

**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 & V on standby. Unit-I and 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	39.25	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	137.74	+	
		Unit- V	0.00	400kV Malbase - Siliguri	20.00	+	
		Unit- VI	180.37	-	-	-	
		<b>Total</b>	<b>180.37</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.38</b>		
2	720MW MHP	Unit-I	0.00	400kV MHP - Jigmeling Fdr - I	0.00		Unit-I,II & IV standby. 400kV MHP-JLG I, III & IV Standby.
		Unit-II	0.00	400kV MHP - Jigmeling Fdr - II	88.00		
		Unit-III	90.30	400kV MHP - Jigmeling Fdr - III	0.00	+	
		Unit-IV	0.00	400kV MHP - Jigmeling Fdr - IV	0.00	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>90.30</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>2.30</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-10.98	-	Unit-I & III under shutdown.
		Unit- II	49.14	220kV CHP - Birpara Fdr- II	-10.82	-	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	11.00	+	
		Unit- IV	46.39	220kV CHP - Sementokha Fdr- IV	89.78	+	
		-	-	220kV Malbase - Birpara Fdr.	-29.00	-	
		-	-	66kV CHP - Chumdo Fdr.	15.13	+	
		-	-	66kV CHP - Gedu Fdr.	-0.68	-	
		<b>Total</b>	<b>95.53</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.12</b>		
4	24MW BHP (U/S)	Unit- I	5.51	220kV BHP - Sementokha Fdr.	-15.29	-	U/S Unit-II & L/S Unit-I under maintenance.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	16.77	+	
		<b>Total</b>	<b>5.51</b>	220kV BHP - Tsirang Fdr.	14.18	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.91	+	
		Unit- II	11.33	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>11.33</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.27</b>		
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.91	+	Unit I under maintenance
		Unit-II	18.14	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>18.14</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.23</b>		
6	60MW KHP	Unit- I	12.32	132kV KHP - Nangkhon Fdr- I	8.43	+	Unit- III & IV under Annual Maintenance
		Unit-II	10.07	132kV KHP - Kilikhar Fdr- II	13.23	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-19.78	-	
		-	-	132kV Motanga - Rangia Fdr.	-14.86	-	
		-	-	220kV Tsirang - Jigmeling	27.92	+	
		<b>Total</b>	<b>22.39</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.43</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	310.88	274.51	270.75	8.45	3.76
2	Eastern Grid	112.69	87.25	84.52	53.36	2.73
	<b>Total</b>	<b>423.57</b>	<b>361.76</b>	<b>355.27</b>	<b>61.81</b>	<b>6.49</b>

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	261.62	265.80	308.60
2	Eastern Grid	61.66	61.66	65.91
	<b>National</b>	<b>323.28</b>	<b>327.46</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 7, 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	11.05	+	
		Unit- IV	0.00	400kV THP - Malbase Fdr- III	106.98	+	
		Unit- V	60.89	400kV Malbase - Siliguri	-5.00	-	
		Unit- VI	60.21	-	-	-	
		<b>Total</b>	<b>121.10</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.07</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	41.00	+	
		Unit-IV	81.86	400kV MHP - Jigmeling Fdr - IV	40.50	+	
		-	-	200MVA, 400/132kV ICT			
		-	-	(Local Load)			
		<b>Total</b>	<b>81.86</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.36</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	-22.52	-	Unit-I & III under shutdown. Unit IV & 220kV CHP-BIR II standby
		Unit- II	30.25	220kV CHP - Birpara Fdr- II	0.00	0	
		Unit- III	0.00	220kV CHP - Malbase Fdr- III	7.21	+	
		Unit- IV	30.37	220kV CHP - Sementokha Fdr- IV	62.22	+	
		-	-	220kV Malbase - Birpara Fdr.	-42.00	-	
		-	-	66kV CHP - Chumdo Fdr.	12.13	+	
		-	-	66kV CHP - Gedu Fdr.	-1.30	-	
		-	-	3x3MVA, 66/11kV TFR	1.54	+	
<b>Total</b>	<b>60.62</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.34</b>				
4	24MW BHP (U/S)	Unit- I	5.41	220kV BHP - Sementokha Fdr.	-3.33	-	U/S Unit-II & L/S Unit-I under maintenance.
		Unit- II	0.00	66kV BHP - Lobeysa Fdr.	14.37	+	
		<b>Total</b>	<b>5.41</b>	220kV BHP - Tsirang Fdr.	3.97	+	
	40MW BHP (L/S)	Unit- I	0.00	5MVA, 66/11kV TFR	0.80	+	
		Unit- II	10.90	30MVA ICT, 220/66kV			
<b>Total</b>	<b>10.90</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.50</b>				
5	126MW DHPC	Unit-I	0.00	220kV DHPC - Tsirang Fdr.	17.71	+	Unit I under maintenance
		Unit-II	17.94	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>17.94</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.23</b>		
6	60MW KHP	Unit- I	16.22	132kV KHP - Nangkhon Fdr- I	0.54	+	Unit-III & IV Annual Maintenance. Unit-II standby
		Unit-II	0.00	132kV KHP - Kilikhar Fdr- II	15.19	+	
		Unit- III	0.00	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	-15.26	-	
		-	-	132kV Motanga - Rangia Fdr.	-20.74	-	
		-	-	220kV Tsirang - Jigmeling	19.65	+	
		<b>Total</b>	<b>16.22</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.19</b>		

**Note: Load summary on February 07, 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	215.97	254.79	249.65	-58.47	5.14
2	Eastern Grid	98.08	72.23	71.68	45.50	0.55
	<b>Total</b>	314.05	327.02	321.33	-12.97	5.69

**Note: Load Summary on February 07, 2019 at 09:00hrs**

Sl. No	Region	09:00Hrs Load (MW)	Day Peak Load (MW)	Month Peak Load (MW)
1	Western Grid	241.24	266.47	285.13
2	Eastern Grid	53.98	60.71	66.55
	<b>National</b>	<b>295.22</b>	<b>327.18</b>	<b>351.68</b>

**NOTES: Malbase load collected from site**

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  - 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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