

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	November 24, 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-IV & 400kV THP-SIL Fdr I under Standby Unit- I,II,400kV Tala-Malbase & ICT under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	144.24	+	
		Unit- III	80.21	400kV THP - Siliguri Fdr- IV	140.06	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	89.62	400kV Malbase - Siliguri	0.00		
		Unit- VI	120.37	-	-	-	
		Total	290.20	Error at Station/Auxiliary Consumption/Losses	2.033%		
2	720MW MHP	Unit-I	179.84	400kV MHP - Jigmeling Fdr - I	89.45	+	Unit-II under shutdown. Unit-III under breakdown. Unit-IV on standby 400kV MHP-JLG Fdr III under shutdown. 400kV MHP-Jigmeling Fdr II under Breakdown.
		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	89.09	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	179.84	Error at Station/Auxiliary Consumption/Losses	0.723%		
3	336MW CHP	Unit- I	81.44	220kV CHP - Birpara Fdr- I	4.92		Unit II under Annual Maintenance. Unit-IV on standby. 220kV CHP-Birpara I under maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	4.94	+	
		Unit- III	71.49	220kV CHP - Malbase Fdr- III	71.45	+	
		Unit- IV	0.00	220kV CHP - Semtokha Fdr- IV	45.00	+	
		-	-	220kV Malbase - Birpara Fdr.	-45.00	-	
		-	-	66kV CHP - Chumdo Fdr.	15.47	+	
		-	-	66kV CHP - Gedu Fdr.	3.63	+	
		-	-	3x3MVA, 66/11kV TFR	2.05	+	
		Total	152.93	Error at Station/Auxiliary Consumption/Losses	3.577%		
4	24MW BHP (U/S)	Unit- I	10.73	220kV BHP - Semtokha Fdr.	15.70	+	U/S Unit-II under annual maintenence
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	17.42	+	
	Total	10.73	220kV BHP - Tsirang Fdr.	0.37	+		
	40MW BHP (L/S)	Unit- I	11.44	5MVA, 66/11kV TFR	0.83	+	
Unit- II		11.44	30MVA ICT, 220/66kV				
		Total	22.88	Error at Station/Auxiliary Consumption/Losses	-2.112%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	37.80	+	Unit I Standby
		Unit-II	38.01	220kV Jigmeling - Dagapela Fdr.	2.20	+	
		-	-	5MVA, 220/33kV TFR			
		Total	38.01	Error at Station/Auxiliary Consumption/Losses	0.552%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	13.34	+	Unit I under Annual Maintenance. Unit II Standby
		Unit-II	10.00	132kV KHP - Kilikhar Fdr- II	15.88	+	
		Unit- III	10.00	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	10.00	132kV Gelephu - Salakati Fdr.	-8.70	-	
		-	-	132kV Motanga - Rangia Fdr.	13.33	+	
		-	-	220kV Tsirang - Jigmeling	32.30	+	
		Total	30.00	Error at Station/Auxiliary Consumption/Losses	1.520%		

Note: Generation-Load Summary for November 24, 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	514.75	233.29	224.62	249.16	8.67
2	Eastern Grid	209.84	58.97	57.21	183.17	1.76
	Total	724.59	292.26	281.83	432.33	10.43

Note: Generation-Load Summary for November 24, 2019 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	593.81	278.66	271.92	291.27	6.74
2	Eastern Grid	188.21	59.93	53.55	152.16	6.38
	Total	782.02	338.59	325.47	443.43	13.12

NOTE:KHP & 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:	November 25, 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-IV & 400kV THP-SIL Fdr I under Standby Unit- I,II,400kV Tala-Malbase & ICT under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	154.92	+	
		Unit- III	99.91	400kV THP - Siliguri Fdr- IV	150.33	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	89.22	400kV Malbase - Siliguri	0.00		
		Unit- VI	120.42	-	-	-	
		Total	309.55	Error at Station/Auxiliary Consumption/Losses	1.389%		
2	720MW MHP	Unit-I	170.19	400kV MHP - Jigmeling Fdr - I	0.00	+	Unit-II under shutdown. Unit-III under breakdown. Unit-IV on standby 400kV MHP-JLG Fdr I & III under shutdown. 400kV MHP-Jigmeling Fdr II under Breakdown.
		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	167.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	170.19	Error at Station/Auxiliary Consumption/Losses	1.874%		
3	336MW CHP	Unit- I	73.83	220kV CHP - Birpara Fdr- I	21.49	+	Unit IV on Standby. Unit II under Annual Maintenance. 220kV CHP_SEM line under shutdown.
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	21.67	+	
		Unit- III	75.41	220kV CHP - Malbase Fdr- III	87.16	+	
		Unit- IV	0.00	220kV CHP - Semtokha Fdr- IV	0.00	+	
		-	-	220kV Malbase - Birpara Fdr.	-32.00	-	
		-	-	66kV CHP - Chumdo Fdr.	13.25	+	
		-	-	66kV CHP - Gedu Fdr.	3.77	+	
		-	-	3x3MVA, 66/11kV TFR	1.25	+	
		Total	149.24	Error at Station/Auxiliary Consumption/Losses	0.436%		
4	24MW BHP (U/S)	Unit- I	10.59	220kV BHP - Semtokha Fdr.	43.99	+	U/S Unit-II under annual maintenace.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	14.90	+	
	Total	10.59	220kV BHP - Tsirang Fdr.	-26.56	-		
	40MW BHP (L/S)	Unit- I	11.10	5MVA, 66/11kV TFR	0.53	+	
Unit- II		11.20	30MVA ICT, 220/66kV				
		Total	22.30	Error at Station/Auxiliary Consumption/Losses	0.135%		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	36.90	+	Unit-I Standby
		Unit-II	37.22	220kV Jigmeling - Dagapela Fdr.	1.40	+	
		-	-	5MVA, 220/33kV TFR			
		Total	37.22	Error at Station/Auxiliary Consumption/Losses	0.860%		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	17.00	+	Unit I under Annual Maintenance. Unit-IV standby
		Unit-II	15.00	132kV KHP - Kilikhar Fdr- II	12.50	+	
		Unit- III	15.00	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-16.79	-	
		-	-	132kV Motanga - Rangia Fdr.	6.66	+	
		-	-	220kV Tsirang - Jigmeling	7.33	+	
		Total	30.00	Error at Station/Auxiliary Consumption/Losses	0.533%		

Note: Generation-Load summary for November 25, 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	528.90	205.16	201.26	316.41	3.90
2	Eastern Grid	200.19	50.65	47.30	156.87	3.35
	Total	729.09	255.81	248.56	473.28	7.25

Note: Generation-Load Summary for November 25, 2019 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	507.57	243.27	237.74	252	5.53
2	Eastern Grid	205.42	52.80	49.78	164.92	3.02
	Total	712.99	296.07	287.52	416.92	8.55

NOTES: MAL & KHP 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.