

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	September 2, 2021
Hours:	19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	185.22	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	185.50	400kV THP - Siliguri Line - II	352.42	+	
		Unit- III	185.08	400kV THP - Siliguri Line- IV	336.66	+	
		Unit- IV	185.64	400kV THP - Malbase Line - III	417.67	+	
		Unit- V	185.18	400kV Malbase - Siliguri Line	311.67	+	
		Unit- VI	186.50	-	-	-	
		Total	1,113.12	Auxiliary Consumption & Transformation Losses at Gen. end	0.572%		
2	720MW MHP	Unit-I	197.79	400kV MHP - Jigmeling Line - I	390.30	+	400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) on standby. (There is a MW power difference of 12MW between MHP fdr sending end and Jigmeling fdr receiving end)
		Unit-II	194.71	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.65	400kV MHP - Jigmeling Line - III	392.30	+	
		Unit-IV	197.09	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-16.70	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	196.30	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	296.70	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	296.70	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	36.70	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	36.80	+	
		-	-	220kV Tsirang - Jigmeling Line	92.81	+	
-	-	132kV Gelephu - Salakati Line	29.97	+			
Total	787.24	Auxiliary Consumption & Transformation Losses at Gen. end	0.589%				
3	336MW CHP	Unit- I	91.19	220kV CHP - Birpara Line- I	98.88	+	
		Unit- II	91.01	220kV CHP - Birpara Line- II	98.96	+	
		Unit- III	91.55	220kV CHP - Malbase Line- III	125.48	+	
		Unit- IV	91.51	220kV CHP - Semtokha Line- IV	24.02	+	
		-	-	220kV Malbase - Birpara Line	64.93	+	
		-	-	66kV CHP - Chumdo Line	10.21	+	
		-	-	66kV CHP - Gedu Line	6.00	+	
		-	-	3x3MVA, 66/11kV TFR	1.27	+	
Total	365.26	Auxiliary Consumption & Transformation Losses at Gen. end	0.120%				
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	82.40	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	11.50	+	
		Total	24.50	220kV BHP - Tsirang Line	-29.00	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	-11.48	-	
		Total	41.80	Auxiliary Consumption & Transformation Losses at Gen. end	0.754%		
6	126MW DHP	Unit-I	63.60	220kV DHP - Tsirang Line	126.15	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.12	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.20	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	126.72	Auxiliary Consumption & Transformation Losses at Gen. end	0.213%		
7	60MW KHP	Unit- I	16.59	132kV KHP - Nangkhon Line	36.47	+	
		Unit-II	16.48	132kV KHP - Kilikhar Line	28.53	+	
		Unit- III	16.46	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.53	132kV Motanga - Rangia Line	44.13	+	
		Total	66.06	Auxiliary Consumption & Transformation Losses at Gen. end	1.150%		

Note: Generation-Load Summary (MW) for September 02, 2021 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW, %)	Auxiliary Consumption & Transformation Losses (MW) at Generator end.
1	Western Grid	1,671.40	315.07	309.69	1,263.52	5.38
2	Eastern Grid	853.30	82.31	76.91	863.80	5.40
	Total	2,524.70	397.38	386.60	2,127.32	10.78

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)	Auxiliary Consumption & Transformation Losses
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-BHP 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:	September 3, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	185.37	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri line I under breakdown.
		Unit- II	186.19	400kV THP - Siliguri Line - II	362.53	+	
		Unit- III	185.27	400kV THP - Siliguri Line- IV	345.32	+	
		Unit- IV	185.71	400kV THP - Malbase Line - III	400.14	+	
		Unit- V	186.63	400kV Malbase - Siliguri Line	327.32	+	
		Unit- VI	186.50	-	-	-	
		Total	1,115.67	Auxiliary Consumption & Transformation Losses at Generator end	0.688%		
2	720MW MHP	Unit-I	197.83	400kV MHP - Jigmeling Line - I	391.44	+	400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line I(Interim) on standby. (There is a MW power difference of 12MW between MHP fdr sending end and Jigmeling fdr receiving end)
		Unit-II	196.87	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	197.80	400kV MHP - Jigmeling Line - III	393.34	+	
		Unit-IV	196.67	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-47.70	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	203.60	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	309.28	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	309.28	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	23.30	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	23.50	+	
		-	-	220kV Tsirang - Jigmeling Line	95.91	+	
-	-	132kV Gelephu - Salakati Line	22.64	+			
Total	789.17	Auxiliary Consumption & Transformation Losses at Generator end	0.556%				
3	336MW CHP	Unit- I	91.35	220kV CHP - Birpara Line- I	96.96	+	
		Unit- II	91.19	220kV CHP - Birpara Line- II	97.29	+	
		Unit- III	91.32	220kV CHP - Malbase Line- III	138.68	+	
		Unit- IV	91.48	220kV CHP - Semtokha Line- IV	18.11	+	
		-	-	220kV Malbase - Birpara Line	50.85	+	
		-	-	66kV CHP - Chumdo Line	6.13	+	
		-	-	66kV CHP - Gedu Line	6.02	+	
		-	-	3x3MVA, 66/11kV TFR	0.74	+	
Total	365.34	Auxiliary Consumption & Transformation Losses at Generator end	0.386%				
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Line	85.10	+	
		Unit- II	12.20	66kV BHP - Lobeysa Line	6.70	+	
		Total	24.50	220kV BHP - Tsirang Line	-27.11	-	
5	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.10	30MVA ICT, 220/66kV (HV)	-16.08	-	
		Total	41.80	Auxiliary Consumption & Transformation Losses at Generator end	1.071%		
6	126MW DHP	Unit-I	63.50	220kV DHP - Tsirang Line	126.19	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.24	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.70	+	
		-	-	5MVA, 220/33kV TFR	0.54	+	
		Total	126.74	Auxiliary Consumption & Transformation Losses at Generator end	0.008%		
7	60MW KHP	Unit- I	16.53	132kV KHP - Nangkhoh Line	41.66	+	
		Unit-II	16.66	132kV KHP - Kilikhar Line	23.49	+	
		Unit- III	16.52	5MVA, 132/11kV TFR	0.32	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	39.44	+	
		Total	66.21	Auxiliary Consumption & Transformation Losses at Generator end	1.118%		

Note: Generation-Load Summary (MW) for September 03, 2021 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Auxiliary Consumption & Transformation Losses (MW) at Generator end.
1	Western Grid	1,674.05	297.87	288.76	1,280.27	9.11
2	Eastern Grid	855.38	67.05	61.92	884.24	5.13
Total		2,529.43	364.92	350.68	2,164.51	14.24

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)	Auxiliary Consumption & Transformation Losses
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-BHP and MHP 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.
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