

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 2, 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	212.16	+	Unit-II under Standby. Unit I,400kV THP-SIL Fdr IV, 400kV THP-Malbase Fdr & 400kV Malbase-SIL Fdr under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	210.18	+	
		Unit- III	120.38	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	90.67	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	119.50	400kV Malbase - Siliguri	0.00		
		Unit- VI	100.79	-	-	-	
		Total	431.34	Error at Station/Auxiliary Consumption/Losses	2.087%		
2	720MW MHP	Unit-I	110.13	400kV MHP - Jigmeling Fdr - I	124.66	+	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	140.38	400kV MHP - Jigmeling Fdr - IV	125.44	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	250.51	Error at Station/Auxiliary Consumption/Losses	0.164%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	51.75	+	Unit I Standby
		Unit- II	83.17	220kV CHP - Birpara Fdr- II	51.76	+	
		Unit- III	82.01	220kV CHP - Malbase Fdr- III	115.53	+	
		Unit- IV	84.36	220kV CHP - Semtokha Fdr- IV	14.99	+	
		-	-	220kV Malbase - Birpara Fdr.	3.00	+	
		-	-	66kV CHP - Chumdo Fdr.	9.13	+	
		-	-	66kV CHP - Gedu Fdr.	4.81	+	
		-	-	3x3MVA, 66/11kV TFR	1.40	+	
		Total	249.54	Error at Station/Auxiliary Consumption/Losses	0.068%		
4	24MW BHP (U/S)	Unit- I	7.45	220kV BHP - Semtokha Fdr.	26.51	+	
		Unit- II	7.45	66kV BHP - Lobeysa Fdr.	14.37	+	
		Total	14.90	220kV BHP - Tsirang Fdr.	1.98	+	
	40MW BHP (L/S)	Unit- I	14.49	5MVA, 66/11kV TFR	0.60	+	
		Unit- II	14.01	30MVA ICT, 220/66kV			
		Total	28.50	Error at Station/Auxiliary Consumption/Losses	-0.138%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	53.97	+	Unit I Standby
		Unit-II	54.22	220kV Jigmeling - Dagapela Fdr.	2.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	54.22	Error at Station/Auxiliary Consumption/Losses	0.461%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	22.09	+	Unit I Standby
		Unit-II	14.49	132kV KHP - Kilihar Fdr- II	19.94	+	
		Unit- III	14.46	5MVA, 132/11kV TFR	0.20	+	
		Unit- IV	14.47	132kV Gelephu - Salakati Fdr.	6.14	+	
		-	-	132kV Motanga - Rangia Fdr.	34.34	+	
		-	-	220kV Tsirang - Jigmeling	53.76	+	
		Total	43.42	Error at Station/Auxiliary Consumption/Losses	2.745%		

Note: Generation-Load Summary for November 02, 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	778.50	195.89	188.53	528.85	7.36
2	Eastern Grid	293.93	57.11	55.51	290.58	1.60
	Total	1,072.43	253.00	244.04	819.43	8.96

Note: Generation-Load Summary for November 02, 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	766.85	264.37	257.90	454.24	6.47
2	Eastern Grid	43.8	67.33	67.04	24.71	0.29
	Total	810.65	331.70	324.94	478.95	6.76

NOTE: MHP,MAL,KHP & 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.

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 3, 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	207.26	+	Unit-I under shutdown ,Unit-II & 400kV THP-SIL Fdr II under Standby.400kV Tala-Malbase & ICT under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	204.65	+	
		Unit- III	100.34	400kV THP - Siliguri Fdr- IV	0.00	+	
		Unit- IV	100.98	400kV THP - Malbase Fdr- III	0.00	+	
		Unit- V	119.15	400kV Malbase - Siliguri	0.00	-	
		Unit- VI	100.75	-	-	-	
		Total	421.22	Error at Station/Auxiliary Consumption/Losses	2.210%		
2	720MW MHP	Unit-I	119.54	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 III under standby.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	0.00		
		Unit-IV	141.54	400kV MHP - Jigmeling Fdr - IV	259.83	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	261.08	Error at Station/Auxiliary Consumption/Losses	0.479%		
3	336MW CHP	Unit- I	59.47	220kV CHP - Birpara Fdr- I	44.18	+	Unit III standby
		Unit- II	67.74	220kV CHP - Birpara Fdr- II	43.92	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	107.00	+	
		Unit- IV	70.41	220kV CHP - Semtokha Fdr- IV	-10.09	-	
		-	-	220kV Malbase - Birpara Fdr.	9.40	-	
		-	-	66kV CHP - Chumdo Fdr.	5.79	+	
		-	-	66kV CHP - Gedu Fdr.	4.98	+	
		-	-	3x3MVA, 66/11kV TFR	0.95	+	
		Total	197.62	Error at Station/Auxiliary Consumption/Losses	0.450%		
4	24MW BHP (U/S)	Unit- I	7.36	220kV BHP - Semtokha Fdr.	40.65	+	
		Unit- II	7.36	66kV BHP - Lobeysa Fdr.	12.62	+	
		Total	14.72	220kV BHP - Tsirang Fdr.	-9.70	-	
	40MW BHP (L/S)	Unit- I	14.85	5MVA, 66/11kV TFR	0.39	+	
		Unit- II	14.28	30MVA ICT, 220/66kV			
		Total	29.13	Error at Station/Auxiliary Consumption/Losses	-0.378%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	53.03	+	Unit I Standby
		Unit-II	53.28	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	53.28	Error at Station/Auxiliary Consumption/Losses	0.469%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	25.32	+	Unit I standby
		Unit-II	14.54	132kV KHP - Kilikhar Fdr- II	16.33	+	
		Unit- III	14.09	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	14.09	132kV Gelephu - Salakati Fdr.	13.68	+	
		-	-	132kV Motanga - Rangia Fdr.	27.43	+	
		-	-	220kV Tsirang - Jigmeling	42.28	+	
		Total	42.72	Error at Station/Auxiliary Consumption/Losses	1.805%		

Note: Generation-Load summary for November 03, 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	715.97	164.28	155.04	509.41	9.24
2	Eastern Grid	303.80	45.14	43.12	300.94	2.02
	Total	1,019.77	209.42	198.16	810.35	11.26

Note: Generation-Load Summary for November 03, 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	642.3	227.09	218.11	379.14	8.98
2	Eastern Grid	235.6	45.55	41.57	226.12	3.98
	Total	877.90	272.64	259.68	605.26	12.96

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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