

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	March 24, 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	147.65	400kV THP - Siliguri Line - I	0.00		Unit-III on standby. Unit-IV,V & VI under AM/PTW 400kV THP-SIL Line I on standby. 400kV THP-SIL Line IV under AMP.
		Unit- II	150.46	400kV THP - Siliguri Line - II	95.50	+	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Line - III	197.32	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	65.95	+	
		Unit- VI	0.00	-	-	-	
		Total	298.11	Error at Station/Auxiliary Consumption/Losses	1.775%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00		Unit- I on standby. Unit-II under maintenance. Unit-III under breakdown. 400kV MHP-JLG Line I ,II & III on standby. 400kV JLG_ALI line II on Standby. 132kV MHP_Yurmo lines not in service.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	130.03	400kV MHP - Jigmeling Line - IV	129.39	+	
		-	-	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	125.30	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	13.10	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	0.00		
		-	-	220kV Tsirang - Jigmeling Line	15.52	+	
Total	130.03	Error at Station/Auxiliary Consumption/Losses	0.492%				
3	336MW CHP	Unit- I	44.48	220kV CHP - Birpara Line- I	-11.52	-	Unit-III & 220kV CHP-BIR line II on Standby. Unit-IV under AMP.
		Unit- II	45.14	220kV CHP - Birpara Line- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Line- III	10.64	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	69.44	+	
		-	-	220kV Malbase - Birpara Line	-27.34	-	
		-	-	66kV CHP - Chumdo Line	14.01	+	
		-	-	66kV CHP - Gedu Line	3.90	+	
		-	-	3x3MVA, 66/11kV TFR	1.63	+	
Total	89.62	Error at Station/Auxiliary Consumption/Losses	1.696%				
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	-13.00	-	U/S on Total Shutdown. L/S Unit-II on standby
		Unit- II	0.00	66kV BHP - Lobeyasa Line	12.00	+	
		Total	0.00	220kV BHP - Tsirang Line	3.04	+	
	40MW BHP (L/S)	Unit- I	3.30	5MVA, 66/11kV TFR	0.87	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	3.30	Error at Station/Auxiliary Consumption/Losses	11.818%				
5	126MW DHP	Unit-I	16.16	220kV DHP - Tsirang Line	15.90	+	Unit-II AMP
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.40	+	
		-	-	5MVA, 220/33kV TFR			
		Total	16.16	Error at Station/Auxiliary Consumption/Losses	1.609%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	9.55	+	Unit-I standby. Unit-III under AMP.
		Unit-II	13.11	132kV KHP - Kilikhar Line	15.84	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.54	+	
		Unit- IV	13.20	132kV Gelephu - Salakati Line	-38.81	-	
		-	-	132kV Motanga - Rangia Line	6.80	+	
		Total	26.31	Error at Station/Auxiliary Consumption/Losses	1.444%		

Note: Generation-Load Summary (MW) for March 24, 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	407.19	269.08	264.02	122.59	5.06
2	Eastern Grid	156.34	78.57	77.55	93.29	1.02
Total		563.53	347.65	341.57	215.88	6.08

Note: Generation-Load Summary for March 24, 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	332.34	264.87	258.15	51.19	6.72
2	Eastern Grid	121.71	62.00	60.78	75.99	1.22
Total		454.05	326.87	318.93	127.18	7.94

NOTE- KHP,MHP & BHP 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:	March 25, 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	0.00	400kV THP - Siliguri Line - I	0.00		Unit-III on standby. Unit-IV,V & VI under AM/PTW 400kV THP-SIL Line I on standby. 400kV THP-SIL Line IV under AMP.
		Unit- II	0.00	400kV THP - Siliguri Line - II	-31.57	-	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Line - III	31.21	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	-41.25	-	
		Unit- VI	0.00	-	-	-	
		Total	0.00	Error at Station/Auxiliary Consumption/Losses	0.000%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00		Unit- I on standby. Unit-II under maintenance. Unit-III under breakdown. 400kV MHP-JLG Line I ,II & III on standby. 400kV JLG_ALI line II on Standby. 132kV MHP_Yurmo lines not in service.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	180.70	400kV MHP - Jigmeling Line - IV	179.63	+	
		-	-	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	83.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	88.00	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	0.00		
Total	180.70	Error at Station/Auxiliary Consumption/Losses	0.592%				
3	336MW CHP	Unit- I	41.24	220kV CHP - Birpara Line- I	8.83	+	Unit-II under Standby. Unit IV & 220kV CHP-BIR line I Standby
		Unit- II	42.26	220kV CHP - Birpara Line- II	0.00	-	
		Unit- III	0.00	220kV CHP - Malbase Line- III	67.65	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	-7.04	-	
		-	-	220kV Malbase - Birpara Line	-37.59	-	
		-	-	66kV CHP - Chumdo Line	7.37	+	
		-	-	66kV CHP - Gedu Line	5.81	+	
		-	-	3x3MVA, 66/11kV TFR	1.00	+	
Total	83.50	Error at Station/Auxiliary Consumption/Losses	-0.144%				
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	48.00	+	U/S on Total Shutdown. L/S Unit-II on standby
		Unit- II	0.00	66kV BHP - Lobeysha Line	10.70	+	
		Total	0.00	220kV BHP - Tsirang Line	-56.63	-	
	40MW BHP (L/S)	Unit- I	3.00	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	3.00	Error at Station/Auxiliary Consumption/Losses	1.667%				
5	126MW DHP	Unit-I	16.04	220kV DHP - Tsirang Line	15.83	+	Unit-II under AMP
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.10	+	
		-	-	5MVA, 220/33kV TFR			
Total	16.04	Error at Station/Auxiliary Consumption/Losses	1.309%				
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	10.12	+	Unit-III under AMP. Unit-I standby.
		Unit-II	12.05	132kV KHP - Kilikhar Line	13.44	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.23	+	
		Unit- IV	12.11	132kV Gelephu - Salakati Line	-1.38	-	
		-	-	132kV Motanga - Rangia Line	13.60	+	
Total	24.16	Error at Station/Auxiliary Consumption/Losses	1.531%				

Note: Generation-Load Summary (MW) for March 25, 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	102.54	247.36	247.96	-101.58	-0.60
2	Eastern Grid	204.86	65.50	64.06	96.12	1.44
Total		307.40	312.86	312.02	-5.46	0.84

Note: Generation-Load Summary for March 25, 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	239.57	230.32	230.20	-1.32	0.12
2	Eastern Grid	140.31	42.32	41.21	108.56	1.11
Total		379.88	272.64	271.41	107.24	1.23

NOTE- MHP, BHP 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.
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