

Новые внешние вызовы для России в газовой сфере – и некоторые возможные решения для внутреннего рынка

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New External Challenges for Russia in gas – and some possible solutions for domestic market

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- 1) New external challenges in gas for Russia & potential responses/solutions**
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- 3) Current base case: decentralized ssLNG-based gasification of the areas to the East of Urals & in Arctic zone (+ modular schemes + zeppelins) => + a “learning curve” to decentralized gasification of CSEE (creation of Black Sea-Danube ssLNG market)
- 4) Options of behavior in respond to anti-Russian sanctions in energy

• Global trends: New external challenges in gas for Russia

- Post-1973/1979: from energy-wasteful towards energy-efficient economy (OECD + globalization)
- Post-2015 (COP-21):
 - Visible (articulated) climate level: from high-GHG-emissions towards low/net-zero GHG-emissions economy (UN + de-globalization post 2008-09 + decline US dominance => protectionism, sanctions/embargoes beyond UN, resignation of rules)
 - EU: Invisible (hidden) political level: “to substitute dirty import molecules by clean domestic electrons”
- Post-2022: political split of the UN world => no global cooperation, incl. in energy, any more... for some time
 - EU: total cut-off from Russian gas/energy based on SOS considerations (Russia articulated as politically non-reliable anymore) in favor of more costlier, more “dirty” (GHG emissions), less technically & economically reliable alternative options
- **EU**: from “Golden age of gas” (IEA, 2012) to *as if* climate-motivated discrimination of gas as fossil fuel (COP-21, 2015 => EU Green Deal, 2019) to politically-motivated total refusal from Russian gas & from Russia itself (2022):
 - IEA 10-points-plan (03.03.2022): Russian gas import reduction by 50 BCM till end-2022,
 - Rus gas immediate substitution by more costlier and more dirty US LNG
 - REPowerEU (08.03/18.05.2022): Russian gas import reduction by 100 BCM till end-2022, zero energy import from RF by 2027
 - Rus gas immediate substitution by more costlier & more dirty US LNG, & by more dirty coal, & by earlier considered to be “unsafe” nuclear; in the long/longer-term by more costlier & long-to-be-developed & yet unclear RenH2, by unsustainable RES-electricity; by energy efficiency
 - “Save Gas for a Safe Winter”(26.07.2022): EU *as if* voluntary 15% demand reduction through 09.22-03.23
 - Forced cut-off demand by lowering quality of life; immediate Rus gas substitution by more dirty coal, wood, etc.
 - “State of the Union 2022 address by President von der Leyen” (14.09.2022): “war raging on European soil” & Russia as “ruthless face of evil”
 - Analogy: US President Ronald Reagan (08.03.1983): USSR as “evil empire” and “the focus of evil in the modern world” => peak of US-USSR/East-West confrontation

New potential responses/solutions to external challenges for Russia in gas

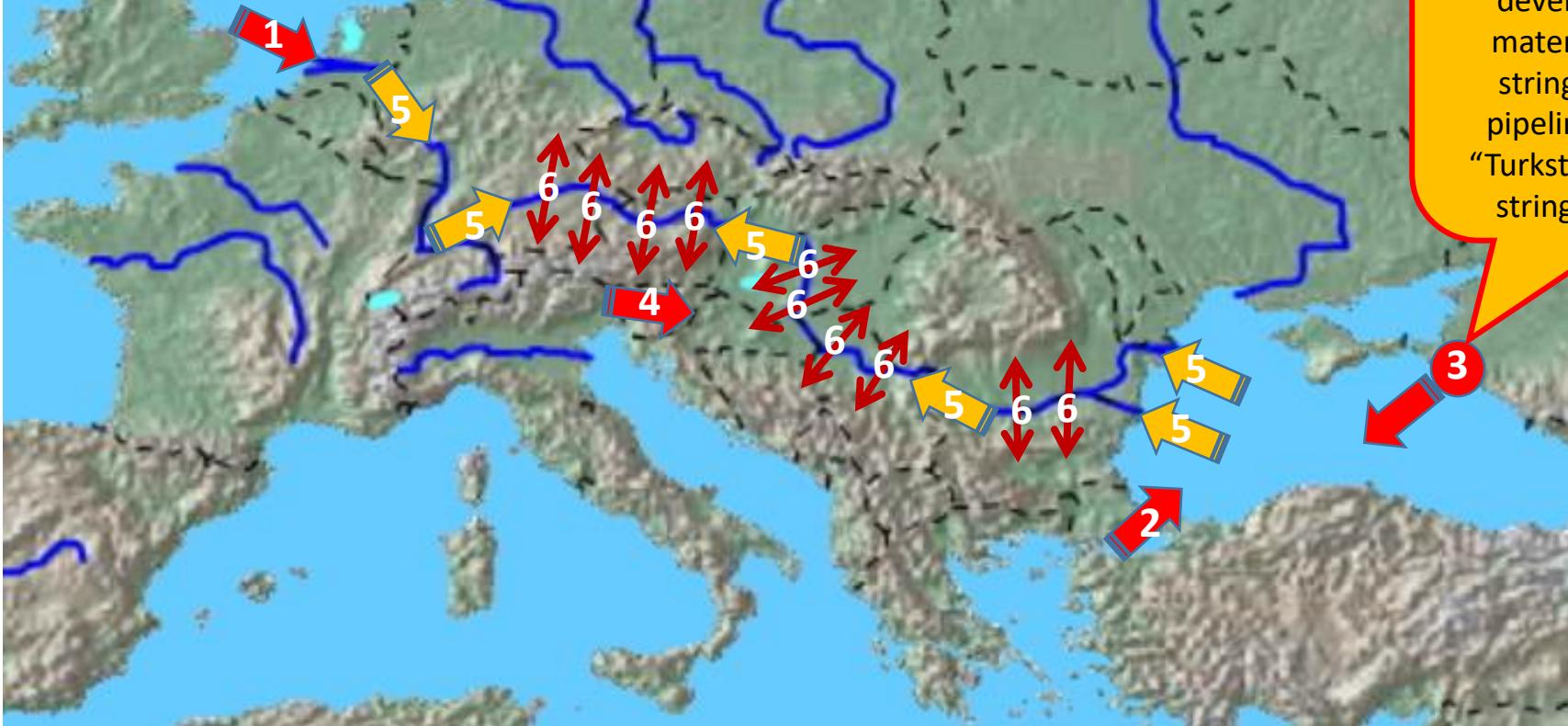
- **Retaliatory steps of Russia = (1) Energy Efficiency, (2) Natural Gas, (3) Self-reliance =>**
- => **Russia:** *inter alia*, appearance of incremental gas volumes available for domestic market
 - Yu.Shafranik (*): incremental demand for gas in Russia, BCM: 20 (additional gasification) + 30 (ssLNG + msLNG) + 20 (production of fertilizers on top of today's 25) + ... gas-chemical industry (to cut-off import from 30 to 15 USD bln);
 - ssLNG:
 - Yu.Shafranik (*): in-full domestically developed ssLNG technologies except cryogenic tanks (imports from China)
 - A.Klimentiev (**): 2019 Russia ssLNG export to 18 states. But fleet of gas-carriers & of cryogenic tanks, used for ssLNG export deliveries, belongs to foreign companies
 - => whether/what is domestic solution, if any? (see final chapter on self reliance)
 - Gasification of Russian East/Far East/Arctic zone (beyond 83% technically achievable gasification of Russia):
 - (i) ssLNG in rechargeable cryogenic tank-containers for power generation, as a motor-fuel, heating/cooking fuel +
 - (ii) modular schemes (capacity bar) for refilling stations & gas-powered decentralized electricity & heat co-generation +
 - (iii) airship (zeppelins) as all-year-round, distance & weight unlimited, transportation vehicle
 - adaptation of earlier Black Sea-Danube/CSEE ssLNG market concept to Russian East/Far East/Arctic zone
 - My previous idea (since transformation of South Stream 63 BCM into Turkish Stream 31.5 BCM): to use Russia-EU energy cooperation in developing Black Sea-Danube/CSEE ssLNG market as a “learning curve” for further its implementation to development of decentralized gasification of Russia to the East of Urals & Arctic zone
 - Now a proposed U-turn: ssLNG “learning curve” in Russia first and then implementation in Europe (BSEC area) after “the war is over” => [BSEC to follow decentralized ssLNG-based gasification of Russian East => maybe via IENE]

(*) Ю.Шафраник. ТЭК России: новый вызов. // «Эксперт», 22.08.2022 (<https://expert.ru/expert/2022/34/tek-rossii-noviy-vyzov/>) (***) А.Климентьев. Итоги экспорта малотоннажного СПГ из Российской Федерации в 2019 году, 20.02.2020 (<https://lngnews.ru/2020/02/1263/itogi-eksporta-malotonnazhnogo-spg-iz/>)

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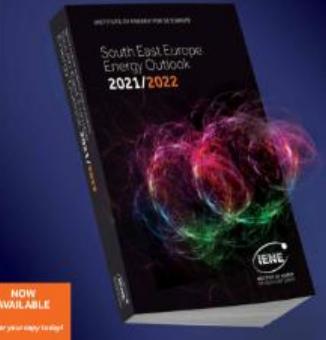
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Prospects of creation of Black Sea-Danube / CSEE ssLNG market (prospective idea for BSEC + BSTDB + ICBSS)



SSLNG plant at Russian Black Sea coast at the end of the onshore pipeline system developed for the non-materialized offshore 4-strings "South Stream" pipeline (63 BCM), while "Turkstream" consists of 2-strings only (31.5 BCM)

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Legend:

1-4 = SSLNG supplies to SEE (1-3 – available; 4 - prospective):

1 = from North Sea area (re-loading) by barges via Rhine-Danube waterway from the North;

2 = through Turkish Straits (limited, up to prohibitive);

3 = by trucks via N.Italy (currently from Spain) & prospectively from coastal regaz/FSRU in North Med;

4 = from proposed Russian Black Sea SSLNG plant:
(i) in changeable cryogenic tank-containers, by container vessels of sea-river class upstream Danube & along Black Sea coastal area, (ii) bunkering ships, within (& beyond?) Black sea area;

5 = supplies within Rhine-Danube waterway by barges/see-river vessels;
6 = SSLNG fueling gas stations in Danube cities (i.e. floating, on anchored barges, modular packaging, with changeable cryogenic tanks) => 53 cities on Danube

(*)Black sea plant

Location	Black sea coast of Russia
Capacity	0.5 – 1.5 mtpa
Status	Prefeasibility study
Delivery countries	Countries of South-Eastern Europe, countries of Danube river region, Turkey.

Source: A.Konoplyanik; (*) Black Sea plant : K.Neuymin (Gazprom).
Development of Small and Medium-Scale LNG Infrastructure in Russia. Presentation at 9th SPB International Gas Forum, 1-4.10.2019



Generalized concept of creating Black Sea-Danube / CSEE ssLNG market (after EU & Russia will return to restarting/reloading energy relations/cooperation). Case for intra- & inter-city road transport as end-user

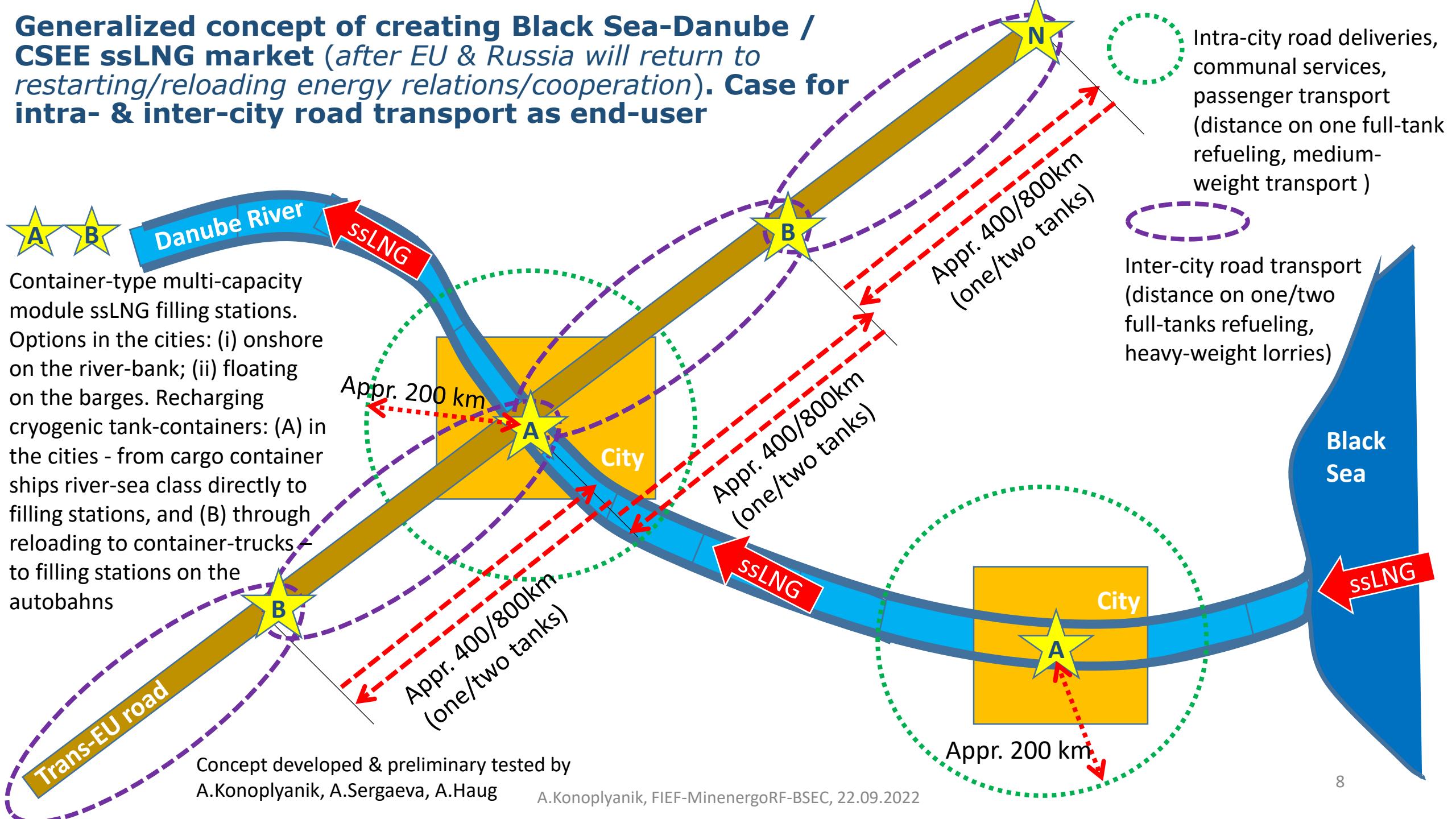


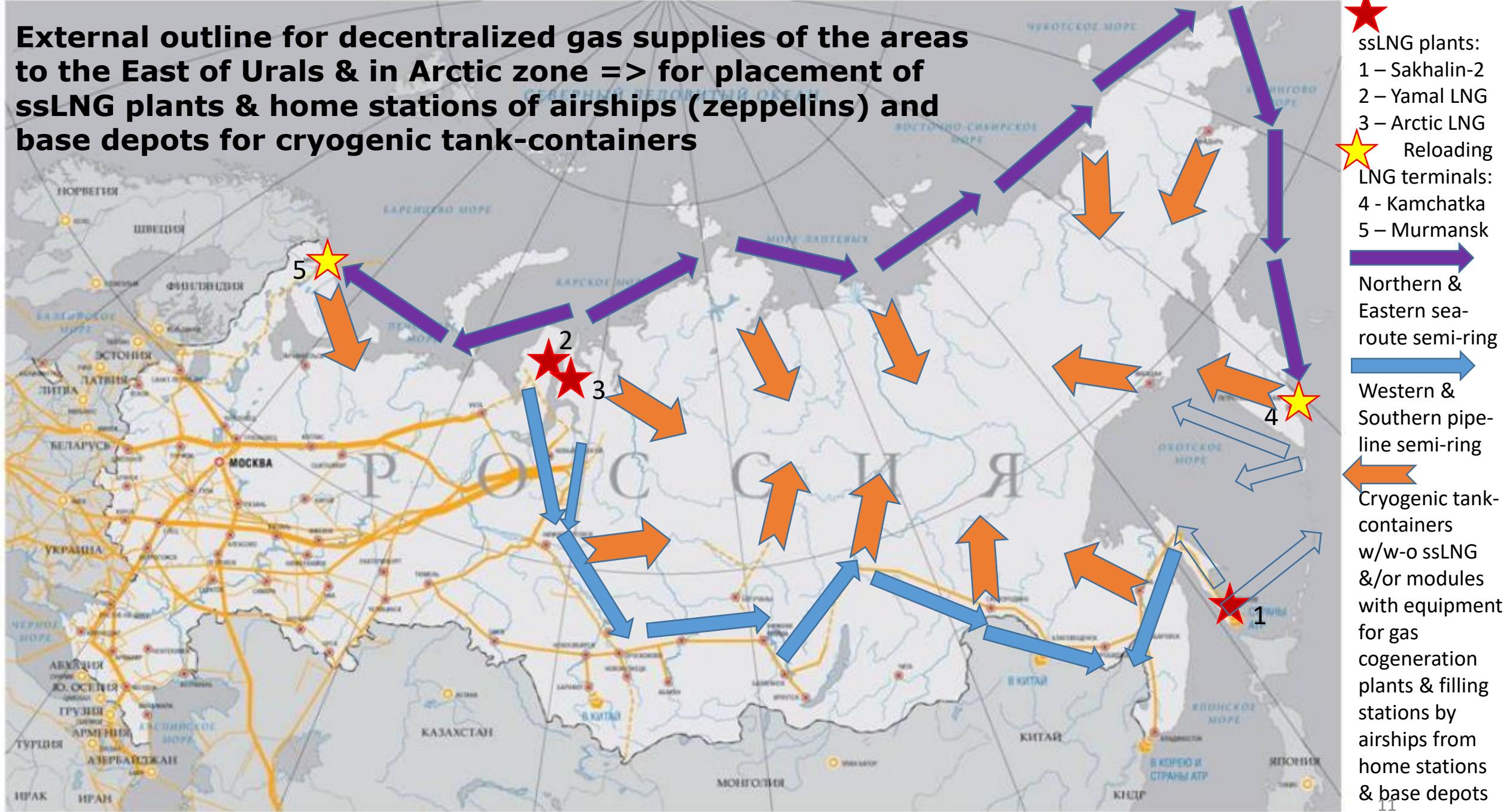
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Key sea-ports on the Russian Northern Sea Route

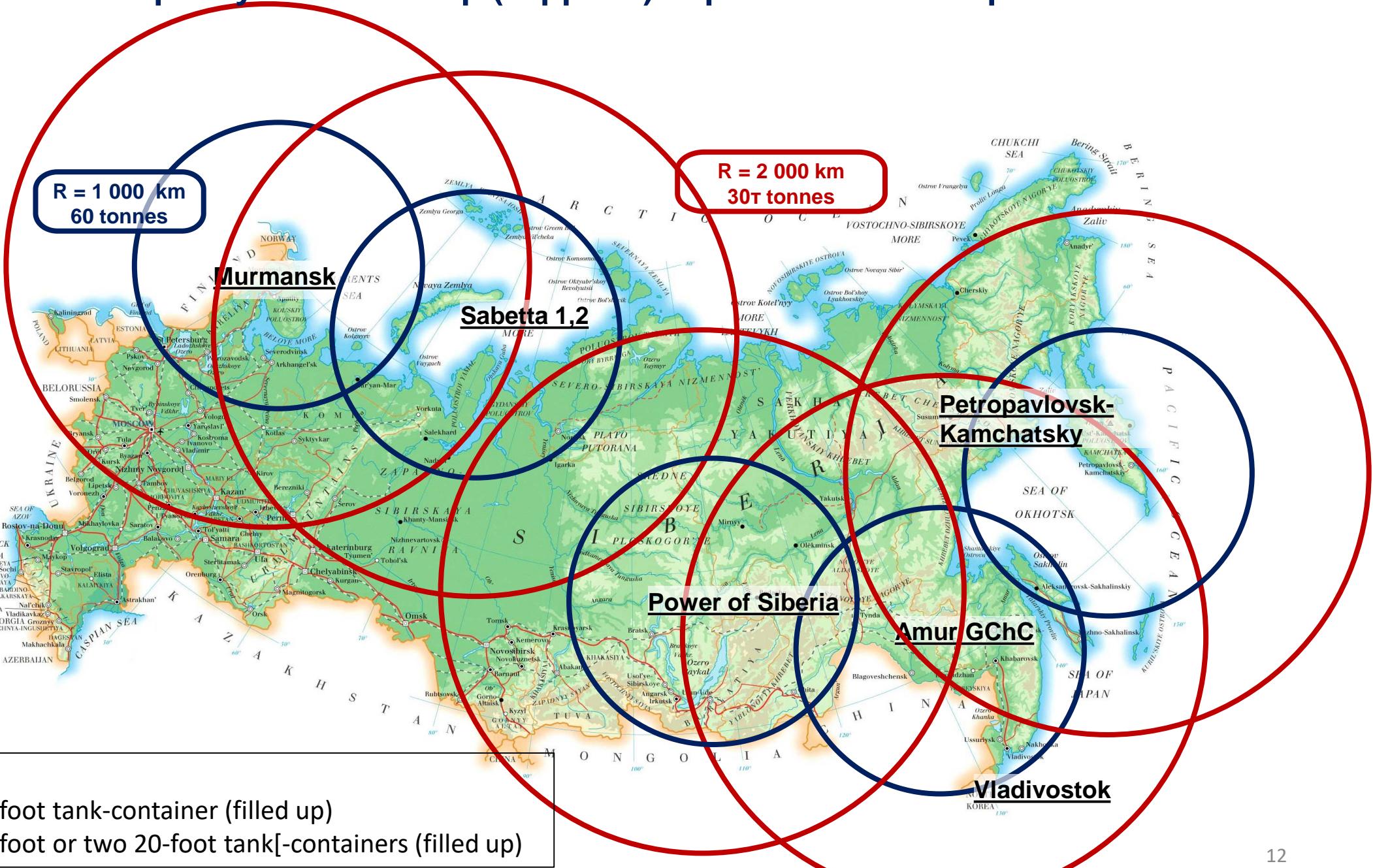


**External outline for decentralized gas supplies of the areas
to the East of Urals & in Arctic zone => for placement of
ssLNG plants & home stations of airships (zeppelins) and
base depots for cryogenic tank-containers**



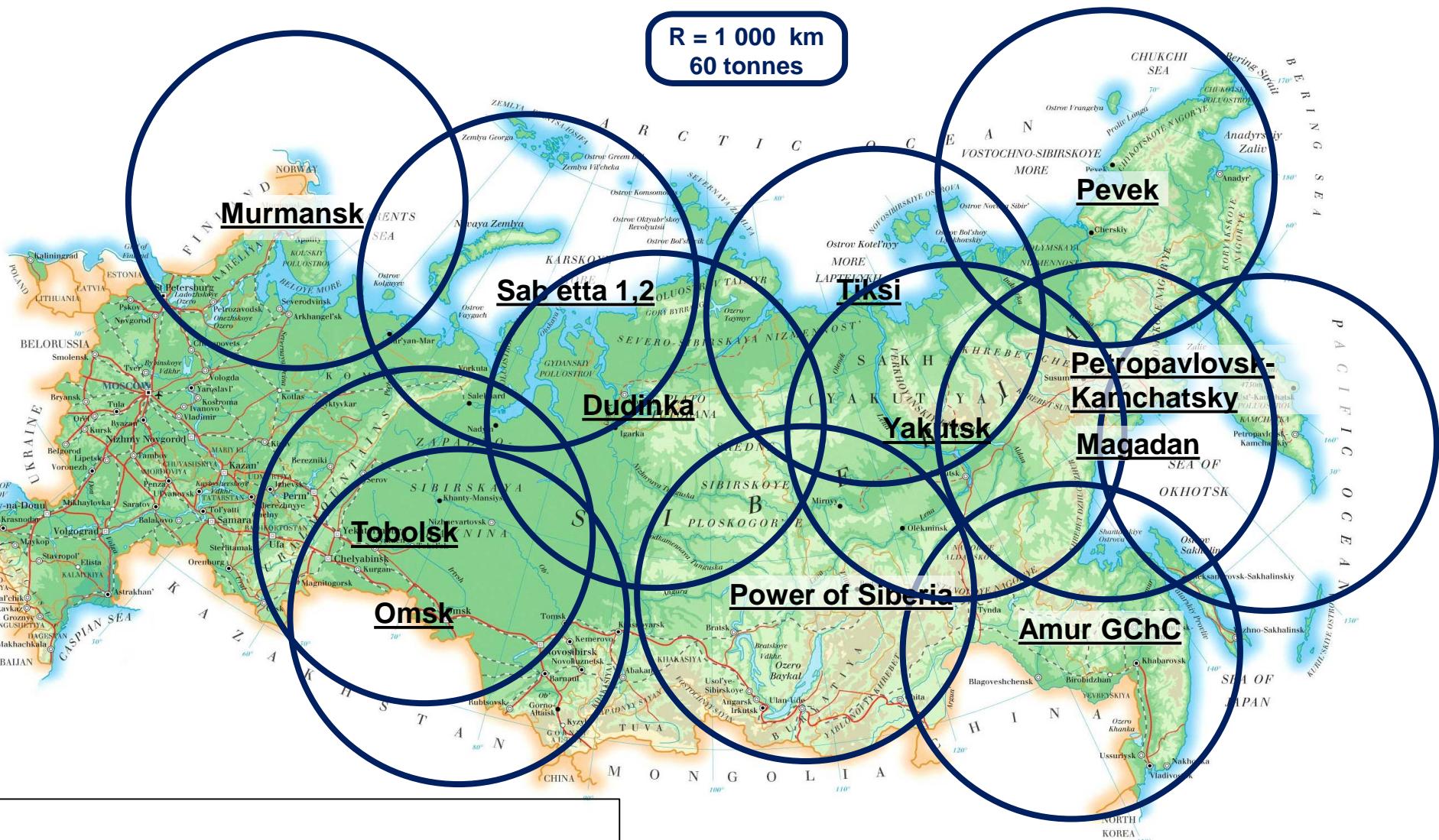
Effective airlift capacity of the airship (zeppelin) dependent on transportation distance

Source:
В.В.Ворошилов,
А.А.Конопляник.
Как нам
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«Нефтегазовая
Вертикаль», 2021,
№17-18, с.16-24
(часть 1), №19-20,
с.24-35 (часть 2)



Improvement of ssLNG airship transportation efficiency backed by existing infrastructure and/or local ssLNG plant

Source:
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For reference:

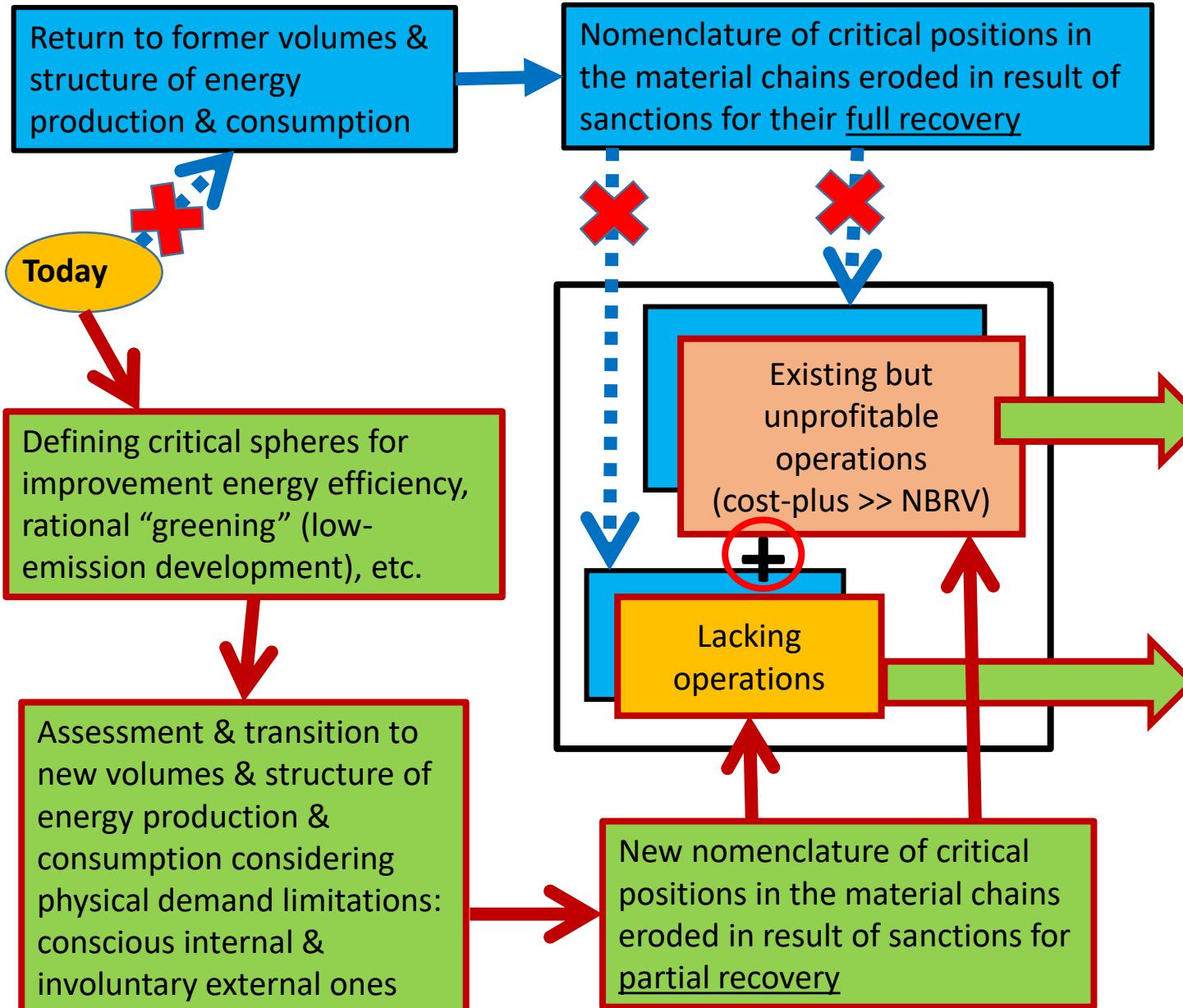
30 tonnes = one 20-foot tank-container (filled up)

60 tonnes = one 40-foot or two 20-foot tank[-containers (filled up)]

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Options of behavior in respond to anti-Russian sanctions in energy



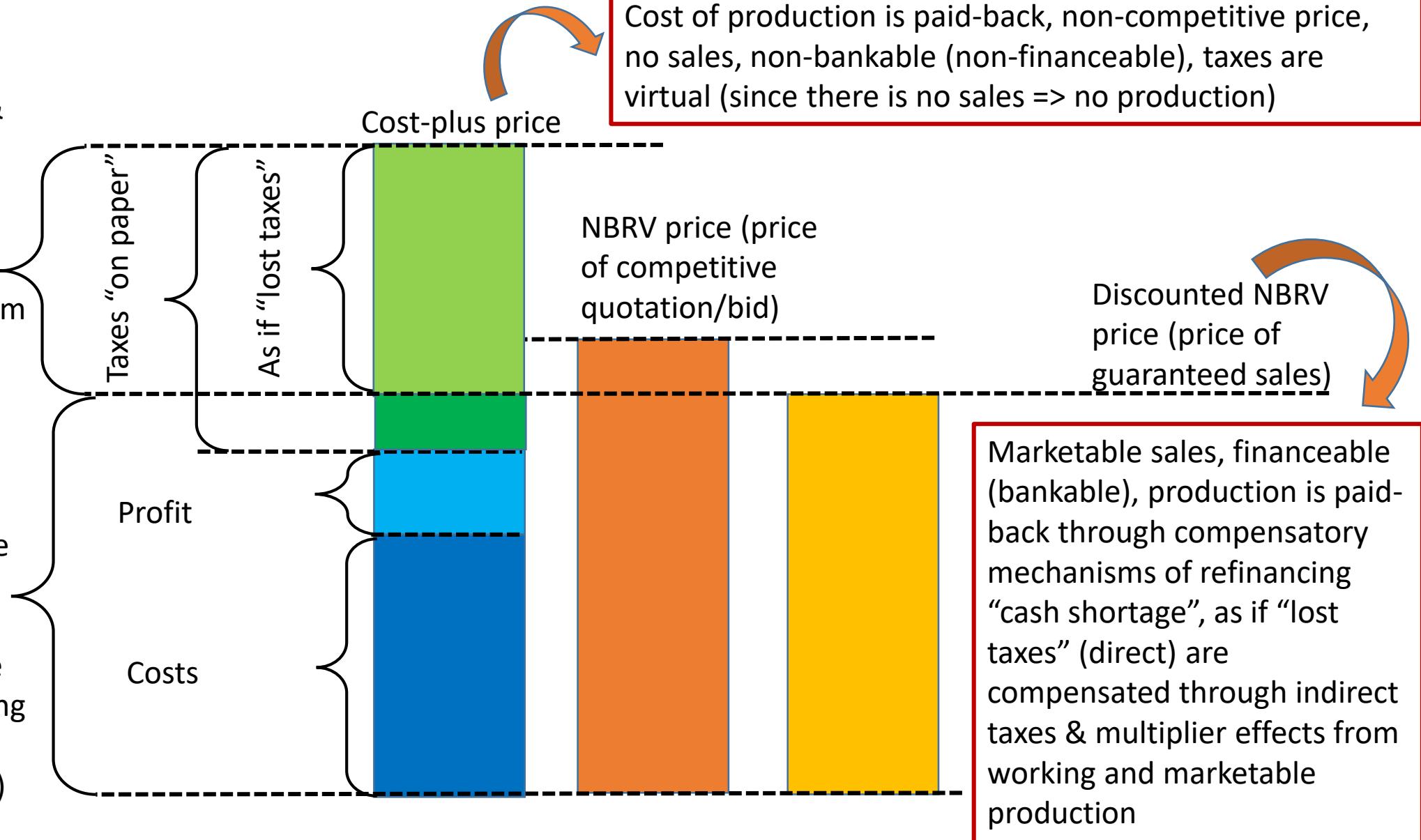
1. Delivery price << NBRV => sales guaranties => market share => revenues => return of investments
 2. Project financing (loans repayment guarantees) => "Project Financing Factory", "Industry Development Fund", ...
 3. State refinancing of "cost-plus minus discounted NBRV" difference => state buy-out of financial credit instruments (secured acc.to 1-2 above) of the enterprise for that sum
 4. Minimization (up to zero) of direct taxes (state will receive its pay-back via indirect taxes & multiplier effects)
 5. State guarantees for project conditions stability no less than up to the end of pay-back period (tax legislation & administration, first of all)
- Analogy (methodological/historical): PSA

1. «*short-run*»: «shenzhen» (China: borrowing/taking with improvements)
 2. «*Long-run*»: start-up of long-run innovative-investment cycles => to begin with state financing of fundamental & applied R&D on potentially breakthrough trends
- Analogy (methodological/historical): nuclear & space programs of US & USSR, US shale revolution, ... (force majeur circumstances)

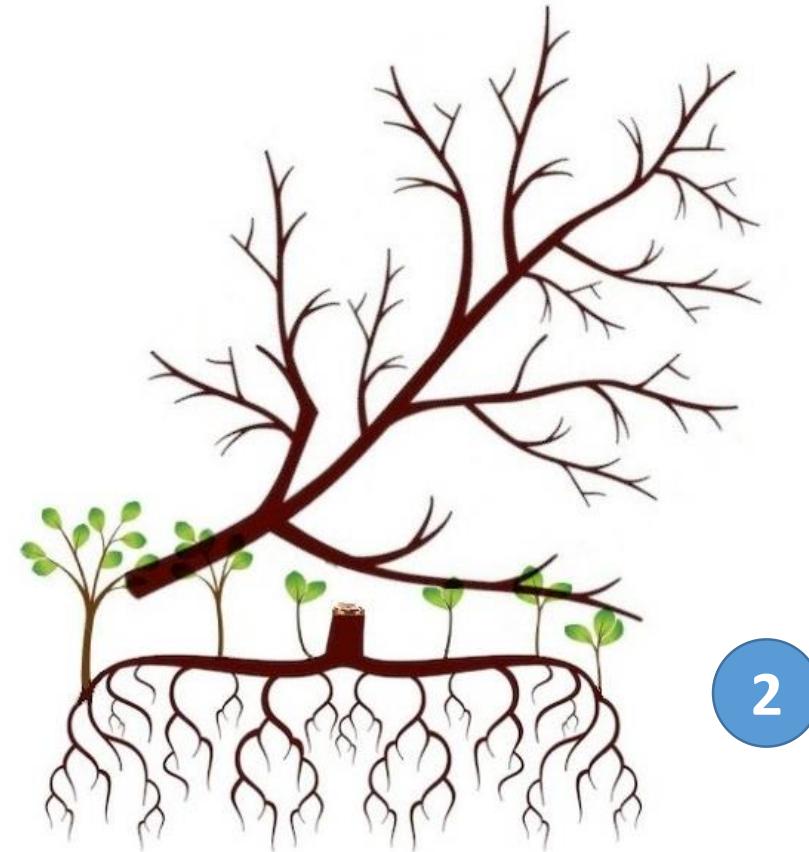
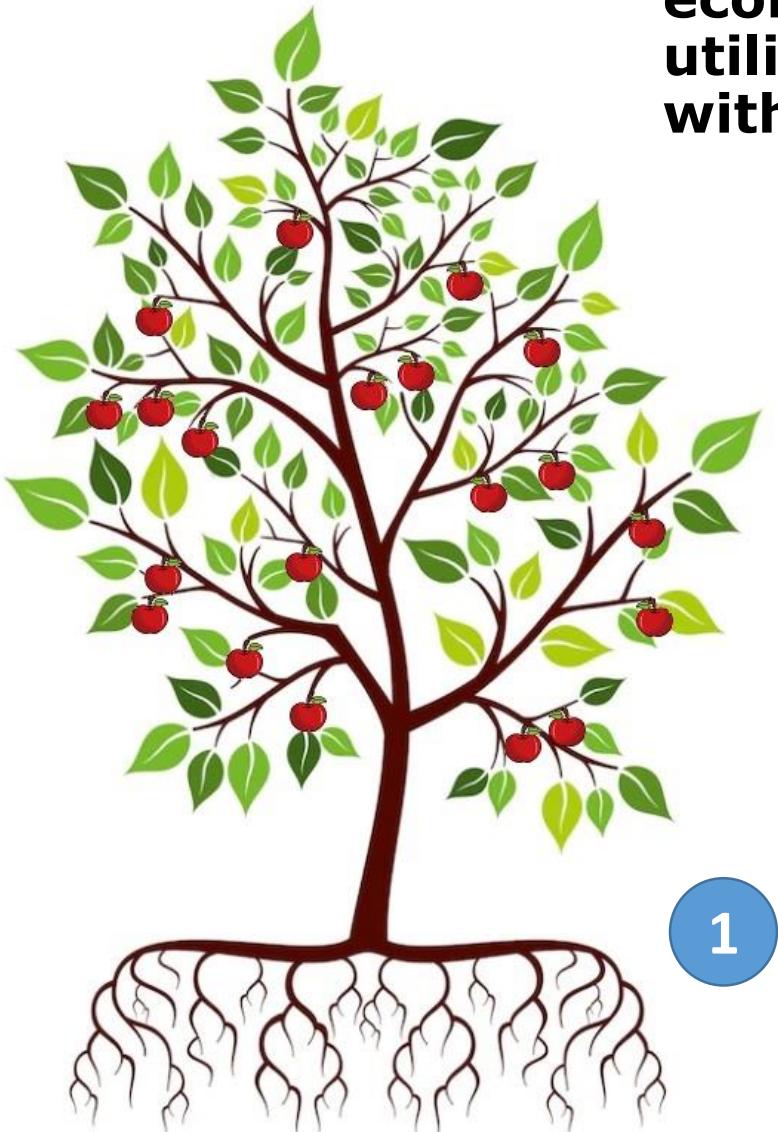
Financing mechanism for yet non-profitable operations

State refinancing of
“cash shortage”
(between “cost-plus” &
discounted NBRV) –
state buy-out (Central
Bank, VEB.RF) of
financial credit
instruments for that sum
of the enterprise
securitized by its
marketable revenue

Project financing at the
marketable (of
guaranteed sales)
discounted NBRV price
цену (“Project Financing
Factory”, “Industry
Development Fund”,...)



It is impossible to cut-off Russia by sanctions from its natural resources (raw materials) - there is no economic growth within any technological mode: utilization of natural resources (raw materials) lies within technological processing stage of any high order



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Thank you for your attention!

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