BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	June 28, 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	184.25	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I & II under breakdown.
		Unit- II	182.82	400kV THP - Siliguri Line - II	0.00	
		Unit- III	184.98	400kV THP - Siliguri Line- IV	554.59	
		Unit- IV	185.38	400kV THP - Malbase Line - III	545.24	
		Unit- V	184.15	400kV Malbase - Siliguri Line	548.59	
		Unit- VI	184.63	-	-	
		Total	**1,106.21**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.58%**	
2	720MW MHP	Unit-I	197.94	400kV MHP - Jigmeling Line - I	294.00	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	197.92	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.95	
		Unit-IV	197.74	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)	9.93	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	143.99	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	215.96	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	214.14	
		-	-	80MVA, 220/132kV ICT - I (HV)	36.35	
		-	-	80MVA, 220/132kV ICT - II (HV)	37.05	
		-	-	220kV Tsirang - Jigmeling Line	99.61	
		-	-	132kV Gelephu - Salakati Line	20.44	
		Total	**593.60**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.61%**	
3	336MW CHP	Unit- I	91.34	220kV CHP - Birpara Line- I	80.18	
		Unit- II	91.06	220kV CHP - Birpara Line- II	80.16	
		Unit- III	91.92	220kV CHP - Malbase Line- III	152.29	
		Unit- IV	91.32	220kV CHP - Semtokha Line- IV	32.55	
		-	-	220kV Malbase - Birpara Line	13.20	
		-	-	66kV CHP - Chumdo Line	12.39	
		-	-	66kV CHP - Gedu Line	5.51	
		-	-	3x3MVA, 66/11kV TFR	1.29	
		Total	**365.64**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.35%**	
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	62.90	
		Unit- II	12.10	66kV BHP - Lobeysa Line	24.96	
		Total	**24.40**	220kV BHP - Tsirang Line	-22.87	
5	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.51	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	2.20	
		Total	**41.80**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.06%**	
6	126MW DHP	Unit-I	63.64	220kV DHP - Tsirang Line	126.29	220kV DHP_Dagapela Line on Standby.
		Unit-II	63.21	220kV DHP - Dagapela Line	0.00	
		-		220kV Jigmeling - Dagapela Line	35.62	
		-	-	5MVA, 220/33kV TFR	0.20	
		Total	**126.85**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.28%**	
7	60MW KHP	Unit- I	16.30	132kV KHP - Nangkhor Line	37.05	
		Unit-II	16.47	132kV KHP - Kilikhar Line	25.99	
		Unit- III	15.37	5MVA, 132/11kV TFR	0.40	
		Unit- IV	16.06	132kV Motanga - Rangia Line	34.83	
		Total	**64.20**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.18%**	

Note: Generation-Load Summary (MW) for June 28, 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	1,664.90	288.57	279.86	1,276.72	8.71
2	Eastern Grid	657.80	128.05	123.64	629.36	4.41
Total		**2,322.70**	**416.62**	**403.50**	**1,906.08**	**13.12**

Note: Generation-Load Summary for June 28, 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	1,224.39	263.60	256.42	890.99	7.18
2	Eastern Grid	657.71	80.01	76.08	647.50	3.93
Total		**1,882.10**	**343.61**	**332.50**	**1,538.49**	**11.11**

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 29, 2022**
Hours:	**09:00 Hours**

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	**1020MW THP**	Unit- I	184.66	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I & II under breakdown.
		Unit- II	184.76	400kV THP - Siliguri Line - II	0.00	
		Unit- III	185.21	400kV THP - Siliguri Line- IV	556.19	
		Unit- IV	185.36	400kV THP - Malbase Line - III	546.44	
		Unit- V	185.34	400kV Malbase - Siliguri Line	549.48	
		Unit- VI	185.84	-	-	
		Total	**1,111.17**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.77%**	
2	**720MW MHP**	Unit-I	197.94	400kV MHP - Jigmeling Line - I	294.29	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	197.89	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	296.08	
		Unit-IV	197.74	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)	15.59	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	142.24	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	213.31	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	213.28	
		-	-	80MVA, 220/132kV ICT - I (HV)	28.60	
		-	-	80MVA, 220/132kV ICT - II (HV)	29.10	
		-	-	220kV Tsirang - Jigmeling Line	77.53	
		-	-	132kV Gelephu - Salakati Line	10.58	
		Total	**593.57**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.54%**	
3	**336MW CHP**	Unit- I	91.55	220kV CHP - Birpara Line- I	56.88	
		Unit- II	7.97	220kV CHP - Birpara Line- II	56.34	
		Unit- III	91.78	220kV CHP - Malbase Line- III	134.44	
		Unit- IV	91.02	220kV CHP - Semtokha Line- IV	16.99	
		-	-	220kV Malbase - Birpara Line	-11.40	
		-	-	66kV CHP - Chumdo Line	10.62	
		-	-	66kV CHP - Gedu Line	5.21	
		-	-	3x3MVA, 66/11kV TFR	0.96	
		Total	**282.32**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.31%**	
4	**24MW BHP (U/S)**	Unit- I	12.43	220kV BHP - Semtokha Line	63.29	
		Unit- II	12.61	66kV BHP - Lobeysa Line	25.39	
		Total	**25.04**	220kV BHP - Tsirang Line	-23.03	
5	**40MW BHP (L/S)**	Unit- I	20.51	5MVA, 66/11kV TFR	0.50	
		Unit- II	21.07	30MVA ICT, 220/66kV (HV)	2.00	
		Total	**41.58**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.71%**	
6	**126MW DHP**	Unit-I	58.41	220kV DHP - Tsirang Line	115.92	220kV DHP_Dagapela Line on Standby.
		Unit-II	58.01	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	35.13	
		-	-	5MVA, 220/33kV TFR	0.35	
		Total	**116.42**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.13%**	
7	**60MW KHP**	Unit- I	16.56	132kV KHP - Nangkhor Line	39.22	
		Unit-II	16.62	132kV KHP - Kilikhar Line	21.92	
		Unit- III	14.21	5MVA, 132/11kV TFR	0.39	
		Unit- IV	14.75	132kV Motanga - Rangia Line	26.37	
		Total	**62.14**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.98%**	

Note: Generation-Load Summary (MW) for June 29, 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**	1,576.53	291.51	281.47	1,207.49	10.04
2	**Eastern Grid**	655.71	127.46	123.65	605.78	3.81
Total		**2,232.24**	**418.97**	**405.12**	**1,813.27**	**13.85**

Note: Generation-Load Summary for June 29, 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**	1,239.33	273.39	257.37	906.55	16.02
2	**Eastern Grid**	659.15	64.77	60.80	653.77	3.97
Total		**1,898.48**	**338.16**	**318.17**	**1,560.32**	**19.99**

NOTE-BHP Generation data collected from site.

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