

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 19, 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	184.99	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance
		Unit- II	183.19	400kV THP - Siliguri Line - II	360.61	+	
		Unit- III	185.39	400kV THP - Siliguri Line- IV	345.08	+	
		Unit- IV	184.47	400kV THP - Malbase Line - III	396.40	+	
		Unit- V	185.65	400kV Malbase - Siliguri Line	327.10	+	
		Unit- VI	185.45	-	-	-	
		Total	1,109.14	Error at Station/Auxiliary Consumption/Losses	0.636%		
2	720MW MHP	Unit-I	197.17	400kV MHP - Jigmeling Line - I	294.30	+	Unit-III under breakdown 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I(Interim) under shutdown 400kV JLG_ALI Line I(Direct) not in service
		Unit-II	197.83	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.80	+	
		Unit-IV	197.56	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)	20.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	240.70	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	361.41	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	36.90	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	37.00	+	
		-	-	220kV Tsirang - Jigmeling Line	96.80	+	
-	-	132kV Gelephu - Salakati Line	33.14	+			
Total	592.56	Error at Station/Auxiliary Consumption/Losses	0.415%				
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	105.19	+	
		Unit- II	91.24	220kV CHP - Birpara Line- II	104.93	+	
		Unit- III	91.19	220kV CHP - Malbase Line- III	145.63	+	
		Unit- IV	90.93	220kV CHP - Semtokha Line- IV	-5.32	-	
		-	-	220kV Malbase - Birpara Line	73.74	+	
		-	-	66kV CHP - Chumdo Line	8.10	+	
		-	-	66kV CHP - Gedu Line	5.01	+	
		-	-	3x3MVA, 66/11kV TFR	1.18	+	
		Total	365.10	Error at Station/Auxiliary Consumption/Losses	0.104%		
4	24MW BHP (U/S)	Unit- I	8.80	220kV BHP - Semtokha Line	59.07	+	30MVA ICT(220/66kV) under shutdown.
		Unit- II	8.70	66kV BHP - Lobeyasa Line	15.50	+	
		Total	17.50	220kV BHP - Tsirang Line	-24.86	-	
	40MW BHP (L/S)	Unit- I	16.70	5MVA, 66/11kV TFR	0.85	+	
		Unit- II	16.80	30MVA ICT, 220/66kV (HV)	0.00		
Total	33.50	Error at Station/Auxiliary Consumption/Losses	0.863%				
5	126MW DHP	Unit-I	63.66	220kV DHP - Tsirang Line	126.33	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.05	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.60	+	
		-	-	5MVA, 220/33kV TFR	0.35	+	
		Total	126.71	Error at Station/Auxiliary Consumption/Losses	0.024%		
6	60MW KHP	Unit- I	16.56	132kV KHP - Nangkhon Line	37.24	+	
		Unit-II	16.58	132kV KHP - Kilikhar Line	27.87	+	
		Unit- III	16.49	5MVA, 132/11kV TFR	0.29	+	
		Unit- IV	16.58	132kV Motanga - Rangia Line	51.42	+	
		Total	66.21	Error at Station/Auxiliary Consumption/Losses	1.223%		

Note: Generation-Load Summary (MW) for June 19, 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	1,651.95	238.50	232.20	1,316.65	6.30
2	Eastern Grid	658.77	68.90	65.63	686.67	3.27
Total		2,310.72	307.40	297.83	2,003.32	9.57

Note: Generation-Load Summary for June 19, 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	1,586.46	230.36	209.69	1,269.10	20.67
2	Eastern Grid	659.42	60.53	56.41	685.89	4.12
Total		2,245.88	290.89	266.10	1,954.99	24.79

NOTE-BHP, JLG and MHPA data collected from 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.
- 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 20, 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	185.88	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	185.19	400kV THP - Siliguri Line - II	361.30	+	
		Unit- III	185.59	400kV THP - Siliguri Line- IV	344.33	+	
		Unit- IV	184.67	400kV THP - Malbase Line - III	398.63	+	
		Unit- V	185.32	400kV Malbase - Siliguri Line	328.34	+	
		Unit- VI	185.63	-	-	-	
		Total	1,112.28	Error at Station/Auxiliary Consumption/Losses	0.721%		
2	720MW MHP	Unit-I	197.55	400kV MHP - Jigmeling Line - I	294.15	+	Unit-III on breakdown 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II(Interim) under shutdown. 400kV JLG_ALI Line I(Direct) not in service
		Unit-II	197.64	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.60	+	
		Unit-IV	197.76	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmoo Line - I	0.00		
		-	-	132kV MHP - Yurmoo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	31.10	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	243.60	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	367.17	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	29.30	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	29.30	+	
		-	-	220kV Tsirang - Jigmeling Line	92.10	+	
-	-	132kV Gelephu - Salakati Line	31.09	+			
Total	592.95	Error at Station/Auxiliary Consumption/Losses	0.540%				
3	336MW CHP	Unit- I	91.65	220kV CHP - Birpara Line- I	103.56	+	
		Unit- II	91.20	220kV CHP - Birpara Line- II	103.48	+	
		Unit- III	91.49	220kV CHP - Malbase Line- III	152.67	+	
		Unit- IV	90.92	220kV CHP - Semtokha Line- IV	-6.07	-	
		-	-	220kV Malbase - Birpara Line	51.79	+	
		-	-	66kV CHP - Chumdo Line	6.42	+	
		-	-	66kV CHP - Gedu Line	4.92	+	
		-	-	3x3MVA, 66/11kV TFR	1.00	+	
		Total	365.26	Error at Station/Auxiliary Consumption/Losses	-0.197%		
4	24MW BHP (U/S)	Unit- I	6.50	220kV BHP - Semtokha Line	59.37	+	30MVA ICT(220/66kV) under shutdown.
		Unit- II	8.70	66kV BHP - Lobeyasa Line	14.70	+	
		Total	15.20	220kV BHP - Tsirang Line	-31.14	-	
	40MW BHP (L/S)	Unit- I	13.90	5MVA, 66/11kV TFR	0.86	+	
		Unit- II	14.00	30MVA ICT, 220/66kV (HV)	0.00		
Total	27.90	Error at Station/Auxiliary Consumption/Losses	-1.601%				
5	126MW DHP	Unit-I	63.51	220kV DHP - Tsirang Line	126.24	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.21	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.30	+	
		-	-	5MVA, 220/33kV TFR	0.20		
		Total	126.72	Error at Station/Auxiliary Consumption/Losses	0.221%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Line	61.48	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	3.87	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.29	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	39.46	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.545%		

Note: Generation-Load Summary (MW) for June 20, 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	1,647.36	262.46	256.87	1,292.80	5.59
2	Eastern Grid	658.95	69.73	66.17	681.32	3.56
Total		2,306.31	332.19	323.04	1,974.12	9.15

Note: Generation-Load Summary for June 20, 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	1,574.19	203.71	184.95	1,294.02	18.76
2	Eastern Grid	659.61	53.10	48.06	682.97	5.04
Total		2,233.80	256.81	233.01	1,976.99	23.80

NOTE-BHP,JLG and MHPA data collected from 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.
- This report is generated to give an idea of the generation & load flow for the system at a particular instant.