BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	June 11, 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	69.61	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I & II under breakdown.
		Unit- II	138.64	400kV THP - Siliguri Line - II	0.00	
		Unit- III	137.89	400kV THP - Siliguri Line- IV	366.16	
		Unit- IV	100.25	400kV THP - Malbase Line - III	358.60	
		Unit- V	118.13	400kV Malbase - Siliguri Line	362.99	
		Unit- VI	169.26	-	-	
		Total	**733.78**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.23%**	
2	720MW MHP	Unit-I	160.10	400kV MHP - Jigmeling Line - I	243.30	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	165.20	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	244.70	
		Unit-IV	165.50	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)	62.40	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	105.20	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	157.30	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	156.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	36.80	
		-	-	80MVA, 220/132kV ICT - II (HV)	37.40	
		-	-	220kV Tsirang - Jigmeling Line	41.00	
		-	-	132kV Gelephu - Salakati Line	14.10	
		Total	**490.80**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.57%**	
3	336MW CHP	Unit- I	91.30	220kV CHP - Birpara Line- I	69.63	
		Unit- II	91.13	220kV CHP - Birpara Line- II	69.21	
		Unit- III	91.96	220kV CHP - Malbase Line- III	154.56	
		Unit- IV	91.16	220kV CHP - Semtokha Line- IV	52.65	
		-	-	220kV Malbase - Birpara Line	-6.15	
		-	-	66kV CHP - Chumdo Line	11.47	
		-	-	66kV CHP - Gedu Line	6.55	
		-	-	3x3MVA, 66/11kV TFR	1.24	
		Total	**365.55**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.07%**	
4	24MW BHP (U/S)	Unit- I	11.60	220kV BHP - Semtokha Line	43.72	
		Unit- II	11.30	66kV BHP - Lobeysa Line	24.96	
		Total	**22.90**	220kV BHP - Tsirang Line	-5.72	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.68	
		Unit- II	20.90	30MVA ICT, 220/66kV (HV)	2.41	
		Total	**41.40**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.03%**	
6	126MW DHP	Unit-I	49.33	220kV DHP - Tsirang Line	49.07	220kV DHP_Dagapela Line on Standby. Unit-II on standby
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-		220kV Jigmeling - Dagapela Line	28.36	
		-	-	5MVA, 220/33kV TFR	0.20	
		Total	**49.33**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.12%**	
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	42.10	
		Unit-II	16.40	132kV KHP - Kilikhar Line	23.00	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	
		Unit- IV	16.60	132kV Motanga - Rangia Line	50.30	
		Total	**66.00**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.91%**	

Note: Generation-Load Summary (MW) for June 11, 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	1,212.96	310.12	300.14	861.84	9.98
2	Eastern Grid	556.80	114.90	111.50	482.90	3.40
Total		**1,769.76**	**425.02**	**411.64**	**1,344.74**	**13.38**

Note: Generation-Load Summary for June 11, 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	986.56	247.56	235.25	701.60	12.31
2	Eastern Grid	556.19	74.35	72.28	519.24	2.07
Total		**1,542.75**	**321.91**	**307.53**	**1,220.84**	**14.38**

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:	**June 12, 2022**
Hours:	**09:00 Hours**

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	**1020MW THP**	Unit- I	146.70	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I & II under breakdown.
		Unit- II	137.88	400kV THP - Siliguri Line - II	0.00	
		Unit- III	167.08	400kV THP - Siliguri Line- IV	391.42	
		Unit- IV	129.24	400kV THP - Malbase Line - III	385.60	
		Unit- V	118.08	400kV Malbase - Siliguri Line	388.22	
		Unit- VI	80.77	-	-	
		Total	**779.75**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.35%**	
2	**720MW MHP**	Unit-I	160.25	400kV MHP - Jigmeling Line - I	233.34	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	150.06	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	234.99	
		Unit-IV	160.52	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)	35.54	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	109.57	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	163.90	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	162.69	
		-	-	80MVA, 220/132kV ICT - I (HV)	17.66	
		-	-	80MVA, 220/132kV ICT - II (HV)	18.01	
		-	-	220kV Tsirang - Jigmeling Line	31.19	
		-	-	132kV Gelephu - Salakati Line	3.20	
		Total	**470.83**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.53%**	
3	**336MW CHP**	Unit- I	91.06	220kV CHP - Birpara Line- I	71.41	.
		Unit- II	90.14	220kV CHP - Birpara Line- II	71.54	
		Unit- III	91.73	220kV CHP - Malbase Line- III	147.56	
		Unit- IV	91.11	220kV CHP - Semtokha Line- IV	54.31	
		-	-	220kV Malbase - Birpara Line	2.20	
		-	-	66kV CHP - Chumdo Line	12.91	
		-	-	66kV CHP - Gedu Line	4.38	
		-	-	3x3MVA, 66/11kV TFR	1.11	
		Total	**364.04**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.23%**	
4	**24MW BHP (U/S)**	Unit- I	10.70	220kV BHP - Semtokha Line	42.21	
		Unit- II	9.70	66kV BHP - Lobeysa Line	23.51	
		Total	**20.40**	220kV BHP - Tsirang Line	-14.08	
5	**40MW BHP (L/S)**	Unit- I	16.20	5MVA, 66/11kV TFR	0.43	
		Unit- II	16.50	30MVA ICT, 220/66kV (HV)	4.50	
		Total	**32.70**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.94%**	
6	**126MW DHP**	Unit-I	48.37	220kV DHP - Tsirang Line	48.08	220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	28.36	
		-	-	5MVA, 220/33kV TFR	0.20	
		Total	**48.37**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.19%**	
7	**60MW KHP**	Unit- I	16.29	132kV KHP - Nangkhor Line	44.20	
		Unit-II	16.50	132kV KHP - Kilikhar Line	20.45	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.31	
		Unit- IV	16.50	132kV Motanga - Rangia Line	31.06	
		Total	**65.79**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.26%**	

Note: Generation-Load Summary (MW) for June 12, 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**	1,245.26	289.28	284.61	924.79	4.67
2	**Eastern Grid**	536.62	97.39	94.06	470.42	3.33
Total		**1,781.88**	**386.67**	**378.67**	**1,395.21**	**8.00**

Note: Generation-Load Summary for June 12, 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**	1,437.00	258.02	241.99	1,047.23	16.03
2	**Eastern Grid**	658.45	70.97	66.91	719.23	4.06
Total		**2,095.45**	**328.99**	**308.90**	**1,766.46**	**20.09**

NOTE- BHP & all eastern data collected from site.

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