

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	March 30, 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	70.16	400kV THP - Siliguri Fdr- I	92.78	+	Unit-V standby. Unit-III & IV under shutdown. 400kV THP-SIL II standby & Fdr-IV under shutdown.
		Unit- II	79.71	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	162.49	+	
		Unit- V	0.00	400kV Malbase - Siliguri	71.38	+	
		Unit- VI	110.77	-	-	-	
		Total	260.64	Error at Station/Auxiliary Consumption/Losses	5.37		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II under standby. Unit-IV under shutdown. 400kV MHP-JLG I, II & III standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	129.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	127.30	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	129.00	Error at Station/Auxiliary Consumption/Losses	1.70		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	11.65	+	Unit-I & IV under shutdown.
		Unit- II	72.93	220kV CHP - Birpara Fdr- II	11.62	+	
		Unit- III	66.19	220kV CHP - Malbase Fdr- III	52.20	+	
		Unit- IV	0.00	220kV CHP - Sementokha Fdr- IV	45.84	+	
		-	-	220kV Malbase - Birpara Fdr.	-20.59	-	
		-	-	66kV CHP - Chumdo Fdr.	11.24	+	
		-	-	66kV CHP - Gedu Fdr.	3.95	+	
		-	-	3x3MVA, 66/11kV TFR	1.68	+	
		Total	139.12	Error at Station/Auxiliary Consumption/Losses	0.94		
4	24MW BHP (U/S)	Unit- I	4.77	220kV BHP - Sementokha Fdr.	-1.09	-	U/S Unit-II under shutdown. L/S Unit I standby
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	11.37	+	
		Total	4.77	220kV BHP - Tsirang Fdr.	4.30	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.64	+	
		Unit- II	10.67	30MVA ICT, 220/66kV			
Total	10.67	Error at Station/Auxiliary Consumption/Losses	0.22				
5	126MW DHPC	Unit-I	17.87	220kV DHPC - Tsirang Fdr.	17.66	+	Unit-II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	17.87	Error at Station/Auxiliary Consumption/Losses	0.21		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	15.20	+	Unit-I & IV under shutdown.
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	16.23	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.60	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-12.75	-	
		-	-	132kV Motanga - Rangia Fdr.	8.41	+	
		-	-	220kV Tsirang - Jigmeling	19.38	+	
		Total	33.00	Error at Station/Auxiliary Consumption/Losses	0.97		

Note: Load summary on March 30, 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	433.07	246.85	240.11	166.84	6.74
2	Eastern Grid	162.00	58.42	55.75	122.96	2.67
	Total	595.07	305.27	295.86	289.80	9.41

Note: Load Summary on March 30, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	249.44	249.97	286.38
2	Eastern Grid	56.40	56.40	62.64
	National	305.84	306.37	349.02

NOTES:KHP,MHP 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 31, 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	68.91	400kV THP - Siliguri Fdr- I	72.95	+	Unit-V standby. Unit-III & IV under shutdown. 400kV THP-SIL II standby & Fdr-IV under shutdown.
		Unit- II	69.79	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	121.60	+	
		Unit- V	0.00	400kV Malbase - Siliguri	58.02	+	
		Unit- VI	61.25	-	-	-	
		Total	199.95	Error at Station/Auxiliary Consumption/Losses	5.40		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II Standby. Unit-IV under shutdown. 400kV MHP-JLG I,II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	170.45	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	169.81	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	170.45	Error at Station/Auxiliary Consumption/Losses	0.64		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	8.93	-	Unit-I & IV under shutdown.
		Unit- II	50.30	220kV CHP - Birpara Fdr- II	8.81	-	
		Unit- III	50.00	220kV CHP - Malbase Fdr- III	52.38	+	
		Unit- IV	0.00	220kV CHP - Sementokha Fdr- IV	17.71	+	
		-	-	220kV Malbase - Birpara Fdr.	-25.94	-	
		-	-	66kV CHP - Chumdo Fdr.	7.04	+	
		-	-	66kV CHP - Gedu Fdr.	3.53	+	
		-	-	3x3MVA, 66/11kV TFR	1.03	+	
		Total	100.30	Error at Station/Auxiliary Consumption/Losses	0.87		
4	24MW BHP (U/S)	Unit- I	5.12	220kV BHP - Sementokha Fdr.	13.99	+	U/S Unit-II under shutdown and LS Unit I under standby.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	9.21	+	
		Total	5.12	220kV BHP - Tsirang Fdr.	-7.36	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.32	+	
		Unit- II	11.00	30MVA ICT, 220/66kV			
Total	11.00	Error at Station/Auxiliary Consumption/Losses	-0.04				
5	126MW DHPC	Unit-I	16.59	220kV DHPC - Tsirang Fdr.	16.40	+	Unit II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	16.59	Error at Station/Auxiliary Consumption/Losses	0.19		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	19.37	+	Unit-I & IV AMP.
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	12.37	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-8.20	-	
		-	-	132kV Motanga - Rangia Fdr.	8.25	+	
		-	-	220kV Tsirang - Jigmeling	6.74	+	
		Total	33.00	Error at Station/Auxiliary Consumption/Losses	0.86		

Note: Load summary on March 31, 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	332.96	203.45	197.03	122.77	6.42
2	Eastern Grid	203.45	40.33	38.83	169.86	1.50
	Total	536.41	243.78	235.86	292.63	7.92

Note: Load Summary on March 31, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	218.28	262.97	286.38
2	Eastern Grid	42.22	52.65	62.64
	National	260.50	315.62	349.02

NOTES: KHP&MHP load collected from site.

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 - 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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