

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	February 1, 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	38.83	+	Unit-III & IV at standby. Unit-I and II under shutdown. 400kV THP_SILI-II under shutdown & 400kV THP_SILI-IV standby.
		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	106.81	+	
		Unit- V	78.50	400kV Malbase - Siliguri	21.66	+	
		Unit- VI	70.54	-	-	-	
		Total	149.04	Error at Station/Auxiliary Consumption/Losses	3.40		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I,II & IV standby. 400kV MHP-JLG I & II Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	91.13	400kV MHP - Jigmeling Fdr - III	45.20	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	44.62	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	91.13	Error at Station/Auxiliary Consumption/Losses	1.31		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		Unit-I under shutdown. Unit-IV & 220kV CHP-BIR I standby
		Unit- II	67.82	220kV CHP - Birpara Fdr- II	-6.27	-	
		Unit- III	35.56	220kV CHP - Malbase Fdr- III	19.80	+	
		Unit- IV	0.00	220kV CHP - Sementokha Fdr- IV	66.81	+	
		-	-	220kV Malbase - Birpara Fdr.	-25.61	-	
		-	-	66kV CHP - Chumdo Fdr.	17.14	+	
		-	-	66kV CHP - Gedu Fdr.	2.35	+	
		-	-	3x3MVA, 66/11kV TFR	1.89	+	
Total	103.38	Error at Station/Auxiliary Consumption/Losses	1.66				
4	24MW BHP (U/S)	Unit- I	5.65	220kV BHP - Sementokha Fdr.	-0.70	+	U/S Unit-II & L/S Unit-I under maintenace.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	16.51	+	
		Total	5.65	220kV BHP - Tsirang Fdr.	0.80	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	11.65	30MVA ICT, 220/66kV			
Total	11.65	Error at Station/Auxiliary Consumption/Losses	0.20				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.95	+	Unit I under maintenance
		Unit-II	18.17	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	18.17	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	12.65	132kV KHP - Nangkhon Fdr- I	9.90	+	Unit-I Standby Unit- III & IV Annual Maintenance
		Unit-II	10.02	132kV KHP - Kilikhar Fdr- II	12.63	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-20.78	-	
		-	-	132kV Motanga - Rangia Fdr.	-10.42	-	
		-	-	220kV Tsirang - Jigmeling	15.59	+	
		Total	22.67	Error at Station/Auxiliary Consumption/Losses	-0.26		

Note: Load summary on February 01, 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	287.89	243.69	238.61	28.61	5.08
2	Eastern Grid	113.80	70.77	69.72	58.62	1.05
	Total	401.69	314.46	308.33	87.23	6.13

Note: Load Summary on February 01, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	275.16	277.64	308.60
2	Eastern Grid	58.48	58.48	65.91
	National	333.64	336.12	374.51

NOTES: Motanga and KHP units data are 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:	February 2, 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	31.61	+	Unit- III & IV at standby. Unit- I & II under shutdown. 400kV THP_SILI-II under shutdown & 400kV THP_SILI-IV standby.
		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	105.67	+	
		Unit- V	69.29	400kV Malbase - Siliguri	13.40	+	
		Unit- VI	70.22	-	-	-	
		Total	139.51	Error at Station/Auxiliary Consumption/Losses	2.23		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I,II & III standby. 400kV MHP-JLG I & II standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	45.00	+	
		Unit-IV	92.00	400kV MHP - Jigmeling Fdr - IV	46.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	92.00	Error at Station/Auxiliary Consumption/Losses	1.00		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		Unit-I under shutdown. Unit IV & 220kV CHP-BIR I standby
		Unit- II	24.40	220kV CHP - Birpara Fdr- II	-17.31	-	
		Unit- III	29.39	220kV CHP - Malbase Fdr- III	16.75	+	
		Unit- IV	0.00	220kV CHP - Sementokha Fdr- IV	36.84	+	
		-	-	220kV Malbase - Birpara Fdr.	-41.08	-	
		-	-	66kV CHP - Chumdo Fdr.	12.46	+	
		-	-	66kV CHP - Gedu Fdr.	2.24	+	
		Total	53.79	Error at Station/Auxiliary Consumption/Losses	1.40		
4	24MW BHP (U/S)	Unit- I	5.50	220kV BHP - Sementokha Fdr.	12.78	+	U/S Unit-II & L/S Unit-I under maintenance.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	12.89	+	
		Total	5.50	220kV BHP - Tsirang Fdr.	-9.46	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.54	+	
		Unit- II	11.36	30MVA ICT, 220/66kV			
		Total	11.36	Error at Station/Auxiliary Consumption/Losses	0.11		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.97	+	Unit I under maintenance
		Unit-II	18.17	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	18.17	Error at Station/Auxiliary Consumption/Losses	0.20		
6	60MW KHP	Unit- I	12.16	132kV KHP - Nangkhon Fdr- I	10.15	+	Unit-III & IV Annual Maintenance.
		Unit-II	10.06	132kV KHP - Kilikhar Fdr- II	10.05	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-15.87	-	
		-	-	132kV Motanga - Rangia Fdr.	-2.81	-	
		-	-	220kV Tsirang - Jigmeling	5.85	+	
		Total	22.22	Error at Station/Auxiliary Consumption/Losses	1.72		

Note: Load summary on February 02, 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	228.33	235.86	231.92	-13.38	3.94
2	Eastern Grid	114.22	47.75	45.03	72.32	2.72
	Total	342.55	283.61	276.95	58.94	6.66

Note: Load Summary on February 02, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	223.59	268.65	285.13
2	Eastern Grid	50.94	57.90	66.55
	National	274.53	326.55	351.68

NOTES: KHP & Motanga 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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