

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	March 31, 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	77.02	+	Unit- V standby. Unit-III & IV under shutdown. 400kV THP-SIL II standby & Fdr-IV under shutdown.
		Unit- II	139.37	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	147.55	+	
		Unit- V	0.00	400kV Malbase - Siliguri	55.53	+	
		Unit- VI	90.26	-	-	-	
		Total	229.63	Error at Station/Auxiliary Consumption/Losses	5.06		
2	720MW MHP	Unit-I	38.80	400kV MHP - Jigmeling Fdr - I	0.00		Unit-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	95.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	130.90	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	133.80	Error at Station/Auxiliary Consumption/Losses	2.90		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	7.05	+	Unit-I & IV under shutdown.
		Unit- II	77.94	220kV CHP - Birpara Fdr- II	6.98	+	
		Unit- III	39.93	220kV CHP - Malbase Fdr- III	39.34	+	
		Unit- IV	0.00	220kV CHP - Sementokha Fdr- IV	46.77	+	
		-	-	220kV Malbase - Birpara Fdr.	-18.11	-	
		-	-	66kV CHP - Chumdo Fdr.	11.86	+	
		-	-	66kV CHP - Gedu Fdr.	3.74	+	
		-	-	3x3MVA, 66/11kV TFR	1.67	+	
		Total	117.87	Error at Station/Auxiliary Consumption/Losses	0.46		
4	24MW BHP (U/S)	Unit- I	4.72	220kV BHP - Sementokha Fdr.	0.36	+	U/S Unit-II under shutdown. L/S Unit I standby
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	11.51	+	
		Total	4.72	220kV BHP - Tsirang Fdr.	2.16	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.79	+	
		Unit- II	10.21	30MVA ICT, 220/66kV			
Total	10.21	Error at Station/Auxiliary Consumption/Losses	0.11				
5	126MW DHPC	Unit-I	17.09	220kV DHPC - Tsirang Fdr.	16.77	+	Unit-II under maintenance
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	17.09	Error at Station/Auxiliary Consumption/Losses	0.32		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	24.71	+	Unit-I under shutdown.
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	18.73	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.60	+	
		Unit- IV	12.27	132kV Gelephu - Salakati Fdr.	-12.80	-	
		-	-	132kV Motanga - Rangia Fdr.	14.52	+	
		-	-	220kV Tsirang - Jigmeling	16.54	+	
		Total	45.27	Error at Station/Auxiliary Consumption/Losses	1.23		

Note: Load summary on March 31, 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	379.52	234.51	228.56	128.47	5.95
2	Eastern Grid	179.07	62.99	58.86	132.62	4.13
	Total	558.59	297.50	287.42	261.09	10.08

Note: Load Summary on March 31, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	262.97	262.97	286.38
2	Eastern Grid	52.65	52.65	62.64
	National	315.62	315.62	349.02

NOTES:KHP & Motanga 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:	April 1, 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	61.70	400kV THP - Siliguri Fdr- I	33.62	+	Unit- II & V standby. Unit-III & IV under shutdown. 400kV THP-SIL II standby & Fdr-IV under shutdown.
		Unit- II	0.00	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	86.29	+	
		Unit- V	0.00	400kV Malbase - Siliguri	20.07	+	
		Unit- VI	60.54	-	-	-	
		Total	122.24	Error at Station/Auxiliary Consumption/Losses	2.33		
2	720MW MHP	Unit-I	55.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-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	95.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	141.10	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	150.00	Error at Station/Auxiliary Consumption/Losses	8.90		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	4.09	+	Unit-I & IV under shutdown. Unit-III breakdown
		Unit- II	91.02	220kV CHP - Birpara Fdr- II	3.13	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	50.36	+	
		Unit- IV	0.00	220kV CHP - Semtokha Fdr- IV	20.74	+	
		-	-	220kV Malbase - Birpara Fdr.	-31.90	-	
		-	-	66kV CHP - Chumdo Fdr.	7.36	+	
		-	-	66kV CHP - Gedu Fdr.	3.55	+	
		-	-	3x3MVA, 66/11kV TFR	1.23	+	
Total	91.02	Error at Station/Auxiliary Consumption/Losses	0.56				
4	24MW BHP (U/S)	Unit- I	4.99	220kV BHP - Semtokha Fdr.	13.05	+	U/S Unit-II under shutdown and LS Unit I under standby.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	9.13	+	
		Total	4.99	220kV BHP - Tsirang Fdr.	-6.85	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.39	+	
		Unit- II	10.65	30MVA ICT, 220/66kV			
Total	10.65	Error at Station/Auxiliary Consumption/Losses	-0.08				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	15.47	+	Unit I standby
		Unit-II	15.69	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	15.69	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Fdr- I	18.40	+	Unit-I AMP. Unit-II standby
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	10.24	+	
		Unit- III	15.03	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	15.15	132kV Gelephu - Salakati Fdr.	-11.80	-	
		-	-	132kV Motanga - Rangia Fdr.	1.79	+	
		-	-	220kV Tsirang - Jigmeling	7.35	+	
		Total	30.18	Error at Station/Auxiliary Consumption/Losses	1.24		

Note: Load summary on April 01, 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	244.59	208.23	205.20	29.01	3.03
2	Eastern Grid	180.18	56.44	46.30	131.09	10.14
	Total	424.77	264.67	251.50	160.10	13.17

Note: Load Summary on April 01, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	239.40	270.19	286.38
2	Eastern Grid	38.84	55.77	62.64
	National	278.24	325.96	349.02

NOTES: KHP & MHEP load 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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