

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	January 25, 2021
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	78.15	400kV THP - Siliguri Fdr- I	0.00		Unit-III on standby. Unit-IV, V & VI under shutdown. 400kV THP-SIL Fdr I on Standby.400kV THP-SIL Fdr II under AMP.
		Unit- II	96.93	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	50.31	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	120.77	+	
		Unit- V	0.00	400kV Malbase - Siliguri	39.00	+	
		Unit- VI	0.00	-	-	-	
		Total	175.08	Error at Station/Auxiliary Consumption/Losses	2.285%		
2	720MW MHP	Unit-I	105.20	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II under maintenance. Unit-III under breakdown.Unit-IV on standby.400kV MHP-JLJ Fdr I,III & IV on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	103.30	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	105.20	Error at Station/Auxiliary Consumption/Losses	1.806%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-5.39	-	Unit-I under Annual Maintenance Unit-III on standby.
		Unit- II	36.14	220kV CHP - Birpara Fdr- II	-5.40	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	17.02	+	
		Unit- IV	49.34	220kV CHP - Semtokha Fdr- IV	56.16	+	
		-	-	220kV Malbase - Birpara Fdr.	-22.00	-	
		-	-	66kV CHP - Chumdo Fdr.	24.46	+	
		-	-	66kV CHP - Gedu Fdr.	-3.07	-	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
		Total	85.48	Error at Station/Auxiliary Consumption/Losses	0.585%		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	4.80	+	U/S Unit-I & L/S Unit-I under AMP.
		Unit- II	6.60	66kV BHP - Lobeysa Fdr.	16.10	+	
	Total	6.60	220kV BHP - Tsirang Fdr.	-1.72	-		
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.89	+	
Unit- II		13.60	30MVA ICT, 220/66kV				
		Total	13.60	Error at Station/Auxiliary Consumption/Losses	0.644%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	20.97	+	Unit-I on standby.
		Unit-II	21.19	220kV Jigmeling - Dagapela Fdr.	2.80	+	
		-	-	5MVA, 220/33kV TFR			
		Total	21.19	Error at Station/Auxiliary Consumption/Losses	1.038%		
6	60MW KHP	Unit- I	10.60	132kV KHP - Nangkhon Fdr- I	7.70	+	Unit-IV on standby. Unit-II under Annual Maintenance.
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	12.56	+	
		Unit- III	10.65	5MVA, 132/11kV TFR	0.52	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-29.49	-	
		-	-	132kV Motanga - Rangia Fdr.	-13.63	-	
		-	-	220kV Tsirang - Jigmeling	11.80	+	
		Total	21.25	Error at Station/Auxiliary Consumption/Losses	2.207%		

Note: Generation-Load Summary for January 25, 2021 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	301.95	233.63	231.58	56.52	2.05
2	Eastern Grid	126.45	78.07	75.70	60.18	2.37
	Total	428.40	311.70	307.28	116.70	4.42

Note: Generation-Load Summary for January 25, 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	338.11	245.08	238.50	76.9	6.58
2	Eastern Grid	106.23	55.81	50.71	66.5	5.10
	Total	444.34	300.89	289.21	143.40	11.68

NOTE- KHP,Motanga & MAL 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:
 - 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:	January 26, 2021
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	69.16	400kV THP - Siliguri Fdr- I	0.00		Unit-III on standby. Unit-IV, V & VI under shutdown. 400kV THP-SIL Fdr I on Standby. 400kV THP-SIL Fdr II under AMP.
		Unit- II	99.61	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	48.02	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	116.25	+	
		Unit- V	0.00	400kV Malbase - Siliguri	34.00	+	
		Unit- VI	0.00	-	-	-	
		Total	168.77	Error at Station/Auxiliary Consumption/Losses	2.666%		
2	720MW MHP	Unit-I	110.10	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II under maintenance. Unit-III under breakdown. Unit IV on standby. 400kV MHP-JLGFdr I, III & IV on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	108.40	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT (Local Load)			
		-	-				
		Total	110.10	Error at Station/Auxiliary Consumption/Losses	1.544%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	2.86	+	Unit-I under Annual Maintenance Unit-III on standby.
		Unit- II	34.46	220kV CHP - Birpara Fdr- II	3.08	+	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	39.13	+	
		Unit- IV	47.27	220kV CHP - Semtokha Fdr- IV	14.85	+	
		-	-	220kV Malbase - Birpara Fdr.	-24.00	-	
		-	-	66kV CHP - Chumdo Fdr.	17.72	+	
		-	-	66kV CHP - Gedu Fdr.	1.16	+	
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		Total	81.73	Error at Station/Auxiliary Consumption/Losses	1.627%		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	26.01	+	U/S Unit-I & L/S Unit-I under AMP. L/S Unit-II tripped at 09:00 hours.
		Unit- II	6.18	66kV BHP - Lobeysa Fdr.	11.78	+	
	Total	6.18	220kV BHP - Tsirang Fdr.	-18.95	-		
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.89	+	
Unit- II		13.07	30MVA ICT, 220/66kV				
		Total	13.07	Error at Station/Auxiliary Consumption/Losses	-2.494%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	21.37	+	Unit-I on standby.
		Unit-II	21.62	220kV Jigmeling - Dagapela Fdr.	1.80	+	
		-	-	5MVA, 220/33kV TFR			
		Total	21.62	Error at Station/Auxiliary Consumption/Losses	1.156%		
6	60MW KHP	Unit- I	10.10	132kV KHP - Nangkhon Fdr- I	7.01	+	Unit-IV on standby. Unit-II under Annual Maintenance. 220kV TSI-JLGFdr under AMP
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	12.42	+	
		Unit- III	10.11	5MVA, 132/11kV TFR	0.13	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-26.11	-	
		-	-	132kV Motanga - Rangia Fdr.	-17.19	-	
		-	-	220kV Tsirang - Jigmeling	0.00	+	
		Total	20.21	Error at Station/Auxiliary Consumption/Losses	3.216%		

Note: Generation-Load summary for January 26, 2021 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	291.37	227.41	223.61	63.96	3.80
2	Eastern Grid	130.31	65.21	62.86	65.10	2.35
	Total	421.68	292.62	286.47	129.06	6.15

Note: Generation-Load Summary for January 26, 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	220.16	226.32	218.52	-13.47	7.80
2	Eastern Grid	105.25	46.58	43.75	65.98	2.83
	Total	325.41	272.90	262.27	52.51	10.63

NOTE: MAL, KHP & Motanga 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.
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