BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load		
Date	Time	Load(MW)
30-Aug-22	19:23 hrs	536.69

Date:	October 12, 2022
Hours:	19:00 Hours

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	185.60	400kV THP - Siliguri Line - I	268.00	
		Unit- II	183.00	400kV THP - Siliguri Line - II	266.60	
		Unit- III	184.90	400kV THP - Siliguri Line- IV	259.10	
		Unit- IV	184.20	400kV THP - Malbase Line - III	306.50	
		Unit- V	186.00	400kV Malbase - Siliguri Line	249.80	
		Unit- VI	186.50	-	-	
		Total	**1,110.20**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.90%**	
2	720MW MHP	Unit-I	197.76	400kV MHP - Jigmeling Line - I	319.14	400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Line II (Interim) on Standby.
		Unit-II	197.99	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	135.47	400kV MHP - Jigmeling Line - III	321.35	
		Unit-IV	196.22	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	85.05	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-37.70	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	174.00	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	260.90	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	261.60	
		-	-	80MVA, 220/132kV ICT - I (HV)	10.10	
		-	-	80MVA, 220/132kV ICT - II (HV)	10.30	
		-	-	220kV Tsirang - Jigmeling Line	-34.30	
		-	-	132kV Gelephu - Salakati Line	27.40	
		Total	**727.44**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.26%**	
3	336MW CHP	Unit- I	91.30	220kV CHP - Birpara Line- I	84.10	
		Unit- II	91.20	220kV CHP - Birpara Line- II	84.30	
		Unit- III	91.60	220kV CHP - Malbase Line- III	128.50	
		Unit- IV	75.30	220kV CHP - Semtokha Line- IV	43.00	
		-	-	220kV Malbase - Birpara Line	38.90	
		-	-	66kV CHP - Chumdo Line	0.70	
		-	-	66kV CHP - Gedu Line	7.70	
		-	-	3x3MVA, 66/11kV TFR	1.00	
		Total	**349.40**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.03%**	
4	24MW BHP (U/S)	Unit- I	11.85	220kV BHP - Semtokha Line	70.40	
		Unit- II	11.85	66kV BHP - Lobeysa Line	27.30	
		Total	**23.70**	220kV BHP - Tsirang Line	-32.50	
5	40MW BHP (L/S)	Unit- I	20.40	5MVA, 66/11kV TFR	0.40	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	3.90	
		Total	**41.40**	**Auxiliary Consumption & Transformation Losses at Generator end**	**-0.77%**	
6	126MW DHP	Unit-I	63.70	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	62.60	220kV DHP - Dagapela Line	125.60	
		-		220kV Jigmeling - Dagapela Line	-93.20	
		-	-	5MVA, 220/33kV TFR	0.40	
		Total	**126.30**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.24%**	
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	36.00	
		Unit-II	16.50	132kV KHP - Kilikhar Line	28.83	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.53	
		Unit- IV	16.50	132kV Motanga - Rangia Line	46.43	
		Total	**66.00**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.97%**	

Note: Generation-Load Summary (MW) for October 12, 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	1,651.00	341.30	331.40	1,250.80	9.90
2	Eastern Grid	793.44	82.01	79.47	770.33	2.54
Total		**2,444.44**	**423.31**	**410.87**	**2,021.13**	**12.44**

Note: Generation-Load Summary for October 12, 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	977.37	308.37	306.90	640.20	1.47
2	Eastern Grid	387.43	55.33	52.46	360.90	2.87
Total		**1,364.80**	**363.70**	**359.36**	**1,001.10**	**4.34**

NOTE-MAT 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)
30-Aug-22	19:23 hrs	536.69

Date:	October 13, 2022
Hours:	09:00 Hours

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	184.69	400kV THP - Siliguri Line - I	269.84	
		Unit- II	184.87	400kV THP - Siliguri Line - II	267.77	
		Unit- III	184.82	400kV THP - Siliguri Line- IV	260.84	
		Unit- IV	185.25	400kV THP - Malbase Line - III	305.31	
		Unit- V	185.78	400kV Malbase - Siliguri Line	248.52	
		Unit- VI	185.33	-	-	
		Total	**1,110.74**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.63%**	
2	720MW MHP	Unit-I	145.16	400kV MHP - Jigmeling Line - I	272.50	400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Line II (Interim) on Standby.
		Unit-II	145.11	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	135.33	400kV MHP - Jigmeling Line - III	274.00	
		Unit-IV	170.60	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	46.30	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-23.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	140.50	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	211.30	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	211.89	
		-	-	80MVA, 220/132kV ICT - I (HV)	12.60	
		-	-	80MVA, 220/132kV ICT - II (HV)	12.90	
		-	-	220kV Tsirang - Jigmeling Line	-18.18	
		-	-	132kV Gelephu - Salakati Line	20.21	
		Total	**596.20**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.57%**	
3	336MW CHP	Unit- I	91.27	220kV CHP - Birpara Line- I	77.72	
		Unit- II	91.18	220kV CHP - Birpara Line- II	77.63	
		Unit- III	91.63	220kV CHP - Malbase Line- III	127.83	
		Unit- IV	75.26	220kV CHP - Semtokha Line- IV	57.00	
		-	-	220kV Malbase - Birpara Line	28.48	
		-	-	66kV CHP - Chumdo Line	0.45	
		-	-	66kV CHP - Gedu Line	7.86	
		-	-	3x3MVA, 66/11kV TFR	0.50	
		Total	**349.34**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.10%**	
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	55.36	
		Unit- II	12.12	66kV BHP - Lobeysa Line	26.50	
		Total	**24.42**	220kV BHP - Tsirang Line	-16.80	
5	40MW BHP (L/S)	Unit- I	20.40	5MVA, 66/11kV TFR	0.40	
		Unit- II	21.00	30MVA ICT, 220/66kV (HV)	3.10	
		Total	**41.40**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.55%**	
6	126MW DHP	Unit-I	50.42	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	49.03	220kV DHP - Dagapela Line	98.96	
		-		220kV Jigmeling - Dagapela Line	-67.30	
		-	-	5MVA, 220/33kV TFR	0.45	
		Total	**99.45**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.04%**	
7	60MW KHP	Unit- I	16.53	132kV KHP - Nangkhor Line	13.71	
		Unit-II	16.48	132kV KHP - Kilikhar Line	51.13	
		Unit- III	16.28	5MVA, 132/11kV TFR	0.50	
		Unit- IV	16.53	132kV Motanga - Rangia Line	13.13	
		Total	**65.82**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.73%**	

Note: Generation-Load Summary (MW) for October 13, 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	1,625.35	345.43	337.70	1,230.80	7.73
2	Eastern Grid	662.02	114.11	110.23	597.03	3.88
Total		**2,287.37**	**459.54**	**447.93**	**1,827.83**	**11.61**

Note: Generation-Load Summary for October 13, 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	948.51	301.90	295.95	605.44	5.95
2	Eastern Grid	396.08	48.10	46.39	389.15	1.71
Total		**1,344.59**	**350.00**	**342.34**	**994.59**	**7.66**

Note: Motanga 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.
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