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 30, 2021**
Hours:	**19:00 Hours**

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	**1020MW THP**	Unit- I	166.51	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	168.84	400kV THP - Siliguri Line - II	258.64	+	
		Unit- III	118.91	400kV THP - Siliguri Line- IV	249.63	+	
		Unit- IV	129.27	400kV THP - Malbase Line - III	315.70	+	
		Unit- V	127.99	400kV Malbase - Siliguri Line	228.91	+	
		Unit- VI	119.24	-	-	-	
		Total	**830.76**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.817%**		
2	**720MW MHP**	Unit-I	135.23	400kV MHP - Jigmeling Line - I	236.22	+	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.
		Unit-II	135.84	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	135.24	400kV MHP - Jigmeling Line - III	237.60	+	
		Unit-IV	70.13	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)	53.14	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	103.99	+	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	163.01	+	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	162.54	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	27.48	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	27.84	+	
		-	-	220kV Tsirang - Jigmeling Line	3.84	+	
		-	-	132kV Gelephu - Salakati Line	16.85	+	
		Total	**476.44**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.550%**		
3	**336MW CHP**	Unit- I	91.40	220kV CHP - Birpara Line- I	105.86	+	220kV CHP_SEM line under shutdown.
		Unit- II	91.18	220kV CHP - Birpara Line- II	105.50	+	
		Unit- III	91.50	220kV CHP - Malbase Line- III	130.35	+	
		Unit- IV	91.26	220kV CHP - Semtokha Line- IV	0.00		
		-	-	220kV Malbase - Birpara Line	72.32	+	
		-	-	66kV CHP - Chumdo Line	17.10	+	
		-	-	66kV CHP - Gedu Line	5.26	+	
		-	-	3x3MVA, 66/11kV TFR	1.27	+	
		Total	**365.34**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.000%**		
4	**24MW BHP (U/S)**	Unit- I	11.60	220kV BHP - Semtokha Line	91.30	+	
		Unit- II	11.40	66kV BHP - Lobeysa Line	31.01	+	
		Total	**23.00**	220kV BHP - Tsirang Line	-61.16	-	
5	**40MW BHP (L/S)**	Unit- I	20.00	5MVA, 66/11kV TFR	0.91	+	
		Unit- II	20.10	30MVA ICT, 220/66kV (HV)	10.27	+	
		Total	**40.10**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**1.648%**		
6	**126MW DHP**	Unit-I	45.38	220kV DHP - Tsirang Line	68.88	+	220kV DHP_Dagapela Line on standby.
		Unit-II	23.98	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.58	+	
		-	-	5MVA, 220/33kV TFR	0.47	+	
		Total	**69.36**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**0.014%**		
7	**60MW KHP**	Unit- I	16.56	132kV KHP - Nangkhor Line	56.38	+	
		Unit-II	16.53	132kV KHP - Kilikhar Line	8.56	+	
		Unit- III	16.55	5MVA, 132/11kV TFR	0.48	+	
		Unit- IV	16.56	132kV Motanga - Rangia Line	49.16	+	
		Total	**66.20**	**Auxiliary Consumption & Transformation Losses at Gen. end**	**1.183%**		

Note: Generation-Load Summary (MW) for September 30, 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**	1,328.56	303.86	298.60	1,020.86	5.26
2	**Eastern Grid**	542.64	50.93	47.53	495.55	3.40
Total		**1,871.20**	**354.79**	**346.13**	**1,516.41**	**8.66**

Note: Generation-Load Summary for September 30, 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**	1,674.89	198.31	180.87	1,378.64	17.44
2	**Eastern Grid**	612.80	68.07	63.68	642.67	4.39
Total		**2,287.69**	**266.38**	**244.55**	**2,021.31**	**21.83**

NOTE-BHP, JLG 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:	October 1, 2021
Hours:	09:00 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	165.83	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	117.51	400kV THP - Siliguri Line - II	261.78	+	
		Unit- III	148.82	400kV THP - Siliguri Line- IV	250.15	+	
		Unit- IV	129.22	400kV THP - Malbase Line - III	289.71	+	
		Unit- V	127.09	400kV Malbase - Siliguri Line	236.80	+	
		Unit- VI	118.91	-	-	-	
		Total	**807.38**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.711%**		
2	720MW MHP	Unit-I	135.04	400kV MHP - Jigmeling Line - I	234.13	+	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.
		Unit-II	130.16	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	135.84	400kV MHP - Jigmeling Line - III	235.45	+	
		Unit-IV	70.13	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)	16.04	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	109.81	+	
		-	-	400kV Jigmeling - Alipurduar Line - I **(Direct)**	168.72	+	
		-	-	400kV Jigmeling - Alipurduar Line - II **(Direct)**	167.62	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	16.20	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	16.45	+	
		-	-	220kV Tsirang - Jigmeling Line	18.58	+	
		-	-	132kV Gelephu - Salakati Line	12.01	+	
		Total	**471.17**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.337%**		
3	336MW CHP	Unit- I	91.40	220kV CHP - Birpara Line- I	97.48	+	220kV CHP_SEM line under shutdown.
		Unit- II	91.18	220kV CHP - Birpara Line- II	97.86	+	
		Unit- III	91.50	220kV CHP - Malbase Line- III	150.01	+	
		Unit- IV	91.26	220kV CHP - Semtokha Line- IV	0.00		
		-	-	220kV Malbase - Birpara Line	45.36	+	
		-	-	66kV CHP - Chumdo Line	12.75	+	
		-	-	66kV CHP - Gedu Line	5.70	+	
		-	-	3x3MVA, 66/11kV TFR	0.66	+	
		Total	**365.34**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.241%**		
4	24MW BHP (U/S)	Unit- I	11.50	220kV BHP - Semtokha Line	80.02	+	
		Unit- II	11.30	66kV BHP - Lobeysa Line	26.50	+	
		Total	**22.80**	220kV BHP - Tsirang Line	-45.00	-	
5	40MW BHP (L/S)	Unit- I	20.00	5MVA, 66/11kV TFR	0.85	+	
		Unit- II	20.00	30MVA ICT, 220/66kV (HV)	7.11	+	
		Total	**40.00**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.685%**		
6	126MW DHP	Unit-I	44.35	220kV DHP - Tsirang Line	67.88	+	220kV DHP_Dagapela Line on standby.
		Unit-II	23.98	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.77	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	**68.33**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.220%**		
7	60MW KHP	Unit- I	16.51	132kV KHP - Nangkhor Line	60.63	+	
		Unit-II	16.55	132kV KHP - Kilikhar Line	4.55	+	
		Unit- III	16.57	5MVA, 132/11kV TFR	0.36	+	
		Unit- IV	16.56	132kV Motanga - Rangia Line	43.76	+	
		Total	**66.19**	**Auxiliary Consumption & Transformation Losses at Generator end**	**0.976%**		

Note: Generation-Load Summary (MW) for October 01, 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	1,303.85	295.84	290.41	989.43	5.43
2	Eastern Grid	537.36	54.02	51.78	501.92	2.24
Total		**1,841.21**	**349.86**	**342.19**	**1,491.35**	**7.67**

Note: Generation-Load Summary for October 01, 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	1,674.05	177.94	159.02	1,496.11	18.92
2	Eastern Grid	626.75	49.09	45.26	577.66	3.83
Total		**2,300.80**	**227.03**	**204.28**	**2,073.77**	**22.75**

NOTE-BHP & 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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