

**BHUTAN POWER SYSTEM OPERATOR LOAD-GENERATION BALANCE REPORT**

Maximum Load/Demand till Date

Date:	May 30, 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	194.98	+	Unit-V on standby.
		Unit- II	186.98	400kV THP - Siliguri Line - II	194.50	+	
		Unit- III	186.84	400kV THP - Siliguri Line- IV	189.98	+	
		Unit- IV	187.50	400kV THP - Malbase Line - III	230.70	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	176.77	+	
		Unit- VI	80.44	-	-	-	
		<b>Total</b>	<b>827.47</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>2.092%</b>	
2	720MW MHP	Unit-I	155.25	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	130.22	400kV MHP - Jigmeling Line - II	219.11	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	155.61	400kV MHP - Jigmeling Line - IV	219.49	+	
		-	-	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	216.60	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	215.30	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	26.00	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	26.00	+	
		-	-	220kV Tsirang - Jigmeling Line	54.02	+	
		-	-	132kV Gelephu - Salakati Line	10.87	+	
<b>Total</b>	<b>441.08</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.562%</b>			
3	336MW CHP	Unit- I	91.74	220kV CHP - Birpara Line- I	84.53	+	
		Unit- II	91.18	220kV CHP - Birpara Line- II	84.04	+	
		Unit- III	91.31	220kV CHP - Malbase Line- III	113.75	+	
		Unit- IV	91.34	220kV CHP - Semtokha Line- IV	64.73	+	
		-	-	220kV Malbase - Birpara Line	50.40	+	
		-	-	66kV CHP - Chumdo Line	9.17	+	
		-	-	66kV CHP - Gedu Line	5.97	+	
		-	-	3x3MVA, 66/11kV TFR	1.40	+	
<b>Total</b>	<b>365.57</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.542%</b>			
4	24MW BHP (U/S)	Unit- I	4.00	220kV BHP - Semtokha Line	-28.12	-	
		Unit- II	3.90	66kV BHP - Lobeyasa Line	26.04	+	
		<b>Total</b>	<b>7.90</b>	220kV BHP - Tsirang Line	25.08	+	
	40MW BHP (L/S)	Unit- I	8.50	5MVA, 66/11kV TFR	0.88	+	
		Unit- II	8.40	30MVA ICT, 220/66kV (HV)	20.59	+	
<b>Total</b>	<b>16.90</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>3.710%</b>			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	31.81	+	Unit-I under shutdown. 220kV DHP_Dagapela Line on standby.
		Unit-II	32.03	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.80	+	
		-	-	5MVA, 220/33kV TFR	0.20	+	
		<b>Total</b>	<b>32.03</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.062%</b>	
6	60MW KHP	Unit- I	16.16	132kV KHP - Nangkhor Line	37.24	+	
		Unit-II	15.95	132kV KHP - Kilikhar Line	26.73	+	
		Unit- III	16.48	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	16.47	132kV Motanga - Rangia Line	39.76	+	
		<b>Total</b>	<b>65.06</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>1.260%</b>	

**Note: Generation-Load Summary (MW) for May 30, 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	1,249.87	220.65	202.22	975.20	18.43
2	Eastern Grid	506.14	77.63	74.33	482.53	3.30
<b>Total</b>		<b>1,756.01</b>	<b>298.28</b>	<b>276.55</b>	<b>1,457.73</b>	<b>21.73</b>

**Note: Generation-Load Summary for May 30, 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	982.47	220.56	213.73	716.39	6.83
2	Eastern Grid	506.90	54.77	48.49	497.39	6.28
<b>Total</b>		<b>1,489.37</b>	<b>275.33</b>	<b>262.22</b>	<b>1,213.78</b>	<b>13.11</b>

**NOTE-BHP & MHP data collected 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:	May 31, 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	185.70	400kV THP - Siliguri Line - I	177.82	+	Unit-V under standby.
		Unit- II	188.44	400kV THP - Siliguri Line - II	175.87	+	
		Unit- III	89.73	400kV THP - Siliguri Line- IV	172.87	+	
		Unit- IV	185.48	400kV THP - Malbase Line - III	193.73	+	
		Unit- V	0.00	400kV Malbase - Siliguri Line	162.41	+	
		Unit- VI	80.19	-	-	-	
		<b>Total</b>	<b>729.54</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>1.268%</b>	
2	720MW MHP	Unit-I	160.32	400kV MHP - Jigmeling Line - I	0.00		Unit-III under breakdown. 400kV MHP-JLG Line I & III on standby. 132kV MHP_Yurmo line I & II not in service.
		Unit-II	160.25	400kV MHP - Jigmeling Line - II	241.55	+	
		Unit-III	0.00	400kV MHP - Jigmeling Line - III	0.00		
		Unit-IV	165.66	400kV MHP - Jigmeling Line - IV	241.98	+	
		-	-	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	237.10	+	
		-	-	400kV Jigmeling - Alipurduar Line - II	238.70	+	
		-	-	80MVA, 220/132kV ICT - I (HV)	15.80	+	
		-	-	80MVA, 220/132kV ICT - II (HV)	15.80	+	
		-	-	220kV Tsirang - Jigmeling Line	33.14	+	
		-	-	132kV Gelephu - Salakati Line	0.00	+	
<b>Total</b>	<b>486.23</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.555%</b>			
3	336MW CHP	Unit- I	90.32	220kV CHP - Birpara Line- I	86.63	+	
		Unit- II	90.46	220kV CHP - Birpara Line- II	86.57	+	
		Unit- III	90.24	220kV CHP - Malbase Line- III	141.62	+	
		Unit- IV	90.74	220kV CHP - Semtokha Line- IV	34.36	+	
		-	-	220kV Malbase - Birpara Line	32.14	+	
		-	-	66kV CHP - Chumdo Line	5.39		
		-	-	66kV CHP - Gedu Line	6.31	+	
		-	-	3x3MVA, 66/11kV TFR	0.70	+	
<b>Total</b>	<b>361.76</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.050%</b>			
4	24MW BHP (U/S)	Unit- I	4.00	220kV BHP - Semtokha Line	-13.87	-	
		Unit- II	3.80	66kV BHP - Lobeyasa Line	30.40	+	
		<b>Total</b>	<b>7.80</b>	220kV BHP - Tsirang Line	5.97	+	
	40MW BHP (L/S)	Unit- I	7.80	5MVA, 66/11kV TFR	0.85	+	
		Unit- II	7.70	30MVA ICT, 220/66kV (HV)	17.11	+	
<b>Total</b>	<b>15.50</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>-0.215%</b>			
5	126MW DHP	Unit-I	0.00	220kV DHP - Tsirang Line	30.31	+	Unit-I under shutdown..220kV DHP_Dagapela Line on standby.
		Unit-II	30.51	220kV DHP - Dagapela Line	0.00		
		-	-	220kV Jigmeling - Dagapela Line	1.00	+	
		-	-	5MVA, 220/33kV TFR	0.23	+	
		<b>Total</b>	<b>30.51</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>-0.098%</b>	
6	60MW KHP	Unit- I	16.03	132kV KHP - Nangkhor Line	42.58	+	
		Unit-II	15.93	132kV KHP - Kilikhar Line	21.73	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.23	+	
		Unit- IV	16.50	132kV Motanga - Rangia Line	26.33	+	
		<b>Total</b>	<b>64.96</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>		<b>0.647%</b>	

**Note: Generation-Load Summary (MW) for May 31, 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	1,145.11	217.66	209.31	894.31	8.35
2	Eastern Grid	551.19	82.20	79.08	502.13	3.12
<b>Total</b>		<b>1,696.30</b>	<b>299.86</b>	<b>288.39</b>	<b>1,396.44</b>	<b>11.47</b>

**Note: Generation-Load Summary for May 31, 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	889.84	176.40	168.62	666.62	7.78
2	Eastern Grid	525.43	49.55	46.84	522.45	2.71
<b>Total</b>		<b>1,415.27</b>	<b>225.95</b>	<b>215.46</b>	<b>1,189.07</b>	<b>10.49</b>

**NOTE-BHP & All Eastern data collected 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.

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