

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 10, 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	216.75	+	Unit-II under Standby Unit- I, 400kV THP-SIL Fdr IV, 400kV Tala-Malbase & ICT under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	215.40	+	
		Unit- III	160.62	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	81.24	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	99.92	400kV Malbase - Siliguri	0.00		
		Unit- VI	100.55	-	-	-	
		Total	442.33	Error at Station/Auxiliary Consumption/Losses	2.301%		
2	720MW MHP	Unit-I	130.06	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II on Standby. Unit-III under AMP(22/09/20- 30/11/2020). 400kV MHP-Jigmeling Fdr I under shutdown. 400kV MHP-Jigmeling Fdr II under Breakdown.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	129.89	+	
		Unit-IV	130.59	400kV MHP - Jigmeling Fdr - IV	129.39	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	260.65	Error at Station/Auxiliary Consumption/Losses	0.526%		
3	336MW CHP	Unit- I	76.34	220kV CHP - Birpara Fdr- I	33.30	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	33.38	+	
		Unit- III	68.89	220kV CHP - Malbase Fdr- III	99.27	+	
		Unit- IV	70.92	220kV CHP - Semtokha Fdr- IV	31.38	+	
		-	-	220kV Malbase - Birpara Fdr.	-24.67	-	
		-	-	66kV CHP - Chumdo Fdr.	12.45	+	
		-	-	66kV CHP - Gedu Fdr.	4.51	+	
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		Total	216.15	Error at Station/Auxiliary Consumption/Losses	0.120%		
4	24MW BHP (U/S)	Unit- I	6.45	220kV BHP - Semtokha Fdr.	21.08	+	
		Unit- II	6.45	66kV BHP - Lobeysa Fdr.	15.93	+	
		Total	12.90	220kV BHP - Tsirang Fdr.	2.41	+	
	40MW BHP (L/S)	Unit- I	13.94	5MVA, 66/11kV TFR	0.70	+	
		Unit- II	13.34	30MVA ICT, 220/66kV			
		Total	27.28	Error at Station/Auxiliary Consumption/Losses	0.149%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	46.81	+	Unit I on Standby
		Unit-II	47.08	220kV Jigmeling - Dagapela Fdr.	2.40	+	
		-	-	5MVA, 220/33kV TFR			
		Total	47.08	Error at Station/Auxiliary Consumption/Losses	0.573%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	17.85	+	Unit I under Annual Maintenance
		Unit-II	12.03	132kV KHP - Kilikhar Fdr- II	16.68	+	
		Unit- III	12.03	5MVA, 132/11kV TFR	0.18	+	
		Unit- IV	12.02	132kV Gelephu - Salakati Fdr.	-6.34	-	
		-	-	132kV Motanga - Rangia Fdr.	20.85	+	
		-	-	220kV Tsirang - Jigmeling	46.33	+	
		Total	36.08	Error at Station/Auxiliary Consumption/Losses	3.800%		

Note: Generation-Load Summary for November 10, 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	745.74	225.25	216.88	474.16	8.37
2	Eastern Grid	296.73	69.27	66.53	273.79	2.74
	Total	1,042.47	294.52	283.41	747.95	11.11

Note: Generation-Load Summary for November 10, 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	666.92	273.48	266.65	370.16	6.83
2	Eastern Grid	245.01	70.21	66.23	198.08	3.98
	Total	911.93	343.69	332.88	568.24	10.81

NOTE: MHP, MAL, KHP & Motanga 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:	November 11, 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	167.03	+	Unit- II under Standby. Unit I, 400kV THP-SIL Fdr IV, 400kV Tala-Malbase & ICT under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	163.83	+	
		Unit- III	80.20	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	80.78	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	79.89	400kV Malbase - Siliguri	0.00		
		Unit- VI	99.45	-	-	-	
		Total	340.32	Error at Station/Auxiliary Consumption/Losses	2.780%		
2	720MW MHP	Unit-I	114.90	400kV MHP - Jigmeling Fdr - I	0.00		Unit-III under maintenance (22/09/20-30/11/2020). Unit-II under standby. 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr I under shutdown
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	122.55	+	
		Unit-IV	130.42	400kV MHP - Jigmeling Fdr - IV	121.74	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	245.32	Error at Station/Auxiliary Consumption/Losses	0.420%		
3	336MW CHP	Unit- I	58.17	220kV CHP - Birpara Fdr- I	31.87	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	31.53	+	
		Unit- III	63.00	220kV CHP - Malbase Fdr- III	93.00	+	
		Unit- IV	58.00	220kV CHP - Semtokha Fdr- IV	8.66	-	
		-	-	220kV Malbase - Birpara Fdr.	-19.50	-	
		-	-	66kV CHP - Chumdo Fdr.	8.50	+	
		-	-	66kV CHP - Gedu Fdr.	3.67	+	
		-	-	3x3MVA, 66/11kV TFR	0.78	+	
		Total	179.17	Error at Station/Auxiliary Consumption/Losses	0.647%		
4	24MW BHP (U/S)	Unit- I	6.38	220kV BHP - Semtokha Fdr.	28.74	+	
		Unit- II	6.38	66kV BHP - Lobeysa Fdr.	12.94	+	
		Total	12.76	220kV BHP - Tsirang Fdr.	-2.22	-	
	40MW BHP (L/S)	Unit- I	13.58	5MVA, 66/11kV TFR	0.50	+	
		Unit- II	13.01	30MVA ICT, 220/66kV			
		Total	26.59	Error at Station/Auxiliary Consumption/Losses	-2.294%		
5	126MW DHPC	Unit-I	46.23	220kV DHPC - Tsirang Fdr.	46.00	+	Unit-II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.40	+	
		-	-	5MVA, 220/33kV TFR			
		Total	46.23	Error at Station/Auxiliary Consumption/Losses	0.498%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	19.99	+	Unit I Annual Maintenance.
		Unit-II	12.51	132kV KHP - Kilihar Fdr- II	15.67	+	
		Unit- III	12.63	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	12.10	132kV Gelephu - Salakati Fdr.	6.49	+	
		-	-	132kV Motanga - Rangia Fdr.	29.60	+	
		-	-	220kV Tsirang - Jigmeling	41.48	+	
		Total	37.24	Error at Station/Auxiliary Consumption/Losses	3.330%		

Note: Generation-Load summary for November 11, 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	605.07	188.83	179.99	374.76	8.84
2	Eastern Grid	282.56	43.66	41.39	280.38	2.27
	Total	887.63	232.49	221.38	655.14	11.11

Note: Generation-Load Summary for November 11, 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	564.7	263.90	258.26	279.35	5.64
2	Eastern Grid	249.94	64.36	57.38	207.03	6.98
	Total	814.64	328.26	315.64	486.38	12.62

NOTES: KHP,MHP,MAL & Motanga datas 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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