

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

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>October 16, 2020</b>
<b>Hours:</b>	<b>19:00 Hours</b>

<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
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	168.90	400kV THP - Siliguri Fdr- I	0.00		Unit-II, IV & 400kV THP-SIL Fdr I under Standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	185.18	+	
		Unit- III	130.39	400kV THP - Siliguri Fdr- IV	178.90	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	243.71	+	
		Unit- V	148.54	400kV Malbase - Siliguri	158.84	+	
		Unit- VI	170.23	-	-	-	
		<b>Total</b>	<b>618.06</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.662%</b>		
2	720MW MHP	Unit-I	80.26	400kV MHP - Jigmeling Fdr - I	188.65	+	Unit-III under maintenance (22/09/20-30/11/2020). 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III under standby.
		Unit-II	140.18	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	160.32	400kV MHP - Jigmeling Fdr - IV	189.69	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>380.76</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.636%</b>		
3	336MW CHP	Unit- I	80.48	220kV CHP - Birpara Fdr- I	87.33	+	
		Unit- II	63.08	220kV CHP - Birpara Fdr- II	87.02	+	
		Unit- III	79.18	220kV CHP - Malbase Fdr- III	115.51	+	
		Unit- IV	74.47	220kV CHP - Semtokha Fdr- IV	-7.17	-	
		-	-	220kV Malbase - Birpara Fdr.	55.66	+	
		-	-	66kV CHP - Chumdo Fdr.	6.56	+	
		-	-	66kV CHP - Gedu Fdr.	5.80	+	
		-	-	3x3MVA, 66/11kV TFR	1.25	+	
		<b>Total</b>	<b>297.21</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.306%</b>		
4	24MW BHP (U/S)	Unit- I	10.20	220kV BHP - Semtokha Fdr.	37.69	+	
		Unit- II	10.20	66kV BHP - Lobeysa Fdr.	15.84	+	
		<b>Total</b>	<b>20.40</b>	220kV BHP - Tsirang Fdr.	3.34	+	
	40MW BHP (L/S)	Unit- I	18.72	5MVA, 66/11kV TFR	0.63	+	
		Unit- II	18.10	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>36.82</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.489%</b>		
5	126MW DHPC	Unit-I	36.22	220kV DHPC - Tsirang Fdr.	72.00	+	
		Unit-II	36.27	220kV Jigmeling - Dagapela Fdr.	1.60	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>72.49</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.676%</b>		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	37.04	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	27.83	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.38	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	24.78	+	
		-	-	132kV Motanga - Rangia Fdr.	59.90	+	
		-	-	220kV Tsirang - Jigmeling	73.69	+	
		<b>Total</b>	<b>66.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.136%</b>		

**Note: Generation-Load Summary for October 16, 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	1,044.98	218.36	208.57	752.93	9.79
2	Eastern Grid	446.76	57.43	54.26	463.02	3.17
	<b>Total</b>	<b>1,491.74</b>	<b>275.79</b>	<b>262.83</b>	<b>1,215.95</b>	<b>12.96</b>

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1	Western Grid	1012.03	264.53	257.42	687.29	7.11
2	Eastern Grid	466.17	54.89	53.56	471.49	1.33
	<b>Total</b>	<b>1,478.20</b>	<b>319.42</b>	<b>310.98</b>	<b>1,158.78</b>	<b>8.44</b>

**NOTE: KHP, Motanga & MHP 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.

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<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
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	168.25	400kV THP - Siliguri Fdr- I	0.00		Unit-II, IV & 400kV THP-SIL Fdr I under Standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	199.04	+	
		Unit- III	130.84	400kV THP - Siliguri Fdr- IV	189.79	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	219.57	+	
		Unit- V	149.32	400kV Malbase - Siliguri	180.87	+	
		Unit- VI	170.16	-	-	-	
		<b>Total</b>	<b>618.57</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.644%</b>		
2	720MW MHP	Unit-I	80.18	400kV MHP - Jigmeling Fdr - I	193.81	+	Unit-III under maintenance (22/09/20-30/11/2020). 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III under standby.
		Unit-II	149.82	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	160.32	400kV MHP - Jigmeling Fdr - IV	194.54	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>390.32</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.505%</b>		
3	336MW CHP	Unit- I	80.49	220kV CHP - Birpara Fdr- I	89.54	+	
		Unit- II	62.84	220kV CHP - Birpara Fdr- II	89.16	+	
		Unit- III	80.27	220kV CHP - Malbase Fdr- III	135.26	+	
		Unit- IV	74.29	220kV CHP - Semtokha Fdr- IV	-28.33	-	
		-	-	220kV Malbase - Birpara Fdr.	43.33	+	
		-	-	66kV CHP - Chumdo Fdr.	3.56	+	
		-	-	66kV CHP - Gedu Fdr.	5.73	+	
		-	-	3x3MVA, 66/11kV TFR	0.80	+	
		<b>Total</b>	<b>297.89</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.728%</b>		
4	24MW BHP (U/S)	Unit- I	10.08	220kV BHP - Semtokha Fdr.	50.48	+	
		Unit- II	10.08	66kV BHP - Lobeysa Fdr.	14.02	+	
		<b>Total</b>	<b>20.16</b>	220kV BHP - Tsirang Fdr.	-7.87	-	
	40MW BHP (L/S)	Unit- I	18.22	5MVA, 66/11kV TFR	0.40	+	
		Unit- II	18.25	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>36.47</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.706%</b>		
5	126MW DHPC	Unit-I	35.21	220kV DHPC - Tsirang Fdr.	69.98	+	
		Unit-II	35.25	220kV Jigmeling - Dagapela Fdr.	1.00	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>70.46</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.681%</b>		
6	60MW KHP	Unit- I	15.50	132kV KHP - Nangkhon Fdr- I	37.41	+	
		Unit-II	15.17	132kV KHP - Kilikhar Fdr- II	22.33	+	
		Unit- III	15.16	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	15.24	132kV Gelephu - Salakati Fdr.	30.15	+	
		-	-	132kV Motanga - Rangia Fdr.	45.94	+	
		-	-	220kV Tsirang - Jigmeling	59.87	+	
		<b>Total</b>	<b>61.07</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.523%</b>		

**Note: Generation-Load summary for October 17, 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	1,043.55	191.95	180.53	791.73	11.42
2	Eastern Grid	451.39	46.82	43.92	464.44	2.90
	<b>Total</b>	<b>1,494.94</b>	<b>238.77</b>	<b>224.45</b>	<b>1,256.17</b>	<b>14.32</b>

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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	970.43	249.85	237.57	672.54	12.28
2	Eastern Grid	511.28	45.35	46.37	513.97	-1.02
	<b>Total</b>	<b>1,481.71</b>	<b>295.20</b>	<b>283.94</b>	<b>1,186.51</b>	<b>11.26</b>

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