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Gas pricing in China and Russia

Abstract: The article covers and compares the methods of pricing on natural gas and LNG in Russia and China for the last five years boosted by the growth of the world consumption of gas, that forces to renounce the models of pricing, where cost of gas tied to the costs or to oil. China has been forced to enlarge transparency of pricing on gas for cities and industrial enterprises. The collaboration of two countries strengthens by the start of gas pipeline of "Сила Siberia".

Keywords: LNG, natural gas, gas pricing, China, Russia, global gas market

In recent years most economists anticipate gas will be the fastest growing fossil fuel, with specific projections for consumption growth between 1.6% and 2.0% per year until 2040.

Natural gas plays a unique role as a source of energy for cities because gas supports the high heat requirements of urban buildings and industrial processes. Gas helps limiting air pollution, given it produces nearly zero sulphur dioxide, nitrogen oxide, and no particulate matter emissions. From urbanpoint of view the development of gas infrastructure allows easily add customers once pipeline networks are established [3].

China is the world's largest energy consumer now, accounting for 23.2% of global energy consumption and contributing 33.6% of global energy demand growth in 2017. China consumption growth was led by natural gas (+15%) [1].

The most substantial gas production growth was from Russia, the second largest producer globally after the US. In 2017, Russian production grew by nearly 50bcm, supplying the majority of Europe's consumption growth [1].

Natural gas is going to play a growing role in China's energy, as a central part of the Chinese leadership's strategy for responding to serious environmental challenges, including urban air pollution and climate change. Domestic production and pipeline imports are unable to keep up with rapidly growing demand, leaving LNG imports to fill the gap.

The world LNG trade growth accelerated by 12% (or 48bcm) in 2017, up from an average of 1.6% per year from 2010-2016. LNG supply growth from Australia and the US in turn agitated significant import growth in Asia (up 29 bcm), of which a majority was from China (17bcm) – the largest ever annual growth in LNG imports by any country [1].

So last year China became the largest contributor to global LNG consumption growth, surpassing South Korea as the world's second biggest LNG importer[4].

China's rapid economic growth and energy consumption cannot do without Russian energy supplies, as energy reserves, production and export volume ranking the forefront of Russia, is China's major energy-importing countries.

As the share of LNG in China's gas consumption rises, domestic competition grows, and a robust LNG benchmark emerges, the failure of the traditional oil-linked LNG supply model becomes certain, in favor of deals that are shorter, smaller and more flexible, and priced not against an associated commodity but LNG itself.

China's natural gas pricing has been highly regulated. Before July 2013, China's pricing model was characterized as costs plus profit margin. China launched a national natural gas pricing reform program linking gas prices with prices of imported fuels, enabling the market to play a more important role in the city gate price formulation.

The new pricing approach was applicable only to the incremental volumes of pipelined natural gas. Pricing of imported LNG and unconventional gas are based on negotiations between producers and users, while the prices for household uses are unchanged from the levels determined by the old pricing regime [5].

However, the 2015 reform was also a step backward in the transparency and stability of the pricing mechanism due to its delinking from oil prices.

The current pricing structure also leaves a number of unresolved market distortions. Capped prices for residential gas consumption (as a part of the city gate price controls) are substantially lower than deregulated prices for large industrial consumers – the opposite pricing structure compared to the Organization for Economic Cooperation and Development countries. Such price differentials occur when the regional caps are lower than the marginal cost of supplied gas. Suppliers' attempt to compensate for such losses by charging higher prices to industrial consumers in deregulated markets where possible, thus exacerbating these price differentials and leading to crosssubsidization between various demand sectors [6].

Chinese old pricing scheme largely ignored that both supply and demand have their impact on price formulation, the new pricing approach created a link with international prices of imported fuel oil and LPG. However, though the new pricing approach reflects market pricing principles to a larger extent, the reform has its limitations. It is still not a true market system, where prices are constantly determined based on the interaction of supply and demand.

As for future reform directions, the following issues are important to consider [6]:

1. More transparent gas pricing system is necessary.

2. China's natural gas pricing is still heavily regulated, transparency is needed to be increased.

3. Clarity for the rules and conditions under which the city gate prices respond to changes in the international oil market price would create the foundation for a movement to a complete market-based pricing system.

4. It is also important to start deregulating the distribution market to correct the price distortions in the retail markets.

5. Encourage competition in natural gas production and distribution. Competition often leads to a more efficient allocation of resources and ultimately to lower prices.

In Russia the following export pricing models are used

- oil price escalation, when the price is linked, usually through a base price and an escalation clause, to competing fuels, typically crude oil, gas oil and/or fuel oil.

- gas-on-gas competition, when the price is determined by the interplay of supply and demand – gas-on-gas competition – and is traded over a variety of different periods (daily, monthly, annually or other periods). Trading takes place at physical hubs (e.g. Henry Hub) or notional hubs (e.g. NBP in the UK). There are likely to be developed futures markets (NYMEX or ICE). Not all gas is bought and sold on a short term fixed price basis and there will be longer term contracts but these will use gas price indices to determine the monthly price, for example, rather than competing fuel indices. Also included in this category is spot LNG, any pricing which is linked to hub or spot prices and also bilateral agreements in markets where there are multiple buyers and sellers [7].

- mixed pricing - the formation of gas prices, based on a combination of two main pricing models: "oil-linked" and gas-on-gas competition. Within the framework of long-term contracts, a part of the gas volumes is allocated, to which the mixed pricing mechanism is applied, as the compromise option for the seller and the buyer in the process of negotiating revision of the contract price.

- gas auctions (in 2015 and 2016 by Gazprom Export LLC) for gas delivered via the Nord Stream pipeline [2].

China and Russia energy cooperation started in the early 90's and from the "One Belt and One Road" strategy proposed for Russia and China energy cooperation provides an opportunity to propose the establishment and strengthening of energy infrastructure.

In May 2014, Gazprom and China National Petroleum Corporation (CNPC) signed the Sales and Purchase Agreement for gas to be supplied via the eastern route (Power of Siberia gas pipeline). The 30-year Agreement provides for Russian gas deliveries to China in the amount of 38 billion cubic meters per year. Power of Siberia - one of the world's longest gas pipelines – will be delivering gas to China at 20th December 2018. The Power of Siberia pipeline, which is also

called the ‘Eastern Route,’ is one of the major energy projects between Russia and China. The pipeline could help Russia become one of China’s main providers of natural gas.

So China is a major energy consumer, Russia is the energy producing country, both neighboring countries and strategic partners, but their energy cooperation is affected by many factors, at multiple levels expand the interests of the game.

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