

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 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	0.00	400kV THP - Siliguri Fdr- I	259.75	+	Unit-I at Standby. 400kV THP-SIL Fdr II 400kV THP-Malbase Fdr under shutdown.
		Unit- II	69.42	400kV THP - Siliguri Fdr- II	0.00	-	
		Unit- III	119.54	400kV THP - Siliguri Fdr- IV	251.31	+	
		Unit- IV	70.52	400kV THP - Malbase Fdr- III	0.00	+	
		Unit- V	138.93	400kV Malbase - Siliguri	-11.37	-	
		Unit- VI	120.36	-	-	-	
		Total	518.77	Error at Station/Auxiliary Consumption/Losses	1.486%		
2	720MW MHP	Unit-I	140.11	400kV MHP - Jigmeling Fdr - I	141.72	+	Unit-II at standby. Unit-III under AMP(22/09/20-30/11/2020). 400kV MHP-Jigmeling Fdr II under Breakdown. 400kV MHP-Jigmeling Fdr III at standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00	-	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00	-	
		Unit-IV	145.62	400kV MHP - Jigmeling Fdr - IV	142.54	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	285.73	Error at Station/Auxiliary Consumption/Losses	0.514%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	61.89	+	Unit I at standby
		Unit- II	85.82	220kV CHP - Birpara Fdr- II	61.64	+	
		Unit- III	85.15	220kV CHP - Malbase Fdr- III	108.25	+	
		Unit- IV	85.50	220kV CHP - Semtokha Fdr- IV	8.48	-	
		-	-	220kV Malbase - Birpara Fdr.	16.49	+	
		-	-	66kV CHP - Chumdo Fdr.	9.10	+	
		-	-	66kV CHP - Gedu Fdr.	5.04	+	
		-	-	3x3MVA, 66/11kV TFR	1.40	+	
		Total	256.47	Error at Station/Auxiliary Consumption/Losses	0.261%		
4	24MW BHP (U/S)	Unit- I	8.39	220kV BHP - Semtokha Fdr.	30.86	+	
		Unit- II	8.39	66kV BHP - Lobeysa Fdr.	14.93	+	
		Total	16.78	220kV BHP - Tsirang Fdr.	2.31	-	
	40MW BHP (L/S)	Unit- I	15.85	5MVA, 66/11kV TFR	0.59	+	
		Unit- II	16.02	30MVA ICT, 220/66kV			
		Total	31.87	Error at Station/Auxiliary Consumption/Losses	-0.082%		
5	126MW DHPC	Unit-I	61.24	220kV DHPC - Tsirang Fdr.	60.87	+	Unit II at standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.70	+	
		-	-	5MVA, 220/33kV TFR			
		Total	61.24	Error at Station/Auxiliary Consumption/Losses	0.604%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	25.09	+	Unit I at standby
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	22.60	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.50	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	17.86	+	
		-	-	132kV Motanga - Rangia Fdr.	50.68	+	
		-	-	220kV Tsirang - Jigmeling	60.90	+	
		Total	49.50	Error at Station/Auxiliary Consumption/Losses	2.646%		

Note: Generation-Load Summary for October 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	885.13	184.52	177.51	639.71	7.01
2	Eastern Grid	335.23	43.33	40.55	352.80	2.78
	Total	1,220.36	227.85	218.06	992.51	9.79

Note: Generation-Load Summary for October 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	788.26	266.13	258.75	472.79	7.38
2	Eastern Grid	307.82	62.92	62.51	294.24	0.41
	Total	1,096.08	329.05	321.26	767.03	7.79

NOTE: BHP & EASTERN 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.
 - 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:	October 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	0.00	400kV THP - Siliguri Fdr- I	199.66	+	Unit-I , II & 400kV THP-SIL Fdr II under Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	120.25	400kV THP - Siliguri Fdr- IV	192.83	+	
		Unit- IV	70.52	400kV THP - Malbase Fdr- III	0.00	+	
		Unit- V	110.50	400kV Malbase - Siliguri	-10.00	+	
		Unit- VI	101.04	-	-	-	
		Total	402.31	Error at Station/Auxiliary Consumption/Losses	2.441%		
2	720MW MHP	Unit-I	135.18	400kV MHP - Jigmeling Fdr - I	139.30	+	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 III under standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	145.59	400kV MHP - Jigmeling Fdr - IV	140.30	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	280.77	Error at Station/Auxiliary Consumption/Losses	0.417%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	60.01	+	Unit I standby
		Unit- II	77.89	220kV CHP - Birpara Fdr- II	59.99	+	
		Unit- III	77.87	220kV CHP - Malbase Fdr- III	119.62	+	
		Unit- IV	79.47	220kV CHP - Semtokha Fdr- IV	-16.24	-	
		-	-	220kV Malbase - Birpara Fdr.	8.00	+	
		-	-	66kV CHP - Chumdo Fdr.	5.40	+	
		-	-	66kV CHP - Gedu Fdr.	4.97	+	
		-	-	3x3MVA, 66/11kV TFR	0.80	+	
		Total	235.23	Error at Station/Auxiliary Consumption/Losses	0.289%		
4	24MW BHP (U/S)	Unit- I	8.28	220kV BHP - Semtokha Fdr.	44.99	+	
		Unit- II	8.28	66kV BHP - Lobeysa Fdr.	13.09	+	
		Total	16.56	220kV BHP - Tsirang Fdr.	-10.16	-	
	40MW BHP (L/S)	Unit- I	15.82	5MVA, 66/11kV TFR	0.34	+	
		Unit- II	15.75	30MVA ICT, 220/66kV			
		Total	31.57	Error at Station/Auxiliary Consumption/Losses	-0.412%		
5	126MW DHPC	Unit-I	59.74	220kV DHPC - Tsirang Fdr.	59.97	+	Unit II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.20	+	
		-	-	5MVA, 220/33kV TFR			
		Total	59.74	Error at Station/Auxiliary Consumption/Losses	-0.385%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	27.50	+	Unit I standby
		Unit-II	15.50	132kV KHP - Kilikhar Fdr- II	17.62	+	
		Unit- III	15.50	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	15.50	132kV Gelephu - Salakati Fdr.	18.53	+	
		-	-	132kV Motanga - Rangia Fdr.	31.74	+	
		-	-	220kV Tsirang - Jigmeling	46.82	+	
		Total	46.50	Error at Station/Auxiliary Consumption/Losses	2.366%		

Note: Generation-Load summary for October 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	745.41	188.10	179.16	510.49	8.94
2	Eastern Grid	327.27	44.22	41.95	329.87	2.27
	Total	1,072.68	232.32	221.11	840.36	11.21

Note: Generation-Load Summary for October 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	723.64	237.13	227.40	452.24	9.73
2	Eastern Grid	313.98	45.00	40.08	303.25	4.92
	Total	1,037.62	282.13	267.48	755.49	14.65

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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