

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

**Maximum Load/Demand till Date**

<b>Date:</b>	<b>June 11, 2020</b>
<b>Hours:</b>	<b>19:00 Hours</b>

<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
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	140.00	400kV THP - Siliguri Fdr- I	214.00	+	THP_MAL III under maintenance.
		Unit- II	110.00	400kV THP - Siliguri Fdr- II	212.00	+	
		Unit- III	100.00	400kV THP - Siliguri Fdr- IV	207.00	+	
		Unit- IV	100.00	400kV THP - Malbase Fdr- III	0.00	+	
		Unit- V	70.00	400kV Malbase - Siliguri	-29.82	-	
		Unit- VI	120.00	-	-	-	
		<b>Total</b>	<b>640.00</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>7.00</b>		
2	720MW MHP	Unit-I	197.75	400kV MHP - Jigmeling Fdr - I	198.48	+	Unit-III & 400kV MHP-JLG III Standby
		Unit-II	197.84	400kV MHP - Jigmeling Fdr - II	198.24	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	197.76	400kV MHP - Jigmeling Fdr - IV	192.99	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		<b>Total</b>	<b>593.35</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.64</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	60.44	+	Unit-I under shutdown till 30th June, 2020.
		Unit- II	91.32	220kV CHP - Birpara Fdr- II	60.34	+	
		Unit- III	91.01	220kV CHP - Malbase Fdr- III	121.41	+	
		Unit- IV	91.51	220kV CHP - Semtokha Fdr- IV	17.61	+	
		-	-	220kV Malbase - Birpara Fdr.	4.88	+	
		-	-	66kV CHP - Chumdo Fdr.	6.15	+	
		-	-	66kV CHP - Gedu Fdr.	5.43	+	
		<b>Total</b>	<b>273.84</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.34</b>		
4	24MW BHP (U/S)	Unit- I	4.70	220kV BHP - Semtokha Fdr.	10.89	+	
		Unit- II	4.70	66kV BHP - Lobeysa Fdr.	11.03	+	
		<b>Total</b>	<b>9.40</b>	220kV BHP - Tsirang Fdr.	6.36	+	
	40MW BHP (L/S)	Unit- I	9.91	5MVA, 66/11kV TFR	0.58	+	
		Unit- II	9.51	30MVA ICT, 220/66kV	0.00		
		<b>Total</b>	<b>19.42</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.04</b>		
5	126MW DHPC	Unit-I	43.22	220kV DHPC - Tsirang Fdr.	42.95	+	Unit II standby. 220kV DHP-Dagapela line under breakdown.
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.	0.00		
		-	-	5MVA, 220/33kV TFR	0.00		
		<b>Total</b>	<b>43.22</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.27</b>		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhon Fdr- I	26.68	+	Unit-IV under breakdown.
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	21.37	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.34	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	10.84	+	
		-	-	132kV Motanga - Rangia Fdr.	45.79	+	
		-	-	220kV Tsirang - Jigmeling	42.94	+	
		<b>Total</b>	<b>49.50</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.11</b>		

**Note: Generation-Load Summary for June 11, 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	985.88	214.10	205.53	728.84	8.57
2	Eastern Grid	642.85	39.45	34.70	646.34	4.75
	<b>Total</b>	<b>1,628.73</b>	<b>253.55</b>	<b>240.23</b>	<b>1,375.18</b>	<b>13.32</b>

**Note: Generation-Load Summary for June 11, 2019 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	765.13	258.64	246.29	465.77	12.35
2	Eastern Grid	65.94	61.48	61.42	45.18	0.06
	<b>Total</b>	<b>831.07</b>	<b>320.12</b>	<b>307.71</b>	<b>510.95</b>	<b>12.41</b>

**NOTE: KHP & Motanga 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**

<b>Date:</b>	<b>June 12, 2020</b>
<b>Hours:</b>	<b>09:00 Hours</b>

<b>Date</b>	<b>Time</b>	<b>Load(MW)</b>
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	142.18	400kV THP - Siliguri Fdr- I	241.84	+	THP Unit-3 under shutdown.
		Unit- II	89.10	400kV THP - Siliguri Fdr- II	236.83	+	
		Unit- III	0.33	400kV THP - Siliguri Fdr- IV	233.91	+	
		Unit- IV	183.80	400kV THP - Malbase Fdr- III	0.00	+	
		Unit- V	140.21	400kV Malbase - Siliguri	-8.99	+	
		Unit- VI	170.26	-	-	-	
		<b>Total</b>	<b>725.88</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>13.30</b>		
2	720MW MHP	Unit-I	197.90	400kV MHP - Jigmeling Fdr - I	198.58	+	Unit-III & 400kV MHP-JLG III Standby
		Unit-II	197.86	400kV MHP - Jigmeling Fdr - II	198.33	+	
		Unit-III	0.00	400kV MHP - Jigmeling Fdr - III	0.00		
		Unit-IV	197.82	400kV MHP - Jigmeling Fdr - IV	193.27	+	
		-	-	200MVA, 400/132kV ICT	0.00		
		-	-	(Local Load)			
		<b>Total</b>	<b>593.58</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>3.40</b>		
3	336MW CHP	Unit- I	0.00	220kV CHP - Birpara Fdr- I	68.99	+	Unit-I under shutdown till 30th June, 2020.
		Unit- II	91.87	220kV CHP - Birpara Fdr- II	68.90	+	
		Unit- III	91.37	220kV CHP - Malbase Fdr- III	137.96	+	
		Unit- IV	91.47	220kV CHP - Semtokha Fdr- IV	-14.99	+	
		-	-	220kV Malbase - Birpara Fdr.	7.50	+	
		-	-	66kV CHP - Chumdo Fdr.	2.60	+	
		-	-	66kV CHP - Gedu Fdr.	9.44	+	
		<b>Total</b>	<b>274.71</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.02</b>		
4	24MW BHP (U/S)	Unit- I	5.49	220kV BHP - Semtokha Fdr.	36.68	+	
		Unit- II	5.49	66kV BHP - Lobeysa Fdr.	10.59	+	
		<b>Total</b>	<b>10.98</b>	220kV BHP - Tsirang Fdr.	-13.10	+	
	40MW BHP (L/S)	Unit- I	11.83	5MVA, 66/11kV TFR	0.42	+	
		Unit- II	11.36	30MVA ICT, 220/66kV			
		<b>Total</b>	<b>23.19</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>-0.42</b>		
5	126MW DHPC	Unit-I	57.26	220kV DHPC - Tsirang Fdr.	56.98	+	Unit II Stand by. 220kV DHP-Dagapela Line under breakdown
		Unit-II	0.00	220kV Jigmeling - Dagapela Fdr.			
		-	-	5MVA, 220/33kV TFR			
		<b>Total</b>	<b>57.26</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>0.28</b>		
6	60MW KHP	Unit- I	16.50	132kV KHP - Nangkhor Fdr- I	29.36	+	Unit-IV under breakdown.
		Unit-II	16.50	132kV KHP - Kilihar Fdr- II	18.31	+	
		Unit- III	16.50	5MVA, 132/11kV TFR	0.30	+	
		Unit- IV	0.00	132kV Gelephu - Salakati Fdr.	20.82	+	
		-	-	132kV Motanga - Rangia Fdr.	45.00	+	
		-	-	220kV Tsirang - Jigmeling	41.53	+	
		<b>Total</b>	<b>49.50</b>	<b>Error at Station/Auxiliary Consumption/Losses</b>	<b>1.53</b>		

**Note: Generation-Load summary for June 12, 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	1,092.02	201.51	187.33	848.98	14.18
2	Eastern Grid	643.08	28.61	23.68	656.00	4.93
	<b>Total</b>	<b>1,735.10</b>	<b>230.12</b>	<b>211.01</b>	<b>1,504.98</b>	<b>19.11</b>

**Note: Generation-Load Summary for June 12, 2019 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	553.17	245.99	240.25	276.98	5.74
2	Eastern Grid	57.61	50.18	49.55	37.63	0.63
	<b>Total</b>	<b>610.78</b>	<b>296.17</b>	<b>289.80</b>	<b>314.61</b>	<b>6.37</b>

**NOTES: KHP & Motanga\_Rangia 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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