

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	May 14, 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-V under annual maintenance Unit-I & III on standby. 400kV THP-Siliguri line I & II under breakdown.
		Unit- II	90.54	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	137.24	
		Unit- IV	138.49	400kV THP - Malbase Line - III	217.53	
		Unit- V	0.00	400kV Malbase - Siliguri Line	123.18	
		Unit- VI	129.96	-	-	
		Total	358.99	Auxiliary Consumption & Transformation Losses at Generator end	1.18%	
2	720MW MHP	Unit-I	95.22	400kV MHP - Jigmeling Line - I	0.00	Unit- III under Shutdown. 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	110.15	400kV MHP - Jigmeling Line - II	156.51	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	110.54	400kV MHP - Jigmeling Line - IV	157.00	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	96.81	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	85.95	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	128.33	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	26.12	
		-	-	80MVA, 220/132kV ICT - II (HV)	26.69	
		-	-	220kV Tsirang - Jigmeling Line	-34.69	
-	-	132kV Gelephu - Salakati Line	6.11			
Total	315.91	Auxiliary Consumption & Transformation Losses at Generator end	0.76%			
3	336MW CHP	Unit- I	64.38	220kV CHP - Birpara Line- I	25.49	Unit-IV on Standby.
		Unit- II	59.93	220kV CHP - Birpara Line- II	25.62	
		Unit- III	61.12	220kV CHP - Malbase Line- III	51.62	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	62.88	
		-	-	220kV Malbase - Birpara Line	0.70	
		-	-	66kV CHP - Chumdo Line	13.87	
		-	-	66kV CHP - Gedu Line	4.61	
		-	-	3x3MVA, 66/11kV TFR	1.33	
Total	185.43	Auxiliary Consumption & Transformation Losses at Generator end	0.01%			
4	24MW BHP (U/S)	Unit- I	5.90	220kV BHP - Semtokha Line	42.10	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	66kV BHP - Lobeyasa Line	20.23	
		Total	5.90	220kV BHP - Tsirang Line	-44.85	
5	40MW BHP (L/S)	Unit- I	12.20	5MVA, 66/11kV TFR	0.58	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	15.02	
		Total	12.20	Auxiliary Consumption & Transformation Losses at Generator end	0.22%	
6	126MW DHP	Unit-I	19.18	220kV DHP - Tsirang Line	18.97	Unit-II on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	8.12	
		-	-	5MVA, 220/33kV TFR	0.15	
Total	19.18	Auxiliary Consumption & Transformation Losses at Gen. end	0.31%			
7	60MW KHP	Unit- I	16.60	132kV KHP - Nangkhor Line	42.50	
		Unit-II	16.50	132kV KHP - Kilikhar Line	22.58	
		Unit- III	16.55	5MVA, 132/11kV TFR	0.55	
		Unit- IV	16.48	132kV Motanga - Rangia Line	32.60	
		Total	66.13	Auxiliary Consumption & Transformation Losses at Generator end	0.76%	

Note: Generation-Load Summary (MW) for May 14, 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	581.70	304.16	299.83	312.23	4.33
2	Eastern Grid	382.04	94.36	91.46	252.99	2.90
Total		963.74	398.52	391.29	565.22	7.23

Note: Generation-Load Summary for May 14, 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	544.94	225.20	225.31	297.87	-0.11
2	Eastern Grid	279.85	67.12	65.19	234.60	1.93
Total		824.79	292.32	290.50	532.47	1.82

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 15, 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-V under annual maintenance Unit-I & III on standby. 400kV THP-Siliguri line I & II under breakdown.
		Unit- II	88.88	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	128.69	
		Unit- IV	99.37	400kV THP - Malbase Line - III	187.77	
		Unit- V	0.00	400kV Malbase - Siliguri Line	117.27	
		Unit- VI	129.92	-	-	
		Total	318.17	Auxiliary Consumption & Transformation Losses at Generator end	0.54%	
2	720MW MHP	Unit-I	130.19	400kV MHP - Jigmeling Line - I	0.00	Unit- III under Shutdown. 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	100.20	400kV MHP - Jigmeling Line - II	169.04	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00	
		Unit-IV	110.47	400kV MHP - Jigmeling Line - IV	169.51	
		-	-	132kV MHP - Yurmo Line - I	0.00	
		-	-	132kV MHP - Yurmo Line - II	0.00	
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	67.50	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	106.64	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	161.72	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	0.00	
		-	-	80MVA, 220/132kV ICT - I (HV)	12.96	
		-	-	80MVA, 220/132kV ICT - II (HV)	13.00	
		-	-	220kV Tsirang - Jigmeling Line	-32.10	
-	-	132kV Gelephu - Salakati Line	5.16			
Total	340.86	Auxiliary Consumption & Transformation Losses at Generator end	0.68%			
3	336MW CHP	Unit- I	51.70	220kV CHP - Birpara Line- I	19.95	Unit-IV on Standby.
		Unit- II	53.03	220kV CHP - Birpara Line- II	20.02	
		Unit- III	60.11	220kV CHP - Malbase Line- III	59.87	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	47.58	
		-	-	220kV Malbase - Birpara Line	-13.72	
		-	-	66kV CHP - Chumdo Line	11.92	
		-	-	66kV CHP - Gedu Line	3.80	
		-	-	3x3MVA, 66/11kV TFR	0.92	
Total	164.84	Auxiliary Consumption & Transformation Losses at Generator end	0.47%			
4	24MW BHP (U/S)	Unit- I	8.30	220kV BHP - Semtokha Line	51.89	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	66kV BHP - Lobeyasa Line	20.12	
		Total	8.30	220kV BHP - Tsirang Line	-51.14	
5	40MW BHP (L/S)	Unit- I	12.70	5MVA, 66/11kV TFR	0.41	L/S Unit-II & U/S Unit-II on Standby
		Unit- II	0.00	30MVA ICT, 220/66kV (HV)	12.41	
		Total	12.70	Auxiliary Consumption & Transformation Losses at Generator end	-1.33%	
6	126MW DHP	Unit-I	27.23	220kV DHP - Tsirang Line	27.01	Unit-II on standby. 220kV DHP_Dagapela Line on Standby.
		Unit-II	0.00	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	7.90	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	27.23	Auxiliary Consumption & Transformation Losses at Generator end	0.07%			
7	60MW KHP	Unit- I	16.54	132kV KHP - Nangkhoh Line	63.27	
		Unit-II	16.54	132kV KHP - Kilikhar Line	2.03	
		Unit- III	16.56	5MVA, 132/11kV TFR	0.45	
		Unit- IV	16.59	132kV Motanga - Rangia Line	23.30	
		Total	66.23	Auxiliary Consumption & Transformation Losses at Generator end	0.72%	

Note: Generation-Load Summary (MW) for May 15, 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	531.24	291.13	288.90	272.21	2.23
2	Eastern Grid	407.09	78.17	75.38	296.82	2.79
Total		938.33	369.30	364.28	569.03	5.02

Note: Generation-Load Summary for May 15, 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	473.88	209.85	204.46	252.89	5.39
2	Eastern Grid	303.54	49.46	47.24	265.22	2.22
Total		777.42	259.31	251.70	518.11	7.61

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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