

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 29, 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	0.00		Unit-III & IV at standby. Unit- I,V & 400kV Feeder I under AMP. 400kV THP_SILI II Standby
		Unit- II	58.60	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	56.04	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	158.42	+	
		Unit- V	0.00	400kV Malbase - Siliguri	32.00	+	
		Unit- VI	160.01	-	-	-	
		Total	218.61	Error at Station/Auxiliary Consumption/Losses	4.15		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I,II & IV standby 400kV MHP-JLG I, II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	85.09	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	84.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	85.09	Error at Station/Auxiliary Consumption/Losses	1.09		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		Unit-I & III under shutdown. 220kV CHP-Birpara Fdr I standby.
		Unit- II	53.70	220kV CHP - Birpara Fdr- II	-11.46	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	15.33	+	
		Unit- IV	54.84	220kV CHP - Sementokha Fdr- IV	83.73	+	
		-	-	220kV Malbase - Birpara Fdr.	-31.00	-	
		-	-	66kV CHP - Chumdo Fdr.	16.72	+	
		-	-	66kV CHP - Gedu Fdr.	2.23	+	
		Total	108.54	Error at Station/Auxiliary Consumption/Losses	0.18		
4	24MW BHP (U/S)	Unit- I	5.40	220kV BHP - Sementokha Fdr.	-21.48	-	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	14.84	+	
		Total	5.40	220kV BHP - Tsirang Fdr.	22.21	+	
	40MW BHP (L/S)	Unit- I	11.25	5MVA, 66/11kV TFR	0.76	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	11.25	Error at Station/Auxiliary Consumption/Losses	0.32				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.80	+	Unit I under maintenance
		Unit-II	18.13	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	18.13	Error at Station/Auxiliary Consumption/Losses	0.33		
6	60MW KHP	Unit- I	12.09	132kV KHP - Nangkhon Fdr- I	8.32	+	Unit- III & IV Annual Maintenance
		Unit-II	10.14	132kV KHP - Kilikhar Fdr- II	13.21	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.50	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-10.09	-	
		-	-	132kV Motanga - Rangia Fdr.	1.19	+	
		-	-	220kV Tsirang - Jigmeling	37.79	+	
		Total	22.23	Error at Station/Auxiliary Consumption/Losses	0.20		

Note: Load summary on February 29, 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	361.93	278.56	273.58	45.58	4.98
2	Eastern Grid	107.32	70.01	68.72	75.10	1.29
	Total	469.25	348.57	342.30	120.68	6.27

Note: Load Summary on February 29, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	0.00	0.00	308.60
2	Eastern Grid	0.00	0.00	65.91
	National	0.00	0.00	374.51

NOTES: KHP, Malbase & JLG 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 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	0.00	400kV THP - Siliguri Fdr- I	0.00		Unit- III,IV & V standby. Unit-I under shutdown. 400kV THP_SILI-I under AMP 400kV THP-SIL II Standby
		Unit- II	59.29	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	14.75	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	101.15	+	
		Unit- V	0.00	400kV Malbase - Siliguri	2.79	-	
		Unit- VI	60.22	-	-	-	
		Total	119.51	Error at Station/Auxiliary Consumption/Losses	3.61		
2	720MW MHP	Unit-I	26.78	400kV MHP - Jigmeling Fdr - I	0.00		Unit-IV and Unit-I under standby 400kV MHP-JLG I, II & III Standby.
		Unit-II	24.59	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	30.89	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	81.80	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	82.26	Error at Station/Auxiliary Consumption/Losses	0.46		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-11.36	-	Unit-I & III under shutdown.
		Unit- II	25.42	220kV CHP - Birpara Fdr- II	-11.42	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	31.72	+	
		Unit- IV	31.86	220kV CHP - Sementokha Fdr- IV	32.83	+	
		-	-	220kV Malbase - Birpara Fdr.	-37.38	-	
		-	-	66kV CHP - Chumdo Fdr.	11.53	+	
		-	-	66kV CHP - Gedu Fdr.	2.51	+	
		Total	57.28	Error at Station/Auxiliary Consumption/Losses	0.10		
4	24MW BHP (U/S)	Unit- I	5.45	220kV BHP - Sementokha Fdr.	13.72	+	U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	11.61	+	
		Total	5.45	220kV BHP - Tsirang Fdr.	-9.18	-	
	40MW BHP (L/S)	Unit- I	11.11	5MVA, 66/11kV TFR	0.58	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
Total	11.11	Error at Station/Auxiliary Consumption/Losses	-0.17				
5	126MW DHPC	Unit-I	19.21	220kV DHPC - Tsirang Fdr.	19.01	+	Unit-II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	19.21	Error at Station/Auxiliary Consumption/Losses	0.20		
6	60MW KHP	Unit- I	10.32	132kV KHP - Nangkhon Fdr- I	13.43	+	Unit-III & IV AMP
		Unit-II	10.10	132kV KHP - Kilikhar Fdr- II	6.04	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	6.23	+	
		-	-	132kV Motanga - Rangia Fdr.	-17.23	-	
		-	-	220kV Tsirang - Jigmeling	7.73	+	
		Total	20.42	Error at Station/Auxiliary Consumption/Losses	0.55		

Note: Load summary on March 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	212.56	247.45	243.71	-42.62	3.74
2	Eastern Grid	102.68	39.61	38.60	70.80	1.01
	Total	315.24	287.06	282.31	28.18	4.75

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

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	245.90	219.38	257.31
2	Eastern Grid	38.25	53.11	66.55
	National	284.15	272.49	323.86

NOTES: KHP generation & JLG 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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