

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Coincidental Maximum Load

Date:	June 16, 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	183.15	400kV THP - Siliguri Line - I	0.00	Unit-III on standby. 400kV THP-Siliguri line I & II under breakdown. 400kV MAL_SIL Line under breakdown.
		Unit- II	29.86	400kV THP - Siliguri Line - II	0.00	
		Unit- III	0.00	400kV THP - Siliguri Line- IV	468.25	
		Unit- IV	184.53	400kV THP - Malbase Line - III	135.04	
		Unit- V	25.18	400kV Malbase - Siliguri Line	0.00	
		Unit- VI	184.60	-	-	
		Total	607.32	Auxiliary Consumption & Transformation Losses at Generator end	0.66%	
2	720MW MHP	Unit-I	197.91	400kV MHP - Jigmeling Line - I	293.90	Unit III under shutdown. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby.
		Unit-II	197.95	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.71	
		Unit-IV	197.82	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)	11.27	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	143.11	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	214.51	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	213.47	
		-	-	80MVA, 220/132kV ICT - I (HV)	23.81	
		-	-	80MVA, 220/132kV ICT - II (HV)	24.24	
		-	-	220kV Tsirang - Jigmeling Line	67.54	
-	-	132kV Gelephu - Salakati Line	7.40			
Total	593.68	Auxiliary Consumption & Transformation Losses at Generator end	0.69%			
3	336MW CHP	Unit- I	91.63	220kV CHP - Birpara Line- I	92.27	
		Unit- II	90.70	220kV CHP - Birpara Line- II	92.50	
		Unit- III	91.85	220kV CHP - Malbase Line- III	100.26	
		Unit- IV	91.44	220kV CHP - Semtokha Line- IV	58.66	
		-	-	220kV Malbase - Birpara Line	72.89	
		-	-	66kV CHP - Chumdo Line	14.42	
		-	-	66kV CHP - Gedu Line	4.76	
		-	-	3x3MVA, 66/11kV TFR	1.45	
Total	365.62	Auxiliary Consumption & Transformation Losses at Generator end	0.36%			
4	24MW BHP (U/S)	Unit- I	11.60	220kV BHP - Semtokha Line	43.00	
		Unit- II	11.40	66kV BHP - Lobeysa Line	25.19	
		Total	23.00	220kV BHP - Tsirang Line	-6.38	
5	40MW BHP (L/S)	Unit- I	20.00	5MVA, 66/11kV TFR	0.57	
		Unit- II	20.00	30MVA ICT, 220/66kV (HV)	3.25	
		Total	40.00	Auxiliary Consumption & Transformation Losses at Generator end	0.98%	
6	126MW DHP	Unit-I	38.33	220kV DHP - Tsirang Line	76.85	220kV DHP_Dagapela Line on Standby.
		Unit-II	38.95	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	30.06	
		-	-	5MVA, 220/33kV TFR	0.42	
Total	77.28	Auxiliary Consumption & Transformation Losses at Gen. end	0.01%			
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhoh Line	42.80	
		Unit-II	16.50	132kV KHP - Kilikhar Line	22.32	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.45	
		Unit- IV	16.50	132kV Motanga - Rangia Line	35.12	
		Total	66.00	Auxiliary Consumption & Transformation Losses at Generator end	0.66%	

Note: Generation-Load Summary (MW) for June 16, 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	1,113.22	319.77	313.81	725.91	5.96
2	Eastern Grid	659.68	113.61	109.11	613.61	4.51
Total		1,772.90	433.38	422.92	1,339.52	10.47

Note: Generation-Load Summary for June 16, 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	1,594.62	265.34	274.11	1,239.66	-8.77
2	Eastern Grid	658.83	76.69	76.59	671.76	0.10
Total		2,253.45	342.03	350.70	1,911.42	-8.67

NOTE-

- 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:	June 17, 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	186.23	400kV THP - Siliguri Line - I	0.00	400kV THP-Siliguri line I & II under breakdown.
		Unit- II	183.43	400kV THP - Siliguri Line - II	0.00	
		Unit- III	185.28	400kV THP - Siliguri Line- IV	555.24	
		Unit- IV	184.40	400kV THP - Malbase Line - III	546.09	
		Unit- V	184.50	400kV Malbase - Siliguri Line	550.64	
		Unit- VI	184.81	-	-	
		Total	1,108.65	Auxiliary Consumption & Transformation Losses at Generator end	0.66%	
2	720MW MHP	Unit-I	197.80	400kV MHP - Jigmeling Line - I	293.80	Unit III under shutdown. 400kV MHP-JLG Line II & IV on Standby. 132kV MHP_Yurmoo line I & II not in service. 400kV JLG_ALI Line II (Interim) on standby.
		Unit-II	197.80	400kV MHP - Jigmeling Line - II	0.00	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.90	
		Unit-IV	197.80	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)	23.85	
		-	-	400kV Jigmeling - Alipurduar Line - I (Interim)	139.68	
		-	-	400kV Jigmeling - Alipurduar Line - II (Interim)	0.00	
		-	-	400kV Jigmeling - Alipurduar Line - I (Direct)	209.26	
		-	-	400kV Jigmeling - Alipurduar Line - II (Direct)	208.46	
		-	-	80MVA, 220/132kV ICT - I (HV)	11.43	
		-	-	80MVA, 220/132kV ICT - II (HV)	11.61	
		-	-	220kV Tsirang - Jigmeling Line	38.30	
-	-	132kV Gelephu - Salakati Line	2.80			
Total	593.40	Auxiliary Consumption & Transformation Losses at Generator end	0.62%			
3	336MW CHP	Unit- I	91.09	220kV CHP - Birpara Line- I	74.68	
		Unit- II	90.47	220kV CHP - Birpara Line- II	74.50	
		Unit- III	91.96	220kV CHP - Malbase Line- III	160.85	
		Unit- IV	91.55	220kV CHP - Semtokha Line- IV	35.64	
		-	-	220kV Malbase - Birpara Line	-3.27	
		-	-	66kV CHP - Chumdo Line	11.32	
		-	-	66kV CHP - Gedu Line	5.80	
		-	-	3x3MVA, 66/11kV TFR	0.97	
Total	365.07	Auxiliary Consumption & Transformation Losses at Generator end	0.36%			
4	24MW BHP (U/S)	Unit- I	10.20	220kV BHP - Semtokha Line	58.50	
		Unit- II	10.50	66kV BHP - Lobeyasa Line	24.11	
		Total	20.70	220kV BHP - Tsirang Line	-25.13	
5	40MW BHP (L/S)	Unit- I	18.40	5MVA, 66/11kV TFR	0.33	
		Unit- II	19.00	30MVA ICT, 220/66kV (HV)	4.19	
		Total	37.40	Auxiliary Consumption & Transformation Losses at Generator end	0.50%	
6	126MW DHP	Unit-I	33.31	220kV DHP - Tsirang Line	64.91	220kV DHP_Dagapela Line on Standby.
		Unit-II	32.01	220kV DHP - Dagapela Line	0.00	
		-	-	220kV Jigmeling - Dagapela Line	30.90	
		-	-	5MVA, 220/33kV TFR	0.20	
Total	65.32	Auxiliary Consumption & Transformation Losses at Generator end	0.32%			
7	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	45.30	
		Unit-II	16.60	132kV KHP - Kilikhar Line	20.00	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.35	
		Unit- IV	16.50	132kV Motanga - Rangia Line	36.10	
		Total	66.10	Auxiliary Consumption & Transformation Losses at Generator end	0.68%	

Note: Generation-Load Summary (MW) for June 17, 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	1,597.14	307.05	297.92	1,251.79	9.13
2	Eastern Grid	659.50	101.50	97.35	596.30	4.15
Total		2,256.64	408.55	395.27	1,848.09	13.28

Note: Generation-Load Summary for June 17, 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	1,603.95	261.72	272.42	1,291.64	-10.70
2	Eastern Grid	658.73	69.13	65.98	640.19	3.15
Total		2,262.68	330.85	338.40	1,931.83	-7.55

NOTE-

- 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.
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