

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	December 30, 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	71.85	400kV THP - Siliguri Fdr- I	57.80	+	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	119.86	400kV THP - Malbase Fdr- III	130.19	+	
		Unit- V	0.00	400kV Malbase - Siliguri	38.00	+	
		Unit- VI	0.00	-	-	-	
		Total	191.71	Error at Station/Auxiliary Consumption/Losses	1.940%		
2	720MW MHP	Unit-I	115.14	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	114.64	+	
		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	115.14	Error at Station/Auxiliary Consumption/Losses	0.434%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-4.96	-	Unit I & II under Annual Maintenance.
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	-4.95	-	
		Unit- III	45.11	220kV CHP - Malbase Fdr- III	26.40	+	
		Unit- IV	56.53	220kV CHP - Semtokha Fdr- IV	60.01	+	
		-	-	220kV Malbase - Birpara Fdr.	-30.00	-	
		-	-	66kV CHP - Chumdo Fdr.	17.88	+	
		-	-	66kV CHP - Gedu Fdr.	1.93	+	
		-	-	3x3MVA, 66/11kV TFR	2.20	+	
		Total	101.64	Error at Station/Auxiliary Consumption/Losses	3.079%		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	9.09	+	U/S Unit-I & L/S Unit-I under AMP.
		Unit- II	7.42	66kV BHP - Lobeysa Fdr.	16.39	+	
	Total	7.42	220kV BHP - Tsirang Fdr.	-3.76	-		
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	1.10	+	
Unit- II		15.26	30MVA ICT, 220/66kV				
		Total	15.26	Error at Station/Auxiliary Consumption/Losses	-0.617%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	25.97	+	Unit-I on standby.
		Unit-II	26.21	220kV Jigmeling - Dagapela Fdr.	2.80	+	
		-	-	5MVA, 220/33kV TFR			
		Total	26.21	Error at Station/Auxiliary Consumption/Losses	0.916%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	5.96	+	Unit-I under Annual Maintenance. Unit-IV on standby.
		Unit-II	10.12	132kV KHP - Kilikhar Fdr- II	13.45	+	
		Unit- III	10.16	5MVA, 132/11kV TFR	0.50	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-20.07	-	
		-	-	132kV Motanga - Rangia Fdr.	0.28	+	
		-	-	220kV Tsirang - Jigmeling	18.73	+	
		Total	20.28	Error at Station/Auxiliary Consumption/Losses	1.824%		

Note: Generation-Load Summary for December 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	342.24	267.62	263.47	55.89	4.15
2	Eastern Grid	135.42	59.30	58.43	94.85	0.87
Total		477.66	326.92	321.90	150.74	5.02

Note: Generation-Load Summary for December 30, 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	406.68	302.17	298.02	93.51	4.15
2	Eastern Grid	115.00	69.07	68.42	56.93	0.65
Total		521.68	371.24	366.44	150.44	4.80

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 31, 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	72.02	400kV THP - Siliguri Fdr- I	63.15	+	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	120.09	400kV THP - Malbase Fdr- III	122.47	+	
		Unit- V	0.00	400kV Malbase - Siliguri	46.00	+	
		Unit- VI	0.00	-	-	-	
		Total	192.11	Error at Station/Auxiliary Consumption/Losses	3.378%		
2	720MW MHP	Unit-I	125.27	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	124.80	+	
		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	125.27	Error at Station/Auxiliary Consumption/Losses	0.375%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	5.07	+	Unit-I & II under Annual Maintenance.
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	4.99	+	
		Unit- III	41.73	220kV CHP - Malbase Fdr- III	43.50	+	
		Unit- IV	55.91	220kV CHP - Semtokha Fdr- IV	25.59	+	
		-	-	220kV Malbase - Birpara Fdr.	-25.00	-	
		-	-	66kV CHP - Chumdo Fdr.	11.47	+	
		-	-	66kV CHP - Gedu Fdr.	2.64	+	
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		Total	97.64	Error at Station/Auxiliary Consumption/Losses	2.847%		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	18.44	+	U/S Unit-I & L/S Unit-I under AMP.
		Unit- II	7.36	66kV BHP - Lobeysa Fdr.	12.44	+	
	Total	7.36	220kV BHP - Tsirang Fdr.	-9.95	-		
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.70	+	
Unit- II		15.06	30MVA ICT, 220/66kV				
		Total	15.06	Error at Station/Auxiliary Consumption/Losses	3.510%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	25.48	+	Unit-I on standby.
		Unit-II	25.71	220kV Jigmeling - Dagapela Fdr.	1.80	+	
		-	-	5MVA, 220/33kV TFR			
		Total	25.71	Error at Station/Auxiliary Consumption/Losses	0.895%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	10.37	+	Unit-I under Annual Maintenance. Unit-IV on standby.
		Unit-II	11.10	132kV KHP - Kilikhar Fdr- II	11.04	+	
		Unit- III	11.10	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-14.12	-	
		-	-	132kV Motanga - Rangia Fdr.	-0.35	-	
		-	-	220kV Tsirang - Jigmeling	14.51	+	
		Total	22.20	Error at Station/Auxiliary Consumption/Losses	2.027%		

Note: Generation-Load summary for December 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	337.88	229.16	220.67	94.21	8.49
2	Eastern Grid	147.47	51.65	50.73	110.33	0.92
	Total	485.35	280.81	271.40	204.54	9.41

Note: Generation-Load Summary for December 31, 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	287.50	239.89	235.99	47.53	3.90
2	Eastern Grid	137.23	52.68	51.82	84.63	0.86
	Total	424.73	292.57	287.81	132.16	4.76

NOTE: All data collected from site.

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 - 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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