

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 21, 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	187.75	400kV THP - Siliguri Fdr- I	270.59	+	
		Unit- II	188.15	400kV THP - Siliguri Fdr- II	268.19	+	
		Unit- III	186.78	400kV THP - Siliguri Fdr- IV	262.51	+	
		Unit- IV	187.04	400kV THP - Malbase Fdr- III	302.82	+	
		Unit- V	187.28	400kV Malbase - Siliguri	247.04	+	
		Unit- VI	186.68	-	-	-	
		Total	1,123.68	Error at Station/Auxiliary Consumption/Losses	1.742%		
2	720MW MHP	Unit-I	197.55	400kV MHP - Jigmeling Fdr - I	260.80	+	400kV MHP-JLG IV Standby.
		Unit-II	197.45	400kV MHP - Jigmeling Fdr - II	242.70	+	
		Unit-III	191.46	400kV MHP - Jigmeling Fdr - III	272.80	+	
		Unit-IV	190.74	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	777.20	Error at Station/Auxiliary Consumption/Losses	0.116%		
3	336MW CHP	Unit- I	90.49	220kV CHP - Birpara Fdr- I	121.88	+	
		Unit- II	91.40	220kV CHP - Birpara Fdr- II	122.22	+	
		Unit- III	90.71	220kV CHP - Malbase Fdr- III	165.13	+	
		Unit- IV	91.61	220kV CHP - Semtokha Fdr- IV	-56.31	-	
		-	-	220kV Malbase - Birpara Fdr.	73.52	+	
		-	-	66kV CHP - Chumdo Fdr.	3.06	+	
		-	-	66kV CHP - Gedu Fdr.	7.81	+	
		-	-	3x3MVA, 66/11kV TFR	1.29	+	
		Total	364.21	Error at Station/Auxiliary Consumption/Losses	-0.239%		
4	24MW BHP (U/S)	Unit- I	11.82	220kV BHP - Semtokha Fdr.	82.09	+	
		Unit- II	11.82	66kV BHP - Lobeysa Fdr.	17.90	+	
		Total	23.64	220kV BHP - Tsirang Fdr.	-34.79	-	
	40MW BHP (L/S)	Unit- I	20.98	5MVA, 66/11kV TFR	0.66	+	
		Unit- II	20.11	30MVA ICT, 220/66kV			
		Total	41.09	Error at Station/Auxiliary Consumption/Losses	-1.746%		
5	126MW DHPC	Unit-I	63.51	220kV DHPC - Tsirang Fdr.	126.21	+	
		Unit-II	63.23	220kV Jigmeling - Dagapela Fdr.	1.66	+	
		-	-	5MVA, 220/33kV TFR			
		Total	126.74	Error at Station/Auxiliary Consumption/Losses	0.418%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	37.40	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	27.11	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.26	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	49.98	+	
		-	-	132kV Motanga - Rangia Fdr.	56.91	+	
		-	-	220kV Tsirang - Jigmeling	87.17	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.870%		

Note: Generation-Load Summary for July 21, 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	1,679.36	226.24	209.80	1,365.95	16.44
2	Eastern Grid	843.20	47.18	45.05	883.19	2.13
	Total	2,522.56	273.42	254.85	2,249.14	18.57

Note: Generation-Load Summary for July 21, 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	1,489.52	229.47	217.64	1,205.43	11.83
2	Eastern Grid	249.84	64.66	64.08	239.80	0.58
	Total	1,739.36	294.13	281.72	1,445.23	12.41

NOTE: KHP load 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:	July 22, 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	187.66	400kV THP - Siliguri Fdr- I	273.37	+	
		Unit- II	186.22	400kV THP - Siliguri Fdr- II	270.29	+	
		Unit- III	188.33	400kV THP - Siliguri Fdr- IV	263.89	+	
		Unit- IV	187.57	400kV THP - Malbase Fdr- III	295.87	+	
		Unit- V	187.42	400kV Malbase - Siliguri	251.22	+	
		Unit- VI	185.82	-	-	-	
		Total	1,123.02	Error at Station/Auxiliary Consumption/Losses	1.745%		
2	720MW MHP	Unit-I	197.84	400kV MHP - Jigmeling Fdr - I	198.62	+	400kV MHP-JLG IV Standby.
		Unit-II	197.94	400kV MHP - Jigmeling Fdr - II	199.44	+	
		Unit-III	197.91	400kV MHP - Jigmeling Fdr - III	194.39	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	593.69	Error at Station/Auxiliary Consumption/Losses	0.209%		
3	336MW CHP	Unit- I	90.49	220kV CHP - Birpara Fdr- I	126.79	+	
		Unit- II	91.40	220kV CHP - Birpara Fdr- II	126.68	+	
		Unit- III	90.71	220kV CHP - Malbase Fdr- III	177.73	+	
		Unit- IV	91.61	220kV CHP - Semtokha Fdr- IV	-73.84	-	
		-	-	220kV Malbase - Birpara Fdr.	72.73	+	
		-	-	66kV CHP - Chumdo Fdr.	0.71	+	
		-	-	66kV CHP - Gedu Fdr.	7.99	+	
		-	-	3x3MVA, 66/11kV TFR	0.87	+	
		Total	364.21	Error at Station/Auxiliary Consumption/Losses	-0.747%		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Fdr.	94.25	+	
		Unit- II	12.20	66kV BHP - Lobeysa Fdr.	15.50	+	
		Total	24.50	220kV BHP - Tsirang Fdr.	-45.20	-	
	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.00	30MVA ICT, 220/66kV			
		Total	41.70	Error at Station/Auxiliary Consumption/Losses	1.799%		
5	126MW DHPC	Unit-I	63.53	220kV DHPC - Tsirang Fdr.	126.27	+	
		Unit-II	63.32	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	126.85	Error at Station/Auxiliary Consumption/Losses	0.457%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	40.74	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	23.81	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.10	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	49.02	+	
		-	-	132kV Motanga - Rangia Fdr.	52.28	+	
		-	-	220kV Tsirang - Jigmeling	76.27	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	2.045%		

Note: Generation-Load summary for July 22, 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	1,680.28	219.04	201.93	1,384.97	17.11
2	Eastern Grid	659.69	42.21	39.62	693.75	2.59
	Total	2,339.97	261.25	241.55	2,078.72	19.70

Note: Generation-Load Summary for July 22, 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	1621.25	226.78	207.81	1,324.04	18.97
2	Eastern Grid	254.59	52.41	50.81	272.61	1.60
	Total	1,875.84	279.19	258.62	1,596.65	20.57

NOTES: KHP,DHP,BHP and 220kV CHP-SEM feeder datas collected from si

- 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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