BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	August 5, 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	185.39	400kV THP - Siliguri Line - I	260.41	
		Unit- II	186.74	400kV THP - Siliguri Line - II	258.64	
		Unit- III	185.14	400kV THP - Siliguri Line- IV	251.76	
		Unit- IV	184.83	400kV THP - Malbase Line - III	335.16	
		Unit- V	185.74	400kV Malbase - Siliguri Line	231.20	
		Unit- VI	185.20	-	-	
		Total	**1,113.04**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.64%**	
2	720MW MHP	Unit-I	197.81	400kV MHP - Jigmeling Line - I	293.77	Unit III under shutdown. 400kV MHP-JLG line II & 400kV MHP-JLG Line IV on Standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II(Interim) on Standby.
		Unit-II	197.75	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.56	
		Unit-IV	197.82	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)	43.58	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	134.82	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	202.59	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	201.63	
		-	-	80MVA, 220/132kV ICT - I (HV)	37.69	
		-	-	80MVA, 220/132kV ICT - II (HV)	38.34	
		-	-	220kV Tsirang - Jigmeling Line	-21.37	
		-	-	132kV Gelephu - Salakati Line	9.75	
		Total	**593.38**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.68%**	
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	60.71	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	60.49	
		Unit- III	91.45	220kV CHP - Malbase Line- III	89.73	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	39.47	
		-	-	220kV Malbase - Birpara Line	30.61	
		-	-	66kV CHP - Chumdo Line	14.04	
		-	-	66kV CHP - Gedu Line	4.96	
		-	-	3x3MVA, 66/11kV TFR	1.21	
		Total	**274.41**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.38%**	
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	57.80	
		Unit- II	12.20	66kV BHP - Lobeysa Line	26.75	
		Total	**24.60**	220kV BHP - Tsirang Line	-19.47	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.25	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	3.34	
		Total	**41.70**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.46%**	
6	126MW DHP	Unit-I	56.39	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	50.04	220kV DHP - Dagapela Line	105.94	
		-		220kV Jigmeling - Dagapela Line	-54.45	
		-	-	5MVA, 220/33kV TFR	0.48	
		Total	**106.43**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.01%**	
7	60MW KHP	Unit- I	16.63	132kV KHP - Nangkhor Line	39.37	
		Unit-II	16.57	132kV KHP - Kilikhar Line	25.83	
		Unit- III	16.52	5MVA, 132/11kV TFR	0.57	
		Unit- IV	16.56	132kV Motanga - Rangia Line	30.22	
		Total	**66.28**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.77%**	

Note: Generation-Load Summary (MW) for August 05, 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	1,560.18	373.28	361.43	1,153.82	11.85
2	Eastern Grid	659.66	113.73	109.17	579.01	4.56
Total		**2,219.84**	**487.01**	**470.60**	**1,732.83**	**16.41**

Note: Generation-Load Summary for August 05, 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	1,624.74	289.60	284.34	1,261.51	5.26
2	Eastern Grid	658.88	71.87	58.79	660.64	13.08
Total		**2,283.62**	**361.47**	**343.13**	**1,922.15**	**18.34**

NOTE-

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:	**August 6, 2022**
Hours:	**09:00 Hours**

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	**1020MW THP**	Unit- I	185.77	400kV THP - Siliguri Line - I	266.78	.
		Unit- II	187.07	400kV THP - Siliguri Line - II	265.52	
		Unit- III	185.46	400kV THP - Siliguri Line- IV	259.24	
		Unit- IV	185.08	400kV THP - Malbase Line - III	314.69	
		Unit- V	184.82	400kV Malbase - Siliguri Line	244.01	
		Unit- VI	185.59	-	-	
		Total	**1,113.79**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.68%**	
2	**720MW MHP**	Unit-I	197.83	400kV MHP - Jigmeling Line - I	361.17	400kV MHP-JLG line II & 400kV MHP-JLG Line IV on Standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II(Interim) on Standby.
		Unit-II	197.84	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	135.44	400kV MHP - Jigmeling Line - III	363.32	
		Unit-IV	197.99	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)	17.41	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	174.28	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	260.90	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	262.15	
		-	-	80MVA, 220/132kV ICT - I (HV)	30.61	
		-	-	80MVA, 220/132kV ICT - II (HV)	31.15	
		-	-	220kV Tsirang - Jigmeling Line	-30.12	
		-	-	132kV Gelephu - Salakati Line	7.81	
		Total	**729.10**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.63%**	
3	**336MW CHP**	Unit- I	91.74	220kV CHP - Birpara Line- I	60.95	Unit IV under breakdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	60.77	
		Unit- III	91.45	220kV CHP - Malbase Line- III	107.28	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	37.47	
		-	-	220kV Malbase - Birpara Line	17.20	
		-	-	66kV CHP - Chumdo Line	9.90	
		-	-	66kV CHP - Gedu Line	4.23	
		-	-	3x3MVA, 66/11kV TFR	0.02	
		Total	**274.41**	**Auxiliary Consumption & Transformation Losses at Generator end**	**-2.26%**	
4	**24MW BHP (U/S)**	Unit- I	20.48	220kV BHP - Semtokha Line	68.57	
		Unit- II	21.04	66kV BHP - Lobeysa Line	25.53	
		Total	**41.52**	220kV BHP - Tsirang Line	-28.83	
5	**40MW BHP (L/S)**	Unit- I	11.88	5MVA, 66/11kV TFR	0.05	
		Unit- II	11.88	30MVA ICT, 220/66kV (HV)	2.10	
		Total	**23.76**	**Auxiliary Consumption & Transformation Losses at Generator end**	**-0.06%**	
6	**126MW DHP**	Unit-I	63.63	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	63.21	220kV DHP - Dagapela Line	126.33	
		-	-	220kV Jigmeling - Dagapela Line	-75.67	
		-	-	5MVA, 220/33kV TFR	0.20	
		Total	**126.84**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.24%**	
7	**60MW KHP**	Unit- I	16.54	132kV KHP - Nangkhor Line	40.47	
		Unit-II	16.69	132kV KHP - Kilikhar Line	25.14	
		Unit- III	16.54	5MVA, 132/11kV TFR	0.10	
		Unit- IV	16.49	132kV Motanga - Rangia Line	36.01	
		Total	**66.26**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.83%**	

Note: Generation-Load Summary (MW) for August 06, 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**	1,580.32	360.30	358.68	1,174.47	1.62
2	**Eastern Grid**	795.36	99.76	94.60	741.15	5.16
Total		**2,375.68**	**460.06**	**453.28**	**1,915.62**	**6.78**

Note: Generation-Load Summary for August 06, 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**	1,622.31	257.69	251.03	1,287.05	6.66
2	**Eastern Grid**	659.56	64.60	61.57	672.53	3.03
Total		**2,281.87**	**322.29**	**312.60**	**1,959.58**	**9.69**

NOTE:

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.
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