I	91.07	220kV CHP - Birpara Line- I	68.83	
		Unit- II	91.14	220kV CHP - Birpara Line- II	68.72	
		Unit- III	91.67	220kV CHP - Malbase Line- III	145.49	
		Unit- IV	91.48	220kV CHP - Semtokha Line- IV	61.44	
		-	-	220kV Malbase - Birpara Line	-0.52	
		-	-	66kV CHP - Chumdo Line	13.75	
		-	-	66kV CHP - Gedu Line	5.27	
		-	-	3x3MVA, 66/11kV TFR	1.07	
		Total	**365.36**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.22%**	
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	36.93	
		Unit- II	12.10	66kV BHP - Lobeysa Line	24.62	
		Total	**24.40**	220kV BHP - Tsirang Line	2.95	
5	40MW BHP (L/S)	Unit- I	20.47	5MVA, 66/11kV TFR	0.55	
		Unit- II	20.81	30MVA ICT, 220/66kV (HV)	1.44	
		Total	**41.28**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.96%**	
6	126MW DHP	Unit-I	30.29	220kV DHP - Tsirang Line	59.86	220kV DHP_Dagapela Line on Standby.
		Unit-II	30.00	220kV DHP - Dagapela Line	0.00	
		-		220kV Jigmeling - Dagapela Line	36.12	
		-	-	5MVA, 220/33kV TFR	0.35	
		Total	**60.29**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.13%**	
7	60MW KHP	Unit- I	16.27	132kV KHP - Nangkhor Line	39.36	
		Unit-II	16.53	132kV KHP - Kilikhar Line	25.18	
		Unit- III	16.34	5MVA, 132/11kV TFR	0.35	
		Unit- IV	16.37	132kV Motanga - Rangia Line	27.49	
		Total	**65.51**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.95%**	

Note: Generation-Load Summary (MW) for June 23, 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	1,276.80	297.35	291.07	919.68	6.28
2	Eastern Grid	460.78	144.75	141.45	375.80	3.30
Total		**1,737.58**	**442.10**	**432.52**	**1,295.48**	**9.58**

Note: Generation-Load Summary for June 23, 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	1,600.53	263.03	249.66	1,269.47	13.37
2	Eastern Grid	659.66	80.59	74.67	647.10	5.92
Total		**2,260.19**	**343.62**	**324.33**	**1,916.57**	**19.29**

NOTE-BHP Generation data collected from site.

1. 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:
   i) 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.
   ii) The clocks of all the locations are not synchronized.
2. 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	**Time**	**Load(MW)**
12-Jan-22	18:00hrs	492.25

Date:	**June 24, 2022**
Hours:	**09:00 Hours**

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	**1020MW THP**	Unit- I	184.62	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I & II under breakdown.
		Unit- II	170.46	400kV THP - Siliguri Line - II	0.00	
		Unit- III	138.13	400kV THP - Siliguri Line- IV	438.55	
		Unit- IV	138.32	400kV THP - Malbase Line - III	432.17	
		Unit- V	166.94	400kV Malbase - Siliguri Line	434.85	
		Unit- VI	80.12	-	-	
		Total	**878.59**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.90%**	
2	**720MW MHP**	Unit-I	197.81	400kV MHP - Jigmeling Line - I	293.69	Unit III under shutdown. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby
		Unit-II	197.82	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.74	
		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)	1.30	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	146.49	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	216.38	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	217.30	
		-	-	80MVA, 220/132kV ICT - I (HV)	30.48	
		-	-	80MVA, 220/132kV ICT - II (HV)	31.14	
		-	-	220kV Tsirang - Jigmeling Line	99.37	
		-	-	132kV Gelephu - Salakati Line	11.11	
		Total	**593.30**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.65%**	
3	**336MW CHP**	Unit- I	91.42	220kV CHP - Birpara Line- I	82.38	
		Unit- II	91.36	220kV CHP - Birpara Line- II	82.38	
		Unit- III	91.49	220kV CHP - Malbase Line- III	155.37	
		Unit- IV	91.36	220kV CHP - Semtokha Line- IV	26.48	
		-	-	220kV Malbase - Birpara Line	14.41	
		-	-	66kV CHP - Chumdo Line	10.42	
		-	-	66kV CHP - Gedu Line	5.80	
		-	-	3x3MVA, 66/11kV TFR	0.92	
		Total	**365.63**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.51%**	
4	**24MW BHP (U/S)**	Unit- I	12.30	220kV BHP - Semtokha Line	63.81	
		Unit- II	12.10	66kV BHP - Lobeysa Line	24.65	
		Total	**24.40**	220kV BHP - Tsirang Line	-23.27	
5	**40MW BHP (L/S)**	Unit- I	20.60	5MVA, 66/11kV TFR	0.38	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	1.32	
		Total	**41.80**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.95%**	
6	**126MW DHP**	Unit-I	63.64	220kV DHP - Tsirang Line	126.15	220kV DHP_Dagapela Line on Standby.
		Unit-II	63.01	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	35.41	
		-	-	5MVA, 220/33kV TFR	0.45	
		Total	**126.65**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.04%**	
7	**60MW KHP**	Unit- I	15.75	132kV KHP - Nangkhor Line	39.56	
		Unit-II	16.18	132kV KHP - Kilikhar Line	23.82	
		Unit- III	15.86	5MVA, 132/11kV TFR	0.50	
		Unit- IV	16.71	132kV Motanga - Rangia Line	31.37	
		Total	**64.50**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.96%**	

Note: Generation-Load Summary (MW) for June 24, 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**	1,437.07	285.13	274.70	1,052.57	10.43
2	**Eastern Grid**	657.80	134.52	130.03	622.65	4.49
Total		**2,094.87**	**419.65**	**404.73**	**1,675.22**	**14.92**

Note: Generation-Load Summary for June 24, 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**	1,583.04	239.80	234.34	1,278.68	5.46
2	**Eastern Grid**	658.23	65.98	61.79	656.81	4.19
Total		**2,241.27**	**305.78**	**296.13**	**1,935.49**	**9.65**

NOTE-BHP data collected from Site.

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