

BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT

Maximum Load/Demand till Date

Date:	May 31, 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	185.71	400kV THP - Siliguri Line - I	168.75	+	Unit-V on standby.
		Unit- II	186.23	400kV THP - Siliguri Line - II	167.02	+	
		Unit- III	90.90	400kV THP - Siliguri Line- IV	162.63	+	
		Unit- IV	187.05	400kV THP - Malbase Line - III	216.13	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	149.00	+	
		Unit- VI	80.14	-	-	-	
		Total	730.03	Error at Station/Auxiliary Consumption/Losses		2.123%	
2	720MW MHP	Unit-I	159.62	400kV MHP - Jigmeling Line - I	0.00		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 ideal charge.
		Unit-II	150.24	400kV MHP - Jigmeling Line - II	228.59	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	150.79	400kV MHP - Jigmeling Line - IV	228.89	+	
		-	-	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	225.90	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	224.70	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	20.10	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	20.10	+	
		-	-	220kV Tsirang - Jigmeling Line	42.08	+	
		-	-	132kV Gelephu - Salakati Line	9.72	+	
Total	460.65	Error at Station/Auxiliary Consumption/Losses		0.688%			
3	336MW CHP	Unit- I	74.50	220kV CHP - Birpara Line- I	65.86	+	
		Unit- II	72.64	220kV CHP - Birpara Line- II	65.87	+	
		Unit- III	75.06	220kV CHP - Malbase Line- III	94.04	+	
		Unit- IV	74.32	220kV CHP - Semtokha Line- IV	57.38	+	
		-	-	220kV Malbase - Birpara Line	35.07	+	
		-	-	66kV CHP - Chumdo Line	6.71	+	
		-	-	66kV CHP - Gedu Line	3.41	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
Total	296.52	Error at Station/Auxiliary Consumption/Losses		0.691%			
4	24MW BHP (U/S)	Unit- I	4.30	220kV BHP - Semtokha Line	-21.19	-	
		Unit- II	4.10	66kV BHP - Lobeyasa Line	27.80	+	
		Total	8.40	220kV BHP - Tsirang Line	18.13	+	
	40MW BHP (L/S)	Unit- I	9.10	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	8.70	30MVA ICT, 220/66kV (HV)	20.15	+	
Total	17.80	Error at Station/Auxiliary Consumption/Losses		2.214%			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	28.27	+	Unit-I under shutdown. 220kV DHP_Dagapela Line on standby.
		Unit-II	28.51	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.80	+	
		-	-	5MVA, 220/33kV TFR	0.08	+	
		Total	28.51	Error at Station/Auxiliary Consumption/Losses		0.561%	
6	60MW KHP	Unit- I	15.48	132kV KHP - Nangkhor Line	37.29	+	
		Unit-II	15.56	132kV KHP - Kilikhar Line	25.77	+	
		Unit- III	16.56	5MVA, 132/11kV TFR	0.36	+	
		Unit- IV	16.47	132kV Motanga - Rangia Line	38.07	+	
		Total	64.07	Error at Station/Auxiliary Consumption/Losses		1.015%	

Note: Generation-Load Summary (MW) for May 31, 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	1,081.26	224.98	208.49	814.20	16.49
2	Eastern Grid	524.72	68.41	64.59	498.39	3.82
Total		1,605.98	293.39	273.08	1,312.59	20.31

Note: Generation-Load Summary for May 31, 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	1,055.11	239.24	223.18	784.46	16.06
2	Eastern Grid	447.30	46.61	36.10	431.83	10.51
Total		1,502.41	285.85	259.28	1,216.29	26.57

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:	June 1, 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	157.34	400kV THP - Siliguri Line - I	137.63	+	Unit-V under standby.
		Unit- II	149.87	400kV THP - Siliguri Line - II	134.70	+	
		Unit- III	90.62	400kV THP - Siliguri Line- IV	132.29	+	
		Unit- IV	100.85	400kV THP - Malbase Line - III	164.18	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	123.13	+	
		Unit- VI	80.28	-	-	-	
		Total	578.96	Error at Station/Auxiliary Consumption/Losses		1.755%	
2	720MW MHP	Unit-I	170.08	400kV MHP - Jigmeling Line - I	0.00		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 ideal charge.
		Unit-II	170.17	400kV MHP - Jigmeling Line - II	254.18	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	170.56	400kV MHP - Jigmeling Line - IV	254.19	+	
		-	-	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	251.00	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	250.20	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	15.80	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	15.80	+	
		-	-	220kV Tsirang - Jigmeling Line	37.99	+	
		-	-	132kV Gelephu - Salakati Line	17.09	+	
Total	510.81	Error at Station/Auxiliary Consumption/Losses		0.478%			
3	336MW CHP	Unit- I	80.94	220kV CHP - Birpara Line- I	74.44	+	
		Unit- II	79.67	220kV CHP - Birpara Line- II	74.31	+	
		Unit- III	80.74	220kV CHP - Malbase Line- III	131.40	+	
		Unit- IV	80.13	220kV CHP - Semtokha Line- IV	30.08	+	
		-	-	220kV Malbase - Birpara Line	20.57	+	
		-	-	66kV CHP - Chumdo Line	5.10		
		-	-	66kV CHP - Gedu Line	4.26	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
Total	321.48	Error at Station/Auxiliary Consumption/Losses		0.370%			
4	24MW BHP (U/S)	Unit- I	4.10	220kV BHP - Semtokha Line	-4.45	-	
		Unit- II	4.00	66kV BHP - Lobeyssa Line	27.10	+	
		Total	8.10	220kV BHP - Tsirang Line	2.38	+	
	40MW BHP (L/S)	Unit- I	9.50	5MVA, 66/11kV TFR	0.82	+	
		Unit- II	8.50	30MVA ICT, 220/66kV (HV)	21.00	+	
Total	18.00	Error at Station/Auxiliary Consumption/Losses		0.958%			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	36.79	+	Unit-I under shutdown..220kV DHP_Dagapela Line on standby.
		Unit-II	37.01	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	0.90	+	
		-	-	5MVA, 220/33kV TFR	0.25	+	
		Total	37.01	Error at Station/Auxiliary Consumption/Losses		-0.081%	
6	60MW KHP	Unit- I	15.31	132kV KHP - Nangkhor Line	40.64	+	
		Unit-II	15.52	132kV KHP - Kilikhar Line	22.27	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.22	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	32.01	+	
		Total	63.83	Error at Station/Auxiliary Consumption/Losses		1.094%	

Note: Generation-Load Summary (MW) for June 01, 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	963.55	228.49	217.82	697.07	10.67
2	Eastern Grid	574.64	62.33	59.19	550.30	3.14
Total		1,538.19	290.82	277.01	1,247.37	13.81

Note: Generation-Load Summary for June 01, 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	931.26	192.47	184.06	701.15	8.41
2	Eastern Grid	656.97	37.03	34.74	657.31	2.29
Total		1,588.23	229.50	218.80	1,358.46	10.70

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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