

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	April 27, 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	0.00	400kV THP - Siliguri Fdr- I	0.00	+	Unit- I, IV & V on standby 400kV THP-SIL I Maintenance
		Unit- II	128.88	400kV THP - Siliguri Fdr- II	80.57	+	
		Unit- III	120.01	400kV THP - Siliguri Fdr- IV	76.03	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	144.70	+	
		Unit- V	0.00	400kV Malbase - Siliguri	62.43	+	
		Unit- VI	60.37	-	-	-	
		Total	309.26	Error at Station/Auxiliary Consumption/Losses	7.96		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	89.45	+	Unit- II & IV on Standby Unit I on AMP(11 to 30.4.2020). 400kV MHP-JLG II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	184.33	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	89.81	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	184.33	Error at Station/Auxiliary Consumption/Losses	5.07		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	47.72	+	Unit-I under shutdown till 30th April, 2020 220kV CHP-Mal under shutdown till 30/04/2020.
		Unit- II	75.92	220kV CHP - Birpara Fdr- II	47.63	+	
		Unit- III	61.24	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	20.06	220kV CHP - Semtokha Fdr- IV	41.45	+	
		-	-	220kV Malbase - Birpara Fdr.	-70.21	-	
		-	-	66kV CHP - Chumdo Fdr.	11.34	+	
		-	-	66kV CHP - Gedu Fdr.	5.46	+	
		-	-	3x3MVA, 66/11kV TFR	1.63	+	
		Total	157.22	Error at Station/Auxiliary Consumption/Losses	1.99		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	3.04	+	U/S Unit I & L/S Unit II standby
		Unit- II	5.40	66kV BHP - Lobeysa Fdr.	11.49	+	
		Total	5.40	220kV BHP - Tsirang Fdr.	-0.90	-	
	40MW BHP (L/S)	Unit- I	11.28	5MVA, 66/11kV TFR	0.72	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
		Total	11.28	Error at Station/Auxiliary Consumption/Losses	2.33		
5	126MW DHPC	Unit-I	17.17	220kV DHPC - Tsirang Fdr.	16.95	+	Unit-II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	17.17	Error at Station/Auxiliary Consumption/Losses	0.22		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Fdr- I	20.16	+	Unit I standby.
		Unit-II	12.00	132kV KHP - Kilikhar Fdr- II	15.09	+	
		Unit- III	12.00	5MVA, 132/11kV TFR	0.44	+	
		Unit- IV	12.00	132kV Gelephu - Salakati Fdr.	-12.80	-	
		-	-	132kV Motanga - Rangia Fdr.	2.59	+	
		-	-	220kV Tsirang - Jigmeling	15.60	+	
		Total	36.00	Error at Station/Auxiliary Consumption/Losses	0.31		

Note: Generation-Load Summary for April 27, 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	500.33	240.56	228.06	244.17	12.50
2	Eastern Grid	220.33	66.88	61.50	169.05	5.38
	Total	720.66	307.44	289.56	413.22	17.88

Note: Generation-Load Summary for April 27, 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	786.18	279.34	275.36	479.47	3.98
2	Eastern Grid	55.34	64.71	64.10	18.00	0.61
	Total	841.52	344.05	339.46	497.47	4.59

NOTES:KHP, GEL, Motanga & 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:	April 28, 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	0.00	400kV THP - Siliguri Fdr- I	0.00		Unit- I,II,III,IV & V standby. 400kV THP-SIL I Maintenance
		Unit- II	129.88	400kV THP - Siliguri Fdr- II	68.86	+	
		Unit- III	60.31	400kV THP - Siliguri Fdr- IV	64.56	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	111.06	+	
		Unit- V	0.00	400kV Malbase - Siliguri	56.61	+	
		Unit- VI	59.82	-	-	-	
		Total	250.01	Error at Station/Auxiliary Consumption/Losses	5.53		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	168.75	+	Unit-IV Standby & Unit I AMP(11 to 30.4.2020). 400kV MHP-JLG II & III Standby.
		Unit-II	170.17	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	170.20	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	169.75	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		Total	340.37	Error at Station/Auxiliary Consumption/Losses	1.87		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	62.60	+	Unit-I under shutdown till 30th April & Unit III under standby. 220kV CHP-MAL under shutdown till 25.4.2020.
		Unit- II	71.00	220kV CHP - Birpara Fdr- II	61.50	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	0.00	+	
		Unit- IV	80.00	220kV CHP - Semtokha Fdr- IV	15.20	+	
		-	-	220kV Malbase - Birpara Fdr.	-94.27	-	
		-	-	66kV CHP - Chumdo Fdr.	7.00	+	
		-	-	66kV CHP - Gedu Fdr.	6.90	+	
		Total	151.00	Error at Station/Auxiliary Consumption/Losses	-3.21		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	20.60	+	U/S Unit I & L/S Unit II standby
		Unit- II	6.80	66kV BHP - Lobeysa Fdr.	10.20	+	
		Total	6.80	220kV BHP - Tsirang Fdr.	-10.40	-	
	40MW BHP (L/S)	Unit- I	13.50	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
		Total	13.50	Error at Station/Auxiliary Consumption/Losses	-1.00		
5	126MW DHPC	Unit-I	20.19	220kV DHPC - Tsirang Fdr.	18.97	+	Unit-II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		Total	20.19	Error at Station/Auxiliary Consumption/Losses	1.22		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	44.17	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	19.97	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.17	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	0.04	+	
		-	-	132kV Motanga - Rangia Fdr.	18.49	+	
		-	-	220kV Tsirang - Jigmeling	11.89	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.69		

Note: Generation-Load summary for April 28, 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	441.50	209.75	207.21	219.86	2.54
2	Eastern Grid	406.37	61.23	57.67	357.03	3.56
	Total	847.87	270.98	264.88	576.89	6.10

Note: Generation-Load Summary for April 28, 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	763.37	244.73	236.94	516.38	7.79
2	Eastern Grid	57.66	40.72	40.39	19.20	0.33
	Total	821.03	285.45	277.33	535.58	8.12

NOTES: KHP,MHPA,BHP,DHP,CHP,JLG,MAT& GEL 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.