

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	March 3, 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	THP under total Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line - IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	0.00	400kV Malbase - Siliguri Line	-46.24	
		Unit- VI	0.00	-	-	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	0.00%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	223.46	Unit-I & II under Annual Maintenance .400kV MHP-JLG Line III under Annual Maintenance . 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo 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	95.31	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	129.29	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)	94.86	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	48.72	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	75.82	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	17.82	
		-	-	80MVA, 220/132kV ICT - II (HV)	17.77	
		-	-	220kV Tsirang - Jigmeling Line	-77.23	
-	-	132kV Gelephu - Salakati Line	-13.10			
Total	224.60	Auxiliary Consumption & Transformation Losses at Generator end	0.51%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	5.72	Unit-I under maintenance. Unit IV on standby
		Unit- II	85.80	220kV CHP - Birpara Line- II	5.71	
		Unit- III	82.44	220kV CHP - Malbase Line- III	76.13	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	57.89	
		-	-	220kV Malbase - Birpara Line	-49.31	
		-	-	66kV CHP - Chumdo Line	17.23	
		-	-	66kV CHP - Gedu Line	2.54	
		-	-	3x3MVA, 66/11kV TFR	1.48	
Total	168.24	Auxiliary Consumption & Transformation Losses at Generator end	0.92%			
4	24MW BHP (U/S)	Unit- I	7.20	220kV BHP - Semtokha Line	69.70	U/S Unit-II & L/S Unit-II under AMP.
		Unit- II	0.00	66kV BHP - Lobeyasa Line	24.77	
		Total	7.20	220kV BHP - Tsirang Line	-73.96	
5	40MW BHP (L/S)	Unit- I	13.60	5MVA, 66/11kV TFR	0.56	U/S Unit-II & L/S Unit-II under AMP.
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	18.27	
		Total	13.60	Auxiliary Consumption & Transformation Losses at Generator end	-1.30%	
6	126MW DHP	Unit-I	27.23	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	27.01	
		-	-	220kV Jigmeling - Dagapela Line	-17.86	
		-	-	5MVA, 220/33kV TFR	0.15	
Total	27.23	Auxiliary Consumption & Transformation Losses at Gen. end	0.26%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	11.46	Unit-I under AMP. Unit-III on Standby.
		Unit-II	14.06	132kV KHP - Kilikhar Line	15.86	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.59	
		Unit- IV	14.11	132kV Motanga - Rangia Line	9.78	
		Total	28.17	Auxiliary Consumption & Transformation Losses at Generator end	0.92%	

Note: Generation-Load Summary (MW) for March 03, 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	216.27	377.62	376.28	-84.12	1.34
2	Eastern Grid	252.77	54.32	52.92	121.22	1.40
Total		469.04	431.94	429.20	37.10	2.74

Note: Generation-Load Summary for March 03, 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	308.20	228.80	228.46	60.86	0.34
2	Eastern Grid	135.82	76.53	75.46	77.83	1.07
Total		444.02	305.33	303.92	138.69	1.41

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 4, 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	THP under total shutdown.
		Unit- II	0.00	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	0.00	
		Unit- IV	0.00	400kV THP - Malbase Line - III	0.00	
		Unit- V	0.00	400kV Malbase - Siliguri Line	-49.67	
		Unit- VI	0.00	-	-	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	0.00%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	185.49	Unit-I & II under Annual Maintenance. 400kV MHP-JLG Line III under Annual Maintenance. 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmoo 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	80.18	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	106.06	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)	73.72	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	42.18	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	65.48	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	14.27	
		-	-	80MVA, 220/132kV ICT - II (HV)	14.52	
		-	-	220kV Tsirang - Jigmeling Line	-62.71	
-	-	132kV Gelephu - Salakati Line	-6.13			
Total	186.24	Auxiliary Consumption & Transformation Losses at Generator end	0.40%			
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Line- I	10.88	Unit-IV standby. Unit-I under Annual Maintenance.
		Unit- II	82.65	220kV CHP - Birpara Line- II	10.95	
		Unit- III	86.36	220kV CHP - Malbase Line- III	78.14	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	49.19	
		-	-	220kV Malbase - Birpara Line	-41.34	
		-	-	66kV CHP - Chumdo Line	14.18	
		-	-	66kV CHP - Gedu Line	3.12	
		-	-	3x3MVA, 66/11kV TFR	1.41	
Total	169.01	Auxiliary Consumption & Transformation Losses at Generator end	0.67%			
4	24MW BHP (U/S)	Unit- I	7.60	220kV BHP - Semtokha Line	64.10	U/S Unit-II & L/S Unit-II under AMP.
		Unit- II	0.00	66kV BHP - Lobeyasa Line	22.71	
		Total	7.60	220kV BHP - Tsirang Line	-59.41	
5	40MW BHP (L/S)	Unit- I	20.00	5MVA, 66/11kV TFR	0.44	
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	15.71	
		Total	20.00	Auxiliary Consumption & Transformation Losses at Generator end	-0.87%	
6	126MW DHP	Unit-I	27.75	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	27.53	
		-	-	220kV Jigmeling - Dagapela Line	-18.63	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	27.75	Auxiliary Consumption & Transformation Losses at Generator end	0.07%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	12.49	Unit-I under AMP. Unit-IV on Standby.
		Unit-II	13.55	132kV KHP - Kilikhar Line	13.64	
		Unit- III	13.56	5MVA, 132/11kV TFR	0.60	
		Unit- IV	0.00	132kV Motanga - Rangia Line	1.38	
		Total	27.11	Auxiliary Consumption & Transformation Losses at Generator end	1.40%	

Note: Generation-Load Summary (MW) for March 04, 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	224.36	356.25	355.33	-69.18	0.92
2	Eastern Grid	213.35	47.73	46.60	102.91	1.13
Total		437.71	403.98	401.93	33.73	2.05

Note: Generation-Load Summary for March 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)
1	Western Grid	235.02	220.19	218.03	5.53	2.16
2	Eastern Grid	200.50	64.01	62.48	145.79	1.53
Total		435.52	284.20	280.51	151.32	3.69

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.