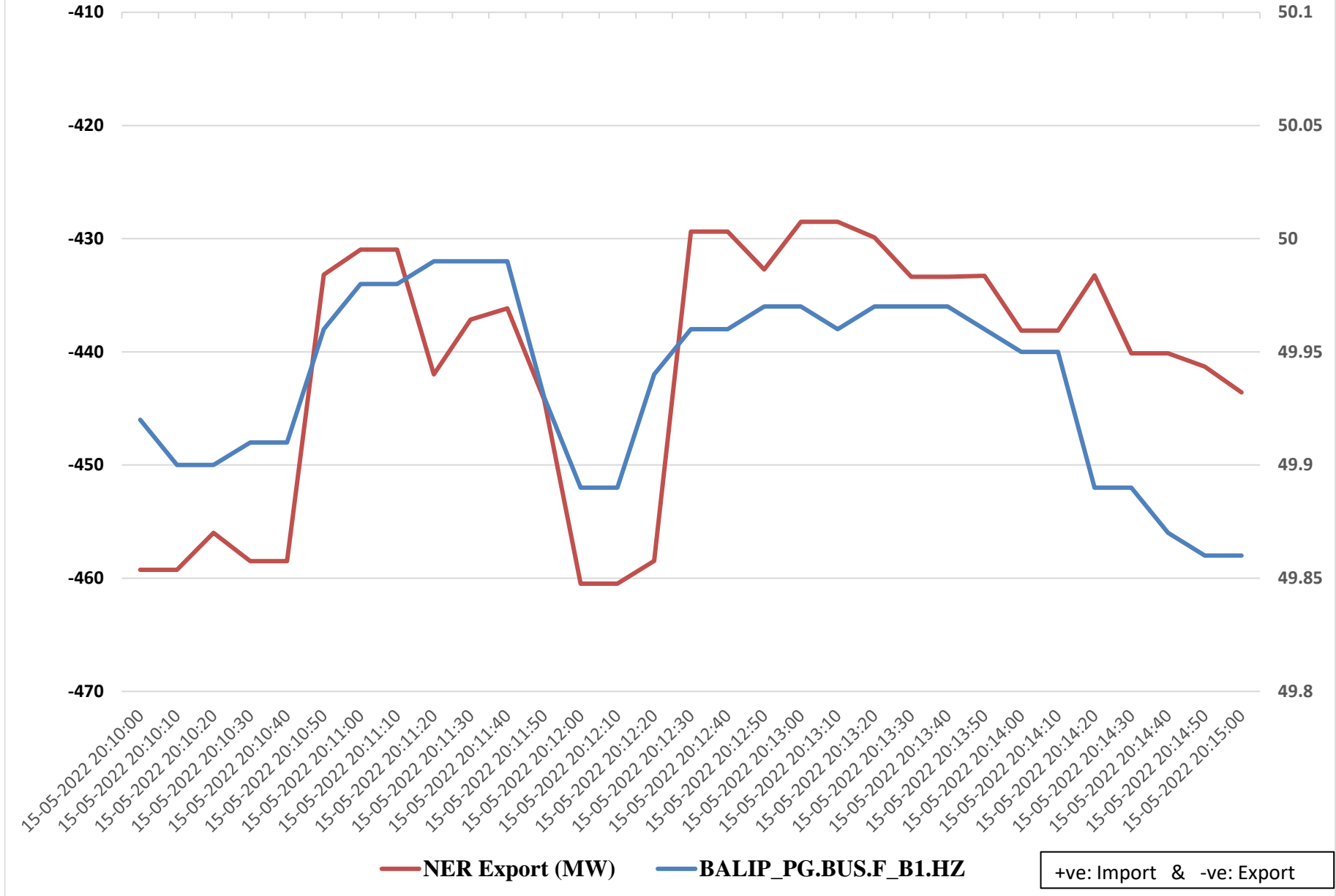


NER Export v/s Frequency



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

Event	At 20:11 Hrs on Dated 15th-May-2022, As reported at 20:11 hrs Generation loss of around 1250 MW occurred due to tripping of Units in Nathpa Jhakri, Rampur and Karcham Wangtoo Hydro generation complex of Northern Region on SPS operation and same has been considered for FRC Calculation.										
Date and Time of Event	15.05.2022, 20:11:00 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	4 x 150	2 x 55
2	No of Units on Bar	MW	2	0	0	2	3	3	3	3	2
3	Installed Capacity (MCR) of Units on Bar	MW	726.6	0.0	0.0	50.0	405.0	105.0	750.0	450.0	110.0
4	Declared capacity (DC)	MW	576.0	0	0	50.0	401.0	104	683	446	118
5	105 % of MCR	MW	762.9	0.0	0.0	52.5	425.3	110.3	787.5	472.5	115.5
6	Whether on ramping (Yes/No)		No	NA	NA	No	No	No	Yes	No	NA
7	Margin Available	MW	190.3	0.0	0.0	1.5	22.4	5.0	318.3	27.3	-3.8
8	Actual Net Interchange before the Event (20:11:40)	MW	572.6	0.00	0.0	51.0	402.8	105.3	469.2	445.2	119.3
9	Actual Net Interchange after the Event (20:12:20)	MW	583.1	0.00	0.0	51.2	402.7	105.1	459.8	448.1	119.4
10	Change in Net Interchange (9 - 8)	MW	10.5	0.0	0.0	0.2	-0.1	-0.2	-9.4	2.9	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	-10.5	0.0	0.0	-0.2	0.1	0.2	9.4	-2.9	-0.1
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	49.94	49.94	49.94	49.94	49.94	49.94	49.94	49.94	49.94
15	Change in Frequency (14-13)	Hz	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05
16	Frequency Response Characteristic (12 / 15)	MW/Hz	210.0	0.0	0.0	3.6	-2.6	-3.4	-188.6	57.4	2.0
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	573	0.00	0	51	403	105	469.2	445.2	119
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	229.0	0.0	0.0	20.4	161.1	42.1	187.7	178.1	47.7
21	Composite ideal response (19 + 20)	MW/Hz	229.0	0.0	0.0	20.4	161.1	42.1	187.7	178.1	47.7
22	Percentage ideal response (16/21)	%	91.69%			17.66%	-1.61%	-8.07%	-100.49%	32.23%	4.19%

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)

Event	At 20:11 Hrs on Dated 15th-May-2022, As reported at 20:11 hrs Generation loss of around 1250 MW occurred due to tripping of Units in Nathpa Jhakri, Rampur and Karcham Wangtoo Hydro generation complex of Northern Region on SPS operation and same has been considered for FRC Calculation.
Date and Time of Event	15.05.2022, 20:11:00 Hrs

Serial No.	Particulars	Dimension	AP	Assam	Meghalaya	Manipur	Mizoram	Nagaland	Tripura*	NER*
1	Actual Net Interchange before the Event (20:11:40)	MW	110.83	1163.29	180.01	124.26	74.47	83.12	248.17	-436.16
2	Actual Net Interchange after the Event (20:12:20)	MW	109.92	1157.86	184.48	123.91	74.54	82.31	242.20	-458.48
3	Change in Net Interchange (2 - 1)	MW	-0.9	-5.4	4.5	-0.4	0.1	-0.8	-6.0	-22.3
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	-5.4	4.5	-0.4	0.1	-0.8	-6.0	-22.3
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	49.94	49.94	49.94	49.94	49.94	49.94	49.94	49.94
8	Change in Frequency (7-6)	HZ	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05	-0.05
9	Frequency Response Characteristic (5 / 8)	MW/HZ	18	109	-89	7	-1.4	16.2	119	446
10	Net System Demand met before the Event	MW	115.83	1456.23	285.61	124.26	91.47	95.12	411.58	2449.44
11	Internal Generation before the Event (10 - 1)	MW	5.0	292.9	105.6	0.0	17.0	12.0	163.4	2885.6
12	Ideal load response assuming 4% per Hz (0.04*Row 10)	MW/Hz	4.6	58.2	11.4	5.0	3.7	3.8	16.5	98.0
13	Ideal generator response assuming 5% droop.....40% per Hz (40% of Row 11)	MW/Hz	2	117.2	42.2	0.0	7	5	65.4	1154.2
14	Composite ideal response (12 + 13)	MW/Hz	7	175	54	5	10	9	82	1252
15	Percentage ideal response (9/14)	%	274.38%	61.9%	-166.6%	140.8%	-13.4%	188.3%	145.9%	35.65%

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

* Tripura Demand Met also includes Bangladesh.

*NER Demand Met excludes Bangladesh