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NATURAL GAS ENERGY SECURITY IN CHINA[1]

This article examines China's approach to energy policy, or more specifically to natural gas as an important fuel for the future, taking into account state targets and policy. Its aim is to analyse Chinese energy policy, its goals and manifestations, using the initial paradigm of state capitalism. The article is divided into two fundamental logical parts. The first part deals with the Chinese economy, Chinese approaches to its governance respectively. It presents the Chinese economy as a system of state capitalism in which the state deliberately interferes with the economy and influences its functioning. In this section, the article is also focused on defining overall structure of the state-capitalist system that are important fundaments for understanding the following part.

In the second part, the article focuses specifically on the energy policy, on China's state-capitalist approach to natural gas and securing its supplies respectively. The article shows a specific institutional setting in this domain, deals with government strategies in the sector as a reaction to rising demand for raw materials. Consequently, the article looks into China's agreements with other countries related to the the supply of natural gas, which practically demonstrates Chinese approach.

STATE CAPITALISM IN CHINA

Given the complexity of today's world economy, it can be said that no economy works without state interventions. As Bremmer (2010) points out, economies are moving on a spectrum from utopian communism, represented by a total command economy, to utopian libertarianism, without any state interventions in the market mechanism. However, both extreme cases are very unusual today. State capitalism differs from the prevalent mixed market economy mainly through state intervention in the market mechanism of the economy. If the state is a dominant player in the economy playing a key role in market coordination development, the system can be classified as state capitalism.[2] This system is sometimes referred to as a system competing or antagonistic

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[2] Given the length of the articel, it is not possible to look deeply at the differences between state capitalism and capitalism. More about this topic for example, JIRÁNKOVÁ, ŽAMBERSKÝ [2014] or BEJKOVSKÝ [2016].

to free market capitalism, or market economies, respectively. In general, state capitalism can be defined as a system in which the state significantly interferes with the economy (market) in order to pursue the government objectives defined by the government; the market only plays a subordinate role in this system; the state (governmental) goal has a priority (BEJKOVSKÝ, 2016). With regards to the fact that state capitalism is often applied in countries with reduced government fluctuations, a higher continuity of the state's goal is maintained, allowing state-capitalist countries to set long-term goals for which the country's resources are then used. A key factor is the extent of state interventions to affect the domestic economy (ALIGICA, TARCO, 2012). In state-capitalist economies, the government is able to pursue defined goals regardless of the market, whereas in the market economies the government has only partial and often indirect instruments available to influence the economy. Generally speaking, it is also important to factor in the size of the economy, because it is clear that a large economy, such as China, will have a higher incentive to protectionist or other measures to support domestic producers compared, for example, with a small Czech economy dependent on the international division of labour. State-capitalist countries most often include China, Russia, Saudi Arabia, Brazil but may include others as well (KURLANTZICK, 2016).

For these states, some identical elements can be traced, thus enabling us to at least briefly describe the fundamental tools and pillars of state-capitalist economies. Consequently, it is possible to gain a better idea of the functioning of state capitalism on a general level.

Probably the most important instrument of governments implementing state capitalism are state oil (and gas) companies and the related raw-materials nationalism, which is later dealt with in this paper. Given the current development of global economy, it is expected that the demand for these resources will grow and the introduction of alternative fuels will not change this trend in foreseeable future. Energy and raw materials sector are considered as a strategic in many countries, which generally leads to increased state control. In the system of state capitalism, however, the state is typically the sole owner of most companies in the sector. The governments of these states can then use these companies to fulfil their goals. These goals can be quite diverse. For instance, to maintain the price level in the domestic economy, influence world prices etc. Another use of these companies by China is the acquisition of strategic raw material reserves abroad, such as in Africa or in nearby Asian countries such as Iran or Pakistan or the Central Asia region discussed in this article (THE WALL STREET JOURNAL, 2016).

Preferred conglomerates (alternatively called "national champions") create another pillar of the system of state capitalism. The unavoidable link between large companies and the state, which, at least on a personal basis, works in many countries, is shifted to a different level in

the system of state capitalism. Large corporations can be directly state-owned, as is the case in China with her state-owned enterprises (hereinafter referred to as SOEs) that concurrently belong to the largest companies in the world (CENDROWSKI, 2015). The state may also have only a partial share in these national champions or these companies may be wholly private. However, a common element always is significant state support, but also a certain degree of obedience of companies to state decisions and close contacts with the government. The state creates a favourable environment for these companies, helps them to expand their business in other countries, and introduces regulation in their favour (BREMMER, 2010).

The remaining two pillars of state capitalism concern the financial security of the whole system — system of state banks and sovereign funds. Allocation of capital by state-owned banks is influenced by state objectives and interests. State banks are often used as a channel for financing SOEs regardless of economic efficiency. Furthermore, these banks finance the foreign expansion of national champions and provide capital to government-selected projects, possibly regardless of market criteria. That is why state banks are an important pillar of state capitalism. For example, in the case of China, state-owned banks are the dominant part of the banking sector in China, and are, according to many parameters, the largest banks in the world (FORBES, 2016). The sovereign funds then manage their wealth according to the country's needs. These entities are currently very important actors in international financial and capital markets. Compared to private funds, they are subject to decisions of the sole owner — the state. Thus, market criteria may not always be crucial in their decision making. The advantage of these entities is that they operate outside the country's budget framework. Their sources can be used for strategic investments both at home and abroad. These funds are shareholders of leading US or European companies nowadays, but their specific portfolio or investment strategies are often kept secret or very little information is available.

We have thus introduced state capitalism as a system in which the state plays the most important role in the economy, controls raw material companies, supports selected private or SOEs in exchange for cooperation with them. Money to this system is provided by state-run banks that can prioritize state targets over economic efficiency when deciding on capital allocation. For strategic investments in international financial markets, state-controlled sovereign funds are often used.

China is a country that is accused of using state-owned enterprises to meet state targets of a non-economic nature. China is also a country where there has recently been a significant increase in dependency on imported raw materials, which the Chinese government has, in its own terms, evaluated as a possible threat. It attaches the highest priority to ensuring supplies of raw

materials (ZHAO, 2013). This is why the following part of the article focuses on how the government uses its influence in the energy sector for securing the country's raw material security.

NATURAL GAS SECTOR

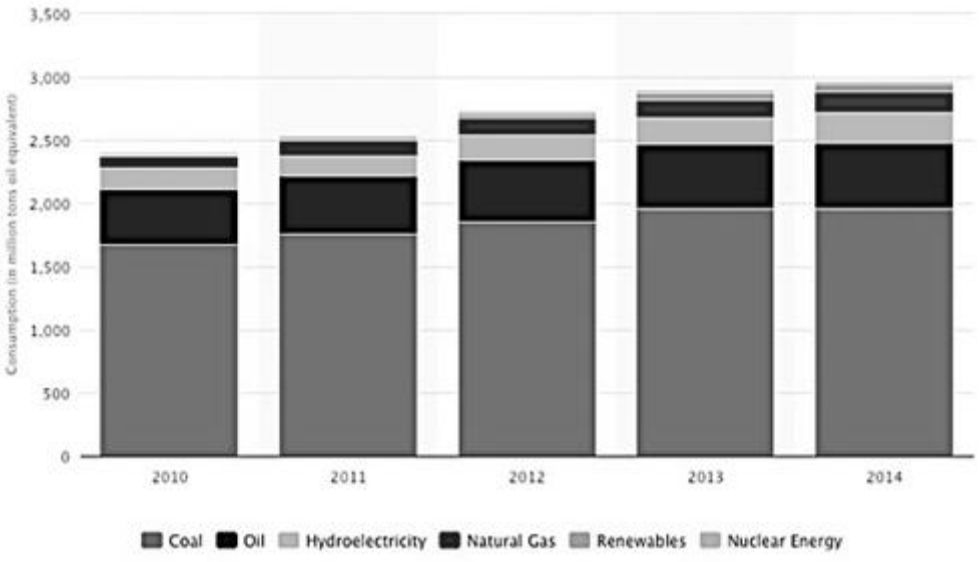
SOEs form an important part of Chinese economy, accounting for more than 60% of China's largest 500 enterprises in 2015 (FINANCE IFENG, 2012). If we focus solely on state capitalism in the energy sector discussed in this article, we find out that the share of SOEs in the total assets of enterprises in the sector is enormous. In oil extraction and natural gas, the share was 98.42% in 2006, 96.27% in 2009 and 94.50% in 2012 (NATIONAL BUREAU OF STATISTICS CHINA, 2017). This is effectively a monopoly of SOEs. Government domination in strategic sectors is still prevalent in China, despite the fact that China has become a WTO member more than a decade ago, with hope for deeper liberalization of the economy. China's non-financial SOEs are under the administration of the State-owned Asset Supervision and Administration Commission of the State Council (hereinafter referred to as SASAC), which was established in 2003 and started systematically managing SOEs since then (SASAC, 2007). However, SASAC itself is not independent of central government, on the contrary. The government clearly uses SASAC to operate and control SOEs. Under the SASAC guidelines that are publicly available, it is clear that the aim of this organization is to promote and maintain state ownership particularly in the so-called strategic sectors, including among others military technology, electricity generation and distribution, petroleum and petrochemical industry and telecommunications (CHINA.COM, 2017). Therefore, in the petroleum and petrochemical industry, state ownership is to be maintained and promoted.

Both Chinese demand as well as natural gas production are constantly growing in the last decade. Since 2003, natural gas production has tripled. Traditionally, China has been a net exporter of this commodity until 2007. Since the beginning of 2008, however, natural gas imports started and continue to grow. This is reflected in the expanding network of gas pipelines and gas processing sites (EIA, 2017). As in other countries, the energy policy is defined by the central government. However, the Chinese specificity are five-year plans and their implementation by other state actors. The previous Five-Year Plan (12th five-year development plan) for the 2011-2015 period was significantly focused on energy, energy security and the impacts of energy consumption (CBI, 2017). An „energy base" should be created in the provinces of Shanxi, Ordos (Inner Mongolia), east of Inner Mongolia, southeast China and in Xinjiang as well. The construction of northeast, north-western and south-eastern transport routes for raw materials (gas pipelines, oil pipelines, etc.) was also discussed, creation of unified plans for the conventional con-

struction of gas pipelines, LNG (liquefied natural gas) decommissioning and take-over stations, international transmission networks and distribution of gas provinces (CBI, 2017).

In the current plan valid for 2016-2020, energy, energy security and, above all, the environmental impact assessment of energy are among the key points again. Part of the plan is called the „Energy Revolution" and it mentions objectives such as the replacement of coal and other fossil fuels in line with „green development plans", grants and permits to explore natural gas and its sites for more companies, the construction of energy storage facilities and advanced distribution networks, development of the distribution network, etc. Thus, natural gas is a strategic fuel for China (PWC, 2017).

Compared to the twelve-year five-year plan, energy intensity[3] drops from 16% to 15% and carbon intensity[4] increased from 17% to 18%. China has overcome both of these goals already in the 12th five-year period, when energy intensity dropped to 18.2% and carbon intensity dropped by 20%. There has also been an increase in the proportion of non-fossil fuels (renewable sources and nuclear energy) from 9.4% of primary energy consumption in 2010 to 12% in 2015, thereby overcoming the target of the 12th Five-Year Plan (11.4% by 2015) (SWITCHBOARD, 2017).



Graph 1 — Primary consumption of sources in China (2010-2014)

Source: (STATISTA, 2016).

In general, according to the government's plan, the share of natural gas in the energy mix should increase to 10% by 2020. This plan also mentions the construction of eight new natural

[3] The energy intensity depends on the amount of energy consumed (oil, natural gas, coal, etc.) per year.

[4] Carbon intensity depends on the amount of coal consumed/year. Here, due to the decreasing consumption of brown and hard coal and the replacement of these fuels by other ones, such as renewable energy sources.

gas production/extraction areas (bases) by 2020, increase of production of unconventional natural gas to 60 Bcm[5] and other objectives linked, for example, to improving the transport infrastructure for the import of natural gas and ensuring reliable supplies (SINOGASENERGY, 2017). Both of the five-year plans show that China is currently continuing to invest in the development of the gas transmission system, in particular in the construction of new gas pipelines, to link areas where natural gas is extracted and produced (in the west and north of the country), with areas where gas demand is greatest, and especially those on the east coast. Compared to other fossil fuels, natural gas is more environment-friendly. All in all, this makes it a strategic commodity for China and the state is willing to use all its power to secure its supply.

Implementation of these strategic state goals related to natural gas is performed by a large number of organizations, institutions and companies that create laws, regulations and standards that have an impact on the industry. However, the overwhelming majority are state entities under direct government influence. It is in the interest of the state to build strong companies that will implement national goals both at home and abroad (ANDRSOVÁ, 2016).

Since the beginning of the reforms (since the inauguration of Deng Xiaoping) the concept of the Ministry of Energy (MOE) has been one of the key issues. The institution has been in operation since 1988, but in 1993 it was cancelled. State interventions in energy policy are then conducted through two government actors — the Communist Party of China (CPC) and the State Council (ANDREWS-SPEED, 2004). A major role in the energy sector is given to the National Development and Reform Commission (NDRC), which directly falls under the State Council. It underwent transformation in 2008 and the National Energy Administration (NEA) was formed. All enterprises active in the energy sector such as Sinopec Shanghai Petrochemical Co (Sinopec), China National Petroleum Corporation (CNPC) and China National Offshore Oil Corporation (CNOOC) are owned by SASAC. In 2008, the National Energy Commission (NEC) was established to cooperate with NEA.

SOEs responsible for the supply and distribution of natural gas in China are Sinopec, CNPC and CNOOC. These companies are not only engaged in the field of natural gas, but operate across the petrochemical industry. All three were founded in the 1980s by transformations from the then oil ministry. (BURKE et. al., 2004). Until now, they serve as implementing entities of state goals in energy policy, sometimes even in spite of economic efficiency, which is typical for state capitalism.[6] After the transformation Sinopec began to be active in the energy field in

[5] Billion cubic metres — basic unit for natural gas with accordance to production or trade

[6] E.g. In 2008-2009 world oil prices rose. China's energy companies, however, have not raised the domestic price of gasoline and related products under pressure from the government, even though they have been selling it with

the south and east of the country, while the CNOOC in the northern and western regions of the country (HENGYUN et. al., 2009).

Sinopec ranks 4th largest company in the world in 2016 (CENDROWSKI, 2015). Sinopec is the largest energy-chemical company in China, but at the same time it is the second largest producer of oil and natural gas in the country. It controls mining, distribution, production, infrastructure construction, storage, trading in these commodities, as well as research and technology development (SINOPEC, 2017). Another of these energy companies is the CNPC, which ranks first among China's oil and gas producers and suppliers and the third largest company in the world according to Global 500 (2017). This company operates internationally, with representation in approximately 70 countries around the world. Trading and all other activities on the territory of China are managed by the PetroChina subsidiary (CNPC, 2017). The countries with which the CNPC cooperates through its activities include Algeria, Azerbaijan, Canada, Chad, Ecuador, Indonesia, Iran, Iraq, Mongolia, Niger, Nigeria, Oman, Peru, Russia, Thailand, Tunisia, Turkmenistan, Uzbekistan and Venezuela (CNPC, 2017).

INTERNATIONAL COOPERATION

The main operator of the national pipeline network is CNPC. However, with the trend of rising natural gas consumption, it was necessary to strengthen the pipeline network through which natural gas from other Asian countries, mainly from the New Silk Road (or OBOR, One Belt One Road) countries, would be transported to China. The aims of this new project by President Xi Jinping are diverse, and cannot be discussed in this article. However, it is clear that securing China's energy security is an important part of this initiative. It is possible to notice the overlap of the target countries of the New Silk Road Initiative and the countries from which China is buying natural gas and other raw materials.

Major gas suppliers to China include Turkmenistan (22.5 Bcm/year), Myanmar (Burma, 3 Bcm/year), Uzbekistan and Kazakhstan (together 3 Bcm/year) (EIA, 2017). Because demand for natural gas is constantly growing, it is desirable that supplies from neighbouring countries need to be regular and flowing, which is linked to the strengthening of gas supplies from Central Asia. Strategic partnerships and long-term contracts have also been concluded for natural gas supplies, which should ensure fluency and price stability. In order to maintain energy security, China has been trying to diversify as much as possible in recent years. All these countries are pri-

loss. However, they have consequently received tax cuts and other benefits from the government. See also: BEJKOVSKÝ [2016].

mary countries for cooperation in terms of the New Silk Road Initiative and cooperation with them in this area has been deepened since 2013 when it has been announced (HKTDC, 2017).

At the same time, in 2013, the yearly increase of the imported gas was 20%, thus showing rising dependence of China on foreign supplies. The first gas pipeline through which China imported gas from abroad was „Central Asian-China Gas Pipeline" (CACGP) built in 2010, which supplies gas from Turkmenistan, Uzbekistan and Kazakhstan, and then flows to China through Xinjiang Province. By 2020, further construction will take part to increase its capacity. On the border of China and Kazakhstan, this gas pipeline joins the „West-to-East Pipeline", which allows gas to be transported from the central part of the East Coast (RATNER et. al., 2016).

Diagram 2 — Main gas and oil pipelines in China

Source: (PetroChina, 2016)

Turkmenistan became the country of interest for the CNPC, which invested here in the construction of the gas pipeline network. All these interests are in line with energy security of China. SOEs operate the Bagtyyarlyk pipeline, supplying the CAGP. In 2009, a contract was signed with Turkmengaz, an SOE. In 2013, when OBOR was announced, a contract for additional gas supplies was signed to increase supplies to 65 Bcm by 2020 (RBTH, 2017).

In 2010, an agreement was signed with Kazakhstan securing annual deliveries amounting to 9.8 Bcm. Kazakhstan and China have also established a joint venture company in 2010 to construct the Beyneu-Bozoi-Shymkent gas pipeline. The total annual supply capacity should be 25 Bcm after completion of the pipeline (THE DIPLOMAT, 2017). Starting of this gas pipeline is corresponding with new cooperation under OBOR for both of these countries in 2013.

In 2008, CNPC signed an agreement with Myanmar in to fund a gas pipeline with a capacity of 12 Bcm from two offshore sites in Myanmar to Chinese Yunnan and Gunagxi. The gas import in 2014 was already 3.5 Bcm (EIA, 2017). Locations in the Indian Ocean are owned by Daewoo, which has signed a 30-year contract with CNPC. The construction of this gas pipeline started in 2010 and its total length is 2 520 km, all the way from Myanmar to Guizhou, Chongqing and Guangxi to Yunnan (HYDROCARBONS-TECHNOLOGY, 2017).

China gas imports begun partly because of the elimination of Russian influence in the region (Financial Times, 2016). However, in 2014, Russia joined the suite and signed a contract for further gas supplies. Consequently, in May 2014, after many months of negotiations on prices and delivery, the deal with Russia was finally concluded. China has pledged to buy 3,248 Bcm from Gazprom's East-Siberian deposits. The total value of the contract is 365,95 billion EUR and it is binding for 30 years (The Guardian, 2014).

The above-mentioned projects are mainly funded from the state-owned China Development Bank, as the construction of "Central Asian-China Gas Pipeline" is (CDB, 2017). Chinese state institutions and SOEs (CNPC, PetroChina and Sinopec) are integral part of these deals. All activities are therefore carried out under state supervision by entities under the control or management of the state and its individual organs.

CONCLUSION

This article was focused on energy policy in China, with focus on the natural gas sector. The article used the paradigm of state capitalism to describe the setting of Chinese energy policy. State capitalism is built on the fundaments of state oil or other raw material companies that are supported by the government in developing or acquiring stocks of strategic raw materials at home and abroad. In addition, this system is based on a group of preferred national champions who benefit from state support but have to submit to government influence and targets, even if these are inconsistent with their economic goals. Capital in this system is usually provided by a system of state-owned banks that ensure that the other actors have sufficient capital and support state-selected projects. Instruments used by state-capitalist countries may also include exchange rate manipulation, if necessary. Sovereign wealth funds operating on international financial markets are used, however, these entities often do not provide any information about their functioning and decision-making implying that their decisions might be influenced by state goals. Thus, the state is able to influence the economy significantly in such system, the assets and resources of the system can be used to meet state-defined objectives of a non-economic nature, such as the so-called strategic objectives.

In China, the government controls the most important energy companies that have a monopoly in the sector through SASAC. China is aware of the growing importance of ensuring raw material security, as illustrated by the 12th and 13th Five-Year Plans. State objectives are subsequently practically implemented by those SOEs that enjoy government support. The article also showed that the key decisions in the energy sector are determined by the CPC leaders, not ministerial officials. The article also focused on how China acquires natural gas as a strategic raw material from abroad. Not surprisingly, SOEs are very active in this area, be it energy companies or banks. They were active both before and after the New Silk Road Initiative which was announced in 2013. However, it is clear that the priority countries of this initiative (eg Central Asia or Burma) are at the same time key suppliers of natural gas to China. Politicians, SOEs and state-owned banks work together to fulfil the strategic objectives set by the government in the five-year plan. Thus, it seems evident that the construction of infrastructure, the development of SOEs, the acquisition of new projects and their financing are controlled at all levels exclusively by state entities fulfilling defined state objectives, confirming the state capitalism paradigm.

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