

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

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>November 11, 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	217.00	+	Unit-II under Standby Unit- I, 400kV THP-SIL Fdr IV, 400kV Tala-Malbase & ICT under Shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	215.00	+	
		Unit- III	120.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	80.00	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	140.00	400kV Malbase - Siliguri	0.00		
		Unit- VI	100.00	-	-	-	
		<b>Total</b>	<b>440.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.818%</b>		
2	720MW MHP	Unit-I	69.85	400kV MHP - Jigmeling Fdr - I	0.00		Unit-II on Standby. Unit-III under AMP(22/09/20- 30/11/2020). 400kV MHP-Jigmeling Fdr I under shutdown. 400kV MHP-Jigmeling Fdr II under Breakdown.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	99.92	+	
		Unit-IV	130.55	400kV MHP - Jigmeling Fdr - IV	99.26	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>200.40</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.609%</b>		
3	336MW CHP	Unit- I	75.00	220kV CHP - Birpara Fdr- I	33.50	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	33.50	+	
		Unit- III	69.00	220kV CHP - Malbase Fdr- III	95.30	+	
		Unit- IV	71.00	220kV CHP - Semtokha Fdr- IV	33.30	+	
		-	-	220kV Malbase - Birpara Fdr.	-23.00	-	
		-	-	66kV CHP - Chumdo Fdr.	12.20	+	
		-	-	66kV CHP - Gedu Fdr.	3.90	+	
		-	-	3x3MVA, 66/11kV TFR	1.60	+	
		<b>Total</b>	<b>215.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.791%</b>		
4	24MW BHP (U/S)	Unit- I	5.00	220kV BHP - Semtokha Fdr.	17.00	+	
		Unit- II	8.10	66kV BHP - Lobeysa Fdr.	15.60	+	
	<b>Total</b>	<b>13.10</b>	220kV BHP - Tsirang Fdr.	5.50	+		
	40MW BHP (L/S)	Unit- I	13.10	5MVA, 66/11kV TFR	0.90	+	
Unit- II		12.90	30MVA ICT, 220/66kV				
		<b>Total</b>	<b>26.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.256%</b>		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	45.39	+	Unit I on Standby
		Unit-II	45.65	220kV Jigmeling - Dagapela Fdr.	2.40	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>45.65</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.570%</b>		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	18.09	+	Unit I under Annual Maintenance
		Unit-II	12.04	132kV KHP - Kilikhar Fdr- II	16.83	+	
		Unit- III	12.04	5MVA, 132/11kV TFR	0.18	+	
		Unit- IV	12.04	132kV Gelephu - Salakati Fdr.	0.56	+	
		-	-	132kV Motanga - Rangia Fdr.	23.30	+	
		-	-	220kV Tsirang - Jigmeling	49.79	+	
		<b>Total</b>	<b>36.12</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.829%</b>		

**Note: Generation-Load Summary for November 11, 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	739.75	213.96	206.30	476.00	7.66
2	Eastern Grid	236.52	63.27	61.03	223.04	2.24
	<b>Total</b>	<b>976.27</b>	<b>277.23</b>	<b>267.33</b>	<b>699.04</b>	<b>9.90</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	677.69	295.11	283.75	354.82	11.36
2	Eastern Grid	233.93	80.33	72.72	181.36	7.61
	<b>Total</b>	<b>911.62</b>	<b>375.44</b>	<b>356.47</b>	<b>536.18</b>	<b>18.97</b>

**NOTE: MHP, MAL, KHP & Motanga data 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 12, 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	179.91	+	Unit- II under Standby. Unit I, 400kV THP-SIL Fdr IV, 400kV Tala-Malbase & ICT under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	176.53	+	
		Unit- III	100.80	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	81.97	400kV THP - Malbase Fdr- III	0.00		
		Unit- V	80.18	400kV Malbase - Siliguri	0.00		
		Unit- VI	100.86	-	-	-	
		<b>Total</b>	<b>363.81</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.026%</b>		
2	720MW MHP	Unit-I	75.18	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	102.77	+	
		Unit-IV	130.47	400kV MHP - Jigmeling Fdr - IV	102.04	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>205.65</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.408%</b>		
3	336MW CHP	Unit- I	59.44	220kV CHP - Birpara Fdr- I	29.03	+	Unit II under Annual Maintenance
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	28.84	+	
		Unit- III	58.18	220kV CHP - Malbase Fdr- III	84.97	+	
		Unit- IV	56.69	220kV CHP - Semtokha Fdr- IV	16.88	+	
		-	-	220kV Malbase - Birpara Fdr.	-18.50	-	
		-	-	66kV CHP - Chumdo Fdr.	9.25	+	
		-	-	66kV CHP - Gedu Fdr.	3.78	+	
		-	-	3x3MVA, 66/11kV TFR	1.20	+	
		<b>Total</b>	<b>174.31</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.207%</b>		
4	24MW BHP (U/S)	Unit- I	5.00	220kV BHP - Semtokha Fdr.	28.11	+	
		Unit- II	8.00	66kV BHP - Lobeysa Fdr.	13.42	+	
	<b>Total</b>	<b>13.00</b>	220kV BHP - Tsirang Fdr.	-2.87	-		
	40MW BHP (L/S)	Unit- I	12.00	5MVA, 66/11kV TFR	0.50	+	
Unit- II		14.90	30MVA ICT, 220/66kV				
		<b>Total</b>	<b>26.90</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.751%</b>		
5	126MW DHPC	Unit-I	44.23	220kV DHPC - Tsirang Fdr.	43.98	+	Unit-II Standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.50	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>44.23</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	19.40	+	Unit I Annual Maintenance.
		Unit-II	11.61	132kV KHP - Kilihar Fdr- II	14.06	+	
		Unit- III	11.59	5MVA, 132/11kV TFR	0.38	+	
		Unit- IV	11.57	132kV Gelephu - Salakati Fdr.	6.82	+	
		-	-	132kV Motanga - Rangia Fdr.	20.40	+	
		-	-	220kV Tsirang - Jigmeling	39.50	+	
		<b>Total</b>	<b>34.77</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.675%</b>		

**Note: Generation-Load summary for November 12, 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	622.25	186.94	179.72	395.81	7.22
2	Eastern Grid	240.42	47.89	46.12	232.03	1.77
	<b>Total</b>	<b>862.67</b>	<b>234.83</b>	<b>225.84</b>	<b>627.84</b>	<b>8.99</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	554.22	271.35	266.20	282.86	5.15
2	Eastern Grid	235.57	51.78	46.73	183.8	5.05
	<b>Total</b>	<b>789.79</b>	<b>323.13</b>	<b>312.93</b>	<b>466.66</b>	<b>10.20</b>

**NOTES: KHP,MHP,BHP,DHP & 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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