

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

Maximum Load/Demand till Date

Date:	August 23, 2020
Hours:	19:00 Hours

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

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	187.00	400kV THP - Siliguri Fdr- I	272.00	+	
		Unit- II	187.00	400kV THP - Siliguri Fdr- II	270.00	+	
		Unit- III	187.00	400kV THP - Siliguri Fdr- IV	261.00	+	
		Unit- IV	187.00	400kV THP - Malbase Fdr- III	304.00	+	
		Unit- V	187.00	400kV Malbase - Siliguri	261.00	+	
		Unit- VI	187.00	-	-	-	
		<b>Total</b>	<b>1,122.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.337%</b>		
2	720MW MHP	Unit-I	197.79	400kV MHP - Jigmeling Fdr - I	262.07	+	400kV MHP-JLG IV Standby
		Unit-II	197.14	400kV MHP - Jigmeling Fdr - II	263.27	+	
		Unit-III	195.60	400kV MHP - Jigmeling Fdr - III	255.95	+	
		Unit-IV	195.39	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>785.92</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.589%</b>		
3	336MW CHP	Unit- I	92.00	220kV CHP - Birpara Fdr- I	122.20	+	
		Unit- II	92.00	220kV CHP - Birpara Fdr- II	122.00	+	
		Unit- III	92.00	220kV CHP - Malbase Fdr- III	160.80	+	
		Unit- IV	92.00	220kV CHP - Semtokha Fdr- IV	-49.60	-	
		-	-	220kV Malbase - Birpara Fdr.	74.00	+	
		-	-	66kV CHP - Chumdo Fdr.	4.20	+	
		-	-	66kV CHP - Gedu Fdr.	6.10	+	
		-	-	3x3MVA, 66/11kV TFR	1.34	+	
		<b>Total</b>	<b>368.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.261%</b>		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Fdr.	69.00	+	
		Unit- II	12.20	66kV BHP - Lobeysa Fdr.	15.60	+	
		<b>Total</b>	<b>24.50</b>	220kV BHP - Tsirang Fdr.	-30.88	-	
	40MW BHP (L/S)	Unit- I	20.70	5MVA, 66/11kV TFR	0.74	+	
		Unit- II	21.00	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>41.70</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>17.734%</b>		
5	126MW DHPC	Unit-I	63.50	220kV DHPC - Tsirang Fdr.	126.25	+	
		Unit-II	63.45	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>126.95</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.551%</b>		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	36.70	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	28.04	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.33	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	46.40	+	
		-	-	132kV Motanga - Rangia Fdr.	54.44	+	
		-	-	220kV Tsirang - Jigmeling	96.20	+	
		<b>Total</b>	<b>66.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.410%</b>		

**Note: Generation-Load Summary for August 23, 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	1,683.15	204.75	178.25	1,382.20	26.50
2	Eastern Grid	851.92	65.99	60.43	882.13	5.56
	<b>Total</b>	<b>2,535.07</b>	<b>270.74</b>	<b>238.68</b>	<b>2,264.33</b>	<b>32.06</b>

**Note: Generation-Load Summary for August 23, 2019 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	1,221.39	256.44	241.45	888.48	14.99
2	Eastern Grid	439.77	71.17	69.41	445.07	1.76
	<b>Total</b>	<b>1,661.16</b>	<b>327.61</b>	<b>310.86</b>	<b>1,333.55</b>	<b>16.75</b>

**NOTES: KHP,BHP,CHP,THP,MAL datas 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.
  - 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:	August 24, 2020
Hours:	09:00 Hours

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

Sl. No.	Hydropower Plant	Unit	MW	Name of Feeders	Load (MW)	Sign	Remarks
1	1020MW THP	Unit- I	187.00	400kV THP - Siliguri Fdr- I	278.00	+	
		Unit- II	187.00	400kV THP - Siliguri Fdr- II	277.00	+	
		Unit- III	187.00	400kV THP - Siliguri Fdr- IV	268.00	+	
		Unit- IV	187.00	400kV THP - Malbase Fdr- III	281.00	+	
		Unit- V	187.00	400kV Malbase - Siliguri	262.00	+	
		Unit- VI	187.00	-	-	-	
		<b>Total</b>	<b>1,122.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.604%</b>		
2	720MW MHP	Unit-I	197.96	400kV MHP - Jigmeling Fdr - I	262.60	+	400kV MHP-JLG IV Standby.
		Unit-II	197.67	400kV MHP - Jigmeling Fdr - II	263.66	+	
		Unit-III	195.70	400kV MHP - Jigmeling Fdr - III	256.28	+	
		Unit-IV	195.44	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>786.77</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.538%</b>		
3	336MW CHP	Unit- I	92.10	220kV CHP - Birpara Fdr- I	126.40	+	
		Unit- II	92.15	220kV CHP - Birpara Fdr- II	126.30	+	
		Unit- III	92.54	220kV CHP - Malbase Fdr- III	147.70	+	
		Unit- IV	91.60	220kV CHP - Semtokha Fdr- IV	-69.80	-	
		-	-	220kV Malbase - Birpara Fdr.	75.00	+	
		-	-	66kV CHP - Chumdo Fdr.	0.90	+	
		-	-	66kV CHP - Gedu Fdr.	5.80	+	
		-	-	3x3MVA, 66/11kV TFR	0.85	+	
		<b>Total</b>	<b>368.39</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>8.209%</b>		
4	24MW BHP (U/S)	Unit- I	12.30	220kV BHP - Semtokha Fdr.	86.20	+	
		Unit- II	12.30	66kV BHP - Lobeysa Fdr.	15.00	+	
		<b>Total</b>	<b>24.60</b>	220kV BHP - Tsirang Fdr.	-35.92	-	
	40MW BHP (L/S)	Unit- I	20.60	5MVA, 66/11kV TFR	0.90	+	
		Unit- II	21.10	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>41.70</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.288%</b>		
5	126MW DHPC	Unit-I	63.50	220kV DHPC - Tsirang Fdr.	126.32	+	
		Unit-II	63.44	220kV Jigmeling - Dagapela Fdr.	1.00	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>126.94</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.488%</b>		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhoh Fdr- I	40.81	+	
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	24.10	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.25	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	52.40	+	
		-	-	132kV Motanga - Rangia Fdr.	53.63	+	
		-	-	220kV Tsirang - Jigmeling	86.61	+	
		<b>Total</b>	<b>66.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.273%</b>		

Note: Generation-Load summary for August 24, 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	1,683.63	184.32	136.34	1,412.70	47.98
2	Eastern Grid	852.77	50.81	45.74	888.57	5.07
	<b>Total</b>	<b>2,536.40</b>	<b>235.13</b>	<b>182.08</b>	<b>2,301.27</b>	<b>53.05</b>

Note: Generation-Load Summary for August 24, 2019 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	1553.55	234.82	215.36	1,243.36	19.46
2	Eastern Grid	438.65	51.03	49.22	462.99	1.81
	<b>Total</b>	<b>1,992.20</b>	<b>285.85</b>	<b>264.58</b>	<b>1,706.35</b>	<b>21.27</b>

NOTES: KHP,BHP,CHP,THP,MAL datas 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.
  - The clocks of all the locations are not synchronized.
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