

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 26, 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	187.62	400kV THP - Siliguri Fdr- I	271.38	+	
		Unit- II	186.11	400kV THP - Siliguri Fdr- II	269.49	+	
		Unit- III	186.12	400kV THP - Siliguri Fdr- IV	262.09	+	
		Unit- IV	186.28	400kV THP - Malbase Fdr- III	299.31	+	
		Unit- V	187.11	400kV Malbase - Siliguri	248.96	+	
		Unit- VI	186.34	-	-	-	
		Total	1,119.58	Error at Station/Auxiliary Consumption/Losses	1.546%		
2	720MW MHP	Unit-I	197.41	400kV MHP - Jigmeling Fdr - I	200.30	+	400kV MHP-JLG IV Standby. Unit-III under shutdown.
		Unit-II	198.07	400kV MHP - Jigmeling Fdr - II	180.50	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	213.00	+	
		Unit-IV	198.33	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	593.81	Error at Station/Auxiliary Consumption/Losses	0.002%		
3	336MW CHP	Unit- I	91.62	220kV CHP - Birpara Fdr- I	120.26	+	
		Unit- II	91.24	220kV CHP - Birpara Fdr- II	120.15	+	
		Unit- III	91.46	220kV CHP - Malbase Fdr- III	168.96	+	
		Unit- IV	91.47	220kV CHP - Semtokha Fdr- IV	-55.40	-	
		-	-	220kV Malbase - Birpara Fdr.	67.63	+	
		-	-	66kV CHP - Chumdo Fdr.	3.71	+	
		-	-	66kV CHP - Gedu Fdr.	7.13	+	
		-	-	3x3MVA, 66/11kV TFR	1.19	+	
		Total	365.79	Error at Station/Auxiliary Consumption/Losses	-0.057%		
4	24MW BHP (U/S)	Unit- I	11.82	220kV BHP - Semtokha Fdr.	81.07	+	
		Unit- II	11.82	66kV BHP - Lobeysa Fdr.	17.51	+	
		Total	23.64	220kV BHP - Tsirang Fdr.	-33.23	-	
	40MW BHP (L/S)	Unit- I	20.98	5MVA, 66/11kV TFR	0.67	+	
		Unit- II	20.11	30MVA ICT, 220/66kV			
		Total	41.09	Error at Station/Auxiliary Consumption/Losses	-1.993%		
5	126MW DHPC	Unit-I	63.43	220kV DHPC - Tsirang Fdr.	126.26	+	
		Unit-II	63.34	220kV Jigmeling - Dagapela Fdr.	1.60	+	
		-	-	5MVA, 220/33kV TFR			
		Total	126.77	Error at Station/Auxiliary Consumption/Losses	0.402%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	38.38	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	26.49	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	47.78	+	
		-	-	132kV Motanga - Rangia Fdr.	54.38	+	
		-	-	220kV Tsirang - Jigmeling	91.45	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.258%		

Note: Generation-Load Summary for July 26, 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	1,676.87	225.46	210.74	1,359.96	14.72
2	Eastern Grid	659.81	55.30	54.46	695.96	0.84
	Total	2,336.68	280.76	265.20	2,055.92	15.56

Note: Generation-Load Summary for July 26, 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	1,679.09	253.34	235.15	1,342.45	18.19
2	Eastern Grid	436.87	46.93	46.17	473.24	0.76
	Total	2,115.96	300.27	281.32	1,815.69	18.95

NOTE: KHP & MHP 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.

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Maximum Load/Demand till Date

Date:	July 27, 2020
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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	187.62	400kV THP - Siliguri Fdr- I	271.38	+	
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		Unit- III	186.12	400kV THP - Siliguri Fdr- IV	262.09	+	
		Unit- IV	186.28	400kV THP - Malbase Fdr- III	299.31	+	
		Unit- V	187.11	400kV Malbase - Siliguri	248.96	+	
		Unit- VI	186.34	-	-	-	
		Total	1,119.58	Error at Station/Auxiliary Consumption/Losses	1.546%		
2	720MW MHP	Unit-I	197.41	400kV MHP - Jigmeling Fdr - I	200.30	+	Unit III under emergency shutdown. 400kV MHP-JLG IV Standby.
		Unit-II	198.07	400kV MHP - Jigmeling Fdr - II	180.50	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	213.00	+	
		Unit-IV	198.33	400kV MHP - Jigmeling Fdr - IV			
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	593.81	Error at Station/Auxiliary Consumption/Losses	0.002%		
3	336MW CHP	Unit- I	91.62	220kV CHP - Birpara Fdr- I	120.26	+	
		Unit- II	91.24	220kV CHP - Birpara Fdr- II	120.15	+	
		Unit- III	91.46	220kV CHP - Malbase Fdr- III	168.96	+	
		Unit- IV	91.47	220kV CHP - Semtokha Fdr- IV	-55.40	-	
		-	-	220kV Malbase - Birpara Fdr.	67.63	+	
		-	-	66kV CHP - Chumdo Fdr.	3.71	+	
		-	-	66kV CHP - Gedu Fdr.	7.13	+	
		-	-	3x3MVA, 66/11kV TFR	1.19	+	
		Total	365.79	Error at Station/Auxiliary Consumption/Losses	-0.057%		
4	24MW BHP (U/S)	Unit- I	11.82	220kV BHP - Semtokha Fdr.	81.07	+	
		Unit- II	11.82	66kV BHP - Lobeysa Fdr.	17.51	+	
		Total	23.64	220kV BHP - Tsirang Fdr.	-33.23	-	
	40MW BHP (L/S)	Unit- I	20.98	5MVA, 66/11kV TFR	0.67	+	
		Unit- II	20.11	30MVA ICT, 220/66kV			
		Total	41.09	Error at Station/Auxiliary Consumption/Losses	-3.139%		
5	126MW DHPC	Unit-I	63.43	220kV DHPC - Tsirang Fdr.	126.26	+	
		Unit-II	63.34	220kV Jigmeling - Dagapela Fdr.	1.33	+	
		-	-	5MVA, 220/33kV TFR			
		Total	126.77	Error at Station/Auxiliary Consumption/Losses	0.402%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.66	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	23.18	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.10	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	54.35	+	
		-	-	132kV Motanga - Rangia Fdr.	51.48	+	
		-	-	220kV Tsirang - Jigmeling	77.19	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.603%		

Note: Generation-Load summary for July 27, 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	1,676.87	239.72	224.73	1,359.96	14.99
2	Eastern Grid	659.81	37.37	36.30	699.63	1.07
	Total	2,336.68	277.09	261.03	2,059.59	16.06

Note: Generation-Load Summary for July 27, 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	1679.09	253.34	235.15	1,342.45	18.19
2	Eastern Grid	436.87	46.93	46.17	473.24	0.76
	Total	2,115.96	300.27	281.32	1,815.69	18.95

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:
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