

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 9, 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	222.07	+	Unit-II under Standby Unit- I, 400kV THP-SIL Fdr IV, 400kV Tala-Malbase & ICT under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	220.09	+	
		Unit- III	149.90	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	81.15	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	119.32	400kV Malbase - Siliguri	0.00		
		Unit- VI	100.48	-	-	-	
		Total	450.85	Error at Station/Auxiliary Consumption/Losses	1.927%		
2	720MW MHP	Unit-I	80.14	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II 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	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	104.80	+	
		Unit-IV	130.53	400kV MHP - Jigmeling Fdr - IV	104.44	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	210.67	Error at Station/Auxiliary Consumption/Losses	0.679%		
3	336MW CHP	Unit- I	81.08	220kV CHP - Birpara Fdr- I	40.77	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	40.78	+	
		Unit- III	72.24	220kV CHP - Malbase Fdr- III	96.01	+	
		Unit- IV	70.77	220kV CHP - Semtokha Fdr- IV	27.89	+	
		-	-	220kV Malbase - Birpara Fdr.	-4.90	-	
		-	-	66kV CHP - Chumdo Fdr.	12.47	+	
		-	-	66kV CHP - Gedu Fdr.	3.82	+	
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		Total	224.09	Error at Station/Auxiliary Consumption/Losses	0.335%		
4	24MW BHP (U/S)	Unit- I	6.57	220kV BHP - Semtokha Fdr.	24.69	+	
		Unit- II	6.57	66kV BHP - Lobeysa Fdr.	15.83	+	
	Total	13.14	220kV BHP - Tsirang Fdr.	-0.66	-		
	40MW BHP (L/S)	Unit- I	13.77	5MVA, 66/11kV TFR	0.70	+	
Unit- II		13.70	30MVA ICT, 220/66kV				
		Total	27.47	Error at Station/Auxiliary Consumption/Losses	0.123%		
5	126MW DHPC	Unit-I	46.28	220kV DHPC - Tsirang Fdr.	46.04	+	Unit II on Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	2.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	46.28	Error at Station/Auxiliary Consumption/Losses	0.519%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	21.47	+	Unit I under Annual Maintenance
		Unit-II	13.00	132kV KHP - Kilikhar Fdr- II	17.34	+	
		Unit- III	13.00	5MVA, 132/11kV TFR	0.42	+	
		Unit- IV	13.00	132kV Gelephu - Salakati Fdr.	-0.02	-	
		-	-	132kV Motanga - Rangia Fdr.	18.95	+	
		-	-	220kV Tsirang - Jigmeling	43.77	+	
		Total	39.00	Error at Station/Auxiliary Consumption/Losses	-0.590%		

Note: Generation-Load Summary for November 09, 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	761.83	199.25	191.62	518.81	7.63
2	Eastern Grid	249.67	65.27	64.07	228.17	1.20
	Total	1,011.50	264.52	255.69	746.98	8.83

Note: Generation-Load Summary for November 09, 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	702.74	293.63	284.02	370.45	9.61
2	Eastern Grid	253.56	72.10	64.87	220.12	7.23
	Total	956.30	365.73	348.89	590.57	16.84

NOTE: MHP, MAL, 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 10, 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	179.69	+	Unit- II under Standby. Unit I, 400kV THP-SIL Fdr IV, 400kV Tala-Malbase & ICT under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	176.70	+	
		Unit- III	79.70	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	81.09	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	99.72	400kV Malbase - Siliguri	0.00		
		Unit- VI	100.44	-	-	-	
		Total	360.95	Error at Station/Auxiliary Consumption/Losses	1.263%		
2	720MW MHP	Unit-I	50.25	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 I under shutdown
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	90.20	+	
		Unit-IV	130.65	400kV MHP - Jigmeling Fdr - IV	89.50	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	180.90	Error at Station/Auxiliary Consumption/Losses	0.663%		
3	336MW CHP	Unit- I	63.21	220kV CHP - Birpara Fdr- I	33.98	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	33.80	+	
		Unit- III	59.31	220kV CHP - Malbase Fdr- III	91.72	+	
		Unit- IV	59.56	220kV CHP - Semtokha Fdr- IV	8.56	+	
		-	-	220kV Malbase - Birpara Fdr.	-19.04	-	
		-	-	66kV CHP - Chumdo Fdr.	9.00	+	
		-	-	66kV CHP - Gedu Fdr.	3.57	+	
		-	-	3x3MVA, 66/11kV TFR	0.78	+	
		Total	182.08	Error at Station/Auxiliary Consumption/Losses	0.368%		
4	24MW BHP (U/S)	Unit- I	6.52	220kV BHP - Semtokha Fdr.	32.84	+	
		Unit- II	6.52	66kV BHP - Lobeysa Fdr.	13.54	+	
		Total	13.04	220kV BHP - Tsirang Fdr.	-5.73	-	
	40MW BHP (L/S)	Unit- I	14.11	5MVA, 66/11kV TFR	0.50	+	
		Unit- II	13.80	30MVA ICT, 220/66kV			
		Total	27.91	Error at Station/Auxiliary Consumption/Losses	-0.717%		
5	126MW DHPC	Unit-I	45.94	220kV DHPC - Tsirang Fdr.	45.72	+	Unit-II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.40	+	
		-	-	5MVA, 220/33kV TFR			
		Total	45.94	Error at Station/Auxiliary Consumption/Losses	0.479%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	20.92	+	Unit I Annual Maintenance.
		Unit-II	12.11	132kV KHP - Kilikhar Fdr- II	14.26	+	
		Unit- III	12.15	5MVA, 132/11kV TFR	0.21	+	
		Unit- IV	12.05	132kV Gelephu - Salakati Fdr.	5.78	+	
		-	-	132kV Motanga - Rangia Fdr.	16.68	+	
		-	-	220kV Tsirang - Jigmeling	38.60	+	
		Total	36.31	Error at Station/Auxiliary Consumption/Losses	2.534%		

Note: Generation-Load summary for November 10, 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	629.92	186.19	182.34	405.13	3.85
2	Eastern Grid	217.21	53.65	51.53	202.16	2.12
	Total	847.13	239.84	233.87	607.29	5.97

Note: Generation-Load Summary for November 10, 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	570.8	258.24	242.16	277.08	16.08
2	Eastern Grid	250.81	59.19	53.05	227.1	6.14
	Total	821.61	317.43	295.21	504.18	22.22

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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