

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

Maximum Load/Demand till Date

Date:	October 31, 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	0.00	400kV THP - Siliguri Fdr- I	219.77	+	Unit-I & II at Standby. 400kV THP-SIL Fdr II at standby 400kV THP-Malbase Fdr under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00	-	
		Unit- III	119.41	400kV THP - Siliguri Fdr- IV	211.63	+	
		Unit- IV	100.16	400kV THP - Malbase Fdr- III	0.00	-	
		Unit- V	120.25	400kV Malbase - Siliguri	-40.00	-	
		Unit- VI	99.70	-	-	-	
		<b>Total</b>	<b>439.52</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.847%</b>		
2	720MW MHP	Unit-I	100.15	400kV MHP - Jigmeling Fdr - I	129.48	+	Unit-II at standby. Unit-III under AMP(22/09/20-30/11/2020). 400kV MHP-Jigmeling Fdr II under Breakdown. 400kV MHP-Jigmeling Fdr III at standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00	-	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00	-	
		Unit-IV	160.18	400kV MHP - Jigmeling Fdr - IV	130.65	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>260.33</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.077%</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	51.82	+	Unit I at standby
		Unit- II	73.70	220kV CHP - Birpara Fdr- II	51.56	+	
		Unit- III	74.01	220kV CHP - Malbase Fdr- III	91.73	+	
		Unit- IV	74.03	220kV CHP - Semtokha Fdr- IV	10.99	+	
		-	-	220kV Malbase - Birpara Fdr.	16.00	+	
		-	-	66kV CHP - Chumdo Fdr.	8.97	+	
		-	-	66kV CHP - Gedu Fdr.	4.78	+	
		-	-	3x3MVA, 66/11kV TFR	1.35	+	
		<b>Total</b>	<b>221.74</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.244%</b>		
4	24MW BHP (U/S)	Unit- I	7.68	220kV BHP - Semtokha Fdr.	28.83	+	
		Unit- II	7.68	66kV BHP - Lobeysa Fdr.	14.26	+	
		<b>Total</b>	<b>15.36</b>	220kV BHP - Tsirang Fdr.	0.44	+	
	40MW BHP (L/S)	Unit- I	14.56	5MVA, 66/11kV TFR	0.64	+	
		Unit- II	14.27	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>28.83</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.045%</b>		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	56.44	+	Unit I at standby
		Unit-II	56.73	220kV Jigmeling - Dagapela Fdr.	1.90	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>56.73</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.511%</b>		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	23.77	+	Unit I at standby
		Unit-II	15.28	132kV KHP - Kilihar Fdr- II	20.81	+	
		Unit- III	15.24	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	15.38	132kV Gelephu - Salakati Fdr.	10.03	+	
		-	-	132kV Motanga - Rangia Fdr.	36.11	+	
		-	-	220kV Tsirang - Jigmeling	54.00	+	
		<b>Total</b>	<b>45.90</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.135%</b>		

**Note: Generation-Load Summary for October 31, 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	762.18	197.40	190.33	510.78	7.07
2	Eastern Grid	306.23	53.96	52.78	306.27	1.18
	<b>Total</b>	<b>1,068.41</b>	<b>251.36</b>	<b>243.11</b>	<b>817.05</b>	<b>8.25</b>

**Note: Generation-Load Summary for October 31, 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	719.43	288.03	281.59	390.09	6.44
2	Eastern Grid	484.81	64.11	62.49	462.01	1.62
	<b>Total</b>	<b>1,204.24</b>	<b>352.14</b>	<b>344.08</b>	<b>852.10</b>	<b>8.06</b>

**NOTE: BHP & EASTERN 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 1, 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	219.57	+	Unit-I , II & 400kV THP-SIL Fdr II under Standby.400kV Tala-Malbase fdr under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	119.16	400kV THP - Siliguri Fdr- IV	211.44	+	
		Unit- IV	99.98	400kV THP - Malbase Fdr- III	0.00	+	
		Unit- V	117.95	400kV Malbase - Siliguri	-16.00	-	
		Unit- VI	100.85	-	-	-	
		<b>Total</b>	<b>437.94</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.582%</b>		
2	720MW MHP	Unit-I	109.93	400kV MHP - Jigmeling Fdr - I	134.06	+	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 III under standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	160.18	400kV MHP - Jigmeling Fdr - IV	135.05	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>270.11</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.370%</b>		
3	336MW CHP	Unit- I	79.37	220kV CHP - Birpara Fdr- I	57.15	+	Unit II standby
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	56.96	+	
		Unit- III	73.70	220kV CHP - Malbase Fdr- III	112.14	+	
		Unit- IV	73.64	220kV CHP - Semtokha Fdr- IV	-12.13	-	
		-	-	220kV Malbase - Birpara Fdr.	8.00	-	
		-	-	66kV CHP - Chumdo Fdr.	6.29	+	
		-	-	66kV CHP - Gedu Fdr.	3.85	+	
		-	-	3x3MVA, 66/11kV TFR	0.99	+	
		<b>Total</b>	<b>226.71</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.644%</b>		
4	24MW BHP (U/S)	Unit- I	7.67	220kV BHP - Semtokha Fdr.	41.81	+	
		Unit- II	7.67	66kV BHP - Lobeysa Fdr.	12.40	+	
		<b>Total</b>	<b>15.34</b>	220kV BHP - Tsirang Fdr.	-8.77	-	
	40MW BHP (L/S)	Unit- I	15.21	5MVA, 66/11kV TFR	0.41	+	
		Unit- II	15.21	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>30.42</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.296%</b>		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	54.92	+	Unit I Standby
		Unit-II	55.19	220kV Jigmeling - Dagapela Fdr.	1.00	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>55.19</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.489%</b>		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	23.65	+	Unit I standby
		Unit-II	15.28	132kV KHP - Kilikhar Fdr- II	20.54	+	
		Unit- III	15.24	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	15.38	132kV Gelephu - Salakati Fdr.	18.21	+	
		-	-	132kV Motanga - Rangia Fdr.	30.66	+	
		-	-	220kV Tsirang - Jigmeling	44.52	+	
		<b>Total</b>	<b>45.90</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.072%</b>		

**Note: Generation-Load summary for November 01, 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	765.60	183.96	176.39	537.12	7.57
2	Eastern Grid	316.01	42.55	40.14	317.98	2.41
	<b>Total</b>	<b>1,081.61</b>	<b>226.51</b>	<b>216.53</b>	<b>855.10</b>	<b>9.98</b>

**Note: Generation-Load Summary for November 01, 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	672.20	247.72	238.82	392.26	8.90
2	Eastern Grid	316.88	43.38	42.64	305.72	0.74
	<b>Total</b>	<b>989.08</b>	<b>291.10</b>	<b>281.46</b>	<b>697.98</b>	<b>9.64</b>

**NOTES: 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.
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