

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

Maximum Load/Demand till Date

Date:	February 7, 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	37.50	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	138.91	+	
		Unit- V	60.91	400kV Malbase - Siliguri	23.00	+	
		Unit- VI	120.15	-	-	-	
		<b>Total</b>	<b>181.06</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>4.65</b>		
2	720MW MHP	Unit-I	0.00	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	85.90	400kV MHP - Jigmeling Fdr - IV	82.90	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>85.90</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.00</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-16.43	-	Unit-I & III under shutdown.220kV CHP- Birpara Fdr-II Standby.
		Unit- II	50.10	220kV CHP - Birpara Fdr- II	0.00	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	10.43	+	
		Unit- IV	49.87	220kV CHP - Sementokha Fdr- IV	83.44	+	
		-	-	220kV Malbase - Birpara Fdr.	-35.00	-	
		-	-	66kV CHP - Chumdo Fdr.	18.18	+	
		-	-	66kV CHP - Gedu Fdr.	1.34	-	
		-	-	3x3MVA, 66/11kV TFR	2.16	+	
<b>Total</b>	<b>99.97</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.85</b>				
4	24MW BHP (U/S)	Unit- I	5.47	220kV BHP - Sementokha Fdr.	-15.82	-	U/S Unit-II & L/S Unit-I under maintenance.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	15.56	+	
		<b>Total</b>	<b>5.47</b>	220kV BHP - Tsirang Fdr.	16.08	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.99	+	
		Unit- II	11.49	30MVA ICT, 220/66kV			
<b>Total</b>	<b>11.49</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.15</b>				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.73	+	Unit I under maintenance
		Unit-II	17.96	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>17.96</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.23</b>		
6	60MW KHP	Unit- I	16.24	132kV KHP - Nangkhor Fdr- I	4.23	+	Unit- III & IV under Annual Maintenance Unit II standby
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	11.46	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-20.02	-	
		-	-	132kV Motanga - Rangia Fdr.	-23.78	-	
		-	-	220kV Tsirang - Jigmeling	30.32	+	
		<b>Total</b>	<b>16.24</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.25</b>		

**Note: Load summary on February 07, 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	315.95	276.56	270.68	9.07	5.88
2	Eastern Grid	102.14	93.36	90.11	39.10	3.25
	<b>Total</b>	418.09	369.92	360.79	48.17	9.13

**Note: Load Summary on February 07, 2019 at 19:00hrs**

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	245.60	266.47	308.60
2	Eastern Grid	60.71	60.71	65.91
	<b>National</b>	<b>306.31</b>	<b>327.18</b>	<b>374.51</b>

**NOTES: Malbase load 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 8, 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	6.14	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	111.32	+	
		Unit- V	59.75	400kV Malbase - Siliguri	-12.00	+	
		Unit- VI	60.50	-	-	-	
		<b>Total</b>	<b>120.25</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.79</b>		
2	720MW MHP	Unit-I	0.00	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	85.77	400kV MHP - Jigmeling Fdr - IV	83.60	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>85.77</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.17</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-29.17	-	Unit-I & III under shutdown. Unit IV & 220kV CHP-BIR II standby
		Unit- II	27.45	220kV CHP - Birpara Fdr- II	0.00	0	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	2.01	+	
		Unit- IV	33.16	220kV CHP - Sementokha Fdr- IV	67.30	+	
		-	-	220kV Malbase - Birpara Fdr.	-46.00	-	
		-	-	66kV CHP - Chumdo Fdr.	13.69	+	
		-	-	66kV CHP - Gedu Fdr.	3.18	+	
		<b>Total</b>	<b>60.61</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.03</b>		
4	24MW BHP (U/S)	Unit- I	5.36	220kV BHP - Sementokha Fdr.	-13.97	-	U/S Unit-II & L/S Unit-I under maintenance.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	13.10	+	
		<b>Total</b>	<b>5.36</b>	220kV BHP - Tsirang Fdr.	16.27	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.76	+	
		Unit- II	10.86	30MVA ICT, 220/66kV			
<b>Total</b>	<b>10.86</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.06</b>				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.72	+	Unit I under maintenance
		Unit-II	17.96	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>17.96</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.24</b>		
6	60MW KHP	Unit- I	16.22	132kV KHP - Nangkhor Fdr- I	4.33	+	Unit-III & IV Annual Maintenance. Unit-II standby
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	11.71	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-23.51	-	
		-	-	132kV Motanga - Rangia Fdr.	0.00	-	
		-	-	220kV Tsirang - Jigmeling	29.00	+	
		<b>Total</b>	<b>16.22</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.12</b>		

**Note: Load summary on February 08, 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	215.04	267.07	261.95	-81.03	5.12
2	Eastern Grid	101.99	70.90	68.85	60.09	2.05
	<b>Total</b>	317.03	337.97	330.80	-20.94	7.17

**Note: Load Summary on February 08, 2019 at 09:00hrs**

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	254.21	283.41	285.13
2	Eastern Grid	36.36	56.52	66.55
	<b>National</b>	<b>290.57</b>	<b>339.93</b>	<b>351.68</b>

**NOTES: Malbase load 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.