

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

Maximum Load/Demand till Date

Date:	February 17, 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	43.94	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	150.04	+	
		Unit- V	58.77	400kV Malbase - Siliguri	25.13	+	
		Unit- VI	139.10	-	-	-	
		<b>Total</b>	<b>197.87</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.89</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	99.80	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	99.20	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>99.80</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.60</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-18.57	-	Unit-I & III under shutdown.220kV CHP-Birpara Fdr-II shutdown
		Unit- II	50.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	-3.41	-	
		Unit- IV	34.00	220kV CHP - Sementokha Fdr- IV	83.32	+	
		-	-	220kV Malbase - Birpara Fdr.	-27.99	-	
		-	-	66kV CHP - Chumdo Fdr.	16.26	+	
		-	-	66kV CHP - Gedu Fdr.	2.80	+	
		<b>Total</b>	<b>84.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.57</b>		
4	24MW BHP (U/S)	Unit- I	5.29	220kV BHP - Sementokha Fdr.	-21.54	-	U/S Unit-II under maintenace & L/S unit II standby
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	14.83	+	
		<b>Total</b>	<b>5.29</b>	220kV BHP - Tsirang Fdr.	22.54	+	
	40MW BHP (L/S)	Unit- I	11.75	5MVA, 66/11kV TFR	0.77	+	
		Unit- II	0.00	30MVA ICT, 220/66kV			
<b>Total</b>	<b>11.75</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.44</b>				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.41	+	Unit I under maintenance
		Unit-II	17.64	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>17.64</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.23</b>		
6	60MW KHP	Unit- I	12.68	132kV KHP - Nangkhon Fdr- I	9.13	+	Unit- III & IV under Annual Maintenance
		Unit-II	10.03	132kV KHP - Kilikhar Fdr- II	13.60	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.40	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-11.47	-	
		-	-	132kV Motanga - Rangia Fdr.	3.45	+	
		-	-	220kV Tsirang - Jigmeling	36.76	+	
		<b>Total</b>	<b>22.71</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.42</b>		

**Note: Load summary on February 17, 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	316.55	257.28	251.15	22.51	6.13
2	Eastern Grid	122.51	68.09	67.91	91.18	0.18
	<b>Total</b>	439.06	325.37	319.06	113.69	6.31

**Note: Load Summary on February 17, 2019 at 19:00hrs**

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	246.99	246.99	308.60
2	Eastern Grid	9.74	59.74	65.91
	<b>National</b>	<b>256.73</b>	<b>306.73</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 18, 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	17.40	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	108.94	+	
		Unit- V	60.01	400kV Malbase - Siliguri	1.47	-	
		Unit- VI	70.60	-	-	-	
		<b>Total</b>	<b>130.61</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>4.27</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	95.10	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	94.80	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>95.10</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.30</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-15.69	-	Unit-I & III under shutdown. 220kV CHP-BIR II standby
		Unit- II	30.00	220kV CHP - Birpara Fdr- II	0.00		
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	12.44	+	
		Unit- IV	33.90	220kV CHP - Sementokha Fdr- IV	48.75	+	
		-	-	220kV Malbase - Birpara Fdr.	-34.14	-	
		-	-	66kV CHP - Chumdo Fdr.	11.58	+	
		-	-	66kV CHP - Gedu Fdr.	3.41	+	
		-	-	3x3MVA, 66/11kV TFR	1.33	+	
		<b>Total</b>	<b>63.90</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.08</b>		
4	24MW BHP (U/S)	Unit- I	5.26	220kV BHP - Sementokha Fdr.	0.04		U/S Unit-II and LS Unit I under shutdown.220kV
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	12.75	+	
		<b>Total</b>	<b>5.26</b>	220kV BHP - Tsirang Fdr.	2.71	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.50	+	
		Unit- II	10.79	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.	16.43	+	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>0.22</b>		
6	60MW KHP	Unit- I	12.65	132kV KHP - Nangkhon Fdr- I	11.57	+	Unit-III & IV Annual Maintenance.
		Unit-II	10.38	132kV KHP - Kilikhar Fdr- II	10.98	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.20	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-8.48	-	
		-	-	132kV Motanga - Rangia Fdr.	-2.86	-	
		-	-	220kV Tsirang - Jigmeling	17.43	+	
		<b>Total</b>	<b>23.03</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.28</b>		

**Note: Load summary on February 18, 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	227.21	240.74	234.12	-30.96	6.62
2	Eastern Grid	118.13	52.10	51.52	83.46	0.58
	<b>Total</b>	<b>345.34</b>	<b>292.84</b>	<b>285.64</b>	<b>52.50</b>	<b>7.20</b>

**Note: Load Summary on February 18, 2019 at 09:00hrs**

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	229.54	245.04	257.31
2	Eastern Grid	43.85	52.19	66.55
	<b>National</b>	<b>273.39</b>	<b>297.23</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.
  - 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.