Title of Thesis:

An Intricate Nature of China's Energy Security

"A detailed study of Chinese quest to become energy secured"

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Contents

List of Acronyms and Abbreviations

PRC – Peoples Republic of China

CCP – China Communist Party

NOC – National Oil Company

IR – International Relations

IPE – International Political Economy

NGO – Non Government Organization

SPR – Strategic Petrol Reserve

CBM – Coal Bed Methane

PCE – Primal Commercial Energy

EIA – Energy Information Administration

OECD – Organisation for Economic Co-operation and Development

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I would like to thank all of my professors that has contributed to writing this thesis, especially at the moments of despair when nothing was coming into my mind and when I my writing was too broad to fit it in this paper. My friends and colleagues and acquaintances. And above all I want to thank my family. My mother for continuous over-stress over my well-being and telling me that I am the smartest one of all of her children. My brother and sister for their comprehensive criticisms and constant support at times of need and an occasional kick in the butt. And finally the biggest thanks to my father who set me of on this academic journey across 3 countries 10 years ago but will never manage to read this as he couldn't wait another year to see me crossing off another challenge. Cheers Pa. Dziękuję Tatusiu!

Abstract

Peoples Republic of China is at the moment a net-importer of all of the popular fossil fuels such as oil, gas and coal and the prediction is that the near and far future will not change that and even intensify the imports of this essential resources to continue the economic growth that is one of the strong points of Party legitimacy. For some, this dependency on foreign fuels is not a safe one and bring the demons of the past – a Western domination. To tackle this problems CCP is trying to establish its own National Oil Companies to be their far reaching arm in gaining predominantly oil from the global markets, but it seems that it does not have the wanted effects for number of reasons and thus endangering its own position in security of energy. The importance of energy security is growing worldwide but is treated as a priority in PRC but there is many problems that it has to encounter. Throughout the paper it will be established why China energy security issue is characteristic only for this country as it tries to implement different approaches in how to deal with its growing economy.

Introduction

In recent years the energy security question of China is a rather changing into a global problem rather than just staying firmly within borders on its own, left for Chinese government to be worried about. We have to remember that China's population is of almost 20% of all the worlds' inhabitants and if the trend of growing Chinese economy is going to continue, the consumption of energy will raise with it and with it, its security levels. And here is a tricky part, with all its economic capabilities and possibilities Chinese dependency on imported oil, excessive use of coal or unclear renewables policies are quite a challenge for think tanks, scientists, policy makers and most importantly to the leadership of Communist Party of China (CCP). Even though the prospects of PRC suddenly "running out" of fuel are rather small, the notion stays and force you to ask "what if?" This paper will not ask this question though, it will however try to describe, explain and analyze the problematic concept of energy security and specifically the components that are within it that cause CCP to go through huge lengths to adequately, affordable and sufficiently fuel its economy and with mixed result. China's eyes are being diverted into the areas where it can trade its extreme surpluses of money for raw resources. For years its involvement in African, Middle-Eastern and South American resource-rich countries has spawned as many critics who disapprove as those who see it as an opportunity both business as livelihood. As the West saw for the same amount of years, the unprecedented growth of Chinese economy, recently the energy security question stopped being an elephant in the room and became widely discussed topic both by academics, media and politicians.

For growth to continue, even if recent governmental statements and actions suggesting the GDP-worship has come to an end (Rudolph, 2014), the Chinese NOCs still have to look for resources outside its own country. Throughout years, Chinese has been digging, drilling and shipping crude minerals back to the Mainland to feed the growing hunger for the energy and at the same time to diversify its own sources to make sure that any socio-political disturbances will not jeopardize the party agenda. Unfortunately, there is plenty of countries involved in a political struggle, especially the regions which are abundant in natural resources as *"the main reason is that oil wealth often wreaks havoc on a country's economy and politics,*

makes it easier for insurgents to fund their rebellions, and aggravates ethnic grievances" (Ross, 2008).

All of those independencies and unclear messages have brought me to the question:

What are the consequences of China thrust for energy? And why we can call Chinese energy security issue, an issue with Chinese Characteristics.

This problem will be constantly accompanied with other no less important questions related to energy security especially when we consider future of world energy – China's place is rightfully in the top of the concern or interest – if not on the top of the agenda.

Methodology

To my understanding the concept of energy security of China cannot be analyzed only from one perspective, as the title of this thesis suggests the characteristics of it are rather complex and affect much more actors than we would think. By following this thought the theories that hopefully will support and sometimes dictate my arguments cannot be used in a singular fashion – simply because there is much more than meets the eye to be blindly led by one form of realism or liberalism of traditional International Relations (IR) theories. Because of greater than ever globalisation processes that the world is witnessing today and intricate state to state interdependencies that it has brought forth put China in midst of all of it. Thus I have decided to take a more thorough, holistic approach to this problem and from all available literature I considered a mixture of previously mentioned IR theories and International Political Economy (IPE) that has the most to offer to analyze and perhaps even allow me to have a glance on how Chinese quest for energy security is effecting China domestically and internationally. Wæver has shown, how the mainstream publications of IR journals or articles are in general dominated by rational choice and realist approaches as *"mainstream IR enthusiastically integrates with theories peculiar to the United States"* (Wæver, 1998, pp. 688-689) and this among whipping fear by the U.S hardcore realists led me to approach the topic from different angles.

To evaluate a problem of energy security in China I decided to use certain set of methodical tools to ensure that the paper will prove to be soundly and properly structured and analyzed. I have chosen what type of fossil energy resources in my opinion are ensuring its constant growth – oil, gas and coal. Furthermore, the case study of nature of major Chinese National Oil Companies (NOCs) will be discussed to reflect the current state of China's ways to "refuel" its growing economy. It will also cover different political aspects as well as socio-economic consequences of Chinese quest to "be energy secured" and most importantly if the Chinese NOCs with growing CCP agenda are being sufficient enough to fulfill this quest. Hopefully, this case study that I present will be reflecting certain theories related to the IPE with emphasis put on the after Cold War or after a decade of transformations of 1990s when the world *"had embarked on a large-scale processes of change and integration that became known as 'globalisation'."* (Falkner, 2011, p. 11). Finally, conclusion will set of the collected data with

accompanied theories and will answer the question on consequences and characteristics of China's energy and energy security.

Methods:

Literature Review:

Literature review will be used to analyze the above, where throughout ocean of economic, social and political journals, articles, periodicals and mostly secondary sources. It came about because of simple reason of the quantity of it, as energy security, especially on China and on the eve of the U.S shale gas boom and unstable oil prices is flooded with texts from all around the world. There is enormous amount of documents from which case studies can be made and discussed but I chose to follow only one to be more precise and to do not speak broadly about every aspect of energy security. The aim of the literature review is critical to present the current state of knowledge on the topic. For me, it was as well critically important to establish a sound and comprehensive review especially in the first part of the thesis in which I ask about definitions of energy security as it is one of the most problematic concept in current economics, politics and social sciences. A critical perspective on the thoughts that the author brought into this paper is hoped to be beneficial and eye opening.

Qualitative Data:

Another important tool, especially within the analysis chapters of Chinese fossil fuel energy structure (oil, gas, coal) I have decided to implement some crucial statistical data as it is important in describing certain economic outcomes which in turn were causes of political decisions and vice a versa, it will help in proving tendencies and possibly future results. The overall China energy consumption, a decent amount of qualitative statistical data regarding imports, exports and production was taken under the scope. Using production and import structure will be first to be discussed as it will help me understand why and how China and its leadership deals with variety of challenges, opportunities and sometimes dangers related to its own national security.

Approach and Theoretical Framework

As I have mentioned before, the theories will be used to portray if the Chinese leaderships is adapting to the current international situation, global market and its own domestic needs. This adaptation will be shown by incorporating current theories of IPE and limited amount of economic theories into a prism of PRC challenges and dealings with ensuring energy security.

Why IPE?

The reason for choosing this set of theories over others is simple as the internationalization of the economic system carried by having a positive impact - greater efficiency, specialization and competition. Whilst the current realist paradigm *"tends separate politics from economics and define power largely in military-political terms"* (Crane & Abla, 1997, p. 4) limits the understanding of structural power, in which international structures of production play an important part (Strange, 1985). What came into the picture is that the ruling nation-states, have to reckon with serious constraints - increased vulnerability of national economies to events happening outside their borders (Matera, 2012), especially the markets within which governments actions often (not always) have no effect. This state of affairs significantly increased interest among citizens of democratic countries with the economy. The subject of public debate has become political cause's economic difficulties and the economic rationale for actions by states or interests groups in the international arena which in turn resulted in increased influence the economy on politics (Gilpin, 1987). These phenomena have contributed to isolate themselves and in the 70s led to creation of new sub-discipline in International Relations – International Political Economy. Helen Milner described its purpose as a test of interactions between markets and states, the impact of decisions of a political nature for economic actors and vice versa - economic situation for political action Over time, she expanded a research area, including the impact of the economy on all aspects of international relations as well *as "the study of international institutions - whether or not they involve economic issues - environmental issues, human rights, and international cooperation of any sort"* (Milner, 2002, p. 287)

Mercantilist approach

Mercantilists assumed the subordination of the economy to the state and its interests - mainly related to the welfare of domestic and international economic security. They emphasize the importance of economic potential, not military. According to this theory the international economic relations are conflictual and dominated by the growing interference of the government in the economy as "*the country must run a balance of trade surplus, maintaining an inflow of specie, to support its position in the international system of self-interested states"* (Crane & Abla, 1997, p. 5) thus economic relations are determined by politics and therefore their study makes sense only in the context of countries.

Economic Nationalism

Friedrich Lists Economic nationalisation whom theory seems to be taken seriously when it comes to China as it fits into the overall assumption of the desire of the economy to keep going into highs. While the West implemented liberal economic policies into its modern economies since the 19th century, underdeveloped and emerging or re-emerging countries such as China lagged behind and had to play a "catch-up" game. (Falkner, 2011). Even though List was not impressed about Smiths and other liberals at the time with their "free trade and competition can fix all" notion he was not completely against it. On the contrary, he proclaimed that "*the end goal was the same*" (Falkner, 2011, p. 21) and that "*Economic nationalism should be understood as a set of practices to create, bolster and protect national economies in the context of world markets"* (Pryke, 2012, p. 281).

Perhaps this is seen in CCP as sort of way to legitimize its own rule and explain the behavior outside in the international system as it as such deals with disadvantages of globalization and free trade may bring to less developed economies. Friedrich List is considered as the founder of economic nationalism and in contrast with at the time mainstream liberal economic approach, which emphasized the *natural* and *material capitals*; he thought that the wealth of a nation is dependent on the development of its own *human capital* (Levi-Faur, 1997). What is more, by using the example of Great Britain during its maritime dominance, List set out to counter the arguments of Adam Smith and David Ricardo that free trade is a win-win situation. Free trade leads to unequal exchange and benefits only the more developed countries (Levi-Faur, 1997). Therefore, any less advanced state such as China who consider itself just that

must not only strengthen its own industry but also protect it from free trade as the English and the Americans did prior to their rise to power.

Institutionalism (neo-liberal):

Liberal theory stresses the importance of relations between the state - society, and above all international interdependence. According to liberals government behaviour reflects their countries interests' variables (Matera, 2012). Governments are trying to achieve the objectives in international relations by means of provoking the conflict or to organize co-operation, depending on the current situation and the foreign policy tools that are available. They have to reckon with the interests of other countries. This theory therefore rejects the assumption of realism about the inevitable conflict between nation-states. Interdependence policy consists in balancing gains and losses in international relations.

Proponents of neoliberalism, also called liberal institutionalism, assume the need for cooperation of countries in the framework of international institutions (Crane & Abla, 1997) (Boyer, Caillé, & Favereau, 2008). PRC is trying to recognize the crucial importance of different countries, while not necessarily approving the influence of non-state actors in international relations, such as international organizations, multinational corporations, churches, trade unions, NGOs, etc. However, according to institutionalists, the anarchy of competing interests of many actors in international relations can tame international regimes. The increase in the level of economic ties and obligations to international organizations reduces the autonomy of states. They are exposed to more and more negative external economic effects and have less and less opportunity to reign over them.

Limitations

As most of papers, this does have a number of limitations that could contribute to the further understanding of energy security. First and foremost is that with all my knowhow on economic terms I am not an economist even though I intensively try to catch up with a lot of different terms and concept. Secondly, with regards to theories I decided the one only I felt are the most suitable in defining and analysing the problematic nature of energy security and energy security in China. Thirdly, due to my limited working proficiency in Chinese language I could not use sources as well as I wanted to. Lastly, the most important limitation of this thesis

is its broad spectrum, however I felt it is crucial give a reader at least a partial picture of this huge topic in political science.

Structure

The structure of this thesis will be divided into some descriptive chapters with a certain amount of statistical data, whilst other will be trying to analyse the collected data with more holistic and theoretical approach.

Firstly, the concept of energy security itself will be thoroughly explained, as without understanding what it is I cannot see the overall energy structure in China that can help me in further discussion and simply because having a wider spectrum of knowledge within the theme of energy brings more to the table. Within this chapter I will answer 3 fundamental questions regarding energy security and further analyse it. The first two questions are straightforward and do not need more explanation on my side on how to read it:

1. **What is Energy Security?** : The problem with defining the concept of energy security due to its complexity and embeddedness in diverse scope of political and economic sciences,
2. **Why Energy Security is important?** : I will evaluate the importance of energy on a global stage, especially when the developing countries, such as China by fuelling its economy to such a degree that more potent and fierce discussions appear in the spheres of academia, politics and even science.

As for the third question it will need some more clarifications as it is composed of 2 subsections:

3. **How China is dealing with its own energy security issues?** : this question will follow a number of subsections:

- Point **a)** will cover the data on fossil fuels in China and general perception of it – predominantly oil as it the most important energy security resource but as well gas and to some extent coal. Furthermore. Within this point I will provide description of China's to provide full understanding state of fossil fuels supply and demand such as oil, gas and coal.

- Point **b)** will follow the collected data in previous point to establish detailed understanding of the energy security in China such as party legitimacy and how and why is it more if not the most complex issue for the current government of Peoples Republic of China to face in upcoming decades.

Secondly, the last section will be composed of case studies to answer the question on how, what, why and IF does the PRC revolves around the issue of energy security:

- NOCs impact and role on the quest for energy security. The nature of win and lose within this government controlled institutions. I will try to describe its function and behaviour on the international stage.

Finally, after establishing the core of the thesis I will reflect on it in a lengthy fashion in conclusion/discussion section.

Energy Security – The Insecure Definition

Before I will present case study, some detailed explanations on energy security have to be made. Moreover, the objective of this section is to ask and answer few, short but extremely important questions:

1. **What is Energy Security?**
2. **Why Energy Security is important?**
3. **How China is dealing with its own Energy Security issues?**

What is energy security?

"There is one thing that has not changed since the early 1970s. If you cannot think of a reasoned rationale for some policy based on standard economic reasoning then argue that the policy is necessary to promote 'energy security'" (Joskow, 2009)

The concept of energy security is, similarly to other "securitesque" terms is hard to define, especially in last few decades. Its "security" aspect on the matter, could be found in academic articles dating as far as early 60s, where Harold Lubell in his *Security of Supply and Energy Policy in Western Europe* is highlighting the dangers of dependency on cheap but politically unstable oil from the Middle East and that it *"give[s] Europe the illusion that oil no longer presents it with a* ***security problem****"* (Lubell, 1961) and followed the oil crisis in the 70s, when the debates about energy became heated. After that in the 80s and 90s, we had two prosperous decades of stabilisation of oil prices. Analysts, ranging from different disciplines such as economists, political science or even from exact and hard science have its own say in the matter, thus making the complete and acceptable for all definition of the term almost impossible without prejudice in one way or another. On top of that, the politicization of the term has only complicated the issue even more. This however, does not mean that by portraying different approaches to energy security will not be useful in this thesis. As some parts of the description are interconnected with each other and share a common theme related to continuity of energy supply I will follow the overview of energy security definitions elegantly portrayed in Christian Winzers *Conceptualizing Energy Security* paper.

Winzers distinguishes three groups of authors who follow a set of definitions related to energy security. First one is bringing about what we mentioned above the continuity of energy supply and considers it as a *"central to all other definitions of energy security"* (Winzer , 2011). This continuity can be explained in a matter of interrupted deliveries and to follow it up with more technical term incorporated into the definition, reliability. Furthermore, Makarov and Moharari sub-conceptualises reliability into two:

1. **System adequacy** – which describes that the physical ability of a utility providing the power and energy requirements as it "reflects the existence of sufficient generation, transmission and distribution facilities to satisfy the customer demand" (Makarov & Moharari, 1999, p. 1).
2. **System security** – which describes the ability of a utility to analyse and counter the potential harmful conditions of unreliable conditions or situations or simply by reflecting "the ability to withstand disturbances" (Makarov & Moharari, 1999, p. 1)

Even though, this two seemingly technical analysis of an energy reliability might look unimportant for a reader, they have what makes the definition in relation to international relations. Within point 1 of the above we can see the correlation between generation, transmission and distribution. If *generation* are, for example countries *producing* traditional forms of energy resources such as oil or gas are the major players like OECD, Russia and *transmission* is the *ability to transport* of the resource to the destined target, which would be the countries dependent of the imports or net importers such as China or European states. This could be done by variety of methods such as pipelines, tankers, trains, etc. Finally the *distribution* would be the potent and developed *system of delivery* at the final destination of a product within importing country or region to sufficiently satisfy consumer demand. Point 2 even though much more specific in technical terms can be used as a metaphor to the stable socio-political environment under which the processes of supply are being undertaken. Winzer, on the other hand goes further with explanations of what Makarov and Moharari distinguished as Energy Security. He rightly observes *"increases of the relative scarcity level of energy are signs of insecurity"* (Winzer , 2011, p. 4).

Continuing with Winzers conceptualisation of energy security he turns to *"authors who introduce additional severity filters"* (Winzer , 2011, p. 4), which in a nutshell are add-ons to

previous term which are related to supply security and some of them will be mentioned below and trying to establish the certain security/insecurity levels over period of continuous delivery/supply. Firstly security is to be impaired if the inadequacy of energy which in turn can run prices over a certain threshold, secondly *if "the speed, size and sustention of the price increases are beyond a certain level"* (Winzer , 2011, p. 5). Normally, if a certain product, in this case energy, satisfy the demand of a country at given price at the time it means it is secure. Finally, if some events, be it foreseeable or unprepared for can be included into the definition to *"filter out smaller discontinuities that are not important for the security of a country"* (Winzer , 2011, p. 5) thus the it seems that the continuity of supply and market prices right for one country can be a hindrance for the other. As well as, in a short term, countries with strong enough economy and surpluses of revenues but with lack of resources can deal with such dangers, for example China.

Another scope of defining supply definition is what Winzer calls "impact measure", which does not take into consideration the above continuity of supply but rather a continuity of services provided within a century as well as the impacts on economy and environment. What it brings about is the notion of the diversification and services availability of supplies and distribution to prevent energy insecurity at the time of disruption of supply and to weight *a "potential commodity supply disruptions according to their impact on continuity of energy services"* (Winzer , 2011, p. 5). Furthermore, the extension of the impact measure with aspect of environment sustainability can become crucial in the future as it "defines energy security as the ability of an economy to guarantee the availability of energy resource supply in a sustainable and timely manner with the energy price being at a level that not adversely affect the economic performance of the economy" (APERC, 2007, p. 6)

Finally, energy along with temperature and entropy is one of the most important component of physical laws of thermodynamics in which it implies *"that energy is necessary, at least, in a minimum quantity (even if ambitious and effective energy-efficiency strategies are carried out), for the material transformations that are related to most productive processes."* (Labandeira & Manzano, 2012, p. 2)

To summarize, energy security is indeed a troublesome concept to define but mainsteamally it is widely accepted political and economic science to associate it with three factors: reliability, affordability and environmental sustainability. Reliability reflects a continuity

(security) of energy supply as highlighted Department of Energy & Climate Change: *"Secure energy means that the risks of interruption to energy supply, are low. Interruptions could be as a result of a power cut or shortages of key fuels."* (Energy Markets Outlook, 2009), as other authors explain it in similar fashion (Lee, Park, & Saunders, 2009) (Ölz , Sims, & Kirchner, 2007) (Shaffer, 2012) (Winzer , 2011) (Labandeira & Manzano, 2012) and affordability means that the prices of the needed resources are low enough to extend or bolster economic growth of a country. As for environmental sustainability, as it can be seen as a long-term energy security plan because the non-renewable energy resources and power coming from it is the end of the bumpy road of the quest for energy security.

Why energy security is Important?

As energy security definition and structure is being not as much remodelled but enhanced throughout years it is clear that it belongs at the centre of international relations, it is economically complex and politically challenging but what isn't? Among other, no less important and problematic issues ranging from Western based Human Rights to CPC legitimacy, the energy security is becoming one of the most discussed issue on the both side of the globe and have implications on other spheres of human life. As it comes down to individual countries, each and every one of them have either completely different attitudes towards energy and energy security or they share some common characteristics. For example, with accordance to literature it seems that *"the United States does not appear to have consistent energy policy"* (Cao & Bluth, 2012, p. 382), this however does not imply that energy security is not important for the US in comparison to China *"as it needs to ensure not only the supply of energy, but also control the precise mix of different forms of energy for different sectors of the economy"* (Cao & Bluth, 2012, p. 382). The US needs to ensure supply of energy and diversify forms of energy, especially on the eve of intense environmental forums and facing scrutiny from international community. Other countries, especially those highly dependent on imported oil, including China are aiming to improve its own energy security situation with regards to unstable situation in some parts of Middle East and Africa as well as highly questionable behaviour of Russia recently. With respect to the data in World Energy Statistics the total energy supply is to reach 33% more in 2035 of the level of 2010[1]. Thus,

[1] Source: 2012 Key World Energy Statistics, International Energy Agency http://www.iea.org

according to Chen this trend can put strains on management of energy generation and consumption which *"relies critically on a systematic approach to weight the energy (and economic) outputs against the concomitant environmental impacts"* (Chen C. M., 2013, p. 147) which will be seen on local, regional and even global scale, if it already is not. Of course it is impossible to measure importance of certain things especially if they are uncountable, but one of the ways to at least picture it is assessing the views of other authors on the growing importance of energy worldwide (Chen C. M., 2013) (Chen W. , 2014) (Cao & Bluth, 2012) etc.

Finally, the definition which I find the most appealing in case of China is the one of Cao and Bluth according to whom the *"energy is an important physical base of economic development, social progress and the construction of modern civilizations [as well as] a strategic material and major element of a country's security, which links national and foreign security policies"* (Cao & Bluth, 2012, p. 381).

It is almost impossible to decide which definition to use in case of China as all of them can be adopted, bent and interpret in different manners. And this is why the energy security is such a problematic issue. Most concepts that vary in wording are frustrating to explain and this what bring the sciences together for example like mathematician trying to establish one but general and beautiful equation out of different rules and descriptions for us to see complexity behind simplicity and energy security conceptualisation is the same, there is no one definite answer thus we keep looking for it. However there is at least one question that we can ask ourselves that can help us understand the energy security within China – is to look at the economic structure of its fossil fuels – oil, gas and coal.

How China is dealing with its own energy security issues?

Finally, after explaining the intricate nature of the energy security and its diverse aspects, I will try to put China's situation into the picture. Like in many cases, China's position is somewhat special and thus why we add "with Chinese characteristics" after every major issue, such as philanthropy, socialism etc. Given of what I had written in the first two points is necessary to establish a framework for analysing China energy security issue, this section will follow similar schematics but at the same time will bring forth more statistics about oil, gas,

coal and renewables situation to emphasise the scale of what are we dealing with. For me, personally it would impossible to write about energy security or even the oil related topics without touching upon the below to-be-discussed other-than-oil-fuels simply because even with limited and quite general understanding it could give me deal of freedom in writing and analysing it in the upcoming chapters of this thesis. And to do so I need to take into consideration few aspects of energy security in China:

Energy security with Chinese characteristics:

Chinese economic growth is breaking every possible statistics with regards to the consumption of oil, gas, coal and other vital minerals to continue building, investing and rising from the ashes that the decades if not centuries brought, thus it is unsurprising that China's main spheres of interest at the given moment are the countries that are resource-rich and are one way or another willing to sell extracted resources. However this was not the case until relatively recent time, let's establish some valuable basics on energy structure in China:

Crude Oil

At given moment, oil is still considered to be the most adequate way to fuel the economy and there are few factors that are supporting this claim. Firstly, in case of China, oil in transportation has an upper hand in comparison to gas on two separate occasions:

1. The way it can be transported with respect to long distances by tankers. As most of it is going from Middle East and Africa through the Malacca Strait to the ports located in the east coast (the fastest growing part of the country) and in amount as the tankers can load more oil onto their cargo than gas, which even with breakthroughs in gas transportation technology is still cheaper and more efficient.

2. On the more technical side of transportation, oil *"as a transport fuel, is much less substitutable"* (Pietz, 2008), again, with the current gas technologies

Secondly, in comparison to coal, oil (even though it is a bit unfair to treat it like this as both resources are used in different appliances (coal predominantly power generation and oil in transportation)) is simply cleaner as for per unit energy produced basis because coal combustion produces more carbon dioxide. (Hong & Slatick, 1994).

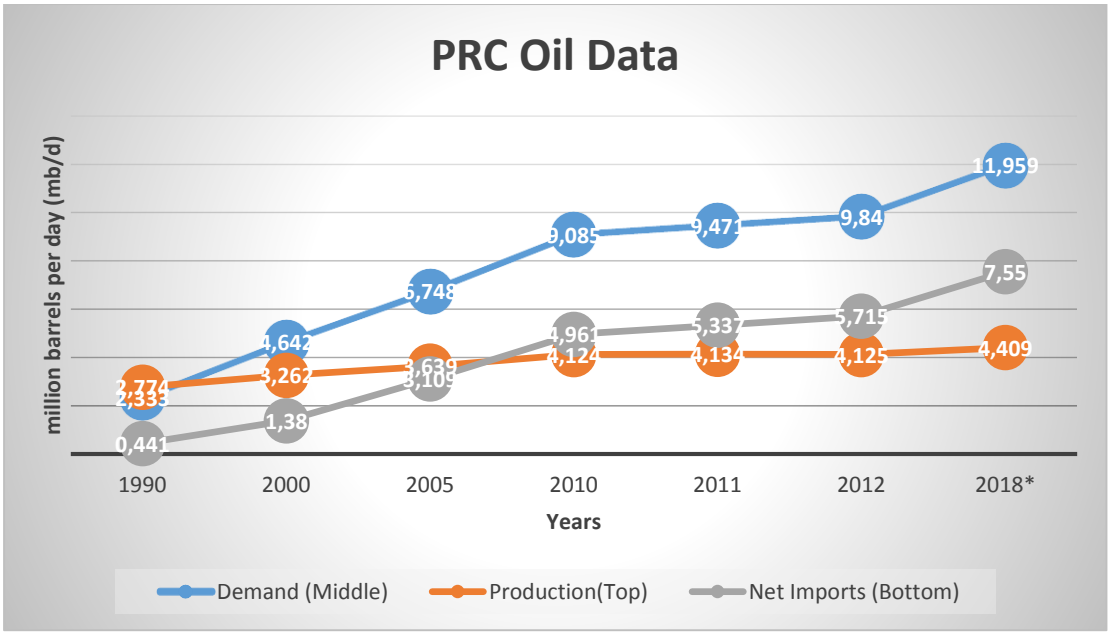
Thirdly and lastly, even though this argument might produce more discussion and if the first two are treated as priority factors, is the fact that at the moment as for 22-04-2015, crude oil price according to NASDAQ WTI is around 59.56 bbl. and net importing countries, especially China should be ripping its benefits. Not to mention that since 2015 the prices of oil were very low. This however, is too early to say. Even among economists there is a division of opinion on the matter. According to JOC Group[2] analysis of Barclays finding that *"the falling oil price is having a talismanic effect on the cargo shipping industry, boosting consumer spending, raising U.S. demand for China imports and improving the profitability of container lines."* (Knowler, 2015). In similar manner, the Oil price Oil & Energy News sees possibilities in *"China's savings on oil and the products that rely on it give can be invested inexpensively in its strategic energy reserves, and keep inflation and producer prices low"* (Tully, 2015). On the other hand, there are voices, much less favourable on the notion of reaping benefits of the cheap oil. According to Wall Street Journal the reason that China is not benefiting from it is because of the price control by Chinese central government which means *"the drops for Chinese businesses and consumers lag those of international oil markets. China's central government has raised fuel taxes, offsetting prices declines."* (Spegele, 2015). However I am not too sure about this and I might be wrong here but doesn't it means that more money is going to the government? Especially when the money is needed to sponsor more major projects as long-term plans to fill strategic oil reserves (SPRs), which are discussed in the same news article as well as in academic analysis in (Kennedy, 2011) (Zhang, 2011). Additionally Zha Daojonog sees higher prices as positive in ensuring stability in overseas supply of resources as he states that *"in a strategic business sense, a key instrument for encouraging the global*

[2] JOC Group Inc. is the authoritative provider of business intelligence, data and events for trade, transportation and logistics professionals worldwide

flow of energy to China would be to allow the domestic price levels to rise above international and regional averages. This would provide energy developers and traders the single most powerful incentives not to disrupt supply to China. It would also motivate them to mitigate political interference in business interactions between China and the rest of the world in the realm of energy" (Clarke, 2009, p. 4). I do believe it is a bit too early to see if China will benefit from oil prices decline, however oil is the most discussed and analysed energy resource for security.

- Short Story of Chinese Oil:

Shortly after establishing PRC, it was apparent that the new government in China will join Soviet Union and as a result the oil embargo among other was imposed by the Western block causing a plummet in oil distribution locally and on the nation scale. By depending on the Soviet crude China managed to function until the events in early 60s – namely, the Sino-Soviet split which resulted in deeply rooted antagonisms that effected diplomatic ties along with trade (Leung, 2011). After a series of new energy policies, rapid development of energy sector including discovery of Daqing Oilfield which *"contributed to the preference of autarkic economic policies that revolved around self-sufficiency and self-reliance"* (Taylor, 2014, p. 81). Deng Xiaopings' reforms in late 70s gave the country another economic boost, which is partly the reason why China in 1993 became net oil importer once again as it is shown in graph below (graph 1) the appetite for it grew from 2.3 mb/d (million barrels per day) in 1990 to 4.6 mb/d in 2000. Another decade doubled the demand to a shy more than 9 mb/d as this being associated with various of factors contributing to enormous economic growth at this period and finally the most recent data shows a stable rise in demand for oil in years 2011 which brings about 9.5 mb/d, 2012 to 9.8 mb/d and as of then, the International Energy Association is predicting that the demand growth will suffice *"by a compound average growth rate of 6.5%"* (ENERGY SUPPLY SECURITY 2014, 2014, p. 532) and as for Oil Market Report predicts the oil demand rising to around 12 mb/d by 2018.



Graph 1 – Starting from 1990 – Top – Production, Middle – Demand, Bottom Net Imports. Data incorporated from free publications of International Energy Association, Source https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_China.pdf and http://www.iea.org/publications/freepublications/publication/keyworld2014.pdf

In the same statistical reports is vivid that China is going to (if not already have) a problematic future, not necessary bad in context of economic growth, but in case of production and net imports of oil. The graph above shows a stagnation in case of oil production. This is partly caused due to decreasing production in already mature oilfields including on one of the biggest in the world and the biggest in China Daqing oilfield. It is estimated *that "the oil production will decline from 41.6 million tons in 2007 to 8.0 million tons in 2060"* (Tang, Zhang, Hook, & Feng, 2010, p. 3102), there is a glimpse of hope though – depending on technological advances in oil shale technologies it is possible for China to exploit its own apparently huge resources (Crooks , 2015) as well as the development of resource rich Western parts of the country. Net imports of crude oil are reflection of demand in China, as China cannot (at the moment and not in foreseeable future) become self-sufficient once again the oil imports continue and will continue to grow not only because of the hunger for energy but as well the lack of alternatives (again, at the given moment). It is estimated that Chinese will overcome the U.S in net oil imports in very near future, thus bringing the oil dependence rate of around 60 % as of 2014 and 30% on gas dependency. (Chen, 2014) (Zhang, 2011).

Gas

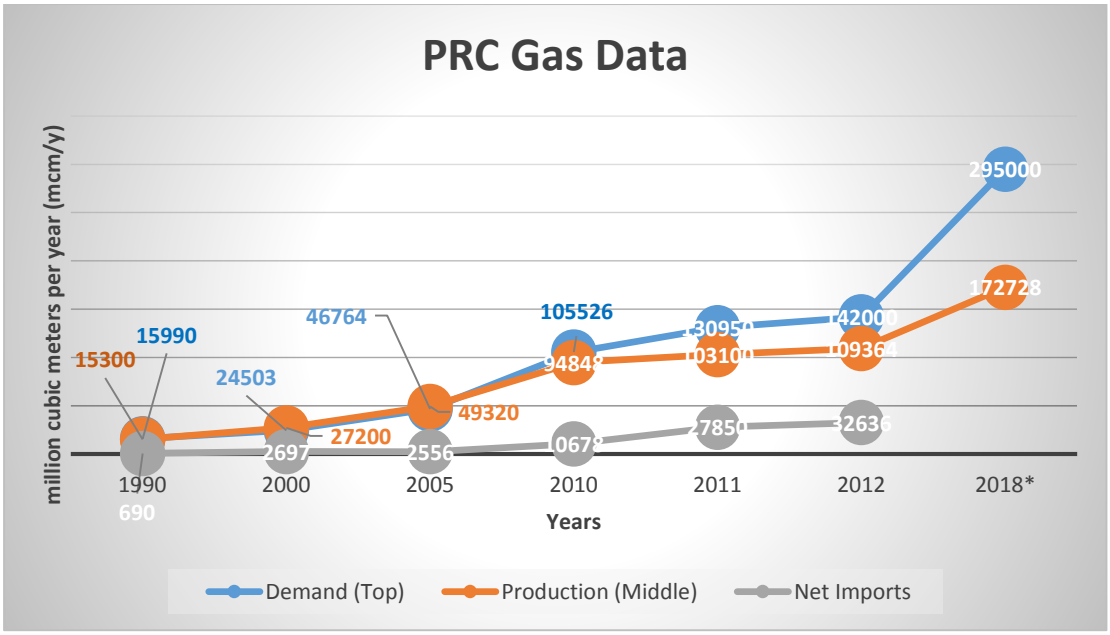
- Why not go “natural [gas]”?

In this section of the thesis I will try to look into PRC’s natural gas intake on Chinese economy. By natural gas I mean the in forms of natural and in forms of unconventional gas such coal-bed methane (CBM), tight gas and shell gas. In this thesis only the short analysis of the latter I consider as the most appropriate to discuss because of possible abundance of the last.

In recent years, natural gas exploration and its use as primal commercial energy (PCE) has grown rapidly but it still lags behind coal and oil respectively. Even though considered to be good alternative for both oil and gas it is still not easy to transport and expensive to install in daily use appliances or in industrial appliances. However, it is considered to be *“cheaper and cleaner than gasoline and produce less greenhouse emissions than its counterparts [oil and coal]. It burns completely and can be safely stored”* (Conserve Energy Future). The problem with natural gas supplies lies in terms of security definition, Sanam Haighighi (2007) in his brilliant intake on energy security in *Energy Security: The External Legal Relations of the European Union with Major Oil and Gas Supplying Countries* distinguishes a subtle but nevertheless difference between oil and gas. For him gas security is *“the guarantee that all the gas volumes demanded by customers will be available at a reasonable price”* in comparison to *“reliable and adequate supply of energy [oil] for a reasonable price”* (Haghighi, 2007). The key difference is the adequacy that gas supplies to all sectors including PCE cannot provide, as gas is not as easily substituted as oil or even coal in terms of usage. By putting it into perspective, transportation, which in China heavy relies on oil *“which occupied 92.9% if total transport end-use energy demand in 2007”* (Leung, 2011, p. 1333) and even if the changes were made to forcibly and drastically change the priorities it would cost enormous amount of money as gas is relatively difficult to store and transport and requires much more alternative routes which it simply does not have thus it is not as flexible (adequate) resource such as oil.

As Chinese government is undertaking projects to diversify its source energies its demand for natural gas grown quite significantly in last decade. According the data from International Energy Association (graph 2) the demand and production of natural gas in China started to grow significantly around 2005 to finally in 2007 to become second net importer of natural gas after oil in 1993. Since then, gas production slowed down, while the demand for gas has

grown significantly China needed to look for gas elsewhere and even this supply lines are not as well secured as one might think. With the most logical choice being Russia and Central Asia due to its relatively close distance and as to some observers the mega deals between Vladimir Putin and Xi Jiping signed in 2014 and early 2015 during APEC summit (part of the deal in 2015 is to bring 30bcm (billion cubic meters) of natural gas annually for next 30 years) were perfectly orchestrated by Chinese leadership to get more and cheap gas for upcoming decades (Downs, 2014) (Weitz, 2015). However, we have to keep in mind that Russia strategy to diversify its export routes are on the agenda due to the Ukraine Crisis. It is worth to mention that Russia and Central Asian countries such as Kazakhstan are not only means to gain access to natural gas. PRC is actively seeking different sources, including ones that are much further away such as Canada, partly because the political situation in Russia and unsure situation on oil markets could provide disturbances in supply chains. Due to the factors above it is safe to say that gas imports will stay on course and significantly grow in upcoming years thus why the data from International Energy Association about the prospects of gas demand up until 2018 are realistic. Imports of natural gas between 2010 and 2012 has tripled! in value from 10678 mcm/y (million cubic meters per year) to 32636 mcm/y in 2012, there is no surprise that it is hard to predict PRCs gas import volumes.



Graph 2 Starting from 1990 Demand (Top), Production (Middle), Net Imports (Bottom)Data incorporated from free publications of International Energy Association, Source https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_China.pdf and http://www.iea.org/publications/freepublications/publication/keyworld2014.pdf

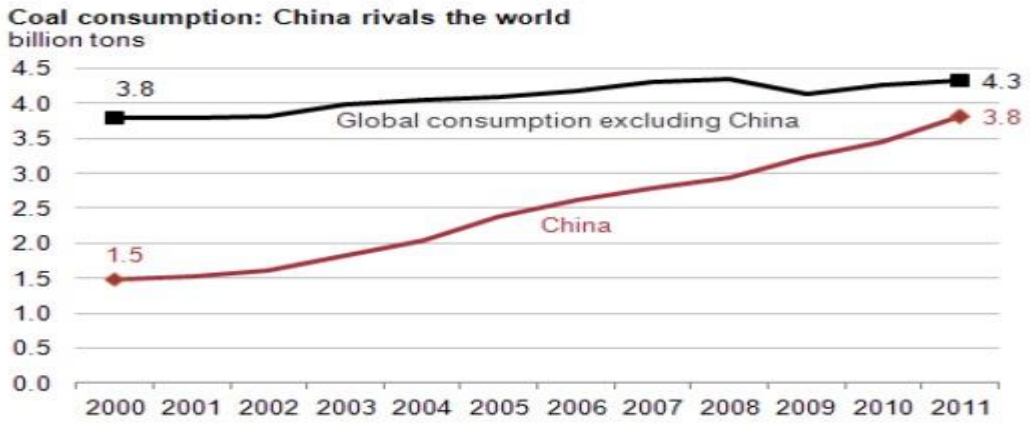
With increasing demand and net imports it is worth to mention the possibilities in recent shell exploration due its probable impact on the economy of PRC. Having in mind that the shell gas exploration is revolutionising American industry does not necessarily means that it will work for China. The prospects however, at least portrayed by the EIA (the U.S Energy Information Administration), are big with the possibility of enormous shale gas reservoirs at around 36 trillion m3. This could provide to be crucial in ensuring its own supply of gas, especially at the time of great technological advances in efficient use of gas appliances, industry and transport. However, at the moment, *"China does not have separate policy incentives for shale gas. However, the same or similar policy measures and incentives for development of CBM are expected to apply to shale gas as well."* (Wu, 2014, p. 9).

Coal

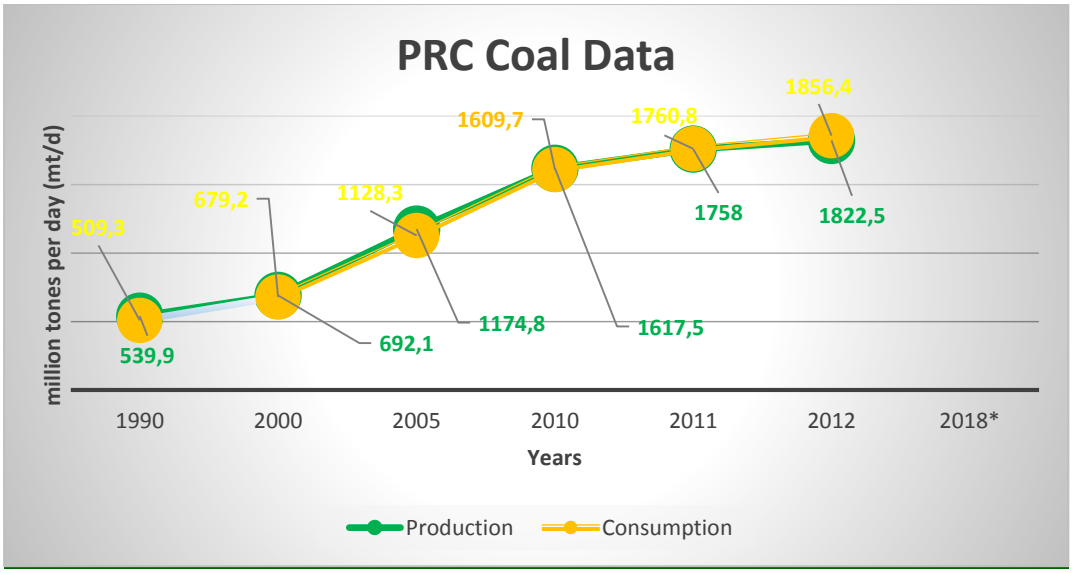
Even though, as I mentioned several times already, it is oil that contribute the most to the current discourse on energy security, or at least it is portrayed like this by many specialists and political entities, I found it important and necessary to at least discuss the issue of coal in

China due to its negative (probably rightly) connotations and scrutiny that the resource that without which the era of industrial revolution would not be possible at all.

This section will briefly outline the problematic nature of coal dependency which is without a doubt known to many observers of China or other developing countries that heavily rely on it for simple reasons A) price – coal is the cheapest fossil fuel that can be found, though lately it is argued by some organisations (Beyond Zero Emissions) (Conserve Energy Future) and respectable newspapers (The Guardian) that the cost of production of electricity (which is the main use of coal) if connected with the environmental issues such as air, water or climate change is much higher than expected. B) Availability of the resource, even though hard to judge how much coal (and other fossil fuels) is left in the ground but some estimate that if we will carry the current volumes of exploitation there would be around one thousand years before it runs out (Conger, 2010) (Senior, 2015) so no biggie, unless of course we will choke because of it.



Graph 3 Source: http://www.mining.com/chinese-c 1



Graph 4 Data incorporated from free publications of International Energy Association, Source https://www.iea.org/media/freepublications/security/EnergySupplySecurity2014_China.pdf and http://www.iea.org/publications/freepublications/publication/keyworld2014.pdf

- Other view on coal for China – the big, the bad and the Jevons Paradox

Unlike gas, coal and oil are at the centre of Chinese economy, they are pivotal for the industry and made China into what it is today. Coal exists in China in abundance but not without consequences, especially when it comes to pollution as it is the most environmentally "unfriendly" resource out of all fossil fuels mentioned in previous sections. However even though the case of coal it is "*not regarded as close as politicized or strategic commodity as oil*" (Leung, 2011, p. 1331)) it is still extremely relevant resource in ensuring energy security.

The Big:

Just to put into perspective of how largely China is dependent on coal gives us much more understanding on how important this resource really is. Firstly, PRC has second largest proven reserves in the world, after the US. Secondly coal represents roughly 80 % of all primary energy for production of which 80% is production. This huge disproportion in energy for production is reflected in immense discussion within the CPC. Finally as China historically was a net exporter of coal recently (and lastly from all other fossil fuels discussed in previous two points, namely oil and gas) became net importer in 2009 of the black smut and not because

it lacks it but simply because it either does not want to mine it more as it can gain it cheaper from other countries such as Russia or due to the fact that it needs more of it to fuel its still growing economy some experts suggest that the imports and production will drop due to undergoing project of diversification of energy resources.

The Bad?

The common conception about coal is that it is simply bad for us and I think it is quite pointless to support this claim in this thesis due to the sheer amount of news articles, governmental white papers, TV documentaries etc., And to be fully honest similar claims are done in the other direction, that the use of coal is the best resource that we have to fuel our economies. As both sides have provided valid points it is impossible for me to choose one side or the other and that is not a point of it either but I will say this, which is very vivid in China case, in the long run the use of coal should and probably will be either cut down to ensure the health safety of its own population and environment or try to establish, invest or develop advance means of production that reduce the devastating outcomes of the usage of coal. This view, especially the first part is heavily viewed by the developed world of the West, especially by developed European countries and the second partly in the US and countries such as Poland which are trying to advance in the clean coal technologies to mixed outcomes that at the moment are not very successful. In a short-term and most common for especially developing countries such as China is to pick up a pace after years, if not decades of stagnation when now well developed countries are already pass this stage and why not to do it by reliable, adequate and sufficient form of energy which is coal.

The Jevon's Paradox:

What supports that claim is the coal evaluation by William Jevon in his book *The Coal Question* (1865) which was later coined as Jevons Paradox. In a nutshell, what Javon's realised is that continuous and efficient use of coal in the industry allowed more production per unit of coal increasing consumption. The theory composes of two important factors, especially important for countries such as China but as well other rapidly developing countries: First, from broad classical economic assumption that *"the efficiency of coal use increases, the cost of coal per unit of goods produced decreases. This reduction in cost makes coal more desirable to*

producers as an energy source, thus leading producers to invest in technologies that utilize coal". Secondly, following political-economic reasoning, the drive to increase profits inherent in capitalist modes of production leads producers to try to both reduce costs by reducing resource inputs per unit of production (i.e., improving efficiency) and increase revenues by expanding the quantity of goods and services produced and sold, thus necessitating the expansion of resource consumption.

Findings

Now, one might ask why speak about all of the fossil fuel that are available, if it is quite obvious that it is the crude oil that has the most influence in the socio-political and economic "well-being" of PRC but as I mentioned at the start of this chapter it is imperative for me to establish at least partial framework for such a huge topic of energy security. However I do agree that at the given moment of time it is oil and even its abundance that causes the leadership of PRC sleepless and nervous nights.

Firstly, unlike coal and much less than gas oil as a commodity on the market is highly sensitive to speculations or actions of oil producing countries with OECD. This works the other way as well, if we meet with the abundance of oil or there is alternative to it, which is what is experienced now as new discoveries in shale gas in the US and new discoveries of oil beneath the sea level as well as in Africa the oil market, even if heavily influenced by politics will be forced to react on its own. The second option is as discussed in previously much more desirable for the Chinese government, however it still does not guarantee reliability or affordability. The price level of energy is essential for economic development of the world. The sharp rise in energy prices (especially fuel derived from petroleum) forced the implementation of programs for the rational use of energy and to reduce the energy intensity of the economy. These events have also shown that these prices are influenced by many unpredictable and non-economic factors, like the political situation in the regions of obtaining fuel (armed conflicts, strikes) or extreme weather. Extremely important factors the future development of markets for fuels and energy also result from ecological conditions, especially with accepted international agreements on environmental protection

Secondly, very much connected to the first one is the transportation and its two variants: as a fuel and a physical transfer of oil to China. As mentioned, the CPC is trying to lower its

dependency on coal based electricity for houses and factories as well as reduce pollution in big Chinese cities and at the same ensure the constant flow of black gold through pipelines and land routes known as the Silk Road Economic Belt (丝绸之路经济带) and sea routes which are already called the 21st Century Maritime Silk Route Economic Belt (21 世纪海上丝绸之路). Ideally, it would be gas or alternative fuels to enhance the economic growth in a long run, but realistically speaking that's not going to happen any time soon.

Thirdly, again associated with the previous activities by the CPC is the question of legitimacy. China energy security was a big topic for the previous administration of Hu Jintao and Wen Jiabao and widely discussed and commented by academia (Tang, 2006) (Scissors, 2008) (Hallding, Han, & Olsson, 2009) news and politics (Stamp, 2006) (Xu, 2009) and it has not changed after the 5th generation of leaders took power in 2013. The Xi-Li administration have probably even more to do with regards to energy than its predecessors. Firstly because of growing dependence of imported oil and gas is met with mixed feeling as on one hand it *"brought back bad memories of the past and sparked again the flame of anxiety about energy security"* (Leung, 2011, p. 1331) and on the other maintaining economic performance of the country is one of if not the most solid source of CCP legitimacy.

Furthermore, according to Christie et al. *the "energy security is national security"*(Christie, Francois, & Urban, 2010, p. 66) and similarly to the U.S it one of the most important and frequent political discourse. However, in contrast to the U.S, economic performance is dependent on energy security in China as it *"underpins the core objectives of Beijing and the political legitimacy of the Communist Party of China"* (Leung, 2011, p. 1). Thus the struggle to diversify the sources of oil and partly gas has been the priority. Chinese top officials often visit countries in Africa or Middle East to ensure the constant flow of black gold and other minerals to keep the wheel turning but this is met with mixed feeling which, according to Odgaard and Delmen are related to potential instability of the regions that are supplying the resources, the disputed and contested territories and the threat of the hegemon, the US that is by far the most traditional and strong player in the area of energy (Odgaard & Delman, 2014).

NOCs: National Oil Companies:

The view of most of Western observers on the increasing influence of National Oil Companies from rapidly developing countries such as India, China or Malaysia, especially those of U.S origin is well known and openly discussed since their expansion on energy market in troubled regions of the world. It was continuously highlighted that their operations in resource rich but politically unstable countries are *"noted for hostility to the US and to democratic, free-market values"* (Chen & Jaffe, 2007) but recently, according to IEA there is a slight shift in investment from high-risk areas as they, for obvious reasons are not providing as secure flows as expected to more cooperative operations with Western companies (IEA, 2014). However, the reason for this case study is to ask a question whether Chinese National Oil Companies are in fact supporting current regime in acquiring necessary sources of oil and thus helping in establishing energy secured China or because of its growing influence outside and most importantly within the country they not only put CCPs legitimacy on the line but as well the possible obstacles in the security of energy sector.

Overall, there are Chinese national companies that are dealing with or at least are supposed to help China in obtaining much needed outputs of oil and gas from the external markets – the Big Three: CNPC (China National Petroleum Corporation), Sinopec (China Petroleum and Chemical Corporation) and CNOOC (China National Offshore Oil Corporation). CNPC, the biggest one of the three is dealing with oil and gas exploration and extraction in 27 countries. Sinopec specializing in the extraction of natural gas and crude oil, petroleum processing and distribution of petroleum products. The last one, and the smallest of the three is responsible for offshore operations which are one of the fastest growing and promising industries in energy sector. While being the biggest national companies within China with regards to energy sector they do lag behind the absolute monsters on the market such as Exxon-Mobile or Shell. This however does not mean that they are less important as for PRC leadership it is imperative to secure energy resources at the moment of need (which is now) and for others, especially those that were on the energy market much longer, it's a new challenge from the second biggest economy in the world.

NOCs Mercantilist

"*The conventional wisdom views the NOCs as arms of the Chinese government that are aggressively snapping up exploration and production assets around the world to enhance China's energy security at the expense of that of other consumers.*" (Downs E. , 2014)

The nature of Chinese NOCs is of complicated nature. Usually, being under control of the CCPs leadership they tend to fulfil the role of a "watchdog" on the external and internal energy market. With many of its corporative leadership changing within the structure of the Party the interdependency is, or at least should be quite visible and straightforward, well, it is not. Because of lack of extensive experience and sheer size of previously mentioned giant MOCs the Chinese NOCs with the support of subsidies from the government could afford close up the gap between them by, for example acquisitions of Western companies. The most prominent example of such, yet quite spectacular "failure", was the CNOOCs try to acquire shares of Unocal – an independent U.S petroleum exploration company but because as some observers note, major outbursts protectionism of the United States House of Representatives referring to the deal as an attack on national security led to series of events that caused CNOOC to withdrew its bid on the expanse of other, this time western based company Chevron. It is a good example of mercantilist actions. If we theorize this situation under early mercantilist theory where China's position is to ensure the prosperity of its own national economy to ensure the legitimacy and its leadership – the CCP, the bid was one way of showing it as *"under a mercantilist strategy, the government and the NOCs would use protective strategies and subsidies to ensure self-sufficiency rather than supporting free markets"* (Lee S. L., 2010, pp. 7-8).

On the other hand we have the U.S and its leadership protectionist actions as *"since these* [energy, oil, strategic resources, technology etc.] *are tangible assets of state power, the government intervenes in the economy both domestically and internationally to maximize holdings of specie".* (Crane i Abla, 1997). The cause of it is a zero-sum game in which, at least to some extent the U.S won, ensuring the protectionist attitude fuelled by the "China Threat" rhetoric at the time to be dominant. However, CNOOC loss came from their lack of experience (at one stage the bid submission was late) in the matter of international energy market, thus if such expertise was provided and probably will in upcoming future especially if we look at

"closer co-operation and co-ordination with independent oil companies of Western countries" (IEA, 2014) that is present in last few years.

Institutional:

On the other hand, even after failures of CNOOC and therefore PRC in establishing a much wider network of supply in energy market it is quite prominent that PRC leadership, within the scope of the institutional model of liberal IPE, which central proposition *"is that an economy can function only within an adequate institutional framework"* (Boyer, Caillé i Favereau, 2008) and with regards to energy (or at least the NOCs) is trying to find its way into international system of energy by seeking membership in International Energy Agency (IEA) of which the most important is if the *country "carries out a comprehensive programme of energy co-operation among its member countries, each of which is obliged to hold oil stocks equivalent to 90 days of its net imports"* (IEA, People's Republic of China, 2012, p. 17). At this point China is planning to finish all most of the stages 2 and 3 in SPR (strategic petroleum reserves) by 2020 to fulfil conditions of IEA. According to Liu *"the importance of SPR is immense in protecting against "energy supply disruptions", a means to ensure "sustainable energy supply", and a way to "stabilize the oil market""* (Lee S. L., 2010, p. 25) which at the moment is one of the most important strategies embarked by the Chinese NOCs. A lot of those actions are following the liberal paradigm of institutionalization of norms that help PRC in engaging with international organisations and thus strengthening its position on not only global energy market but profoundly changing or what Su Change describe as it *"redefines its national interest and view on national security"* (Change, 2007, str. 70). Furthermore, Lee sees a certain interest difference between the central government of PRC, which wants to turn "the preference for equity oil" to profit, and NOCs longer term plans in establishing SPRs to avoid *"immediate profit".* (Lee S. L., 2010, p. 22). Additionally two contending approaches in political science: the rational choice and historical institutionalisms have one thing in common, the view of institutions as "important for politics because they structure political behaviour" (Steinmo , 2001).

Weak government – strong NOCs

And this is probably where the problem lies. The Chinese NOCs are neither fully under control of the government nor an independent entity that was created to work within the frameworks of the energy market. Firstly, perhaps by the long run but because of recent freedoms to criticize "anything" that is related to economic development which managed to openly discuss and push PRC into joining international organisations, signing and ratifying a number important international conventions. Secondly, mentioned before different preferences of both sides such as simple manner of goals. For PRC leadership the NOCs should become great multinational corporations and join the league of the big players on the energy market but at the same time they want them to be fully responsible institution ensuring the energy security of China by supplying the resources needed and At this stage it might be right to think about the economic nationalism, that could fit into this paradigm quite well in which "*Economic nationalism should be understood as a set of practices to create, bolster and protect national economies in the context of world markets"*. Thus before becoming a fully-fledged MOC with aims for profit and equity ensure the safety of own domestic market. Whereas NOCs perspective, probably rightly as well is to follow liberal-institutaionalist ways to "see expansion of equity oil on the open market as the overarching strategy to ensure reliability" (Lee S. L., 2010, p. 22) and that the *"corporation and marketization have made them more market-oriented and become self-interest motivated players"* (Shaofeng , 2009) thus *"their priority in foreign markets is to expand their energy reserves and fiscal coffers"* (Shaofeng, 2011, p. 623). Thirdly, whilst the decisions on energy are made with market oriented and liberal thought in mind like integration with the current economic system, cooperation with international organisations, trade interdependencies between nations that are not considered Pariah states the actual outcome is rather viewed by many (Lee S. L., 2010) (Williams, 2004) (Snyder, 2004) as mercantilist because of lack of experienced NOCs and not enough soft power to compete within current system.

This gives the notion of inefficiency of NOCs with all its great influence and subsidized power which result is endangering PRCs energy security strategy. There is no one way to describe Chinese NOCs especially when they are so entangled within the structures of CCP. Some of their actions can be explained through liberal theoreticization as well more enforced mercantilist

actions discussed above. One thing is clear though, at the given moment, both are in an impasse since PRC decided to "semi-integrate" into the world system (Shaofeng , 2009) (even with all joined organisations and number of ratifications we can agree that China is perusing the notion but still is not as integrated into the world system as we expect her to be), with no expectations in global energy market.

Conclusion

Chinese energy market is undergoing some serious changes and challenges within and outside its own country since it decided to play a "catch-up" game with the West. Fossil fuels, being the biggest contributor to the economic growth of PRC are all net-imported from other resource-rich countries. Firstly, it is generally agreed that at this stage of development crude oil is strategically the most important fuel especially when it comes to transportation within China and we are not talking only about private cars but about whole network of transit line to transport all sort of thing across the country and beyond it. CCP government knows it and that's why it set out its own NOCs such as CNPC, SINOPEC or CNOOC to firmly be establishing its presence abroad in oil and gas markets and at the same time to gain experience and technologies that can help in increasing its own output within China due to the possibilities of large quantities of resources still buried underground but requiring more sophisticated tools to reach it. Secondly, we have breakthrough with gas exploration and usage. Being cheaper and less harmful gas provides an alternative never seen before as are the statistical data's suggest from the IEA gas will play much bigger role in diversifying energy resources not only in China but worldwide. Thirdly, the scapegoating of coal. By scapegoating I do not mean to say that coal is the future and is perfect fossil fuel, far from it – it is the most toxic out of all previous discussed energy resources. However, it is still affordable and reliable source of energy for many developing countries so the arguments of developed economies that every country should walk away from coal are simply naïve, especially if in a definition of energy the last stage of usage of fossil fuels is renewable energy and not other fossil fuels. On top of that, with respect to Jevon's paradox the limitation on coal use can slow down technological advances that help improving the living standards. Finally, looking at the NOCs and its relationship with the CCP government it feels like there a slight lack of cooperation on many matter but at the same time there is still plenty of time and room to manoeuvre in the

international energy market. The energy security in China is at the crossroads or at worst in the limbo – where two visions of the country collide – the one fully integrated into the world system through institutions and other with preparation to challenge it by changing the rules but perhaps it would be easier to start with the first option and then change it from within.

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