

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	August 24, 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	187.00	400kV THP - Siliguri Fdr- I	270.00	+	
		Unit- II	187.00	400kV THP - Siliguri Fdr- II	267.00	+	
		Unit- III	187.00	400kV THP - Siliguri Fdr- IV	259.00	+	
		Unit- IV	187.00	400kV THP - Malbase Fdr- III	306.00	+	
		Unit- V	187.00	400kV Malbase - Siliguri	256.00	+	
		Unit- VI	187.00	-	-	-	
		Total	1,122.00	Error at Station/Auxiliary Consumption/Losses	1.783%		
2	720MW MHP	Unit-I	180.22	400kV MHP - Jigmeling Fdr - I	240.83	+	400kV MHP-JLG IV Standby
		Unit-II	180.18	400kV MHP - Jigmeling Fdr - II	242.05	+	
		Unit-III	180.96	400kV MHP - Jigmeling Fdr - III	235.19	+	
		Unit-IV	180.73	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	722.09	Error at Station/Auxiliary Consumption/Losses	0.557%		
3	336MW CHP	Unit- I	92.10	220kV CHP - Birpara Fdr- I	126.40	+	
		Unit- II	92.15	220kV CHP - Birpara Fdr- II	126.30	+	
		Unit- III	92.50	220kV CHP - Malbase Fdr- III	147.70	+	
		Unit- IV	91.60	220kV CHP - Semtokha Fdr- IV	-69.80	-	
		-	-	220kV Malbase - Birpara Fdr.	82.00	+	
		-	-	66kV CHP - Chumdo Fdr.	4.70	+	
		-	-	66kV CHP - Gedu Fdr.	5.80	+	
		-	-	3x3MVA, 66/11kV TFR	1.34	+	
		Total	368.35	Error at Station/Auxiliary Consumption/Losses	7.034%		
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Fdr.	77.00	+	
		Unit- II	12.30	66kV BHP - Lobeysa Fdr.	16.40	+	
		Total	24.70	220kV BHP - Tsirang Fdr.	-28.46	-	
	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.10	30MVA ICT, 220/66kV			
		Total	41.70	Error at Station/Auxiliary Consumption/Losses	0.843%		
5	126MW DHPC	Unit-I	63.40	220kV DHPC - Tsirang Fdr.	126.34	+	
		Unit-II	63.45	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	126.85	Error at Station/Auxiliary Consumption/Losses	0.402%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	36.52	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	28.26	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.36	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	47.57	+	
		-	-	132kV Motanga - Rangia Fdr.	54.16	+	
		-	-	220kV Tsirang - Jigmeling	100.57	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.303%		

Note: Generation-Load Summary for August 24, 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	1,683.60	196.33	151.25	1,386.70	45.08
2	Eastern Grid	788.09	68.86	63.98	819.80	4.88
	Total	2,471.69	265.19	215.23	2,206.50	49.96

Note: Generation-Load Summary for August 24, 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	1,526.02	243.65	226.02	1202.59	17.63
2	Eastern Grid	439.93	69.12	67.75	450.59	1.37
	Total	1,965.95	312.77	293.77	1,653.18	19.00

NOTES: KHP,BHP,CHP,THP,MAL 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:	August 25, 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	187.00	400kV THP - Siliguri Fdr- I	277.00	+	
		Unit- II	187.50	400kV THP - Siliguri Fdr- II	276.00	+	
		Unit- III	187.50	400kV THP - Siliguri Fdr- IV	267.00	+	
		Unit- IV	187.50	400kV THP - Malbase Fdr- III	284.00	+	
		Unit- V	187.40	400kV Malbase - Siliguri	260.00	+	
		Unit- VI	187.10	-	-	-	
		Total	1,124.00	Error at Station/Auxiliary Consumption/Losses	1.779%		
2	720MW MHP	Unit-I	197.69	400kV MHP - Jigmeling Fdr - I	263.80	+	400kV MHP-JLG IV Standby.
		Unit-II	197.67	400kV MHP - Jigmeling Fdr - II	265.17	+	
		Unit-III	197.74	400kV MHP - Jigmeling Fdr - III	257.75	+	
		Unit-IV	197.87	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	790.97	Error at Station/Auxiliary Consumption/Losses	0.537%		
3	336MW CHP	Unit- I	92.00	220kV CHP - Birpara Fdr- I	128.00	+	
		Unit- II	92.00	220kV CHP - Birpara Fdr- II	128.00	+	
		Unit- III	92.00	220kV CHP - Malbase Fdr- III	170.60	+	
		Unit- IV	92.00	220kV CHP - Semtokha Fdr- IV	-69.70	-	
		-	-	220kV Malbase - Birpara Fdr.	82.00	+	
		-	-	66kV CHP - Chumdo Fdr.	0.90	+	
		-	-	66kV CHP - Gedu Fdr.	5.80	+	
		-	-	3x3MVA, 66/11kV TFR	0.85	+	
		Total	368.00	Error at Station/Auxiliary Consumption/Losses	0.965%		
4	24MW BHP (U/S)	Unit- I	12.40	220kV BHP - Semtokha Fdr.	87.70	+	
		Unit- II	12.30	66kV BHP - Lobeysa Fdr.	15.80	+	
		Total	24.70	220kV BHP - Tsirang Fdr.	-38.90	-	
	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	21.10	30MVA ICT, 220/66kV			
		Total	41.70	Error at Station/Auxiliary Consumption/Losses	2.182%		
5	126MW DHPC	Unit-I	63.54	220kV DHPC - Tsirang Fdr.	126.67	+	
		Unit-II	63.39	220kV Jigmeling - Dagapela Fdr.	1.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	126.93	Error at Station/Auxiliary Consumption/Losses	0.205%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.34	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	23.71	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.26	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	55.13	+	
		-	-	132kV Motanga - Rangia Fdr.	50.59	+	
		-	-	220kV Tsirang - Jigmeling	86.50	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.051%		

Note: Generation-Load summary for August 25, 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	1,685.33	180.83	157.11	1,418.00	23.72
2	Eastern Grid	856.97	51.03	46.09	892.44	4.94
	Total	2,542.30	231.86	203.20	2,310.44	28.66

Note: Generation-Load Summary for August 25, 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	1539.71	238.36	224.35	1,232.16	14.01
2	Eastern Grid	439.55	49.72	49.14	459.02	0.58
	Total	1,979.26	288.08	273.49	1,691.18	14.59

NOTES: KHP,BHP,CHP,THP,MAL 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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