Gas market dynamics in Europe and the (factual & perceived) role of Russia

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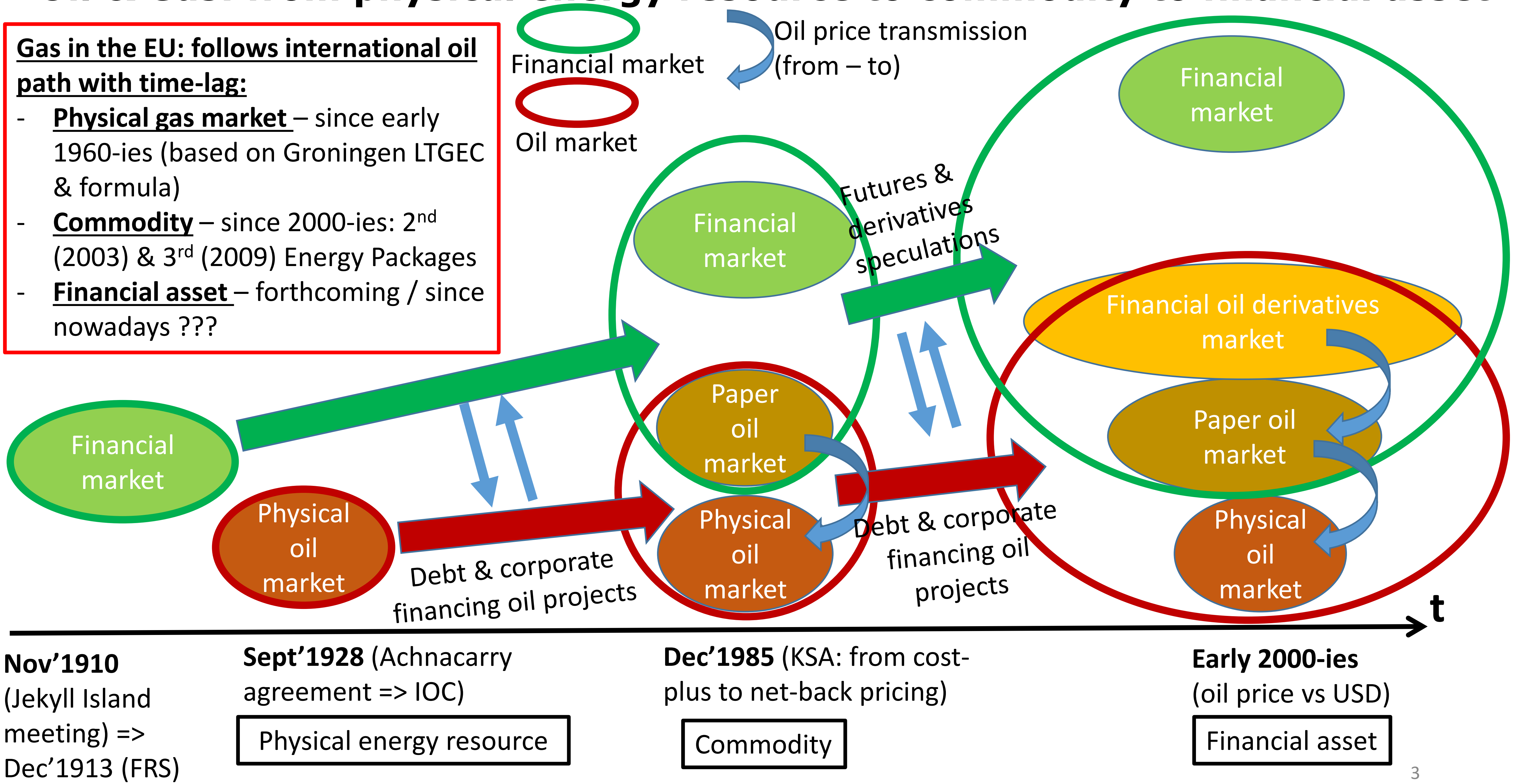
Table of content

Oil & Gas: from physical energy resource to commodity to financial asset

Gas in the EU: follows international oil path with time-lag:
- **Physical gas market** – since early 1960-ies (based on Groningen LTGEC & formula)
- **Commodity** – since 2000-ies: 2nd (2003) & 3rd (2009) Energy Packages
- **Financial asset** – forthcoming / since nowadays ???



Today’s global gas market in the making

- **Pipeline gas** (regional) vs **LNG** (global, following oil path)
  - Pipeline gas = two key regions: North America & “Broader Energy Europe” – integral parts of global gas market in the making
  - LNG: from regional (Asia-Pacific = “energy island” economies) to global (post-US LNG export began in February’2016) => “Cheniere formula” as background for global price arbitrage =>
    - *“non-tradable regional price differences has transformed into tradable price differentials”* (*Wolfgang Peters, The Gas Value Chain*)
- **Physical gas** (investments) & **paper gas** (trading) => following oil path
  - From **LTC** (an investment tool) towards **spot** (growing portfolio deals) and **futures** trading (price testing) => from **price-indexation** formulas in LTC to **spot (OTC)** to gas **trading floors** price quotations both in spot and term deals
  - Paper trades are more sensitive to perceived developments, rumours, speculative news… which immediately incorporates in price fluctuations
    - But: paper gas trading in EU - no cut-off/stop-trade limits like at the stock market (plus-minus 15% price fluctuations)

Price & Pricing preferences of producers, consumers, speculators

(simplified illustration: without time-gap between term contract prices & spot/futures quotations)

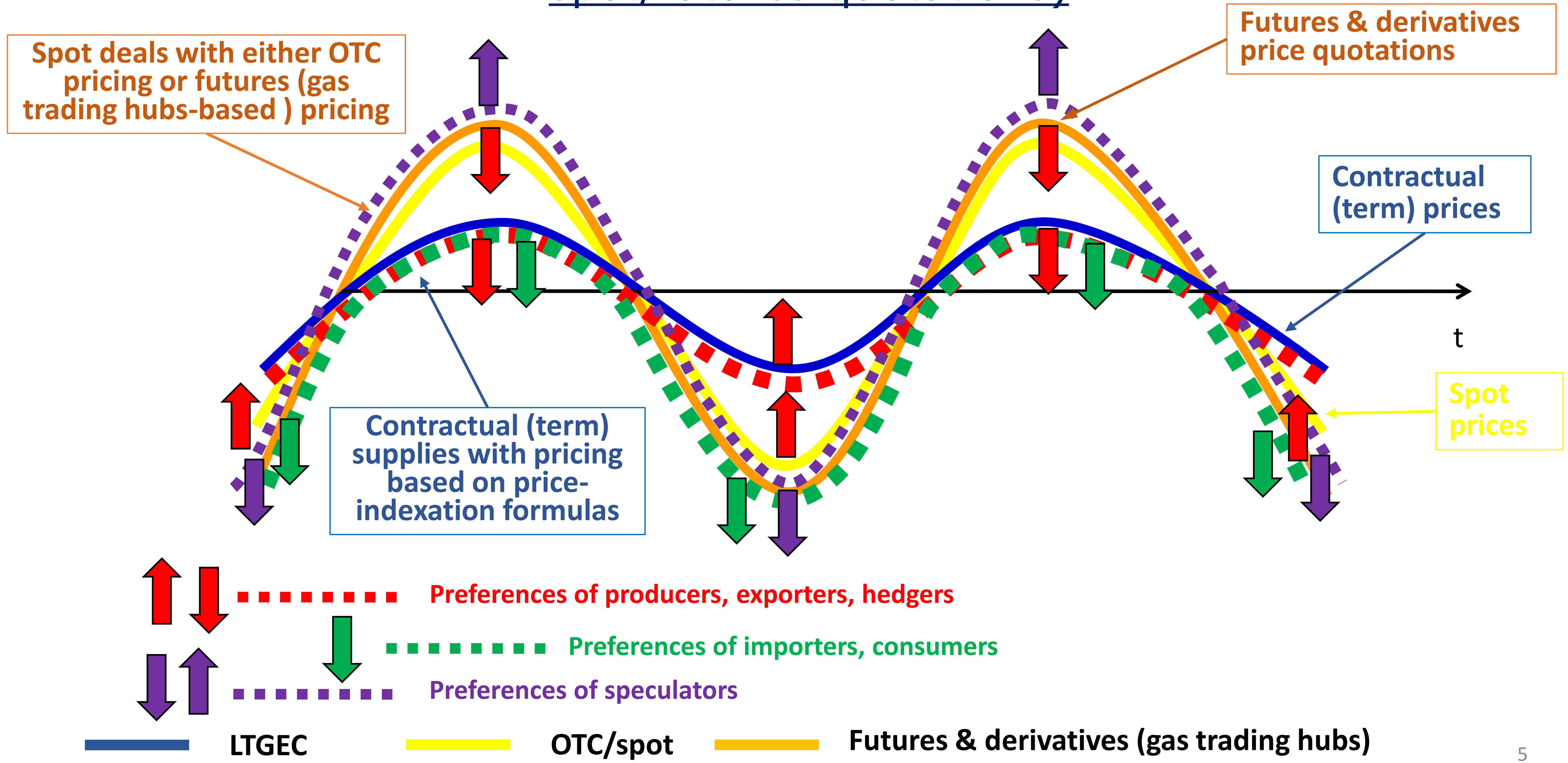


Table of content

1) Oil & Gas markets: fundamental long-term structural factors
2) **Specific EU gas market movements Autumn’2021**
3) Factual & perceived role of Russia: different understanding in the EU and in Russia of what Gazprom SHALL and what it HAS THE RIGHT to do in Europe in the given conditions

Specific EU gas Autumn 2021 factors (1/2)

1) Hot Summer => **increased electricity demand for air conditioning** => weather dependent RES (wind & solar) incapable to cover regular demand in base-load-curve => increased fossil-fuel-based (*gas & coal*) power generation - *(i) as back-up for RES, (ii) self-dependent poser generation* - to cover incremental electricity demand. Increased demand for gas & coal => increased prices for them => increase of their import supplies to EU, *incl. from Russia*

2) Instead of regular Summer injection to UGS – **long-term off-take from UGS**. This was worsened by state of the market: gas was injected under low prices => it is profitable today to take-off & sell for traders at high prices. And vice-versa, even on expectation of future price decline when NordStream-2 will start (even if partial) operation.

Specific EU gas Autumn 2021 factors (2/2)

3) EU **domestic production in decline** (incl. stop-over of Groningen in 2023). Decommissioning (climate-based) Nuclear & Coal power generation should be compensated, but can't with climate-dependent RES (wind & solar) => import demand for gas grew.

4) Expected reliance on LNG as a balancing fuel for EU failed. **EU is not a premium market for global LNG**. Premium market for LNG is Asia-Pacific where prices are higher than in EU => global LNG flew to Asia, incl. US "molecules of freedom".

- China was first to recover from pandemia & began post-covid economic recovery => large-scale demand growth here.

- => In result, **Russian gas became the balancing fuel** for EU => some nuances regarding what Gazprom "SHALL" and "HAS THE RIGHT" to do in the given circumstances… => since some in the West have already prescribed Russia & Gazprom as being responsible for current gas crisis in EU

Table of content

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What Gazprom "SHALL" and "HAS THE RIGHT" to do (1/3)

- Gazprom fulfills all its contractual export obligations. Views differs regarding above-contractual supplies. In EU many considers that (according to logic of "price arbitrage") Gazprom SHALL use current price situation, to sell more gas which will bring prices down => expectations that Gazprom would like to earn SHORT-TERM did not materialize. Why? Gazprom works LONG-TERM.

1. Gazprom is OBLIGED by RF Law "On Gas Supply" to provide stable & secure supply for domestic consumers => his priority was to inject in domestic UGS in advance of Winter heating season + to fulfill all its export contractual obligations.
   - This is in full conformity with International Law: UN GA Resolution 1803 (14.12.1962) "Permanent Sovereignty over Natural Resources" => "…must be exercised in the interest of their national development and of the well-being of the people of the State concerned" =>
2. If EU needs Russian/Gazprom's gas, why it harms Russia/Gazprom with anti-Russian sanctions (incl. by introducing discriminatory legal regime for NordStream-2 & OPAL gas pipelines)? Why in these conditions Russia should make a unilateral favour for EU? Where reciprocity principle? => Gazprom has the full legal & moral right to deliver ONLY contractual LTC volumes & NOT above them.

What Gazprom "SHALL" and "HAS THE RIGHT" to do (2/3)

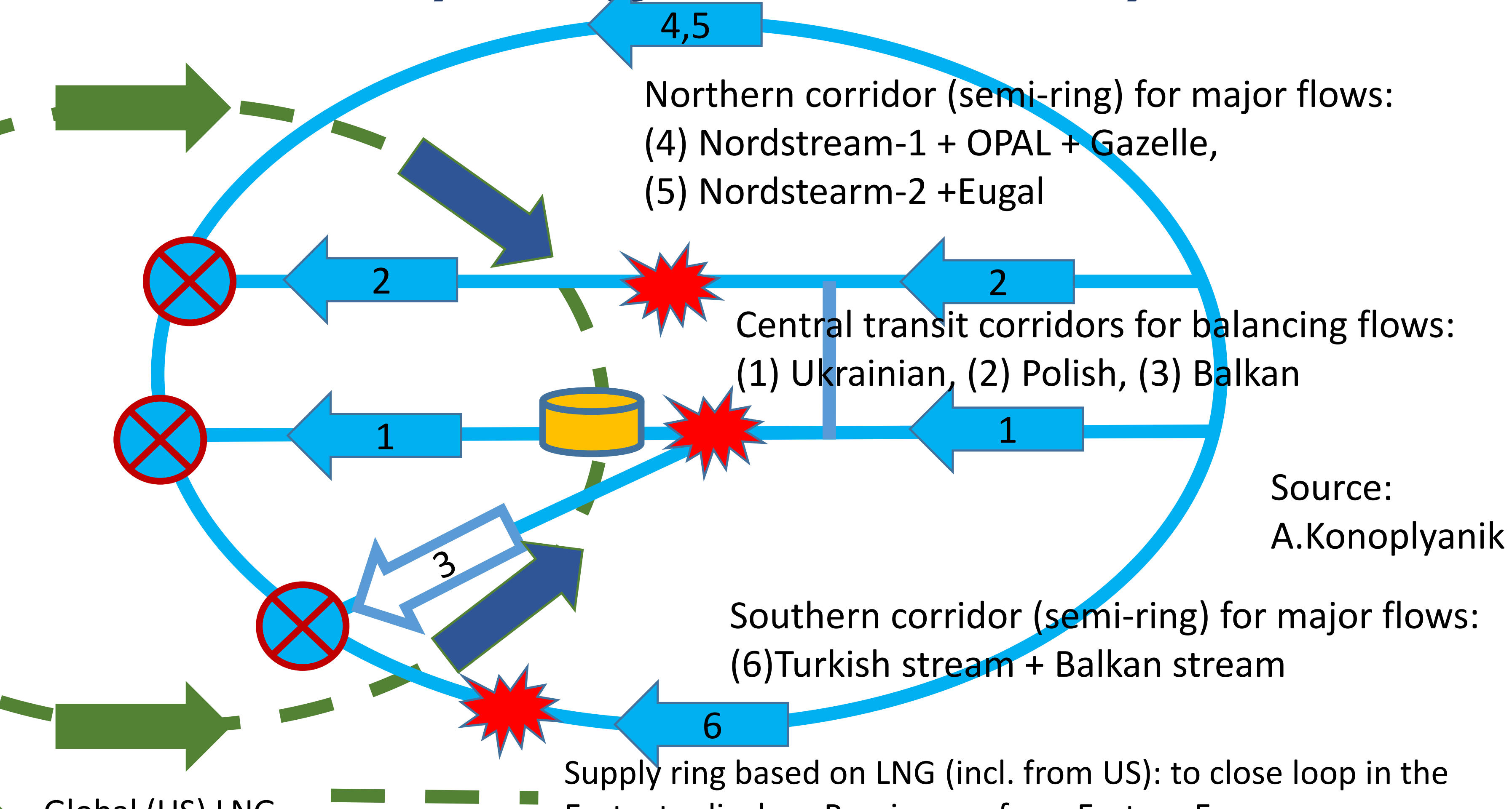
3) Russia/Gazprom are being forced to deliver gas to EU via Ukrainian transit. BUT: it is the legal right of supplier to choose delivery route to LTC delivery points - which supplier considers to be less risky & costly (regulatory, technological, political aspects of "transit risks pyramid").

- Due to modern technology of NS-1&2 & their shorter supply route to EU (from Yamal compared with Ukrainian route from Nadym-Pur-Taz), transportation costs by NS-1&2 are lower, as well as carbon footprint => delivery cut-off price of Russian gas in EU by NS-1&2 will be also lower => for mutual benefit of Russia & EU.
- Full utilization of capacity of NS-1 (+OPAL & Gazelle), NS-2 (+ Eugal), & Turkstream (+ Balkan Stream) is more beneficial compared with Ukrainian route under its current technical conditions (KPMG "accident rate" for UA GTS is 9 times higher than for EU/FRG)
- Reservation of additional transit volumes of US GTS above fixed "ship &/or pay" transit contractual 2020-2024 obligations is done at higher transit tariffs => cut-off price in EU of gas delivered via UA GTS would have been higher compared to deliveries via NS-1&2.

Transition from historical system of linear corridors to current linear-circular system of Russian gas supplies to the EU within two current rings of competitive gas supplies in formation: (i) “disruptive” ring of global LNG supplies & (ii) “integral” with internal backup ring of Russian pipeline gas supplies within radial-circle gas infrastructure system (generalized scheme)

-> Europe for Russian pipeline gas supplies = target market

-> Europe for LNG supplies (incl. US LNG) = closing (bridge) market within arbitrage deals (but target market for US LNG in Eastern Europe => “to kill the (Russian gas as) competitor”)



Historical delivery points of Russian gas to the EU

Zones of transit risks

Pipeline gas

Global (US) LNG

Supply ring based on LNG (incl. from US): to close loop in the East – to displace Russian gas from Eastern Europe

Ukrainian UGS

Regaz LNG

Supply ring based on Russian pipeline gas: to close loop in the West – to increase security of supplies

What Gazprom “SHALL” and “HAS THE RIGHT” to do (3/3)

4) LTC pricing is formula-based => indexation formulas smooths price peaks driven by short-term perceptions of speculators => even transition from PP-indexation (dominated in the past) to currently dominating gas-hubs-indexation (above 80% in current Russian LTGEC) ALWAYS smooths price peaks => current contractual prices are appr. 3-4 times lower price peaks (futures/hubs).

5) Within its “Green Deal” agenda EU:

- propagate departure from gas, though leaving for gas 10Y-long “transition period” (much shorter than duration of standard investment cycle of gas project);
- introduce direct discriminatory limitations for financing gas, incl. infrastructure, projects (EIB, Nov.2019, etc.). Plans of previous EU Commission for infrastructure de-bottlenecking (interconnectors to provide obligatory on-border reverse flows and free flows of gas within EU “single” internal gas market) left unfinished => this worsens local gas crises.
- => In sum-total: current gas crisis in Europe is mostly a hand-made, though with the hands & within mental models of European legislators & regulators themselves.

Thank you for your attention!

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