

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	January 21, 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	73.58	+	Unit- III & V AND 400kV THP_SIL IV standby. Unit-I & II under AMP. 400kV THP_SILI-II 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	150.78	+	
		Unit- V	150.00	400kV Malbase - Siliguri	51.70	+	
		Unit- VI	80.66	-	-	-	
		Total	230.66	Error at Station/Auxiliary Consumption/Losses		6.30	
2	720MW MHP	Unit-I	97.90	400kV MHP - Jigmeling Fdr - I	0.00		Unit-III under maintenance. Unit-II & IV standby. 400kV MHP-JLG I & II under shutdown. 400kV MHP-JLG IV standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	95.30	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	97.90	Error at Station/Auxiliary Consumption/Losses		2.60	
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		220kV CHP-BIR I standby Unit-I & II under AMP. Unit III tripped at 18:17Hrs
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	-6.00	-	
		Unit- III	37.50	220kV CHP - Malbase Fdr- III	27.30	+	
		Unit- IV	70.12	220kV CHP - Semtokha Fdr- IV	62.17	+	
		-	-	220kV Malbase - Birpara Fdr.	-30.14	-	
		-	-	66kV CHP - Chumdo Fdr.	15.77	+	
		-	-	66kV CHP - Gedu Fdr.	4.38	+	
		-	-	3x3MVA, 66/11kV TFR	1.87	+	
Total	107.62	Error at Station/Auxiliary Consumption/Losses		2.13			
4	24MW BHP (U/S)	Unit- I	6.21	220kV BHP - Semtokha Fdr.	3.06	+	U/S Unit-II & L/S Unit I under AMP
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	16.70	+	
		Total	6.21	220kV BHP - Tsirang Fdr.	-1.88	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.87	+	
		Unit- II	12.57	30MVA ICT, 220/66kV			
Total	12.57	Error at Station/Auxiliary Consumption/Losses		0.03			
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	18.95	+	Unit I under AMP
		Unit-II	19.18	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	19.18	Error at Station/Auxiliary Consumption/Losses		0.23	
6	60MW KHP	Unit- I	12.43	132kV KHP - Nangkhon Fdr- I	10.28	+	Unit-II & III AMP
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	11.52	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.70	+	
		Unit- IV	10.16	132kV Gelephu - Salakati Fdr.	-21.53	-	
		-	-	132kV Motanga - Rangia Fdr.	-2.31	-	
		-	-	220kV Tsirang - Jigmeling	14.01	+	
		Total	22.59	Error at Station/Auxiliary Consumption/Losses		0.09	

Note: Load summary on January 21, 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	376.24	273.09	264.40	89.14	8.69
2	Eastern Grid	120.49	63.04	60.35	71.46	2.69
	Total	496.73	336.13	324.75	160.60	11.38

Note: Load Summary on January 21, 2019 at 19:00hrs

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	248.62	248.82	308.60
2	Eastern Grid	61.60	61.60	65.91
	National	310.22	310.42	374.51

NOTES:KHP Generation 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:	January 22, 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	40.30	+	Unit- III & V AND 400kV THP_SIL IV standby. Unit-I & II under AMP. 400kV THP_SILI-II 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	71.62	400kV THP - Malbase Fdr- III	108.68	+	
		Unit- V	0.00	400kV Malbase - Siliguri	23.13	+	
		Unit- VI	79.90	-	-	-	
		Total	151.52	Error at Station/Auxiliary Consumption/Losses		2.54	
2	720MW MHP	Unit-I	98.80	400kV MHP - Jigmeling Fdr - I	0.00		Unit-III under maintenance. Unit-II & IV standby. 400kV MHP-JLG I & II under shutdown. 400kV MHP-JLG IV standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	98.54	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	98.80	Error at Station/Auxiliary Consumption/Losses		0.26	
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		Unit-I & II under shutdownn. 220kV CHP-BIR I Standby
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	-10.38	-	
		Unit- III	37.48	220kV CHP - Malbase Fdr- III	19.59	+	
		Unit- IV	30.78	220kV CHP - Semtokha Fdr- IV	40.34	+	
		-	-	220kV Malbase - Birpara Fdr.	-31.35	-	
		-	-	66kV CHP - Chumdo Fdr.	12.44	+	
		-	-	66kV CHP - Gedu Fdr.	3.88	+	
		-	-	3x3MVA, 66/11kV TFR	1.36	+	
Total	68.26	Error at Station/Auxiliary Consumption/Losses		1.03			
4	24MW BHP (U/S)	Unit- I	6.10	220kV BHP - Semtokha Fdr.	14.83	+	U/S Unit-II & L/S Unit I under maintenace.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	14.57	+	
		Total	6.10	220kV BHP - Tsirang Fdr.	-11.40	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.63	+	
		Unit- II	12.41	30MVA ICT, 220/66kV			
Total	12.41	Error at Station/Auxiliary Consumption/Losses		-0.12			
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	19.24	+	Unit I under shutdown
		Unit-II	19.45	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	19.45	Error at Station/Auxiliary Consumption/Losses		0.21	
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Fdr- I	8.10	+	Unit-II & III Annual Maintenance. Unit-I Standby
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	7.60	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	16.27	132kV Gelephu - Salakati Fdr.	-16.42	-	
		-	-	132kV Motanga - Rangia Fdr.	-10.40	-	
		-	-	220kV Tsirang - Jigmeling	5.43	+	
		Total	16.27	Error at Station/Auxiliary Consumption/Losses		0.17	

Note: Load summary on January 22, 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	257.74	230.61	226.95	21.70	3.66
2	Eastern Grid	115.07	48.78	48.35	71.72	0.43
	Total	372.81	279.39	275.30	93.42	4.09

Note: Load Summary on January 22, 2019 at 09:00hrs

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	239.89	267.80	308.60
2	Eastern Grid	41.58	53.21	65.91
	National	281.47	321.01	374.51

NOTES:

- 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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