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:	**January 21, 2021**
Hours:	**19:00 Hours**

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	**1020MW THP**	Unit- I	69.11	400kV THP - Siliguri Fdr- I	0.00		Unit-III on standby. Unit-IV, V &VI under shutdown. 400kV THP-SIL Fdr I on Standby.400kV THP-SIL Fdr II under AMP.
		Unit- II	108.13	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	48.61	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	125.25	+	
		Unit- V	0.00	400kV Malbase - Siliguri	33.00	+	
		Unit- VI	0.00	-	-	-	
		Total	**177.24**	**Error at Station/Auxiliary Consumption/Losses**	**1.907%**		
2	**720MW MHP**	Unit-I	116.23	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II under maintenance. Unit-III under breakdown.Unit-IV on standby.400kV MHP-JLG Fdr I,III & IV on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	115.79	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	**116.23**	**Error at Station/Auxiliary Consumption/Losses**	**0.379%**		
3	**336MW CHP**	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-6.69	-	Unit-I under Annual Maintenance Unit-III on standby.
		Unit- II	39.25	220kV CHP - Birpara Fdr- II	-6.22	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	23.71	+	
		Unit- IV	50.95	220kV CHP - Semtokha Fdr- IV	50.47	+	
		-	-	220kV Malbase - Birpara Fdr.	-31.00	-	
		-	-	66kV CHP - Chumdo Fdr.	23.13	+	
		-	-	66kV CHP - Gedu Fdr.	2.03	+	
		-	-	3x3MVA, 66/11kV TFR	1.70	+	
		Total	**90.20**	**Error at Station/Auxiliary Consumption/Losses**	**2.295%**		
4	**24MW BHP (U/S)**	Unit- I	0.00	220kV BHP - Semtokha Fdr.	11.82	+	U/S Unit-I & L/S Unit-I under AMP.
		Unit- II	6.96	66kV BHP - Lobeysa Fdr.	15.91	+	
		Total	**6.96**	220kV BHP - Tsirang Fdr.	-7.38	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.95	+	
		Unit- II	14.32	30MVA ICT, 220/66kV			
		Total	**14.32**	**Error at Station/Auxiliary Consumption/Losses**	**-0.094%**		
5	**126MW DHPC**	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	22.56	+	Unit-I on standby.
		Unit-II	22.82	220kV Jigmeling - Dagapela Fdr.	2.80	+	
		-	-	5MVA, 220/33kV TFR			
		Total	**22.82**	**Error at Station/Auxiliary Consumption/Losses**	**1.139%**		
6	**60MW KHP**	Unit- I	11.96	132kV KHP - Nangkhor Fdr- I	8.98	+	Unit-IV on standby. Unit-II under Annual Maintenance.
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	13.50	+	
		Unit- III	11.12	5MVA, 132/11kV TFR	0.18	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-26.19	-	
		-	-	132kV Motanga - Rangia Fdr.	-9.25	-	
		-	-	220kV Tsirang - Jigmeling	12.28	+	
		Total	**23.08**	**Error at Station/Auxiliary Consumption/Losses**	**1.828%**		

Note: Generation-Load Summary for January 21, 2021 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**	311.54	261.56	258.67	37.70	2.89
2	**Eastern Grid**	139.31	71.24	70.38	80.35	0.86
Total		**450.85**	**332.80**	**329.05**	**118.05**	**3.75**

Note: Generation-Load Summary for January 21, 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**	376.24	273.09	264.40	**264.4**	8.69
2	**Eastern Grid**	120.49	63.04	60.35	**60.35**	2.69
Total		**496.73**	**336.13**	**324.75**	**324.75**	**11.38**

NOTE- KHP,MHP,Motanga & MAL 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:	**January 22, 2021**
Hours:	**09:00 Hours**

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	**1020MW THP**	Unit- I	69.17	400kV THP - Siliguri Fdr- I	0.00		Unit-III on standby.Unit-IV,V &VI under shutdown. 400kV THP-SIL Fdr I on Standby.400kV THP-SIL Fdr II under AMP.
		Unit- II	110.60	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	50.00	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	122.00	+	
		Unit- V	0.00	400kV Malbase - Siliguri	38.00	+	
		Unit- VI	0.00	-	-	-	
		Total	**179.77**	**Error at Station/Auxiliary Consumption/Losses**	**4.322%**		
2	**720MW MHP**	Unit-I	118.14	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II under maintenance. Unit-III under breakdown.Unit IV on standby.400kV MHP-JLG Fdr I,III & IV on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	117.74	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	**118.14**	**Error at Station/Auxiliary Consumption/Losses**	**0.339%**		
3	**336MW CHP**	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.40	+	Unit-I under Annual Maintenance Unit-III on standby.
		Unit- II	39.37	220kV CHP - Birpara Fdr- II	0.40	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	41.60	+	
		Unit- IV	51.30	220kV CHP - Semtokha Fdr- IV	25.00	+	
		-	-	220kV Malbase - Birpara Fdr.	-31.00	-	
		-	-	66kV CHP - Chumdo Fdr.	16.10	+	
		-	-	66kV CHP - Gedu Fdr.	2.70	+	
		-	-	3x3MVA, 66/11kV TFR	1.53	+	
		Total	**90.67**	**Error at Station/Auxiliary Consumption/Losses**	**3.243%**		
4	**24MW BHP (U/S)**	Unit- I	0.00	220kV BHP - Semtokha Fdr.	13.20	+	U/S Unit-I & L/S Unit-I under AMP.
		Unit- II	6.90	66kV BHP - Lobeysa Fdr.	11.20	+	
		Total	**6.90**	220kV BHP - Tsirang Fdr.	-4.50	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	14.30	30MVA ICT, 220/66kV			
		Total	**14.30**	**Error at Station/Auxiliary Consumption/Losses**	**1.887%**		
5	**126MW DHPC**	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	22.40	+	Unit-I on standby.
		Unit-II	22.70	220kV Jigmeling - Dagapela Fdr.	1.70	+	
		-	-	5MVA, 220/33kV TFR			
		Total	**22.70**	**Error at Station/Auxiliary Consumption/Losses**	**1.322%**		
6	**60MW KHP**	Unit- I	0.00	132kV KHP - Nangkhor Fdr- I	10.31	+	Unit-I on standby. Unit-II under Annual Maintenance.
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	10.13	+	
		Unit- III	10.58	5MVA, 132/11kV TFR	0.44	+	
		Unit- IV	10.54	132kV Gelephu - Salakati Fdr.	-15.05	-	
		-	-	132kV Motanga - Rangia Fdr.	-8.03	-	
		-	-	220kV Tsirang - Jigmeling	12.57	+	
		Total	**21.12**	**Error at Station/Auxiliary Consumption/Losses**	**1.136%**		

Note: Generation-Load summary for January 22, 2021 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**	314.34	243.97	234.26	57.80	9.71
2	**Eastern Grid**	139.26	57.17	56.53	94.66	0.64
Total		**453.60**	**301.14**	**290.79**	**152.46**	**10.35**

Note: Generation-Load Summary for January 22, 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**	257.74	230.61	226.95	**226.95**	3.66
2	**Eastern Grid**	115.07	48.78	48.35	**48.35**	0.43
Total		**372.81**	**279.39**	**275.30**	**275.30**	**4.09**

NOTE: MAL & Eastern loads 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.