

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	August 14, 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	186.99	400kV THP - Siliguri Fdr- I	277.49	+	
		Unit- II	187.55	400kV THP - Siliguri Fdr- II	274.16	+	
		Unit- III	187.80	400kV THP - Siliguri Fdr- IV	267.36	+	
		Unit- IV	187.01	400kV THP - Malbase Fdr- III	285.72	+	
		Unit- V	188.14	400kV Malbase - Siliguri	256.94	+	
		Unit- VI	187.07	-	-	-	
		Total	1,124.56	Error at Station/Auxiliary Consumption/Losses	1.763%		
2	720MW MHP	Unit-I	197.80	400kV MHP - Jigmeling Fdr - I	259.12	+	400kV MHP-JLG IV Standby
		Unit-II	190.01	400kV MHP - Jigmeling Fdr - II	260.58	+	
		Unit-III	198.70	400kV MHP - Jigmeling Fdr - III	253.29	+	
		Unit-IV	190.84	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	777.35	Error at Station/Auxiliary Consumption/Losses	0.561%		
3	336MW CHP	Unit- I	91.70	220kV CHP - Birpara Fdr- I	128.15	+	
		Unit- II	90.90	220kV CHP - Birpara Fdr- II	128.50	+	
		Unit- III	91.56	220kV CHP - Malbase Fdr- III	176.88	+	
		Unit- IV	91.88	220kV CHP - Semtokha Fdr- IV	-77.44	-	
		-	-	220kV Malbase - Birpara Fdr.	75.49	+	
		-	-	66kV CHP - Chumdo Fdr.	0.91	+	
		-	-	66kV CHP - Gedu Fdr.	6.12	+	
		-	-	3x3MVA, 66/11kV TFR	0.76	+	
		Total	366.04	Error at Station/Auxiliary Consumption/Losses	0.590%		
4	24MW BHP (U/S)	Unit- I	11.79	220kV BHP - Semtokha Fdr.	94.70	+	
		Unit- II	11.79	66kV BHP - Lobeysa Fdr.	15.38	+	
		Total	23.58	220kV BHP - Tsirang Fdr.	-44.75	-	
	40MW BHP (L/S)	Unit- I	21.01	5MVA, 66/11kV TFR	0.43	+	
		Unit- II	20.11	30MVA ICT, 220/66kV			
		Total	41.12	Error at Station/Auxiliary Consumption/Losses	-1.638%		
5	126MW DHPC	Unit-I	63.50	220kV DHPC - Tsirang Fdr.	126.46	+	
		Unit-II	63.54	220kV Jigmeling - Dagapela Fdr.	2.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	127.04	Error at Station/Auxiliary Consumption/Losses	0.457%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	40.45	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	24.52	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.21	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	59.95	+	
		-	-	132kV Motanga - Rangia Fdr.	33.27	+	
		-	-	220kV Tsirang - Jigmeling	85.85	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.242%		

Note: Generation-Load Summary for August 14, 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	1,682.34	188.40	168.99	1,408.09	19.41
2	Eastern Grid	843.35	62.99	57.81	866.21	5.18
	Total	2,525.69	251.39	226.80	2,274.30	24.59

Note: Generation-Load Summary for August 14, 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	1,562.98	243.29	221.60	1,239.85	21.69
2	Eastern Grid	621.56	72.34	64.80	629.06	7.54
	Total	2,184.54	315.63	286.40	1,868.91	29.23

NOTE: KHP loads 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 15, 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	187.99	400kV THP - Siliguri Fdr- I	280.48	+	
		Unit- II	187.49	400kV THP - Siliguri Fdr- II	277.98	+	
		Unit- III	187.98	400kV THP - Siliguri Fdr- IV	271.12	+	
		Unit- IV	187.03	400kV THP - Malbase Fdr- III	274.95	+	
		Unit- V	187.64	400kV Malbase - Siliguri	263.38	+	
		Unit- VI	187.17	-	-	-	
		Total	1,125.30	Error at Station/Auxiliary Consumption/Losses	1.846%		
2	720MW MHP	Unit-I	197.42	400kV MHP - Jigmeling Fdr - I	261.20	+	400kV MHP-JLG IV Standby.
		Unit-II	190.09	400kV MHP - Jigmeling Fdr - II	242.50	+	
		Unit-III	197.05	400kV MHP - Jigmeling Fdr - III	271.90	+	
		Unit-IV	190.69	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	775.25	Error at Station/Auxiliary Consumption/Losses	-0.045%		
3	336MW CHP	Unit- I	91.64	220kV CHP - Birpara Fdr- I	127.93	+	
		Unit- II	90.88	220kV CHP - Birpara Fdr- II	127.39	+	
		Unit- III	91.39	220kV CHP - Malbase Fdr- III	178.82	+	
		Unit- IV	91.79	220kV CHP - Semtokha Fdr- IV	-77.94	-	
		-	-	220kV Malbase - Birpara Fdr.	74.22	+	
		-	-	66kV CHP - Chumdo Fdr.	0.81	+	
		-	-	66kV CHP - Gedu Fdr.	6.27	+	
		-	-	3x3MVA, 66/11kV TFR	0.85	+	
		Total	365.70	Error at Station/Auxiliary Consumption/Losses	0.429%		
4	24MW BHP (U/S)	Unit- I	11.79	220kV BHP - Semtokha Fdr.	94.55	+	
		Unit- II	11.79	66kV BHP - Lobeysa Fdr.	15.33	+	
		Total	23.58	220kV BHP - Tsirang Fdr.	-44.37	-	
	40MW BHP (L/S)	Unit- I	20.94	5MVA, 66/11kV TFR	0.44	+	
		Unit- II	20.15	30MVA ICT, 220/66kV			
		Total	41.09	Error at Station/Auxiliary Consumption/Losses	-3.115%		
5	126MW DHPC	Unit-I	63.49	220kV DHPC - Tsirang Fdr.	126.47	+	
		Unit-II	63.56	220kV Jigmeling - Dagapela Fdr.	1.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	127.05	Error at Station/Auxiliary Consumption/Losses	0.457%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.89	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	21.82	+	
		Unit- III	16.01	5MVA, 132/11kV TFR	0.28	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	58.90	+	
		-	-	132kV Motanga - Rangia Fdr.	39.18	+	
		-	-	220kV Tsirang - Jigmeling	78.27	+	
		Total	65.51	Error at Station/Auxiliary Consumption/Losses	2.316%		

Note: Generation-Load summary for August 15, 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	1,682.72	181.95	161.31	1,422.50	20.64
2	Eastern Grid	840.76	45.35	44.18	873.68	1.17
	Total	2,523.48	227.30	205.49	2,296.18	21.81

Note: Generation-Load Summary for August 15, 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	1563.75	199.65	175.81	1,261.29	23.84
2	Eastern Grid	434.61	83.67	80.80	453.75	2.87
	Total	1,998.36	283.32	256.61	1,715.04	26.71

NOTES: KHP 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.
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