



Russia, Europe and Global Gas: 2000-present

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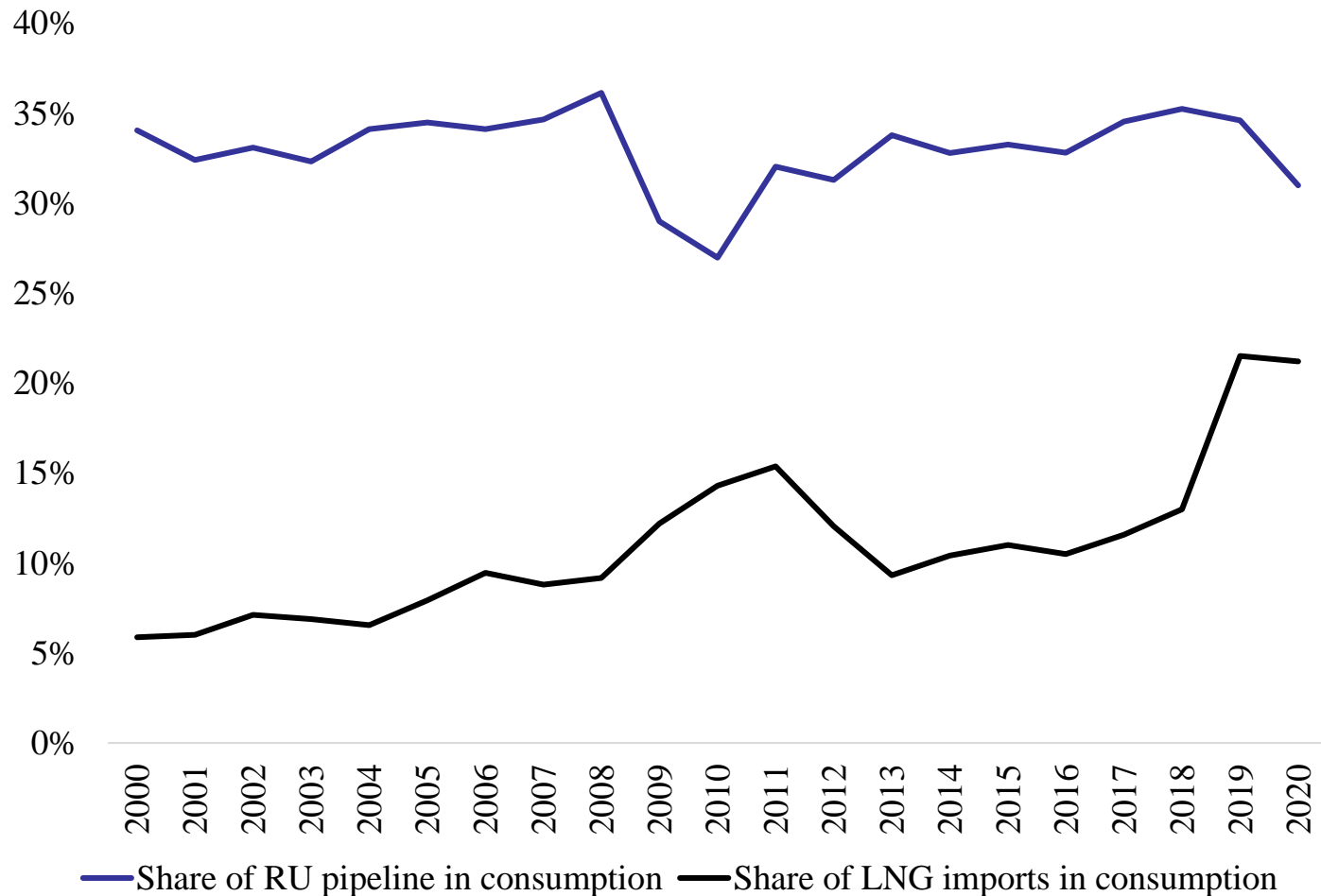
Key messages

- By 2050, the role of fossil fuels, in particular natural gas, in the European energy system will be minimal due to the Net Zero policy;
- European energy policy has been effective in supporting gas supply diversification **(i.e., reducing “security externalities” of gas trade with Russia) at reasonable cost;**
- Partially limiting gas imports from Russia only increases its export revenue;
- Severing completely gas imports from Russia would harm Europe while having **minimal impact on Russia’s ability to conduct its war in Ukraine;**
- In the medium term, global LNG market will mediate Europe-Russian gas relationship;
- **One off “switching cost”** – second best trade equilibrium:
 - Europe <->LNG;
 - Russia<->LNG & China/East Asia.

European gas supply sources

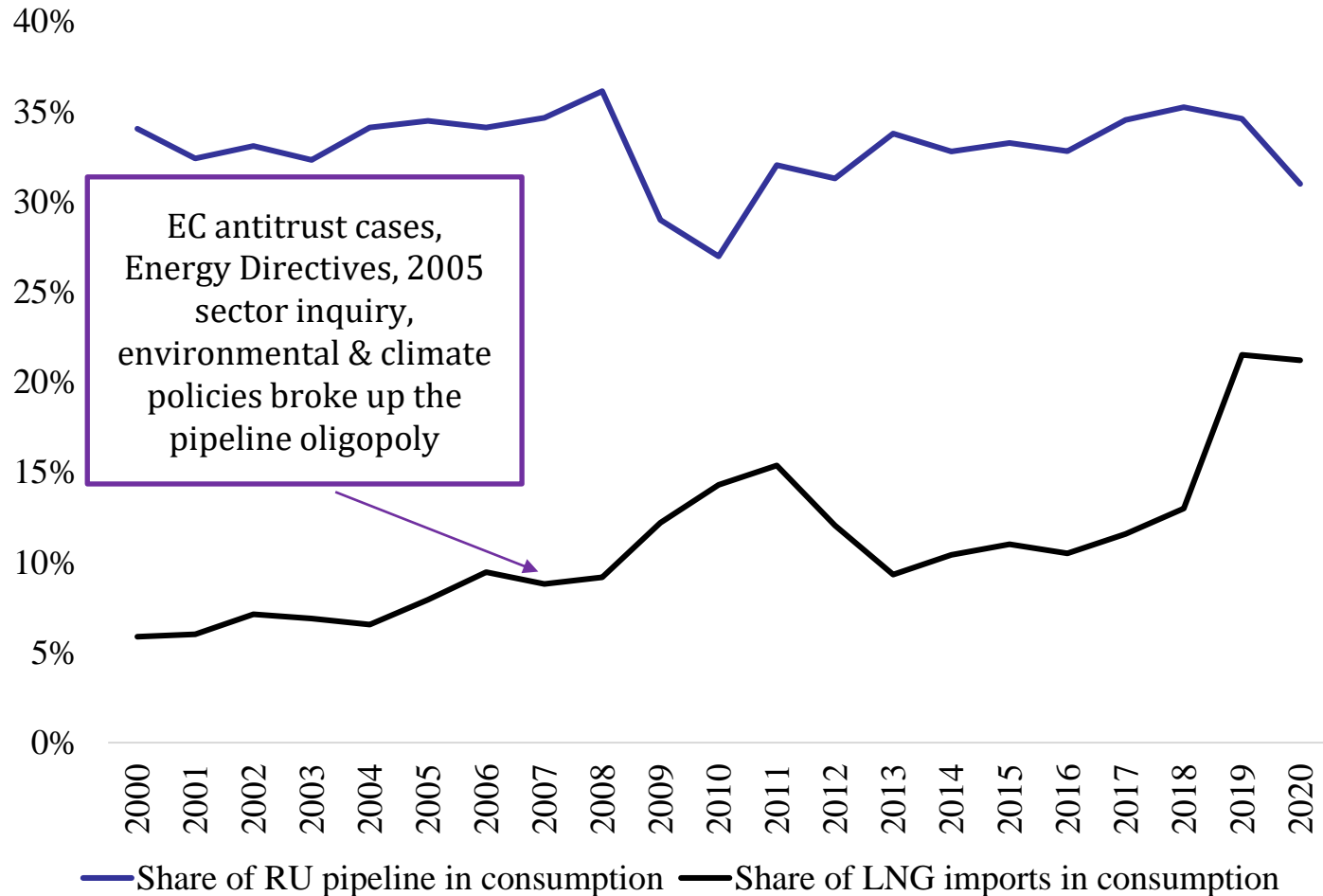


Europe's quest for diversification has been an ongoing project



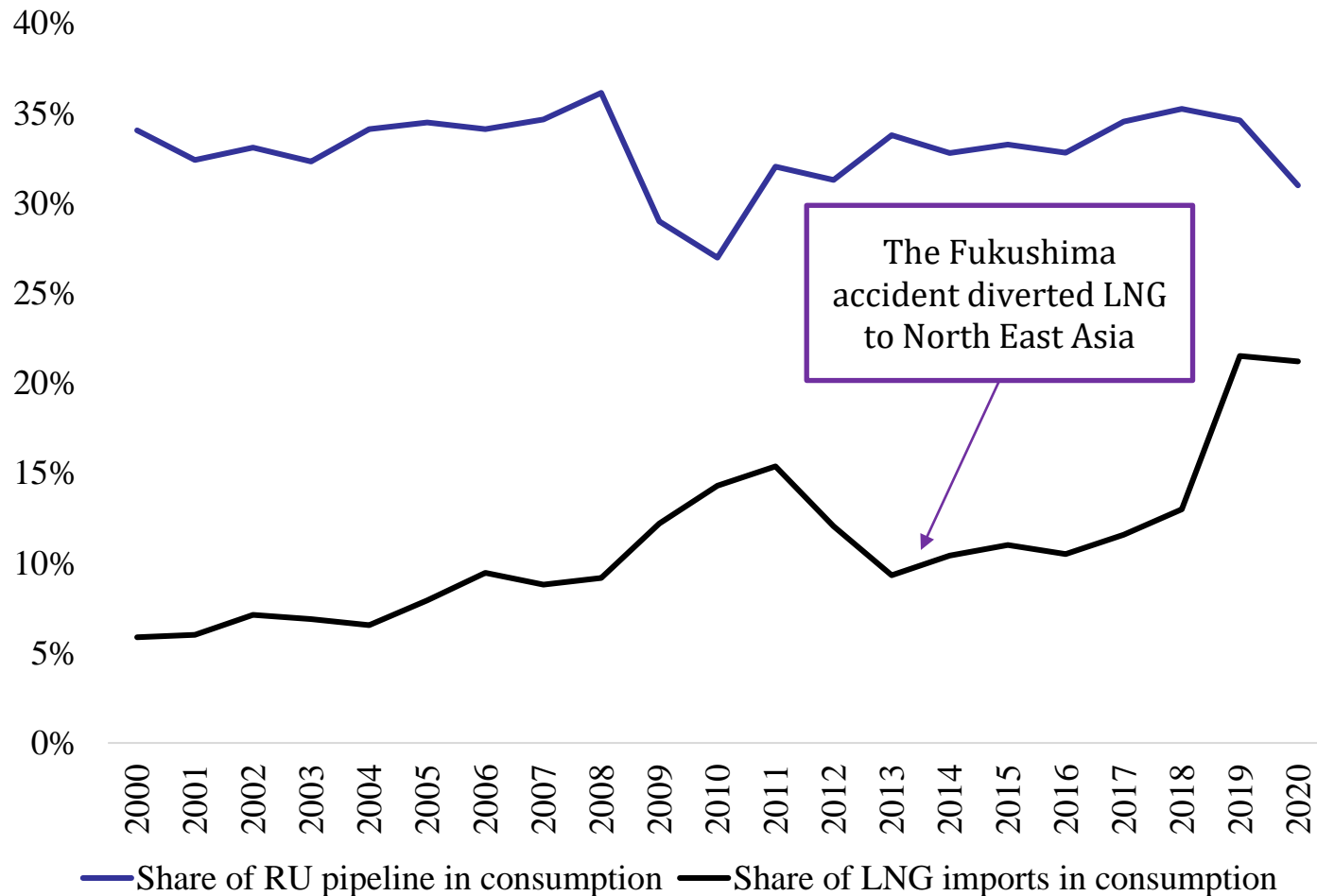
Source: BP Statistical Review (2021)

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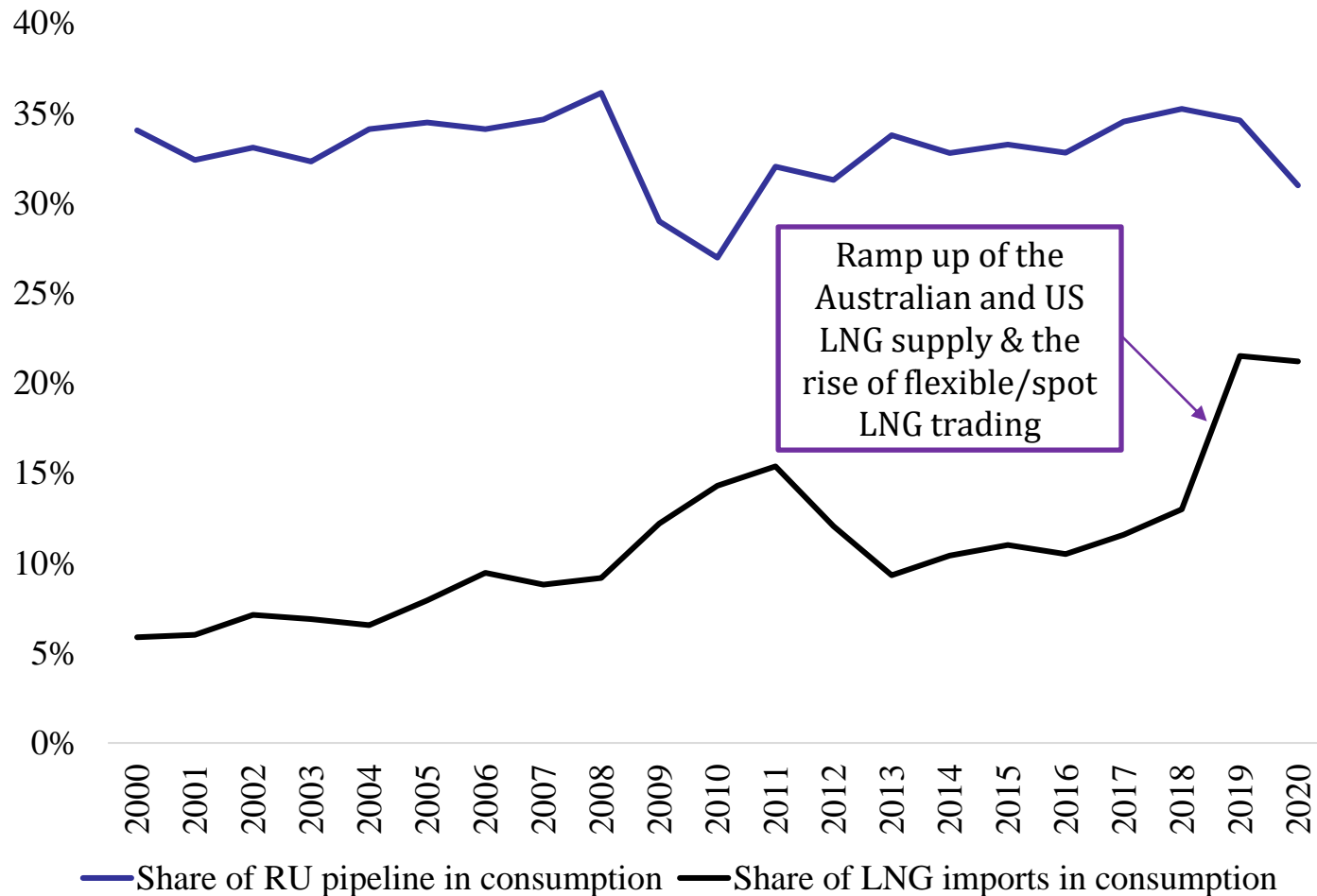
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Breaking up the pipeline oligopoly in Europe *(including Ukraine's transit monopoly)*

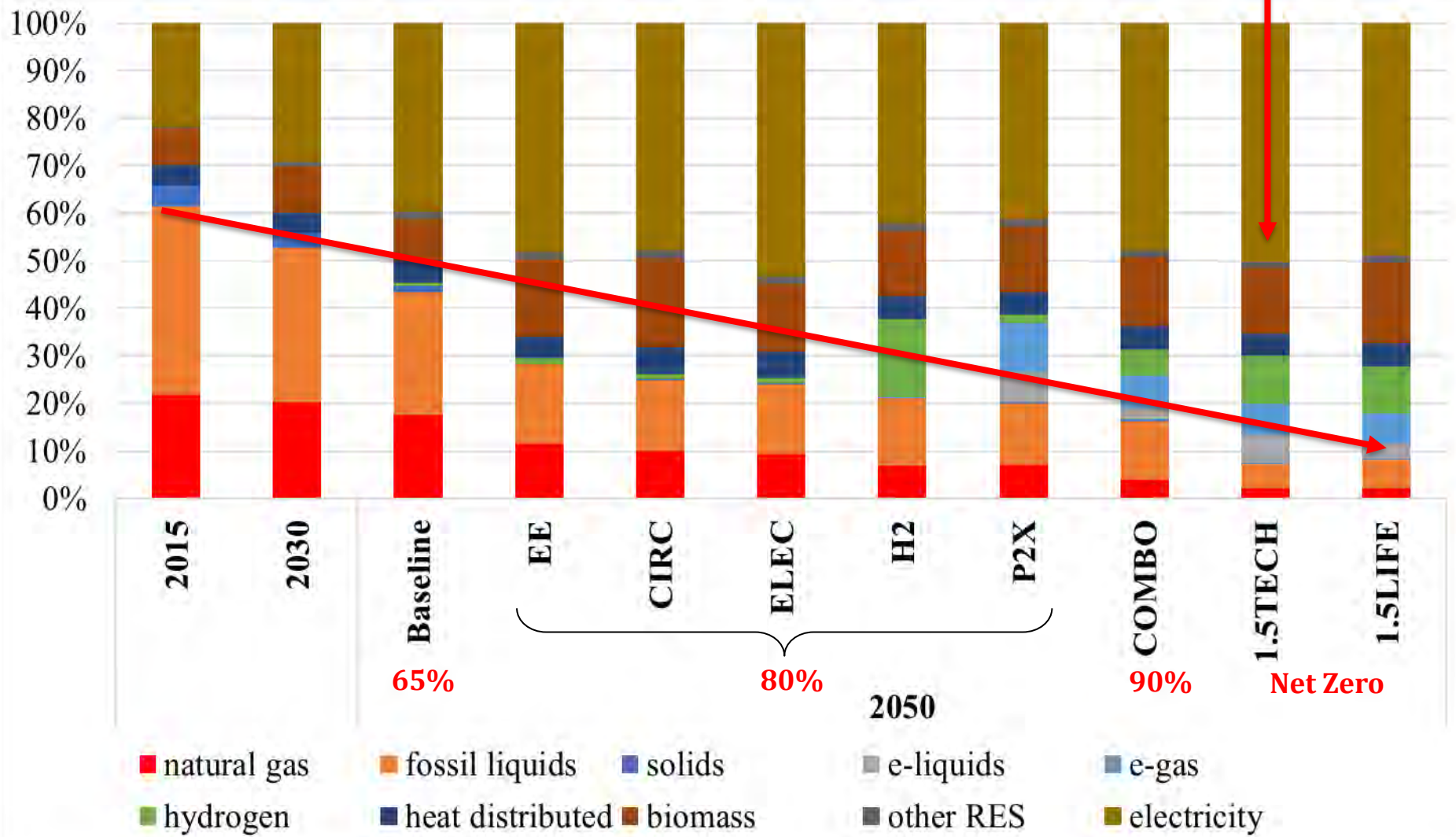
	1999	2006	2016	2020
LNG import capacity: Total	64	91	226	231
Belgium	6	6	10	10
Croatia	0	0	0	3
Finland	0	0	0	1
France	18	18	36	36
Greece	0	1	5	7
Italy	4	4	16	16
Portugal	0	6	8	8
Spain	37	52	73	73
UK	0	5	55	55
Lithuania	0	0	4	4
Netherlands	0	0	13	13
Poland	0	0	5	5
Sweden	0	0	1	1
Pipeline import capacity: Total	321	332	421	447
Russia	175	175	230	246
Norway	104	104	130	130
North Africa	42	53	61	61
Caspian region	0	0	0	10
EU Consumption*	460	512	449	452
Share of LNG capacity in consumption	14%	18%	50%	51%
Share of pipeline capacity in consumption	70%	65%	94%	99%
relative to 1999 - LNG import capacity	100%	141%	351%	359%
relative to 1999 - pipeline import capacity	100%	103%	131%	139%

Notes: capacity and consumption in bcm/yr

Source: Chyong (2019), GIIGNL
(2021), BP (2021)

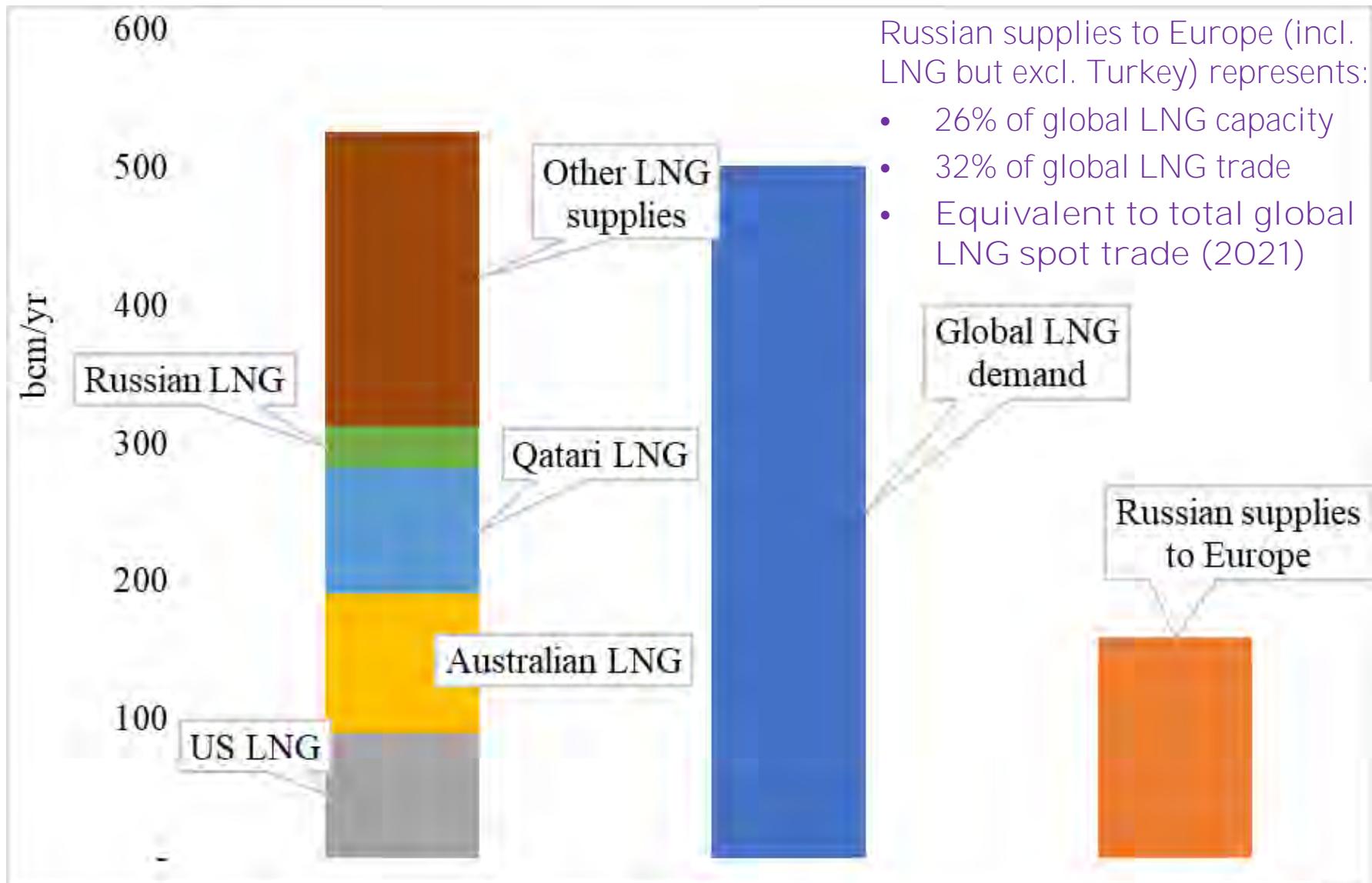
Dependence on fossil fuels and Net Zero

Central role of low-C electricity to replace fossil fuels

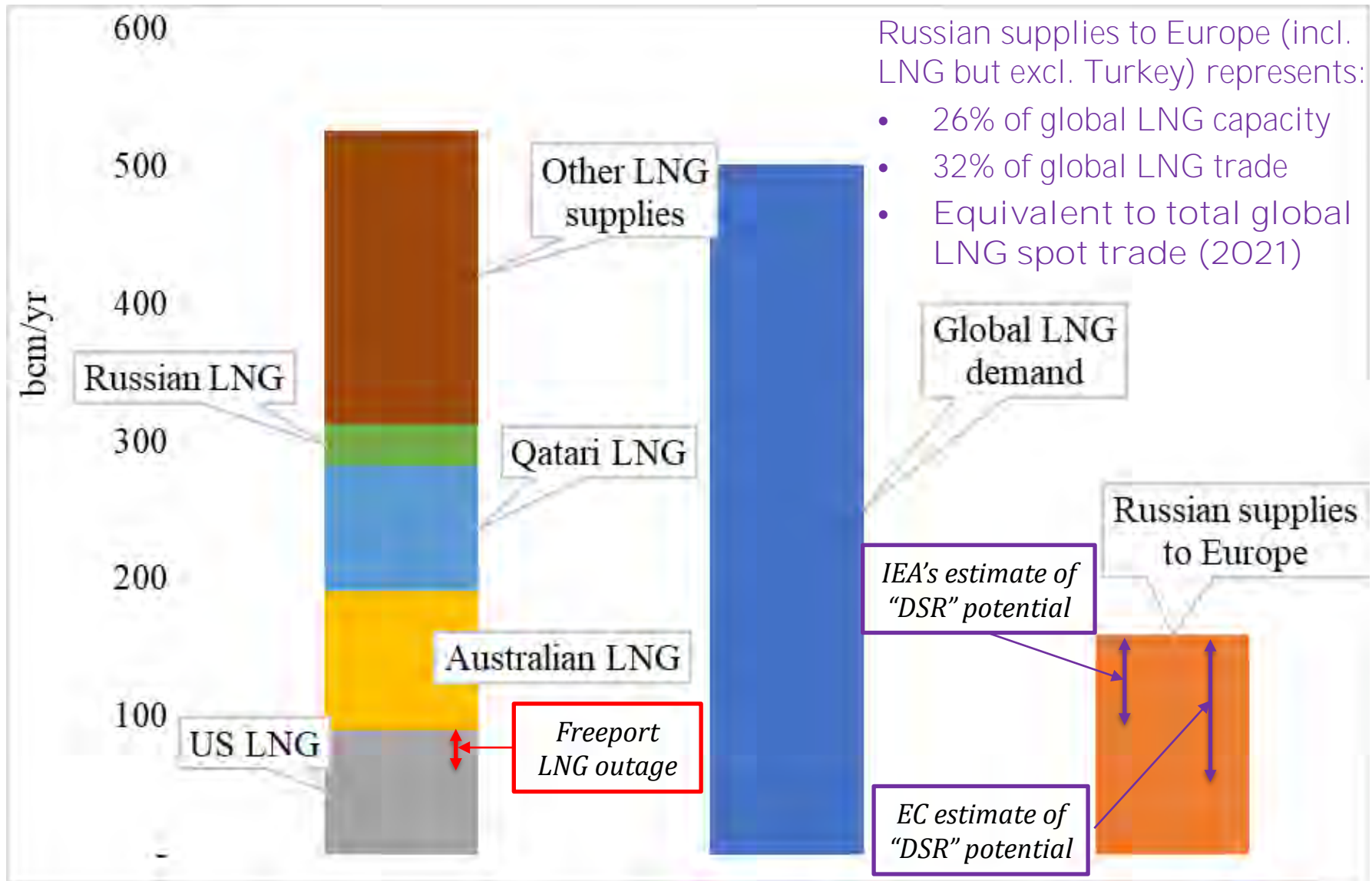


Source: EC (2018)

Europe's quest to wean itself off Russian gas



Europe's quest to wean itself off Russian gas



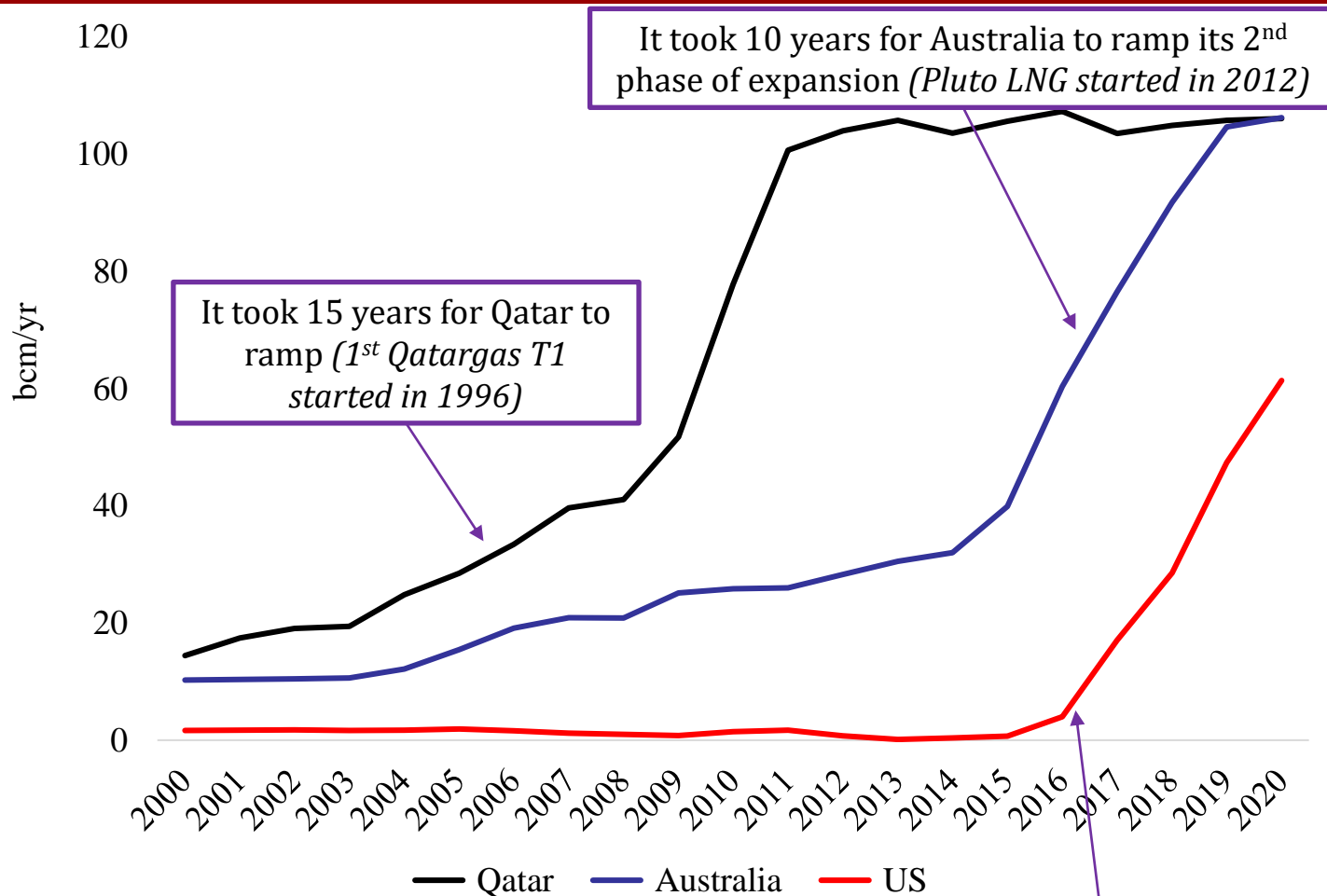
Russian supplies to Europe (incl. LNG but excl. Turkey) represents:

- 26% of global LNG capacity
- 32% of global LNG trade
- Equivalent to total global LNG spot trade (2021)

The war in Ukraine and gas price convergence through LNG trade



Ramping up LNG exports takes time

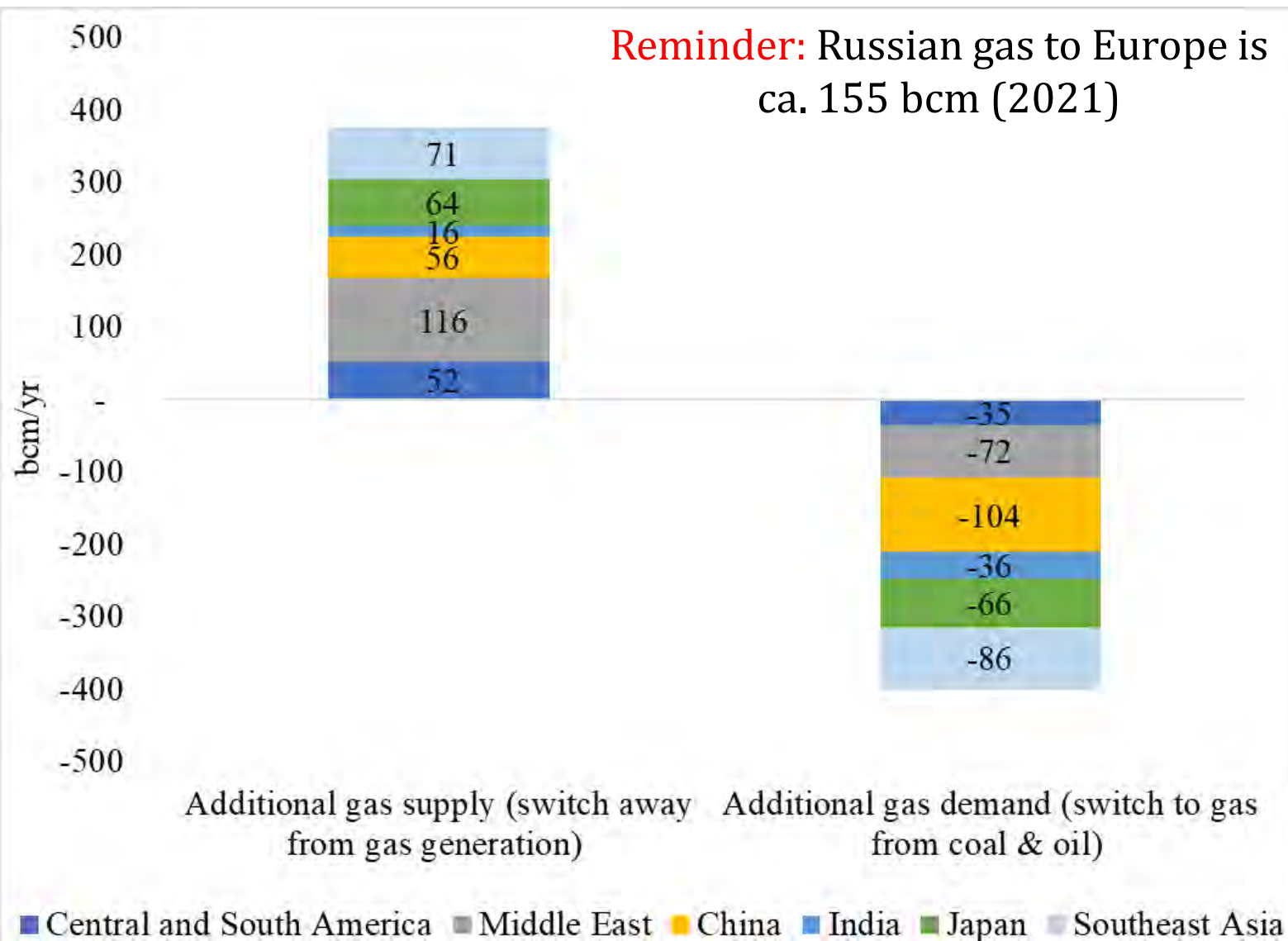


Source: BP (2021); Eikon Terminal

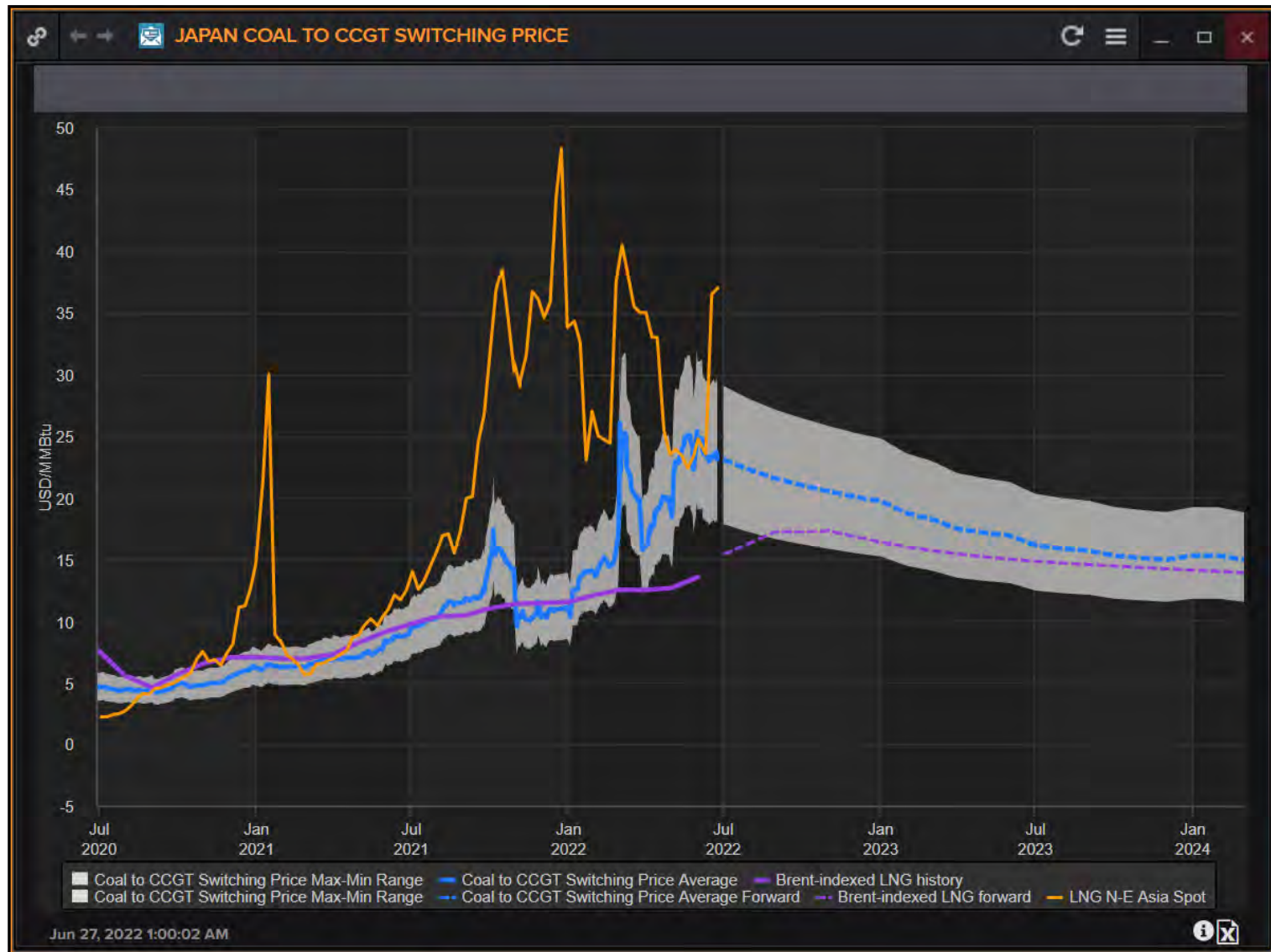
Reminder: Russian gas to Europe is ca. 155 bcm (2021)

How about global demand response?

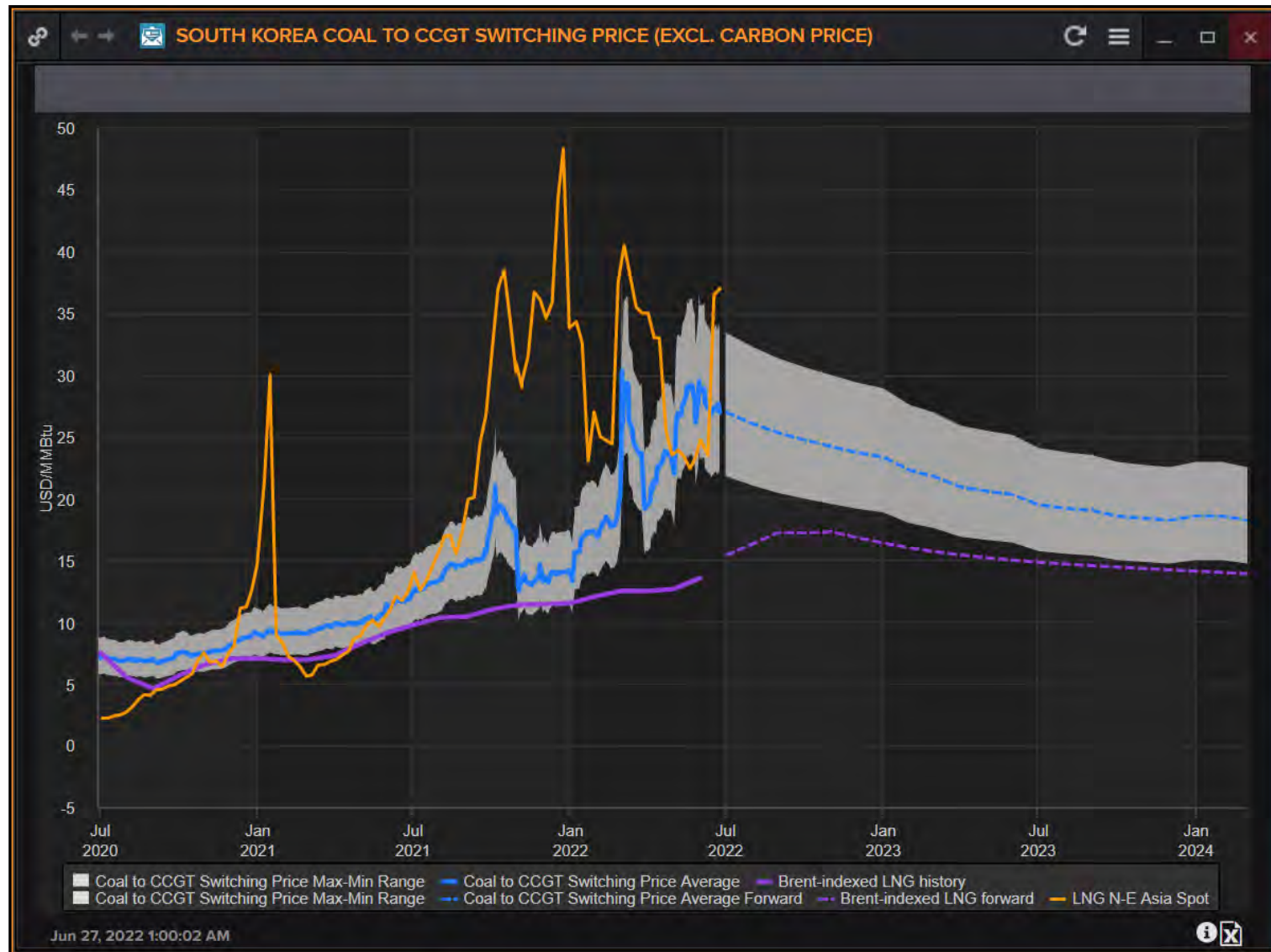
Reminder: Russian gas to Europe is ca. 155 bcm (2021)



How about global demand response? *CCGTs run ahead of coal in Japan*



How about global demand response? *CCGTs runs ahead of coal in South Korea*



Conclusions

1. By 2050, the role of fossil fuels, in particular natural gas, in the European energy system will be minimal due to the Net Zero policy;
2. In the medium term, global LNG market will mediate Europe-Russian gas **relationship; One off “switching cost”** – second best trade equilibrium:
 - Europe <->LNG;
 - Russia<->LNG & China/East Asia.
3. In the short term, partially limiting gas imports from Russia only increases its export revenue;
4. Severing completely gas imports from Russia would harm Europe while having **minimal impact on Russia’s ability to conduct its war** in Ukraine.