

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

Maximum Load/Demand till Date

Date:	February 18, 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- IV at standby. Unit- I, II & III under shutdown. 400kV THP_SILL-I & II Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	49.82	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	155.41	+	
		Unit- V	60.15	400kV Malbase - Siliguri	30.72	+	
		Unit- VI	149.30	-	-	-	
		<b>Total</b>	<b>209.45</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>4.22</b>		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II standby and Unit-IV under shutdown. 400kV MHP-JLG I, II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	50.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	47.35	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>50.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.65</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-16.27	-	Unit-I & III under shutdown.220kV CHP-Birpara Fdr-II shutdown
		Unit- II	52.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	16.42	+	
		Unit- IV	53.00	220kV CHP - Semtokha Fdr- IV	81.18	+	
		-	-	220kV Malbase - Birpara Fdr.	-39.17	-	
		-	-	66kV CHP - Chumdo Fdr.	15.79	+	
		-	-	66kV CHP - Gedu Fdr.	4.39	+	
		<b>Total</b>	<b>105.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.44</b>		
4	24MW BHP (U/S)	Unit- I	5.18	220kV BHP - Semtokha Fdr.	-19.85	-	U/S Unit-II under maintenace & L/S unit II standby
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	15.26	+	
		<b>Total</b>	<b>5.18</b>	220kV BHP - Tsirang Fdr.	19.72	+	
	40MW BHP (L/S)	Unit- I	10.79	5MVA, 66/11kV TFR	0.79	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
<b>Total</b>	<b>10.79</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.05</b>				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.93	+	Unit I under maintenance
		Unit-II	17.17	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>17.17</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.24</b>		
6	60MW KHP	Unit- I	12.62	132kV KHP - Nangkhon Fdr- I	8.42	+	Unit- III & IV under Annual Maintenance
		Unit-II	10.17	132kV KHP - Kilikhar Fdr- II	13.82	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.50	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-15.76	-	
		-	-	132kV Motanga - Rangia Fdr.	-12.34	+	
		-	-	220kV Tsirang - Jigmeling	32.91	+	
		<b>Total</b>	<b>22.79</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.05</b>		

**Note: Load summary on February 18, 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	347.59	289.58	283.63	25.10	5.95
2	Eastern Grid	72.79	86.45	83.75	19.25	2.70
	<b>Total</b>	<b>420.38</b>	<b>376.03</b>	<b>367.38</b>	<b>44.35</b>	<b>8.65</b>

**Note: Load Summary on February 18, 2019 at 19:00hrs**

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	245.04	245.04	308.60
2	Eastern Grid	45.67	52.19	65.91
	<b>National</b>	<b>290.71</b>	<b>297.23</b>	<b>374.51</b>

**NOTES: KHP & CHP loads 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

Date:	February 19, 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- IV at standby. Unit- I, II & III under shutdown. 400kV THP_SILL-I & II Standby
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	16.63	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	111.51	+	
		Unit- V	60.26	400kV Malbase - Siliguri	0.00	-	
		Unit- VI	70.99	-	-	-	
		<b>Total</b>	<b>131.25</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.11</b>		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I & II standby and Unit-IV under shutdown. 400kV MHP-JLG I, II & III Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	47.74	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	47.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>47.74</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.74</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-19.51	-	Unit-I & III under shutdown. 220kV CHP-BIR II under maintenance.
		Unit- II	30.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	12.06	+	
		Unit- IV	30.00	220kV CHP - Sementokha Fdr- IV	50.00	+	
		-	-	220kV Malbase - Birpara Fdr.	-40.03	-	
		-	-	66kV CHP - Chumdo Fdr.	11.32	+	
		-	-	66kV CHP - Gedu Fdr.	4.14	+	
		-	-	3x3MVA, 66/11kV TFR	1.38	+	
<b>Total</b>	<b>60.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.61</b>				
4	24MW BHP (U/S)	Unit- I	5.27	220kV BHP - Sementokha Fdr.	-1.11		U/S Unit-II and LS Unit II under shutdown.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	12.48	+	
		<b>Total</b>	<b>5.27</b>	220kV BHP - Tsirang Fdr.	3.76	+	
	40MW BHP (L/S)	Unit- I	10.93	5MVA, 66/11kV TFR	0.76	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
<b>Total</b>	<b>10.93</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.31</b>				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	16.95	+	Unit I under maintenance
		Unit-II	17.17	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>17.17</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.22</b>		
6	60MW KHP	Unit- I	12.65	132kV KHP - Nangkhon Fdr- I	0.35	+	Unit-III & IV Annual Maintenance.
		Unit-II	10.38	132kV KHP - Kilikhar Fdr- II	22.34	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.20	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-7.42	-	
		-	-	132kV Motanga - Rangia Fdr.	-17.24	-	
		-	-	220kV Tsirang - Jigmeling	26.25	+	
		<b>Total</b>	<b>23.03</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.14</b>		

Note: Load summary on February 19, 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	224.62	241.28	237.03	-42.91	4.25
2	Eastern Grid	70.77	74.68	73.80	22.34	0.88
	<b>Total</b>	295.39	315.96	310.83	-20.57	5.13

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

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	231.66	255.33	257.31
2	Eastern Grid	35.94	53.63	66.55
	<b>National</b>	<b>267.60</b>	<b>308.96</b>	<b>323.86</b>

NOTES: KHP & CHP generation 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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