

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	March 3, 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	71.21	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 IV under AMP.
		Unit- II	70.23	400kV THP - Siliguri Fdr- II	39.83	+	
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	98.21	+	
		Unit- V	0.00	400kV Malbase - Siliguri	25.00	+	
		Unit- VI	0.00	-	-	-	
		Total	141.44	Error at Station/Auxiliary Consumption/Losses	2.404%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit- I on standby. Unit-II under maintenance. Unit-III under breakdown. 400kV MHP-JLG Fdr I, II & III on standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	114.82	400kV MHP - Jigmeling Fdr - IV	113.81	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	114.82	Error at Station/Auxiliary Consumption/Losses	0.880%		
3	336MW CHP	Unit- I	85.36	220kV CHP - Birpara Fdr- I	9.03	+	Unit-II on standby. Unit III under AMP 220kV CHP-BIR fdr II under AMP.
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	37.81	+	
		Unit- IV	48.08	220kV CHP - Semtokha Fdr- IV	66.30	+	
		-	-	220kV Malbase - Birpara Fdr.	-13.00	-	
		-	-	66kV CHP - Chumdo Fdr.	15.43	+	
		-	-	66kV CHP - Gedu Fdr.	4.18	+	
		-	-	3x3MVA, 66/11kV TFR	1.97	+	
		Total	133.44	Error at Station/Auxiliary Consumption/Losses	-0.959%		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	-2.88	-	U/S Unit-I on standby L/S Unit-I on standby
		Unit- II	5.13	66kV BHP - Lobeysa Fdr.	14.11	+	
	Total	5.13	220kV BHP - Tsirang Fdr.	3.37	-		
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.87	+	
Unit- II		10.84	30MVA ICT, 220/66kV				
		Total	10.84	Error at Station/Auxiliary Consumption/Losses	3.131%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.13	+	Unit-I under standby
		Unit-II	17.35	220kV Jigmeling - Dagapela Fdr.	2.50	+	
		-	-	5MVA, 220/33kV TFR			
		Total	17.35	Error at Station/Auxiliary Consumption/Losses	1.268%		
6	60MW KHP	Unit- I	10.50	132kV KHP - Nangkhon Fdr- I	6.43	+	Unit-III on standby. Unit-IV under Annual Maintenance.
		Unit-II	10.50	132kV KHP - Kilikhar Fdr- II	13.71	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.80	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-29.19	-	
		-	-	132kV Motanga - Rangia Fdr.	-6.79	-	
		-	-	220kV Tsirang - Jigmeling	18.54	+	
		Total	21.00	Error at Station/Auxiliary Consumption/Losses	0.286%		

Note: Generation-Load Summary for March 03, 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	308.20	228.80	228.46	60.86	0.34
2	Eastern Grid	135.82	76.53	75.46	77.83	1.07
	Total	444.02	305.33	303.92	138.69	1.41

Note: Generation-Load Summary for March 03, 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	333.74	309.62	303.65	-2.74	5.97
2	Eastern Grid	106.03	70.82	70.35	62.07	0.47
	Total	439.77	380.44	374.00	59.33	6.44

NOTE- Eastern & 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:	March 4, 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	59.97	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 Tala-SIL IV under AMP.
		Unit- II	60.04	400kV THP - Siliguri Fdr- II	24.09	+	
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	93.13	+	
		Unit- V	0.00	400kV Malbase - Siliguri	9.00	+	
		Unit- VI	0.00	-	-	-	
		Total	120.01	Error at Station/Auxiliary Consumption/Losses	2.325%		
2	720MW MHP	Unit-I	180.32	400kV MHP - Jigmeling Fdr - I	0.00		Unit-IV standby. Unit-II under maintenance Unit-III under breakdown. 400kV MHP-JLG Fdr I,II & III on standby.
		Unit-II	0.00	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	179.20	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	180.32	Error at Station/Auxiliary Consumption/Losses	0.621%		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-1.56	-	Unit-I under shutdown. Unit-III under AMP. Unit-II standby. 220kV CHP-BIR II on AMP.
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	32.11	+	
		Unit- IV	81.49	220kV CHP - Semtokha Fdr- IV	35.33	+	
		-	-	220kV Malbase - Birpara Fdr.	-26.00	-	
		-	-	66kV CHP - Chumdo Fdr.	10.30	+	
		-	-	66kV CHP - Gedu Fdr.	3.58	+	
		-	-	3x3MVA, 66/11kV TFR	1.46	+	
		Total	81.49	Error at Station/Auxiliary Consumption/Losses	0.331%		
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Fdr.	11.21	+	U/S Unit-I standby. L/S Unit-I on standby.
		Unit- II	5.12	66kV BHP - Lobeysa Fdr.	11.40	+	
		Total	5.12	220kV BHP - Tsirang Fdr.	-6.60	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.40	+	
		Unit- II	11.26	30MVA ICT, 220/66kV			
		Total	11.26	Error at Station/Auxiliary Consumption/Losses	-0.183%		
5	126MW DHPC	Unit-I	17.14	220kV DHPC - Tsirang Fdr.	16.91	+	Unit-II under AMP..
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		Total	17.14	Error at Station/Auxiliary Consumption/Losses	1.342%		
6	60MW KHP	Unit- I	10.09	132kV KHP - Nangkhon Fdr- I	9.10	+	Unit-IV under Annual Maintenance.
		Unit-II	10.09	132kV KHP - Kilihar Fdr- II	10.34	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.33	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-24.36	-	
		-	-	132kV Motanga - Rangia Fdr.	-9.05	-	
		-	-	220kV Tsirang - Jigmeling	9.30	+	
		Total	20.18	Error at Station/Auxiliary Consumption/Losses	2.032%		

Note: Generation-Load summary for March 04, 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	235.02	220.19	218.03	5.53	2.16
2	Eastern Grid	200.50	64.01	62.48	145.79	1.53
	Total	435.52	284.20	280.51	151.32	3.69

Note: Generation-Load Summary for March 04, 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	268.55	256.45	251.55	-10.9	4.90
2	Eastern Grid	112.65	65.86	64.86	69.79	1.00
	Total	381.20	322.31	316.41	58.89	5.90

NOTE: KHP,MAL,MHP and Motanga 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.