

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	October 29, 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	240.34	+	Unit-I & II at Standby. 400kV THP-SIL Fdr II at standby 400kV THP-Malbase Fdr under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00	-	
		Unit- III	119.97	400kV THP - Siliguri Fdr- IV	231.09	+	
		Unit- IV	140.07	400kV THP - Malbase Fdr- III	0.00	-	
		Unit- V	119.78	400kV Malbase - Siliguri	15.49	+	
		Unit- VI	100.55	-	-	-	
		Total	480.37	Error at Station/Auxiliary Consumption/Losses	1.861%		
2	720MW MHP	Unit-I	130.01	400kV MHP - Jigmeling Fdr - I	136.18	+	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	145.00	400kV MHP - Jigmeling Fdr - IV	137.07	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	275.01	Error at Station/Auxiliary Consumption/Losses	0.640%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	60.63	+	Unit I at standby
		Unit- II	83.83	220kV CHP - Birpara Fdr- II	60.46	+	
		Unit- III	83.08	220kV CHP - Malbase Fdr- III	98.97	+	
		Unit- IV	84.86	220kV CHP - Semtokha Fdr- IV	15.78	+	
		-	-	220kV Malbase - Birpara Fdr.	16.85	+	
		-	-	66kV CHP - Chumdo Fdr.	9.19	+	
		-	-	66kV CHP - Gedu Fdr.	5.05	+	
		-	-	3x3MVA, 66/11kV TFR	1.47	+	
		Total	251.77	Error at Station/Auxiliary Consumption/Losses	0.087%		
4	24MW BHP (U/S)	Unit- I	8.06	220kV BHP - Semtokha Fdr.	24.85	+	
		Unit- II	8.06	66kV BHP - Lobeysa Fdr.	14.77	+	
		Total	16.12	220kV BHP - Tsirang Fdr.	6.77	+	
	40MW BHP (L/S)	Unit- I	15.59	5MVA, 66/11kV TFR	0.61	+	
		Unit- II	15.34	30MVA ICT, 220/66kV			
		Total	30.93	Error at Station/Auxiliary Consumption/Losses	0.106%		
5	126MW DHPC	Unit-I	57.23	220kV DHPC - Tsirang Fdr.	56.89	+	Unit II at standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.50	+	
		-	-	5MVA, 220/33kV TFR			
		Total	57.23	Error at Station/Auxiliary Consumption/Losses	0.594%		
6	60MW KHP	Unit- I	15.06	132kV KHP - Nangkhon Fdr- I	23.37	+	Unit III at standby
		Unit-II	15.45	132kV KHP - Kilihar Fdr- II	21.28	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.50	+	
		Unit- IV	15.46	132kV Gelephu - Salakati Fdr.	15.15	+	
		-	-	132kV Motanga - Rangia Fdr.	41.05	+	
		-	-	220kV Tsirang - Jigmeling	62.05	+	
		Total	45.97	Error at Station/Auxiliary Consumption/Losses	1.784%		

Note: Generation-Load Summary for October 29, 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	836.42	149.51	141.46	624.86	8.05
2	Eastern Grid	320.98	53.58	51.00	329.45	2.58
	Total	1,157.40	203.09	192.46	954.31	10.63

Note: Generation-Load Summary for October 29, 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	753.86	253.34	248.53	456.14	4.81
2	Eastern Grid	283.65	59.96	58.70	268.07	1.26
	Total	1,037.51	313.30	307.23	724.21	6.07

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 30, 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	233.05	+	Unit-I , II & 400kV THP-SIL Fdr II under Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	119.61	400kV THP - Siliguri Fdr- IV	224.51	+	
		Unit- IV	140.82	400kV THP - Malbase Fdr- III	0.00	+	
		Unit- V	103.95	400kV Malbase - Siliguri	-11.37	-	
		Unit- VI	99.82	-	-	-	
		Total	464.20	Error at Station/Auxiliary Consumption/Losses	1.430%		
2	720MW MHP	Unit-I	135.08	400kV MHP - Jigmeling Fdr - I	134.46	+	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	135.29	400kV MHP - Jigmeling Fdr - IV	135.29	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	270.37	Error at Station/Auxiliary Consumption/Losses	0.229%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	57.78	+	Unit I standby
		Unit- II	74.59	220kV CHP - Birpara Fdr- II	57.55	+	
		Unit- III	74.48	220kV CHP - Malbase Fdr- III	112.60	+	
		Unit- IV	76.38	220kV CHP - Semtokha Fdr- IV	-15.01	-	
		-	-	220kV Malbase - Birpara Fdr.	16.49	+	
		-	-	66kV CHP - Chumdo Fdr.	5.74	+	
		-	-	66kV CHP - Gedu Fdr.	4.51	+	
		-	-	3x3MVA, 66/11kV TFR	1.00	+	
		Total	225.45	Error at Station/Auxiliary Consumption/Losses	0.568%		
4	24MW BHP (U/S)	Unit- I	7.98	220kV BHP - Semtokha Fdr.	43.25	+	
		Unit- II	7.98	66kV BHP - Lobeysa Fdr.	12.98	+	
		Total	15.96	220kV BHP - Tsirang Fdr.	-11.74	-	
	40MW BHP (L/S)	Unit- I	14.45	5MVA, 66/11kV TFR	0.38	+	
		Unit- II	14.20	30MVA ICT, 220/66kV			
		Total	28.65	Error at Station/Auxiliary Consumption/Losses	-0.908%		
5	126MW DHPC	Unit-I	57.72	220kV DHPC - Tsirang Fdr.	57.44	+	Unit II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	57.72	Error at Station/Auxiliary Consumption/Losses	0.485%		
6	60MW KHP	Unit- I	14.00	132kV KHP - Nangkhon Fdr- I	25.30	+	Unit III standby
		Unit-II	14.00	132kV KHP - Kilikhar Fdr- II	16.26	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.23	+	
		Unit- IV	14.00	132kV Gelephu - Salakati Fdr.	16.66	+	
		-	-	132kV Motanga - Rangia Fdr.	26.94	+	
		-	-	220kV Tsirang - Jigmeling	44.37	+	
		Total	42.00	Error at Station/Auxiliary Consumption/Losses	0.495%		

Note: Generation-Load summary for October 30, 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	791.98	169.60	162.76	578.01	6.84
2	Eastern Grid	312.37	43.39	42.56	313.35	0.83
	Total	1,104.35	212.99	205.32	891.36	7.67

Note: Generation-Load Summary for October 30, 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	712.98	237.05	229.46	439.81	7.59
2	Eastern Grid	290.99	51.20	51.21	275.91	-0.01
	Total	1,003.97	288.25	280.67	715.72	7.58

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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