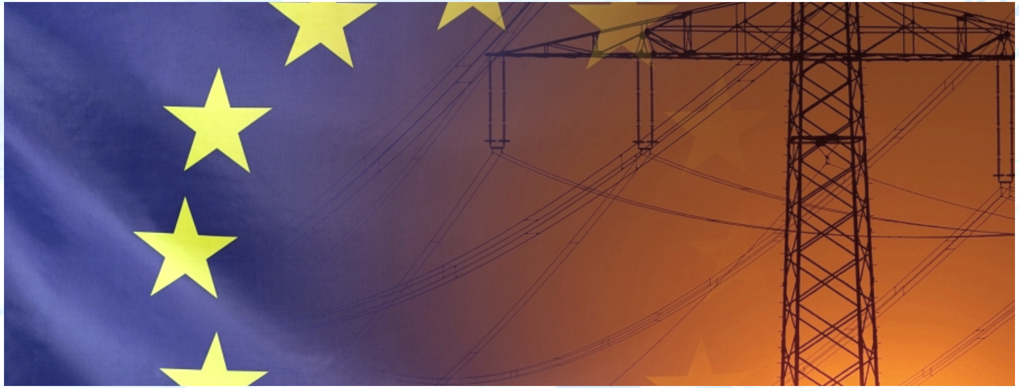
Centre Energie - Centre for Energy

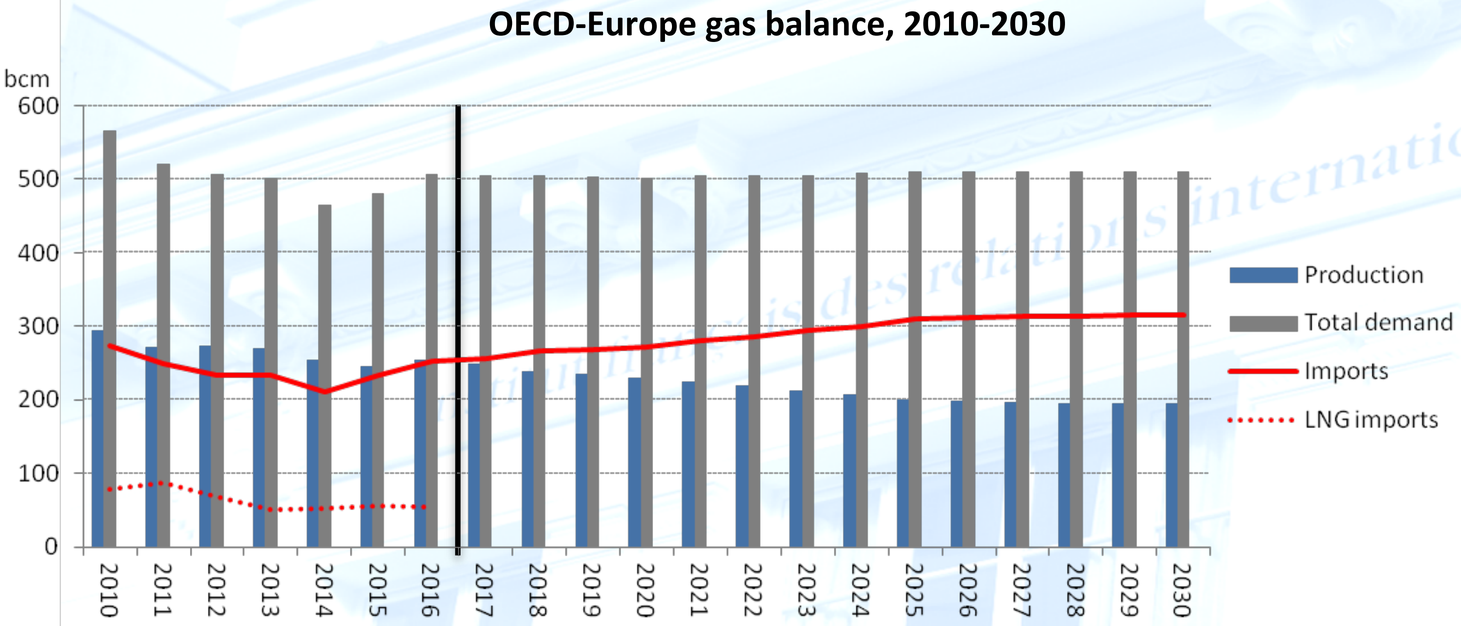
Ukraine and the great game of pipelines: the ball is in Ukraine's court



Ukrainian Gas Forum, Kiev, 11-12 Octobre 2017

Marc-Antoine Eyl-Mazzega
Director, Centre for Energy

Europe's gas imports are set to slightly increase

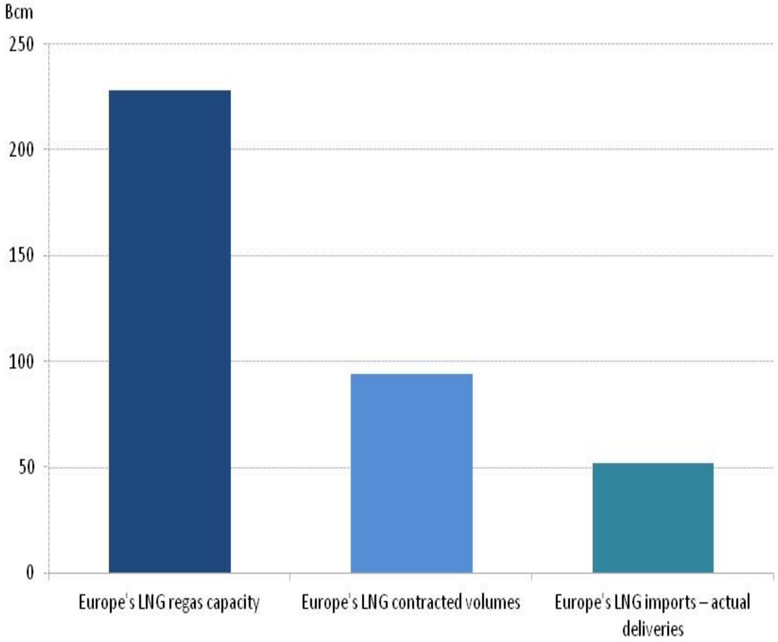


Sources: Ifri, IEA Gas Report 2017, IEA WEO 2016

Europe's gas demand is expected to be flat or in slight increase if carbon instruments are effective to favor gas-fired power generation and if gas utilization develops in the transport sector. Amidst declining production, imports are set to slightly increase.

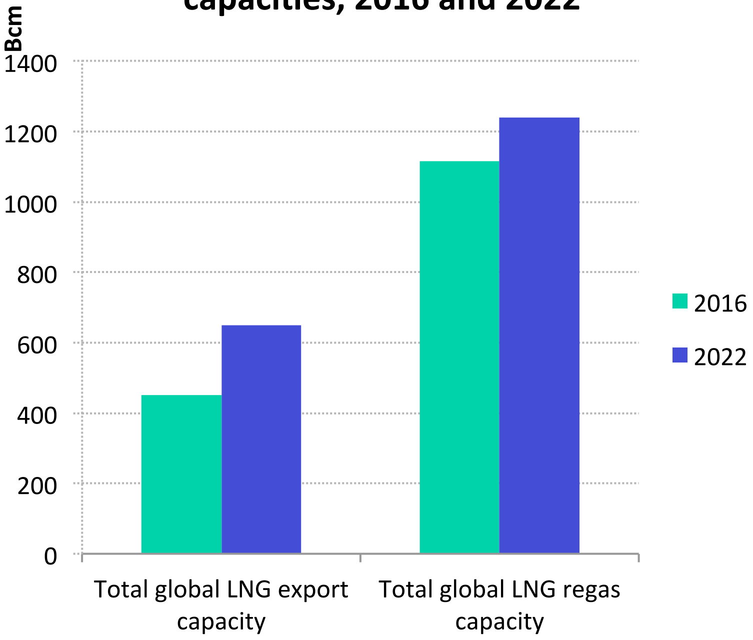
Europe will see growing competition between LNG and Russian gas, so far LNG imports are low...

OECD-Europe LNG import data for 2016



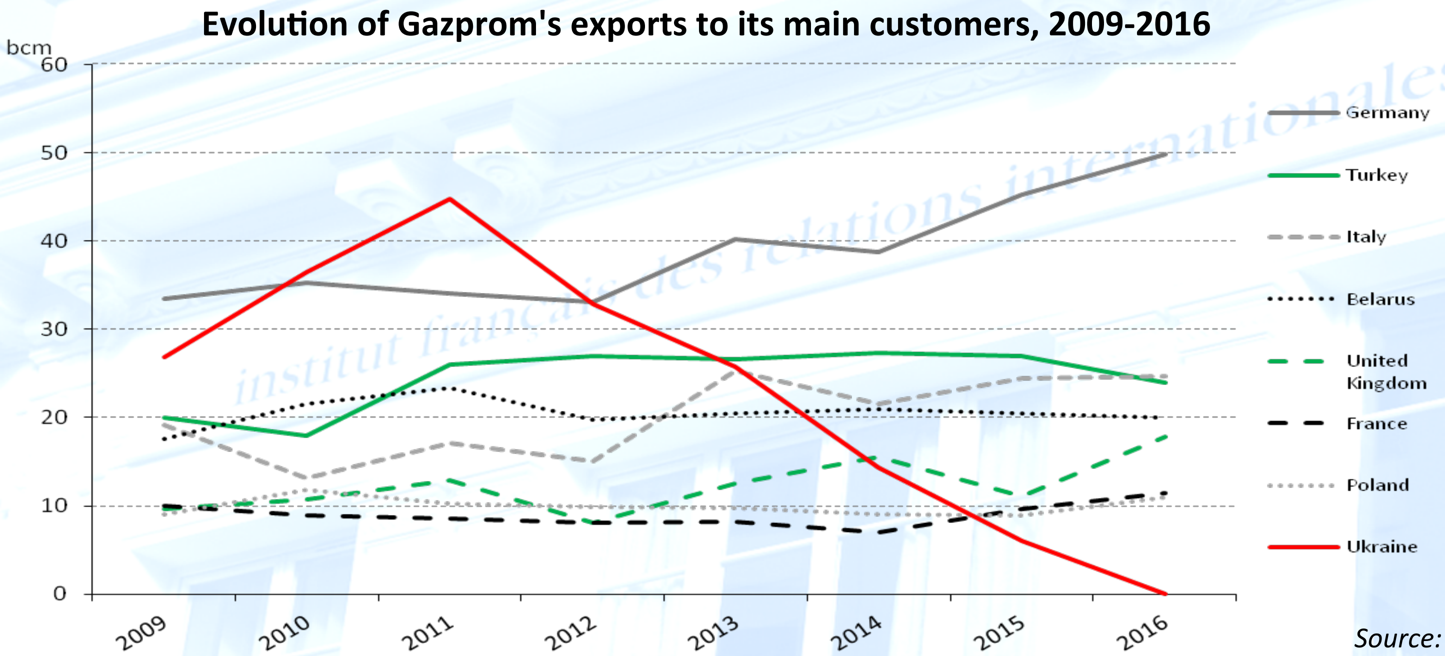
Source: IEA Gas Report 2017

Comparison of global LNG import/export capacities, 2016 and 2022



Source: IEA Gas Report 2017

…while Gazprom is winning everywhere as its commercial strategy has adjusted, to the benefit of Ukraine's transit role

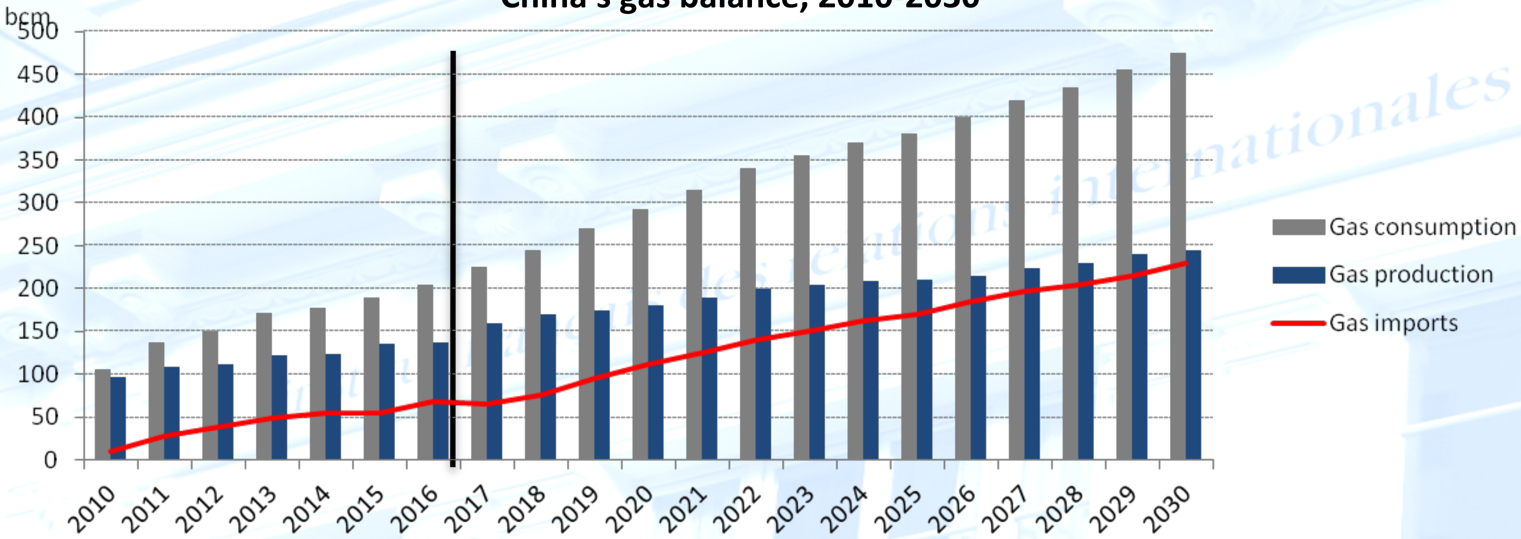


Source: Gazprom

Gazprom's oil indexed pipeline supplies are more competitive than current LNG export costs from the USA to Europe, except marginal supplies. Gazprom has also benefited from the fall in Groningen production, posting record high sales volumes.

The great gas game is also about Russia's future export level to China and their impact on Europe

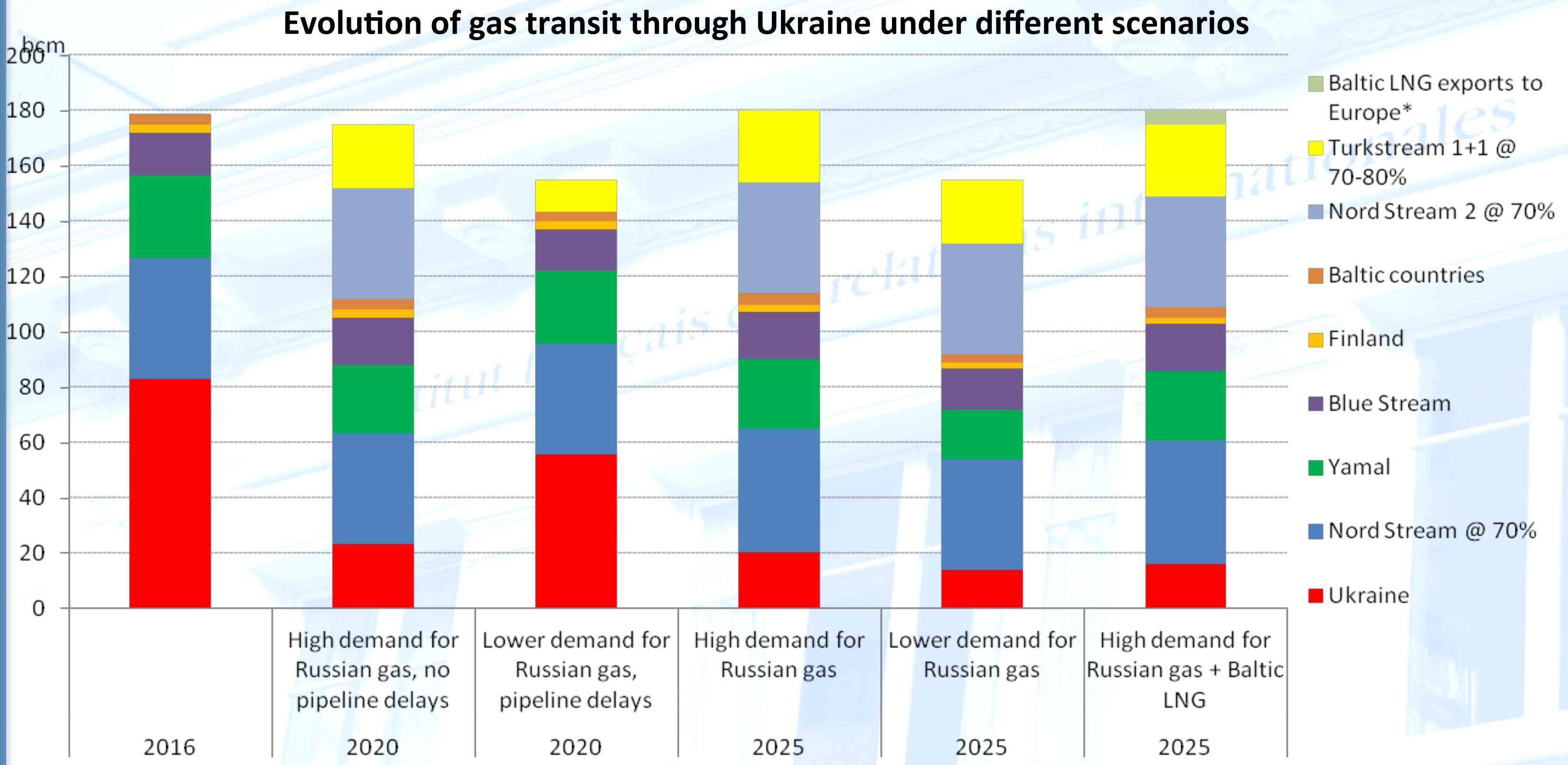
China's gas balance, 2010-2030



Sources: Ifri, IEA Gas Report 2017, IEA WEO 2016

China will consume almost as much gas as Europe by 2030. Its imports will be covered also by Russian gas. The pace of China's LNG imports will have a global market impact with repercussions on Russia's exports to Europe.

Transit volumes through Ukraine expected to decrease



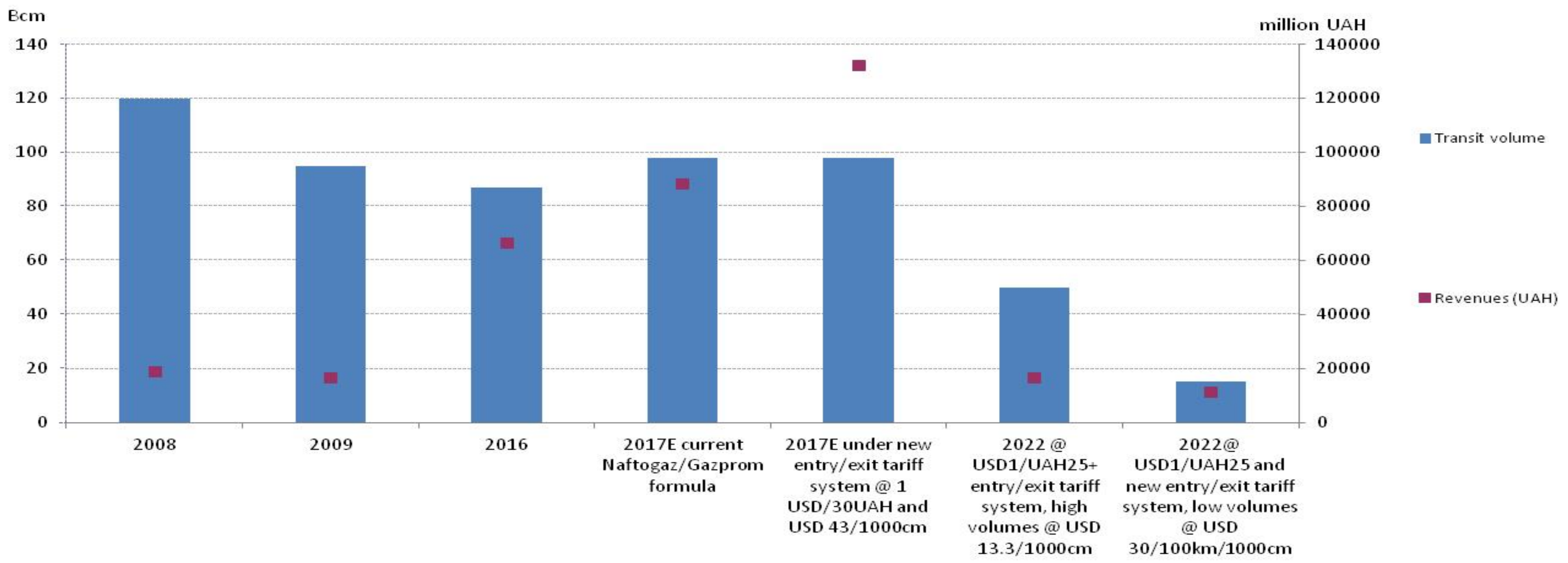
Source: Ifri, Naftogaz, Gazprom
Note: this analysis assumes load factors of new pipelines, if realized, at 70%

Preliminary conclusions

- ➢Russia's gas exports to Europe can increase in the medium term but much less than the additional new pipeline export capacity planned
- ➢Ukraine can have no influence on Russian gas export levels to Europe
- ➢If new pipelines are build by Gazprom, transit volumes through Ukraine will decrease strongly, yet not necessarily equally to the new alternative capacity added
- ➢Worse case scenario of falling Russian gas exports to Europe and additional bypass capacities is not realistic
- ➢Ukraine will remain a transit country in the foreseeable future unless it send the wrong signals

Transit revenues at record levels, governance & ownership of MGU + professionalism & independence of regulator key

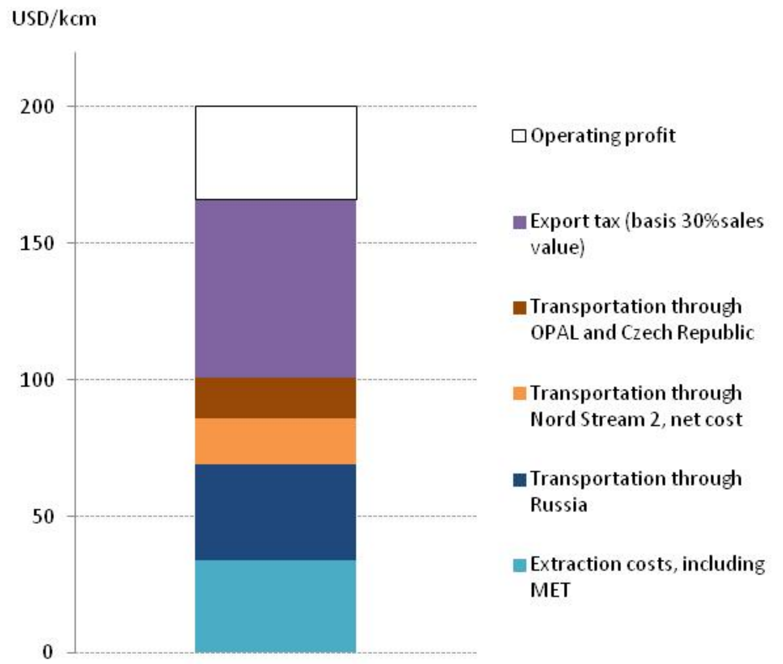
Evolution of Ukraine's transit revenues under Gazprom/Naftogaz contracts and under the new entry/exit capacity booking tariff system



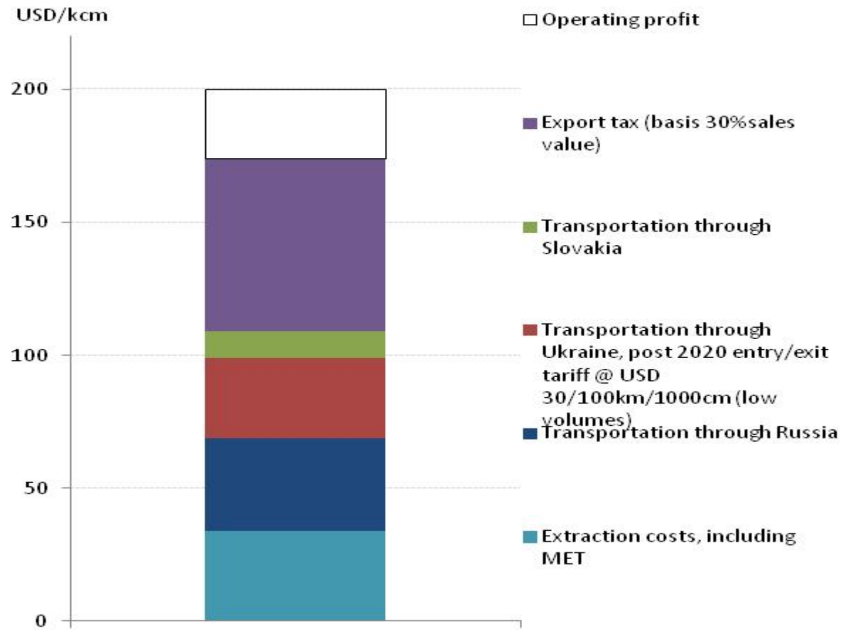
The new entry/exit involves a reevaluation of assets & accelerated amortization over the period 2016-2020. It incentivizes long-term use at high level of Ukraine's GTS. Yet the tariff system would require adjustments and additions to foster market liquidity.

Efficient, non-discriminatory and predictable tariffs for capacity bookings at the borders are urgently needed

Estimate of economics of Russian gas exports via Nord Stream to Baumgarten at USD 200/kcm



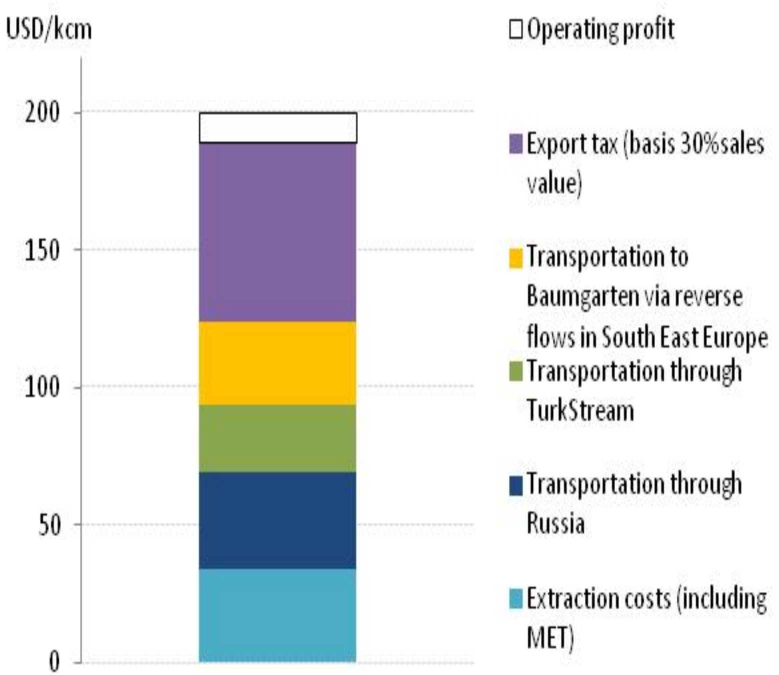
Estimate of economics of Russian gas exports via Ukraine to Baumgarten at USD 200/kcm, low case



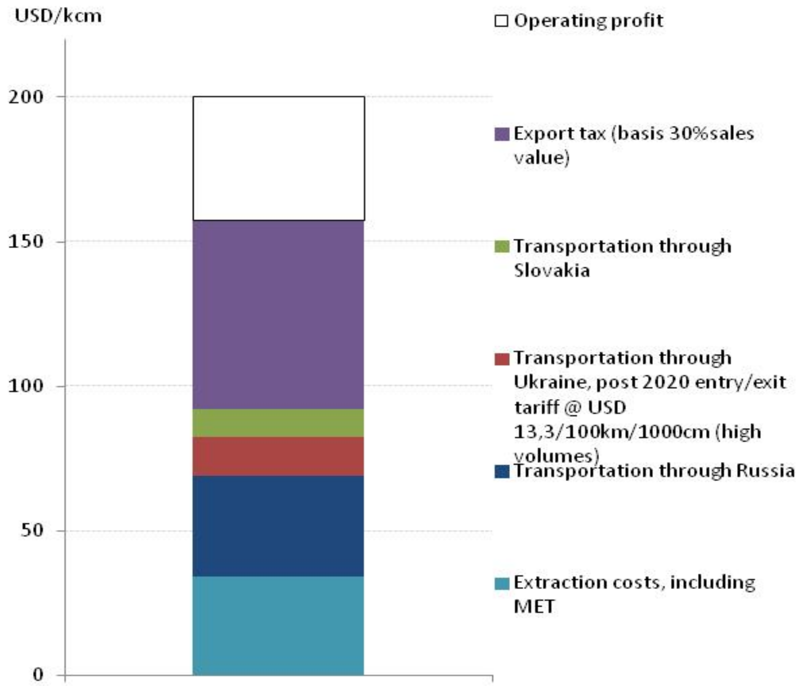
Sources: Ifri, Naftogaz, Gazprom, Eustream, NKRE

Ukraine's GTS has only a really competitive edge when used at high volumes/long term in the new entry/exit system

Estimate of economics of Russian gas exports via TurkStream to Baumgarten at USD 200/kcm



Estimate of economics of Russian gas exports via Ukraine to Baumgarten at USD 200/kcm, high case



Sources: Ifri, Naftogaz, Gazprom, Eustream

Preliminary conclusions

- Gazprom's alternative routes can be operated at profit at current gas prices because of the huge sunk costs. That would not be the case if gas prices fell to USD 150/kcm and if the Ukrainian route is booked at high levels in the long run as from 2020 (High case transmission cost is about USD13.3/km, low case is about USD 30/kcm). Yet gas prices unlikely to fall that low.

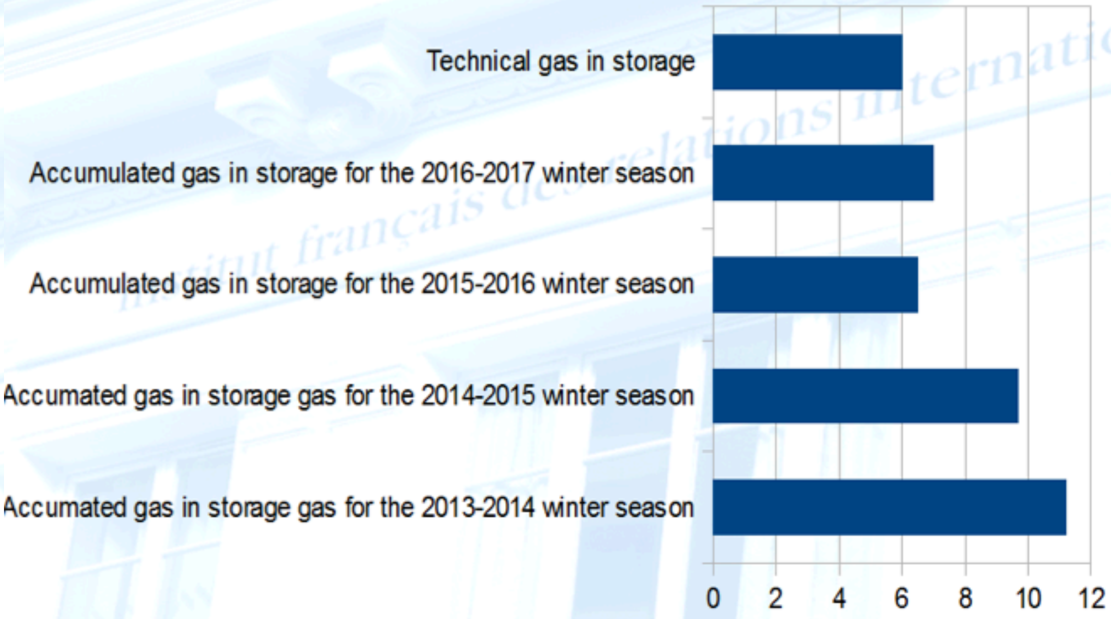
- Ukraine's GTS would be much more competitive under the new tariff only if high capacities are booked in the long term. Yet this is not what Gazprom wants. And Gazprom has the gas and the capacity to build alternatives.

- Ukraine's new tariff system encourages Gazprom to further decrease transit to 0 as usage of Ukraine's GTS will be more expensive at low volumes.

- The current tariffs may well discourage European users to use the Ukrainian system post 2020 in trying to obtain changes in gas delivery points to the RU-UA border. Their interest could be to join Gazprom for new pipelines.

Ownership, regulation and operation of unbundled storages: transparency, predictability, competitiveness are critical...

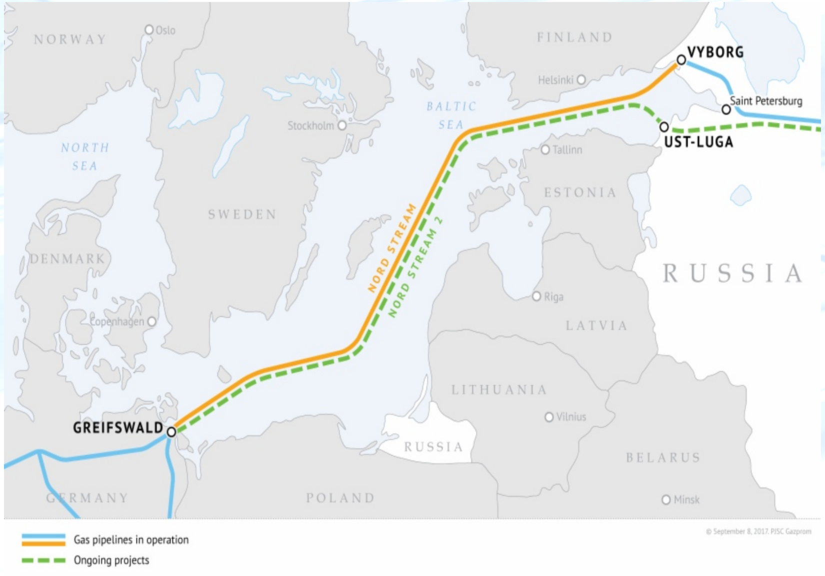
Gas storage data for Ukraine (bcm)



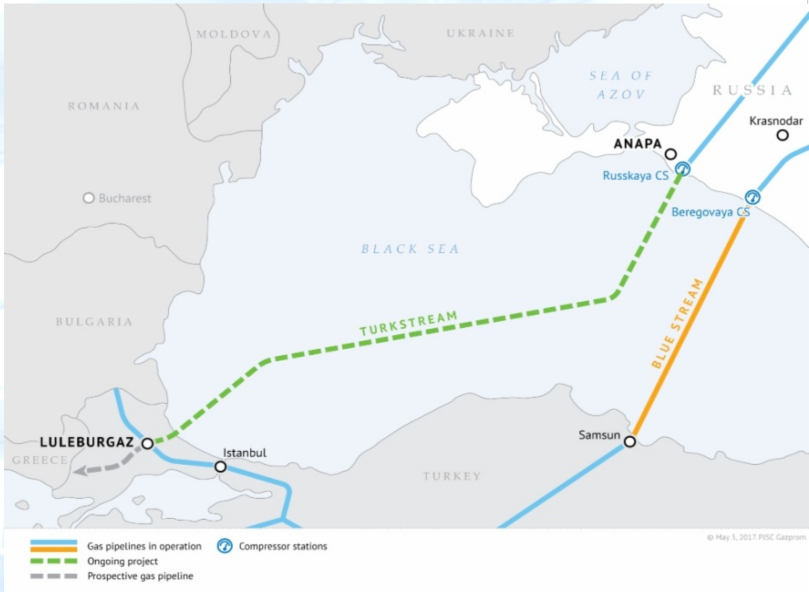
Sources: Ifri, Naftogaz

While Ukraine's effective rules of the gas market are uncertain, Gazprom is moving fast

Nord Stream 2



TurkStream

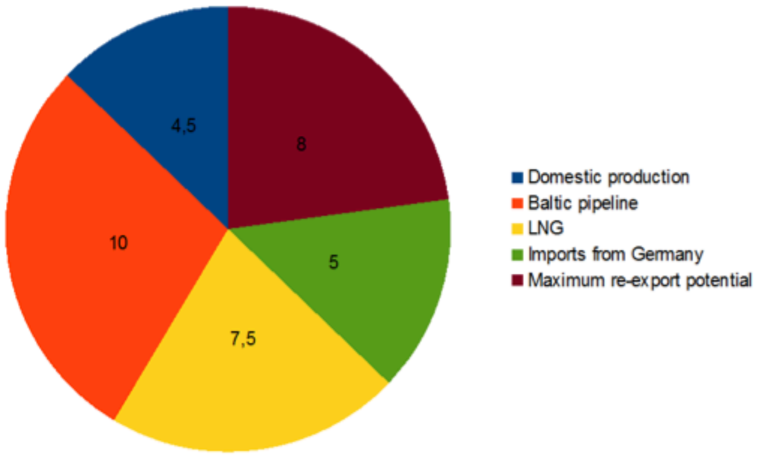


Source: Gazprom

Gazprom could seek to fully load Nord Stream and Nord Stream 2, if built. It can also work to add a second and third string to TurkStream for supplies to Italy and Central Europe. Ukraine's transit role could be further diminished to 0.

Poland's gas supply diversification is an opportunity for Ukraine, interconnection important project

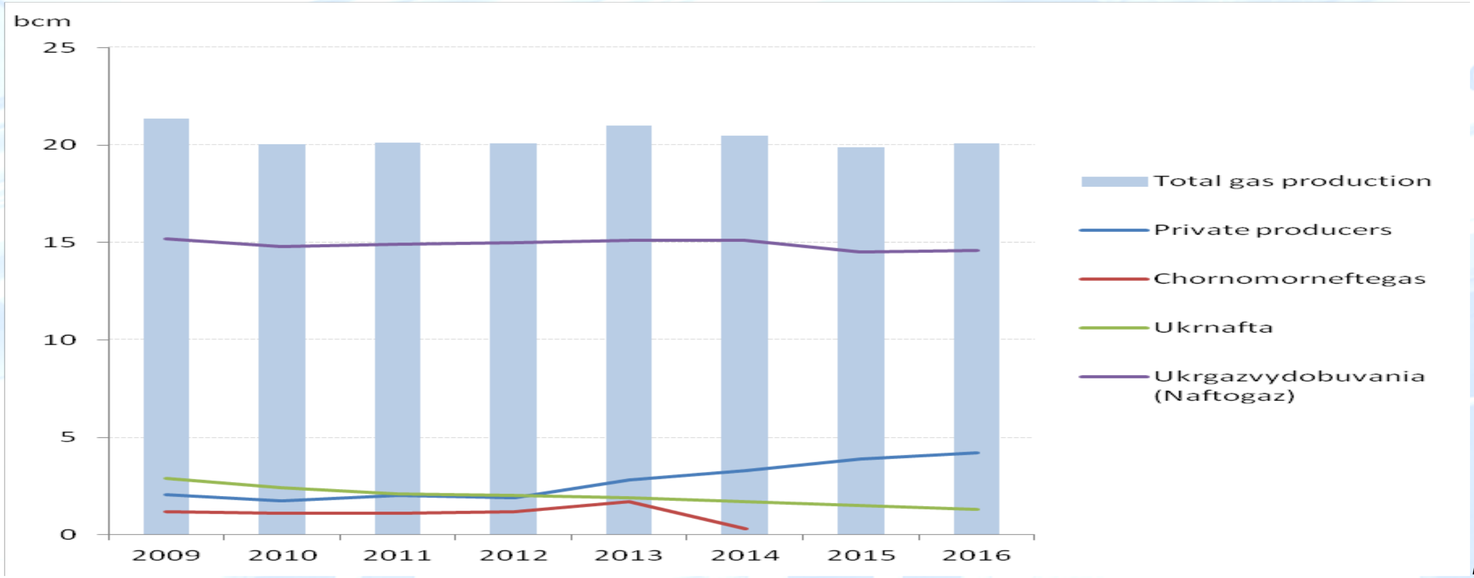
Poland's expected available gas capacities, 2023 (bcm)



Source: PGNiG, Ifri

Raising gas production is of strategic importance, full and urgent sector shake up is required as clock is ticking

Evolution of Ukraine's gas production, 2009-2016



Source: Naftogaz

Ukraine's upstream segment is dominated by UGV which now has the ressources to increase production by 2023. For foreign private companies, Ukraine is one of the worst places to invest. Reversing this is key to reach gas self sufficiency, increase tax collection and increase the use of the GTS.

Conclusion (1): Unprecedented changes…

Unprecedented gas market changes and reforms in Ukraine:

- ✓ Demand decrease, fall in import dependency
- ✓ Reduction of consumption subsidies
- ✓ New gas market regulation
- ✓ Reverse flow imports and full integration into the European gas market
- ✓ First steps towards a more liquid market

Unprecedented changes within Naftogaz:

- ✓ Secure and reliable transit
- ✓ Reverse flow imports, competitive gas purchases
- ✓ Secure and reliable winter storage operation
- ✓ Profitable company
- ✓ Import liberalization, start of wholesale segment liberalization
- ✓ Corporate governance reforms & transparency
- ✓ Upstream company UGV gets fair selling price allowing for investments

Conclusion (2): yet the glass is still half empty!

- Upstream sector reshuffle and massive private investments
- Unbundling under ISO model: transparent and effective
- Multiple and simple steps towards more competitive and liquid gas market: attractive tariffs for export, storage operations, easing conditions for market entry, Public sector obligation reform, VAT refunding
- De-monopolization of retail segment
- Strategy for the gas sector and clear rules of the game
- Effective and professional gas regulator
- Tariff adjustments need, cross border trade impossible

! Stalling of gas sector reforms risks Ukraine's credibility at a critical time and jeopardizes future gas supply security

➔Strengthened, efficient and transparent institutions

➔Predictable, effective and competitive gas market rules for storage, retail, wholesale, transmission, distribution.. .

➔Consortium + new gas selling points currently impossible ifri

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