

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 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	99.91	400kV THP - Siliguri Line - I	0.00		Unit-V on standby. 400kV THP-Siliguri Line I under maintenance
		Unit- II	100.46	400kV THP - Siliguri Line - II	181.66	+	
		Unit- III	150.04	400kV THP - Siliguri Line- IV	173.14	+	
		Unit- IV	140.17	400kV THP - Malbase Line - III	227.62	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	159.76	+	
		Unit- VI	100.88	-	-	-	
		Total	591.46	Error at Station/Auxiliary Consumption/Losses		1.528%	
2	720MW MHP	Unit-I	197.80	400kV MHP - Jigmeling Line - I	195.89	+	Unit-III on breakdown. Unit-IV Emergency shutdown. 400kV MHP_JLG line II and IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400/220kV ICT at JLG opened.
		Unit-II	197.82	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	197.11	+	
		Unit-IV	0.00	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)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	194.40	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	192.70	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	22.10	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	22.00	+	
		-	-	220kV Tsirang - Jigmeling Line	45.32	+	
		-	-	132kV Gelephu - Salakati Line	11.29	+	
Total	395.62	Error at Station/Auxiliary Consumption/Losses		0.662%			
3	336MW CHP	Unit- I	80.86	220kV CHP - Birpara Line- I	70.41	+	
		Unit- II	80.58	220kV CHP - Birpara Line- II	70.47	+	
		Unit- III	74.82	220kV CHP - Malbase Line- III	107.48	+	
		Unit- IV	77.08	220kV CHP - Semtokha Line- IV	51.12	+	
		-	-	220kV Malbase - Birpara Line	31.57	+	
		-	-	66kV CHP - Chumdo Line	8.52	+	
		-	-	66kV CHP - Gedu Line	1.92	+	
		-	-	3x3MVA, 66/11kV TFR	1.08	+	
Total	313.34	Error at Station/Auxiliary Consumption/Losses		0.747%			
4	24MW BHP (U/S)	Unit- I	4.20	220kV BHP - Semtokha Line	0.00		220kV BHP-SEM line under shutdown.
		Unit- II	4.20	66kV BHP - Lobeyasa Line	17.90	+	
		Total	8.40	220kV BHP - Tsirang Line	8.98	+	
	40MW BHP (L/S)	Unit- I	9.90	5MVA, 66/11kV TFR	0.85	+	
		Unit- II	9.80	30MVA ICT, 220/66kV (HV)	10.00	+	
Total	19.70	Error at Station/Auxiliary Consumption/Losses		1.317%			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	38.79	+	Unit-I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	38.98	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.30	+	
		-	-	5MVA, 220/33kV TFR	0.40	+	
		Total	38.98	Error at Station/Auxiliary Consumption/Losses		-0.539%	
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	39.42	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	25.70	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.25	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	42.63	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses		0.955%	

Note: Generation-Load Summary (MW) for June 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)	Load Balance (MW)
1	Western Grid	971.88	239.55	229.31	687.01	10.24
2	Eastern Grid	461.62	65.92	62.67	441.02	3.25
Total		1,433.50	305.47	291.98	1,128.03	13.49

Note: Generation-Load Summary for June 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)	Load Balance (MW)
1	Western Grid	1,142.93	211.57	196.37	883.52	15.20
2	Eastern Grid	659.21	45.18	40.66	661.87	4.52
Total		1,802.14	256.75	237.03	1,545.39	19.72

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 11, 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	99.79	400kV THP - Siliguri Line - I	0.00		Unit-V on standby. 400kV THP-Siliguri Line I under maintenance.
		Unit- II	139.47	400kV THP - Siliguri Line - II	212.14	+	
		Unit- III	149.82	400kV THP - Siliguri Line- IV	203.31	+	
		Unit- IV	140.40	400kV THP - Malbase Line - III	251.81	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	189.51	+	
		Unit- VI	149.97	-	-	-	
		Total	679.45	Error at Station/Auxiliary Consumption/Losses		1.794%	
2	720MW MHP	Unit-I	197.65	400kV MHP - Jigmeling Line - I	294.14	+	Unit-III on breakdown 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400/220kV ICT at JLG opened.
		Unit-II	197.29	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.94	+	
		Unit-IV	197.73	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)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	290.20	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	292.00	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	16.70	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	16.70	+	
		-	-	220kV Tsirang - Jigmeling Line	34.00	+	
		-	-	132kV Gelephu - Salakati Line	15.82	+	
Total	592.67	Error at Station/Auxiliary Consumption/Losses		0.437%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	59.73	+	CHP Unit I under shutdown.
		Unit- II	90.62	220kV CHP - Birpara Line- II	59.48	+	
		Unit- III	86.91	220kV CHP - Malbase Line- III	100.69	+	
		Unit- IV	91.91	220kV CHP - Semtokha Line- IV	40.77	+	
		-	-	220kV Malbase - Birpara Line	19.74	+	
		-	-	66kV CHP - Chumdo Line	5.89	+	
		-	-	66kV CHP - Gedu Line	2.17	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
Total	269.44	Error at Station/Auxiliary Consumption/Losses		0.004%			
4	24MW BHP (U/S)	Unit- I	4.10	220kV BHP - Semtokha Line	0.00		220kV BHP_SEM line under shutdown.
		Unit- II	4.10	66kV BHP - Lobeyasa Line	18.40	+	
		Total	8.20	220kV BHP - Tsirang Line	5.65	+	
	40MW BHP (L/S)	Unit- I	8.40	5MVA, 66/11kV TFR	0.87	+	
		Unit- II	8.40	30MVA ICT, 220/66kV (HV)	10.92	+	
Total	16.80	Error at Station/Auxiliary Consumption/Losses		0.320%			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	31.77	+	220kV DHP_Dagapela Line on standby.
		Unit-II	31.95	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.60	+	
		-	-	5MVA, 220/33kV TFR	0.17	+	
		Total	31.95	Error at Station/Auxiliary Consumption/Losses		0.031%	
6	60MW KHP	Unit- I	16.54	132kV KHP - Nangkhor Line	43.45	+	
		Unit-II	16.58	132kV KHP - Kilikhar Line	21.86	+	
		Unit- III	16.56	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	16.53	132kV Motanga - Rangia Line	31.53	+	
		Total	66.21	Error at Station/Auxiliary Consumption/Losses		0.936%	

Note: Generation-Load Summary (MW) for June 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)	Load Balance (MW)
1	Western Grid	1,005.84	227.93	216.24	743.91	11.69
2	Eastern Grid	658.88	63.33	60.12	629.55	3.21
Total		1,664.72	291.26	276.36	1,373.46	14.90

Note: Generation-Load Summary for June 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)	Load Balance (MW)
1	Western Grid	1,042.06	194.97	180.87	804.94	14.10
2	Eastern Grid	657.31	33.49	28.85	665.97	4.64
Total		1,699.37	228.46	209.72	1,470.91	18.74

NOTE-BHP & MHP collected site

- 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:
 - 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.
 - The clocks of all the locations are not synchronized.
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