

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

Maximum Load/Demand till Date

Date:	October 21, 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	170.02	400kV THP - Siliguri Fdr- I	164.46	+	Unit-II, IV & 400kV THP-SIL Fdr IV under Standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	163.64	+	
		Unit- III	99.96	400kV THP - Siliguri Fdr- IV	0.00	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	221.83	+	
		Unit- V	118.80	400kV Malbase - Siliguri	141.08	+	
		Unit- VI	170.38	-	-	-	
		<b>Total</b>	<b>559.16</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.651%</b>		
2	720MW MHP	Unit-I	160.18	400kV MHP - Jigmeling Fdr - I	158.59	+	Unit-III under maintenance (22/09/20-30/11/2020). Unit-IV under standby 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III under standby.
		Unit-II	160.07	400kV MHP - Jigmeling Fdr - II	0.00	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	159.85		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>320.25</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.565%</b>		
3	336MW CHP	Unit- I	68.64	220kV CHP - Birpara Fdr- I	72.07	+	
		Unit- II	65.53	220kV CHP - Birpara Fdr- II	71.74	+	
		Unit- III	62.40	220kV CHP - Malbase Fdr- III	94.59	+	
		Unit- IV	60.23	220kV CHP - Semtokha Fdr- IV	3.13	+	
		-	-	220kV Malbase - Birpara Fdr.	47.49	+	
		-	-	66kV CHP - Chumdo Fdr.	7.82	+	
		-	-	66kV CHP - Gedu Fdr.	5.42	+	
		-	-	3x3MVA, 66/11kV TFR	1.34	+	
		<b>Total</b>	<b>256.80</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.269%</b>		
4	24MW BHP (U/S)	Unit- I	9.14	220kV BHP - Semtokha Fdr.	31.08	+	
		Unit- II	9.14	66kV BHP - Lobeysa Fdr.	14.75	+	
		<b>Total</b>	<b>18.28</b>	220kV BHP - Tsirang Fdr.	5.98	+	
	40MW BHP (L/S)	Unit- I	17.26	5MVA, 66/11kV TFR	0.60	+	
		Unit- II	16.70	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>33.96</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.325%</b>		
5	126MW DHPC	Unit-I	32.26	220kV DHPC - Tsirang Fdr.	63.08	+	
		Unit-II	31.27	220kV Jigmeling - Dagapela Fdr.	2.00	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>63.53</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.708%</b>		
6	60MW KHP	Unit- I	14.25	132kV KHP - Nangkhon Fdr- I	29.38	+	
		Unit-II	14.17	132kV KHP - Kilikhar Fdr- II	24.22	+	
		Unit- III	13.20	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	13.19	132kV Gelephu - Salakati Fdr.	16.92	+	
		-	-	132kV Motanga - Rangia Fdr.	49.23	+	
		-	-	220kV Tsirang - Jigmeling	67.16	+	
		<b>Total</b>	<b>54.81</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.478%</b>		

**Note: Generation-Load Summary for October 21, 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	931.73	204.09	195.89	660.48	8.20
2	Eastern Grid	375.06	57.63	55.01	384.59	2.62
	<b>Total</b>	<b>1,306.79</b>	<b>261.72</b>	<b>250.90</b>	<b>1,045.07</b>	<b>10.82</b>

**Note: Generation-Load Summary for October 21, 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	953.12	272.64	260.43	623.97	12.21
2	Eastern Grid	435.51	59.93	57.49	432.09	2.44
	<b>Total</b>	<b>1,388.63</b>	<b>332.57</b>	<b>317.92</b>	<b>1,056.06</b>	<b>14.65</b>

**NOTE: KHP, MHP & Motanga 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**

<b>Date:</b>	<b>October 22, 2020</b>
<b>Hours:</b>	<b>09:00 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	169.50	400kV THP - Siliguri Fdr- I	166.12		Unit-II, IV & 400kV THP-SIL Fdr IV under Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	162.94	+	
		Unit- III	100.69	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	191.63	+	
		Unit- V	89.58	400kV Malbase - Siliguri	147.92	+	
		Unit- VI	170.24	-	-	-	
		<b>Total</b>	<b>530.01</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.758%</b>		
2	720MW MHP	Unit-I	165.20	400kV MHP - Jigmeling Fdr - I	163.55	+	Unit-III under maintenance (22/09/20-30/11/2020). Unit-IV under PTW. 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr III under standby.
		Unit-II	165.05	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	164.38	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>330.25</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.702%</b>		
3	336MW CHP	Unit- I	63.15	220kV CHP - Birpara Fdr- I	74.23	+	
		Unit- II	62.03	220kV CHP - Birpara Fdr- II	73.98	+	
		Unit- III	63.14	220kV CHP - Malbase Fdr- III	112.79	+	
		Unit- IV	62.48	220kV CHP - Semtokha Fdr- IV	-20.58	-	
		-	-	220kV Malbase - Birpara Fdr.	35.44	+	
		-	-	66kV CHP - Chumdo Fdr.	4.09	+	
		-	-	66kV CHP - Gedu Fdr.	5.02	+	
		-	-	3x3MVA, 66/11kV TFR	0.81	+	
		<b>Total</b>	<b>250.80</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.183%</b>		
4	24MW BHP (U/S)	Unit- I	9.07	220kV BHP - Semtokha Fdr.	43.83	+	
		Unit- II	9.07	66kV BHP - Lobeysa Fdr.	12.93	+	
		<b>Total</b>	<b>18.14</b>	220kV BHP - Tsirang Fdr.	-5.77	-	
	40MW BHP (L/S)	Unit- I	16.70	5MVA, 66/11kV TFR	0.35	+	
		Unit- II	16.51	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>33.21</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.030%</b>		
5	126MW DHPC	Unit-I	31.75	220kV DHPC - Tsirang Fdr.	63.15	+	
		Unit-II	31.84	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>63.59</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.692%</b>		
6	60MW KHP	Unit- I	14.11	132kV KHP - Nangkhon Fdr- I	32.10	+	
		Unit-II	13.98	132kV KHP - Kilihar Fdr- II	22.71	+	
		Unit- III	14.00	5MVA, 132/11kV TFR	0.18	+	
		Unit- IV	13.97	132kV Gelephu - Salakati Fdr.	28.67	+	
		-	-	132kV Motanga - Rangia Fdr.	51.89	+	
		-	-	220kV Tsirang - Jigmeling	54.00	+	
		<b>Total</b>	<b>56.06</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.909%</b>		

**Note: Generation-Load summary for October 22, 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	895.75	181.12	171.99	660.63	9.13
2	Eastern Grid	386.31	31.82	28.43	408.49	3.39
	<b>Total</b>	<b>1,282.06</b>	<b>212.94</b>	<b>200.42</b>	<b>1,069.12</b>	<b>12.52</b>

**Note: Generation-Load Summary for October 22, 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	906.35	236.09	227.10	627.88	8.99
2	Eastern Grid	326.46	56.38	46.83	312.46	9.55
	<b>Total</b>	<b>1,232.81</b>	<b>292.47</b>	<b>273.93</b>	<b>940.34</b>	<b>18.54</b>

**NOTES: KHP,MHP & Motanga datas collected from site.**

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  - 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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