

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	September 12, 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	187.73	400kV THP - Siliguri Fdr- I	268.89	+	
		Unit- II	186.6	400kV THP - Siliguri Fdr- II	268.84	+	
		Unit- III	186.16	400kV THP - Siliguri Fdr- IV	261.14	+	
		Unit- IV	187.33	400kV THP - Malbase Fdr- III	306.29	+	
		Unit- V	187.56	400kV Malbase - Siliguri	243.92	+	
		Unit- VI	187.26	-	-	-	
		Total	1,122.64	Error at Station/Auxiliary Consumption/Losses	1.557%		
2	720MW MHP	Unit-I	197.13	400kV MHP - Jigmeling Fdr - I	192.36	+	Unit-II under shutdown. 400kV MHP-JLG Fdr II under Breakdown
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	197.62	400kV MHP - Jigmeling Fdr - III	198.54	+	
		Unit-IV	197.25	400kV MHP - Jigmeling Fdr - IV	198.54	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	592.00	Error at Station/Auxiliary Consumption/Losses	0.432%		
3	336MW CHP	Unit- I	92.46	220kV CHP - Birpara Fdr- I	122.83	+	
		Unit- II	91.42	220kV CHP - Birpara Fdr- II	123.03	+	
		Unit- III	91.32	220kV CHP - Malbase Fdr- III	142.57	+	
		Unit- IV	91.55	220kV CHP - Semtokha Fdr- IV	-34.97	-	
		-	-	220kV Malbase - Birpara Fdr.	94.43	+	
		-	-	66kV CHP - Chumdo Fdr.	5.49	+	
		-	-	66kV CHP - Gedu Fdr.	6.01	+	
		-	-	3x3MVA, 66/11kV TFR	1.36	+	
		Total	366.75	Error at Station/Auxiliary Consumption/Losses	0.117%		
4	24MW BHP (U/S)	Unit- I	11.89	220kV BHP - Semtokha Fdr.	64.68	+	
		Unit- II	11.89	66kV BHP - Lobeyasa Fdr.	17.33	+	
		Total	23.78	220kV BHP - Tsirang Fdr.	-17.48	-	
	40MW BHP (L/S)	Unit- I	20.48	5MVA, 66/11kV TFR	0.68	+	
		Unit- II	20.68	30MVA ICT, 220/66kV			
Total	41.16	Error at Station/Auxiliary Consumption/Losses	-0.416%				
5	126MW DHPC	Unit-I	57.33	220kV DHPC - Tsirang Fdr.	114.02	+	
		Unit-II	57.29	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	114.62	Error at Station/Auxiliary Consumption/Losses	0.523%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	35.72	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	28.88	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.38	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	48.32	+	
		-	-	132kV Motanga - Rangia Fdr.	63.29	+	
		-	-	220kV Tsirang - Jigmeling	94.00	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.553%		

Note: Generation-Load Summary for September 12, 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	1,668.95	191.87	175.53	1,383.08	16.34
2	Eastern Grid	658.00	50.95	47.37	701.05	3.59
	Total	2,326.95	242.82	222.90	2,084.13	19.93

Note: Generation-Load Summary for September 12, 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	1,569.12	259.57	249.25	1235.9	10.32
2	Eastern Grid	446.79	53.48	54.66	466.96	-1.18
	Total	2,015.91	313.05	303.91	1,702.86	9.14

NOTES: KHP & MHEP 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:	September 13, 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	187.59	400kV THP - Siliguri Fdr- I	278.51	+	
		Unit- II	186.24	400kV THP - Siliguri Fdr- II	276.23	+	
		Unit- III	187.56	400kV THP - Siliguri Fdr- IV	270.05	+	
		Unit- IV	186.68	400kV THP - Malbase Fdr- III	277.03	+	
		Unit- V	186.90	400kV Malbase - Siliguri	261.37	+	
		Unit- VI	185.97	-	-	-	
		Total	1,120.94	Error at Station/Auxiliary Consumption/Losses	1.706%		
2	720MW MHP	Unit-I	179.99	400kV MHP - Jigmeling Fdr - I	184.18	+	400kV MHP-JLG II Breakdown ,Unit II under shutdown
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	196.10	400kV MHP - Jigmeling Fdr - III	190.62	+	
		Unit-IV	190.79	400kV MHP - Jigmeling Fdr - IV	190.34	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	566.88	Error at Station/Auxiliary Consumption/Losses	0.307%		
3	336MW CHP	Unit- I	91.10	220kV CHP - Birpara Fdr- I	120.21	+	
		Unit- II	91.51	220kV CHP - Birpara Fdr- II	120.35	+	
		Unit- III	91.61	220kV CHP - Malbase Fdr- III	168.85	+	
		Unit- IV	91.36	220kV CHP - Semtokha Fdr- IV	-54.25	-	
		-	-	220kV Malbase - Birpara Fdr.	69.66	+	
		-	-	66kV CHP - Chumdo Fdr.	2.11	+	
		-	-	66kV CHP - Gedu Fdr.	5.70	+	
		-	-	3x3MVA, 66/11kV TFR	0.87	+	
		Total	365.58	Error at Station/Auxiliary Consumption/Losses	0.476%		
4	24MW BHP (U/S)	Unit- I	11.84	220kV BHP - Semtokha Fdr.	73.03	+	
		Unit- II	11.84	66kV BHP - Lobeysa Fdr.	16.00	+	
		Total	23.68	220kV BHP - Tsirang Fdr.	-23.74	-	
	40MW BHP (L/S)	Unit- I	20.49	5MVA, 66/11kV TFR	0.41		
		Unit- II	20.69	30MVA ICT, 220/66kV			
		Total	41.18	Error at Station/Auxiliary Consumption/Losses	-2.040%		
5	126MW DHPC	Unit-I	51.30	220kV DHPC - Tsirang Fdr.	103.04	+	
		Unit-II	52.29	220kV Jigmeling - Dagapela Fdr.	1.50	+	
		-	-	5MVA, 220/33kV TFR			
		Total	103.59	Error at Station/Auxiliary Consumption/Losses	0.531%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.02	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	23.83	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	48.49	+	
		-	-	132kV Motanga - Rangia Fdr.	50.12	+	
		-	-	220kV Tsirang - Jigmeling	75.13	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.288%		

Note: Generation-Load summary for September 13, 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	1,654.97	183.46	164.39	1,396.38	19.07
2	Eastern Grid	632.88	44.26	41.67	663.75	2.59
	Total	2,287.85	227.72	206.06	2,060.13	21.66

Note: Generation-Load Summary for September 13, 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	1589.08	252.45	242.16	1,267.26	10.29
2	Eastern Grid	447.69	20.57	19.64	496.49	0.93
	Total	2,036.77	273.02	261.80	1,763.75	11.22

NOTES: KHP & MHP load collected from site.

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