

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	May 3, 2022
Hours:	19:00 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-III under annual maintenance & Unit-I & V on standby. 400kV THP-Siliguri line I & II under breakdown.
		Unit- II	78.37	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	128.00	
		Unit- IV	119.01	400kV THP - Malbase Line - III	214.81	
		Unit- V	0.00	400kV Malbase - Siliguri Line	111.63	
		Unit- VI	149.50	-	-	
		Total	346.88	Auxiliary Consumption & Transformation Losses at Generator end	1.17%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	Unit- I & III on Standby. 400kV MHP-JLG Line I & 400kV MHP-JLG Line III on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby. 400kV JLG_ALI Line II (Direct) on standby.
		Unit-II	79.72	400kV MHP - Jigmeling Line - II	119.15	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	160.41	400kV MHP - Jigmeling Line - IV	119.42	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	97.71	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	54.95	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	82.49	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	28.52	
		-	-	80MVA, 220/132kV ICT - II (HV)	29.10	
		-	-	220kV Tsirang - Jigmeling Line	-32.29	
-	-	132kV Gelephu - Salakati Line	-4.13			
Total	240.13	Auxiliary Consumption & Transformation Losses at Generator end	0.65%			
3	336MW CHP	Unit- I	59.86	220kV CHP - Birpara Line- I	21.86	Unit-III on Standby.
		Unit- II	56.24	220kV CHP - Birpara Line- II	21.96	
		Unit- III	0.00	220kV CHP - Malbase Line- III	53.75	
		Unit- IV	59.26	220kV CHP - Semtokha Line- IV	49.93	
		-	-	220kV Malbase - Birpara Line	-5.78	
		-	-	66kV CHP - Chumdo Line	21.81	
		-	-	66kV CHP - Gedu Line	2.52	
		-	-	3x3MVA, 66/11kV TFR	1.57	
Total	175.36	Auxiliary Consumption & Transformation Losses at Generator end	1.12%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	54.60	U/S Unit-I on Standby & L/S Unit-II under Maintenance.
		Unit- II	6.20	66kV BHP - Lobeysa Line	20.45	
		Total	6.20	220kV BHP - Tsirang Line	-55.39	
5	40MW BHP (L/S)	Unit- I	13.80	5MVA, 66/11kV TFR	0.67	U/S Unit-I on Standby & L/S Unit-II under Maintenance.
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	14.92	
		Total	13.80	Auxiliary Consumption & Transformation Losses at Generator end	-1.65%	
6	126MW DHP	Unit-I	33.83	220kV DHP - Tsirang Line	33.59	Unit-II on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	8.36	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	33.83	Auxiliary Consumption & Transformation Losses at Gen. end	0.12%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhoh Line	25.89	Unit-I on Standby.
		Unit-II	13.34	132kV KHP - Kilikhar Line	13.39	
		Unit- III	13.32	5MVA, 132/11kV TFR	0.33	
		Unit- IV	13.24	132kV Motanga - Rangia Line	16.62	
		Total	39.90	Auxiliary Consumption & Transformation Losses at Generator end	0.73%	

Note: Generation-Load Summary (MW) for May 03, 2022 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)
1	Western Grid	576.07	330.69	324.95	277.67	5.74
2	Eastern Grid	280.03	97.81	95.96	149.93	1.85
Total		856.10	428.50	420.91	427.60	7.59

Note: Generation-Load Summary for May 03, 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)
1	Western Grid	334.81	240.41	238.68	76.75	1.73
2	Eastern Grid	182.05	75.53	75.23	124.17	0.30
Total		516.86	315.94	313.91	200.92	2.03

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:	May 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	Unit-III under annual maintenance & Unit-I&V on standby. 400kV THP-Siliguri line I & II under breakdown.
		Unit- II	79.97	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	95.44	
		Unit- IV	80.06	400kV THP - Malbase Line - III	170.81	
		Unit- V	0.00	400kV Malbase - Siliguri Line	81.95	
		Unit- VI	109.63	-	-	
		Total	269.66	Auxiliary Consumption & Transformation Losses at Generator end	1.26%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	Unit- I & III on Standby. 400kV MHP-JLG Line I & 400kV MHP-JLG Line III on standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby. 400kV JLG_ALI Line II (Direct) on standby.
		Unit-II	84.88	400kV MHP - Jigmeling Line - II	114.22	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	145.56	400kV MHP - Jigmeling Line - IV	114.49	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	28.76	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	78.75	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	119.24	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	22.20	
		-	-	80MVA, 220/132kV ICT - II (HV)	22.55	
		-	-	220kV Tsirang - Jigmeling Line	23.97	
-	-	132kV Gelephu - Salakati Line	1.49			
Total	230.44	Auxiliary Consumption & Transformation Losses at Generator end	0.75%			
3	336MW CHP	Unit- I	48.93	220kV CHP - Birpara Line- I	-9.28	Unit-III on AMP.
		Unit- II	47.13	220kV CHP - Birpara Line- II	-9.31	
		Unit- III	0.00	220kV CHP - Malbase Line- III	31.93	
		Unit- IV	45.68	220kV CHP - Semtokha Line- IV	107.99	
		-	-	220kV Malbase - Birpara Line	-39.35	
		-	-	66kV CHP - Chumdo Line	15.50	
		-	-	66kV CHP - Gedu Line	2.32	
		-	-	3x3MVA, 66/11kV TFR	0.85	
Total	141.74	Auxiliary Consumption & Transformation Losses at Generator end	1.23%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	0.00	U/S Unit-I on Standby & Common Shutdown of L/S Units & 220kV Switchyard.
		Unit- II	6.10	66kV BHP - Lobeyssa Line	5.56	
		Total	6.10	220kV BHP - Tsirang Line	0.00	
5	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.36	U/S Unit-I on Standby & Common Shutdown of L/S Units & 220kV Switchyard.
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	13.69	
		Total	0.00	Auxiliary Consumption & Transformation Losses at Generator end	2.95%	
6	126MW DHP	Unit-I	32.26	220kV DHP - Tsirang Line	32.03	Unit-II under Annual Maintenance. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	7.83	
		-	-	5MVA, 220/33kV TFR	0.15	
Total	32.26	Auxiliary Consumption & Transformation Losses at Generator end	0.25%			
7	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhor Line	25.33	Unit-I on Standby.
		Unit-II	13.50	132kV KHP - Kilikhar Line	14.34	
		Unit- III	13.48	5MVA, 132/11kV TFR	0.42	
		Unit- IV	13.46	132kV Motanga - Rangia Line	16.21	
		Total	40.44	Auxiliary Consumption & Transformation Losses at Generator end	0.87%	

Note: Generation-Load Summary (MW) for May 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	449.76	306.34	300.93	119.45	5.41
2	Eastern Grid	270.88	79.16	77.08	215.69	2.08
Total		720.64	385.50	378.01	335.14	7.49

Note: Generation-Load Summary for May 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	357.29	214.35	207.10	122.63	7.25
2	Eastern Grid	229.61	61.97	61.02	187.95	0.95
Total		586.90	276.32	268.12	310.58	8.20

NOTE-BHP 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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