

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

Maximum Load/Demand till Date

Date:	January 13, 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	46.48	+	Unit- III & V at standby. Unit-I & II under shutdown. 400kV THP_SILI-IV under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	110.36	400kV THP - Malbase Fdr- III	130.24	+	
		Unit- V	0.00	400kV Malbase - Siliguri	24.67	+	
		Unit- VI	70.30	-	-	-	
		<b>Total</b>	<b>180.66</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.94</b>		
2	720MW MHP	Unit-I	110.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-III under maintenance. Unit-I & II standby. 400kV MHP-JLG I & II under shutdown. 400kV MHP-JLG IV standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	108.00	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>110.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.00</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		CHP under Total shutdown. 220kV CHP-BIR I standby
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	-45.24	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	-26.49	-	
		Unit- IV	0.00	220kV CHP - Semtokha Fdr- IV	50.75	+	
		-	-	220kV Malbase - Birpara Fdr.	-52.06	-	
		-	-	66kV CHP - Chumdo Fdr.	16.01	+	
		-	-	66kV CHP - Gedu Fdr.	2.56	+	
		-	-	3x3MVA, 66/11kV TFR	1.79	+	
		<b>Total</b>	<b>0.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.62</b>		
4	24MW BHP (U/S)	Unit- I	6.73	220kV BHP - Semtokha Fdr.	-5.01	-	U/S Unit-II & L/S Unit I under maintenance.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	16.57	+	
		<b>Total</b>	<b>6.73</b>	220kV BHP - Tsirang Fdr.	8.02	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.85	+	
		Unit- II	13.81	30MVA ICT, 220/66kV			
<b>Total</b>	<b>13.81</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.11</b>				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	19.88	+	Unit I at Standby.
		Unit-II	20.17	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>20.17</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.29</b>		
6	60MW KHP	Unit- I	12.30	132kV KHP - Nangkhor Fdr- I	18.01	+	Unit-II & III Annual Maintenance.
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	4.35	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.50	+	
		Unit- IV	11.12	132kV Gelephu - Salakati Fdr.	-27.60	-	
		-	-	132kV Motanga - Rangia Fdr.	-10.90	-	
		-	-	220kV Tsirang - Jigmeling	24.00	+	
		<b>Total</b>	<b>23.42</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.56</b>		

**Note: Load summary on January 13, 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	221.37	223.52	218.56	-26.15	4.96
2	Eastern Grid	133.42	87.92	85.36	69.50	2.56
	<b>Total</b>	<b>354.79</b>	<b>311.44</b>	<b>303.92</b>	<b>43.35</b>	<b>7.52</b>

**Note: Load Summary on January 13, 2019 at 19:00hrs**

Sl. No	Region	19:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	262.94	262.94	308.60
2	Eastern Grid	57.89	58.98	65.91
	<b>National</b>	<b>320.83</b>	<b>321.92</b>	<b>374.51</b>

**NOTES: Eastern Data 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:	January 14, 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	59.47	+	Unit- III & V at standby. Unit-I & II under shutdown. 400kV THP_SILI-IV under shutdown.
		Unit- II	0.00	400kV THP - Siliguri Fdr- II	0.00		
		Unit- III	0.00	400kV THP - Siliguri Fdr- IV	0.00		
		Unit- IV	110.65	400kV THP - Malbase Fdr- III	118.42	+	
		Unit- V	0.00	400kV Malbase - Siliguri	42.58	-	
		Unit- VI	70.28	-	-	-	
		<b>Total</b>	<b>180.93</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.04</b>		
2	720MW MHP	Unit-I	109.20	400kV MHP - Jigmeling Fdr - I	0.00		Unit-III under maintenance. Unit-I & II standby. 400kV MHP-JLG I & II under shutdown. 400kV MHP-JLG IV standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	0.00		
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	108.72	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00		
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>109.20</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.48</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	0.00		Unit-I & II under shutdownn. 220kV CHP-BIR I Standby
		Unit- II	0.00	220kV CHP - Birpara Fdr- II	-2.02	-	
		Unit- III	38.44	220kV CHP - Malbase Fdr- III	25.57	+	
		Unit- IV	38.95	220kV CHP - Semtokha Fdr- IV	36.38	+	
		-	-	220kV Malbase - Birpara Fdr.	-23.52	-	
		-	-	66kV CHP - Chumdo Fdr.	12.49	+	
		-	-	66kV CHP - Gedu Fdr.	2.99	+	
		-	-	3x3MVA, 66/11kV TFR	1.69	+	
<b>Total</b>	<b>77.39</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.29</b>				
4	24MW BHP (U/S)	Unit- I	6.54	220kV BHP - Semtokha Fdr.	17.77	+	U/S Unit-II & L/S Unit I under maintenance.
		Unit- II	0.00	66kV BHP - Lobeyasa Fdr.	14.69	+	
		<b>Total</b>	<b>6.54</b>	220kV BHP - Tsirang Fdr.	-13.45	-	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.82	+	
		Unit- II	13.21	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>13.21</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.08</b>		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	20.40	+	Unit-I at Standby
		Unit-II	20.66	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>20.66</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.26</b>		
6	60MW KHP	Unit- I	13.34	132kV KHP - Nangkhor Fdr- I	19.45	+	Unit-II & III Annual Maintenance.
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	3.02	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	10.20	132kV Gelephu - Salakati Fdr.	-14.60	-	
		-	-	132kV Motanga - Rangia Fdr.	-0.71	-	
		-	-	220kV Tsirang - Jigmeling	4.54	+	
		<b>Total</b>	<b>23.54</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.77</b>		

**Note: Load summary on January 14, 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	298.73	217.68	214.17	76.51	3.51
2	Eastern Grid	132.74	43.87	42.62	93.41	1.25
	<b>Total</b>	<b>431.47</b>	<b>261.55</b>	<b>256.79</b>	<b>169.92</b>	<b>4.76</b>

**Note: Load Summary on January 14, 2019 at 09:00hrs**

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	239.26	263.79	308.60
2	Eastern Grid	47.66	61.47	65.91
	<b>National</b>	<b>286.92</b>	<b>325.26</b>	<b>374.51</b>

**NOTES:Eastern Data 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.