

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	December 3, 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- I, II under shutdown. Unit-IV & V on stand by. 400kV THP-SIL Fdr I under shutdown. 400kV THP-SIL Fdr IV on Standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	107.56	+	
		Unit- III	140.01	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	167.02	+	
		Unit- V	0.00	400kV Malbase - Siliguri	87.00	+	
		Unit- VI	139.46	-	-	-	
		Total	279.47	Error at Station/Auxiliary Consumption/Losses	1.750%		
2	720MW MHP	Unit-I	155.20	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II under shutdown. Unit-III under breakdown. Unit-IV on standby. 400kV MHP-JLG Fdr I & IV on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	75.00	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	75.00	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	155.20	Error at Station/Auxiliary Consumption/Losses	3.351%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	36.66	+	Unit I & Unit II under Annual Maintenance. 220kV CHP-Malbase Fdr III under AMP.
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	36.91	+	
		Unit- III	71.73	220kV CHP - Malbase Fdr- III	0.00		
		Unit- IV	70.50	220kV CHP - Semtokha Fdr- IV	45.95	+	
		-	-	220kV Malbase - Birpara Fdr.	-37.00	-	
		-	-	66kV CHP - Chumdo Fdr.	14.97	+	
		-	-	66kV CHP - Gedu Fdr.	4.72	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
		Total	142.23	Error at Station/Auxiliary Consumption/Losses	1.280%		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	17.40	+	U/S Unit-I & L/S Unit I under AMP
		Unit- II	10.20	66kV BHP - Lobeysa Fdr.	17.00	+	
	Total	10.20	220kV BHP - Tsirang Fdr.	-5.05	-		
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.98	+	
Unit- II		20.60	30MVA ICT, 220/66kV				
		Total	20.60	Error at Station/Auxiliary Consumption/Losses	1.526%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	33.40	+	Unit I on Standby
		Unit-II	33.62	220kV Jigmeling - Dagapela Fdr.	2.30	+	
		-	-	5MVA, 220/33kV TFR			
		Total	33.62	Error at Station/Auxiliary Consumption/Losses	0.654%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	12.82	+	Unit I under Annual Maintenance. Unit IV on Standby.
		Unit-II	14.11	132kV KHP - Kilikhar Fdr- II	14.13	+	
		Unit- III	14.12	5MVA, 132/11kV TFR	0.48	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-11.04	-	
		-	-	132kV Motanga - Rangia Fdr.	5.39	+	
		-	-	220kV Tsirang - Jigmeling	25.02	+	
		Total	28.23	Error at Station/Auxiliary Consumption/Losses	2.834%		

Note: Generation-Load Summary for December 03, 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	486.12	229.97	224.87	231.13	5.10
2	Eastern Grid	183.43	64.10	58.10	144.35	6.00
	Total	669.55	294.07	282.97	375.48	11.10

Note: Generation-Load Summary for December 03, 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	518.98	300.15	291.60	202.83	8.55
2	Eastern Grid	180.54	65.55	63.55	130.99	2.00
	Total	699.52	365.70	355.15	333.82	10.55

NOTE: Data collected from MHP, BHP, KHP, Motanga and Malbase.

- 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 4, 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- I, II under shutdown. Unit-IV & V on stand by. 400kV THP-SIL Fdr I under shutdown. 400kV THP-SIL Fdr IV on Standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	112.00	+	
		Unit- III	140.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	162.00	+	
		Unit- V	0.00	400kV Malbase - Siliguri	94.00	+	
		Unit- VI	140.40	-	-	-	
		Total	280.40	Error at Station/Auxiliary Consumption/Losses	2.282%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II under shutdown. Unit-III under breakdown. Unit-I on standby. 400kV MHP-JLG Fdr I & IV on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	70.11	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	70.25	+	
		Unit-IV	140.50	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	140.50	Error at Station/Auxiliary Consumption/Losses	0.100%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	45.60	+	Unit I & II under Annual Maintenance. 220kV CHP-Malbase Fdr III under AMP.
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	45.50	+	
		Unit- III	68.06	220kV CHP - Malbase Fdr- III	0.00		
		Unit- IV	71.30	220kV CHP - Semtokha Fdr- IV	28.50	+	
		-	-	220kV Malbase - Birpara Fdr.	-46.00	-	
		-	-	66kV CHP - Chumdo Fdr.	11.10	+	
		-	-	66kV CHP - Gedu Fdr.	5.00	+	
		-	-	3x3MVA, 66/11kV TFR	1.38	+	
		Total	139.36	Error at Station/Auxiliary Consumption/Losses	1.636%		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	23.00	+	U/S Unit-I & L/S Unit-II under Annual Maintenance.
		Unit- II	10.10	66kV BHP - Lobeysa Fdr.	14.80	+	
		Total	10.10	220kV BHP - Tsirang Fdr.	-8.84	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	19.50	30MVA ICT, 220/66kV			
		Total	19.50	Error at Station/Auxiliary Consumption/Losses	-1.333%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	34.30	+	Unit-I Standby
		Unit-II	34.53	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	34.53	Error at Station/Auxiliary Consumption/Losses	0.666%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	14.79	+	Unit I under Annual Maintenance. Unit IV on Standby.
		Unit-II	14.09	132kV KHP - Kilihar Fdr- II	12.27	+	
		Unit- III	14.09	5MVA, 132/11kV TFR	0.39	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	2.30	+	
		-	-	132kV Motanga - Rangia Fdr.	5.35	+	
		-	-	220kV Tsirang - Jigmeling	26.30	+	
		Total	28.18	Error at Station/Auxiliary Consumption/Losses	2.576%		

Note: Generation-Load summary for December 04, 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	483.89	206.49	199.74	251.10	6.75
2	Eastern Grid	168.68	46.97	46.10	148.01	0.87
	Total	652.57	253.46	245.84	399.11	7.62

Note: Generation-Load Summary for December 04, 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	415.07	257.17	252.87	147.74	4.30
2	Eastern Grid	178.34	64.54	61.29	123.96	3.25
	Total	593.41	321.71	314.16	271.70	7.55

NOTES: 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.