BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date		
Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Date:	September 3, 2021
Hours:	19:00 Hours

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	185.01	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	186.32	400kV THP - Siliguri Line - II	350.00	+	
		Unit- III	185.57	400kV THP - Siliguri Line- IV	333.98	+	
		Unit- IV	186.02	400kV THP - Malbase Line - III	419.84	+	
		Unit- V	184.81	400kV Malbase - Siliguri Line	310.44	+	
		Unit- VI	186.15	-	-	-	
		Total	**1,113.88**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.903%**		
2	720MW MHP	Unit-I	197.83	400kV MHP - Jigmeling Line - I	391.44	+	400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby. (There is a MW power difference of 12MW between MHP fdr sending end and Jigmeling fdr receiving end)
		Unit-II	196.65	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.78	400kV MHP - Jigmeling Line - III	393.26	+	
		Unit-IV	196.74	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)	-11.40	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	194.89	+	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	294.74	+	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	294.74	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	40.50	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	40.70	+	
		-	-	220kV Tsirang - Jigmeling Line	92.06	+	
		-	-	132kV Gelephu - Salakati Line	30.84	+	
		Total	**789.00**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.545%**		
3	336MW CHP	Unit- I	91.43	220kV CHP - Birpara Line- I	101.72	+	
		Unit- II	91.24	220kV CHP - Birpara Line- II	101.80	+	
		Unit- III	91.60	220kV CHP - Malbase Line- III	116.06	+	
		Unit- IV	91.31	220kV CHP - Semtokha Line- IV	26.76	+	
		-	-	220kV Malbase - Birpara Line	77.78	+	
		-	-	66kV CHP - Chumdo Line	1.53	+	
		-	-	66kV CHP - Gedu Line	5.93	+	
		-	-	3x3MVA, 66/11kV TFR	1.30	+	
		Total	**365.58**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**2.867%**		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	83.11	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	11.60	+	
		Total	**24.50**	220kV BHP - Tsirang Line	-29.45	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	-11.82	-	
		Total	**41.80**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.226%**		
6	126MW DHP	Unit-I	63.57	220kV DHP - Tsirang Line	125.96	+	220kV DHP_Dagapela Line on standby.
		Unit-II	62.96	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.50	+	
		-	-	5MVA, 220/33kV TFR	0.28	+	
		Total	**126.53**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.229%**		
7	60MW KHP	Unit- I	16.58	132kV KHP - Nangkhor Line	35.90	+	
		Unit-II	16.49	132kV KHP - Kilikhar Line	29.14	+	
		Unit- III	16.54	5MVA, 132/11kV TFR	0.50	+	
		Unit- IV	16.52	132kV Motanga - Rangia Line	47.61	+	
		Total	**66.13**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.895%**		

Note: Generation-Load Summary (MW) for September 03, 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) at Generator end.
1	Western Grid	1,672.29	304.51	285.03	1,275.72	19.48
2	Eastern Grid	855.13	84.37	79.48	862.82	4.89
Total		**2,527.42**	**388.88**	**364.51**	**2,138.54**	**24.37**

Note: Generation-Load Summary for September 03, 2020 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
1	Western Grid	1,639.57	194.19	176.12	1,384.88	18.07
2	Eastern Grid	659.93	67.43	63.95	653.00	3.48
Total		**2,299.50**	**261.62**	**240.07**	**2,037.88**	**21.55**

NOTE-BHP and MHP data collected from site

1. The Instantaneous load balance is 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

Maximum Load/Demand till Date		
Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Date:	September 4, 2021
Hours:	09:00 Hours

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	185.27	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	185.41	400kV THP - Siliguri Line - II	363.93	+	
		Unit- III	185.42	400kV THP - Siliguri Line- IV	347.03	+	
		Unit- IV	186.59	400kV THP - Malbase Line - III	394.61	+	
		Unit- V	185.39	400kV Malbase - Siliguri Line	330.04	+	
		Unit- VI	185.81	-	-	-	
		Total	**1,113.89**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.747%**		
2	720MW MHP	Unit-I	197.78	400kV MHP - Jigmeling Line - I	391.44	+	400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I(Interim) on standby. (There is a MW power difference of 10MW between MHP fdr sending end and Jigmeling fdr receiving end)
		Unit-II	196.90	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.80	400kV MHP - Jigmeling Line - III	393.34	+	
		Unit-IV	196.90	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)	-42.90	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	202.16	+	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	307.63	+	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	307.63	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	26.40	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	26.60	+	
		-	-	220kV Tsirang - Jigmeling Line	97.30	+	
		-	-	132kV Gelephu - Salakati Line	24.73	+	
		Total	**789.38**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.583%**		
3	336MW CHP	Unit- I	90.96	220kV CHP - Birpara Line- I	98.80	+	
		Unit- II	91.32	220kV CHP - Birpara Line- II	98.66	+	
		Unit- III	92.16	220kV CHP - Malbase Line- III	137.03	+	
		Unit- IV	91.35	220kV CHP - Semtokha Line- IV	17.42	+	
		-	-	220kV Malbase - Birpara Line	55.20	+	
		-	-	66kV CHP - Chumdo Line	6.47	+	
		-	-	66kV CHP - Gedu Line	5.31	+	
		-	-	3x3MVA, 66/11kV TFR	0.76	+	
		Total	**365.79**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.366%**		
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Line	82.10	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	7.50	+	
		Total	**24.60**	220kV BHP - Tsirang Line	-24.94	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	-15.32	-	
		Total	**41.80**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.295%**		
6	126MW DHP	Unit-I	63.54	220kV DHP - Tsirang Line	126.25	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.20	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.90	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	**126.74**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.150%**		
7	60MW KHP	Unit- I	16.55	132kV KHP - Nangkhor Line	41.13	+	
		Unit-II	16.61	132kV KHP - Kilikhar Line	24.21	+	
		Unit- III	16.59	5MVA, 132/11kV TFR	0.25	+	
		Unit- IV	16.53	132kV Motanga - Rangia Line	38.07	+	
		Total	**66.28**	**Auxiliary Consumption & Transformation Losses at Generator end**	**1.041%**		

Note: Generation-Load Summary (MW) for September 04, 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) at Generator end.
1	Western Grid	1,672.82	281.86	272.05	1,293.66	9.81
2	Eastern Grid	855.66	72.74	67.45	880.22	5.29
Total		**2,528.48**	**354.60**	**339.50**	**2,173.88**	**15.10**

Note: Generation-Load Summary for September 04, 2020 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
1	Western Grid	1,512.12	167.80	151.41	1,264.00	16.39
2	Eastern Grid	704.95	27.97	39.52	757.30	-11.55
Total		**2,217.07**	**195.77**	**190.93**	**2,021.30**	**4.84**

NOTE-BHP and MHP data collected from site

1. The Instantaneous load balance is 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.