

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	May 5, 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	89.37	400kV THP - Siliguri Fdr- I	0.00		Unit- II standby. 400kV THP-SIL I Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	123.82	+	
		Unit- III	70.21	400kV THP - Siliguri Fdr- IV	116.94	+	
		Unit- IV	71.26	400kV THP - Malbase Fdr- III	174.08	+	
		Unit- V	69.73	400kV Malbase - Siliguri	104.78	+	
		Unit- VI	120.35	-	-	-	
		Total	420.92	Error at Station/Auxiliary Consumption/Losses	6.08		
2	720MW MHP	Unit-I	140.03	400kV MHP - Jigmeling Fdr - I	143.22	+	Unit- III & Unit IV Standby 400kV MHP-JLG II & III Standby.
		Unit-II	149.85	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	144.21	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	289.88	Error at Station/Auxiliary Consumption/Losses	2.45		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	85.45	+	Unit-I under shutdown till 30th June. 220kV CHP-Mal under shutdown till 09.5.2020.
		Unit- II	71.10	220kV CHP - Birpara Fdr- II	85.01	+	
		Unit- III	74.46	220kV CHP - Malbase Fdr- III	0.00		
		Unit- IV	69.79	220kV CHP - Semtokha Fdr- IV	25.91	+	
		-	-	220kV Malbase - Birpara Fdr.	-71.39	-	
		-	-	66kV CHP - Chumdo Fdr.	8.91	+	
		-	-	66kV CHP - Gedu Fdr.	7.39	+	
		Total	215.35	Error at Station/Auxiliary Consumption/Losses	1.26		
4	24MW BHP (U/S)	Unit- I	3.58	220kV BHP - Semtokha Fdr.	14.20	+	Unit-II Standby
		Unit- II	3.58	66kV BHP - Lobeysa Fdr.	11.57	+	
		Total	7.16	220kV BHP - Tsirang Fdr.	-4.72	-	
	40MW BHP (L/S)	Unit- I	15.08	5MVA, 66/11kV TFR	0.68	+	
		Unit- II	0.00	30MVA ICT, 220/66kV	0.00		
		Total	15.08	Error at Station/Auxiliary Consumption/Losses	0.51		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	26.97	+	Unit-I Standby
		Unit-II	27.19	220kV Jigmeling - Dagapela Fdr.	0.00		
		-	-	5MVA, 220/33kV TFR	0.00		
		Total	27.19	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	43.04	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	21.38	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.46	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	2.06	+	
		-	-	132kV Motanga - Rangia Fdr.	21.97	+	
		-	-	220kV Tsirang - Jigmeling	20.25	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.12		

Note: Generation-Load Summary for May 05, 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	685.70	220.84	212.77	444.61	8.07
2	Eastern Grid	355.88	64.67	61.10	311.46	3.57
	Total	1,041.58	285.51	273.87	756.07	11.64

Note: Generation-Load Summary for May 05, 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	1,184.61	279.02	270.92	855.10	8.10
2	Eastern Grid	65.95	70.66	70.02	45.78	0.64
	Total	1,250.56	349.68	340.94	900.88	8.74

NOTES:KHP & MHEP Loads collected from site.

1. 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:
 - i) 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.
 - ii) The clocks of all the locations are not synchronized.
2. 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 6, 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	89.15	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	129.80	+	
		Unit- III	100.14	400kV THP - Siliguri Fdr- IV	120.08	+	
		Unit- IV	121.12	400kV THP - Malbase Fdr- III	170.77	+	
		Unit- V	0.00	400kV Malbase - Siliguri	111.88	+	
		Unit- VI	120.62	-	-	-	
		Total	431.03	Error at Station/Auxiliary Consumption/Losses	10.38		
2	720MW MHP	Unit-I	149.30	400kV MHP - Jigmeling Fdr - I	146.30	+	Unit-III & IV on Standby. 400kV MHP-JLG II & III Standby.
		Unit-II	148.30	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	146.90	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	297.60	Error at Station/Auxiliary Consumption/Losses	4.40		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	95.56	+	Unit-I under shutdown till 30th June. 220kV CHP-Mal under shutdown till 09.5.2020.
		Unit- II	82.88	220kV CHP - Birpara Fdr- II	95.34	+	
		Unit- III	82.23	220kV CHP - Malbase Fdr- III	0.00		
		Unit- IV	47.03	220kV CHP - Semtokha Fdr- IV	6.61	+	
		-	-	220kV Malbase - Birpara Fdr.	-75.08	-	
		-	-	66kV CHP - Chumdo Fdr.	5.27	+	
		-	-	66kV CHP - Gedu Fdr.	7.88	+	
		Total	212.14	Error at Station/Auxiliary Consumption/Losses	0.52		
4	24MW BHP (U/S)	Unit- I	3.44	220kV BHP - Semtokha Fdr.	23.20	+	
		Unit- II	3.44	66kV BHP - Lobeysa Fdr.	9.30	+	
		Total	6.88	220kV BHP - Tsirang Fdr.	-11.39	-	
	40MW BHP (L/S)	Unit- I	14.56	5MVA, 66/11kV TFR	0.42	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
		Total	14.56	Error at Station/Auxiliary Consumption/Losses	-0.09		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	31.29	+	Unit I standby.
		Unit-II	32.19	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	32.19	Error at Station/Auxiliary Consumption/Losses	0.90		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	45.46	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	19.70	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.16	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	18.32	+	
		-	-	132kV Motanga - Rangia Fdr.	29.48	+	
		-	-	220kV Tsirang - Jigmeling	21.60	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.68		

Note: Generation-Load summary for May 06, 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	696.80	197.62	185.91	477.58	11.71
2	Eastern Grid	363.60	44.20	39.12	341.00	5.08
	Total	1,060.40	241.82	225.03	818.58	16.79

Note: Generation-Load Summary for May 06, 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	1,145.83	245.38	233.35	875.10	12.03
2	Eastern Grid	66.53	53.34	52.85	38.54	0.49
	Total	1,212.36	298.72	286.20	913.64	12.52

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.
- This report is generated to give an idea of the generation & load flow for the system at a particular instant.