

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	July 3, 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	185.68	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	186.14	400kV THP - Siliguri Line - II	359.65	+	
		Unit- III	185.29	400kV THP - Siliguri Line- IV	344.15	+	
		Unit- IV	184.57	400kV THP - Malbase Line - III	405.37	+	
		Unit- V	183.87	400kV Malbase - Siliguri Line	322.30	+	
		Unit- VI	185.56	-	-	-	
		Total	1,111.11	Auxiliary Consumption & Transformation Losses at Gen. end	0.175%		
2	720MW MHP	Unit-I	197.85	400kV MHP - Jigmeling Line - I	294.28	+	Unit-II under Maintenance. Unit-III under Restoration 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG_ALI Line I(Interim) under shutdown
		Unit-II	197.79	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	296.12	+	
		Unit-IV	197.80	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)	-51.70	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	158.50	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	237.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	237.80	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	32.40	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	32.40	+	
		-	-	220kV Tsirang - Jigmeling Line	118.90	+	
-	-	132kV Gelephu - Salakati Line	25.00	+			
Total	593.44	Auxiliary Consumption & Transformation Losses at Gen. end	0.512%				
3	336MW CHP	Unit- I	91.94	220kV CHP - Birpara Line- I	102.54	+	
		Unit- II	91.21	220kV CHP - Birpara Line- II	102.24	+	
		Unit- III	91.84	220kV CHP - Malbase Line- III	138.57	+	
		Unit- IV	92.06	220kV CHP - Semtokha Line- IV	8.48	+	
		-	-	220kV Malbase - Birpara Line	60.17	+	
		-	-	66kV CHP - Chumdo Line	6.94	+	
		-	-	66kV CHP - Gedu Line	5.47	+	
		-	-	3x3MVA, 66/11kV TFR	1.00	+	
		Total	367.05	Auxiliary Consumption & Transformation Losses at Gen. end	0.493%		
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	42.80	+	30MVA ICT(220/66kV) under shutdown.
		Unit- II	12.10	66kV BHP - Lobeysa Line	23.40	+	
		Total	24.30	220kV BHP - Tsirang Line	-1.92	-	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	20.90	30MVA ICT, 220/66kV (HV)	0.00		
		Total	41.40	Auxiliary Consumption & Transformation Losses at Gen. end	0.822%		
6	126MW DHP	Unit-I	63.58	220kV DHP - Tsirang Line	124.13	+	220kV DHP_Dagapela Line on standby. 220kV JLG_Dagapela Line under maintenance.
		Unit-II	61.00	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.90	+	
		-	-	5MVA, 220/33kV TFR	0.27	+	
		Total	124.58	Auxiliary Consumption & Transformation Losses at Gen. end	0.144%		
7	60MW KHP	Unit- I	16.49	132kV KHP - Nangkor Line	38.00	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	27.50	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.14	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	39.51	+	
		Total	65.99	Auxiliary Consumption & Transformation Losses at Gen. end	0.538%		

Note: Generation-Load Summary (MW) for July 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)	Auxiliary Consumption & Transformation Losses (MW) at Generator end.
1	Western Grid	1,668.44	258.49	255.92	1,291.05	2.57
2	Eastern Grid	659.43	79.72	76.33	698.61	3.40
	Total	2,327.87	338.21	332.25	1,989.66	5.97

Note: Generation-Load Summary for July 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)	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,631.16	227.93	214.97	1,324.03	12.96
2	Eastern Grid	857.22	62.64	59.56	873.80	3.08
	Total	2,488.38	290.57	274.53	2,197.83	16.04

NOTE-BHP and MHEP 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:	July 4, 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	185.97	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	183.59	400kV THP - Siliguri Line - II	361.96	+	
		Unit- III	185.71	400kV THP - Siliguri Line- IV	344.92	+	
		Unit- IV	183.79	400kV THP - Malbase Line - III	397.40	+	
		Unit- V	185.60	400kV Malbase - Siliguri Line	328.52	+	
		Unit- VI	185.29	-	-	-	
		Total	1,109.95	Auxiliary Consumption & Transformation Losses at Generator end	0.511%		
2	720MW MHP	Unit-I	197.82	400kV MHP - Jigmeling Line - I	294.27	+	Unit-III on Restoration. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line I (Interim) under shutdown.
		Unit-II	197.84	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	296.05	+	
		Unit-IV	197.73	400kV MHP - Jigmeling Line - IV	0.00		
		-	-	132kV MHP - Yurmoo Line - I	0.00		
		-	-	132kV MHP - Yurmoo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	-71.80	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	161.44	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	246.17	+	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	245.63	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	24.30	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	24.30	+	
		-	-	220kV Tsirang - Jigmeling Line	122.40	+	
-	-	132kV Gelephu - Salakati Line	26.20	+			
Total	593.39	Auxiliary Consumption & Transformation Losses at Generator end	0.517%				
3	336MW CHP	Unit- I	91.61	220kV CHP - Birpara Line- I	100.22	+	
		Unit- II	91.28	220kV CHP - Birpara Line- II	100.16	+	
		Unit- III	91.50	220kV CHP - Malbase Line- III	141.46	+	
		Unit- IV	91.28	220kV CHP - Semtokha Line- IV	9.76	+	
		-	-	220kV Malbase - Birpara Line	54.10	+	
		-	-	66kV CHP - Chumdo Line	6.91	+	
		-	-	66kV CHP - Gedu Line	5.01	+	
		-	-	3x3MVA, 66/11kV TFR	0.90	+	
Total	365.67	Auxiliary Consumption & Transformation Losses at Generator end	0.342%				
4	24MW BHP (U/S)	Unit- I	12.20	220kV BHP - Semtokha Line	40.66	+	30MVA ICT(220/66kV) under shutdown
		Unit- II	12.10	66kV BHP - Lobeysa Line	24.60	+	
		Total	24.30	220kV BHP - Tsirang Line	-1.34	-	
5	40MW BHP (L/S)	Unit- I	20.50	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	20.90	30MVA ICT, 220/66kV (HV)			
		Total	41.40	Auxiliary Consumption & Transformation Losses at Generator end	1.355%		
6	126MW DHP	Unit-I	63.65	220kV DHP - Tsirang Line	126.34	+	220kV DHP_Dagapela Line on standby.
		Unit-II	63.27	220kV DHP - Dagapela Line			
		-	-	220kV Jigmeling - Dagapela Line	1.10	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	126.92	Auxiliary Consumption & Transformation Losses at Generator end	0.221%		
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkor Line	40.80	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	24.37	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.25	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	42.11	+	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	0.879%		

Note: Generation-Load Summary (MW) for July 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)	Auxiliary Consumption & Transformation Losses (MW) at Generator end.
1	Western Grid	1,668.24	255.96	248.97	1,289.88	6.99
2	Eastern Grid	659.39	60.24	56.59	721.55	3.65
Total		2,327.63	316.20	305.56	2,011.43	10.64

Note: Generation-Load Summary for July 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)	Auxiliary Consumption & Transformation Losses
1	Western Grid	1,646.50	215.72	196.82	1,356.15	18.90
2	Eastern Grid	842.02	55.26	51.38	861.39	3.88
Total		2,488.52	270.98	248.20	2,217.54	22.78

NOTE-BHP and MHEP 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.