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, 2020**
Hours:	**19:00 Hours**

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	**1020MW THP**	Unit- I	186.86	400kV THP - Siliguri Fdr- I	220.13	+	
		Unit- II	189.41	400kV THP - Siliguri Fdr- II	218.64	+	
		Unit- III	140.80	400kV THP - Siliguri Fdr- IV	214.00	+	
		Unit- IV	141.20	400kV THP - Malbase Fdr- III	277.75	+	
		Unit- V	148.29	400kV Malbase - Siliguri	194.31	+	
		Unit- VI	139.79	-	-	-	
		Total	**946.35**	**Error at Station/Auxiliary Consumption/Losses**	**1.673%**		
2	**720MW MHP**	Unit-I	135.15	400kV MHP - Jigmeling Fdr - I	185.81	+	400kV MHP-JLG II Breakdown
		Unit-II	140.14	400kV MHP - Jigmeling Fdr - II	0.00	+	
		Unit-III	135.71	400kV MHP - Jigmeling Fdr - III	192.00		
		Unit-IV	160.58	400kV MHP - Jigmeling Fdr - IV	192.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	**571.58**	**Error at Station/Auxiliary Consumption/Losses**	**0.310%**		
3	**336MW CHP**	Unit- I	91.17	220kV CHP - Birpara Fdr- I	119.35	+	
		Unit- II	91.53	220kV CHP - Birpara Fdr- II	119.35	+	
		Unit- III	91.24	220kV CHP - Malbase Fdr- III	128.06	+	
		Unit- IV	91.78	220kV CHP - Semtokha Fdr- IV	-15.09	-	
		-	-	220kV Malbase - Birpara Fdr.	98.85	+	
		-	-	66kV CHP - Chumdo Fdr.	5.98	+	
		-	-	66kV CHP - Gedu Fdr.	5.77	+	
		-	-	3x3MVA, 66/11kV TFR	1.70	+	
		Total	**365.72**	**Error at Station/Auxiliary Consumption/Losses**	**0.164%**		
4	**24MW BHP (U/S)**	Unit- I	11.68	220kV BHP - Semtokha Fdr.	43.80	+	
		Unit- II	11.68	66kV BHP - Lobeysa Fdr.	17.25	+	
		Total	**23.36**	220kV BHP - Tsirang Fdr.	2.19	-	
	40MW BHP (L/S)	Unit- I	20.11	5MVA, 66/11kV TFR	0.58	+	
		Unit- II	20.43	30MVA ICT, 220/66kV			
		Total	**40.54**	**Error at Station/Auxiliary Consumption/Losses**	**0.125%**		
5	**126MW DHPC**	Unit-I	45.32	220kV DHPC - Tsirang Fdr.	88.21	+	
		Unit-II	45.34	220kV Jigmeling - Dagapela Fdr.	2.30	+	
		-	-	5MVA, 220/33kV TFR			
		Total	**90.66**	**Error at Station/Auxiliary Consumption/Losses**	**2.702%**		
6	**60MW KHP**	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	37.04	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	27.11	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	42.48	+	
		-	-	132kV Motanga - Rangia Fdr.	53.00	+	
		-	-	220kV Tsirang - Jigmeling	90.23	+	
		Total	**66.00**	**Error at Station/Auxiliary Consumption/Losses**	**2.348%**		

Note: Generation-Load Summary for September 04, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	**Western Grid**	1,466.63	191.77	175.11	1,184.63	16.66
2	**Eastern Grid**	637.58	62.52	59.20	665.29	3.32
	Total	**2,104.21**	**254.29**	**234.31**	**1,849.92**	**19.98**

Note: Generation-Load Summary for September 04, 2019 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	**Western Grid**	**1,511.99**	264.47	246.10	**1167.75**	18.37
2	**Eastern Grid**	**638.75**	75.41	65.83	**643.11**	9.58
	Total	**2,150.74**	**339.88**	**311.93**	**1,810.86**	**27.95**

NOTES: KHP,MHP load 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 5, 2020**
Hours:	**09:00 Hours**

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	**1020MW THP**	Unit- I	187.48	400kV THP - Siliguri Fdr- I	238.86	+	
		Unit- II	147.87	400kV THP - Siliguri Fdr- II	237.46	+	
		Unit- III	170.52	400kV THP - Siliguri Fdr- IV	232.54	+	
		Unit- IV	170.09	400kV THP - Malbase Fdr- III	289.29	+	
		Unit- V	168.26	400kV Malbase - Siliguri	212.64	+	
		Unit- VI	168.25	-	-	-	
		Total	**1,012.47**	**Error at Station/Auxiliary Consumption/Losses**	**1.414%**		
2	**720MW MHP**	Unit-I	197.73	400kV MHP - Jigmeling Fdr - I	251.33	+	400kV MHP-JLG II Breakdown.
		Unit-II	196.89	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	170.76	400kV MHP - Jigmeling Fdr - III	260.25	+	
		Unit-IV	190.27	400kV MHP - Jigmeling Fdr - IV	260.33	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	**755.65**	**Error at Station/Auxiliary Consumption/Losses**	**-2.152%**		
3	**336MW CHP**	Unit- I	0.00	220kV CHP - Birpara Fdr- I	145.47	+	Unit I under shutdown
		Unit- II	87.52	220kV CHP - Birpara Fdr- II	0.00	+	
		Unit- III	91.85	220kV CHP - Malbase Fdr- III	157.44	+	
		Unit- IV	88.61	220kV CHP - Semtokha Fdr- IV	-42.14	-	
		-	-	220kV Malbase - Birpara Fdr.	110.79	+	
		-	-	66kV CHP - Chumdo Fdr.	0.70	+	
		-	-	66kV CHP - Gedu Fdr.	5.09	+	
		-	-	3x3MVA, 66/11kV TFR	0.75	+	
		Total	**267.98**	**Error at Station/Auxiliary Consumption/Losses**	**0.250%**		
4	**24MW BHP (U/S)**	Unit- I	11.86	220kV BHP - Semtokha Fdr.	60.05	+	
		Unit- II	11.86	66kV BHP - Lobeysa Fdr.	15.28	+	
		Total	**23.72**	220kV BHP - Tsirang Fdr.	-10.62	-	
	40MW BHP (L/S)	Unit- I	20.47	5MVA, 66/11kV TFR	0.43	+	
		Unit- II	20.75	30MVA ICT, 220/66kV			
		Total	**41.22**	**Error at Station/Auxiliary Consumption/Losses**	**-0.485%**		
5	**126MW DHPC**	Unit-I	51.33	220kV DHPC - Tsirang Fdr.	102.05	+	
		Unit-II	51.30	220kV Jigmeling - Dagapela Fdr.	1.40	+	
		-	-	5MVA, 220/33kV TFR			
		Total	**102.63**	**Error at Station/Auxiliary Consumption/Losses**	**0.565%**		
6	**60MW KHP**	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	41.84	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	22.88	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	47.77	+	
		-	-	132kV Motanga - Rangia Fdr.	42.32	+	
		-	-	220kV Tsirang - Jigmeling	88.60	+	
		Total	**66.00**	**Error at Station/Auxiliary Consumption/Losses**	**1.485%**		

Note: Generation-Load summary for September 05, 2020 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	**Western Grid**	1,448.02	181.66	167.69	1,177.76	13.97
2	**Eastern Grid**	821.65	48.25	63.53	862.00	-15.28
	Total	**2,269.67**	**229.91**	**231.22**	**2,039.76**	**-1.31**

Note: Generation-Load Summary for September 05, 2019 at 09:00hrs

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	**Western Grid**	1524.41	232.89	216.75	1,223.63	16.14
2	**Eastern Grid**	638.34	53.40	57.91	652.83	-4.51
	Total	**2,162.75**	**286.29**	**274.66**	**1,876.46**	**11.63**

NOTES: KHP,MHP load 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.