

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 1, 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	235.40	+	Unit-I,II & 400kV THP-SIL Fdr II under Standby 400kV THP-Malbase Fdr under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	120.16	400kV THP - Siliguri Fdr- IV	226.78	+	
		Unit- IV	129.44	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	119.78	400kV Malbase - Siliguri	-42.00	-	
		Unit- VI	100.43	-	-	-	
		Total	469.81	Error at Station/Auxiliary Consumption/Losses	1.624%		
2	720MW MHP	Unit-I	179.15	400kV MHP - Jigmeling Fdr - I	126.18	+	Unit-II under Standby. Unit-III under AMP(22/09/20-30/11/2020). 400kV MHP-Jigmeling Fdr II under Breakdown. 400kV MHP-Jigmeling 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	74.18	400kV MHP - Jigmeling Fdr - IV	127.25	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	253.33	Error at Station/Auxiliary Consumption/Losses	-0.039%		
3	336MW CHP	Unit- I	70.53	220kV CHP - Birpara Fdr- I	45.13	+	Unit II Standby
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	44.98	+	
		Unit- III	73.73	220kV CHP - Malbase Fdr- III	89.82	+	
		Unit- IV	73.68	220kV CHP - Semtokha Fdr- IV	21.75	+	
		-	-	220kV Malbase - Birpara Fdr.	5.00	+	
		-	-	66kV CHP - Chumdo Fdr.	10.03	+	
		-	-	66kV CHP - Gedu Fdr.	4.03	+	
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		Total	217.94	Error at Station/Auxiliary Consumption/Losses	0.275%		
4	24MW BHP (U/S)	Unit- I	7.59	220kV BHP - Semtokha Fdr.	20.44	+	
		Unit- II	7.59	66kV BHP - Lobeysa Fdr.	13.88	+	
		Total	15.18	220kV BHP - Tsirang Fdr.	8.61	+	
	40MW BHP (L/S)	Unit- I	14.39	5MVA, 66/11kV TFR	0.70	+	
		Unit- II	14.11	30MVA ICT, 220/66kV			
		Total	28.50	Error at Station/Auxiliary Consumption/Losses	0.114%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	56.44	+	Unit I Standby
		Unit-II	55.23	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	55.23	Error at Station/Auxiliary Consumption/Losses	-2.191%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	22.57	+	Unit I Standby
		Unit-II	15.09	132kV KHP - Kilikhar Fdr- II	21.25	+	
		Unit- III	15.10	5MVA, 132/11kV TFR	0.38	+	
		Unit- IV	14.08	132kV Gelephu - Salakati Fdr.	11.13	+	
		-	-	132kV Motanga - Rangia Fdr.	36.55	+	
		-	-	220kV Tsirang - Jigmeling	60.35	+	
		Total	44.27	Error at Station/Auxiliary Consumption/Losses	0.158%		

Note: Generation-Load Summary for November 01, 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	786.66	211.02	205.85	515.29	5.17
2	Eastern Grid	297.60	56.84	56.87	301.11	-0.03
	Total	1,084.26	267.86	262.72	816.40	5.14

Note: Generation-Load Summary for November 01, 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	766.26	260.63	253.42	455.95	7.21
2	Eastern Grid	43.78	63.40	63.22	30.06	0.18
	Total	810.04	324.03	316.64	486.01	7.39

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:	November 2, 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	214.96	+	Unit-I , II & 400kV THP-SIL Fdr II under Standby.400kV Tala-Malbase fdr under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	120.33	400kV THP - Siliguri Fdr- IV	207.16	+	
		Unit- IV	90.65	400kV THP - Malbase Fdr- III	0.00	+	
		Unit- V	119.88	400kV Malbase - Siliguri	-18.00	-	
		Unit- VI	99.45	-	-	-	
		Total	430.31	Error at Station/Auxiliary Consumption/Losses	1.903%		
2	720MW MHP	Unit-I	80.55	400kV MHP - Jigmeling Fdr - I	110.44	+	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	141.01	400kV MHP - Jigmeling Fdr - IV	111.04	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	221.56	Error at Station/Auxiliary Consumption/Losses	0.036%		
3	336MW CHP	Unit- I	67.64	220kV CHP - Birpara Fdr- I	52.36	+	Unit II standby
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	52.32	+	
		Unit- III	74.02	220kV CHP - Malbase Fdr- III	103.86	+	
		Unit- IV	71.19	220kV CHP - Semtokha Fdr- IV	-7.55	-	
		-	-	220kV Malbase - Birpara Fdr.	6.00	-	
		-	-	66kV CHP - Chumdo Fdr.	6.02	+	
		-	-	66kV CHP - Gedu Fdr.	4.16	+	
		-	-	3x3MVA, 66/11kV TFR	0.92	+	
		Total	212.85	Error at Station/Auxiliary Consumption/Losses	0.357%		
4	24MW BHP (U/S)	Unit- I	7.52	220kV BHP - Semtokha Fdr.	38.21	+	
		Unit- II	7.52	66kV BHP - Lobeysa Fdr.	12.40	+	
		Total	15.04	220kV BHP - Tsirang Fdr.	-6.47	-	
	40MW BHP (L/S)	Unit- I	14.97	5MVA, 66/11kV TFR	0.39	+	
		Unit- II	14.30	30MVA ICT, 220/66kV			
		Total	29.27	Error at Station/Auxiliary Consumption/Losses	-0.752%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	54.94	+	Unit I Standby
		Unit-II	55.20	220kV Jigmeling - Dagapela Fdr.	1.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	55.20	Error at Station/Auxiliary Consumption/Losses	0.471%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	24.03	+	Unit I standby
		Unit-II	14.06	132kV KHP - Kilihar Fdr- II	17.30	+	
		Unit- III	14.56	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	14.63	132kV Gelephu - Salakati Fdr.	17.22	+	
		-	-	132kV Motanga - Rangia Fdr.	30.64	+	
		-	-	220kV Tsirang - Jigmeling	46.56	+	
		Total	43.25	Error at Station/Auxiliary Consumption/Losses	3.746%		

Note: Generation-Load summary for November 02, 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	742.67	181.31	173.32	514.80	7.99
2	Eastern Grid	264.81	42.03	40.33	269.34	1.70
	Total	1,007.48	223.34	213.65	784.14	9.69

Note: Generation-Load Summary for November 02, 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	649.93	252.89	247.03	360.16	5.86
2	Eastern Grid	43.63	52.00	51.98	28.51	0.02
	Total	693.56	304.89	299.01	388.67	5.88

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.
 - 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.