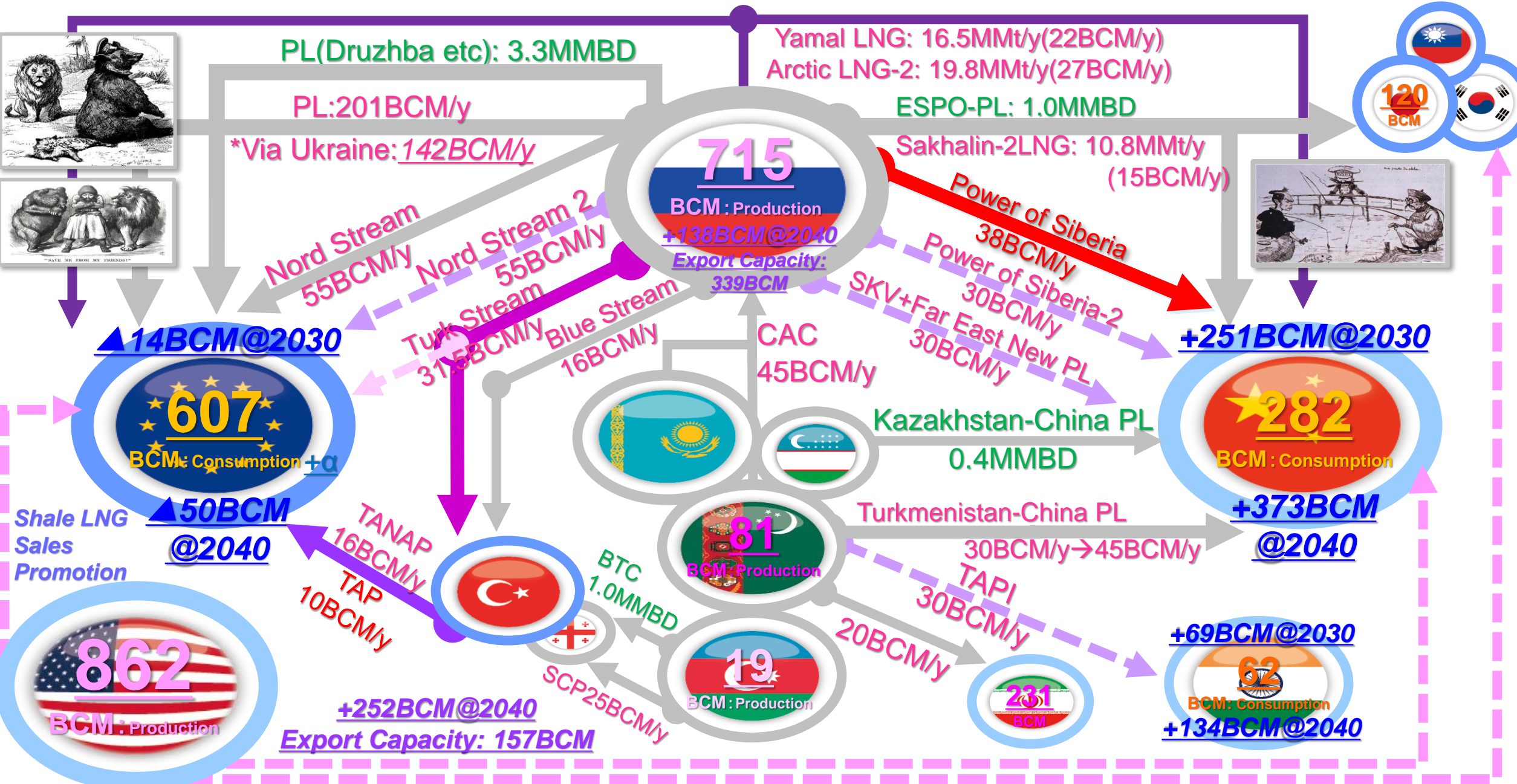


'Great Game' in 21st Century: Both Producers & Markets try to diversify Routes & Sources 1



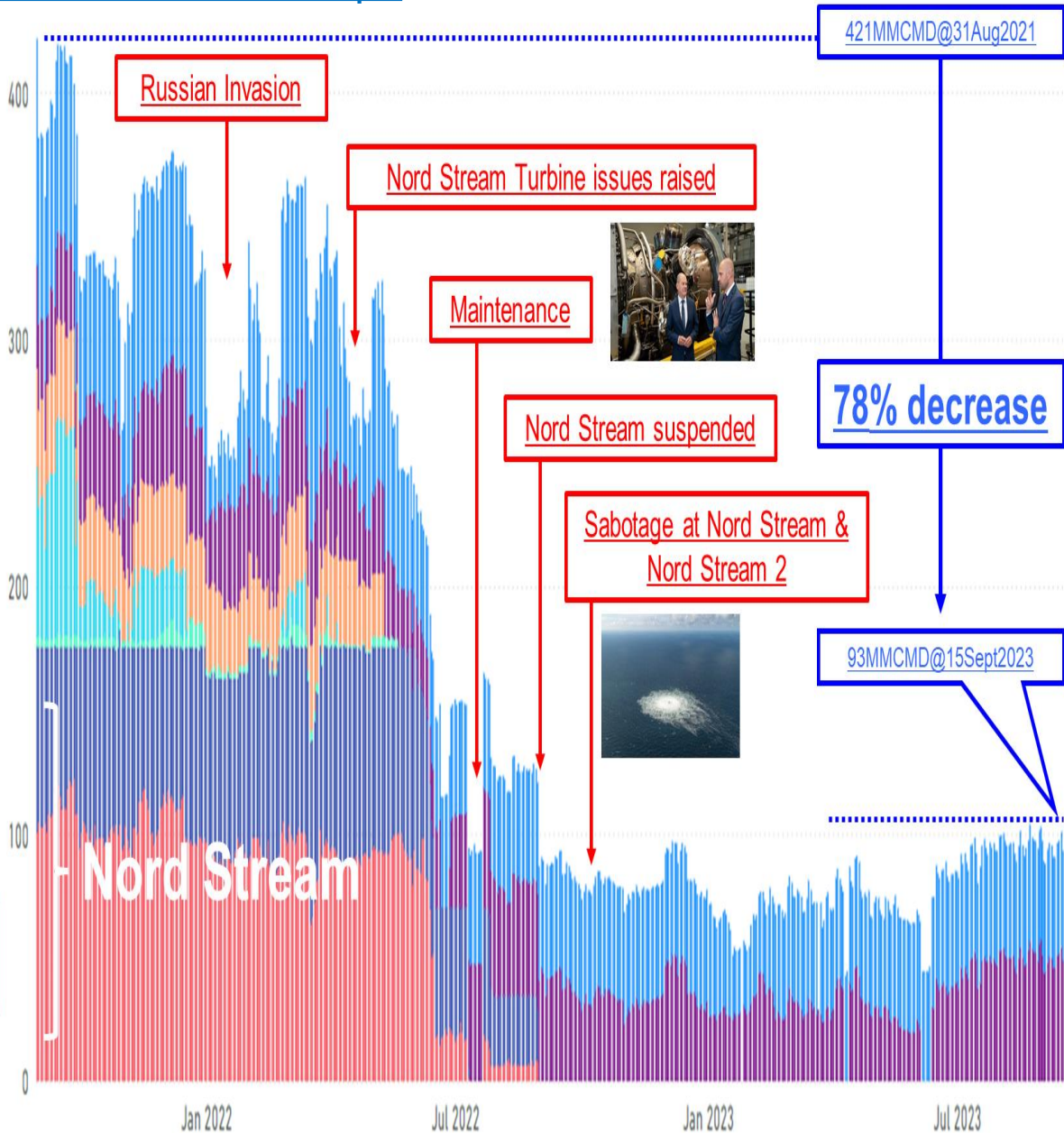
Source: JOGMEC-Research

Shale LNG Sales Promotion

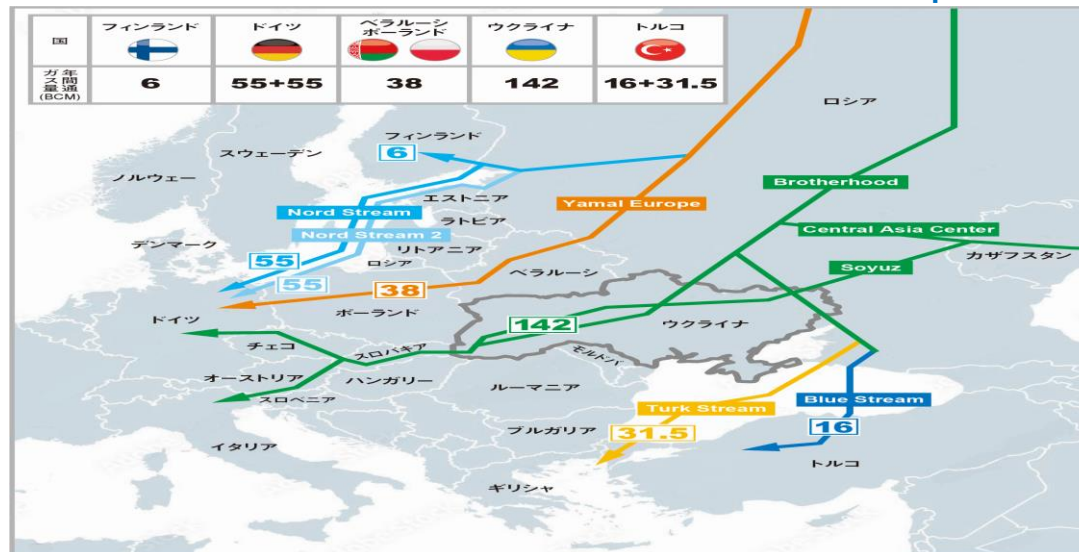
Is this under their calculation?: Russia is losing golden market

★ Russian Gas Flow to Europe

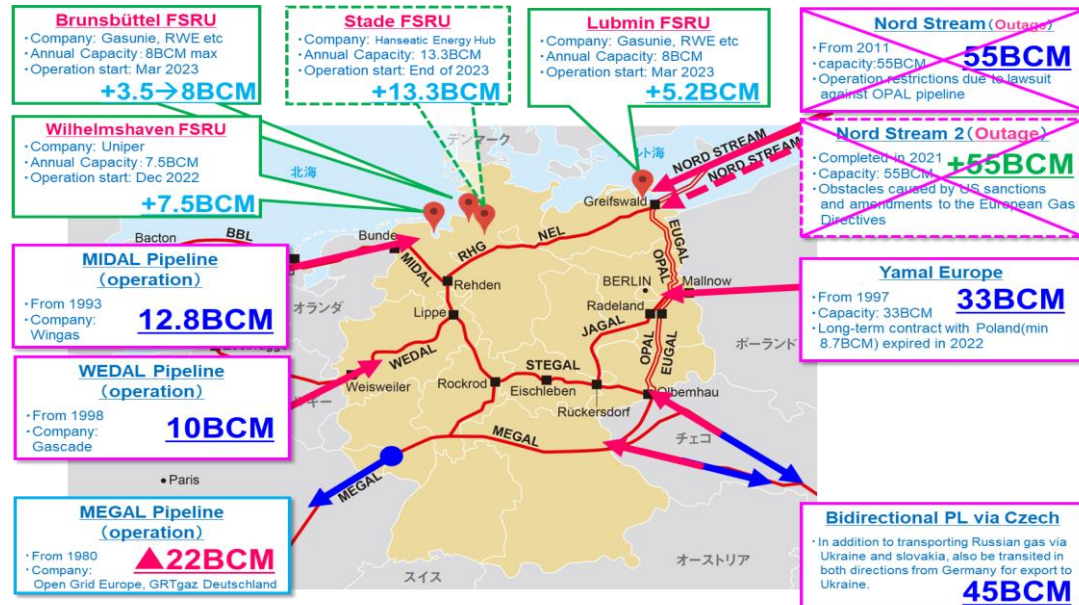
※Blue Stream (16BCM) is not included.



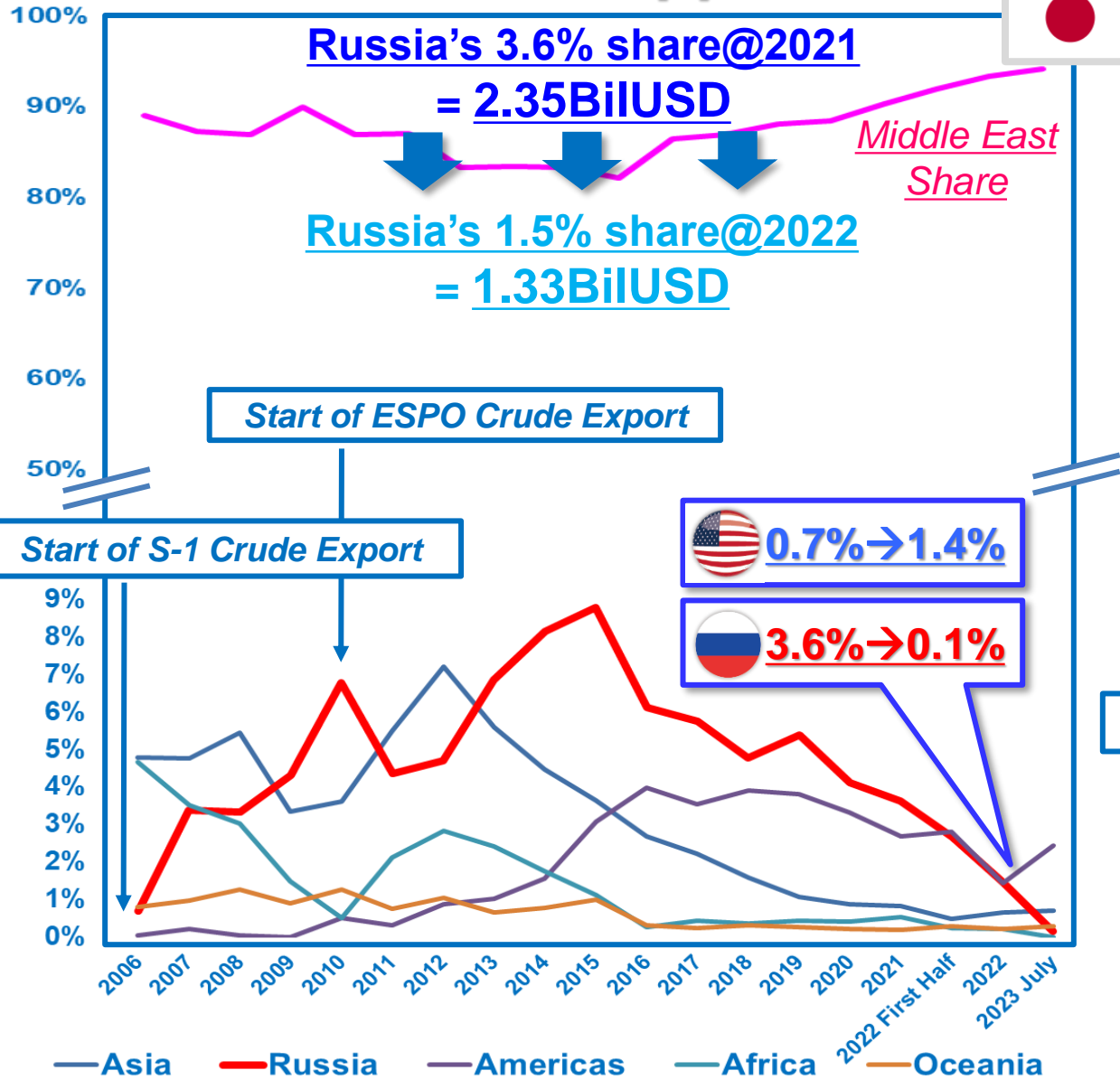
★ Russian Gas Infrastructures to Europe



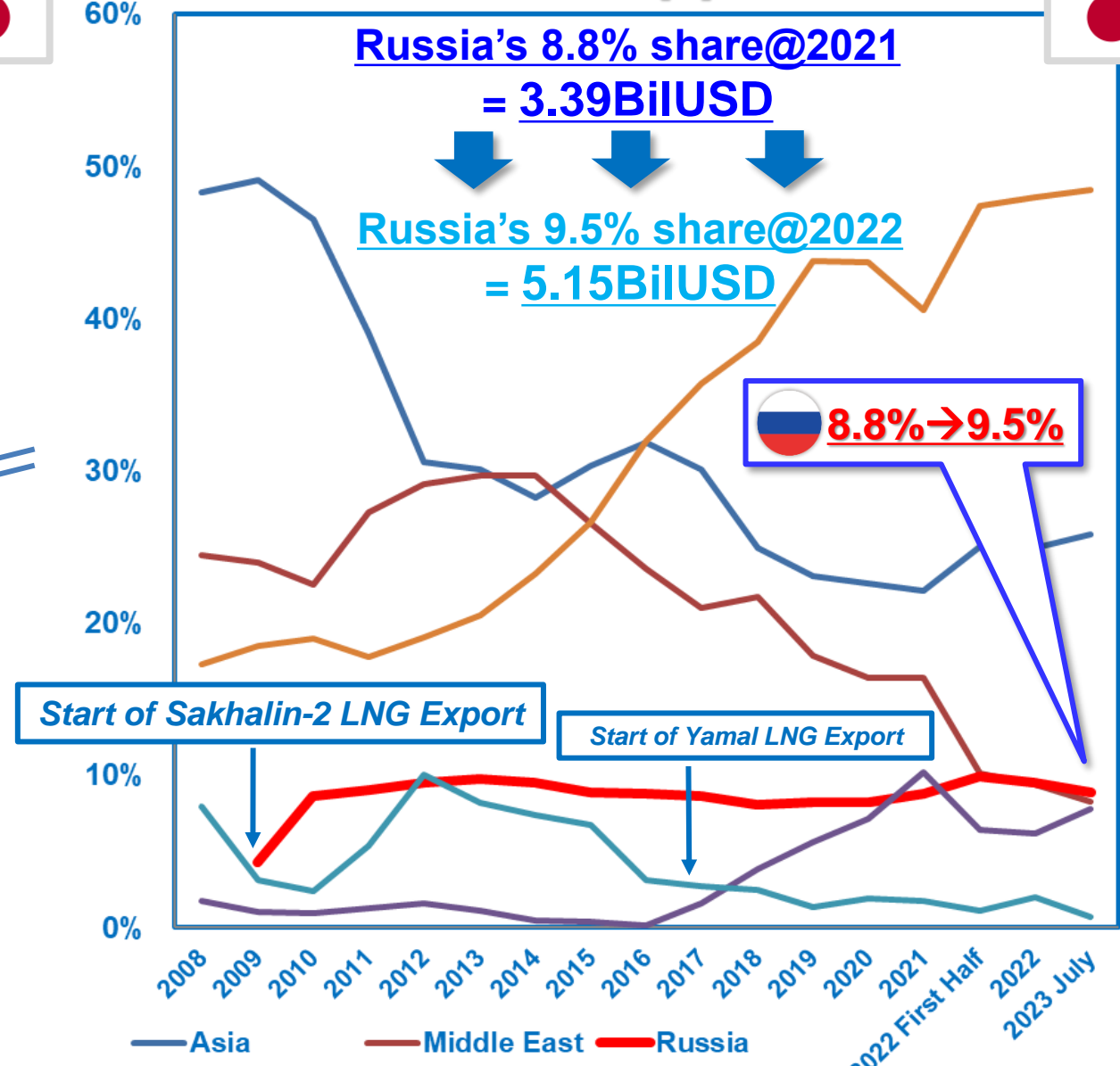
★ Existing & Newly Built German Gas Infrastructures




























Crude Oil Suppliers



LNG Suppliers



Russia is still as a Reasonable LNG Supplier for Japan

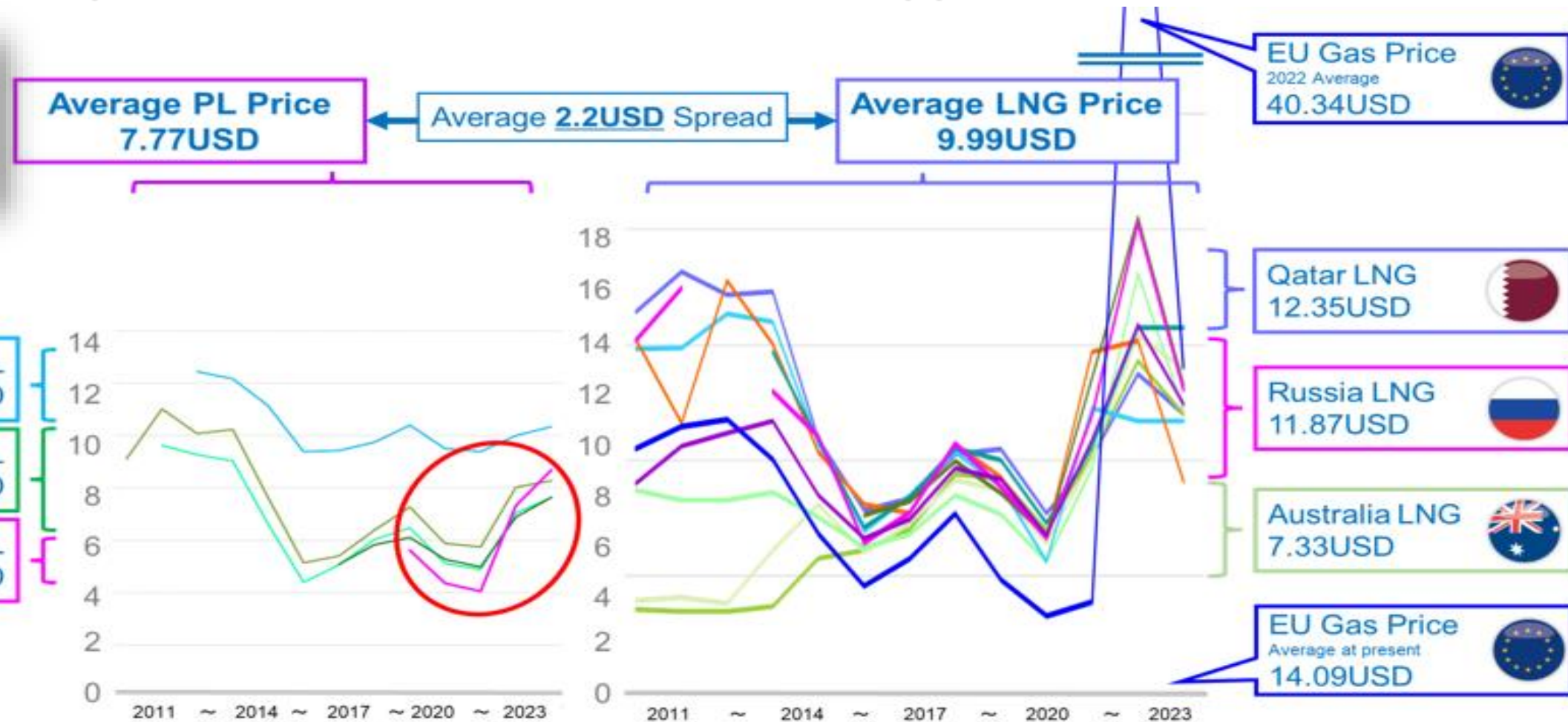
1000yen/ton	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023 at present	Average	USD/MMBTU
 Oman	53.2	48.8	65.4	33.6	32.3	39.5	48.9	57.3	62.7	51.9	44.1	47.8	52.1	49.9	46.3	54.4	96.5	98.1	54.6	12.94
 Russia	-	-	-	32.1	38.3	52.7	59.5	71.5	83.3	62.7	37.2	42.9	53.7	52.7	41.0	56.7	98.6	97.6	58.7	13.91
 USA	36.2	36.7	41.3	40.7	55.5	54.2	65.9	-	85.4	47.9	-	66.9	60.8	53.3	47.1	66.8	137.9	87.7	61.5	14.57
 Australia	38.8	42.0	61.4	42.9	52.2	61.2	65.6	75.6	86.3	63.4	41.0	47.5	58.4	58.3	44.4	57.9	118.3	107.5	62.4	14.78
 Malaysia	39.1	47.2	68.2	46.0	53.7	64.1	73.6	86.6	93.5	67.4	38.3	46.0	54.2	52.7	40.1	52.8	106.9	98.1	62.7	14.85
 Brunei	35.2	38.4	69.3	50.3	52.7	63.1	72.9	84.0	92.3	69.9	43.0	48.9	57.9	58.7	44.1	52.0	97.9	98.9	62.8	14.87
 Trinidad Tobago	69.2	63.8	86.6	46.5	45.6	42.7	52.6	80.3	92.7	70.4	46.4	47.0	58.5	-	-	-	80.0	68.9	63.4	15.02
 Nigeria	72.9	63.9	91.7	56.0	38.1	54.8	66.9	81.4	90.5	67.0	41.9	47.3	48.1	38.9	37.5	68.2	126.0	-	64.2	15.21
 Yemen	-	-	-	-	36.0	60.0	68.1	83.9	84.8	58.0	-	-	-	-	-	-	-	-	65.1	15.43
 Indonesia	48.7	51.4	62.2	36.3	42.7	62.2	75.1	87.8	94.2	68.0	42.2	48.9	57.4	58.5	44.1	55.1	131.8	105.7	65.1	15.43
 Qatar	45.8	49.5	71.7	53.0	56.4	64.6	71.8	84.6	92.2	66.5	35.6	44.2	57.4	58.4	41.4	52.3	139.6	119.3	66.9	15.85
 UAE	40.7	43.6	60.6	43.3	52.8	63.3	71.7	85.0	91.4	62.7	37.2	46.4	59.9	57.1	44.1	57.4	190.9	131.1	68.8	16.31
 Papua New Guinea	-	-	-	-	-	-	-	-	78.3	64.5	40.1	48.8	60.5	57.9	44.2	63.4	129.2	102.2	68.9	16.33
 Angola	-	-	-	-	-	-	-	84.4	86.6	-	-	41.7	54.3	-	-	-	82.7	-	70.0	16.58
 Algeria	60.8	61.6	94.8	-	34.3	58.5	70.6	79.9	91.9	58.8	41.8	71.1	-	40.8	-	75.7	152.4	-	70.9	16.80
 Egypt	67.4	66.3	87.3	87.6	60.1	65.0	72.8	83.2	93.3	-	36.0	41.8	60.1	56.3	46.8	72.6	143.3	167.8	76.9	18.23
 Peru	-	-	-	-	-	57.2	68.1	86.6	104.6	82.6	-	49.1	55.4	53.9	43.4	46.2	120.1	159.6	77.2	18.30
 Equator Guinea	-	58.9	87.9	56.9	58.4	71.2	75.4	87.7	99.6	64.6	39.4	46.3	44.1	52.7	-	68.1	117.3	229.1	78.6	18.62
 Mozambique	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91.1	91.1	21.59
 Korea	-	-	-	-	-	-	-	-	-	52.9	34.0	33.8	-	-	32.4	-	-	118.9	54.4	12.89
 Singapore	-	-	-	-	-	-	-	-	-	51.9	36.5	42.6	58.6	-	-	223.1	88.0	-	83.4	19.77
 France	-	-	-	-	-	-	71.7	86.1	-	54.6	39.4	45.2	59.7	-	-	171.3	-	-	75.4	17.87
 Brazil	-	-	-	-	-	-	63.9	-	-	-	-	-	-	-	-	-	-	-	63.9	15.13
 Spain	-	-	-	-	-	-	69.2	83.7	79.9	67.1	-	-	-	-	-	-	-	-	75.0	17.77
 Norway	-	-	94.6	-	-	54.1	64.8	87.8	84.3	74.6	-	-	62.2	-	-	-	-	-	74.6	17.68
Netherlands	-	-	-	-	-	-	-	-	101.2	-	-	-	64.4	-	-	-	-	-	82.8	19.61
Belgium	-	-	-	-	-	-	64.8	-	101.2	-	-	-	-	-	-	-	-	-	83.0	19.66
China	-	-	-	-	-	-	-	-	-	-	-	-	-	31.9	-	-	167.6	113.4	104.3	24.71
Thailand	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92.2	-	-	92.2	21.85

*Earthquake 2011
and Fukushima*

Comparison of Prices of PL & LNG suppliers in China



Presidential meeting
in 4th Feb 2022



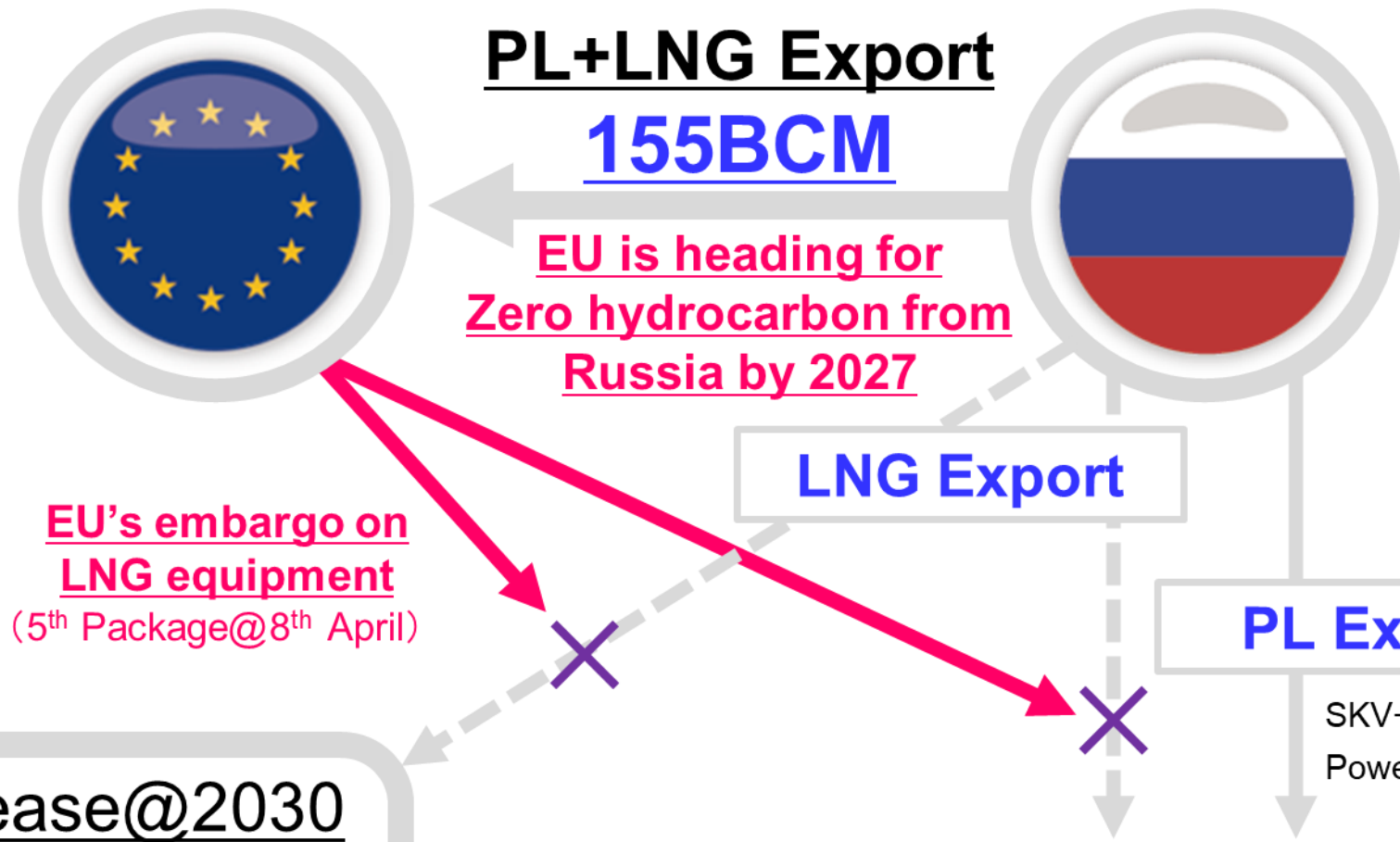
- ✓ Price of Russian PL gas (Power of Siberia) has been linked to LNG prices so that the PL gas became competitive. (Russian PL gas price + Domestic transit cost in China < LNG prices in Shanghai + Regasification cost)
- ✓ China could have realized the diversification of supply sources, routes (and forms) and price indexes.
- ✓ Russia had to make compromise on the price negotiation in 2014 and became the cheapest natural gas supplier at border level. History would repeat when the offered new PLs are to be build for China.

Point 1
China & India cannot replace European market.

Point 2
EU's ban on LNG equipment export will have a critical impact on Russia.

Point 3
Russia will rush to build Power of Siberia 2 Pipeline in order to connect West & East.


Point 4
China will press Russia for gas price discount, but limits max volume up to 35BCM.



Demand Increase@2030
+73BCM

<Breakdown>
Domestic: 30BCM
PL: -
LNG: 43BCM

※Not including TAPI-PL (Turkmenistan) import.



Demand Increase@2030
+123BCM

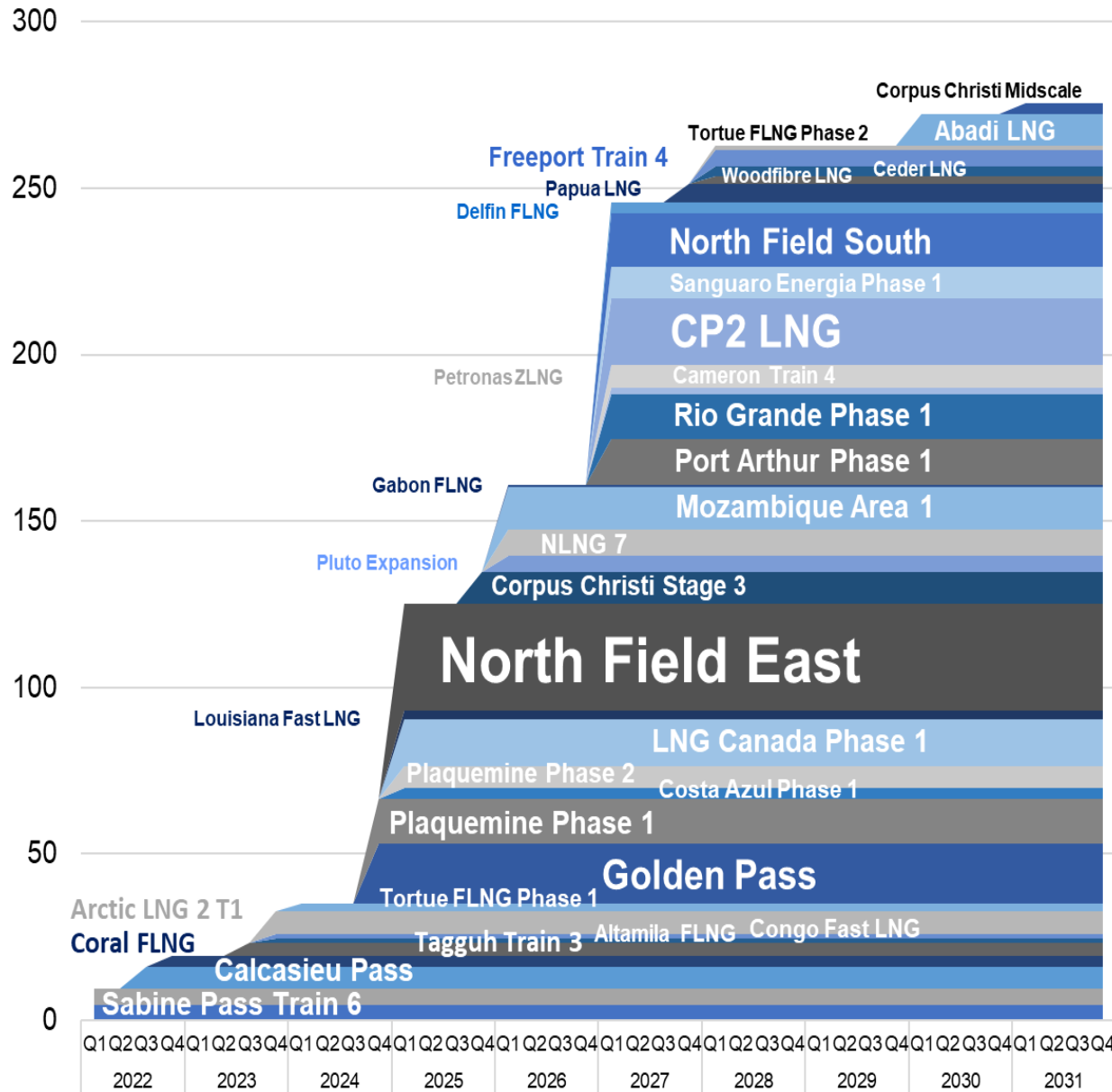
<Breakdown>
Domestic: 58BCM
PL: 35BCM
LNG: 30BCM

国内生産対輸入=47:53
内、輸入:PL対LNG=54:46

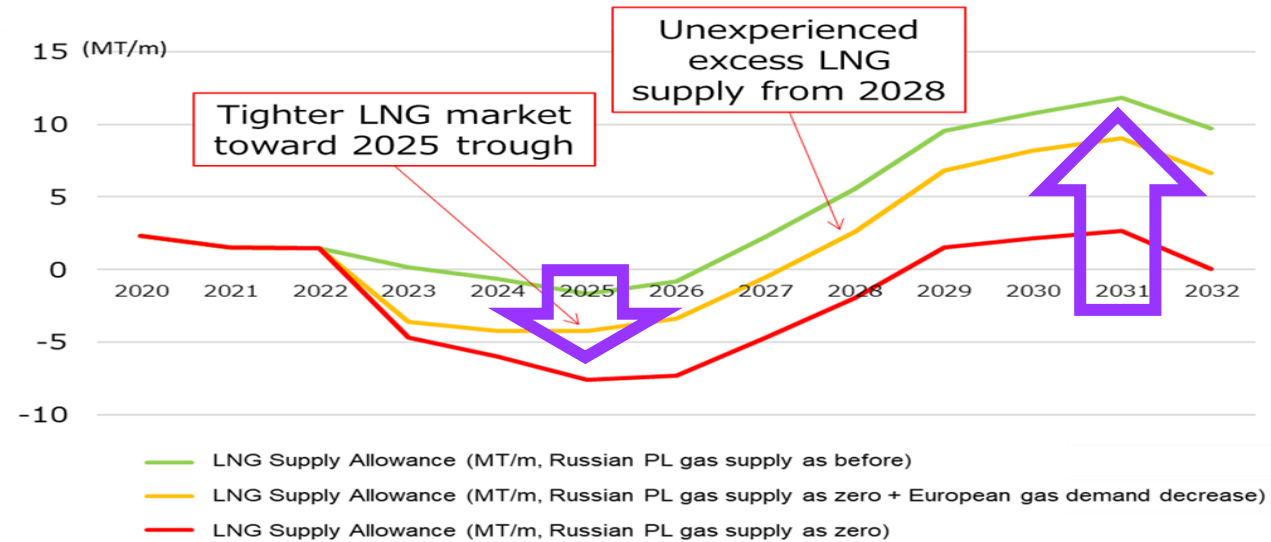


Mid and Long Term Outlook: Upcoming Ups and Downs

★ Mid Term Supply Additions by FID Base



★ Mid Term: upcoming valley and mountain



★ Long Term: Demand & Supply gap starts from 2030s

