

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

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>November 3, 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	0.00	400kV THP - Siliguri Fdr- I	206.68	+	Unit-II under Standby. Unit I,400kV THP-SIL Fdr IV, 400kV THP-Malbase Fdr & 400kV Malbase-SIL Fdr under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	204.80	+	
		Unit- III	99.67	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	100.19	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	120.14	400kV Malbase - Siliguri	0.00		
		Unit- VI	99.13	-	-	-	
		<b>Total</b>	<b>419.13</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.825%</b>		
2	720MW MHP	Unit-I	99.73	400kV MHP - Jigmeling Fdr - I	0.00	+	Unit-II under Standby. Unit-III under AMP(22/09/20-30/11/2020). 400kV MHP-Jigmeling Fdr II under Breakdown. 400kV MHP-Jigmeling Fdr I under shutdown.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	123.07		
		Unit-IV	145.58	400kV MHP - Jigmeling Fdr - IV	122.46	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>245.31</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.090%</b>		
3	336MW CHP	Unit- I	73.03	220kV CHP - Birpara Fdr- I	53.09	+	
		Unit- II	77.35	220kV CHP - Birpara Fdr- II	53.06	+	
		Unit- III	70.16	220kV CHP - Malbase Fdr- III	104.64	+	
		Unit- IV	20.03	220kV CHP - Semtokha Fdr- IV	20.00	+	
		-	-	220kV Malbase - Birpara Fdr.	7.00	+	
		-	-	66kV CHP - Chumdo Fdr.	10.14	+	
		-	-	66kV CHP - Gedu Fdr.	4.71	+	
		-	-	3x3MVA, 66/11kV TFR	1.75	+	
		<b>Total</b>	<b>240.57</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-2.835%</b>		
4	24MW BHP (U/S)	Unit- I	7.31	220kV BHP - Semtokha Fdr.	22.74	+	
		Unit- II	7.31	66kV BHP - Lobeysa Fdr.	14.37	+	
		<b>Total</b>	<b>14.62</b>	220kV BHP - Tsirang Fdr.	5.32	+	
	40MW BHP (L/S)	Unit- I	14.12	5MVA, 66/11kV TFR	0.60	+	
		Unit- II	14.12	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>28.24</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.397%</b>		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	53.03	+	Unit I Standby
		Unit-II	53.28	220kV Jigmeling - Dagapela Fdr.	1.60	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>53.28</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.469%</b>		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	24.28	+	Unit I Standby
		Unit-II	15.13	132kV KHP - Kilikhar Fdr- II	19.77	+	
		Unit- III	15.07	5MVA, 132/11kV TFR	0.17	+	
		Unit- IV	15.16	132kV Gelephu - Salakati Fdr.	9.79	+	
		-	-	132kV Motanga - Rangia Fdr.	32.46	+	
		-	-	220kV Tsirang - Jigmeling	56.25	+	
		<b>Total</b>	<b>45.36</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.513%</b>		

**Note: Generation-Load Summary for November 03, 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	755.84	174.96	175.65	524.63	-0.69
2	Eastern Grid	290.67	59.14	58.22	287.78	0.92
	<b>Total</b>	<b>1,046.51</b>	<b>234.10</b>	<b>233.87</b>	<b>812.41</b>	<b>0.23</b>

**Note: Generation-Load Summary for November 03, 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	754.96	270.24	262.55	443.02	7.69
2	Eastern Grid	264.51	57.52	57.33	248.69	0.19
	<b>Total</b>	<b>1,019.47</b>	<b>327.76</b>	<b>319.88</b>	<b>691.71</b>	<b>7.88</b>

**NOTE: MHP,MAL,KHP & 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>November 4, 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	0.00	400kV THP - Siliguri Fdr- I	206.68	+	Unit-I under shutdown ,Unit-II & 400kV THP-SIL Fdr II under Standby.400kV Tala-Malbase & ICT under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	204.80	+	
		Unit- III	99.67	400kV THP - Siliguri Fdr- IV	0.00	+	
		Unit- IV	100.19	400kV THP - Malbase Fdr- III	0.00	+	
		Unit- V	120.14	400kV Malbase - Siliguri	0.00	-	
		Unit- VI	99.13	-	-	-	
		<b>Total</b>	<b>419.13</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.825%</b>		
2	720MW MHP	Unit-I	109.70	400kV MHP - Jigmeling Fdr - I	0.00	+	Unit-III under maintenance (22/09/20-30/11/2020). Unit-II under standby. 400kV MHP-JLG Fdr II under Breakdown. 400kV MHP-JLG Fdr I under shutdown
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	125.54	+	
		Unit-IV	140.42	400kV MHP - Jigmeling Fdr - IV	124.85	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>250.12</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.108%</b>		
3	336MW CHP	Unit- I	68.30	220kV CHP - Birpara Fdr- I	43.90	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	43.50	+	
		Unit- III	67.40	220kV CHP - Malbase Fdr- III	103.30	+	
		Unit- IV	62.00	220kV CHP - Semtokha Fdr- IV	-8.28	-	
		-	-	220kV Malbase - Birpara Fdr.	-6.00	-	
		-	-	66kV CHP - Chumdo Fdr.	10.14	+	
		-	-	66kV CHP - Gedu Fdr.	4.71	+	
		<b>Total</b>	<b>197.70</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.668%</b>		
4	24MW BHP (U/S)	Unit- I	7.25	220kV BHP - Semtokha Fdr.	39.40	+	
		Unit- II	7.25	66kV BHP - Lobeysa Fdr.	12.80	+	
		<b>Total</b>	<b>14.50</b>	220kV BHP - Tsirang Fdr.	-9.50	-	
	40MW BHP (L/S)	Unit- I	14.60	5MVA, 66/11kV TFR	0.60	+	
		Unit- II	13.90	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>28.50</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-1.053%</b>		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	52.80	+	Unit I Standby
		Unit-II	53.10	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>53.10</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.565%</b>		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	28.72	+	Unit I standby
		Unit-II	15.13	132kV KHP - Kilikhar Fdr- II	16.56	+	
		Unit- III	15.10	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	15.08	132kV Gelephu - Salakati Fdr.	13.01	+	
		-	-	132kV Motanga - Rangia Fdr.	27.39	+	
		-	-	220kV Tsirang - Jigmeling	41.37	+	
		<b>Total</b>	<b>45.31</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.817%</b>		

**Note: Generation-Load summary for November 04, 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	712.93	178.68	173.45	492.88	5.23
2	Eastern Grid	295.43	46.01	46.65	290.79	-0.64
	<b>Total</b>	<b>1,008.36</b>	<b>224.69</b>	<b>220.10</b>	<b>783.67</b>	<b>4.59</b>

**Note: Generation-Load Summary for November 04, 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	626.67	250.85	244.23	343.38	6.62
2	Eastern Grid	269.31	59.05	58.53	242.7	0.52
	<b>Total</b>	<b>895.98</b>	<b>309.90</b>	<b>302.76</b>	<b>586.08</b>	<b>7.14</b>

**NOTES: SEM,KHP,MHP,MAL & 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.