

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	March 29, 2022
Hours:	18:00 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 under maintenance. 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	124.33	
		Unit- IV	159.51	400kV THP - Malbase Line - III	201.47	
		Unit- V	68.88	400kV Malbase - Siliguri Line	105.41	
		Unit- VI	100.03	-	-	
		Total	328.42	Auxiliary Consumption & Transformation Losses at Generator end	0.80%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	279.26	Unit-I under shutdown. Unit 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	141.57	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	139.27	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)	86.25	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	73.45	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	114.13	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	19.35	
		-	-	80MVA, 220/132kV ICT - II (HV)	19.63	
		-	-	220kV Tsirang - Jigmeling Line	-61.32	
-	-	132kV Gelephu - Salakati Line	3.89			
Total	280.84	Auxiliary Consumption & Transformation Losses at Generator end	0.56%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	19.52	Unit-I under Annual Maintenance. Unit IV on Standby.
		Unit- II	75.70	220kV CHP - Birpara Line- II	19.29	
		Unit- III	72.64	220kV CHP - Malbase Line- III	42.72	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	47.76	
		-	-	220kV Malbase - Birpara Line	-0.87	
		-	-	66kV CHP - Chumdo Line	12.48	
		-	-	66kV CHP - Gedu Line	3.85	
		-	-	3x3MVA, 66/11kV TFR	1.17	
Total	148.34	Auxiliary Consumption & Transformation Losses at Generator end	1.04%			
4	24MW BHP (U/S)	Unit- I	6.90	220kV BHP - Semtokha Line	57.70	U/S Unit-II under AMP & L/S Unit-II on Standby.
		Unit- II	0.00	66kV BHP - Lobeyasa Line	21.46	
		Total	6.90	220kV BHP - Tsirang Line	-58.25	
5	40MW BHP (L/S)	Unit- I	14.30	5MVA, 66/11kV TFR	0.57	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	15.31	
		Total	14.30	Auxiliary Consumption & Transformation Losses at Generator end	-1.32%	
6	126MW DHP	Unit-I	22.77	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	22.56	
		-	-	220kV Jigmeling - Dagapela Line	-14.89	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	22.77	Auxiliary Consumption & Transformation Losses at Gen. end	0.04%			
7	60MW KHP	Unit- I	14.99	132kV KHP - Nangkhon Line	23.97	Unit-IV on Standby.
		Unit-II	15.11	132kV KHP - Kilikhar Line	19.93	
		Unit- III	15.01	5MVA, 132/11kV TFR	0.67	
		Unit- IV	0.00	132kV Motanga - Rangia Line	16.19	
		Total	45.11	Auxiliary Consumption & Transformation Losses at Generator end	1.20%	

Note: Generation-Load Summary (MW) for March 29, 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	520.73	314.37	310.47	267.68	3.90
2	Eastern Grid	325.95	56.97	54.85	207.66	2.12
Total		846.68	371.34	365.32	475.34	6.02

Note: Generation-Load Summary for March 29, 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	239.06	257.16	251.34	-25.67	5.82
2	Eastern Grid	133.13	63.82	63.13	76.88	0.69
Total		372.19	320.98	314.47	51.21	6.51

NOTE- BHP 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.

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	March 30, 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 under maintenance. 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	85.23	
		Unit- IV	69.83	400kV THP - Malbase Line - III	160.96	
		Unit- V	69.49	400kV Malbase - Siliguri Line	69.34	
		Unit- VI	109.24	-	-	
		Total	248.56	Auxiliary Consumption & Transformation Losses at Generator end	0.95%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	170.08	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	60.35	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	110.23	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)	69.51	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	37.09	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	58.94	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	20.13	
		-	-	80MVA, 220/132kV ICT - II (HV)	20.60	
		-	-	220kV Tsirang - Jigmeling Line	-44.03	
-	-	132kV Gelephu - Salakati Line	4.20			
Total	170.58	Auxiliary Consumption & Transformation Losses at Generator end	0.29%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	16.86	Unit-I under Annual Maintenance. Unit IV on Standby.
		Unit- II	83.40	220kV CHP - Birpara Line- II	16.94	
		Unit- III	84.04	220kV CHP - Malbase Line- III	54.73	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	60.29	
		-	-	220kV Malbase - Birpara Line	-14.40	
		-	-	66kV CHP - Chumdo Line	12.89	
		-	-	66kV CHP - Gedu Line	3.34	
		-	-	3x3MVA, 66/11kV TFR	1.13	
Total	167.44	Auxiliary Consumption & Transformation Losses at Generator end	0.75%			
4	24MW BHP (U/S)	Unit- I	7.30	220kV BHP - Semtokha Line	42.38	U/S Unit-II under AMP & L/S Unit-II on Standby
		Unit- II	0.00	66kV BHP - Lobeyssa Line	20.26	
		Total	7.30	220kV BHP - Tsirang Line	-41.24	
5	40MW BHP (L/S)	Unit- I	14.50	5MVA, 66/11kV TFR	0.41	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	13.48	
		Total	14.50	Auxiliary Consumption & Transformation Losses at Generator end	-0.05%	
6	126MW DHP	Unit-I	23.21	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	22.99	
		-	-	220kV Jigmeling - Dagapela Line	-15.51	
		-	-	5MVA, 220/33kV TFR		
Total	23.21	Auxiliary Consumption & Transformation Losses at Generator end	0.95%			
7	60MW KHP	Unit- I	13.40	132kV KHP - Nangkhoh Line	22.92	Unit-IV on Standby.
		Unit-II	13.31	132kV KHP - Kilikhar Line	16.13	
		Unit- III	13.34	5MVA, 132/11kV TFR	0.50	
		Unit- IV	0.00	132kV Motanga - Rangia Line	9.53	
		Total	40.05	Auxiliary Consumption & Transformation Losses at Generator end	1.25%	

Note: Generation-Load Summary (MW) for March 30, 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	461.01	331.07	327.23	173.97	3.84
2	Eastern Grid	210.63	56.84	55.84	109.76	1.00
Total		671.64	387.91	383.07	283.73	4.84

Note: Generation-Load Summary for March 30, 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	248.94	254.11	248.37	-17.01	5.74
2	Eastern Grid	99.12	57.55	56.33	53.41	1.22
Total		348.06	311.66	304.70	36.40	6.96

NOTE-All data collected from Site.

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 - 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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