

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 21, 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	184.60	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	182.91	400kV THP - Siliguri Line - II	359.49	+	
		Unit- III	186.52	400kV THP - Siliguri Line- IV	344.65	+	
		Unit- IV	185.71	400kV THP - Malbase Line - III	402.41	+	
		Unit- V	185.93	400kV Malbase - Siliguri Line	324.23	+	
		Unit- VI	185.78	-	-	-	
		Total	1,111.45	Auxiliary Consumption & Transformation Losses at Gen. end	0.441%		
2	720MW MHP	Unit-I	197.21	400kV MHP - Jigmeling Line - I	294.06	+	Unit-III under breakdown 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 400kV JLG-ALI Line I(Direct) not in service.
		Unit-II	197.69	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.66	+	
		Unit-IV	197.71	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)	-11.30	-	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	236.30	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	354.60	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	37.20	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	37.30	+	
		-	-	220kV Tsirang - Jigmeling Line	86.46	+	
-	-	132kV Gelephu - Salakati Line	31.97	+			
Total	592.61	Auxiliary Consumption & Transformation Losses at Gen. end	0.488%				
3	336MW CHP	Unit- I	91.57	220kV CHP - Birpara Line- I	104.11	+	
		Unit- II	91.04	220kV CHP - Birpara Line- II	104.11	+	
		Unit- III	91.33	220kV CHP - Malbase Line- III	137.74	+	
		Unit- IV	91.66	220kV CHP - Semtokha Line- IV	3.17	+	
		-	-	220kV Malbase - Birpara Line	62.87	+	
		-	-	66kV CHP - Chumdo Line	8.49	+	
		-	-	66kV CHP - Gedu Line	5.30	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
Total	365.60	Auxiliary Consumption & Transformation Losses at Gen. end	0.405%				
4	24MW BHP (U/S)	Unit- I	7.40	220kV BHP - Semtokha Line	54.80	+	30MVA ICT(220/66kV) under shutdown.
		Unit- II	7.30	66kV BHP - Lobeysa Line	13.80	+	
		Total	14.70	220kV BHP - Tsirang Line	-27.32	-	
5	40MW BHP (L/S)	Unit- I	13.30	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	14.00	30MVA ICT, 220/66kV (HV)	0.00		
		Total	27.30	Auxiliary Consumption & Transformation Losses at Gen. end	-0.405%		
6	126MW DHP	Unit-I	55.43	220kV DHP - Tsirang Line	117.99	+	220kV DHP-Dagapela Line on standby.
		Unit-II	62.90	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.50	+	
		-	-	5MVA, 220/33kV TFR	0.30	+	
		Total	118.33	Auxiliary Consumption & Transformation Losses at Gen. end	0.034%		
7	60MW KHP	Unit- I	16.51	132kV KHP - Nangkor Line	37.65	+	
		Unit-II	16.54	132kV KHP - Kilikhar Line	27.37	+	
		Unit- III	16.53	5MVA, 132/11kV TFR	0.43	+	
		Unit- IV	16.63	132kV Motanga - Rangia Line	50.67	+	
		Total	66.21	Auxiliary Consumption & Transformation Losses at Gen. end	1.148%		

Note: Generation-Load Summary (MW) for June 21, 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	1,637.38	251.46	246.71	1,299.46	4.75
2	Eastern Grid	658.82	71.74	68.09	673.54	3.65
Total		2,296.20	323.20	314.80	1,973.00	8.40

Note: Generation-Load Summary for June 21, 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	1,557.85	208.62	190.75	1,276.39	17.87
2	Eastern Grid	659.32	60.56	57.51	671.60	3.05
Total		2,217.17	269.18	248.26	1,947.99	20.92

NOTE-BHP, JLG and MHPA data collected from site

1. 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:

- i) 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.
- ii) The clocks of all the locations are not synchronized.

2. 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:	June 22, 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	185.31	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	184.27	400kV THP - Siliguri Line - II	360.66	+	
		Unit- III	186.16	400kV THP - Siliguri Line- IV	344.85	+	
		Unit- IV	185.48	400kV THP - Malbase Line - III	399.73	+	
		Unit- V	184.84	400kV Malbase - Siliguri Line	325.56	+	
		Unit- VI	185.55	-	-	-	
		Total	1,111.61	Auxiliary Consumption & Transformation Losses at Generator end	0.573%		
2	720MW MHP	Unit-I	197.19	400kV MHP - Jigmeling Line - I	293.94	+	Unit-III on breakdown 400kV MHP-JLG Line II & IV on standby. 132kV MHP-Yurmo line I & II not in service. 400kV JLG-ALI Line II(Interim) under shutdown. 400kV JLG-ALI Line I(Direct) not in service
		Unit-II	197.80	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.64	+	
		Unit-IV	197.74	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)	2.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	229.80	+	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	349.90	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	32.50	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	32.50	+	
		-	-	220kV Tsirang - Jigmeling Line	63.22	+	
-	-	132kV Gelephu - Salakati Line	27.25	+			
Total	592.73	Auxiliary Consumption & Transformation Losses at Generator end	0.531%				
3	336MW CHP	Unit- I	91.60	220kV CHP - Birpara Line- I	100.98	+	
		Unit- II	91.13	220kV CHP - Birpara Line- II	100.63	+	
		Unit- III	91.74	220kV CHP - Malbase Line- III	144.09	+	
		Unit- IV	91.29	220kV CHP - Semtokha Line- IV	7.18	-	
		-	-	220kV Malbase - Birpara Line	52.21	+	
		-	-	66kV CHP - Chumdo Line	5.76	+	
		-	-	66kV CHP - Gedu Line	5.16	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
Total	365.76	Auxiliary Consumption & Transformation Losses at Generator end	0.344%				
4	24MW BHP (U/S)	Unit- I	6.30	220kV BHP - Semtokha Line	44.61	+	30MVA ICT(220/66kV) under shutdown.
		Unit- II	6.20	66kV BHP - Lobeysa Line	11.80	+	
		Total	12.50	220kV BHP - Tsirang Line	-21.63	-	
5	40MW BHP (L/S)	Unit- I	10.90	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	11.80	30MVA ICT, 220/66kV (HV)	0.00		
		Total	22.70	Auxiliary Consumption & Transformation Losses at Generator end	-1.335%		
6	126MW DHP	Unit-I	58.44	220kV DHP - Tsirang Line	87.95	+	220kV DHP-Dagapela Line on standby.
		Unit-II	29.96	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.40		
		Total	88.40	Auxiliary Consumption & Transformation Losses at Generator end	0.057%		
7	60MW KHP	Unit- I	16.60	132kV KHP - Nangkor Line	39.88	+	
		Unit-II	16.46	132kV KHP - Kilikhar Line	25.25	+	
		Unit- III	16.51	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	16.56	132kV Motanga - Rangia Line	48.09	+	
		Total	66.13	Auxiliary Consumption & Transformation Losses at Generator end	1.059%		

Note: Generation-Load Summary (MW) for June 22, 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	1,600.97	252.86	246.65	1,284.89	6.21
2	Eastern Grid	658.86	67.04	63.19	655.04	3.85
Total		2,259.83	319.90	309.84	1,939.93	10.06

Note: Generation-Load Summary for June 22, 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	1,553.32	224.72	207.18	1,266.14	17.54
2	Eastern Grid	656.99	49.78	46.05	669.67	3.73
Total		2,210.31	274.50	253.23	1,935.81	21.27

NOTE-BHP, JLG and MHPA data collected from site

1. 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:

- i) 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.
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