BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	September 10, 2021
Hours:	19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	184.75	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	185.62	400kV THP - Siliguri Line - II	352.62	+	
		Unit- III	185.62	400kV THP - Siliguri Line- IV	336.97	+	
		Unit- IV	185.13	400kV THP - Malbase Line - III	413.50	+	
		Unit- V	186.31	400kV Malbase - Siliguri Line	313.05	+	
		Unit- VI	185.37	-	-	-	
		Total	**1,112.80**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.873%**		
2	720MW MHP	Unit-I	197.90	400kV MHP - Jigmeling Line - I	390.87	+	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 MW power difference of 15.3 MW between Total MHP generation & outgoing feeder at JLG end)
		Unit-II	196.62	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.78	400kV MHP - Jigmeling Line - III	393.08	+	
		Unit-IV	196.72	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)	-12.10	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	195.60	+	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	294.75	+	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	294.75	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	40.70	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	40.80	+	
		-	-	220kV Tsirang - Jigmeling Line	96.62	+	
		-	-	132kV Gelephu - Salakati Line	31.15	+	
		Total	**789.02**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.643%**		
3	336MW CHP	Unit- I	92.02	220kV CHP - Birpara Line- I	105.21	+	
		Unit- II	91.42	220kV CHP - Birpara Line- II	105.01	+	
		Unit- III	91.39	220kV CHP - Malbase Line- III	112.32	+	
		Unit- IV	91.46	220kV CHP - Semtokha Line- IV	25.80	+	
		-	-	220kV Malbase - Birpara Line	85.01	+	
		-	-	66kV CHP - Chumdo Line	10.63	+	
		-	-	66kV CHP - Gedu Line	6.12	+	
		-	-	3x3MVA, 66/11kV TFR	1.30	+	
		Total	**366.29**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**-0.027%**		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	82.00	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	9.20	+	
		Total	**24.50**	220kV BHP - Tsirang Line	-26.08	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	14.06	+	
		Total	**41.80**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.437%**		
6	126MW DHP	Unit-I	63.57	220kV DHP - Tsirang Line	126.03	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.23	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.30	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	**126.80**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.371%**		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	56.42	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	8.75	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.48	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	44.62	+	
		Total	**66.00**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.530%**		

Note: Generation-Load Summary (MW) for September 10, 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	1,672.19	277.70	269.63	1,297.87	8.07
2	Eastern Grid	855.02	90.77	85.35	860.87	5.42
Total		**2,527.21**	**368.47**	**354.98**	**2,158.74**	**13.49**

Note: Generation-Load Summary for September 10, 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	1,654.75	203.86	188.88	1,358.89	14.98
2	Eastern Grid	832.45	67.51	64.27	856.94	3.24
Total		**2,487.20**	**271.37**	**253.15**	**2,215.83**	**18.22**

NOTE-BHP, JLG, KHP and MHPA 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 11, 2021
Hours:	09:00 Hours

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	185.28	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	185.90	400kV THP - Siliguri Line - II	362.88	+	
		Unit- III	185.20	400kV THP - Siliguri Line- IV	347.23	+	
		Unit- IV	185.51	400kV THP - Malbase Line - III	396.70	+	
		Unit- V	186.24	400kV Malbase - Siliguri Line	328.13	+	
		Unit- VI	185.29	-	-	-	
		Total	**1,113.42**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.594%**		
2	720MW MHP	Unit-I	197.75	400kV MHP - Jigmeling Line - I	391.05	+	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 MW power difference of 15.76MW between Total MHP generation & outgoing feeder at JLG end)
		Unit-II	196.62	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.78	400kV MHP - Jigmeling Line - III	393.41	+	
		Unit-IV	196.61	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)	-43.90	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	203.62	+	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	306.13	+	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	306.13	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	27.50	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	27.60	+	
		-	-	220kV Tsirang - Jigmeling Line	100.61	+	
		-	-	132kV Gelephu - Salakati Line	26.83	+	
		Total	**788.76**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.545%**		
3	336MW CHP	Unit- I	90.52	220kV CHP - Birpara Line- I	99.16	+	.
		Unit- II	91.51	220kV CHP - Birpara Line- II	99.25	+	
		Unit- III	90.88	220kV CHP - Malbase Line- III	131.49	+	
		Unit- IV	91.62	220kV CHP - Semtokha Line- IV	19.91	+	
		-	-	220kV Malbase - Birpara Line	60.80	+	
		-	-	66kV CHP - Chumdo Line	7.06	+	
		-	-	66kV CHP - Gedu Line	5.83	+	
		-	-	3x3MVA, 66/11kV TFR	0.80	+	
		Total	**364.53**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.283%**		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	81.10	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	6.09	+	
		Total	**24.50**	220kV BHP - Tsirang Line	-22.30	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	-17.09	-	
		Total	**41.80**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.799%**		
6	126MW DHP	Unit-I	63.64	220kV DHP - Tsirang Line	126.28	+	220kV DHP_Dagapela Line on standby.
		Unit-II	62.99	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.30	+	
		-	-	5MVA, 220/33kV TFR	0.34		
		Total	**126.63**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.008%**		
7	60MW KHP	Unit- I	16.66	132kV KHP - Nangkhor Line	61.20	+	
		Unit-II	16.55	132kV KHP - Kilikhar Line	4.17	+	
		Unit- III	16.49	5MVA, 132/11kV TFR	0.31	+	
		Unit- IV	16.57	132kV Motanga - Rangia Line	38.99	+	
		Total	**66.27**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.887%**		

Note: Generation-Load Summary (MW) for September 11, 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	1,670.88	272.82	265.94	1,297.45	6.88
2	Eastern Grid	855.03	73.94	69.05	881.70	4.89
Total		**2,525.91**	**346.76**	**334.99**	**2,179.15**	**11.77**

Note: Generation-Load Summary for September 11, 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	1,682.47	200.70	181.54	1,395.39	19.16
2	Eastern Grid	856.31	51.02	46.75	891.67	4.27
Total		**2,538.78**	**251.72**	**228.29**	**2,287.06**	**23.43**

NOTE-BHP and MHPA 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.

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