

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	June 17, 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	187.62	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance
		Unit- II	185.18	400kV THP - Siliguri Line - II	356.02	+	
		Unit- III	187.41	400kV THP - Siliguri Line- IV	340.64	+	
		Unit- IV	186.79	400kV THP - Malbase Line - III	405.15	+	
		Unit- V	187.25	400kV Malbase - Siliguri Line	320.82	+	
		Unit- VI	186.42	-	-	-	
		Total	1,120.67	Error at Station/Auxiliary Consumption/Losses	1.683%		
2	720MW MHP	Unit-I	197.46	400kV MHP - Jigmeling Line - I	294.37	+	Unit-III on breakdown. 400kV MHP_JLG line II and IV on standby. 132kV MHP_Yurmo line I & II not in service.
		Unit-II	197.75	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.86	+	
		Unit-IV	197.72	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)	-41.65	-	
		-	-	400kV Jigmeling - Alipurduar Line - I	270.45	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	271.25	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	43.50	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	43.50	+	
		-	-	220kV Tsirang - Jigmeling Line	43.12	+	
		-	-	132kV Gelephu - Salakati Line	32.53	+	
		Total	592.93	Error at Station/Auxiliary Consumption/Losses	0.455%		
3	336MW CHP	Unit- I	92.06	220kV CHP - Birpara Line- I	106.08	+	
		Unit- II	91.41	220kV CHP - Birpara Line- II	105.99	+	
		Unit- III	91.34	220kV CHP - Malbase Line- III	130.65	+	
		Unit- IV	91.59	220kV CHP - Semtokha Line- IV	7.52	+	
		-	-	220kV Malbase - Birpara Line	71.70	+	
		-	-	66kV CHP - Chumdo Line	8.35	+	
		-	-	66kV CHP - Gedu Line	4.75	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
Total	366.40	Error at Station/Auxiliary Consumption/Losses	0.508%				
4	24MW BHP (U/S)	Unit- I	5.60	220kV BHP - Semtokha Line	44.06	+	30MVA ICT(220/66kV) kept open at LV side.
		Unit- II	5.40	66kV BHP - Lobeyasa Line	7.23	+	
		Total	11.00	220kV BHP - Tsirang Line	-21.59	-	
	40MW BHP (L/S)	Unit- I	9.90	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	8.80	30MVA ICT, 220/66kV (HV)	0.00		
Total	18.70	Error at Station/Auxiliary Consumption/Losses	-2.997%				
5	126MW DHP	Unit-I	43.32	220kV DHP - Tsirang Line	70.93	+	220kV DHP_Dagapela Line on standby.
		Unit-II	28.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.60	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		Total	71.35	Error at Station/Auxiliary Consumption/Losses	0.308%		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	37.99	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	27.46	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.38	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	44.68	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses	0.258%		

Note: Generation-Load Summary (MW) for June 17, 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	1,588.12	243.75	225.30	1,301.25	18.45
2	Eastern Grid	658.93	83.14	80.27	618.91	2.87
Total		2,247.05	326.89	305.57	1,920.16	21.32

Note: Generation-Load Summary for June 17, 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	1,520.83	224.62	204.42	1,228.72	20.20
2	Eastern Grid	659.52	57.00	52.84	670.01	4.16
Total		2,180.35	281.62	257.26	1,898.73	24.36

NOTE-BHP,KHP & MHP data collected from site

1. 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:

- i) 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.
- ii) The clocks of all the locations are not synchronized.

2. 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:	June 18, 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	187.46	400kV THP - Siliguri Line - I	0.00		400kV THP-Siliguri Line I under maintenance.
		Unit- II	186.68	400kV THP - Siliguri Line - II	360.69	+	
		Unit- III	188.13	400kV THP - Siliguri Line- IV	344.78	+	
		Unit- IV	187.13	400kV THP - Malbase Line - III	400.94	+	
		Unit- V	189.66	400kV Malbase - Siliguri Line	327.34	+	
		Unit- VI	186.43	-	-	-	
		Total	1,125.49	Error at Station/Auxiliary Consumption/Losses		1.695%	
2	720MW MHP	Unit-I	197.36	400kV MHP - Jigmeling Line - I	294.21	+	Unit-III on breakdown 400kV MHP-JLG Line II & IV on standby. 132kV MHP_Yurmo line I & II not in service.
		Unit-II	197.85	400kV MHP - Jigmeling Line - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	295.61	+	
		Unit-IV	197.76	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)	7.50	+	
		-	-	400kV Jigmeling - Alipurduar Line - I	296.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	295.50	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	33.80	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	33.70	+	
		-	-	220kV Tsirang - Jigmeling Line	79.70	+	
		-	-	132kV Gelephu - Salakati Line	33.09	+	
		Total	592.97	Error at Station/Auxiliary Consumption/Losses		0.531%	
3	336MW CHP	Unit- I	91.59	220kV CHP - Birpara Line- I	107.94	+	
		Unit- II	91.17	220kV CHP - Birpara Line- II	108.26	+	
		Unit- III	90.75	220kV CHP - Malbase Line- III	152.58	+	
		Unit- IV	91.55	220kV CHP - Semtokha Line- IV	-16.68	-	
		-	-	220kV Malbase - Birpara Line	74.36	+	
		-	-	66kV CHP - Chumdo Line	5.19	+	
		-	-	66kV CHP - Gedu Line	5.40	+	
		-	-	3x3MVA, 66/11kV TFR	0.78	+	
Total	365.06	Error at Station/Auxiliary Consumption/Losses		0.436%			
4	24MW BHP (U/S)	Unit- I	6.40	220kV BHP - Semtokha Line	69.00	+	
		Unit- II	6.20	66kV BHP - Lobeyasa Line	7.20	+	
		Total	12.60	220kV BHP - Tsirang Line	-41.63	-	
	40MW BHP (L/S)	Unit- I	11.50	5MVA, 66/11kV TFR	0.89	+	
		Unit- II	12.00	30MVA ICT, 220/66kV (HV)	-3.95	-	
		Total	23.50	Error at Station/Auxiliary Consumption/Losses		1.773%	
5	126MW DHP	Unit-I	63.63	220kV DHP - Tsirang Line	126.42	+	
		Unit-II	63.26	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.20	+	
		-	-	5MVA, 220/33kV TFR	0.40		
		Total	126.89	Error at Station/Auxiliary Consumption/Losses		0.055%	
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Line	60.99	+	
		Unit-II	16.50	132kV KHP - Kilikhar Line	4.23	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.31	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	37.90	+	
		Total	66.00	Error at Station/Auxiliary Consumption/Losses		0.712%	

Note: Generation-Load Summary (MW) for June 18, 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	1,653.54	250.47	230.29	1,323.37	20.18
2	Eastern Grid	658.97	76.18	72.56	662.49	3.62
Total		2,312.51	326.65	302.85	1,985.86	23.80

Note: Generation-Load Summary for June 18, 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	1,582.04	210.79	193.35	1,301.18	17.44
2	Eastern Grid	659.27	44.48	40.45	684.86	4.03
Total		2,241.31	255.27	233.80	1,986.04	21.47

NOTE-KHP & MHP data collected from 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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