

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date: March 23, 2022
Hours: 18:00 Hours

Date: 12-Jan-22 **Time:** 18:00hrs **Load(MW):** 492.25

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	0.00	Unit I, II & III on Standby. 400kV THP- Siliguri - I under Shutdown. 400kV THP- Siliguri - II under Breakdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	117.16	
		Unit- IV	119.21	400kV THP - Malbase Line - III	212.05	
		Unit- V	74.04	400kV Malbase - Siliguri Line	95.73	
		Unit- VI	138.37	-	-	
		Total	331.62	Auxiliary Consumption & Transformation Losses at Generator end	0.73%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	179.44	Unit-I & II under Annual Maintenance. 400kV MHP-JLG Line II,III & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG-ALI I (Interim) on Standby. 400kV JLG_ALI Line II (Direct) on Standby
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	70.51	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	109.55	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)	83.59	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	36.36	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	56.80	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	25.16	
		-	-	80MVA, 220/132kV ICT - II (HV)	25.96	
		-	-	220kV Tsirang - Jigmeling Line	-49.96	
-	-	132kV Gelephu - Salakati Line	3.07			
Total	180.06	Auxiliary Consumption & Transformation Losses at Generator end	0.34%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	18.61	Unit-I under maintenance. Unit-II on Standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	18.55	
		Unit- III	84.31	220kV CHP - Malbase Line- III	46.04	
		Unit- IV	71.00	220kV CHP - Semtokha Line- IV	52.10	
		-	-	220kV Malbase - Birpara Line	-4.55	
		-	-	66kV CHP - Chumdo Line	13.82	
		-	-	66kV CHP - Gedu Line	3.13	
		-	-	3x3MVA, 66/11kV TFR	1.24	
Total	155.31	Auxiliary Consumption & Transformation Losses at Generator end	1.17%			
4	24MW BHP (U/S)	Unit- I	8.20	220kV BHP - Semtokha Line	52.20	U/S Unit-II & L/S Unit-II under AMP.
		Unit- II	0.00	66kV BHP - Lobeyasa Line	22.20	
		Total	8.20	220kV BHP - Tsirang Line	-46.80	
5	40MW BHP (L/S)	Unit- I	20.00	5MVA, 66/11kV TFR	0.79	U/S Unit-II & L/S Unit-II under AMP.
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	14.89	
		Total	20.00	Auxiliary Consumption & Transformation Losses at Generator end	-0.67%	
6	126MW DHP	Unit-I	25.27	220kV DHP - Tsirang Line	0.00	Unit-II under Annual Maintenance. 220kV DHP_Tsirang Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	25.05	
		-	-	220kV Jigmeling - Dagapela Line	-17.36	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	25.27	Auxiliary Consumption & Transformation Losses at Gen. end	0.08%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	14.05	Unit-I on Standby.
		Unit-II	10.37	132kV KHP - Kilikhar Line	16.04	
		Unit- III	10.40	5MVA, 132/11kV TFR	0.60	
		Unit- IV	10.33	132kV Motanga - Rangia Line	4.49	
		Total	31.10	Auxiliary Consumption & Transformation Losses at Generator end	1.32%	

Note: Generation-Load Summary (MW) for March 23, 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	540.40	344.86	340.80	245.50	4.06
2	Eastern Grid	211.16	60.48	59.45	100.72	1.03
Total		751.56	405.34	400.25	346.22	5.09

Note: Generation-Load Summary for March 23, 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	313.00	252.87	248.84	36.56	4.03
2	Eastern Grid	141.77	73.48	72.39	91.86	1.09
Total		454.77	326.35	321.23	128.42	5.12

NOTE- BHP 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:	March 24, 2022
Hours:	09:00 Hours

Date	Time	Load(MW)
12-Jan-22	18:00hrs	492.25

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	0.00	Unit I, II & III on Standby. 400kV THP- Siliguri - I under Shutdown. 400kV THP- Siliguri - II under Breakdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	86.19	
		Unit- IV	69.91	400kV THP - Malbase Line - III	165.18	
		Unit- V	69.64	400kV Malbase - Siliguri Line	68.39	
		Unit- VI	114.83	-	-	
		Total	254.38	Auxiliary Consumption & Transformation Losses at Generator end	1.18%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	215.33	Unit-I & II under Annual Maintenance. 400kV MHP-JLG Line II,III & IV on standby. 132kV MHP_Yurmo line I & II not in service. 400kV JLG-ALI I (Interim) on Standby. 400kV JLG_ALI Line II (Direct) on Standby
		Unit-II	0.00	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	70.49	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	145.51	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)	78.77	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	52.36	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	80.66	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	24.53	
		-	-	80MVA, 220/132kV ICT - II (HV)	25.02	
		-	-	220kV Tsirang - Jigmeling Line	-47.43	
-	-	132kV Gelephu - Salakati Line	5.91			
Total	216.00	Auxiliary Consumption & Transformation Losses at Generator end	0.31%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	15.67	Unit-I under Annual Maintenance. Unit-II under standby.
		Unit- II	0.00	220kV CHP - Birpara Line- II	15.69	
		Unit- III	77.16	220kV CHP - Malbase Line- III	48.96	
		Unit- IV	71.90	220kV CHP - Semtokha Line- IV	50.62	
		-	-	220kV Malbase - Birpara Line	-12.34	
		-	-	66kV CHP - Chumdo Line	12.37	
		-	-	66kV CHP - Gedu Line	3.41	
		-	-	3x3MVA, 66/11kV TFR	1.04	
Total	149.06	Auxiliary Consumption & Transformation Losses at Generator end	0.87%			
4	24MW BHP (U/S)	Unit- I	8.00	220kV BHP - Semtokha Line	50.00	U/S Unit-II under annual maintenance & L/S Unit-I under standby
		Unit- II	0.00	66kV BHP - Lobeysa Line	21.46	
		Total	8.00	220kV BHP - Tsirang Line	-45.57	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.41	
		Unit- II	18.00	30MVA ICT, 220/66kV (HV)	13.79	
		Total	18.00	Auxiliary Consumption & Transformation Losses at Generator end	-1.15%	
6	126MW DHP	Unit-I	25.62	220kV DHP - Tsirang Line	0.00	Unit-II under Annual maintenance. 220kV DHP_Tsirang Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	25.62	
		-	-	220kV Jigmeling - Dagapela Line	-18.32	
		-	-	5MVA, 220/33kV TFR	0.18	
Total	25.62	Auxiliary Consumption & Transformation Losses at Generator end	-0.70%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	21.70	Unit-I on Standby.
		Unit-II	13.48	132kV KHP - Kilikhar Line	17.84	
		Unit- III	13.53	5MVA, 132/11kV TFR	0.70	
		Unit- IV	13.47	132kV Motanga - Rangia Line	16.57	
		Total	40.48	Auxiliary Consumption & Transformation Losses at Generator end	0.59%	

Note: Generation-Load Summary (MW) for March 24, 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	455.06	328.89	325.06	173.60	3.83
2	Eastern Grid	256.48	53.55	52.64	155.50	0.91
Total		711.54	382.44	377.70	329.10	4.74

Note: Generation-Load Summary for March 24, 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	327.56	234.65	231.69	82.67	2.96
2	Eastern Grid	182.79	64.29	63.38	128.74	0.91
Total		510.35	298.94	295.07	211.41	3.87

NOTE-BHP data collected from Site.

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- 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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