

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 12, 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	185.24	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance
		Unit- II	186.53	400kV THP - Siliguri Line - II	328.53	+	
		Unit- III	99.23	400kV THP - Siliguri Line- IV	312.56	+	
		Unit- IV	187.35	400kV THP - Malbase Line - III	372.73	+	
		Unit- V	186.46	400kV Malbase - Siliguri Line	295.51	+	
		Unit- VI	186.15	-	-	-	
		Total	1,030.96	Error at Station/Auxiliary Consumption/Losses	1.663%		
2	720MW MHP	Unit-I	197.79	400kV MHP - Jigmeling Line - I	294.10	+	Unit-III on breakdown. 400kV MHP_JLG line II and IV on standby. 132kV MHP_Yurmo line I & II not in service.
		Unit-II	197.92	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.55	+	
		Unit-IV	197.32	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)	-63.34	-	
		-	-	400kV Jigmeling - Alipurduar Line - I	321.55		
		-	-	400kV Jigmeling - Alipurduar Line - II	322.15	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	48.15	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	48.22	+	
		-	-	220kV Tsirang - Jigmeling Line	162.30	+	
		-	-	132kV Gelephu - Salakati Line	44.94	+	
Total	593.03	Error at Station/Auxiliary Consumption/Losses	0.570%				
3	336MW CHP	Unit- I	91.92	220kV CHP - Birpara Line- I	91.53	+	
		Unit- II	90.96	220kV CHP - Birpara Line- II	91.41	+	
		Unit- III	90.45	220kV CHP - Malbase Line- III	127.26	+	
		Unit- IV	91.24	220kV CHP - Semtokha Line- IV	42.91	+	
		-	-	220kV Malbase - Birpara Line	50.17	+	
		-	-	66kV CHP - Chumdo Line	7.17	+	
		-	-	66kV CHP - Gedu Line	2.37	+	
		-	-	3x3MVA, 66/11kV TFR	1.13	+	
Total	364.57	Error at Station/Auxiliary Consumption/Losses	0.217%				
4	24MW BHP (U/S)	Unit- I	12.00	220kV BHP - Semtokha Line	0.00		220kV BHP-SEM line under shutdown.
		Unit- II	12.00	66kV BHP - Lobeyasa Line	22.40	+	
		Total	24.00	220kV BHP - Tsirang Line	39.90	+	
	40MW BHP (L/S)	Unit- I	20.00	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	20.00	30MVA ICT, 220/66kV (HV)	-1.76	-	
Total	40.00	Error at Station/Auxiliary Consumption/Losses	1.266%				
5	126MW DHP	Unit-I	63.35	220kV DHP - Tsirang Line	125.96	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.07	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.90	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	126.42	Error at Station/Auxiliary Consumption/Losses	0.127%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	37.19	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	27.87	+	
		Unit- III	16.41	5MVA, 132/11kV TFR	0.39	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	53.98	+	
		Total	65.91	Error at Station/Auxiliary Consumption/Losses	0.698%		

Note: Generation-Load Summary (MW) for June 12, 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	1,585.95	253.94	236.94	1,169.71	17.00
2	Eastern Grid	658.94	78.62	74.78	742.62	3.84
Total		2,244.89	332.56	311.72	1,912.33	20.84

Note: Generation-Load Summary for June 12, 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	1,097.36	204.14	189.37	853.07	14.77
2	Eastern Grid	642.51	35.48	30.69	647.18	4.79
Total		1,739.87	239.62	220.06	1,500.25	19.56

NOTE-BHP, MHP & KHP 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 13, 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	187.13	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	186.57	400kV THP - Siliguri Line - II	362.33	+	
		Unit- III	187.11	400kV THP - Siliguri Line - IV	345.61	+	
		Unit- IV	187.14	400kV THP - Malbase Line - III	398.15	+	
		Unit- V	188.37	400kV Malbase - Siliguri Line	328.20	+	
		Unit- VI	187.13	-	-	-	
		Total	1,123.45	Error at Station/Auxiliary Consumption/Losses	1.545%		
2	720MW MHP	Unit-I	197.96	400kV MHP - Jigmeling Line - I	294.23	+	Unit-III on breakdown 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service.
		Unit-II	197.95	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.95	+	
		Unit-IV	197.35	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)	-84.56	-	
		-	-	400kV Jigmeling - Alipurduar Line - I	332.75	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	330.88	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	39.20	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	39.20	+	
		-	-	220kV Tsirang - Jigmeling Line	163.89	+	
		-	-	132kV Gelephu - Salakati Line	45.05	+	
		Total	593.26	Error at Station/Auxiliary Consumption/Losses	0.519%		
3	336MW CHP	Unit- I	91.73	220kV CHP - Birpara Line - I	90.19	+	
		Unit- II	91.05	220kV CHP - Birpara Line - II	90.39	+	
		Unit- III	91.19	220kV CHP - Malbase Line - III	131.71	+	
		Unit- IV	91.23	220kV CHP - Semtokha Line - IV	41.82	+	
		-	-	220kV Malbase - Birpara Line	44.87	+	
		-	-	66kV CHP - Chumdo Line	6.45	+	
		-	-	66kV CHP - Gedu Line	2.43	+	
		-	-	3x3MVA, 66/11kV TFR	1.01	+	
Total	365.20	Error at Station/Auxiliary Consumption/Losses	0.329%				
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	0.00		220kV BHP_SEM line under shutdown.
		Unit- II	12.20	66kV BHP - Lobeyasa Line	24.40		
		Total	24.50	220kV BHP - Tsirang Line	40.82	+	
	40MW BHP (L/S)	Unit- I	20.40	5MVA, 66/11kV TFR	0.87	+	
		Unit- II	20.90	30MVA ICT, 220/66kV (HV)	0.73		
		Total	41.30	Error at Station/Auxiliary Consumption/Losses	-0.441%		
5	126MW DHP	Unit-I	63.57	220kV DHP - Tsirang Line	126.23	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.16	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.50	+	
		Total	126.73	Error at Station/Auxiliary Consumption/Losses	0.000%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	40.12	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	23.79	+	
		Unit- III	16.02	5MVA, 132/11kV TFR	0.25	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	40.26	+	
		Total	65.52	Error at Station/Auxiliary Consumption/Losses	2.083%		

Note: Generation-Load Summary (MW) for June 13, 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	1,681.18	255.70	238.43	1,261.59	17.27
2	Eastern Grid	658.78	73.73	69.29	748.94	4.44
Total		2,339.96	329.43	307.72	2,010.53	21.71

Note: Generation-Load Summary for June 13, 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	1,121.82	167.92	161.04	906.60	6.88
2	Eastern Grid	659.42	30.84	26.29	675.88	4.55
Total		1,781.24	198.76	187.33	1,582.48	11.43

NOTE-BHP & MHP 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.
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