

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

Maximum Load/Demand till Date

Date:	October 24, 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	139.34	400kV THP - Siliguri Fdr- I	165.37	+	Unit-II & 400kV THP-SIL Fdr II under Standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	100.85	400kV THP - Siliguri Fdr- IV	156.19	+	
		Unit- IV	71.54	400kV THP - Malbase Fdr- III	171.65	+	
		Unit- V	89.25	400kV Malbase - Siliguri	153.01	+	
		Unit- VI	99.50	-	-	-	
		<b>Total</b>	<b>500.48</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.453%</b>		
2	720MW MHP	Unit-I	150.22	400kV MHP - Jigmeling Fdr - I	151.27	+	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	155.05	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	152.36		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>305.27</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.537%</b>		
3	336MW CHP	Unit- I	82.17	220kV CHP - Birpara Fdr- I	75.30	+	Unit-IV Standby
		Unit- II	81.72	220kV CHP - Birpara Fdr- II	74.95	+	
		Unit- III	82.41	220kV CHP - Malbase Fdr- III	113.24	+	
		Unit- IV	0.00	220kV CHP - Semtokha Fdr- IV	-27.81	-	
		-	-	220kV Malbase - Birpara Fdr.	37.81	+	
		-	-	66kV CHP - Chumdo Fdr.	4.10	+	
		-	-	66kV CHP - Gedu Fdr.	4.60	+	
		-	-	3x3MVA, 66/11kV TFR	0.83	+	
		<b>Total</b>	<b>246.30</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.443%</b>		
4	24MW BHP (U/S)	Unit- I	8.73	220kV BHP - Semtokha Fdr.	50.92	+	
		Unit- II	8.73	66kV BHP - Lobeysa Fdr.	12.93	+	
		<b>Total</b>	<b>17.46</b>	220kV BHP - Tsirang Fdr.	-13.74	-	
	40MW BHP (L/S)	Unit- I	16.45	5MVA, 66/11kV TFR	0.48	+	
		Unit- II	16.46	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>32.91</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.437%</b>		
5	126MW DHPC	Unit-I	60.80	220kV DHPC - Tsirang Fdr.	60.48	+	Unit-II standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	2.00	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>60.80</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.526%</b>		
6	60MW KHP	Unit- I	15.06	132kV KHP - Nangkhon Fdr- I	34.05	+	
		Unit-II	15.09	132kV KHP - Kilikhar Fdr- II	24.44	+	
		Unit- III	15.13	5MVA, 132/11kV TFR	0.37	+	
		Unit- IV	15.11	132kV Gelephu - Salakati Fdr.	18.05	+	
		-	-	132kV Motanga - Rangia Fdr.	43.65	+	
		-	-	220kV Tsirang - Jigmeling	54.00	+	
		<b>Total</b>	<b>60.39</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.538%</b>		

**Note: Generation-Load Summary for October 24, 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	857.95	141.32	134.86	662.63	6.46
2	Eastern Grid	365.66	54.33	51.16	365.33	3.17
	<b>Total</b>	<b>1,223.61</b>	<b>195.65</b>	<b>186.02</b>	<b>1,027.96</b>	<b>9.63</b>

**Note: Generation-Load Summary for October 24, 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	847.26	274.89	266.24	523.88	8.65
2	Eastern Grid	331.47	59.86	58.56	320.10	1.30
	<b>Total</b>	<b>1,178.73</b>	<b>334.75</b>	<b>324.80</b>	<b>843.98</b>	<b>9.95</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 25, 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	154.46		Unit-II, 400kV THP-SIL Fdr II under Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00	+	
		Unit- III	100.53	400kV THP - Siliguri Fdr- IV	148.73		
		Unit- IV	141.62	400kV THP - Malbase Fdr- III	168.82	+	
		Unit- V	138.44	400kV Malbase - Siliguri	141.47	+	
		Unit- VI	99.57	-	-	-	
		<b>Total</b>	<b>480.16</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.697%</b>		
2	720MW MHP	Unit-I	154.88	400kV MHP - Jigmeling Fdr - I	153.57	+	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	155.14	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	154.66	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>310.02</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.577%</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	70.35	+	Unit-I under standby.
		Unit- II	78.89	220kV CHP - Birpara Fdr- II	70.24	+	
		Unit- III	79.34	220kV CHP - Malbase Fdr- III	115.60	+	
		Unit- IV	80.99	220kV CHP - Semtokha Fdr- IV	-27.68	-	
		-	-	220kV Malbase - Birpara Fdr.	27.25	+	
		-	-	66kV CHP - Chumdo Fdr.	4.37	+	
		-	-	66kV CHP - Gedu Fdr.	4.08	+	
		-	-	3x3MVA, 66/11kV TFR	0.98	+	
		<b>Total</b>	<b>239.22</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.535%</b>		
4	24MW BHP (U/S)	Unit- I	8.61	220kV BHP - Semtokha Fdr.	52.29	+	
		Unit- II	8.61	66kV BHP - Lobeysa Fdr.	13.29	+	
		<b>Total</b>	<b>17.22</b>	220kV BHP - Tsirang Fdr.	-16.27	-	
	40MW BHP (L/S)	Unit- I	15.59	5MVA, 66/11kV TFR	0.43	+	
		Unit- II	16.60	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>32.19</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-1.025%</b>		
5	126MW DHPC	Unit-I	63.53	220kV DHPC - Tsirang Fdr.	63.19	+	Unit-II standby
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	1.10	+	
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>63.53</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.535%</b>		
6	60MW KHP	Unit- I	14.18	132kV KHP - Nangkhon Fdr- I	34.90	+	
		Unit-II	13.61	132kV KHP - Kilikhar Fdr- II	21.66	+	
		Unit- III	13.52	5MVA, 132/11kV TFR	0.27	+	
		Unit- IV	13.65	132kV Gelephu - Salakati Fdr.	25.62	+	
		-	-	132kV Motanga - Rangia Fdr.	37.99	+	
		-	-	220kV Tsirang - Jigmeling	45.17	+	
		<b>Total</b>	<b>54.96</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-3.402%</b>		

**Note: Generation-Load summary for October 25, 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	832.32	174.65	166.31	612.50	8.34
2	Eastern Grid	364.98	38.31	38.39	371.84	-0.08
	<b>Total</b>	<b>1,197.30</b>	<b>212.96</b>	<b>204.70</b>	<b>984.34</b>	<b>8.26</b>

**Note: Generation-Load Summary for October 25, 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	806.78	246.98	237.47	514.80	9.51
2	Eastern Grid	326.54	49.54	51.40	322.00	-1.86
	<b>Total</b>	<b>1,133.32</b>	<b>296.52</b>	<b>288.87</b>	<b>836.80</b>	<b>7.65</b>

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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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