

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 17, 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	191.22	+	Unit-IV under Standby Unit- I,II, 400kV THP-SIL Fdr IV, 400kV Tala-Malbase & ICT under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	189.16	+	
		Unit- III	99.89	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	148.99	400kV Malbase - Siliguri	0.00		
		Unit- VI	140.02	-	-	-	
		Total	388.90	Error at Station/Auxiliary Consumption/Losses	2.191%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I 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	54.69	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	92.36	+	
		Unit-IV	130.44	400kV MHP - Jigmeling Fdr - IV	91.72	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	185.13	Error at Station/Auxiliary Consumption/Losses	0.567%		
3	336MW CHP	Unit- I	72.08	220kV CHP - Birpara Fdr- I	26.98	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	26.82	+	
		Unit- III	64.19	220kV CHP - Malbase Fdr- III	89.48	+	
		Unit- IV	63.09	220kV CHP - Semtokha Fdr- IV	36.81	+	
		-	-	220kV Malbase - Birpara Fdr.	-24.51	-	
		-	-	66kV CHP - Chumdo Fdr.	13.66	+	
		-	-	66kV CHP - Gedu Fdr.	3.63	+	
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		Total	199.36	Error at Station/Auxiliary Consumption/Losses	0.191%		
4	24MW BHP (U/S)	Unit- I	5.89	220kV BHP - Semtokha Fdr.	21.89	+	
		Unit- II	5.89	66kV BHP - Lobeysa Fdr.	16.20	+	
		Total	11.78	220kV BHP - Tsirang Fdr.	-2.40	-	
	40MW BHP (L/S)	Unit- I	12.56	5MVA, 66/11kV TFR	0.70	+	
		Unit- II	12.05	30MVA ICT, 220/66kV			
		Total	24.61	Error at Station/Auxiliary Consumption/Losses	0.000%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	41.26	+	Unit I on Standby
		Unit-II	41.51	220kV Jigmeling - Dagapela Fdr.	2.20	+	
		-	-	5MVA, 220/33kV TFR			
		Total	41.51	Error at Station/Auxiliary Consumption/Losses	0.602%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	13.95	+	Unit I under Annual Maintenance. Unit IV on Standby
		Unit-II	14.92	132kV KHP - Kilikhar Fdr- II	14.69	+	
		Unit- III	15.07	5MVA, 132/11kV TFR	0.17	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-6.64	-	
		-	-	132kV Motanga - Rangia Fdr.	11.75	+	
		-	-	220kV Tsirang - Jigmeling	36.58	+	
		Total	29.99	Error at Station/Auxiliary Consumption/Losses	3.925%		

Note: Generation-Load Summary for November 17, 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	666.16	219.91	212.96	409.67	6.95
2	Eastern Grid	215.12	62.51	60.28	189.19	2.23
	Total	881.28	282.42	273.24	598.86	9.18

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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	627.59	288.91	281.26	315.21	7.65
2	Eastern Grid	218.06	62.92	57.13	178.61	5.79
	Total	845.65	351.83	338.39	493.82	13.44

NOTE: 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 18, 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	161.55	+	Unit- IV & 400kV Tala-Siliguri fdr IV under standby. Unit-I & II under maintenace
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	159.70	+	
		Unit- III	98.89	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	89.53	400kV Malbase - Siliguri	0.00		400kV Tala-Malbase & ICT under shutdown.
		Unit- VI	138.97	-	-	-	
		Total	327.39	Error at Station/Auxiliary Consumption/Losses	1.875%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-III under AMP (22/09/20-30/11/2020) Unit-I on standby 400kV MHP-JLG Fdr II under Breakdown 400kV MHP-JLG Fdr I under shutdown
		Unit-II	64.85	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	97.43	+	
		Unit-IV	130.48	400kV MHP - Jigmeling Fdr - IV	96.90	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	195.33	Error at Station/Auxiliary Consumption/Losses	0.512%		
3	336MW CHP	Unit- I	56.63	220kV CHP - Birpara Fdr- I	21.31	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	21.26	+	
		Unit- III	51.78	220kV CHP - Malbase Fdr- III	86.44	+	
		Unit- IV	53.12	220kV CHP - Semtokha Fdr- IV	18.22	+	
		-	-	220kV Malbase - Birpara Fdr.	-31.80	-	
		-	-	66kV CHP - Chumdo Fdr.	8.58	+	
		-	-	66kV CHP - Gedu Fdr.	4.13	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
Total	161.53	Error at Station/Auxiliary Consumption/Losses	0.241%				
4	24MW BHP (U/S)	Unit- I	5.83	220kV BHP - Semtokha Fdr.	25.33	+	
		Unit- II	5.83	66kV BHP - Lobeysa Fdr.	13.47	+	
		Total	11.66	220kV BHP - Tsirang Fdr.	-3.37	-	
	40MW BHP (L/S)	Unit- I	12.43	5MVA, 66/11kV TFR	0.38	+	
		Unit- II	11.93	30MVA ICT, 220/66kV			
		Total	24.36	Error at Station/Auxiliary Consumption/Losses	0.862%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	41.30	+	Unit-I on Standby
		Unit-II	41.51	220kV Jigmeling - Dagapela Fdr.	1.30	+	
		-	-	5MVA, 220/33kV TFR			
		Total	41.51	Error at Station/Auxiliary Consumption/Losses	0.506%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	16.87	+	Unit I under Annual Maintenance
		Unit-II	10.07	132kV KHP - Kilikhar Fdr- II	12.12	+	
		Unit- III	10.17	5MVA, 132/11kV TFR	0.35	+	
		Unit- IV	10.07	132kV Gelephu - Salakati Fdr.	4.07	+	
		-	-	132kV Motanga - Rangia Fdr.	9.80	+	
		-	-	220kV Tsirang - Jigmeling	32.16	+	
		Total	30.31	Error at Station/Auxiliary Consumption/Losses	3.200%		

Note: Generation-Load summary for November 18, 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	566.45	202.27	196.62	332.02	5.65
2	Eastern Grid	225.64	49.60	47.63	208.20	1.97
	Total	792.09	251.87	244.25	540.22	7.62

Note: Generation-Load Summary for November 18, 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	493.81	260.03	253.31	219.88	6.72
2	Eastern Grid	224.64	54.81	48.67	183.73	6.14
	Total	718.45	314.84	301.98	403.61	12.86

NOTES: KHP,MHP & Motanga datas collected from site.

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 - 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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