

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	December 28, 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	72.21	400kV THP - Siliguri Fdr- I	65.03	+	Unit-II & V under shutdown. Unit-VI under maintenance Unit-III on standby. 400kV THP-SIL Fdr II & IV on 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	140.86	400kV THP - Malbase Fdr- III	141.22	+	
		Unit- V	0.00	400kV Malbase - Siliguri	42.00	+	
		Unit- VI	0.00	-	-	-	
		Total	213.07	Error at Station/Auxiliary Consumption/Losses	3.201%		
2	720MW MHP	Unit-I	110.19	400kV MHP - Jigmeling Fdr - I	0.00		Unit-IV on standby. Unit-II under shutdown. Unit-III under breakdown. 400kV MHP-JLG Fdr I,III & IV on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	109.65	+	
		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	110.19	Error at Station/Auxiliary Consumption/Losses	0.490%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-2.92	-	Unit I & II under Annual Maintenance.
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	-2.79	-	
		Unit- III	50.42	220kV CHP - Malbase Fdr- III	22.33	+	
		Unit- IV	56.74	220kV CHP - Semtokha Fdr- IV	68.36	+	
		-	-	220kV Malbase - Birpara Fdr.	-22.22	-	
		-	-	66kV CHP - Chumdo Fdr.	18.03	+	
		-	-	66kV CHP - Gedu Fdr.	2.09	+	
		-	-	3x3MVA, 66/11kV TFR	2.20	+	
		Total	107.16	Error at Station/Auxiliary Consumption/Losses	-0.131%		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	4.47	+	U/S Unit-I & L/S Unit-I under AMP.
		Unit- II	7.61	66kV BHP - Lobeysa Fdr.	16.24	+	
	Total	7.61	220kV BHP - Tsirang Fdr.	1.68	+		
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	1.10	+	
Unit- II		15.78	30MVA ICT, 220/66kV				
		Total	15.78	Error at Station/Auxiliary Consumption/Losses	-0.428%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	26.24	+	Unit-I on standby.
		Unit-II	26.52	220kV Jigmeling - Dagapela Fdr.	2.70	+	
		-	-	5MVA, 220/33kV TFR			
		Total	26.52	Error at Station/Auxiliary Consumption/Losses	1.056%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	7.30	+	Unit-I under Annual Maintenance. Unit-IV on standby.
		Unit-II	10.50	132kV KHP - Kilikhar Fdr- II	12.86	+	
		Unit- III	10.53	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-16.43	-	
		-	-	132kV Motanga - Rangia Fdr.	-1.67	-	
		-	-	220kV Tsirang - Jigmeling	24.02	+	
		Total	21.03	Error at Station/Auxiliary Consumption/Losses	2.235%		

Note: Generation-Load Summary for December 28, 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	370.14	267.02	262.86	79.10	4.16
2	Eastern Grid	131.22	63.69	62.68	91.55	1.01
	Total	501.36	330.71	325.54	170.65	5.17

Note: Generation-Load Summary for December 28, 2019 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	432.84	310.01	297.66	109.02	12.35
2	Eastern Grid	121.00	64.98	63.05	69.83	1.93
	Total	553.84	374.99	360.71	178.85	14.28

NOTE- All 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:	December 29, 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	70.00	400kV THP - Siliguri Fdr- I	74.00	+	Unit-II & V under shutdown. Unit-VI under maintenance Unit-III on standby. 400kV THP-SIL Fdr II & IV on 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	140.00	400kV THP - Malbase Fdr- III	132.00	+	
		Unit- V	0.00	400kV Malbase - Siliguri	58.00	+	
		Unit- VI	0.00	-	-	-	
		Total	210.00	Error at Station/Auxiliary Consumption/Losses	1.905%		
2	720MW MHP	Unit-I	124.86	400kV MHP - Jigmeling Fdr - I	0.00		Unit-IV on standby. Unit-II under shutdown. Unit-III under breakdown. 400kV MHP-JLG Fdr I, III & IV on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	124.38	+	
		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	124.86	Error at Station/Auxiliary Consumption/Losses	0.384%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	7.50	+	Unit-I & II under Annual Maintenance.
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	7.50	+	
		Unit- III	45.48	220kV CHP - Malbase Fdr- III	42.31	+	
		Unit- IV	56.20	220kV CHP - Semtokha Fdr- IV	26.62		
		-	-	220kV Malbase - Birpara Fdr.	-17.00	-	
		-	-	66kV CHP - Chumdo Fdr.	10.80	+	
		-	-	66kV CHP - Gedu Fdr.	3.20	+	
		-	-	3x3MVA, 66/11kV TFR	0.77	+	
		Total	101.68	Error at Station/Auxiliary Consumption/Losses	2.931%		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	17.70	+	U/S Unit-I & L/S Unit-I under AMP.
		Unit- II	7.80	66kV BHP - Lobeysa Fdr.	12.30	+	
	Total	7.80	220kV BHP - Tsirang Fdr.	-6.36	-		
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.89	+	
Unit- II		16.20	30MVA ICT, 220/66kV				
		Total	16.20	Error at Station/Auxiliary Consumption/Losses	-2.208%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	25.98	+	Unit-I on standby.
		Unit-II	26.20	220kV Jigmeling - Dagapela Fdr.	1.80	+	
		-	-	5MVA, 220/33kV TFR			
		Total	26.20	Error at Station/Auxiliary Consumption/Losses	0.840%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	10.15	+	Unit-I under Annual Maintenance. Unit-IV on standby.
		Unit-II	10.50	132kV KHP - Kilikhar Fdr- II	9.98	+	
		Unit- III	10.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-15.50	-	
		-	-	132kV Motanga - Rangia Fdr.	-4.22	-	
		-	-	220kV Tsirang - Jigmeling	14.00	+	
		Total	21.00	Error at Station/Auxiliary Consumption/Losses	2.729%		

Note: Generation-Load summary for December 29, 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	361.88	217.88	213.01	130.00	4.87
2	Eastern Grid	145.86	55.20	54.15	104.66	1.05
	Total	507.74	273.08	267.16	234.66	5.92

Note: Generation-Load Summary for December 29, 2019 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	284.64	264.89	258.17	12.81	6.72
2	Eastern Grid	129.33	54.18	52.52	82.09	1.66
	Total	413.97	319.07	310.69	94.90	8.38

NOTE: All 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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