

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

Maximum Load/Demand till Date

Date:	February 9, 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	0.00		Unit-III , IV on standby. Unit-I and II under shutdown. 400kV THP_SILI-II under shutdown & 400kV THP_SILI-I standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	43.62	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	142.56	+	
		Unit- V	60.58	400kV Malbase - Siliguri	26.35	+	
		Unit- VI	130.36	-	-	-	
		<b>Total</b>	<b>190.94</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>4.76</b>		
2	720MW MHP	Unit-I	85.10	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I,II & III standby. 400kV MHP-JLG I, II & III 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	0.00	400kV MHP - Jigmeling Fdr - IV	82.90	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>85.10</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.20</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-16.97	-	Unit-I & III under shutdown.220kV CHP-Birpara Fdr-II Standby.
		Unit- II	49.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	11.95	+	
		Unit- IV	49.00	220kV CHP - Sementokha Fdr- IV	82.09	+	
		-	-	220kV Malbase - Birpara Fdr.	-36.45	-	
		-	-	66kV CHP - Chumdo Fdr.	18.10	+	
		-	-	66kV CHP - Gedu Fdr.	1.50	+	
		-	-	3x3MVA, 66/11kV TFR	2.30	+	
<b>Total</b>	<b>98.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.97</b>				
4	24MW BHP (U/S)	Unit- I	5.44	220kV BHP - Sementokha Fdr.	-11.16	-	U/S Unit-II & L/S Unit-I under maintenace.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	16.41	+	
		<b>Total</b>	<b>5.44</b>	220kV BHP - Tsirang Fdr.	10.36	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	1.01	+	
		Unit- II	11.47	30MVA ICT, 220/66kV			
<b>Total</b>	<b>11.47</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.29</b>				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.42	+	Unit I under maintenance
		Unit-II	16.65	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>16.65</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.23</b>		
6	60MW KHP	Unit- I	13.50	132kV KHP - Nangkhon Fdr- I	8.62	+	Unit- III & IV under Annual Maintenance
		Unit-II	9.50	132kV KHP - Kilikhar Fdr- II	13.31	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.50	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-17.17	-	
		-	-	132kV Motanga - Rangia Fdr.	-1.69	-	
		-	-	220kV Tsirang - Jigmeling	23.68	+	
		<b>Total</b>	<b>23.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.57</b>		

**Note: Load summary on February 09, 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	322.50	282.27	277.96	16.55	4.31
2	Eastern Grid	108.10	67.74	64.97	64.04	2.77
	<b>Total</b>	<b>430.60</b>	<b>350.01</b>	<b>342.93</b>	<b>80.59</b>	<b>7.08</b>

**Note: Load Summary on February 09, 2019 at 19:00hrs**

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	272.76	272.76	308.60
2	Eastern Grid	58.29	58.29	65.91
	<b>National</b>	<b>331.05</b>	<b>331.05</b>	<b>374.51</b>

**NOTES:**

- 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

Date:	February 10, 2020
Hours:	09:00 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	0.00		Unit- III & IV at standby. Unit- I & II under shutdown. 400kV THP_SILI-II under shutdown & 400kV THP_SILI-IV standby.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	15.22	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	111.69	+	
		Unit- V	59.85	400kV Malbase - Siliguri	-1.38	-	
		Unit- VI	70.58	-	-	-	
		<b>Total</b>	<b>130.43</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.52</b>		
2	720MW MHP	Unit-I	85.34	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I II & III standby. 400kV MHP-JLG I & II 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	0.00	400kV MHP - Jigmeling Fdr - IV	84.40	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>85.34</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.94</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-23.69	-	Unit-I & III under shutdown. 220kV CHP-BIR II standby
		Unit- II	23.63	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	3.65	+	
		Unit- IV	33.48	220kV CHP - Sementokha Fdr- IV	56.43	+	
		-	-	220kV Malbase - Birpara Fdr.	-40.52	-	
		-	-	66kV CHP - Chumdo Fdr.	13.64	+	
		-	-	66kV CHP - Gedu Fdr.	2.64	+	
		-	-	3x3MVA, 66/11kV TFR	1.63	+	
		<b>Total</b>	<b>57.11</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.81</b>		
4	24MW BHP (U/S)	Unit- I	5.19	220kV BHP - Sementokha Fdr.	-0.39	-	U/S Unit-II & L/S Unit-I under maintenace.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	13.94	+	
		<b>Total</b>	<b>5.19</b>	220kV BHP - Tsirang Fdr.	1.51	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.76	+	
		Unit- II	10.62	30MVA ICT, 220/66kV			
<b>Total</b>	<b>10.62</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.01</b>				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.93	+	Unit I under maintenance
		Unit-II	18.16	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>18.16</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.23</b>		
6	60MW KHP	Unit- I	0.00	132kV KHP - Nangkhon Fdr- I	0.67	+	Unit-III & IV Annual Maintenance. Unit-I standby
		Unit-II	15.00	132kV KHP - Kilikhar Fdr- II	13.90	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-13.83	-	
		-	-	132kV Motanga - Rangia Fdr.	-10.73	-	
		-	-	220kV Tsirang - Jigmeling	14.72	+	
		<b>Total</b>	<b>15.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.13</b>		

**Note: Load summary on February 10, 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	221.51	257.16	250.61	-50.37	6.55
2	Eastern Grid	100.34	55.22	54.15	59.84	1.07
	<b>Total</b>	<b>321.85</b>	<b>312.38</b>	<b>304.76</b>	<b>9.47</b>	<b>7.62</b>

**Note: Load Summary on February 10, 2019 at 09:00hrs**

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	270.85	270.85	285.13
2	Eastern Grid	60.69	60.69	66.55
	<b>National</b>	<b>331.54</b>	<b>331.54</b>	<b>351.68</b>

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- 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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