BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	August 8, 2022
Hours:	19:00 Hours

Date	Time	Load(MW)
8-Aug-22	19:33 hrs	513.31

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	185.25	400kV THP - Siliguri Line - I	260.39	
		Unit- II	184.11	400kV THP - Siliguri Line - II	259.53	
		Unit- III	185.35	400kV THP - Siliguri Line- IV	252.55	
		Unit- IV	184.87	400kV THP - Malbase Line - III	331.81	
		Unit- V	185.86	400kV Malbase - Siliguri Line	233.24	
		Unit- VI	185.25	-	-	
		Total	**1,110.69**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.58%**	
2	720MW MHP	Unit-I	197.98	400kV MHP - Jigmeling Line - I	360.99	132kV GEL-Salakati line 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 I(Interim) on Standby.
		Unit-II	197.88	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	135.49	400kV MHP - Jigmeling Line - III	363.26	
		Unit-IV	197.79	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)	42.55	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	166.53	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	251.06	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	251.95	
		-	-	80MVA, 220/132kV ICT - I (HV)	30.50	
		-	-	80MVA, 220/132kV ICT - II (HV)	31.10	
		-	-	220kV Tsirang - Jigmeling Line	-25.65	
		-	-	132kV Gelephu - Salakati Line	0.00	
		Total	**729.14**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.67%**	
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	61.18	Unit IV under Shutdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	61.08	
		Unit- III	91.45	220kV CHP - Malbase Line- III	92.34	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	37.33	
		-	-	220kV Malbase - Birpara Line	28.54	
		-	-	66kV CHP - Chumdo Line	13.36	
		-	-	66kV CHP - Gedu Line	5.73	
		-	-	3x3MVA, 66/11kV TFR	1.31	
		Total	**274.41**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.76%**	
4	24MW BHP (U/S)	Unit- I	20.46	220kV BHP - Semtokha Line	61.76	
		Unit- II	21.02	66kV BHP - Lobeysa Line	26.17	
		Total	**41.48**	220kV BHP - Tsirang Line	-22.97	
5	40MW BHP (L/S)	Unit- I	11.89	5MVA, 66/11kV TFR	0.69	
		Unit- II	11.89	30MVA ICT, 220/66kV (HV)	2.30	
		Total	**23.78**	**Auxiliary Consumption & Transformation Losses at Generator end**	**-0.60%**	
6	126MW DHP	Unit-I	48.45	220kV DHP - Tsirang Line	0.00	220kV DHP_Tsirang Line on Standby.
		Unit-II	49.01	220kV DHP - Dagapela Line	96.94	
		-		220kV Jigmeling - Dagapela Line	-46.48	
		-	-	5MVA, 220/33kV TFR	0.50	
		Total	**97.46**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.02%**	
7	60MW KHP	Unit- I	16.49	132kV KHP - Nangkhor Line	39.26	
		Unit-II	16.58	132kV KHP - Kilikhar Line	25.75	
		Unit- III	16.54	5MVA, 132/11kV TFR	0.80	
		Unit- IV	16.67	132kV Motanga - Rangia Line	31.38	
		Total	**66.28**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.71%**	

Note: Generation-Load Summary (MW) for August 08, 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	1,547.82	370.48	362.36	1,156.51	8.12
2	Eastern Grid	795.42	115.33	109.97	700.92	5.36
Total		**2,343.24**	**485.81**	**472.33**	**1,857.43**	**13.48**

Note: Generation-Load Summary for August 08, 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	1,621.45	273.93	264.24	1,274.33	9.69
2	Eastern Grid	659.29	70.36	67.77	662.12	2.59
Total		**2,280.74**	**344.29**	**332.01**	**1,936.45**	**12.29**

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:	August 9, 2022
Hours:	09:00 Hours

Date	Time	Load(MW)
8-Aug-22	19:33 hrs	513.31

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	186.11	400kV THP - Siliguri Line - I	265.13	.
		Unit- II	185.58	400kV THP - Siliguri Line - II	263.68	
		Unit- III	185.77	400kV THP - Siliguri Line- IV	256.59	
		Unit- IV	184.90	400kV THP - Malbase Line - III	319.74	
		Unit- V	184.77	400kV Malbase - Siliguri Line	240.18	
		Unit- VI	185.31	-	-	
		Total	**1,112.44**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.66%**	
2	720MW MHP	Unit-I	197.89	400kV MHP - Jigmeling Line - I	361.42	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 I(Interim) on Standby.
		Unit-II	197.94	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	135.52	400kV MHP - Jigmeling Line - III	363.48	
		Unit-IV	197.80	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)	8.10	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Interim)**	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Interim)**	173.07	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	265.40	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	265.64	
		-	-	80MVA, 220/132kV ICT - I (HV)	32.71	
		-	-	80MVA, 220/132kV ICT - II (HV)	33.26	
		-	-	220kV Tsirang - Jigmeling Line	-15.13	
		-	-	132kV Gelephu - Salakati Line	7.26	
		Total	**729.15**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.58%**	
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	63.01	Unit IV under breakdown.
		Unit- II	91.22	220kV CHP - Birpara Line- II	62.94	
		Unit- III	91.45	220kV CHP - Malbase Line- III	92.91	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	35.01	
		-	-	220kV Malbase - Birpara Line	31.71	
		-	-	66kV CHP - Chumdo Line	10.75	
		-	-	66kV CHP - Gedu Line	5.87	
		-	-	3x3MVA, 66/11kV TFR	0.90	
		Total	**274.41**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.10%**	
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	53.93	
		Unit- II	12.20	66kV BHP - Lobeysa Line	23.82	
		Total	**24.60**	220kV BHP - Tsirang Line	-13.41	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.41	
		Unit- II	21.20	30MVA ICT, 220/66kV (HV)	1.22	
		Total	**41.70**	**Auxiliary Consumption & Transformation Losses at Generator end**	**2.34%**	
6	126MW DHP	Unit-I	55.43	220kV DHP - Tsirang Line	0.00	220kV DHP_TSI Line on Standby.
		Unit-II	54.00	220kV DHP - Dagapela Line	108.95	
		-	-	220kV Jigmeling - Dagapela Line	-74.94	
		-	-	5MVA, 220/33kV TFR	0.50	
		Total	**109.43**	**Auxiliary Consumption & Transformation Losses at Generator end**	**-0.02%**	
7	60MW KHP	Unit- I	16.61	132kV KHP - Nangkhor Line	40.36	
		Unit-II	16.64	132kV KHP - Kilikhar Line	24.47	
		Unit- III	16.48	5MVA, 132/11kV TFR	0.27	
		Unit- IV	16.46	132kV Motanga - Rangia Line	35.72	
		Total	**66.19**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.65%**	

Note: Generation-Load Summary (MW) for August 09, 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	1,562.58	319.53	307.68	1,183.24	11.85
2	Eastern Grid	795.34	108.06	102.72	747.09	5.34
Total		**2,357.92**	**427.59**	**410.40**	**1,930.33**	**17.19**

Note: Generation-Load Summary for August 09, 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	1,520.00	286.46	280.36	1,160.84	6.10
2	Eastern Grid	659.83	59.62	56.90	672.91	2.72
Total		**2,179.83**	**346.08**	**337.26**	**1,833.75**	**8.82**

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.