

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

Maximum Load/Demand till Date

Date:	July 8, 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	186.69	400kV THP - Siliguri Fdr- I	271.40	+	
		Unit- II	186.65	400kV THP - Siliguri Fdr- II	269.36	+	
		Unit- III	187.36	400kV THP - Siliguri Fdr- IV	265.09	+	
		Unit- IV	186.83	400kV THP - Malbase Fdr- III	299.24	+	
		Unit- V	187.05	400kV Malbase - Siliguri	248.41	+	
		Unit- VI	186.73	-	-	-	
		<b>Total</b>	<b>1,121.31</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>16.22</b>		
2	720MW MHP	Unit-I	198.05	400kV MHP - Jigmeling Fdr - I	265.10	+	400kV MHP-JLG IV Standby.
		Unit-II	197.60	400kV MHP - Jigmeling Fdr - II	247.77	+	
		Unit-III	197.85	400kV MHP - Jigmeling Fdr - III	276.66	+	
		Unit-IV	197.82	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		<b>Total</b>	<b>791.32</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.79</b>		
3	336MW CHP	Unit- I	92.00	220kV CHP - Birpara Fdr- I	118.30	+	
		Unit- II	92.00	220kV CHP - Birpara Fdr- II	118.30	+	
		Unit- III	92.00	220kV CHP - Malbase Fdr- III	161.90	+	
		Unit- IV	92.00	220kV CHP - Semtokha Fdr- IV	-45.20	-	
		-	-	220kV Malbase - Birpara Fdr.	71.13	+	
		-	-	66kV CHP - Chumdo Fdr.	3.37	+	
		-	-	66kV CHP - Gedu Fdr.	7.22	+	
		-	-	3x3MVA, 66/11kV TFR	1.08	+	
		<b>Total</b>	<b>368.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.03</b>		
4	24MW BHP (U/S)	Unit- I	11.83	220kV BHP - Semtokha Fdr.	69.63	+	
		Unit- II	11.83	66kV BHP - Lobeysa Fdr.	16.80	+	
		<b>Total</b>	<b>23.66</b>	220kV BHP - Tsirang Fdr.	-20.89	-	
	40MW BHP (L/S)	Unit- I	20.97	5MVA, 66/11kV TFR	0.12	+	
		Unit- II	20.13	30MVA ICT, 220/66kV	0.00		
		<b>Total</b>	<b>41.10</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.90</b>		
5	126MW DHPC	Unit-I	57.21	220kV DHPC - Tsirang Fdr.	113.89	+	
		Unit-II	57.25	220kV Jigmeling - Dagapela Fdr.	1.67	+	
		-	-	5MVA, 220/33kV TFR	0.00		
		<b>Total</b>	<b>114.46</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.57</b>		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	37.47	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	27.00	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	47.74	+	
		-	-	132kV Motanga - Rangia Fdr.	57.50	+	
		-	-	220kV Tsirang - Jigmeling	90.70	+	
		<b>Total</b>	<b>66.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.19</b>		

**Note: Generation-Load Summary for July 08, 2020 at 19:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	1,668.53	215.84	198.59	1,361.99	17.25
2	Eastern Grid	857.32	53.25	50.27	894.77	2.98
	<b>Total</b>	<b>2,525.85</b>	<b>269.09</b>	<b>248.86</b>	<b>2,256.76</b>	<b>20.23</b>

**Note: Generation-Load Summary for July 08, 2019 at 19:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	1674.59	262.05	257.85	1,317.19	4.20
2	Eastern Grid	424.47	51.65	49.63	468.17	2.02
	<b>Total</b>	<b>2,099.06</b>	<b>313.70</b>	<b>307.48</b>	<b>1,785.36</b>	<b>6.22</b>

**NOTE: KHP,MHEP & 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>July 9, 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	186.13	400kV THP - Siliguri Fdr- I	276.98	+	
		Unit- II	187.00	400kV THP - Siliguri Fdr- II	273.75	+	
		Unit- III	186.45	400kV THP - Siliguri Fdr- IV	267.69	+	
		Unit- IV	186.11	400kV THP - Malbase Fdr- III	282.56	+	
		Unit- V	186.81	400kV Malbase - Siliguri	258.79	+	
		Unit- VI	186.51	-	-	-	
		<b>Total</b>	<b>1,119.01</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>18.03</b>		
2	720MW MHP	Unit-I	197.86	400kV MHP - Jigmeling Fdr - I	264.72	+	400kV MHP-JLG IV Standby.
		Unit-II	197.32	400kV MHP - Jigmeling Fdr - II	266.54	+	
		Unit-III	197.99	400kV MHP - Jigmeling Fdr - III	258.54	+	
		Unit-IV	197.88	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		<b>Total</b>	<b>791.05</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.25</b>		
3	336MW CHP	Unit- I	91.70	220kV CHP - Birpara Fdr- I	124.12	+	
		Unit- II	91.54	220kV CHP - Birpara Fdr- II	123.51	+	
		Unit- III	91.39	220kV CHP - Malbase Fdr- III	181.40	+	
		Unit- IV	91.68	220kV CHP - Semtokha Fdr- IV	-72.30	-	
		-	-	220kV Malbase - Birpara Fdr.	65.08	+	
		-	-	66kV CHP - Chumdo Fdr.	0.85	+	
		-	-	66kV CHP - Gedu Fdr.	7.34	+	
		-	-	3x3MVA, 66/11kV TFR	0.76	+	
		<b>Total</b>	<b>366.31</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.63</b>		
4	24MW BHP (U/S)	Unit- I	11.82	220kV BHP - Semtokha Fdr.	90.43	+	
		Unit- II	11.82	66kV BHP - Lobeysa Fdr.	16.24	+	
		<b>Total</b>	<b>23.64</b>	220kV BHP - Tsirang Fdr.	-41.02	-	
	40MW BHP (L/S)	Unit- I	21.01	5MVA, 66/11kV TFR	0.50	+	
		Unit- II	20.19	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>41.20</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-1.31</b>		
5	126MW DHPC	Unit-I	63.53	220kV DHPC - Tsirang Fdr.	126.39	+	
		Unit-II	63.44	220kV Jigmeling - Dagapela Fdr.	1.03	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>126.97</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.58</b>		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	40.69	+	
		Unit-II	16.50	132kV KHP - Kilikhar Fdr- II	24.08	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.26	+	
		Unit- IV	16.50	132kV Gelephu - Salakati Fdr.	50.32	+	
		-	-	132kV Motanga - Rangia Fdr.	60.28	+	
		-	-	220kV Tsirang - Jigmeling	81.69	+	
		<b>Total</b>	<b>66.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.97</b>		

**Note: Generation-Load summary for July 09, 2020 at 09:00hrs.**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	1,677.13	205.52	188.62	1,389.92	16.90
2	Eastern Grid	857.05	38.34	36.12	900.40	2.22
	<b>Total</b>	<b>2,534.18</b>	<b>243.86</b>	<b>224.74</b>	<b>2,290.32</b>	<b>19.12</b>

**Note: Generation-Load Summary for July 09, 2019 at 09:00hrs**

Sl. No	Region	Total Generation (MW)	Total Load [Generation - Export (MW)]	Total Load [Feeder Summation (MW)]	Total Export/Import	Load Balance
1	Western Grid	1638.59	220.40	214.45	1,351.55	5.95
2	Eastern Grid	424.06	43.68	39.57	447.02	4.11
	<b>Total</b>	<b>2,062.65</b>	<b>264.08</b>	<b>254.02</b>	<b>1,798.57</b>	<b>10.06</b>

**NOTES: KHP,MHEP & 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.
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