

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	May 4, 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	68.80	400kV THP - Siliguri Fdr- I	0.00		Unit- II & V standby. 400kV THP-SIL I Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	143.26	+	
		Unit- III	140.29	400kV THP - Siliguri Fdr- IV	136.09	+	
		Unit- IV	140.93	400kV THP - Malbase Fdr- III	203.32	+	
		Unit- V	0.00	400kV Malbase - Siliguri	119.10	+	
		Unit- VI	140.45	-	-	-	
		Total	490.47	Error at Station/Auxiliary Consumption/Losses	7.80		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	148.36	+	Unit- I & Unit IV Standby 400kV MHP-JLG II & III Standby.
		Unit-II	149.87	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	149.94	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	148.45	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	299.81	Error at Station/Auxiliary Consumption/Losses	3.00		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	81.40	+	Unit-I under shutdown till 30th June. 220kV CHP-Mal under shutdown till 09.5.2020.
		Unit- II	74.07	220kV CHP - Birpara Fdr- II	81.05	+	
		Unit- III	75.38	220kV CHP - Malbase Fdr- III	0.00		
		Unit- IV	63.64	220kV CHP - Semtokha Fdr- IV	28.31	+	
		-	-	220kV Malbase - Birpara Fdr.	-52.88	-	
		-	-	66kV CHP - Chumdo Fdr.	9.01	+	
		-	-	66kV CHP - Gedu Fdr.	7.02	+	
		Total	213.09	Error at Station/Auxiliary Consumption/Losses	4.83		
4	24MW BHP (U/S)	Unit- I	5.09	220kV BHP - Semtokha Fdr.	7.99	+	
		Unit- II	5.09	66kV BHP - Lobeysa Fdr.	12.15	+	
		Total	10.18	220kV BHP - Tsirang Fdr.	8.80	+	
	40MW BHP (L/S)	Unit- I	10.10	5MVA, 66/11kV TFR	0.79	+	
		Unit- II	9.72	30MVA ICT, 220/66kV	0.00		
		Total	19.82	Error at Station/Auxiliary Consumption/Losses	0.27		
5	126MW DHPC	Unit-I	26.73	220kV DHPC - Tsirang Fdr.	26.45	+	Unit-II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	0.00		
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	26.73	Error at Station/Auxiliary Consumption/Losses	0.28		
6	60MW KHP	Unit- I	13.20	132kV KHP - Nangkhon Fdr- I	29.65	+	
		Unit-II	13.20	132kV KHP - Kilikhar Fdr- II	21.69	+	
		Unit- III	13.16	5MVA, 132/11kV TFR	0.47	+	
		Unit- IV	13.20	132kV Gelephu - Salakati Fdr.	1.21	+	
		-	-	132kV Motanga - Rangia Fdr.	27.90	+	
		-	-	220kV Tsirang - Jigmeling	32.95	+	
		Total	52.76	Error at Station/Auxiliary Consumption/Losses	0.95		

Note: Generation-Load Summary for May 04, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	760.29	219.32	206.14	508.02	13.18
2	Eastern Grid	352.57	59.60	55.65	325.92	3.95
	Total	1,112.86	278.92	261.79	833.94	17.13

Note: Generation-Load Summary for May 04, 2019 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	1,628.84	275.85	266.43	1,304.36	9.42
2	Eastern Grid	66.05	65.03	64.79	49.65	0.24
	Total	1,694.89	340.88	331.22	1,354.01	9.66

NOTES:KHP & MHEP 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:	May 5, 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	138.78	400kV THP - Siliguri Fdr- I	0.00		Unit-II & V standby. 400kV THP-SIL I under standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	172.40	+	
		Unit- III	139.70	400kV THP - Siliguri Fdr- IV	164.99	+	
		Unit- IV	140.18	400kV THP - Malbase Fdr- III	212.69	+	
		Unit- V	0.00	400kV Malbase - Siliguri	151.72	+	
		Unit- VI	140.52	-	-	-	
		Total	559.18	Error at Station/Auxiliary Consumption/Losses	9.10		
2	720MW MHP	Unit-I	149.74	400kV MHP - Jigmeling Fdr - I	183.12	+	Unit-III on Standby. 400kV MHP-JLG II & III Standby.
		Unit-II	100.21	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	120.00	400kV MHP - Jigmeling Fdr - IV	184.15	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	369.95	Error at Station/Auxiliary Consumption/Losses	2.68		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	122.02	+	Unit-I under shutdown till 30th June. 220kV CHP-Mal under shutdown till 09.5.2020.
		Unit- II	90.77	220kV CHP - Birpara Fdr- II	122.12	+	
		Unit- III	90.29	220kV CHP - Malbase Fdr- III	0.00		
		Unit- IV	91.11	220kV CHP - Semtokha Fdr- IV	12.34	+	
		-	-	220kV Malbase - Birpara Fdr.	-75.67	-	
		-	-	66kV CHP - Chumdo Fdr.	4.87	+	
		-	-	66kV CHP - Gedu Fdr.	9.27	+	
		-	-	3x3MVA, 66/11kV TFR	0.92	+	
		Total	272.17	Error at Station/Auxiliary Consumption/Losses	0.63		
4	24MW BHP (U/S)	Unit- I	4.30	220kV BHP - Semtokha Fdr.	15.99	+	
		Unit- II	4.30	66kV BHP - Lobeysa Fdr.	9.34	+	
		Total	8.60	220kV BHP - Tsirang Fdr.	0.44	+	
	40MW BHP (L/S)	Unit- I	9.06	5MVA, 66/11kV TFR	0.44	+	
		Unit- II	8.70	30MVA ICT, 220/66kV			
		Total	17.76	Error at Station/Auxiliary Consumption/Losses	0.15		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	33.97	+	Unit I standby.
		Unit-II	34.19	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	34.19	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	42.49	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	21.82	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.60	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	16.16	+	
		-	-	132kV Motanga - Rangia Fdr.	37.15	+	
		-	-	220kV Tsirang - Jigmeling	32.14	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.09		

Note: Generation-Load summary for May 05, 2020 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	891.90	202.18	192.08	657.58	10.10
2	Eastern Grid	435.95	47.51	43.74	420.58	3.77
	Total	1,327.85	249.69	235.82	1,078.16	13.87

Note: Generation-Load Summary for May 05, 2019 at 09:00hrs

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	1,628.84	275.85	266.43	1,304.36	9.42
2	Eastern Grid	66.05	65.03	64.79	49.65	0.24
	Total	1,694.89	340.88	331.22	1,354.01	9.66

NOTES: Eastern 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.
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