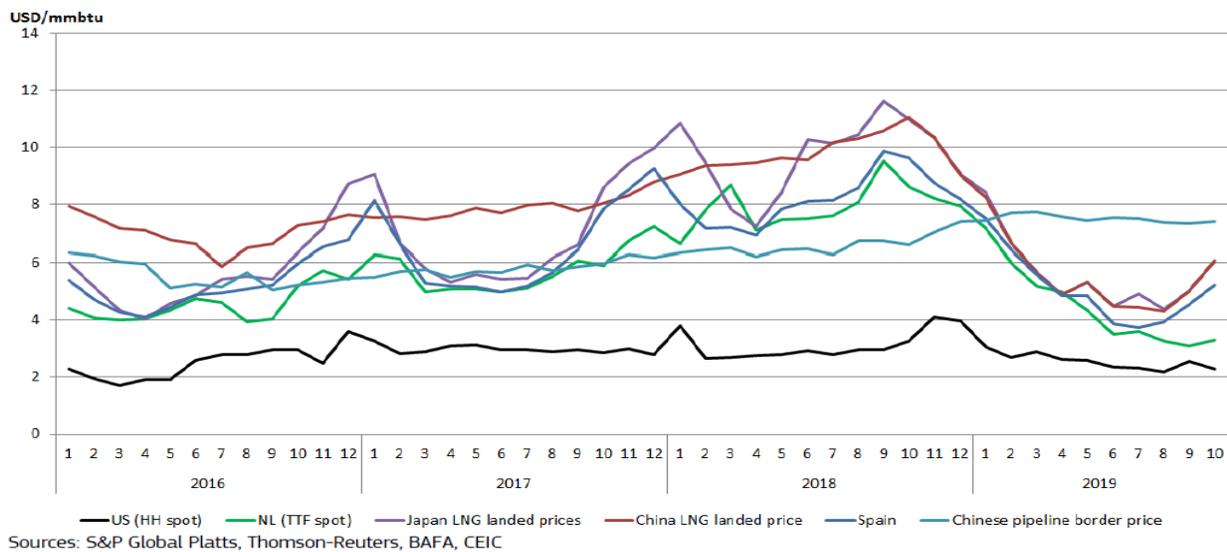




RUSSIAN CHESS on GAS POLICIES & TURKISH STREAM

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Global gas demand is expected to highly increase in the long term period. As being related with the demand projections and the existing reserves, our studies show that, prices are going to be in such a pocket burning situation. However, currently, we are facing with a different situation about the global gas prices. Due to plenty of global LNG supplies and lesser demand, nearly prices in all the markets have been felt sharply.



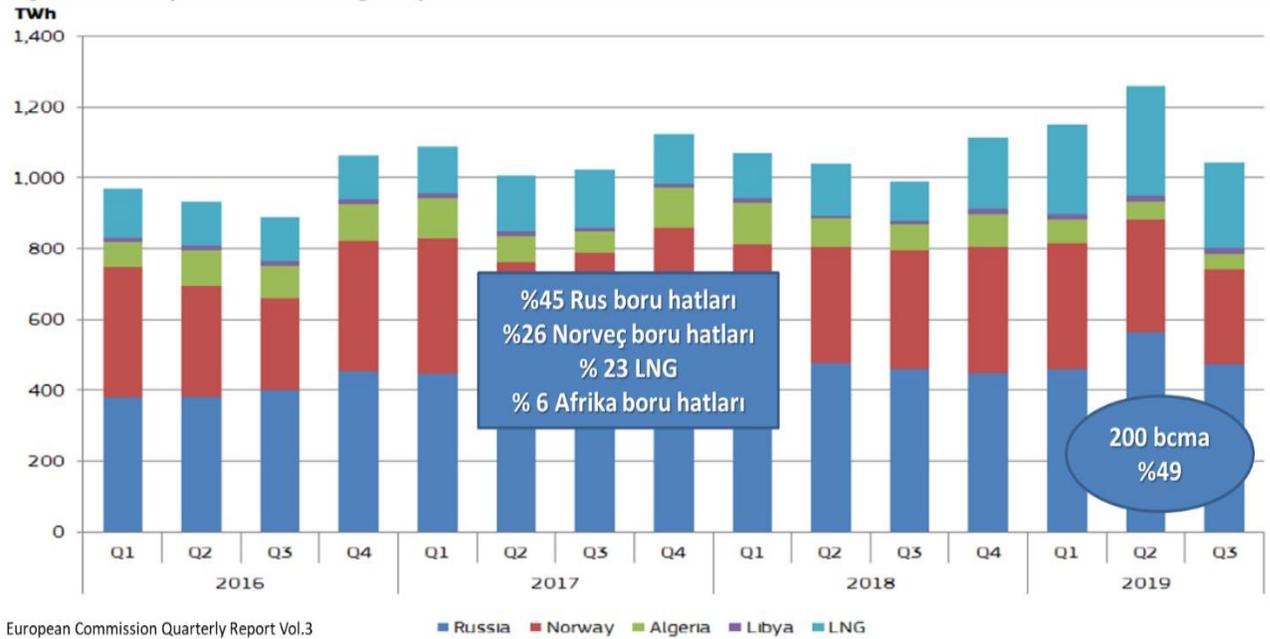
Graph 1: Global Gas Prices Comparison (Source: European Commission Quarterly Report Vol.3)

As can be understood from the graph, except the Chinese pipeline border prices, nearly all due average spot prices in due markets hit to lower levels.

Without any doubt, this situation is mainly due to US's shale gas revolution. US shale gas's cheap net back price and the increasing production capacity is changing the dynamics. In the future we will be faced with how LNG's importance will going to increase in gas balances.

Additionally, the decrease in the price levels affected the revenues and the planned budgets of the Russian side, which is currently the most important actor in global gas balances.

In 2019, Russia sold around 200 bcm gas to the biggest consumer European Union.

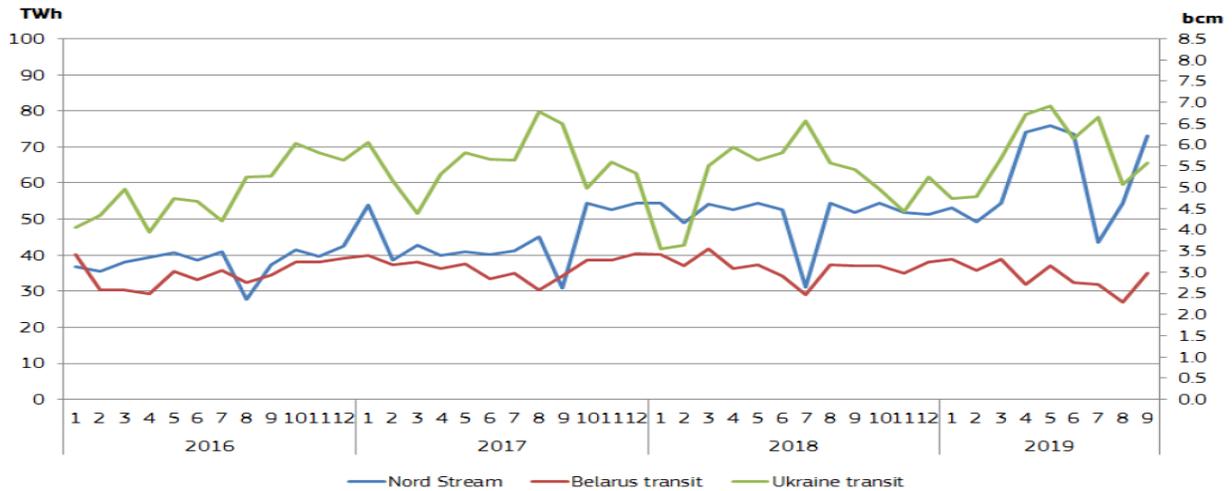


Graph 2: Gas Exports of EU (Source: European Commission Quarterly Report Vol.3)

As can be understood from the graph above,

- Russia is supplying nearly the half of EU's gas imports.
- %45 of these sales to the EU are transported through the Russian pipeline network.
- %26 is coming from the Norwegian lines,
- %23 of the total supply is from LNG (where EU has much more additional degasification capacity, to accept more LNG),
- And the rest %6 percent is coming from the African pipelines.

By focusing on the Russian sales, as can be seen in the next graph below:



Graph 3: Russian Gas Export Routes to EU (Source: European Commission Quarterly Report Vol.3)

- Nearly %43 of the total Russian sales are following the Ukrainian route,
- %37 is from the Nord Stream,
- And the rest is through the Belarus transit.

At this point, while checking the equation from the Russian sight, Russia has some strong and weak points for directing the future dynamics.

Its strong points are:

- Having plenty of proved reserves and huge potential for new discoveries,
- Having national know-how and enough technology to develop the fields,
- Having enough and cheap transportation capacity to reach the due European markets,
- Having important price competitive advantage.

And the brittle points are:

- Cheaper gas prices,
- US's shale gas effect in all markets,
- US's sanctions,
- More compressive EU legislations,
- Lack of enough finance,
- Transit risks in the Ukrainian route,
- Becoming LNG more important for the gas markets,
- Old pipeline networks.

To be able to handle the due weak points, Russia has put some new strategies within its ongoing energy policies. These are mainly:

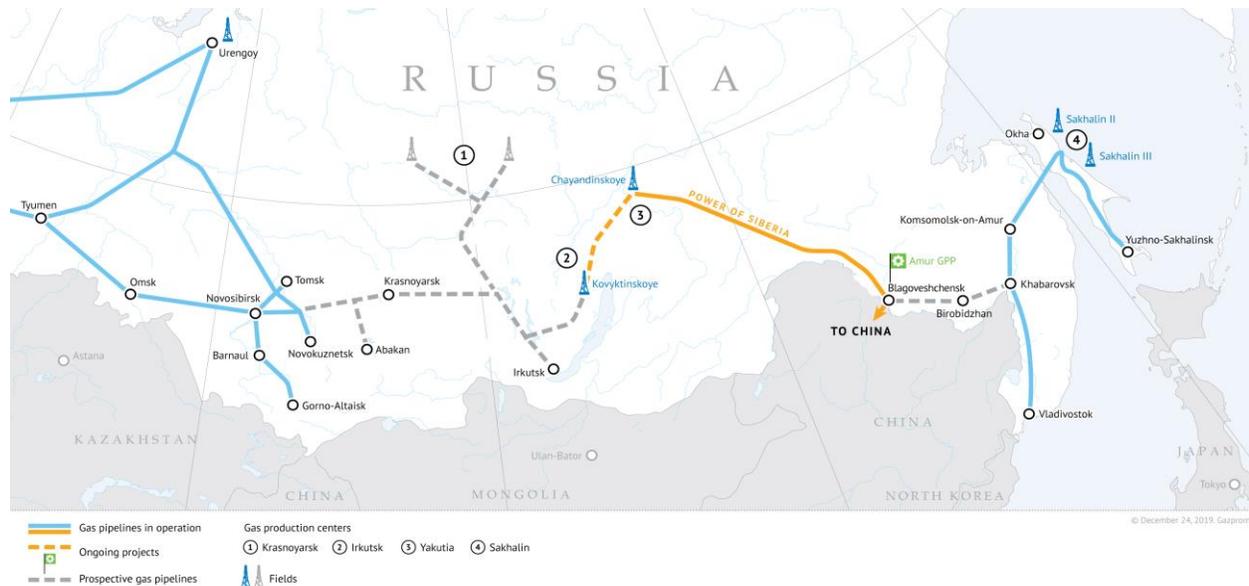
As can be observed from the map, from the Turkish Stream Pipeline,

- Turkey will get all the gas from the first line, with a capacity around 15,75 bcma,
- Then after the route will be completed, Bulgaria will get around 3,5 bcma,
- Serbia will get 2,5 bcma,
- Hungary will be fed with 6 bcma,
- And lastly Austria and Slovakia will get the rest amount (around 3,75 bcma)

In addition to the Turkish Stream supplies, there are other smaller markets in the region, which are already buying gas from Gazprom. They may be fed through the old lines or the other existing Northern or Western routes. Moreover, we have to note that with TANAP and the TAP, Azerbaijan gas will also feed the Greece, Bulgaria, Albania and Italy markets, nearly at the same time laps.

The third Russian important export pipeline is the Power of Siberia. “Currently, the Power of Siberia gas trunkline (eastern route) supplies gas from the Chayandinskoye field – the basis for the Yakutia gas production center – to domestic consumers in Russia’s Far East and to China. In late 2022, Power of Siberia will start to receive gas from one more field – Kovyktinskoye, which serves as the basis for the Irkutsk gas production center.” (Source: Gazprom)

As can be seen from the map below, Power of Siberia will transport the gas production in the South Eastern region of Russia to China. Total initial capacity is to be around 38 bcma and a 40 bcma extension will planned to be completed in the forward steps. This project may not be accepted as a competitor for the EU markets because, new eastern fields (which are already located very far from the Europe) are already being developed for China.



Map 2: Power of Siberia (Source: Gazprom)

Other important act of Russia is the LNG spurt. Russia currently has around an 18 mt LNG liquefaction capacity and has plans to expand its capacity up to 120 mt levels in 2035's. With 3 huge companies, Gazprom, Rosneft and Novatek, Russia plans to accomplish its LNG strategies, while the LNG's share in the global gas markets is increasing.

In addition, Russia wants to use its locational advantages such as:

- being closer to Japan and China markets,
- having a very cold climate which may make liquefaction more efficient (with some new technologies)
- and having plenty of resources with usually low production costs

for being the leader of the future LNG dynamics.

Lastly, while checking the future regional gas dynamics in Asia region, as can be seen from the map below, during 2050's:

- Russia is expected to have an additional 150 bcma export capacity.
- While China has additional 250 bcma of extra gas hunger for import.
- And within the countries showed in the map, total extra supply will be 220 less than the total demand. This means, some additional supplies will have to be found or some countries' energy security issues will fail.
- Moreover, by evaluating the future facilities and agreed volumes to import, China seems to will have solved the 2050 gas security issues. But the other bigger demand area India may not be able to successfully meet its demand.



Map 3: 2050 Supply and Demand Balances in Asia



To sum up, Russia tries to continue its dominance in the gas markets. New huge pipeline projects and the LNG spurts are the signatures of such a target. While the gas becomes more and more important in the future of energy balances, we will observe the altering dynamics. In addition we have to mention that, unconventional may become more important resources after 2050's. And methane hydrates have a chance to be the shining star of the gas markets!