

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	January 30, 2021
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	69.05	400kV THP - Siliguri Fdr- I	0.00		Unit-III on standby. Unit-IV, V & VI under shutdown. 400kV THP-SIL Fdr I on Standby. 400kV THP-SIL Fdr II under AMP.
		Unit- II	90.81	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	44.28	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	112.41	+	
		Unit- V	0.00	400kV Malbase - Siliguri	30.00	+	
		Unit- VI	0.00	-	-	-	
		Total	159.86	Error at Station/Auxiliary Consumption/Losses	1.983%		
2	720MW MHP	Unit-I	100.12	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II under maintenance. Unit-III under breakdown. Unit-IV on standby. 400kV MHP-JLG Fdr I, III & IV on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	99.53	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	100.12	Error at Station/Auxiliary Consumption/Losses	0.589%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-7.99	-	Unit-I under Annual Maintenance Unit-III on standby. 220kV CHP-BIR II on Standby
		Unit- II	33.93	220kV CHP - Birpara Fdr- II	0.00	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	15.75	+	
		Unit- IV	42.86	220kV CHP - Semtokha Fdr- IV	49.85	+	
		-	-	220kV Malbase - Birpara Fdr.	-25.00	-	
		-	-	66kV CHP - Chumdo Fdr.	16.92	+	
		-	-	66kV CHP - Gedu Fdr.	-0.13	-	
		-	-	3x3MVA, 66/11kV TFR	2.20	+	
		Total	76.79	Error at Station/Auxiliary Consumption/Losses	0.247%		
4	24MW BHP (U/S)	Unit- I	6.00	220kV BHP - Semtokha Fdr.	17.59	+	U/S Unit-II and L/S Unit-II under AMP.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	16.39	+	
		Total	6.00	220kV BHP - Tsirang Fdr.	-16.73	-	
	40MW BHP (L/S)	Unit- I	12.04	5MVA, 66/11kV TFR	0.80	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
		Total	12.04	Error at Station/Auxiliary Consumption/Losses	-0.055%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	20.25	+	Unit-I under AMP
		Unit-II	20.47	220kV Jigmeling - Dagapela Fdr.	2.71	+	
		-	-	5MVA, 220/33kV TFR			
		Total	20.47	Error at Station/Auxiliary Consumption/Losses	1.075%		
6	60MW KHP	Unit- I	10.10	132kV KHP - Nangkhon Fdr- I	6.09	+	Unit-IV on standby. Unit-II under Annual Maintenance. 220kV TSI-JLG under AMP
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	9.28	+	
		Unit- III	10.12	5MVA, 132/11kV TFR	0.46	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-37.20	-	
		-	-	132kV Motanga - Rangia Fdr.	-8.79	-	
		-	-	220kV Tsirang - Jigmeling	0.00		
		Total	20.22	Error at Station/Auxiliary Consumption/Losses	21.711%		

Note: Generation-Load Summary for January 30, 2021 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	275.16	233.87	233.01	41.29	0.86
2	Eastern Grid	120.34	66.80	61.82	53.54	4.98
Total		395.50	300.67	294.83	94.83	5.84

Note: Generation-Load Summary for January 30, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	359.76	288.09	282.46	73.03	5.63
2	Eastern Grid	125.96	66.93	63.54	57.67	3.39
Total		485.72	355.02	346.00	130.70	9.02

NOTE- Eastern & MAL 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.
 - 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 31, 2021
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	69.24	400kV THP - Siliguri Fdr- I	0.00		Unit-III on standby,Unit-IV, V & VI under shutdown. 400kV THP-SIL Fdr I on Standby.400kV THP-SIL Fdr II under AMP.
		Unit- II	89.52	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	110.00	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	42.00	+	
		Unit- V	0.00	400kV Malbase - Siliguri	30.00	+	
		Unit- VI	0.00	-	-	-	
		Total	158.76	Error at Station/Auxiliary Consumption/Losses	4.258%		
2	720MW MHP	Unit-I	100.17	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II under maintenance. Unit-III under breakdown.Unit IV on standby.400kV MHP-JLGFdr I,III & IV on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	99.96	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	100.17	Error at Station/Auxiliary Consumption/Losses	0.210%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.96	+	Unit-I under AMP Unit-III on standby. 220kV CHP-BIR II on Standby
		Unit- II	37.15	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	29.79	+	
		Unit- IV	37.10	220kV CHP - Semtokha Fdr- IV	25.72	+	
		-	-	220kV Malbase - Birpara Fdr.	-21.00	-	
		-	-	66kV CHP - Chumdo Fdr.	11.40	+	
		-	-	66kV CHP - Gedu Fdr.	2.30	+	
		-	-	3x3MVA, 66/11kV TFR	1.59	+	
		Total	74.25	Error at Station/Auxiliary Consumption/Losses	3.354%		
4	24MW BHP (U/S)	Unit- I	5.72	220kV BHP - Semtokha Fdr.	23.51	+	U/S Unit-II & L/S Unit-II under AMP.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	12.59	+	
	Total	5.72	220kV BHP - Tsirang Fdr.	-18.05	-		
	40MW BHP (L/S)	Unit- I	12.67	5MVA, 66/11kV TFR	0.60	+	
Unit- II		0.00	30MVA ICT, 220/66kV				
		Total	12.67	Error at Station/Auxiliary Consumption/Losses	-1.414%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	20.32	+	Unit-I under AMP
		Unit-II	20.53	220kV Jigmeling - Dagapela Fdr.	1.80	+	
		-	-	5MVA, 220/33kV TFR			
		Total	20.53	Error at Station/Auxiliary Consumption/Losses	1.023%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	7.20	+	Unit-I & IV on standby. Unit-II under Annual Maintenance. 220kV TSI-JLGFdr under AMP
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	8.31	+	
		Unit- III	16.22	5MVA, 132/11kV TFR	0.29	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-29.10	-	
		-	-	132kV Motanga - Rangia Fdr.	-20.75	-	
		-	-	220kV Tsirang - Jigmeling	0.00	+	
		Total	16.22	Error at Station/Auxiliary Consumption/Losses	2.614%		

Note: Generation-Load summary for January 31, 2021 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	271.93	151.97	144.57	119.96	7.40
2	Eastern Grid	116.39	66.28	65.65	50.11	0.63
	Total	388.32	218.25	210.22	170.07	8.03

Note: Generation-Load Summary for January 31, 2020 at 09:00hrs

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	237.57	263.21	258.07	-30.21	5.14
2	Eastern Grid	126.14	53.10	48.36	77.61	4.74
	Total	363.71	316.31	306.43	47.40	9.88

NOTE: All 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.