

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	March 17, 2020
Hours:	19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Fdr- I	19.71		Unit- V at standby. Unit-II under shutdown. Unit-I & IV under AMP. 400kV THP_SILI II Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	129.34	400kV THP - Siliguri Fdr- IV	16.57	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	160.03	+	
		Unit- V	0.00	400kV Malbase - Siliguri	4.00	-	
		Unit- VI	70.15	-	-	-	
		Total	199.49	Error at Station/Auxiliary Consumption/Losses	3.18		
2	720MW MHP	Unit-I	94.20	400kV MHP - Jigmeling Fdr - I	0.00		Unit II, III & IV Under Standby 400kV MHP-JLG I,II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	93.60	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	94.20	Error at Station/Auxiliary Consumption/Losses	0.60		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	2.35	+	Unit-I & III under shutdown. 220kV CHP-Malbase Fdr III under AMP. 220kV MAL-Birpara Fdr emergency shutdown.
		Unit- II	50.29	220kV CHP - Birpara Fdr- II	2.24	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	51.43	220kV CHP - Sementokha Fdr- IV	68.85	+	
		-	-	220kV Malbase - Birpara Fdr.	-70.00	-	
		-	-	66kV CHP - Chumdo Fdr.	13.85	+	
		-	-	66kV CHP - Gedu Fdr.	9.96	+	
		-	-	3x3MVA, 66/11kV TFR	1.99	+	
		Total	101.72	Error at Station/Auxiliary Consumption/Losses	2.48		
4	24MW BHP (U/S)	Unit- I	4.65	220kV BHP - Sementokha Fdr.	-9.55	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	13.67	+	
		Total	4.65	220kV BHP - Tsirang Fdr.	9.39	+	
	40MW BHP (L/S)	Unit- I	10.01	5MVA, 66/11kV TFR	0.93	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	10.01	Error at Station/Auxiliary Consumption/Losses	0.22				
5	126MW DHPC	Unit-I	16.05	220kV DHPC - Tsirang Fdr.	15.85	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.05	Error at Station/Auxiliary Consumption/Losses	0.20		
6	60MW KHP	Unit- I	10.30	132kV KHP - Nangkhon Fdr- I	8.32	+	Unit- III & IV Annual Maintenance
		Unit-II	10.05	132kV KHP - Kilikhar Fdr- II	11.70	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-22.86	-	
		-	-	132kV Motanga - Rangia Fdr.	-17.47	-	
		-	-	220kV Tsirang - Jigmeling	22.94	+	
		Total	20.35	Error at Station/Auxiliary Consumption/Losses	0.03		

Note: Load summary on March 17, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	331.92	334.11	328.03	-25.13	6.08
2	Eastern Grid	114.55	84.22	83.59	53.27	0.63
	Total	446.47	418.33	411.62	28.14	6.71

Note: Load Summary on March 17, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	244.86	262.24	286.38
2	Eastern Grid	58.61	58.61	62.64
	National	303.47	320.85	349.02

NOTES:KHP,MHP & Malbase loads 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 18, 2020
Hours:	09:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Fdr- I	22.34		Unit-V standby. Unit-II under shutdown. Unit-I & IV under shutdown. 400kV THP-SIL II & IV in Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	59.10	400kV THP - Siliguri Fdr- IV	0.00	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	106.10	+	
		Unit- V	0.00	400kV Malbase - Siliguri	16.00	+	
		Unit- VI	70.46	-	-	-	
		Total	129.56	Error at Station/Auxiliary Consumption/Losses	1.12		
2	720MW MHP	Unit-I	94.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I standby, Unit III & IV Under in Standby 400kV MHP-JLG I,II & III in Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	93.50	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	94.00	Error at Station/Auxiliary Consumption/Losses	0.50		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	3.50	+	Unit-I & III under shutdown. 220kV CHP-Malbase Fdr III under AMP.
		Unit- II	31.41	220kV CHP - Birpara Fdr- II	3.55	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	29.73	220kV CHP - Sementokha Fdr- IV	35.99	+	
		-	-	220kV Malbase - Birpara Fdr.	-65.00	-	
		-	-	66kV CHP - Chumdo Fdr.	8.61	+	
		-	-	66kV CHP - Gedu Fdr.	6.34	+	
		-	-	3x3MVA, 66/11kV TFR	1.14	+	
Total	61.14	Error at Station/Auxiliary Consumption/Losses	2.01				
4	24MW BHP (U/S)	Unit- I	4.75	220kV BHP - Sementokha Fdr.	9.83	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	11.04	+	
		Total	4.75	220kV BHP - Tsirang Fdr.	-6.56	-	
	40MW BHP (L/S)	Unit- I	9.99	5MVA, 66/11kV TFR	0.55	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	9.99	Error at Station/Auxiliary Consumption/Losses	-0.12				
5	126MW DHPC	Unit-I	16.05	220kV DHPC - Tsirang Fdr.	15.86	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.05	Error at Station/Auxiliary Consumption/Losses	0.19		
6	60MW KHP	Unit- I	12.50	132kV KHP - Nangkhon Fdr- I	17.21	+	Unit-III & IV AMP
		Unit-II	10.03	132kV KHP - Kilikhar Fdr- II	4.99	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.33	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-18.80	-	
		-	-	132kV Motanga - Rangia Fdr.	-9.81	-	
		-	-	220kV Tsirang - Jigmeling	11.72	+	
		Total	22.53	Error at Station/Auxiliary Consumption/Losses	0.00		

Note: Load summary on March 18, 2020 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	221.49	229.38	226.18	-19.61	3.20
2	Eastern Grid	116.53	63.36	62.86	64.89	0.50
	Total	338.02	292.74	289.04	45.28	3.70

Note: Load Summary on March 18, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	226.32	270.80	286.38
2	Eastern Grid	40.06	53.49	62.64
	National	266.38	324.29	349.02

NOTES: KHP & Malbase loads 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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