

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	September 2, 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	148.63	400kV THP - Siliguri Fdr- I	241.17	+	
		Unit- II	185.77	400kV THP - Siliguri Fdr- II	240.47	+	
		Unit- III	187.23	400kV THP - Siliguri Fdr- IV	233.67	+	
		Unit- IV	187.31	400kV THP - Malbase Fdr- III	285.39	+	
		Unit- V	139.19	400kV Malbase - Siliguri	216.94	+	
		Unit- VI	169.37	-	-	-	
		Total	1,017.50	Error at Station/Auxiliary Consumption/Losses	1.651%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	294.20	+	Unit I Under shutdown (31-03/09/2020) 400kV MHP-JLG II Breakdown
		Unit-II	197.77	400kV MHP - Jigmeling Fdr - II	0.00	+	
		Unit-III	197.94	400kV MHP - Jigmeling Fdr - III	314.20	+	
		Unit-IV	197.92	400kV MHP - Jigmeling Fdr - IV	0.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	593.63	Error at Station/Auxiliary Consumption/Losses	-2.488%		
3	336MW CHP	Unit- I	91.73	220kV CHP - Birpara Fdr- I	125.18	+	
		Unit- II	91.49	220kV CHP - Birpara Fdr- II	125.11	+	
		Unit- III	91.44	220kV CHP - Malbase Fdr- III	140.58	+	
		Unit- IV	91.99	220kV CHP - Semtokha Fdr- IV	-36.91	-	
		-	-	220kV Malbase - Birpara Fdr.	99.15	+	
		-	-	66kV CHP - Chumdo Fdr.	4.68	+	
		-	-	66kV CHP - Gedu Fdr.	5.90	+	
		-	-	3x3MVA, 66/11kV TFR	1.15	+	
		Total	366.65	Error at Station/Auxiliary Consumption/Losses	0.262%		
4	24MW BHP (U/S)	Unit- I	11.87	220kV BHP - Semtokha Fdr.	64.65	+	
		Unit- II	11.87	66kV BHP - Lobeysa Fdr.	17.35	+	
		Total	23.74	220kV BHP - Tsirang Fdr.	-17.68	-	
	40MW BHP (L/S)	Unit- I	20.49	5MVA, 66/11kV TFR	0.74	+	
		Unit- II	20.70	30MVA ICT, 220/66kV			
		Total	41.19	Error at Station/Auxiliary Consumption/Losses	-0.200%		
5	126MW DHPC	Unit-I	50.34	220kV DHPC - Tsirang Fdr.	98.00	+	
		Unit-II	48.31	220kV Jigmeling - Dagapela Fdr.	2.00	+	
		-	-	5MVA, 220/33kV TFR			
		Total	98.65	Error at Station/Auxiliary Consumption/Losses	0.659%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	42.81	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	22.21	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	61.80	+	
		-	-	132kV Motanga - Rangia Fdr.	17.86	+	
		-	-	220kV Tsirang - Jigmeling	77.44	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	1.000%		

Note: Generation-Load Summary for September 02, 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	1,547.73	188.60	172.32	1,281.69	16.28
2	Eastern Grid	659.63	49.01	63.12	688.06	-14.11
	Total	2,207.36	237.61	235.44	1,969.75	2.17

Note: Generation-Load Summary for September 02, 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	1,334.00	246.75	236.82	1018.68	9.93
2	Eastern Grid	586.62	65.53	66.95	589.66	-1.42
	Total	1,920.62	312.28	303.77	1,608.34	8.51

NOTES: Both WDC and EDC load 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:	September 3, 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	187.10	400kV THP - Siliguri Fdr- I	276.48	+	
		Unit- II	186.48	400kV THP - Siliguri Fdr- II	273.65	+	
		Unit- III	185.85	400kV THP - Siliguri Fdr- IV	266.47	+	
		Unit- IV	187.02	400kV THP - Malbase Fdr- III	286.47	+	
		Unit- V	186.72	400kV Malbase - Siliguri	255.66	+	
		Unit- VI	186.93	-	-	-	
		Total	1,120.10	Error at Station/Auxiliary Consumption/Losses	1.520%		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	294.60	+	Unit I Under shutdown (31-03/09/2020) 400kV MHP-JLG II Breakdown.400kV MHP-Jlg IV under standby.
		Unit-II	196.56	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	196.30	400kV MHP - Jigmeling Fdr - III	314.50	+	
		Unit-IV	197.96	400kV MHP - Jigmeling Fdr - IV	0.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		Total	590.82	Error at Station/Auxiliary Consumption/Losses	-3.094%		
3	336MW CHP	Unit- I	91.77	220kV CHP - Birpara Fdr- I	121.66	+	
		Unit- II	91.42	220kV CHP - Birpara Fdr- II	121.91	+	
		Unit- III	91.61	220kV CHP - Malbase Fdr- III	159.24	+	
		Unit- IV	91.55	220kV CHP - Semtokha Fdr- IV	-46.30	-	
		-	-	220kV Malbase - Birpara Fdr.	79.87	+	
		-	-	66kV CHP - Chumdo Fdr.	1.79	+	
		-	-	66kV CHP - Gedu Fdr.	5.71	+	
		-	-	3x3MVA, 66/11kV TFR	0.74	+	
		Total	366.35	Error at Station/Auxiliary Consumption/Losses	0.437%		
4	24MW BHP (U/S)	Unit- I	11.85	220kV BHP - Semtokha Fdr.	62.09	+	
		Unit- II	11.85	66kV BHP - Lobeysa Fdr.	15.42	+	
		Total	23.70	220kV BHP - Tsirang Fdr.	-12.84	-	
	40MW BHP (L/S)	Unit- I	20.46	5MVA, 66/11kV TFR	0.38	+	
		Unit- II	20.69	30MVA ICT, 220/66kV			
		Total	41.15	Error at Station/Auxiliary Consumption/Losses	-0.486%		
5	126MW DHPC	Unit-I	48.32	220kV DHPC - Tsirang Fdr.	96.13	+	
		Unit-II	48.29	220kV Jigmeling - Dagapela Fdr.	0.90	+	
		-	-	5MVA, 220/33kV TFR			
		Total	96.61	Error at Station/Auxiliary Consumption/Losses	0.497%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	41.10	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	23.10	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	51.61	+	
		-	-	132kV Motanga - Rangia Fdr.	49.07	+	
		-	-	220kV Tsirang - Jigmeling	80.27	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	2.273%		

Note: Generation-Load summary for September 03, 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	1,647.91	171.94	153.93	1,395.70	18.01
2	Eastern Grid	656.82	27.31	44.09	709.78	-16.78
	Total	2,304.73	199.25	198.02	2,105.48	1.23

Note: Generation-Load Summary for September 03, 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	1489.27	242.16	229.49	1,181.25	12.67
2	Eastern Grid	623.22	47.44	50.56	641.64	-3.12
	Total	2,112.49	289.60	280.05	1,822.89	9.55

NOTES: Both WDC and EDC load 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.