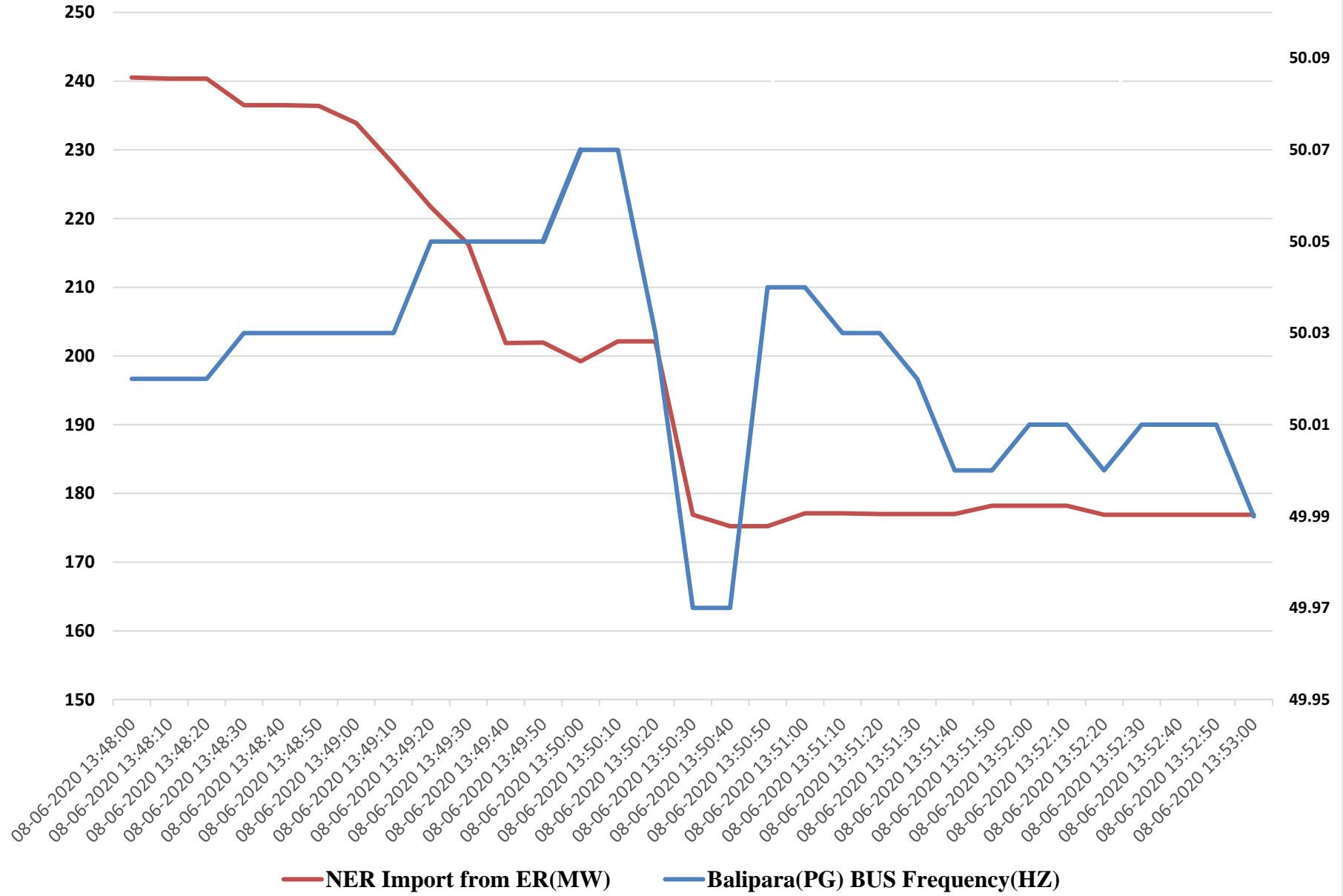


# NER Import v/s Frequency



**Frequency Response Characteristic in North-Eastern Region (Based on NERLDC SCADA data)**

Event	On 06th August 2020,As reported at 13:50 Hrs 400 KV Akal-Jodhpur (RS) Ckt-1 tripped due to DT received at Jodhpur end. At the same time, 400/220 kV 315 MVA ICT 1 & 315 MVA ICT 2 at Barmer(RS) also tripped.Wind generation loss of around 1348 MW occurred ( as observed from NLDC SCADA data)										
Date and Time of Event	06.08.2020, 13:50:00 Hrs										
			NER ISGS GENERATION								
SI No.	Particulars	Dimension	Palatana	Khandong + stg II	Kopili	Doyang	RHEP	Loktak	BgTPP	Kameng	Pare
1	Installed Capacity	MW	2 x 363.3	2 x 25 +1 x 25	4 x 50	3 x 25	3 x 135	3 x 35	3 x 250	2 x 150	2 x 55
2	No of Units on Bar	MW	1	0	0	3	2	3	2	2	2
3	Installed Capacity (MCR) of Units on Bar	MW	363.3	0.0	0.0	75.0	270.0	105.0	450.0	300.0	110.0
4	Declared capacity (DC)	MW	300.0	0	0	47.0	230.0	102	455	300	114
5	105 % of MCR	MW	381.5	0.0	0.0	78.8	283.5	110.3	472.5	315.0	115.5
6	Whether on ramping (Yes/No)		No	NA	NA	No	No	No	No	No	No
7	Margin Available	MW	91.3	0.0	0.0	32.1	49.1	7.2	216.9	22.0	1.3
8	Actual Net Interchange before the Event (13:50:10)	MW	290.2	0.00	0.0	46.6	234.4	103.1	255.6	293.0	114.2
9	Actual Net Interchange after the Event (13:51:10)	MW	289.9	0.00	0.0	46.9	234.5	103.0	259.8	291.3	114.4
10	Change in Net Interchange (9 - 8)	MW	-0.3	0.0	0.0	0.3	0.1	-0.1	4.2	-1.7	0.1
11	Generation Loss (+) / Load Throw off (-) during the Event	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	Control Area Response 11-10)	MW	0.3	0.0	0.0	-0.3	-0.1	0.1	-4.2	1.7	-0.1
13	Frequency before the Event	Hz	50.07	50.07	50.07	50.07	50.07	50.07	50.07	50.07	50.07
14	Frequency after the Event	Hz	50.03	50.03	50.03	50.03	50.03	50.03	50.03	50.03	50.03
15	Change in Frequency (14-13)	Hz	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
16	<b>Frequency Response Characteristic (12 / 15)</b>	<b>MW/Hz</b>	<b>-7.5</b>	<b>0.0</b>	<b>0.0</b>	<b>6.5</b>	<b>2.8</b>	<b>-2.5</b>	<b>106.0</b>	<b>-42.3</b>	<b>3.3</b>
17	Net System Demand met before the Event	MW	0	0.0	0	0	0	0	0	0	0
18	Internal Generation before the Event (8)	MW	290	0.00	0	47	234	103	255.6	293.0	114
19	Ideal load response assuming 4% per Hz (0.04*Row 17)	MW/Hz	0	0.0	0	0	0	0	0	0	0
20	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 18)	MW/Hz	116.1	0.0	0.0	18.7	93.8	41.2	102.2	117.2	45.7
21	Composite ideal response (19 + 20)	MW/Hz	116.1	0.0	0.0	18.7	93.8	41.2	102.2	117.2	45.7
22	Percentage ideal response (16/21)	%	-6.46%			34.85%	2.93%	-6.06%	103.69%	-36.05%	7.11%

NER ISGS AGBPP and AGTCCPP are not mandated for FGMO/RGMO as unit wise IC is less than 50 MW.

### Frequency Response Characteristic in North-Eastern Region (Based on NERLDC SCADA data)

<b>Event</b>	On 06th August 2020,As reported at 13:50 Hrs 400 KV Akal-Jodhpur (RS) Ckt-1 tripped due to DT received at Jodhpur end. At the same time, 400/220 kV 315 MVA ICT 1 & 315 MVA ICT 2 at Barmer(RS) also tripped.Wind generation loss of around 1348 MW occurred ( as observed from NLDC SCADA data)	
<b>Date and Time of Event</b>	06.08.2020, 13:50:00 Hrs	

Serial No.	Particulars	Dimension	AP	Assam	Meghalaya	Manipur	Mizoram	Nagaland	Tripura*	NER*
1	Actual Net Interchange before the Event (13:50:10)	MW	91.97	1368.13	-53.30	90.57	32.05	112.12	217.85	202.14
2	Actual Net Interchange after the Event (13:51:10)	MW	91.95	1364.06	-58.48	90.06	32.38	111.90	216.08	177.11
3	Change in Net Interchange (2 - 1)	MW	0.0	-4.1	-5.2	-0.5	0.3	-0.2	-1.8	-25.0
4	Generation Loss (+) / Load Throw off (-) during the Event	MW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	Control Area Response (3-4)	MW	0.0	-4.1	-5.2	-0.5	0.3	-0.2	-1.8	-25.0
6	Frequency before the Event	HZ	50.07	50.07	50.07	50.07	50.07	50.07	50.07	50.07
7	Frequency after the Event	HZ	50.03	50.03	50.03	50.03	50.03	50.03	50.03	50.03
8	Change in Frequency (7-6)	HZ	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04	-0.04
9	Frequency Response Characteristic (5 / 8)	MW/HZ	0	102	130	13	-8.3	5.5	44	626
10	Net System Demand met before the Event	MW	91.97	1508.13	157.92	90.57	50.05	120.12	324.08	2216.60
11	Internal Generation before the Event (10 - 1)	MW	0.0	140.0	211.2	0.0	18.0	8.0	106.2	2014.5
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	3.7	60.3	6.3	3.6	2.0	4.8	13.0	88.7
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	0	56.0	84.5	0.0	7	3	42.5	805.8
14	Composite ideal response (12 + 13)	MW/Hz	4	116	91	4	9	8	55	894
15	Percentage ideal response (9/14)	%	13.59%	87.5%	142.6%	351.9%	-89.7%	68.7%	79.8%	69.96%

Note: +ve exchange=> import ; (-)ve exchange => export

\* Tripura Demand Met also includes Bangladesh.

\*NER Demand Met excludes Bangladesh