**Natural gas involvement in China’s energy transition**

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**Overview**

The Asia-Pacific region will be the main source of world gas demand growth before 2030 (representing according IEA, 2018, 50 % of the world growth before 2023). Within this zone, China takes a particular weight. The growth of its gas consumption, by 2017, under climatic policies (substitution of the coal by the gas) was around 15 %. The objective of the Chinese government is to increase the part of the gas in the energy balance from 8,3 % currently to 10 % in 2020. Considering the evolutions of the Chinese gas production including the non-conventional gas development, this demand growth should be translated by massive imports. China could so become the first world importer of gas by 2019 and change the competition between suppliers, regional gas prices and create new tensions between regional markets. In particular the US GNL could be exported towards Asia and not towards the European market which increasingly may become a residual GNL market.

The perspective of a new golden age of the world gas will be concentrated in the Asia-Pacific region and particularly in China. Showing important ambitions to substitute at least on the short term the coal by the gas, China may strongly change its gas request profile, being thus fundamental for the balances of the regional natural gas markets. Many uncertainties put us in the face of important differences in the estimations of the Chinese gas demand varying according sources from 300 to 600 Gm3 by 2030.

The objectif of the paper is to test various scenarios of the Chinese gas demand under 2D climatic policies. It is then necessary to analyze the consequences for the European market in terms of competition and price level.

The paper will consecutively present first (i) an overview of the main drivers of the China’s gas market, current and future challenges; (ii) further will describe scenario’s construction with the POLES model and use them to (iii) analyze China’s gas demand by scenario and implications for the EU gas security.

**Method**

POLES model (Prospective Outlook on Long-term Energy Systems) has a good representation of regional gas markets. It can be used to analyze the great opportunities that China’s natural gas demand and supply may face in various scenarios:

1. For eg. what may be the role of China’s climate policy (like increasing shares of renewable energy) on the demand for gas ;
2. What may be the role of demand for gas in China on global gas markets and how can be prevented eventual tensions.
3. Certainly, the prospective outlooks on these questions are highly dependent on the future oil and gas prices, which should also affect the gas demand.

**Results**

Expected results are two-fold. Firstly, the paper will propose an assessment of gas demand and supply in China under different climate policy scenarios. Secondly, it will derive implications in terms of gas supply options for the EU.

**Conclusions**

Chinese gas demand affects regional gas balances, in particular through availability of LNG supply in the European gas market. Therefore, energy security policies in Europe should consider different gas consumption scenarios in China.

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