

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	May 8, 2021
Hours:	19:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit-I	139.78	400kV THP - Siliguri Line - I	112.45	+	Unit-III under AMP. Unit-IV,V 400kV THP_SIL Line II & IV on Standby.
		Unit-II	81.07	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	173.20	+	
		Unit-V	0.00	400kV Malbase - Siliguri Line	90.20	+	
		Unit-VI	70.33	-	-	-	
		Total	291.18	Error at Station/Auxiliary Consumption/Losses		1.899%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	+	Unit-I under AMP. Unit-III under breakdown. 400kV MHP-JLG Line I & III on standby. 132kV MHP_Yurmo line I & II not in service. 400/220kV ICT at JLG not in service. 400kV JLG_ALI line II on standby.
		Unit-II	79.83	400kV MHP - Jigmeling Line - II	124.36		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	170.33	400kV MHP - Jigmeling Line - IV	124.36	+	
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	245.35	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	9.84	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	9.83	+	
		-	-	220kV Tsirang - Jigmeling Line	21.87	+	
		-	-	132kV Gelephu - Salakati Line	-15.80	-	
Total	250.16	Error at Station/Auxiliary Consumption/Losses		0.576%			
3	336MW CHP	Unit-I	51.52	220kV CHP - Birpara Line - I	23.43	+	Unit-II under standby.
		Unit-II	0.00	220kV CHP - Birpara Line - II	23.62	+	
		Unit-III	51.65	220kV CHP - Malbase Line-III	51.88	+	
		Unit-IV	56.52	220kV CHP - Semtokha Line- IV	41.75	+	
		-	-	220kV Malbase - Birpara Line	-1.01	-	
		-	-	66kV CHP - Chumdo Line	10.33	+	
		-	-	66kV CHP - Gedu Line	5.36	+	
		-	-	3x3MVA, 66/11kV TFR	1.50	+	
Total	159.69	Error at Station/Auxiliary Consumption/Losses		1.140%			
4	24MW BHP (U/S)	Unit-I	0.00	220kV BHP - Semtokha Line	1.50	+	Upper Stage Unit I and Lower Stage Unit I on standby.
		Unit-II	6.90	66kV BHP - Lobeysa Line	11.70	+	
		Total	6.90	220kV BHP - Tsirang Line	6.02	+	
	40MW BHP (L/S)	Unit-I	0.00	5MVA, 66/11kV TFR	0.89	+	
		Unit-II	13.40	30MVA ICT, 220/66kV (HV)	7.32	+	
Total	13.40	Error at Station/Auxiliary Consumption/Losses		0.936%			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	18.44	+	Unit-I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	18.64	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	2.08	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		Total	18.64	Error at Station/Auxiliary Consumption/Losses		0.000%	
6	60MW KHP	Unit-I	0.00	132kV KHP - Nangkhor Line	17.55	+	Unit-I standby.
		Unit-II	12.16	132kV KHP - Kilikhar Line	17.87	+	
		Unit-III	12.17	5MVA, 132/11kV TFR	0.34	+	
		Unit-IV	12.04	132kV Motanga - Rangia Line	23.18	+	
		Total	36.37	Error at Station/Auxiliary Consumption/Losses		1.672%	

Note: Generation-Load Summary (MW) for May 08, 2021 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	489.81	219.25	213.79	248.69	5.46
2	Eastern Grid	286.53	55.67	53.62	252.73	2.05
Total		776.34	274.92	267.41	501.42	7.51

Note: Generation-Load Summary for May 08, 2020 at 19:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	585.31	205.04	197.28	355.97	7.76
2	Eastern Grid	345.60	62.12	56.10	307.78	6.02
Total		930.91	267.16	253.38	663.75	13.78

NOTE-BHP & MHP data collected site

- The Instantaneous load balance is 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

Maximum Load/Demand till Date

Date:	May 9, 2021
Hours:	09:00 Hours

Date	Time	Load(MW)
27-Dec-18	18:18hrs	399.35MW

Sl. No.	Hydropower Plant	Unit	MW	Transmission Lines and Elements	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	101.56	400kV THP - Siliguri Line - I	103.40	+	Unit-V on standby. Unit-III & IV under AMP. 400kV THP_SIL Line II & IV on Standby.
		Unit- II	81.78	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	143.92	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	87.40	+	
		Unit- VI	70.48	-	-	-	
		Total	253.82	Error at Station/Auxiliary Consumption/Losses		2.561%	
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Line - I	0.00	+	Unit-I under AMP. Unit -III under breakdown. 400kV MHP-JLG Line I & III on standby. 132kV MHP_Yurmoo line I & II not in service. 400/220kV ICT at JLG not in service. 400kV JLG_ALI line II on standby.
		Unit-II	130.20	400kV MHP - Jigmeling Line - II	129.58		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	130.47	400kV MHP - Jigmeling Line - IV	129.88	+	
		-	-	132kV MHP - Yurmo Line - I	0.00		
		-	-	132kV MHP - Yurmo Line - II	0.00		
		-	-	500MVA, 400/220kV ICT at Jigmeling (HV)	0.00		
		-	-	400kV Jigmeling - Alipurduar Line - I	254.49	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	0.00		
		-	-	80MVA, 220/132kV ICT - I (HV)	6.82	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	6.82	+	
		-	-	220kV Tsirang - Jigmeling Line	14.65	+	
		-	-	132kV Gelephu - Salakati Line	-7.80	-	
Total	260.67	Error at Station/Auxiliary Consumption/Losses		0.464%			
3	336MW CHP	Unit- I	67.91	220kV CHP - Birpara Line- I	19.14	+	Unit-II standby. Unit-IV under shutdown.
		Unit- II	0.00	220kV CHP - Birpara Line- II	19.23	+	
		Unit- III	72.22	220kV CHP - Malbase Line- III	55.95	+	
		Unit- IV	0.00	220kV CHP - Semtokha Line- IV	30.92	+	
		-	-	220kV Malbase - Birpara Line	-11.57	+	
		-	-	66kV CHP - Chumdo Line	8.09	+	
		-	-	66kV CHP - Gedu Line	4.66	+	
		-	-	3x3MVA, 66/11kV TFR	1.00	+	
Total	140.13	Error at Station/Auxiliary Consumption/Losses		0.814%			
4	24MW BHP (U/S)	Unit- I	0.00	220kV BHP - Semtokha Line	7.30	+	U/S Unit-I under standby. L/S Unit-I under standby.
		Unit- II	5.70	66kV BHP - Lobeyasa Line	10.27	+	
		Total	5.70	220kV BHP - Tsirang Line	-0.30	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	12.50	30MVA ICT, 220/66kV (HV)	5.47	+	
Total	12.50	Error at Station/Auxiliary Consumption/Losses		0.165%			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	16.51	+	Unit-I on standby. 220kV DHP_Dagapela Line on standby.
		Unit-II	16.76	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.95	+	
		-	-	5MVA, 220/33kV TFR	0.24	+	
		Total	16.76	Error at Station/Auxiliary Consumption/Losses		0.060%	
6	60MW KHP	Unit- I	12.28	132kV KHP - Nangkhor Line	31.37	+	
		Unit-II	12.28	132kV KHP - Kilikhar Line	16.95	+	
		Unit- III	12.34	5MVA, 132/11kV TFR	0.23	+	
		Unit- IV	12.26	132kV Motanga - Rangia Line	20.66	+	
		Total	49.16	Error at Station/Auxiliary Consumption/Losses		1.241%	

Note: Generation-Load Summary (MW) for May 09, 2021 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	428.91	196.66	189.93	217.60	6.73
2	Eastern Grid	309.83	57.13	55.31	267.35	1.82
Total		738.74	253.79	245.24	484.95	8.55

Note: Generation-Load Summary for May 09, 2020 at 09:00hrs.

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import (MW)	Load Balance (MW)
1	Western Grid	494.77	196.08	187.37	290.46	8.71
2	Eastern Grid	284.75	42.52	41.08	250.46	1.44
Total		779.52	238.60	228.45	540.92	10.15

NOTE- BHP & MHP data collected site

- The Instantaneous load balance is 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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