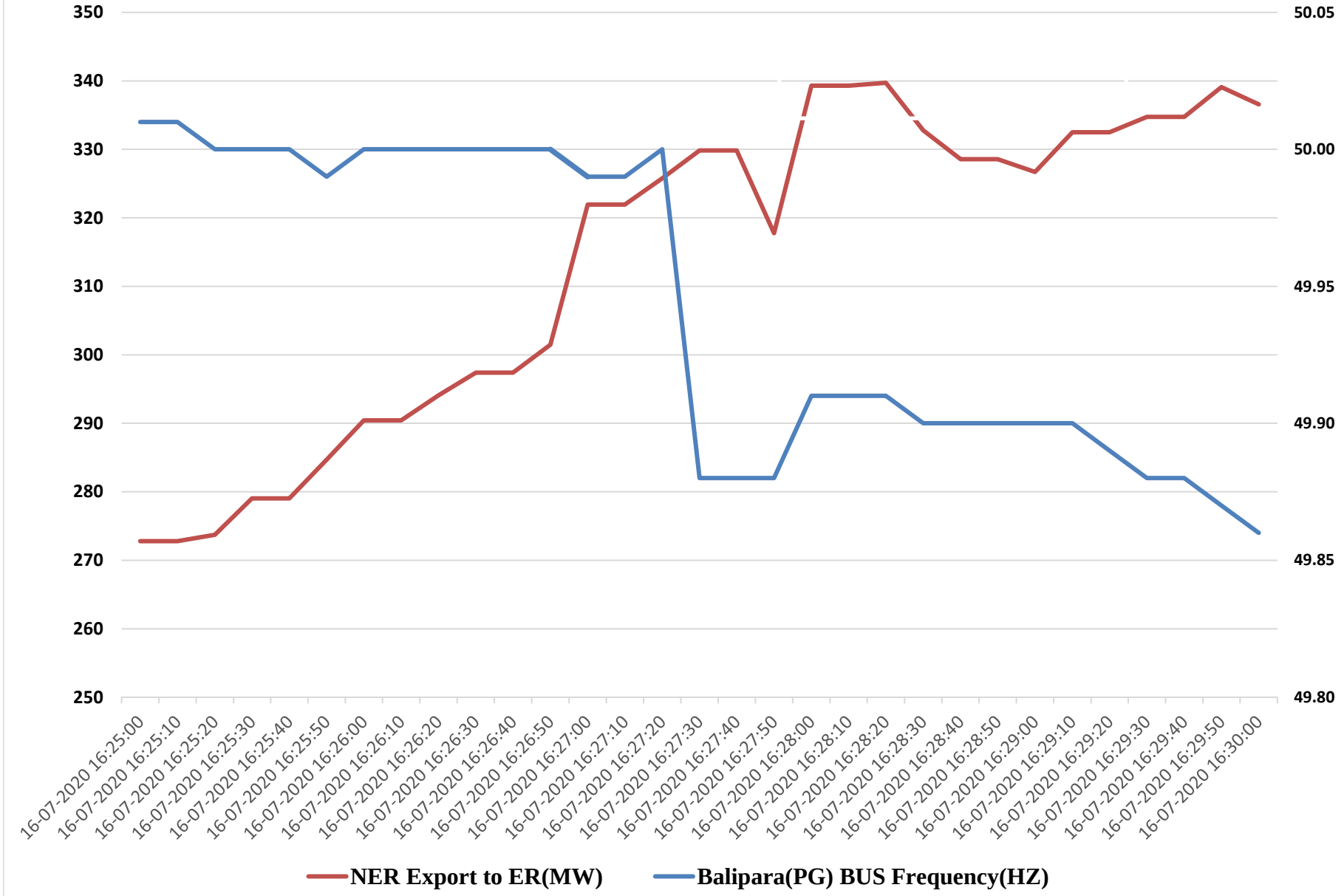
NER Export v/s Frequency



Frequency Response Characteristic in North-Eastern Region											
Event	**On 16th July 2020, 400 KV Teesta III-Kishanganj was under emergency outage availed at 15:49 Hrs, to replace gas density monitor. At 16:27 Hrs 400 KV Rangpo-Kishanganj tripped on directional earth fault in B phase at Rangpo end and DT receipt at Kishanganj. At the same time, 400kV Rangpo-Dikchu and 400 kV Dikchu-Teesta III also tripped. As per NLDC SCADA data generation loss during the event comes out to be 1394 MW (1285 MW and 109 MW at Teesta III and Dikchu respectively).**										
Date and Time of Event	**16.07.2020, 16:27:00 Hrs**										
			NER ISGS GENERATION									
Sl 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**	2	0	0	3	3	3	2	2	2
3	Installed Capacity (MCR) of Units on Bar	**MW**	726.6	0.0	0.0	75.0	405.0	105.0	500.0	300.0	110.0
4	Declared capacity (DC)	**MW**	648.0	0	0	48.0	401.0	105	477	300	118
5	105 % of MCR	**MW**	762.9	0.0	0.0	78.8	425.3	110.3	525.0	315.0	115.5
6	Whether on ramping (Yes/No)		No	NA	NA	No	No	No	No	No	No
7	Margin Available	**MW**	115.2	0.0	0.0	30.6	26.1	4.1	277.2	11.5	-2.9
8	Actual Net Interchange before the Event (16:27:10)	**MW**	647.7	0.00	0.0	48.1	399.2	106.2	247.8	303.5	118.4
9	Actual Net Interchange after the Event (16:28:20)	**MW**	653.4	0.00	0.0	48.2	398.6	106.3	250.6	303.2	118.6
10	Change in Net Interchange (9 - 8)	**MW**	5.7	0.0	0.0	0.0	-0.6	0.1	2.8	-0.3	0.2
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**	-5.7	0.0	0.0	0.0	0.6	-0.1	-2.8	0.3	-0.2
13	Frequency before the Event	**Hz**	49.99	49.99	49.99	49.99	49.99	49.99	49.99	49.99	49.99
14	Frequency after the Event	**Hz**	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91
15	Change in Frequency (14-13)	**Hz**	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08
16	**Frequency Response Characteristic (12 / 15)**	**MW/Hz**	**71.2**	**0.0**	**0.0**	**0.5**	**-7.3**	**1.1**	**34.5**	**-3.1**	**2.1**
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**	648	0.00	0	48	399	106	247.8	303.5	118
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**	259.1	0.0	0.0	19.2	159.7	42.5	99.1	121.4	47.4
21	Composite ideal response (19 + 20)	**MW/Hz**	259.1	0.0	0.0	19.2	159.7	42.5	99.1	121.4	47.4
22	Percentage ideal response (16/21)	**%**	27.50%			2.60%	-4.54%	2.65%	34.81%	-2.57%	4.49%

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

Event	**On 16th July 2020, 400 KV Teesta III-Kishanganj was under emergency outage availed at 15:49 Hrs, to replace gas density monitor. At 16:27 Hrs 400 KV Rangpo-Kishanganj tripped on directional earth fault in B phase at Rangpo end and DT receipt at Kishanganj. At the same time, 400kV Rangpo-Dikchu and 400 kV Dikchu-Teesta III also tripped. As per NLDC SCADA data generation loss during the event comes out to be 1394 MW (1285 MW and 109 MW at Teesta III and Dikchu respectively).**
Date and Time of Event	**16.07.2020, 16:27:00 Hrs**

Serial No.	Particulars	Dimension	AP	Assam	Meghalaya	Manipur	Mizoram	Nagaland	Tripura*	NER*
1	Actual Net Interchange before the Event (16:27:10)	MW	67.40	1191.99	-60.25	114.04	63.79	128.20	246.59	-321.95
2	Actual Net Interchange after the Event (16:28:20)	MW	68.34	1168.99	-63.94	111.31	64.39	127.90	245.07	-339.72
3	Change in Net Interchange (2 - 1)	MW	0.9	-23.0	-3.7	-2.7	0.6	-0.3	-1.5	-17.8
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	0.9	-23.0	-3.7	-2.7	0.6	-0.3	-1.5	-17.8
6	Frequency before the Event	HZ	49.99	49.99	49.99	49.99	49.99	49.99	49.99	49.99
7	Frequency after the Event	HZ	49.91	49.91	49.91	49.91	49.91	49.91	49.91	49.91
8	Change in Frequency (7-6)	HZ	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08	-0.08
9	Frequency Response Characteristic (5 / 8)	MW/HZ	-12	287	46	34	-7.5	3.7	19	222
10	Net System Demand met before the Event	MW	67.40	1331.99	193.39	114.04	79.79	136.20	347.67	2117.25
11	Internal Generation before the Event (10 - 1)	MW	0.0	140.0	253.6	0.0	16.0	8.0	101.1	2439.2
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	2.7	53.3	7.7	4.6	3.2	5.4	13.9	84.7
13	Ideal generator response assuming 5% droop…….40% per Hz (40% of Row 11)	MW/Hz	0	56.0	101.5	0.0	6	3	40.4	975.7
14	Composite ideal response (12 + 13)	MW/Hz	3	109	109	5	10	9	54	1060
15	Percentage ideal response (9/14)	%	-435.83%	263.1%	42.2%	748.1%	-78.2%	43.4%	35.0%	20.95%

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

* Tripura Demand Met also includes Bangladesh.

*NER Demand Met excludes Bangladesh