BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 2, 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	158.01	400kV THP - Siliguri Line - I	132.33	+	Unit-V on standby.
		Unit- II	149.41	400kV THP - Siliguri Line - II	130.78	+	
		Unit- III	90.32	400kV THP - Siliguri Line- IV	127.61	+	
		Unit- IV	100.34	400kV THP - Malbase Line - III	178.16	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	113.88	+	
		Unit- VI	80.40	-	-	-	
		Total	**578.48**	**Error at Station/Auxiliary Consumption/Losses**	**1.660%**		
2	720MW MHP	Unit-I	150.27	400kV MHP - Jigmeling Line - I	0.00		Unit-III under breakdown. 400kV MHP-JLG Line I & III on standby. 132kV MHP_Yurmoo line I & II not in service. 400/220kV ICT at JLG ideal charge.
		Unit-II	149.92	400kV MHP - Jigmeling Line - II	228.66	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	160.21	400kV MHP - Jigmeling Line - IV	229.14	+	
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	226.40	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	224.70	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	20.70	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	20.80	+	
		-	-	220kV Tsirang - Jigmeling Line	43.31	+	
				132kV Gelephu - Salakati Line	7.20	+	
		Total	**460.40**	**Error at Station/Auxiliary Consumption/Losses**	**0.565%**		
3	336MW CHP	Unit- I	69.51	220kV CHP - Birpara Line- I	62.88	+	
		Unit- II	71.57	220kV CHP - Birpara Line- II	62.78	+	
		Unit- III	77.98	220kV CHP - Malbase Line- III	98.60	+	
		Unit- IV	75.49	220kV CHP - Semtokha Line- IV	56.65	+	
		-	-	220kV Malbase - Birpara Line	26.01	+	
		-	-	66kV CHP - Chumdo Line	8.76	+	
		-	-	66kV CHP - Gedu Line	2.40	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
		Total	**294.55**	**Error at Station/Auxiliary Consumption/Losses**	**0.435%**		
4	24MW BHP (U/S)	Unit- I	3.70	220kV BHP - Semtokha Line	-19.90	-	
		Unit- II	3.60	66kV BHP - Lobeysa Line	27.32	+	
		Total	**7.30**	220kV BHP - Tsirang Line	14.50	+	
	40MW BHP (L/S)	Unit- I	7.90	5MVA, 66/11kV TFR	0.98	+	
		Unit- II	8.10	30MVA ICT, 220/66kV (HV)	21.00	+	
		Total	**16.00**	**Error at Station/Auxiliary Consumption/Losses**	**1.717%**		
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	31.27	+	Unit-I under shutdown. 220kV DHP_Dagapela Line on standby.
		Unit-II	31.50	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.70	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		Total	**31.50**	**Error at Station/Auxiliary Consumption/Losses**	**0.095%**		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	38.97	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	26.12	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	34.77	+	
		Total	**66.00**	**Error at Station/Auxiliary Consumption/Losses**	**0.970%**		

Note: Generation-Load Summary (MW) for June 02, 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	927.83	228.25	218.64	656.27	9.61
2	Eastern Grid	526.40	76.64	73.40	493.07	3.24
Total		**1,454.23**	**304.89**	**292.04**	**1,149.34**	**12.85**

Note: Generation-Load Summary for June 02, 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	984.94	219.96	206.46	726.19	13.50
2	Eastern Grid	656.93	65.63	55.03	629.90	10.60
Total		**1,641.87**	**285.59**	**261.49**	**1,356.09**	**24.10**

NOTE-BHP & MHP data collected 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:	June 3, 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	157.97	400kV THP - Siliguri Line - I	155.63	+	Unit-V under standby.
		Unit- II	147.79	400kV THP - Siliguri Line - II	154.65	+	
		Unit- III	170.50	400kV THP - Siliguri Line- IV	151.60	+	
		Unit- IV	100.64	400kV THP - Malbase Line - III	183.98	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	140.99	+	
		Unit- VI	80.99	-	-	-	
		Total	**657.89**	**Error at Station/Auxiliary Consumption/Losses**	**1.829%**		
2	720MW MHP	Unit-I	170.33	400kV MHP - Jigmeling Line - I	0.00		Unit-III under breakdown. 400kV MHP-JLG Line I & III on standby. 132kV MHP_Yurmoo line I & II not in service. 400/220kV ICT at JLG ideal charge.
		Unit-II	140.14	400kV MHP - Jigmeling Line - II	238.86	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	170.57	400kV MHP - Jigmeling Line - IV	239.26	+	
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - I	234.20	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	236.90	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	23.10	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	23.00	+	
				220kV Tsirang - Jigmeling Line	47.30	+	
				132kV Gelephu - Salakati Line	20.80	+	
		Total	**481.04**	**Error at Station/Auxiliary Consumption/Losses**	**0.607%**		
3	336MW CHP	Unit- I	83.33	220kV CHP - Birpara Line- I	78.74	+	
		Unit- II	77.58	220kV CHP - Birpara Line- II	78.63	+	
		Unit- III	83.69	220kV CHP - Malbase Line- III	136.33	+	
		Unit- IV	79.50	220kV CHP - Semtokha Line- IV	23.33	+	
		-	-	220kV Malbase - Birpara Line	20.57	+	
		-	-	66kV CHP - Chumdo Line	5.52	+	
		-	-	66kV CHP - Gedu Line	3.37	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
		Total	**324.10**	**Error at Station/Auxiliary Consumption/Losses**	**-0.778%**		
4	24MW BHP (U/S)	Unit- I	6.40	220kV BHP - Semtokha Line	5.24	+	
		Unit- II	6.20	66kV BHP - Lobeysa Line	30.27	+	
		Total	**12.60**	220kV BHP - Tsirang Line	5.79	+	
	40MW BHP (L/S)	Unit- I	14.40	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	14.30	30MVA ICT, 220/66kV (HV)	17.67	+	
		Total	**28.70**	**Error at Station/Auxiliary Consumption/Losses**	**-2.179%**		
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	42.80	+	Unit-I under shutdown..220kV DHP_Dagapela Line on standby.
		Unit-II	43.07	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.25	+	
		Total	**43.07**	**Error at Station/Auxiliary Consumption/Losses**	**0.046%**		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	41.29	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	23.89	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.29	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	38.79	+	
		Total	**66.00**	**Error at Station/Auxiliary Consumption/Losses**	**0.803%**		

Note: Generation-Load Summary (MW) for June 03, 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	1,066.36	238.25	230.62	780.81	7.63
2	Eastern Grid	547.04	63.65	60.20	530.69	3.45
Total		**1,613.40**	**301.90**	**290.82**	**1,311.50**	**11.08**

Note: Generation-Load Summary for June 03, 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	931.26	192.47	184.06	701.15	8.41
2	Eastern Grid	656.97	37.03	34.74	657.31	2.29
Total		**1,588.23**	**229.50**	**218.80**	**1,358.46**	**10.70**

NOTE-BHP & MHP data collected 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.