

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: October 31, 2022
Hours: 18:00 Hours

Date: 24-Oct-22
Time: 18:10hrs
Load(MW): 578.88

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	121.93	Unit-I under Shutdown. Unit-IV on Standby. 400kV THP- Siliguri Line- II on Standby.
		Unit- II	117.37	400kV THP - Siliguri Line - II	0.00	
		Unit- III	88.25	400kV THP - Siliguri Line- IV	117.21	
		Unit- IV	0.00	400kV THP - Malbase Line - III	220.43	
		Unit- V	128.14	400kV Malbase - Siliguri Line	95.05	
		Unit- VI	129.01	-	-	
		Total	462.77	Auxiliary Consumption & Transformation Losses at Generator end	0.69%	
2	720MW MHP	Unit-I	140.14	400kV MHP - Jigmeling Line - I	94.98	Unit-II on standby. Unit-III under shutdown. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Direct line II Standby. 400kV JLG_ALI Line II (Interim) on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	95.78	
		Unit-IV	140.58	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	88.11	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	67.55	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	48.49	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	72.89	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	17.97	
		-	-	80MVA, 220/132kV ICT - II (HV)	18.38	
		-	-	220kV Tsirang - Jigmeling Line	30.52	
-	-	132kV Gelephu - Salakati Line	13.35			
Total	280.72	Auxiliary Consumption & Transformation Losses at Generator end	0.66%			
3	336MW CHP	Unit- I	84.77	220kV CHP - Birpara Line- I	31.81	Unit-II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	31.52	
		Unit- III	79.86	220kV CHP - Malbase Line- III	49.10	
		Unit- IV	74.82	220kV CHP - Semtokha Line- IV	97.68	
		-	-	220kV Malbase - Birpara Line	13.35	
		-	-	66kV CHP - Chumdo Line	20.60	
		-	-	66kV CHP - Gedu Line	6.46	
		-	-	3x3MVA, 66/11kV TFR	1.52	
Total	239.45	Auxiliary Consumption & Transformation Losses at Generator end	0.32%			
4	24MW BHP (U/S)	Unit- I	7.90	220kV BHP - Semtokha Line	34.20	
		Unit- II	7.60	66kV BHP - Lobeyasa Line	26.10	
		Total	15.50	220kV BHP - Tsirang Line	-17.60	
5	40MW BHP (L/S)	Unit- I	14.40	5MVA, 66/11kV TFR	0.70	
		Unit- II	13.90	30MVA ICT, 220/66kV (HV)	11.70	
		Total	28.30	Auxiliary Consumption & Transformation Losses at Generator end	0.91%	
6	126MW DHP	Unit-I	52.34	220kV DHP - Tsirang Line	52.06	Unit-II on Standby 220kV DHP-Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	62.35	
		-	-	5MVA, 220/33kV TFR	0.27	
Total	52.34	Auxiliary Consumption & Transformation Losses at Gen. end	0.02%			
7	60MW KHP	Unit- I	12.69	132kV KHP - Nangkhon Line	25.58	
		Unit-II	12.73	132kV KHP - Kilikhar Line	24.83	
		Unit- III	12.78	5MVA, 132/11kV TFR	0.60	
		Unit- IV	13.29	132kV Motanga - Rangia Line	21.80	
		Total	51.49	Auxiliary Consumption & Transformation Losses at Generator end	0.93%	

Note: Generation-Load Summary (MW) for October 31, 2022 at 18:00hrs.

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)
1	Western Grid	798.36	356.97	352.60	410.87	4.37
2	Eastern Grid	332.21	206.20	203.87	156.53	2.33
Total		1,130.57	563.17	556.47	567.40	6.70

Note: Generation-Load Summary for October 31, 2021 at 18:00hrs.

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)
1	Western Grid	1,244.76	318.43	323.00	875.59	-4.57
2	Eastern Grid	337.75	80.30	77.59	308.19	2.71
Total		1,582.51	398.73	400.59	1,183.78	-1.86

NOTE- Motanga data collected from site.

- The Instantaneous load balance,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

Coincidental Maximum Load

Date: November 1, 2022
Hours: 09:00 Hours

Date: 24-Oct-22
Time: 18:10hrs
Load(MW): 578.88

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Remarks
1	1020MW THP	Unit- I	0.00	400kV THP - Siliguri Line - I	134.73	Unit-I under Shutdown. Unit-IV on Standby. 400kV THP- Siliguri Line- II on Standby.
		Unit- II	118.09	400kV THP - Siliguri Line - II	0.00	
		Unit- III	89.91	400kV THP - Siliguri Line- IV	130.67	
		Unit- IV	0.00	400kV THP - Malbase Line - III	198.19	
		Unit- V	127.90	400kV Malbase - Siliguri Line	115.37	
		Unit- VI	129.28	-	-	
		Total	465.18	Auxiliary Consumption & Transformation Losses at Generator end	0.34%	
2	720MW MHP	Unit-I	140.14	400kV MHP - Jigmeling Line - I	101.52	Unit-III under shutdown. Unit-II on Standby 400kV MHP-JLG Line II & IV. 132kV MHP_Yurmoo line I not in service. 400kV JLG_ALI Direct line II Standby. 400kV JLG_ALI Line II (Interim) on Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	102.28	
		Unit-IV	140.55	400kV MHP - Jigmeling Line - IV	0.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	74.84	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	51.93	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	60.36	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	91.06	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	9.71	
		-	-	80MVA, 220/132kV ICT - II (HV)	9.91	
		-	-	220kV Tsirang - Jigmeling Line	28.42	
-	-	132kV Gelephu - Salakati Line	2.18			
Total	280.69	Auxiliary Consumption & Transformation Losses at Generator end	0.73%			
3	336MW CHP	Unit- I	85.40	220kV CHP - Birpara Line- I	33.03	Unit-II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	32.81	
		Unit- III	76.14	220kV CHP - Malbase Line- III	67.05	
		Unit- IV	72.97	220kV CHP - Semtokha Line- IV	76.64	
		-	-	220kV Malbase - Birpara Line	2.82	
		-	-	66kV CHP - Chumdo Line	16.71	
		-	-	66kV CHP - Gedu Line	6.21	
		-	-	3x3MVA, 66/11kV TFR	1.12	
Total	234.51	Auxiliary Consumption & Transformation Losses at Generator end	0.40%			
4	24MW BHP (U/S)	Unit- I	7.80	220kV BHP - Semtokha Line	40.71	
		Unit- II	7.50	66kV BHP - Lobeyssa Line	23.67	
		Total	15.30	220kV BHP - Tsirang Line	-21.24	
5	40MW BHP (L/S)	Unit- I	14.50	5MVA, 66/11kV TFR	0.44	
		Unit- II	14.00	30MVA ICT, 220/66kV (HV)	9.10	
		Total	28.50	Auxiliary Consumption & Transformation Losses at Generator end	0.50%	
6	126MW DHP	Unit-I	52.38	220kV DHP - Tsirang Line	52.13	Unit-II under Standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	61.21	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	52.38	Auxiliary Consumption & Transformation Losses at Generator end	0.10%			
7	60MW KHP	Unit- I	12.29	132kV KHP - Nangkhor Line	29.39	
		Unit-II	12.28	132kV KHP - Kilikhar Line	19.93	
		Unit- III	12.27	5MVA, 132/11kV TFR	0.45	
		Unit- IV	13.57	132kV Motanga - Rangia Line	18.53	
		Total	50.41	Auxiliary Consumption & Transformation Losses at Generator end	1.27%	

Note: Generation-Load Summary (MW) for November 01, 2022 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)
1	Western Grid	795.87	318.02	315.22	449.43	2.80
2	Eastern Grid	331.10	187.39	184.70	172.13	2.69
Total		1,126.97	505.41	499.92	621.56	5.49

Note: Generation-Load Summary for November 01, 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)
1	Western Grid	1,168.22	318.59	318.59	790.53	0.00
2	Eastern Grid	342.79	72.95	70.40	328.94	2.55
Total		1,511.01	391.54	388.99	1,119.47	2.55

NOTE-Motanga data collected from Site.

1. The Instantaneous load balance,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.