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China's Resource Security and its Arctic aspirations

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这本学术论文的议题是资源安全,也就是说各个国家为解决资源 短缺而实施的政策,主要是能源资源。资源安全是以资源供应为基础的, 如果将来材料短缺的话,很可能会有用。中国正在实施这项政策,以保 护其经济。自中华人民共和国于 1949 年诞生以来,中国经历了巨大的 经济繁荣。经济繁荣改善了中国人民的生活方式,同时也带来了外交和 商业上的改善。

中国的领土很大,但中国并不总是拥有为国家和人民所需要的所有资源。就能源供应而言,中国陷入了困境,因为中国的大城市和工业是以高消费为基础的,而国家的能源可用性是无法满足的。问题主要在于采购不可再生资源,如碳氢化合物。为了应付这一复杂局面,中国政府开始与那些能源丰富的国家建立外交和经济联系。参与资源安全这一政策的公司是国有企业,因此政府的干预是显而易见的,以这种情况来警告竞争国家。当然,中国不能直接揭露其意图,因此它试图在研究计划和人道主义援助的帮助下掩饰其意图。其中最明显的例子是非洲和拉丁美国(见2章)。

北极地区正成为中国资源安全感兴趣的一个开发点。在北极有世界上 30% 的天然气和 13% 的石油。此外,中国对北极的发展旅游、农业、矿山、运输和贸易等物流基础设施有着很大的兴趣。冰层继续融化,为国际贸易开辟了一条直接通道。北极作为一个战略领域越来越重要。由于气候变暖,使中国对开采碳氢化合物的新技术以及北部海洋航线产生了浓厚的兴趣。

北极不受特定国际条约的管辖。它的法律规定受制于在"联合国海洋法会议"(《海洋法公约》)的国际法律框架和其他具体国际条约中领海的各种主权。《海洋法公约》规定,每一个国家都可以单方面和不受任何外部干涉,在离海岸 200 海里的范围内扩展其平台。尽管有这种规定,但仍有若干争议正在进行中。

石油和天然气编织了北极和非北极国家之间的共同利益网络。虽 然不是一个北极国家, 但中国不想被排除在北极管制及北极经济和商业 的可能性之外。这就是中国在很多方面与北极国家合作的原因。中国对 北极的参与并不是什么新鲜事了。自1994年以来,中国正在北极进行科 学研究,用它的破冰船"雪龙"作为平台,并且中国准备在2019年建造第二 个 "雪龙2"。从2004年起, 在挪威的中国站, 在斯匹次卑尔根岛群岛, 更被 称为斯瓦尔巴特, 正在运作。中国以其研究船和站为平台, 逐步建立了覆 盖北极海、冰、大气、生物和地质系统的科学观测系统。自2013年以来, 由于致力于研究,中国取得了北极理事会观察员地位。这是北极国家、 土著社区和非政府组织之间合作的最高政府间论坛。为了保护北极生态 系统、当地人口、资源和北极区域的可持续发展, 所有这些成员都一起 工作。在 2018年1月26日, 中国政府发表了一篇白皮书, 介绍中国在北极 所作的承诺。通过这篇白皮书,中国解释它是以合作逻辑为基础的。中 国把重点放在北极的环境保护和科学研究上。由于全球变暖正在加剧, 这些行动必须支持北极生态系统的发展。这篇白皮书还研究了北极的经 济治理的各个方面。中国已经表明, 它希望积极参与北极管治, 通过"尊 重北极国家的主权,并符合庄严载明的海洋权利、《联合国海洋法公约》 和各项公约、气候变化条约和国际海事组织有关规则"的行动。

通过我的论文,我想说明资源安全的重要性以及中国在这方面制定的政策,特别是在北极地区,因为这个地区尚未显示出其全部潜力。由于解冻,北极可能成为新的能源区域和供应来源。在这种情况下,这将是一个比中东或非洲更稳定的地区,因为它将提供比现在流经马六甲海峡更安全的运输路线。北极可能是中国能源供应的更好选择。

在第一章中,我概括地解释了资源安全意味着什么,并解释了为什么资源安全对中国的利益如此重要。在这一章中,我阐述了与中国合作的基本原则,以确保全球能源安全;我还展示了资源安全对中国全球化项目的战略重要性,特别是为了"走出去"计划和"一带一路"计划。第二章论述了中国政府在自然资源丰富的主要国家的活动。在第三和最后一章中,我解释了北极的潜力和问题。在北极,主要是地缘政治问题,因为毗邻北极的国家正在争夺该地区的统治。北极国家相互冲突因为发现了北极有大量的碳氢化合物矿床。这些矿床直到最近才被熟识,并因气候变化而被发现。在这种情况下,中国不想继续被排除在外,中国政府已经开始对北极事务感兴趣,无论是在外交和科学、经济和商业上。最后,我分析了中国政府在这方面的举措,以及中国与北极国家之间的主要关系,因为虽然有巨大的财力,但中国常常没有技术和知识能够在北极工作。因此,中国必须依靠合资企业和外交协议,以改善其在北极地区的地位。

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LIST OF ACRONYMS

A.D. Anno Domini

A5 Arctic 5

A8 Arctic 8

AEPS Arctic Environmental Protection Strategy

AGDC Alaska Gasoline Development Corporation

ANU Australian National University

BOC Bank of China

BP British Petroleum

CCP Chinese Communist Party

CEO Chief Executive Officer

CFE Treaty on Conventional Armed Forces in Europe

CIMA China Institute for Marine Affairs

CNARC China-Nordic Arctic Research Centre

CNOOC China National Offshore Oil Corporation

CNPC China National Petroleum Corporation

COSCO China Ocean Shipping Company Group

DRC Democratic Republic of Congo

EU European Union

FDI Foreign direct investment

FTA Free trade agreement

GDP Gross domestic product

IASC International Arctic Science Committee

IBM International Business Machines

IOCAS Institute of Oceanology of the Chinese Academy of Sciences

LNG Liquefied natural gas

MNE Multinational enterprise

NATO North Atlantic Treaty Organization

NDRC National Development and Reform Commission

NGL Natural gaseous liquids

NORAD North American Aerospace Defense Command

NORDEFCO Nordic Defense Cooperation

NSOE Non-state-owned enterprise

OBOR One Belt One Road project

ODA Official development assistance

ODI Outward direct investment

OFDI Outward foreign direct investment

OSCE Organization for Security and Co-operation in Europe

PLA People's Liberation Army

PLAN People's Liberation Army Navy

PRC Popular Republic of China

PRIC Polar Research Institute of China

REE Rare earth elements

SAR Search and Rescue

SCO Shanghai Cooperation Organization

SINOPEC China Petrochemical Corporation

SOA State Oceanic Administration

SOE State-owned enterprise

START Strategic Arms Reduction Treaties

U.S. United States

UK United Kingdom

UN United Nations

UNCLOS United Nations Convention on the Law of the Sea

USA United States of America

USGS United States Geological Survey

USSR Union of Soviet Socialist Republics

WTO World Trade Organization

INTRODUCTION

When I try to explain in Italian what my thesis is about I can never find the right words. This is because the term "resource security" is difficult to translate into Italian.

I portray resource security as a kind of arms race, but on another level of course, in fact I am not talking about war. "Arms race" has always been a way of saying that fascinated me. I remember the first time I heard it while at lesson in high school: during class the teacher was speaking about the various factions that in wartime tried to beat the enemy on time in order to provide war advantages. For this reason I relate the images of the arms race with resource security.

Today's society, at least the one of developed or developing countries, is consuming natural resources in an exorbitant way. We talk about deforestation, aggressive crops, mines as big as cities and wars with the aim of obtaining oil. Another sentence I was impressed with in high school was: "thirty percent of the planet consumes seventy percent of the world's resources." I do not know if the data is exactly correct, but in any case I think that the assertion is close to the truth. Most of the people I know, including myself, complain about how the world is collapsing under the weight of our lifestyle, but in the end it is easier said than done, or like Chinese people say *shuo yi xing nan* 说易行难.

My thesis does not want to be a criticism and does not even search for solutions to deal with this problem. With this elaborate I want to explain how China puts its resource security in place with the purpose of protecting its economy. Why China? This is because China appears on the world stage by relatively little in respect of American or European states and I think it is a case to study. China has experienced a great economic boom since the birth of the People's Republic of China (PRC) in 1949; as a result the lifestyle of Chinese people has improved and even at

diplomatic and commercial level there have been improvements. As a matter of fact, China has managed to enter into several world organizations, such as the United Nations, or even to create alliances not only with the aim of profit in monetary terms, but also of benefit as peaceful collaboration under its ideal to help countries considered "south of the world".

The resource security is based on sourcing material and resources from different states in order to have a safe reserve in case of shortage. This is done because many nations cannot keep up with the fast pace with which they progress. One of the most striking examples is a developed country that makes agreements with countries of the Middle East so that it can obtain oil at affordable price. In the case of China, the latter is experiencing a development never seen before and even if it is expected that will slow down considerably in the coming decades, China fails to cope with the situation relying solely on its forces.

China is spread over a wide territory, but in spite of that it does not always have all those resources necessary to "feed itself". In terms of energy availability, China is in trouble because its large cities and industries are based on high consumption, which cannot be met by national endowment. The problem lies mainly in the procurement of non-renewable resources, such as hydrocarbons. To cope with this shortfall, the Chinese government has been working for time and has begun to forge diplomatic and economic ties with those energy-rich countries. Of course, China cannot directly expose its intentions, so it seeks to disguise its scope with the help of research programs and humanitarian aid. I am nonetheless of the idea that China is not the only one to implement such a program, as several Western states have done the same in previous years. For example the US presence in the Middle East: I believe that the conflicts put in place at the beginning of 2000s in order to defeat the Taliban bases with the aim of protecting the local population and the whole world are not simply works for a good purpose. In the same way, I believe

that the Chinese aid dispensed in many countries on the African continent does not have the sole reason to help the nations in distress.

However, unlike other countries, China's searching of resources stands out. The Chinese population is currently the most numerous in the world, so the consumption to which the government has to cope is proportional. As a result, the arms race implemented by China turns out to be massive and vast, as it relies on deposits in different parts of the world, as you will understand from the study I propose in this thesis. Moreover, most of the companies involved in this process are partly state-owned companies, so government intervention is obvious, alerting the competing countries.

In my opinion, the most noticeable examples of China's implemented resource security policies are in Africa, followed by Australia and Latin America. Chinese presence in these areas, however, had already been extensively studied, both as regards to the presence of mineral resources and hydrocarbons, and for the "soft power" implemented in these countries, namely the ability of persuasion used to achieve certain objectives. This is why I decided to study an area that was rediscovered quite recently as the Arctic.

Because of climate change and of the high temperatures that result, the melting of ice in the north of the planet is now on the agenda. We often hear about the consequences that this entails: rising of the seas, species at risk of extinction, drastic changes in the climate, etc. What we do not hear often is the great economic possibilities that this implies, such as the opening of new trade routes and the discovery of new energy resource fields. These opportunities attract many countries outside the Arctic region, which believe that the area must be exploited by everyone. In fact, there are several laws discussing how it is possible and in what degree nations can use the Arctic, but only by those countries that have the right to do so,

namely Canada, the United States, Greenland (Denmark), Norway and Russia, while all the others remain excluded.

China looks with interest at the opportunity to be present on the Arctic scenario for several reasons ranging from the scientific ones to those based on profit prospective. In 2018 the Chinese government issued its opinion and intentions through its Arctic Policy. Although it is not an Arctic country, China does not want to be excluded from the Arctic governance, as well as from its economic and commercial possibilities. That is why China collaborates with Arctic nations in various respects, both to improve the current situation (with regard to climate change) and to improve its presence within this perspective.

The purpose of my thesis is to present the importance of resource security in a historical moment full of changes, and to expose what policies and activities China has put in place in various parts of the planet, focusing mainly on the Arctic area, considering that is a region that has yet to prove its full potential.

The objective of the first chapter is to propose a general overview of what resource security consists of, especially from the point of view of governments and companies, and why it is so important for China. I therefore illustrate the basic Chinese principles of cooperation in order to ensure global energy security. It is indeed important for China that there are solid foundations based on mutual advantage and understanding in order for collaborations to be successful. Finally, I report the strategic relevance of this way of acting for the Chinese globalization projects, in particular for the programs "Going Global" and "One Belt One Road".

In the second chapter I go into detail talking about the activities of Chinese Government in the main countries rich in natural and energetic resources. The chapter is divided into sub-chapters according to the Chinese intervention in a certain country; for each one then is presented the history of relations and the relations that are currently underway with China. This is because each state responds differently to the Chinese presence on its territory and consequently requires different conduct. But in the case of those countries considered to be "south of the world" we cannot speak of behavior but of real barters in exchange for resources, such as the construction of infrastructures or monetary aid from China.

In the third and last chapter is finally introduced the Arctic. Initially I explain the potential of this rediscovered region and the resulting problems. There is an issue of underlying geopolitics: the Arctic area is composed of sea and ice, so it is difficult to understand where the border of a state ends and where the international waters begin. The states bordering on the Arctic then compete in order to insert pieces of territory under their jurisdiction. To cope with this, the countries have made every effort and have deployed their military powers with the aim of defending themselves. This is because the Arctic, due to climate change, is bringing to light oil deposits and resources that until recently were not thought to exist. In this context, China does not want to remain excluded and the government has begun to take an interest in Arctic affairs, both from a diplomatic point of view and from a scientific, economic and commercial point of view. In fact, I analyzed later the policies put in place and the institutions created ad hoc in this regard. Finally, I wanted to report the main relations established between China and the Arctic states because, despite having great financial resources, China often lacks of the technology and of the knowledge necessary to deal with the Arctic; it must therefore rely on joint ventures and diplomatic agreements in order to solidify its presence in the Arctic region.

FIRST CHAPTER

WHAT IS RESOURCE SECURITY AND CHINA'S DEGREE OF INVOLVEMENT

Energy is the material basis for the progress of human civilization and an indispensable basic condition for the development of modern society. It remains a major strategic issue for China as the country moves towards its goals of modernization and common prosperity for its people.

Since China adopted the policy of reform and opening up in the late 1970s, its energy industry has made great advances. China is now the world's largest energy producer. It has built up a comprehensive energy supply system comprising coal, electricity, petroleum, natural gas, and new and renewable energy resources. (...)

However, China's energy development still faces many challenges. The country's energy resource endowment is not high and its per-capita share of coal, petroleum and natural gas is low. Its energy consumption has grown too quickly in recent years, increasing the strain on energy supply.¹

1.1 DEFINITION

Natural resources have always been a critical factor for emerging and developed powers. Large countries can produce most of the basic elements of national power and prosperity from within their own borders, but it is also true that these great powers are confined with the natural resources they have. In the end, emerging powers are forced to look outside in search of the natural resources they need, with widespread consequences (for examples the colonies of the past).²

To ensure a long-term, stable, secure and affordable provision of energy and resources, the main resource-consuming nations have resorted to political, diplomatic or even military stratagems. For emerging economies such as India and

¹ Information Office of the State Council of the People's Republic of China, "China's Energy Policy 2012", October 2012, Beijing, p. 2 (http://english.gov.cn).

² Elizabeth C. ECONOMY and Michael LEVI, By All Means Necessary: How China's Resource Quest is Changing the World, OUP USA, 2014, pp. 1-2.

China, securing sufficient energy and resources for economic development has been a diplomatic priority. There were fears among consumer countries that the few governments and companies that had a key role in reserves and in the supply of certain important energy and mineral resources could apply protectionist measures. In fact, resource producers put up barriers to market entry and restrictions on exports, in order to leveraging their position to increase economic returns.

In this context, regarding the extraction of natural resources, the presence and the power of state-owned enterprises (SOEs) are growing in global markets. Because of the low level of natural resources, competition in this sector is fierce; as a matter of fact SOEs compete head-to-head with other SOEs and non-state-owned enterprises (NSOEs). The desire of SOEs' owners, that are the governments, is to reduce the reliance of other firms and countries; moreover they aim to increase their own participation and authority in the area of natural resources. For instance, SOEs have a 34 percent share in the world's crude petroleum and natural gas extraction sectors and a 35 percent share in the world's coal and lignite mining sectors.³

But why resources are secured? For the intent of satisfying short-term needs or as a safeguard for the future? Multinationals purchase resources for two main reasons: for exploration (that is the initial investigation and discovery of value in resources, for long-term resource security), that have little or no utility toward the short-term meeting needs; or for exploitation (that is the production using resources of known value, for the security of relatively short-term resources), in which SOEs are more interested than NSOEs because these resources enable their owners to secure the future of their home country. In fact, SOEs can attribute value to such resources acquired through exploitation and therefore keep them in reserve as a safeguard for the future. Long-term strategic benefits, like geopolitical position and

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³ A. Erin BASS and Subrata CHAKRABARTY, "Resource security: Competition for global resources, strategic intent, and governments as owners", *Journal of International Business Studies*, Vol. 45, No. 8, (Special Issue: Governments as Owners: Globalizing State-Owned Enterprises; October/November 2014), p. 961.

power, are exhausted in an equivalent way when resources are exploited and subsequently consumed.⁴

Focusing on specific, China is a major resource producer and both the world's largest consumer of energy, as well as the largest emitter of greenhouse gases (gases that absorbs and emits radiant energy within the thermal infrared range in the atmosphere), that is why its economic transition has global ramifications for resource markets, environmental security and resource governance. Global resource governance can be defined as:

The collection of international narratives, norms, rules and organizations, formal or informal, that directly or indirectly influence the production, trade or consumption of natural resources. It includes arrangements in which sovereign governments are the central actors, from multilateral conventions and international organizations to regional groupings and bilateral partnerships. It also includes arrangements in which non-state actors play an important role, including global commodity exchanges, arbitration mechanisms, supply chain initiatives and other arrangements. They all contribute to a relatively orderly and predictable international framework for the production and trade of resources.⁵

Sometimes resources are just an excuse for wider geopolitical tensions, providing a subject of conflict, and are therefore included in the mandates of numerous international institutions' and organizations' appointment, such as trade, investment and territorial claims.

1.2 How China's resource pursuit is changing its diplomacy

Chinese energy industry has witnessed rapid growth, achieving excellent development goals regarding coal, electricity, petroleum, natural gas, and new and

⁴ A. Erin BASS and Subrata CHAKRABARTY, "Resource security: Competition for global resources, strategic intent, and governments as owners", *Journal of International Business Studies*, Vol. 45, No. 8, (Special Issue: Governments as Owners: Globalizing State-Owned Enterprises; October/November 2014), p. 962.

⁵ Felix PRESTON, Rob BAILEY and Siân BRADLEY (Chatham House), and WEI Jigang and ZHAO Changwen (DRC, Development Research Center of the State Council), *Navigating the New Normal: China and Global Resource Governance*, a joint DRC and Chatham House report, January 2016, p. 3.

renewable energy resources. In this way China is making important contributions to the long-term, steady and rapid growth of the national economy and is also improving the standards of living of its citizens.

As Chinese people moved into the middle class, they began to consume more, rapidly overcoming China's capability to produce the resources needed to plump its economy. The trend was incredibly fast in the mid-2000s as China built up cities, industries, power plants, roads, and railways, raising the demand for everything. Chinese firms seemed to be scouring the world from its resources. As China's economy continued to grow, China started to face shortages in almost all raw materials, particularly in oil, iron ore, aluminum, and uranium, and therefore it had to build trade linkages with Australia, Russia, Brazil, and other resource-rich countries to secure supplies. These resource-rich economies have been looking for beneficiaries like the ones coming from China, thanks to its wide-ranging trade, aid, and investment deals. This kind of image is consistent with its self-image as the "leader of the developing world", by giving credit for countries with poor governance avoided by Western lenders. But by doing so, the prospect of resource wars raised, and defense planners began to worry that China would seek to control the seas through which the resource trade flowed.

China sustained economic growth through the 1990s and 2000s, leading to a higher demand for natural resources. Many observers have indicated the search for natural resources by China as the factor of a series of transformations around the world; moreover, they are pointing out that Chinese investment in overseas resources is changing the commodities world from one predominantly ruled by free markets to one where China secure reserves and creates its own mercantilist system

⁶ Elizabeth C. ECONOMY and Michael LEVI, *By All Means Necessary: How China's Resource Quest is Changing the World*, OUP USA, 2014, p. 1.

⁷ Leonard K. CHENG and Zihui MA, "China's Outward FDI: Past and Future", *Proceedings of the NBER (National Bureau of Economic Research) Conference on China's Growing Role in World Trade*, University of Chicago Press, 2007, p. 5.

for trade. In the commercial sphere, Western enterprises are now forced to face the Chinese-owned giants, which use every lever of the Chinese government to seize resources and defeat competition. This entails a shift in the balance of economic power from free markets to state capitalism.⁸

In this context, Chinese officials face the diplomatic and practical challenge of managing relations with a large number of resource partners; in fact, eighteen major resource partners account for over 70 percent of China's imports. In the list are included China's neighbors Russia, Japan, South Korea and Indonesia; Middle Eastern oil exporters Saudi Arabia, Iran, Oman, Iraq and the United Arab Emirates; South American states Brazil, Chile and Venezuela; Angola and South Africa these two African nations; and finally some advanced economies that are either resource-rich or processing centers, like Australia, the United States, Canada and the European Union. From all over the world China import crude oil, iron ore, coal, gas, liquefied natural gas (LNG), copper and potash. This is the reason why China depends on opening international markets, rules-based resource trade and supply security (Figure 1). 10

According to China's Energy Policy of 2012,¹¹ as the world's largest energy producer, China mainly relies on its own forces to develop the energy it needs, and has managed to reach 90 percent of self-sufficiency. China's energy development not only ensures the economic and social development of the country, but also makes significant contributions to global energy security. In the coming years, China's industrialization and urbanization will continue to accelerate, as the demand for

⁸ Elizabeth C. ECONOMY and Michael LEVI, *By All Means Necessary: How China's Resource Quest is Changing the World*, OUP USA, 2014, pp. 5-6.

⁹ Felix PRESTON, Rob BAILEY and Siân BRADLEY (Chatham House), and WEI Jigang and ZHAO Changwen (DRC, Development Research Center of the State Council), *Navigating the New Normal: China and Global Resource Governance*, a joint DRC and Chatham House report, January 2016, p. 8.

¹⁰ Felix PRESTON, Rob BAILEY and Siân BRADLEY (Chatham House), and WEI Jigang and ZHAO Changwen (DRC, Development Research Center of the State Council), *Navigating the New Normal: China and Global Resource Governance*, a joint DRC and Chatham House report, January 2016, pp. 9-10.

¹¹ Information Office of the State Council of the People's Republic of China, "China's Energy Policy 2012", October 2012, Beijing (http://english.gov.cn).

energy will continue to increase, and so China will face increasingly arduous challenges regarding energy supply.

Nevertheless, the average per-capita of China's energy resources is low, comparing it with world standards: although China has experienced a rapid growth in energy utilization in recent years, its consumption of energy per-capita is still low, and corresponds only to one third of the average of developed countries. But as the economy and society progress, and with the improvement of living standards, China's energy consumption will continue to grow abruptly, leading to a growing restriction on resources.

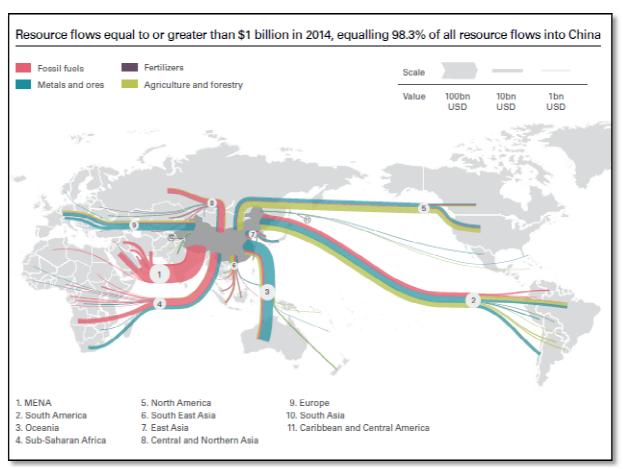


Fig. 1 – China's resource interdependencies (source: Chatham House Resource Trade Database, COMTRADE, 2015).

However, China's dependence on foreign energy sources has been increasing in recent years. In particular, the percentage of imported petroleum increased by twenty-five percent starting from the beginning of the 21st century. Maritime

transportation of petroleum and the transmission of oil and gas through cross-border pipelines collide with increasing security risks as well. In addition, price fluctuations in the international energy market make it more difficult to guarantee domestic energy supply. It will not be easy for China to maintain its energy security since its energy reserves are small and its ability to respond to a potential emergency is weak.¹²

As the largest developing country in the world, China faces the burdensome tasks of developing its economy, improving its people's livelihood, and building a moderately prosperous society. This is the reason why it is an important strategic duty of the Chinese government to maintain long-term, stable and sustainable use of energy resources.

This aim is reflected in China's energy policies. Their basic contents are:

Giving priority to conservation, relying on domestic resources, encouraging diverse development, protecting the environment, promoting scientific and technological innovation, deepening reform, expanding international cooperation, and improving the people's livelihood.¹³

In fact, China controls both the total energy consumption and the intensity of it. The goals are to build an energy-saving production and consumption system in order to promote the transformation of the patterns of economic development and household consummation, and to accelerate the pace of building an energy-efficient country as well as an energy-saving society.

China is employing several forces with the aim of expanding its capacity to supply energy and security through the use of its national resources. The consequent results are due to the improvement of the emergency energy reserve and emergency response systems, and to the control of its dependence on foreign energy sources. But

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¹² Information Office of the State Council of the People's Republic of China, "China's Energy Policy 2012", October 2012, Beijing (http://english.gov.cn).

¹³ Information Office of the State Council of the People's Republic of China, "China's Energy Policy 2012", October 2012, Beijing (http://english.gov.cn).

China wants to give importance not only to the international energy development, but at the same time to the domestic one, by working in increasing the scope, channels and forms of international cooperation. In this way China would like to improve its ability of "going global", by promoting the creation of a new international energy order and fostering mutually beneficial cooperation.¹⁴

Of course, cooperation with the rest of the world is a key factor for China. The establishment of good relations between China and other countries in the energy sector is due to the acceleration of the economic globalization. In addition, the improvement in the energy field implemented by China has not only helped its needs for economic and social progress, but has also made great contributions to world energy security and to the stability of the global market.

China takes part in international energy cooperation in an operative way as well, and it has set up bilateral dialogue and mechanisms for collaboration in the branch of energy with the U.S., the EU, Japan, Russia, Kazakhstan, Turkmenistan, Uzbekistan, Brazil, Argentina, Venezuela and many other countries and regions, and has consolidated dialogues, exchanges and cooperation with these countries regarding oil, natural gas, coal, electric power, renewable energy, technology, equipment and energy policy. China takes also part in many multilateral organizations and mechanisms, including the energy working group of the Asia-Pacific Economic Cooperation Organization, Group of 20, Shanghai Cooperation Organization, World Energy Council and International Energy Forum. It is an observer of the Energy Charter - a declaration of political intention aiming at strengthening energy cooperation between the signatory states without any legally binding obligation or financial commitment-, and preserves close relations with international organizations such as the World Energy Agency and the Organization

¹⁴ Information Office of the State Council of the People's Republic of China, "China's Energy Policy 2012", October 2012, Beijing (http://english.gov.cn).

of Petroleum-Exporting Countries. In this way China is in charge of many obligations and at the same time has an important role in international energy cooperation.

Moreover, always in regard to energy, China supports a policy of opening to foreign nations. It also enacted a number of laws and regulations, such as the Law on Sino-foreign Equity Joint Ventures, the Law on Sino-foreign Cooperative Joint Ventures and the Law on Foreign Investment Enterprises, with the aim of arranging a positive environment for foreign investment on one hand, and of preserving the legitimate rights and interests of investors on the other hand. The Chinese government hopes that: investments coming from abroad will focus in the exploration and development of oil, natural gas and unconventional oil and gas resources, such as shale gas and coal-bed gas; foreign investments will be made in order to build new-energy power stations, hydroelectric power stations, clean-combustion power stations, and nuclear power stations (as long as the Chinese partners have control); and Research & Development centers will be constructed in China.¹⁵

Chinese energy companies actively take part in international energy cooperation through the design of infrastructure abroad and by cooperating in energy engineering and services, while still following the principles of equality, mutual benefits and reciprocity, that are, according to Chinese people, the basis to make a relationship work. Chinese energy enterprises must then respect local laws and regulations, and respect the religious beliefs and customs of the local people when doing business in foreign countries. The final goal is to contribute to local economic and social development, realizing self-growth at the same time.

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¹⁵ Information Office of the State Council of the People's Republic of China, "China's Energy Policy 2012", October 2012, Beijing (http://english.gov.cn).

International energy trade will surely remain for a long time the most important way by which China uses foreign energy sources.¹⁶

The Chinese government expects efforts coming from abroad in the following fields with the aim of achieving global energy security together:

 Strengthening dialogues and exchanges, as communication between energy exporting, consuming and transiting states is the basis of international cooperation on energy.

According to the Chinese point of view, dialogues and exchanges should be intensified in the areas of energy efficient use, energy conservation, environmental protection, energy management and energy policy; monitoring and emergency response mechanisms for the global energy market should be advanced; finally, cooperation in the fields of information exchange, staff training and coordination should be mastered.

Carrying out effective energy cooperation. Countries that are interested in
energy development should ensure that cooperation would be beneficial for
all those involved, so that everyone could make the most of it. They therefore
should collaborate on energy resources exploration, cooperative mechanisms
and methods, international energy supply, and supply channels.

According to the Chinese point of view, the international community should share the same interest of helping to remove energy poverty in the least developed countries, increase energy performances and upgrade sustainable development.

 Working together to maintain energy security in order to have a solid global energy market.

¹⁶ Information Office of the State Council of the People's Republic of China, "China's Energy Policy 2012", October 2012, Beijing (http://english.gov.cn).

According to the Chinese point of view, states should work together to keep stability of oil producing and exporting countries, particularly those in the Middle East, so as to ensure the safety of international energy transport routes and avoid conflicts influencing global energy supply. The various countries involved should resolve the main international energy disputes through dialogue and consultation. In addition, the use of weapons to solve issues related to energy should be avoided.¹⁷

Regarding China's future energy, the projections are alarming for a regime that relies heavily on "performance legitimacy" to underpin its authority, also because the pace and scale of China's rise have had a major impact on international energy and resource production. Performance legitimacy means that a state's right to rule is justified by its economic and/or moral performance, and by the state's capacity of territorial defense. At this rate China alone will consume twenty per cent of the world's energy by 2035, considering that 19 of the 45 main minerals needed in China will be in short supply by 2020. 19

Resource security has become vitally important for China as to be rewriting its entire overture to foreign policy. In order to ensure access to overseas resources, the government has lessened foreign investment restrictions and implemented incentives to Chinese companies operating abroad as part of its "Going Global" strategy. The companies involved in China's "Going Global" strategy have different owners: central and provincial governments, and proprieties. These companies compete with

¹⁷ Information Office of the State Council of the People's Republic of China, "China's Energy Policy 2012", October 2012, Beijing (http://english.gov.cn).

¹⁸ ZHAO Dingxin and YANG Hongxing, "Performance Legitimacy, State Autonomy and China's Economic Miracle", *CDDRL Working Papers*, Number 132, April 2013, p. 14.

¹⁹ Mark BEESON, Mills SOKO and WANG Yong, "The new resource politics: can Australia and South Africa accommodate China?", *International Affairs*, Volume 87, Issue 6, 1st November 2011, pp. 1366-1367.

each other to seize overseas projects, development rights and construction contracts.²⁰

The global strategy of multinational enterprises (MNEs) from China started to emerge in the beginning of the 2000s. This is due to the significant increase of China's outward foreign direct investment (OFDI), by lowering financing interest, promoting favorable exchange rates, reducing taxation and subsiding insurance for expatriates to ease OFDI. As a result, many Chinese firms responded to these institutional incentives and ventured abroad looking for acquisitions as the preferred mode of entry (other modes of entry include exports). Acquisitions are the primary mode of entry because (1) lead for a fast market entry, especially in the areas of natural resources, (2) overcome MNE's weakness of poor branding prowess by acquiring existing world-class brands (such as IBM's PC brand or Volvo), and (3) satisfy CEOs' managerial hubris and empire building.²¹ Chinese companies are encouraged to seek direct access to overseas resources through exploration and investment, drawing on the rapidly expanding pool of China's foreign exchange reserves.

In the context of China's endeavors to diversify the sources from which it obtains energy and raw materials, its immediate neighbors are seen as especially important. This reflects the Chinese initiatives to involve with key economic partners through regional forums with Africa, the Caribbean and South Pacific, and through the practice of China's influential role in Shanghai Cooperation Organization (SCO). The SCO is a permanent intergovernmental international organization formed by the Republic of Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Russian Federation, the Republic of India, the Islamic Republic of Pakistan, the Republic of Tajikistan, and the Republic of Uzbekistan. The SCO's main goals are:

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²⁰ Mark BEESON, Mills SOKO and WANG Yong, "The new resource politics: can Australia and South Africa accommodate China?", *International Affairs*, Volume 87, Issue 6, 1st November 2011, p.1370.

²¹ Mike W. PENG, "The global strategy of emerging multinationals from China", *Global Strategy Journal*, Volume 2, 2012, pp. 97-100.

strengthening mutual trust and neighborliness among the member states; promoting their effective cooperation in politics, trade, the economy, research, technology and culture, as well as in education, energy, transport, tourism, environmental protection, and other areas; making joint efforts to maintain and ensure peace, security and stability in the region; and moving towards the establishment of a democratic, fair and rational new international political and economic order.²²

China in particular targets developing countries because they hope to gain aid and investment from the Chinese government and are therefore generally receptive to its approach, and because there are commonly fewer political obstacles for China to defeat. Through the enlargement of incentives and means of support to the enterprises "Going Global", China is rapidly increasing foreign exchange reserves that allow financial institutions owned by the state to sign investment abroad and expansion.²³ In this way, the government can reduce the risks and the problems for the Chinese economy that the rapid accumulation of foreign exchange reserves has brought. Inter alia, fast and vast speculative capital has contributed to an enormous increase in its reserves and to the greater risks for the financial system.²⁴ Since the large reserves of Chinese foreign exchange reserves are an increasing source of mobile capital and a key part of China's official government policy, it is likely that Chinese foreign investments will continue. China is now the largest capital-surplus economy in the world thanks to receipts from China's existing global investments and trade surpluses.²⁵

²² The Shanghai Cooperation Organization (http://eng.sectsco.org).

²³ Mark BEESON, Mills SOKO and WANG Yong, "The new resource politics: can Australia and South Africa accommodate China?", *International Affairs*, Volume 87, Issue 6, 1st November 2011, p. 1369. ²⁴ ZHENG Yongnian and YI Jingtao, "China's Rapid Accumulation of Foreign Exchange Reserves and Its Policy

Implications", China & World Economy / 14-25, Volume 15, No. 1, 2007, pp. 24-25.

²⁵ Nargiza SALIDJANOVA (Policy Analyst for Economic and Trade Issues), "Going out: an overview of China's outward foreign direct investment", U.S.-China Economic & Security Review Commission, USCC Staff Research Report, March 30th 2011, p. 1.

1.3 THE IMPORTANCE OF THE "GOING GLOBAL" AND "ONE BELT ONE ROAD" PROJECTS IN CHINA'S RESOURCE SECURITY STRATEGY

Issued in 1999, the "Going Global" strategy asked Chinese firms to take advantage of booming world trade to invest in global markets. From an ideological as well economic point of view, it formulates China's ambitions for global leadership and cooperation. Under the leadership of Xi Jinping 习近平 (president of the PRC from 2013) and Li Keqiang 李克强 (PRC prime minister from 2013), "Going Global" has developed to mirror domestic goals: moving from an investment-based economy to an innovation-oriented economy, and reinforcing Party demands on legitimacy by becoming an effective global player. Thanks to "Going Global", China can now claim to be an exponent of free trade, providing a framework for leading companies to find resources and markets offshore so that domestic firms can export their practices that worked within the PRC business world. China only had to make sure that firms invested abroad wisely, with a great concern for local sensibilities and China's image.

Unfortunately, firms "Going Global" face serious issues regarding political, natural, economic and market risks. This is because both state and private societies have different objectives between and within the countries that receive firms' attention; these countries themselves already have their own geopolitical goals, so discrepancies between institutions and law of participating states result. Moreover, the response of many overseas investments does not mirror the results expected, as they enter the market without sufficient prior evaluation, generating little value and exposing firms to unjustified risks.²⁶

Anyway, included in this huge project there is "One Belt One Road" project, which was proposed by chairman Xi Jinping in 2013, with the aim of dealing the U.S. influence. The strategy focuses south and west, trying to build up infrastructure, trade, investment and human linkages across Eurasia. It is formed by the "Silk Road"

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²⁶ China Policy, "China Going Global, between ambition and capacity", Beijing, April 2017, pp. 3-9.

Economic Belt" that develops through Central Asia, and by the "Maritime Silk Road" that extends from the Indian Ocean to the Middle East. In fact, the purpose of the first one is to seek to amply the development in the West, mainly through better economic integration with countries in South and Central Asia and the Middle East. In this way China tries to revitalize the northeast of the country, house of the heavy industry, so that the country can be linked with the promised synergies flowing through "One Belt One Road".²⁷

The most interesting feature in this international plan is that the government has decided where the overseas expansion should take place, or rather the strategic industries and markets that align with the country's long-term development strategies such as obtaining overseas natural resources.²⁸ In fact, securing the access to overseas energy resources and raw materials in order to support China's high economic growth rate is a key strategic driving force. A practical example is that China has become the world's largest net importer (imports minus exports) of total petroleum and other liquid fuels in 2013, and starting from 2017 it has surpassed the United States in annual gross crude oil imports (importing 8.4 million barrels per day only last year, compared with 7.9 million of the United States) (Figure 2), being the world's largest consumer for the ninth consecutive year.²⁹ Anyway, petroleum is not the only resource in demand growing; a similar picture regards also coal, aluminum, copper, nickel and iron ore. Of course this natural resource race is tightly connected with the Chinese government's pursuit of its national energy security agenda to secure overseas assets and provisions agreements. The close involvement of the government can also be seen in the support of overseas directed energy acquisitions stipulated by the National Development and Reform

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²⁷ China Policy, "China Going Global, between ambition and capacity", Beijing, April 2017, pp. 6.

²⁸ Mark Yaolin WANG, "The Motivation Behind China's Government-Initiated Industrial Investment Overseas", *Pacific Affairs* 75.2, Summer 2002, p. 194.

²⁹ Jeff BARRON from the U.S. Energy Information Administration, "China surpassed the United States as the world's largest crude oil importer in 2017", Washington, DC: Department of Energy, February 5th, 2018 (https://www.eia.gov/todayinenergy).

Commission (NDRC), which requires China's energy firms to purchase equity in upstream energy suppliers.³⁰ It is evident that acquisitions in oil, gas, and mining are playing a growing role in Chinese outward direct investment. For example in 2009 Yanzhou Coal Mining 兖州煤业公司, China's fourth biggest producer of the fuel, acquired in full Australia's Felix Resources Ltd. for about \$2.9 billion to secure supplies; while China Petroleum & Chemical Corp. (of SINOPEC Group), the largest Chinese oil refiner, bought the Swiss oil explorer Addax for \$7.24 billion to secure high-potential oil blocks in West Africa and Iraq.³¹ Always in the oil area, China's

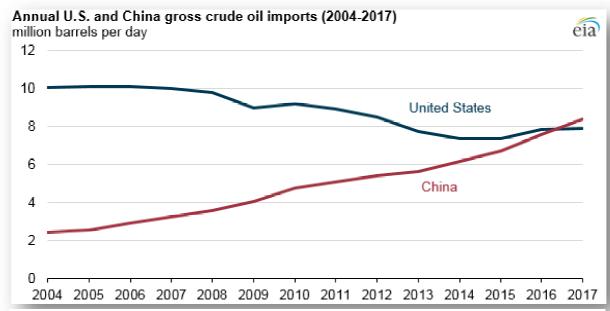


Fig. 2 – Annual U.S. and China gross crude oil imports (2004-2017) (source: U.S. Energy Information Administration, *Petroleum Supply Monthly* and *Weekly Petroleum Status Report*, China General Administration of Customs, based on Bloomberg, L.P.).

three main energy firms, i.e. China National Petroleum Corporation (CNPC), SINOPEC and China National Offshore Oil Corporation (CNOOC) have been the major purchasers. In Central Asia, Chinese investors have encouraged Kazakhstan as an investment destination, while in the Middle East, the two main oil producers, Saudi Arabia and Iran, have welcomed relatively little attention from Chinese

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Direct Investment", IHS Global Insight, 2006, p. 2. ³¹ Jason SCOTT and John DUCE, "Yanzhou Coal Mining Company's \$3.5 Billion Acquisition of Felix Resources", August 13th, 2010 (http://www.corrs.com.au); and Reuters, "China's Sinopec to Buy Addax for \$8.27 Billion", June 24th, 2009 (http://www.reuters.com).

investors whereas Iraq has been preferred as an investment destination for Chinese companies in the region. In Latin America, China's oil and gas majors have favored Brazil and Venezuela, the largest oil producers in the region.³²

Thanks to its state-owned enterprises, China can acquire increasing power and influence abroad, improving also the image of the country and of the Chinese Communist Party (CCP). Such state-owned companies include direct and indirect subsidies, and favorable funding reported in the form of credit lines and low interest rate loans by state-owned banks.

One of the priorities for China according to its "Going Global" strategy is the creation of "global champions", which are large multinational companies with globally recognized brands able to compete on the international market. These state-owned or state-affiliated firms often receive an advantage thanks to political and financial support, which gives them an advantage over more market-oriented western enterprises. A variant of the national champion is a hybrid that is at least partially owned by the Chinese government, or that maintains strong government bonds but that has some flexibility (an example is Lenovo): they are aggressively promoted as private companies, in part because their attempts to acquire foreign companies or joint venture partners, but still their Chinese government connections cannot be hidden.³³

As seen before, state-owned banks, including the government's China Export-Import Bank, China Development Bank and also China Export & Credit Insurance Corporation, are essential in the outward investment process by providing loans, and by signing agreements regarding risk assessment, insurance, and protection against

³² The Economist Intelligence Unit, "China Going Global Investment Index 2017", p. 12 (www.eiu.com).

³³ Nargiza SALIDJANOVA (Policy Analyst for Economic and Trade Issues), "Going out: an overview of China's outward foreign direct investment", U.S.-China Economic & Security Review Commission, *USCC Staff Research Report*, March 30th, 2011, pp. 11-12.

currency fluctuations in the host country to enterprises that wish to "Go global".³⁴ Moreover, Chinese embassies help foreign-investing firms by providing additional support that result from studies which evaluate the chances of success of proposed Chinese investment projects in the host country.

After examining Chinese policies in general with regard to the supplying of foreign natural resources, the following chapter will cover China's presence in other continents.

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³⁴ LIU Jianhui, "Zou chuqu de jiaolü" 走出去的焦虑 ("Anxieties about 'Going Out'), Tengxun caijing 腾讯财经 *(Tencent finance and economics*), July 25th, 2006 (*www.jingji.com.cn*).

SECOND CHAPTER

CHINA LOOKS BEYOND THE BORDERS

China's growing dependency on foreign energy is both a theoretical and a practical challenge for China's energy planners, even thought from a theoretical perspective, reliance on imported energy resources arguably violates the Maoist doctrine of self-reliance (zili gengsheng, 自力更生), that is the guiding principle for economic development in the 1960s and 1970s.35 But China could not have done otherwise because domestic resources would have not been able to meet its growing demand for energy in general, and oil and gas in particular. In fact, China's heavy industrialization process requires more resources and energy input than the country can produce. To date, China has relied on imports to meet its rising demands for natural resources, but the increased need for these resources has seen prices grow beyond the point where Chinese producers can maintain their margins of profit. Thanks to China's stock of foreign exchange reserves and also thanks to a valued currency, Chinese companies had the opportunity to look outwards, taking important interests in mining projects overseas and acting as both shareholders and customers. Meanwhile, the rapid development of heavy industries in the country of origin has also driven companies capital-intensive abroad, while resource-seeking outward seeking investment (ODI) is directed to exploit local factor endowments such as oil, gas, minerals, timber and other natural resources in other nations (the abundance of natural resources in the host country is the key determinant in this type of ODI).

Going into further detail, Australia is the biggest recipient of Chinese investment thanks to its resources. As a matter of fact, more than 80 per cent of

³⁵ Erica STRECKER DOWNS for AIR FORCE Project, *China's quest for Energy security*, RAND Corporation, Santa Monica, 2000, p. 11.

Chinese investment in Australia resides in the mining industry, almost half of this goes to iron ore and the rest goes to coal, zinc, aluminum, copper, uranium, and so on. Likewise, a large amount of Chinese ODI flows into Canada for its oil and oil-sands, Russia for its oil and forests, and South Africa for its gold and platinum.³⁶

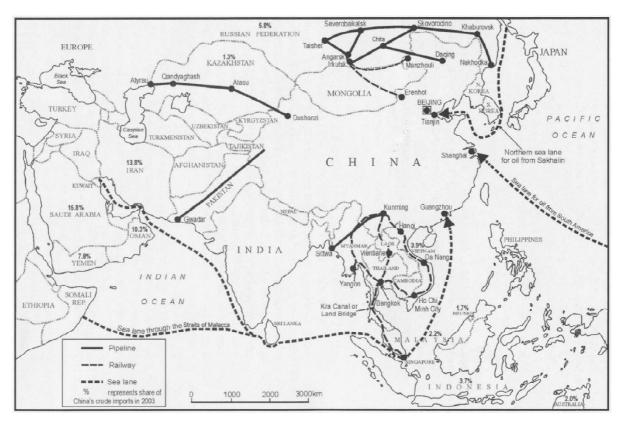


Fig. 3 – "China's oil route" (Source: Hongyi Harry LAI, "China's oil diplomacy: is it a global security threat?," *Third World Quarterly*, Vol. 28, No. 3, 2007, p. 524).

³⁶ Huw MCKAY and Ligang SONG, *Rebalancing and sustaining growth in China*, Australian National University (ANU) E Press, Canberra, 2012, pp. 156-160.

2.1 Australia

For some years now China has been Australia's largest trading partner and one of its most significant bilateral relationships. Chinese economic success has also benefited Australia, which now has a steady economic growth and better living standards. Anyway, China's ties with Australia could led to misunderstandings as the country puts in place a regional security architecture with the result of countering China's strategic potential. But despite this, Australia is a country that has to compromise with China, as it has become a central component in terms of national economic development and in its political sphere. This is why there is great sensitivity and prudence both by China and Australia regarding the management of their relationship: it is complex, as they are two very different countries, but at the same time they linked one to the other by their joint resource interests. Moreover, from a Chinese point of view, Australia is not merely a strategically important resource-rich country, but it also provides an important testing ground for the effectiveness of China's foreign policies towards those states that have very different economic and political conditions. In fact, the growing Chinese presence in economic and strategic areas is increasingly affecting Australia's national and foreign policies. China must be careful as Australia will no longer allow being only a remote supplier of raw materials.37

As mentioned before, ore and coal are the top two imported resources by China from Australia, and each one is indispensable for Chinese industrial development (Table 1). Besides, the continuous increase of crude steel consumption requires more iron ore for production, and this is the reason why crude steel plays a strategic role in China's economic construction (China has become the largest

³⁷ Mark BEESON, Mills SOKO and WANG Yong, "The new resource politics: can Australia and South Africa accommodate China?", *International Affairs*, Volume 87, Issue 6, 1st November 2011.

importer of iron ore in the world since 2003). China's high dependence on iron and energy imports from Australia reflects the significance of Sino-Australian relations.³⁸

Asian industrialization and Australia's vast mineral wealth together have led Australia and the "Asian tigers" to complement each other. Nowadays, China is both Australia's largest trade partner and one of the largest sources of politically sensitive foreign direct investment (for example, over a hundred different firms are competing to invest in iron ore mines in Australia). As said before, Australia and China are complementary trading partners: Australia has a large amount of natural resource compared to its population and has therefore specialized in the production of primary goods aimed at export, and at the same time it needs to obtain workers for labor-intensive and other manufactured goods sectors; in reverse, China has a large workforce and it has accumulated large amounts of capital, but it has few natural resources compared to its population. For this reason, China's industrial development was built on labor-intensive production, which it exchanges with Australia for imports of scarce resources.

Table 1: "Actual projected exports of commodities to China" (Source: ANU Press, "Partnership for change, Australia-China Joint Economic Report", East Asian Bureau of Economic Research (Canberra) and China Centre for International Economic Exchanges (Beijing), August 2016, p. 78).

Share of commodity exports to China by value (per cent)						
	2005	2015	2025	2035		
Growth scenario	Actual	Estimated	Projection	Projection		
Iron ore	47.3	57.9	51-51.5	43-47.5		
Base metals	25.1	13.2	13	12-13		
Coal	4.3	8.7	9.5-10	11-13		
Natural gas (LNG)	0.0	5.4	10	12-14		
Food	5.8	8.6	9	9.5-11		

³⁸ Weihua LIU and Yufan HAO, "Australia in China's Grand Strategy", *Asian Survey*, Vol. 54, No. 2, Strategic Dilemma, March/April 2014, pp. 386-387.

³⁹ The "Four Asian tigers" are the highly developed economies of Hong Kong, Singapore, South Korea and Taiwan. China could be considered the fifth tiger. These regions were the first newly industrialized countries in Asia. They are known because they had very high growth rates and fast industrialization between the early 1960s and 1990s. Now all five economies are rich economies.

⁴⁰ Mark BEESON, Mills SOKO and WANG Yong, "The new resource politics: can Australia and South Africa accommodate China?", *International Affairs*, Volume 87, Issue 6, 1st November 2011, p. 1370.

⁴¹ ANU Press, "Partnership for change, Australia-China Joint Economic Report", East Asian Bureau of Economic Research (Canberra) and China Centre for International Economic Exchanges (Beijing), August 2016, p. 73.

Australia's resource endowments made it a natural destination for Chinese investment during the mining boom and it will remain a major anchor in China's external resource security.

2.2 Russia

First of all, it is important to point out that Russia has plentiful oil and gas resources in Siberia and in its Far Eastern region. In fact, Russia accounts for 13 percent of the world's total petroleum reserves and 45 percent of natural gas reserves. ⁴² Considering that China has a growing demand for oil and gas, and that it is looking for the modernization of its national economy and the improvement of its people's lifestyle, a Sino-Russian cooperation in this area turns out to be a winning move. Moreover, Siberia and Russia's Far East could take advantage from the Sino-Russian energy cooperation and improve the local economy.

In the Fifties and early Sixties most of China's imported oil was from the Soviet Union. However, the discovery of an oil field in Daqing 大庆 (in the north province of Heilongjiang 黑龙江) in 1959 and the revocation of Soviet counselors from China's oil industry in 1960 allowed China to become self-sufficient in oil by the mid-Sixties, to the point that in 1970 China began to export small amounts of oil, but only for a short period of time. With China becoming an oil exporter in the Seventies, the Chinese government started to copy the Soviet Union in its usage of oil exports as a foreign policy tool. For instance, in order to remove Japan's intentions to invest in Siberian oil and gas development projects, China used to sell oil to Japan at

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⁴² XIA Yishan of China Institute for International Studies, "China-Russia energy cooperation: impetuses, prospects and impacts", *Japanese energy security and changing global energy markets: an analysis of Northeast Asian energy cooperation and Japan's evolving leadership role in the region*, The James A. Baker III Institute for Public Policy of Rice University, May 2000, p. 6.

⁴³ Gaye CHRISTOFFERSEN, "China's Intentions for Russian and Central Asian Oil and Gas", *NBR Analysis*, Vol. 9, No. 2, March 1998, p. 6.

below market prices. This was part of the plan of weaken the transportation and communications infrastructure in Siberia in order to remove the resources needed for a possible Soviet Union's attack to North Eastern China, the country's industrial heartland.⁴⁴

Nonetheless, China's interest in the development of Siberian energy resources can be linked to the fact that Siberia is a region that is not ruled by U.S. military power. Despite this, there are still some Chinese leaders and People's Liberation Army officers who oppose to the increasing of energy cooperation with Russia on national security grounds, because they are concerned that in the event of a Sino-Russian crisis Russia would halt the flow of energy resources to China.⁴⁵

Since years 2000s, the state China Petroleum and Natural Gas Corporation (CNPC) is helping its Russian partner in this sector with studies and economic assistance on some projects regarding pipelines that from Russian regions then arrive in China in order to provide the natural resources that China needs in exchange for favorable prices. Some of these are the natural gas project at Kovyktin (Irkutsk, Eastern Siberia), the gas project in Urengoy (in Western Siberia), and the Chayankin gas fields in the Sakha Autonomous Republic.⁴⁶

⁴⁴ Erica STRECKER DOWNS for AIR FORCE Project, *China's quest for Energy security*, RAND Corporation, Santa Monica, 2000, p. 43.

⁴⁵ Erica STRECKER DOWNS for AIR FORCE Project, *China's quest for Energy security*, RAND Corporation, Santa Monica, 2000, p. 47.

⁴⁶ XIA Yishan of China Institute for International Studies, "China-Russia energy cooperation: impetuses, prospects and impacts", *Japanese energy security and changing global energy markets: an analysis of Northeast Asian energy cooperation and Japan's evolving leadership role in the region*, The James A. Baker III Institute for Public Policy of Rice University, May 2000.

2.3 UNITED STATES OF AMERICA

Even though the USA is China's largest trading partner, and China is America's second largest, China considers the United States as a major threat to its energy security because America is the most powerful country in the world in military, economic, and technological terms. Many Chinese analysts sense the United States to be uncomfortable with China's increasing power and so it tries to put the Chinese government in a bad light. Furthermore, there is the fear that the United States could use the superiority of its military not only for the purpose of controlling the oil of Middle East, but also to keep an eye on China from there. Others also believe that the U.S. could achieve "energy containment" against China in order to weaken China by gaining control of energy resources in western areas of the Asian continent and by blocking oil imports accesses, or else that the United States could apply oil sanctions against China to punish behavior considered undesirable, like human rights abuses or weapons sales. In fact, economic sanctions have always been an important tool of U.S. foreign policy.⁴⁷

Actually, part of China's energy security activities is aimed to reduce the vulnerability of China's oil supply to American power. The fact that the United States is a very influential power in the Middle East makes the Chinese government uncomfortable.⁴⁸

⁴⁷ Erica STRECKER DOWNS for AIR FORCE Project, *China's quest for Energy security*, RAND Corporation, Santa Monica, 2000, pp. 44-45.

⁴⁸ Erica STRECKER DOWNS for AIR FORCE Project, *China's quest for Energy security*, RAND Corporation, Santa Monica, 2000, p. xii.

2.4 Canada

There are several considerations to take in account when talking about China investing in Canada, such as the quality of life, which is among the highest in the world, the easiness to access U.S. and other key markets from there, the abundant and reliable energy resources, and so on. In particular, China and Canada are committed to work on oil, gas, oil sands, energy efficiency, environment and related ventures. Anyway, the most attractive aspect of Canada is its huge oil reserves; the two parts have also signed a few agreements regarding China's involvement in energy development in Canada.⁴⁹ As Canadian Prime Minister Paul Martin stated when visiting Beijing for the signature of the Statement on Energy Co-operation in the 21st Century:

"China and Canada have decided to work together to promote co-operation in the oil and gas sector, including Canada's oil sands, as well as in the uranium resources sector. (...) The work of the group will initially focus on enhancing our partnership in the fields of multilateral co-operation, natural resources and energy, and trade and investment" ⁵⁰

However, any major energy cooperation between Canada and China will be closely watched by the United States because China is seen as a competitor who is taking away energy from Canada at the expense of U.S. (as Canada is the largest source of imported oil for the U.S.), that must in turn import oil from other parts of the world that are more hostile to Washington.⁵¹

⁴⁹ Yuen Pau WOO and Kenny ZHANG, "China goes global: the implications of Chinese outward direct investment for Canada", Vancouver: Asia-Pacific Foundation of Canada, 2006.

⁵⁰ Embassy of the People's Republic of China in Canada, "China, Canada sign Energy agreements", 21st January 2005 (http://ca.china-embassy.org).

⁵¹ Wenran JIANG, "Fueling the dragon, China's quest for Energy security and Canada's opportunities", Department of political science, University of Alberta, 2005, p. 8-9.

2.5 MIDDLE EAST

Unlike the unfriendly U.S.-China relations, the Chinese government believes that plumping strong bilateral relations with oil-producing countries in the Middle East can help to ensure the oil resources that China needs. China's efforts to establish closer ties with the Middle East have economic, political, and military dimensions.

 Economically, China is pursuing what can be described as a strategy of "two imports and one export" to reinforce its energy connections with the Middle East. This approach refers to:

Oil imports and capital to invest in the development of China's oil industry. Chinese oil companies have signed long-term supply contracts with Middle Eastern countries. (...) The Chinese government has encouraged the participation of Middle Eastern oil companies in China's oil industry. (...) The "one export" refers to China's investment in oil exploration and development projects in the Middle East.⁵²

The Chinese government hopes that the development of strong Sino-Middle Eastern energy ties will help China secure the oil that it needs from this region.

- Politically speaking, China, through the improvement of its diplomacy in the region, is ensuring the possibility of importing oil from the Middle East. China believes that strong bilateral political relationships can produce greater supply security during times of crisis, despite the past events. In addition, China wants to take advantage of the fact that the countries in the region are unhappy with the American presence. Indeed, China's closest bilateral relationships are with those nations that are targets of United Nations and U.S. sanctions, i.e. Iran and Iraq.⁵³
- Militarily, it is possible that China could use its arms sales to Middle East as
 an excuse to promote closer ties with oil-producing countries, in order to

⁵² Erica STRECKER DOWNS for AIR FORCE Project, *China's quest for Energy security*, RAND Corporation, Santa Monica, 2000, pp. 48-49.

⁵³ Sergei TROUSH, "China's Changing Oil Strategy and Its Foreign Policy Implications", Center for Northeast Asian Policy Studies, Working Paper, Washington, DC: Brookings Institution, Fall 1999 (www.brookings.edu).

receive favorable prices for oil imports.⁵⁴ China has a long history of exporting weapons to the Middle East, particularly to Iran, Iraq, Libya, and Saudi Arabia (of particular concern are China's sales to Iran of C-801 and C-802 anti-ship cruise missiles, which pose a threat to oil tanker traffic and American naval vessels in the Persian Gulf). Given the difficulties of the Chinese government to levy payments on the transfer of weapons to Iran, it is possible that China's leaders would consider the barter of weapons in exchange for oil, especially when oil prices are high. In short, China hopes that the development of close relations with the Middle East's oil-producing states could help China guarantee a fair share of oil from a region whose U.S. presence is paramount.

Finally, Chinese economic, political, and military activities in the Middle East can facilitate investment in projects concerning oil exploration and development, and can ease the negotiation of long-term supply contracts with oil-producing countries, especially those that are contrary to the United States.⁵⁵

2.6 Europe

In general, China's investments in Europe concentrate in two sectors: minority acquisitions in multinational oil and gas companies, and in financial and banking services. The focus on oil and gas reflects the priority accorded to "resource security" by China's policymakers. In the European Union, oil and gas priority takes the form of acquiring minority shares in some of the largest global multinational

⁵⁴ Barry RUBIN, "China's Middle East Strategy", *Middle East Review of International Affairs*, Vol. 3, No. 1, March 1999 (www.biu.ac.il).

⁵⁵ Erica STRECKER DOWNS for AIR FORCE Project, *China's quest for Energy security*, RAND Corporation, Santa Monica, 2000, pp. 49-50.

producers, like BP (British Petroleum) and Total.⁵⁶ Moreover, the EU is one of China's biggest sources of technology imports, through both private and public transactions, regarding renewable energy and energy efficiency technologies.⁵⁷

Chinese economic interests in the European area are somewhat tough because of the difficulty by the Chinese government to come to terms with the European Union since it remains an entity formed by several states (China should therefore create alliances with each individual Member State). This is the reason why China has decided to quit its interests regarding natural resources in this area and tried instead to cooperate with EU in relation of the preservation of the climate and of energy in general. A possible collaboration between China and Europe could lead to advantages to both sides such as the transferring of clean energy technology to China while gaining better access to its markets by the European Union. Moreover,

this cooperation could also be highly beneficial for both partners from a purely economic point of view, due to the huge future market value of low-carbon technology and the urgent need of both mitigation of /and adaptation to climate change in the world.⁵⁸

But, in order to build a solid cooperation, China and the EU have to focus on building trust between them. It is clear that trust built through official dialogues between the two governments is not enough, and that it is necessary that both sides achieve further protection regarding their economic interests, as most of the transfer of technologies takes place with the help of private companies.⁵⁹

⁵⁶ Charles WOLF, Brian G. CHOW, Gregory S. JONES and SCOTT Harold, *China's expanding role in global mergers and acquisitions markets*, RAND Corporation, Santa Monica, 2011, p. 44.

⁵⁷ Bernice LEE, Nick MABEY, Jason SWITZER, Antony FROGGATT and Rob FOULKES, "Interdependencies on Energy and climate security for China and Europe: leading the technology race", Chatham House, November 2007, p. 14.

⁵⁸ Constantin HOLZER and Haibin ZHANG, "The potentials and limits of China-EU cooperation on climate change and energy security", *Asia Europe Journal*, Volume 6, Issue 2, June 2008, p. 220.

⁵⁹ Constantin HOLZER and Haibin ZHANG, "The potentials and limits of China-EU cooperation on climate change and energy security", *Asia Europe Journal*, Volume 6, Issue 2, June 2008, p. 226.

2.7 AFRICA

In the last years, Chinese companies have gone to Africa for three main reasons. First of all, they went to undertake development projects aimed at gaining an advantage over the local African markets, so that they could use their familiarity to make subsequent investments. A second motivation concerns the clothing sector so as to enjoy some preferential trade agreements. Third, China has put in place a series of investments with the aim of finding oil, gas and other natural resources to be exported to China. 60 As a matter of fact, China's largest investments in Africa have been in resource extraction (mainly oil). China in fact shows a great deal of interests in the African continent, in particular towards Angola, Sudan, the Democratic Republic of Congo (DRC) and Gabon. The main reason is that, unlike other countries, the African oil industry is open to investments from abroad. Another point in favor of China is that the United States and the European Union have moved away from these African states because of concerns about the violence and human rights violations that are happening. The Chinese government benefits from this situation because its links with the African region are free from ideological and security obstructions, and more important there are not those hostilities that instead intervene with the old colonizing powers, which have negatively marked African history.⁶¹

In Table 2 the phases with which China has come into contact with the African continent are listed. Here the differentiation of the objectives of the Chinese state-owned companies can be seen: through the decades their objectives have moved from noble ones, such as humanitarian aid (mainly from year 1949 to mid-1990s), to those more prone to an economic return (from mid-1990s until now). The word "aid" refers to the definition of official development assistance (ODA):

⁶⁰ Jing GU, "China's Private Enterprises in Africa and the Implications for African Development", *European Journal of Development Research*, Special Issue on China, India and Africa, September 2009, p. 571.

⁶¹ Hongyi Harry LAI, "China's oil diplomacy: is it a global security threat?", *Third World Quarterly*, Vol. 28, No. 3, 2007, p. 525.

Concessional funding given to developing countries (those with a per capita income below a regularly adjusted threshold) and to multilateral institutions primarily for the purpose of promoting welfare and economic development in the recipient country (OECD 2008). 62

In addition to ODA, governments can also offer other official flows such as military aid and export credits. China provides the equivalent of ODA through three tools: subsidies, zero-interest loans, and concessional (fixed-rate, low-interest) loans. These instruments finance Chinese Government scholarships for African students; medical teams; construction of stadiums, government buildings, Chinese telecommunications networks and other infrastructure; technical assistance teams in agriculture and other sectors; short-term training programs; youth volunteers; and material aid.63

Table 2: Growth stages of Chinese companies in Africa (Source: "China-Africa Project Survey", 2009).

Stages	Main features		
Stage One: 1949 - 1980s	Limited number of Chinese companies, mainly implementing		
	Chinese Governments development Aid Projects.		
Stage Two: 1980s – mid-1990s	Large national and provincial level state-owned trading		
	companies, closely associated with diplomatic agenda; few private		
	companies.		
Stage Three: Mid-1990s – 2000	Emergence of large state-owned enterprises (SOEs) mainly		
	resource-seeking, strategic asset-seeking, and infrastructure		
	investments; increasing number of private companies start		
	exploring African market.		
Stage Four: 2000 – 2005	Expansion of large SOEs and private companies; emergence of		
	clustering development strategy.		
Stage Five: 2005 – Present	Acceleration of private companies in various sectors and		
	continued expansion of SOEs; the development of clustering		
	industry strategy.		

The most common pattern of Chinese investment in Africa is known as "the Angola model", in which natural resources are used as the currency to repay the Chinese government of the loan aimed at the infrastructure development.⁶⁴ The following table (Table 3) explains its process.

 $^{^{62}\} Deborah\ BRAUTIGAM,\ "Rising\ China:\ Global\ Challenges\ and\ Opportunities",\ ANU\ Press,\ 2011,\ pp.\ 203-204.$

⁶³ Deborah BRAUTIGAM, "Rising China: Global Challenges and Opportunities", ANU Press, 2011, pp. 204-205.

⁶⁴ Evan S. MEDEIROS for AIR FORCE Project, China's international behavior: activism, opportunism and diversification, RAND Corporation, Santa Monica, 2009, pp. 151-152.

Table 3: Fundamental structure of the Angola model (source: Dunia ZONGWE, "On the road to post conflict reconstruction by contract: the Angola model", University of Namibia, 2010).

	Infrastructure	Resources
Africa	Resource rich African party contracts with China for the construction of major infrastructure works	O .
China	China deploys its state-owned construction corporations to build infrastructure works	China uses exports of minerals or hydrocarbons to pay for the costs of infrastructure works

2.8 LATIN AMERICA

Chinese interests in the Latin American area are certainly great, among these, the most relevant are surely those associated with access to a vast possession of the resources that China needs, such as oil, copper and iron. A secondary goal is to isolate Taiwan, which currently maintains diplomatic relations with some countries in Latin America and the Caribbean, and thus obtain their diplomatic recognition in China. In addition, Chinese presence in this region, which is also strategic for the United States, can pose a threat to the U.S. by building a third world coalition of nations (considering also that the U.S. has lost a lot of interests in this area after the terrorist attacks of 2001, deteriorating their diplomatic relations). Finally, there are two sides of the same coin: some Latin American countries welcome Chinese investment, while others perceive China as an economic menace. For example Mexico sees China as a competitor who could replace it in the American market.⁶⁵

Furthermore, the involvement of China in Latin America (and also in the Caribbean) is part of a more general policy of "Going out" (zou chuqu 走出去), which inevitably goes to clash with negative experiences of "landings" (desembarcos)

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⁶⁵ Ariel C. ARMONY and Julia C. STRAUSS, "From Going out (*zou chuqu*) to Arriving in (*desembarco*): constructing a new field of inquiry in China-Latin America interactions", *The China Quarterly*, No. 209, March 2012.

suffered by those already living in the Latin region, in which China represents just the last one of conquerors powers. But China makes a great effort on "giving and getting", like playing an important role in transnational investments, migration and diplomacy, as well as not interfering in the domestic politics, unlike the Western powers. Not to mention the criticisms China receives because of its mining and oil activities, criticism it receives only for having a different method of dealing with that of other national superpowers (is Latin America "U.S. backyard" or "China's next Africa"?66). Chinese mining investment in Latin America (Peru and Ecuador) gives priority to liberal mining investment regimes, political stability, pre-existing business relations and the presence of a significant Chinese community in the host country. But is also true that China could use tensions between the United Stated and Latin America in its favor and seize the opportunity to interfere more in the region (it is a possibility that might also work in other regions of the Third World): in this case China would be seen as the counter-balance to U.S. power.67

It is possible to resume the impact of China on Latin America in two standpoints: optimistic and pessimistic.

- The optimistic point of view sees the collaboration between Latin America and China as the possibility to increase the foreign exchange earnings, improve in terms of trade with other countries, reduce the cost of living and investment costs through lower prices of goods coming from China, improve the infrastructures at home, and integrate Latin America into the global production of networks involving China.
- The pessimistic point of view sees in China a threat as many countries and sectors face competition from China in export markets (Table 4). Moreover,

⁶⁶ Is China going to use the strategy of securing natural resources while flooding the region's markets with cheap goods?

⁶⁷ Ariel C. ARMONY and Julia C. STRAUSS, "From Going out (*zou chuqu*) to Arriving in (*desembarco*): constructing a new field of inquiry in China-Latin America interactions", *The China Quarterly*, No. 209, March 2012.

there is the fear of displacing domestic manufacturers and of reducing employment by accepting the imports from China and that FDI from other countries could slide from Latin America to China. Finally, could China's growing influence undermine democracy and free market policies in the region?⁶⁸

Table 4: Composition of Latin American exports to China, 1995, 2001, 2006 (% share) (source: Economic Commission for Latin America and the Caribbean, https://www.cepal.org/en).

	1995	2001	2006
Primary products	35.0	56.5	62.5
Manufactured goods	65.0	43.5	37.5
Of which:			
Resource-based	43.3	21.4	22.8
Low-technology	10.1	6.5	3.7
Medium-technology	10.4	8.3	6.3
High-technology	1.1	7.3	4.7
Total	100.0	100.0	100.0

Chinese FDI in Latin America is primarily related to resource seeking, particularly in oil and minerals. China currently has projects in Argentina, Brazil, Chile, Cuba, the Dominican Republic, Guyana, and Venezuela. Chinese investments in Brazil, Argentina, Chile, and Venezuela focus mainly on the accessibility of natural resources such as iron ore, copper, and oil (in the case of Venezuela). During the official visit of President Hu Jintao 胡锦涛 in Latin America in November 200470, the latter declared China's commitment in some economic areas such as railway, oil

⁶⁸ Rhys JENKINS, "China's global expansion and Latin America", *Journal of Latin American Studies*, Vol. 42, No. 4, November 2010, p. 819.

⁶⁹ Evan S. MEDEIROS for AIR FORCE Project, *China's international behavior: activism, opportunism and diversification*, RAND Corporation, Santa Monica, 2009, p. 155.

⁷⁰ President Hu Jintao has spent more time travelling in Latin America than President Bush, as well of many Latin American presidents.

exploration, and construction projects in Argentina; in a nickel plant in Cuba; in some copper mining projects in Chile; and in steel mill, railway, and oil exploration projects in Brazil. Moreover, in the following years others South American presidents have travelled to Beijing to sign further contracts with China, including plans for Chinese investment in oil and gas exploration in Venezuela, increased investment in Colombia, and a bilateral free trade agreement between China and Chile.⁷¹

In 2008 the Chinese government issued its first policy paper on Latin America and a second one was published in 2016.

2.9 Asia

In recent years, PRC government entities have financed many infrastructure, energy-related (especially hydropower), agricultural and other high profile development projects in Burma, Cambodia and Laos, which also rely upon Chinese construction materials, equipment, technical expertise, and labor. China has also become a major financer and investor in infrastructure, energy, agriculture, and mining in the Philippines, that is the largest recipient of PRC loans in Southeast Asia.⁷²

China is also trying to reduce its dependence on energy supplies from Middle Eastern countries by developing East China Sea's energy supply of hydrocarbon resources.

⁷¹ Kerry DUMBAUGH and Mark P. SULLIVAN, "China's growing interest in Latin America", CRS Report for Congress (Congressional Research Service The Library of Congress), Washington, 20th April 2005, p. 3.

⁷² Thomas LUM, *China's assistance and government-sponsored investment activities in Africa, Latin America, and Southeast Asia*, Congressional Research Service of Library of Congress (Washington), report of November 2009, p. 15.

The searching of natural resources beyond the borders has obviously led to changes in the Chinese diplomacy and also in the relations between China and other countries. There are mainly three differences.

• First, China is strengthening its relations with resource-producing and resource-exporting nations, as just reported.

It is known that China has striven to expand its overseas resource supplies. Obviously, China is reinforcing relations with those resource-producing nations that are willing to cooperate, or else with those that are still available to open their reserves to China. These nations comprehend Saudi Arabia, Iran, Omen and Yemen in the Middle East; Angola, Sudan and Gabon in Africa; Russia and Kazakhstan among the former Soviet republics; Venezuela and Brazil in Latin America; and Canada. In order to maintain good relations with some of these nations, China sympathizes with the positions taken by the latter concerning some delicate issues. An example is the standing that the Arab's world took towards Palestine. In fact, at the request of Saudi Arabia, China in 2003 called on all parties involved in the conflict to halt the circle of violence created and to address the outstanding issues in Israeli relations with Palestine, Lebanon and Syria on the principle of "land for peace". 73 Another example corresponds to the diplomatic support that China gives to Sudan, which is casually its second largest African oil supplier. Chinese help consists in moderating Western pressure to impose sanctions against Sudan born due to the growing atrocities in Darfur.74

⁷³ It is the basic principle of the Israeli-Arab peace process, which includes the demands that Israel withdraw from "the territories" it had been occupying since 1967 (the Arab-Israel War) as the Arab countries were ready to make peace on condition that Israel restore the lands it occupied.

⁷⁴ Hongyi Harry LAI, "China's oil diplomacy: is it a global security threat?", *Third World Quarterly*, Vol. 28, No. 3, 2007, pp. 529-530.

Second, China may both compete and co-operate with nations that have a
moderate reliance on imported resources, including the USA, India and a
number of Southeast Asian nations.

Regarding competition, China could undermine United States' resource security or contravene American policies in order to obtain the resources needed. This statement refers to areas where both powers have interests, such as Iraq, Iran, Sudan and also Canada and South American nations, but in reality China has not openly opposed the U.S. yet. Moreover, China's demand for resources places itself in competition with other Asian consuming nations like India, whose demands are rising thanks to its surging economy, or Japan, with which China fought to get Russia's trans-Siberia pipeline and with which is still disputing over extractions in the East China Sea.

Regarding cooperation, China made considerable progresses with Southeast Asian and South Asian nations. For instance, despite the rivalries, China and Japan have nevertheless undertaken cooperation over oil in order to reach trade deals.

• Third, China may compete fiercely with nations that rely heavily on imported resources.⁷⁵

Nevertheless, these effects also depend largely on the state of China's relations with these nations, the extent of its reliance on imported resources, as well as China's and different countries' commitment to limit contrasts.

⁷⁵ Hongyi Harry LAI, "China's oil diplomacy: is it a global security threat?", *Third World Quarterly*, Vol. 28, No. 3, 2007, pp. 530-533.

As it has just been analyzed, the Chinese presence is constantly growing in places rich in those natural resources that China needs to ensure its national energy security. The biggest concern is that of a future depletion of oil, minerals, etc. in countries with which China has economic and diplomatic relations. In addition, the Chinese government must put into account the competition to the resource race that takes place with other superpowers, such as in the Middle East, Africa, Latin America and even Canada. To cope with this, China has put into practice a series of actions aimed at helping and/or making friends with the parties important for its "resource security" project, but the presence of competitors in key areas and the exhaustion of resources forces China to think of new stratagems in order to face with the current situation.

It is for this reason that China has decided to put its attention on a relatively new area of natural resources exploitation: the Arctic area. Due to global warning in recent years, the melting of ice and snow has brought to the surface new deposits of natural resources that could be used. That is why the Arctic is gaining global significance regarding economic, commercial, scientific and even touristic values, not only for China, but for the entire world. The Arctic region is starting to be considered as a "gold mine" whose possibilities are countless, rather than as an environment to protect.

The objective in the next chapter is to make a thorough investigation of Chinese interest in the Arctic area regarding the resources needed by China in its "resource security" plan.

THIRD CHAPTER

ARCTIC ASPIRATIONS

The Arctic, which covers 11 percent of the world's surface area, contains 30 percent of world's undiscovered gas and 13 percent of world's undiscovered oil. Not to mention the reserves of chromium, coal, copper, diamonds, gold, lead, manganese, nickel, rare earths, silver, titanium, tungsten and zinc that it possesses.⁷⁶

Whoever has control over the Arctic Route will control the new passage of world economics and also world strategies. Any country that lacks comprehensive research on Polar politics will be excluded from being a decisive power in the management of the Arctic and therefore will be forced into a passive position.



Fig. 4 – Arctic Ocean map (source: produced by Brad Cole of Geology.com using data licensed from Map Resources).

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⁷⁶ United States Geological Survey (USGS), "Circum-Arctic Resource Appraisal (CARA): estimates of undiscovered oil and gas North of the Arctic Circle", 2008.

3.1 What is the Arctic?

The Arctic is the region surrounding the North Pole; it consists of a large ocean, called Arctic Ocean, surrounded by land. Scientists define the Arctic as the region above the Arctic Circle, an imaginary line that circles the globe at approximately 66° 34' N. However, other scientists define the Arctic as the area north of the Arctic tree line, where the landscape is formed by shrubs and lichens due to its icy weather. The Arctic could be also defined based on temperature: the Arctic includes any location in high latitudes where the average daily summer temperature does not rise above 10 degrees Celsius (50 degrees Fahrenheit).

Nowadays the Arctic region is warmer than it used to be and it continues to get warmer. Over the past thirty years it has warmed more than any other region on earth. The blame lies with climate change, attributed to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels. This Arctic warming is causing changes to sea ice, snow cover, and the extent of permafrost in the Arctic, a permanently frozen layer of land. Satellite data show that snow cover over land in the Arctic has decreased, and glaciers in Greenland and northern Canada are retreating. In addition, frozen ground in the Arctic has started to thaw out.

Changes in the Arctic climate are important because the Arctic acts as a refrigerator for the rest of the world, since it gives off more heat to space than it absorbs from outside, which helps to cool the planet. That is the reason why changes in the Arctic climate could affect the climate in the rest of the world. For example, when the ice cover melts in summer, areas of dark open water are exposed, which can absorb more heat from the sun; that extra heat then helps melt even more ice and permafrost. As permafrost thaws, plants and animals that were frozen in the ground begin to decay, releasing carbon dioxide and methane back to the atmosphere that contributes to further warming.

The extreme Arctic climate (usually) makes the region a forbidding place to travel and a challenging place to live in. Nevertheless, people have found ways to explore and reside in this region, for instance indigenous peoples have lived in the Arctic for thousands of years. Explorers, adventurers, and researchers have also ventured into the Arctic to explore its environment and geography. Residents of the Arctic include a number of indigenous groups as well as more recent arrivals from more southern latitudes: in total, only about four million people live in the Arctic worldwide. European explorers started venturing north into Arctic regions of Scandinavia and Russia around a thousand years ago, while Vikings from Scandinavia traveled to Greenland around A.D. 930, and settled there for nearly five centuries. Russians began exploring the northern regions of their country in the 11th and 12th centuries, and by the 17th century they had explored many Arctic islands. During the 1800's, many explorers searched for a Northwest Passage. Irish explorer, Sir Robert McClure, is credited with finding it in 1851.

Scientific exploration in the Arctic began in the 18th and 19th centuries, as people realized that there was much to learn about the Arctic climate. In the late 1800's twelve countries participated in the first International Polar Year expedition, establishing new research stations and conducting extensive studies of oceanography, sea ice, and biology of the Polar regions. The expeditions catalogued new islands, animals, and plants. From 2007 to 2008, researchers from around the world participated in another International Polar Year, launching international expeditions and collecting vast amounts of data about the Arctic and Antarctic regions. Nowadays researchers are also beginning to collaborate with native people, who have more knowledge regarding the weather, plants, and animals, thanks to which they rely upon.

But since Arctic is a huge region, scientists cannot measure every bit of it in person. So researchers also use other tools to study the Arctic from afar. They make observations using remote sensing, a variety of tools that allow them to measure factors that they cannot see directly, or which are too big to be observed in person, so instead, they mount sensors on airplanes or satellites to record data. For example, satellite data provides estimates of the sea ice cover on the Arctic Ocean as well as weather patterns over the Arctic.

Many people in the Arctic today live in modern towns and cities. Working in the Arctic consists of extracting oil and gas from rich deposits beneath the permafrost, working in tourism, or conducting research, but there are other people still living in small villages much the way their ancestors did. However, Arctic people today face many changes to their homes and environment. Climate change is causing sea ice to melt and permafrost to thaw, threatening coastal villages with bigger storms and erosion. As the sea ice declines the Arctic Ocean opens up for commercial shipping or tourist cruises.⁷⁷

3.2 GEOPOLITICAL ARCTIC

The states facing the Arctic ocean are Canada, Denmark (Greenland), Norway, Sweden, Finland, Iceland, Russia and the United States of America (also called A8), but only five countries directly border on the Arctic, that are Canada, Denmark, Norway, the United States, and Russia (consequently named A5), and have the right to exploit its shelf. These countries understand that the climate change in this area

⁷⁷ National snow and ice data center, "All about Arctic Climatology and Meteorology". Accessed on 20th June 2018 (https://nsidc.org/cryosphere/arctic-meteorology/index.html).

presents not only socio-ecological challenges, but also economic and geopolitical opportunities.

Above all, they are aware that the current changing situation in the Arctic could lead to new geopolitical disputes involving also non-coastal states, particularly with regard to matters relating to free passage and to the rights of resource extraction. For this reason, many states are paying attention to the Arctic region in order to assess its transformation and to the economic, territorial and geopolitical implications that comes with it. The possible economic benefits (including those relating to large fishing areas) and the control of routes that can eliminate thousands of kilometers in the connections between Europe and the East, have given rise to problems of sovereignty over the area. In fact, shipping via the Northern Sea Route will yield significant savings in time and fuel. But to sift this possibility there is the need to revise both the current breakdown in sectors of the Arctic and the principles of international law of the Sea, to re-orient world trade, and to consider a possible loss of power in the countries of the southern parts of the globe. This would lead the A5 states, which base their economic potential on the availability of large energy sources, to see their role in the international energy market diminished. The international confrontation in the Arctic represents a test for the countries facing that ocean, as well as for the international institutions involved in Arctic governance and in the most thorny issues relating to the continent and, finally, for the countries that are far away (China, southern European countries and members of the EU) but included as observers in the Arctic Council78, which are interested in Arctic energy sources and in the new possible trade and transport way.⁷⁹

⁷⁸ The Arctic Council is the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic States, Arctic indigenous communities and other Arctic inhabitants on common Arctic issues, in particular on issues of sustainable development and environmental protection in the Arctic. (https://arctic-council.org/index.php/en/)

⁷⁹ Osservatorio di politica internazionale del Parlamento Italiano (International Policy Observatory of the Italian Parliament), "Il confronto internazionale nell'Artico" ("The international confrontation in the Arctic"), n. 24, October 2010.

Therefore, nowadays the problem consists in the limits of the Arctic: where does the land end and does the water begin? Because today's ice could be tomorrow's water and the Arctic's increasing climate change has created new incentives for incorporating Arctic's water within the territories of sovereign states.

To better understand the geopolitical situation, below are shown some states' plans concerning the Arctic.

potential in the world and for this reason energy security has become national security, with the goal of being an energy independent country. Due to the melting of ice and since the exploration and development of hydrocarbons moving towards glacial waters, new regulatory approaches are needed, including the adoption of specific rules for the Arctic and the implementation of systems, infrastructures and ways of sharing resources, so as to reinforce the prevention of oil spills and oil containment. The United States needs to manage environmental challenges at local, regional and international level, particularly those related to indigenous communities, which must be managed by strengthening the existing offshore governance regime that is a national security priority. Si

The United States has not signed the United Nations (UN) conventions on maritime law (United Nations Convention on the Law of the Sea, UNCLOS), which would allow signatories to extend jurisdiction over a country's continental shelf beyond the limits of its exclusive economic zone, but nevertheless it is prepared to defend its interests in the Arctic region. American interests consist of military-strategic, domestic security,

⁸¹ Charles EBINGER, John P. BANKS and Alisa SCHACKMANN, "Offshore oil and gas governance in the Arctic: a leadership role for the U.S.", Energy Security Initiative, Policy Brief 14-01, March 2014, p. xiv.

⁸⁰ Kathrin KEIL, "The Arctic: a new region of conflict? The case of oil and gas", *Cooperation and Conflict 2014*, Vol. 49(2), 2014, p.170.

political and economic ones. Among these, there is the possibility in participating in Greenland's hydrocarbon industry and extending exploration in Alaska. American domestic security consists in preventing terrorist attacks or other criminal acts that increase its vulnerability in the Arctic region.

America's approach envisages collaboration with other Arctic nations to develop the energy resources present in the territory, while taking into account the environment. 2 In other words, United States want to have access and right to speak without being part of the Arctic Council, considered by them merely a forum of discussion. In practice, the United States accept most of all of UNCLOS's provisions and operate independently or in conjunction with other states in order to safeguard security. However, the U.S. would like the ratification of the UN Convention on the Law of the Sea so as to have a legal mechanism for coordinating its policy with other Arctic states and to expand its extraction of mineral resources. 33

• NATO⁸⁴ is focusing on the so-called "soft security", which is, in the Arctic scenario, the ecological consequences of global warming and of human activity in the Arctic. NATO has also expressed its interest in participating in the global competition of Arctic resources, which is currently in progress. For this reason, NATO has decided to consolidate its presence on regions containing existing and prospective deposits of energy

⁸² Arctic diplomacy under George W. Bush, 2009.

⁸³ Valery KONISHEV and Aleksandr SERGUNIN, "The Arctic at the crossroads and geopolitical interests", *Russian Politics and Law*, Vol. 50, No. 2, March-April 2012, pp. 35-39.

⁸⁴ The North Atlantic Treaty Organization (North Atlantic Alliance) is an intergovernmental military alliance between 29 North American and European countries. NATO constitutes a system of collective defense whereby its independent member states agree to mutual defense in response to an attack by any external party (https://www.nato.int/, accessed on 5th June 2018).

resources, which are also important to its members for trade routes, and consequently to strengthen its military presence in the North.

NATO's ultimate goal is to tackle the consequences of natural and artificial disasters, to do research and safeguard, to fight against illegal migration and drug trafficking, and other "soft security" challenges. The only problem that can hinder this objective is the disagreement between the various member states, which prefer to advance their own interests in the Arctic rather than participate in a united policy (although alone they would not be able to deal with more powerful rivals).85

• The European Union has always shown great interest in the Arctic, supporting its concern about competition between the various powers for natural resources, territorial disputes and the claims of different countries for the control of the northern sea straits, and about the ecological deterioration taking place in the region. In particular, the EU places its attention on the destruction of the ecosystem established as a result of the melting of polar ice, on the negative consequences of economic activity related to the development of the region's natural resources and the increasing number of international trade routes, and on the increasing competition between the Arctic powers for the use of natural resources and sea straits in the Arctic. For this reason the EU wants to ensure equal access by everyone to the natural resources and trade routes of the region; in addition, it would like to establish a dialogue with Arctic countries (non-EU countries) on the matter of global climate changing the international security.⁸⁶

⁸⁵ Valery KONISHEV and Aleksandr SERGUNIN, "The Arctic at the crossroads and geopolitical interests", *Russian Politics and Law*, Vol. 50, No. 2, March-April 2012, pp. 40-43.

⁸⁶ Valery KONISHEV and Aleksandr SERGUNIN, "The Arctic at the crossroads and geopolitical interests", *Russian Politics and Law*, Vol. 50, No. 2, March-April 2012, pp. 43-46.

Russia's main objective in the Arctic is to ensure a profitable operational regime, including maintenance of the necessary combat potential of troops, military formations, and military agencies in this region. Howsoever, Russian interests in the Arctic are various. First of all economic ones: the Arctic provides about 20 percent of Russia's gross domestic product (GDP) and 22 per cent of all Russian exports87; in addition, as the ice continues to melt, Russia continues to extract minerals and exploit the Northern Sea Route (the country has the longest Arctic coastline and is thus expected to gain the most from Arctic resource extraction). Not to mention the establishment of military bases to intercept ballistic missiles in order to ensure its national security and to expand the continental shelf beyond of Russia over the limit of 200 miles in the direction of the pole (proving that Russian shelf is an extension of Lomonosov and Mendeleev ridges). So the challenge is to boost its presence in the Arctic, to protect its national interest and security, to maintain cooperation with other states by adhering to principles of international law and cooperation, and to preserve its military activity in the Arctic, as outlined in its official strategy.88 The "Foundations of the State Policy of the Russian Federation" lists its interests: to develop the resources of the Arctic; to transform the Northern Sea Route into a unified national transport corridor and into a line of communication, and to maintain the region as an international cooperation zone.89

⁸⁷ Kathrin KEIL, "The Arctic: a new region of conflict? The case of oil and gas", *Cooperation and Conflict 2014*, Vol. 49(2), 2014, p. 166.

⁸⁸ "Russian Federation Policy for the Arctic to 2020 and beyond".

⁸⁹ Valery KONISHEV and Aleksandr SERGUNIN, "The Arctic at the crossroads and geopolitical interests", *Russian Politics and Law*, Vol. 50, No. 2, March-April 2012, pp. 46-49.

3.3 ARCTIC WEALTH

In recent years, governments have realized that the development of large offshore oil and natural gas deposits in the Arctic area has increased. Not only the states of this region understood the importance of oil and natural gas resources, but these activities have become essential even beyond borders, as they have become one of the main geopolitical, economic and social concern. The Arctic has become a link in the global energy system and therefore plays a special role. But this does not only bring economic opportunities, but also the possibility of incurring risks.

Today Arctic is a region in which economies are based on natural resources, which are used for both domestic and international consumption, and are therefore exported. Some of the Arctic countries are fully focused on large-scale extraction of non-renewable resources such as fossil fuels and minerals. Some examples that can be reported are the North Slope of Alaska in the United States with oil and natural gas, the Khanty-Mansi Autonomous Area in Russia always with oil and natural gas, Norilsk and the Kola Peninsulas in Russia with nickel deposits, the Northwest area of Canada with diamonds, and Chukotka in Russia with gold. Other countries focus on renewable natural resources instead, such as fish and wood. Regardless of the sectors, right now economic growth in Arctic regions is twice that of non-Arctic regions, in particular, growth rates are very high in regions that have recently started to produce oil and natural gas. Inter alia, four Arctic areas generate more than 60 percent of the total GDP of the Arctic.⁹⁰

The Arctic region has not always been economically oriented towards the extraction of resources, also because it has always been a little inhabited area, but human presence in the Polar zone has changed dramatically over the years. Previously, people challenged the harsh weather conditions of the Arctic and the

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⁹⁰ Maria MORGUNOVA, *Arctic offshore hydrocarbon resource development. Past, present and vision of the future,* Division of Sustainability and Industrial Dynamics, Department of Industrial Economics and Management of KTH Royal Institute of Technology (Stockholm, Sweden), April 2015, p. 18.

distance from home, and despite the uncertainties, men were willing to fight cold and ice in order to become pioneers in this land. At the beginning of the twentieth century, the North Pole was not mapped, explored or asserted by a state. The reasons which pushed human activities so much to the north, both before and after the Second World War, were of military and sovereignty nature. The energy resource factor came later, which, together with geopolitical interests, transformed the Arctic region into a zone of exploration. Trade in oil and gas has been taking place in the Arctic for more than ninety years now; for example, in the northwest territories of Canada, in northern Russia and in Alaska, trade have been active since 1920. The development of the Arctic during the Sixties and the Seventies is due to events in the Middle East and to political instability in the major oil-exporting countries, thus leading to significant increases in oil prices and, at the same time, attracting investments in the Arctic both by governments and by companies. The exploration and development of hydrocarbons in the Arctic area is both challenging and costly, and much of the region lacked of the infrastructure necessary for transporting oil and gas to major markets. This trend is further developed in the Eighties and Nineties, and new technological approaches are adapted to the Arctic from 2010 onwards.⁹¹

Below are the Arctic prospects and business activities of some governments.

It is estimated that the Arctic part of the **United States** is in possession of remarkable reserves of oil and gas. It is even believed that there may be oil and gas in schist formations, which could potentially be picked up if the hydraulic technologies developed, as long as market conditions allow. In recent years the U.S. government, through the Obama administration's "All of the above" energy strategy, tried to help the promotion of economic development and the improvement of energy security. Oil in the state of Alaska is of essential importance: the oil industry represents 98

⁹¹ Maria MORGUNOVA, *Arctic offshore hydrocarbon resource development. Past, present and vision of the future,* Division of Sustainability and Industrial Dynamics, Department of Industrial Economics and Management of KTH Royal Institute of Technology (Stockholm, Sweden), April 2015, pp. 19-21.

percent of all revenues from the natural resources collected by Alaska, and it also offers about 50 percent of all state jobs, which are directly or indirectly related to the production of oil or connected to activities in the north province. But despite this, oil production started to worsen from 1988, due also to the success of the oil and gas alternative production in the other forty-eight American states. This situation reflects the difficulties of developing energy resources in high-cost areas like the Arctic.⁹²

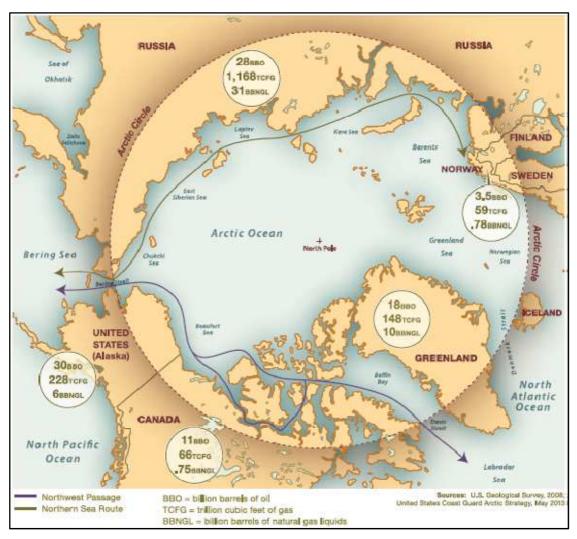


Fig. 5 – Estimated undiscovered oil and gas in the Arctic and potential trade routes (source: Charles EBINGER, John P. BANKS and Alisa SCHACKMANN, "Offshore oil and gas governance in the Arctic: a leadership role for the U.S.," Energy Security Initiative, Policy Brief 14-01, March 2014, p. 3).

⁹² Charles EBINGER, John P. BANKS and Alisa SCHACKMANN, "Offshore oil and gas governance in the Arctic: a leadership role for the U.S.", Energy Security Initiative, Policy Brief 14-01, March 2014, pp. 5-7.

Norway is the largest European oil producer and one of the world's largest natural gas exporters. Norwegian oil activities are divided into two. The first activity is performed in the so-called mature areas, which include the North Sea, where most of the oil production of the Norwegian Sea takes place. The second activity take place in frontier areas, defined as regions of which there is little geological knowledge, lack of infrastructures and avant-garde techniques to withdraw the oil; these include the northern waters of the Norwegian Sea, and most of the Barents Sea. The latter has very attractive prospects: it is believed that it owns 11 billion barrels of oil, 380 trillion cubic meters of natural gas, and 2 billion barrels of natural gaseous liquids (NGLs), which would correspond to 30 percent and 43 percent oil and gaseous resources of the country not yet discovered. However, there are further areas of interest, like all the North Sea of Barents towards the Svalbard archipelago, the eastern part of the southern Barents Sea, the north-eastern Norwegian Sea, the Arctic Ocean north of Svalbard, and the area around Jan Mayen Island. These areas need seismic exploration in order to work securely with energy resources. For the purpose of coping with this, the Norwegian government has initiated two studies in order to assess its risks and prospects.93

Russia has the widest opportunities in the Arctic region as it has the greatest offshore oil and gas potential. Russia is believed to possess 52 percent of all petroleum, natural gas, and natural gas liquids in the region. For this reason, Russia issued its first Arctic strategy in February 2013, which should be applied by 2020, placing the Arctic at the centre of its national security, economic growth, and the improvement of jobs and quality of life. The plan develops around the construction of infrastructures in the region and on the development of oil and gas fields in the

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⁹³ Charles EBINGER, John P. BANKS and Alisa SCHACKMANN, "Offshore oil and gas governance in the Arctic: a leadership role for the U.S.", Energy Security Initiative, Policy Brief 14-01, March 2014, p. 8.

⁹⁴ Ernst and Young, "Arctic oil and gas", 2013, p. 3.

⁹⁵ Trude PETTERSEN, "Russia launches program on Arctic development to 2020", *Barents Observer*, 20th February 2013.

continental part of the country. The Russian government is also establishing a state program for mining exploration and development in the Arctic platform regarding resources such as chromium, zinc, manganese, titanium, aluminum, tin, and uranium.

The Canadian Government supports the development of energy resources, resources that **Canada** has in large numbers. In fact, there are important oil, gas and NGL resources in Canadian Arctic, with offshore potential in the Mackenzie Delta-Beaufort Sea, in the offshore of Arctic Sea and in Arctic islands. Canada has even identified the Canadian continental shelf as one of its main priorities in its Arctic foreign policy Statement of 2010.96 Within its Arctic plan, there is a control of the Arctic seabed through drilling, put into practice since 2011 by the National Energy Board, a body that is in charge of regulating the activities of exploration of oil and gas in the Arctic, so to collect information on the risks associated with drilling in Arctic waters and develop appropriate approaches to the territory. In addition, in December 2013, the government filed a partial claim for rights in the Atlantic seabed and indicated its intention to present an Arctic claim extending to the North Pole.97

Greenland's large oil and gas reserves are an important opportunity to support economic development and increase autonomy from Denmark, an objective that Greenland also sought to achieve through the release of 120 energy licenses and mining licenses to multinational companies that work iron, uranium, emeralds and nickel. However, while recognizing the potential of oil and gas extraction, which is useful to stimulate economic development, the Prime Minister of Greenland has also issued a warning regarding new exploration licenses. This is because environmental conditions continue to make Greenland a very challenging operating environment.

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⁹⁶ Government of Canada, "Canada and the circumpolar Arctic". Accessed 20th August 2018 (https://www.canada.ca/en.html).

⁹⁷ Charles EBINGER, John P. BANKS and Alisa SCHACKMANN, "Offshore oil and gas governance in the Arctic: a leadership role for the U.S.", Energy Security Initiative, Policy Brief 14-01, March 2014, pp. 10-11.

Other important obstacles to these activities are regulatory uncertainties and high costs.⁹⁸

3.4 ARCTIC OIL AND GAS

As mentioned before, the Arctic represents only about 6 percent of Earth's surface, but nevertheless, it houses 20 percent of the oil and natural gas not yet discovered in the world. It has been known for decades the presence of hydrocarbons in this area, but only in recent years, thanks mainly to the opening of the navigation, the development on a large scale was technologically and economically possible.

Large oil and gas fields are essential for the development of Arctic resources, as they contribute to pay the infrastructure required for smaller fields. The first discovery of hydrocarbon fields in the Arctic occurred in 1962 by Russia, with the discovery of the Tazovskoye field. Later in 1967, the discovery of the Prudhoe Bay fields in Alaska, in the United States, occurred. Until 2008, the year of the U.S. Geological Survey (USGS), large oil and natural gas deposits discovered within the Arctic Circle were sixty-one: 45 deposits in Russia, 11 in Canada, 6 in Alaska and 1 in Norway. In 33 geologic provinces may remain to be found 90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids. More than 70 percent of the undiscovered oil is estimated to occur in the provinces of Arctic Alaska, Amerasia Basin, East Greenland Rift Basins, East Barents Basins and West Greenland-East Canada, while more than 70 percent of the undiscovered natural gas is estimated to occur in the provinces of West Siberian Basin, East Barents Basins and Arctic Alaska (Fig. 6). It is estimated that the Arctic region of Alaska is the region with the largest oil deposits not yet discovered in the Arctic, i.e. about 30

⁹⁸ Charles EBINGER, John P. BANKS and Alisa SCHACKMANN, "Offshore oil and gas governance in the Arctic: a leadership role for the U.S.", Energy Security Initiative, Policy Brief 14-01, March 2014, pp. 11-12.

billion barrels. Meanwhile the second largest oil province in the Arctic is the Amerasia Basin, located just north of Canada, where it is estimated the presence of about 9.7 billion barrels of oil to be discovered. The third largest Arctic oil province is the East Greenland Rift, with its 8.9 billion barrels of undiscovered oil. It is expected that altogether these three North American provinces have about 48.6 billion barrels

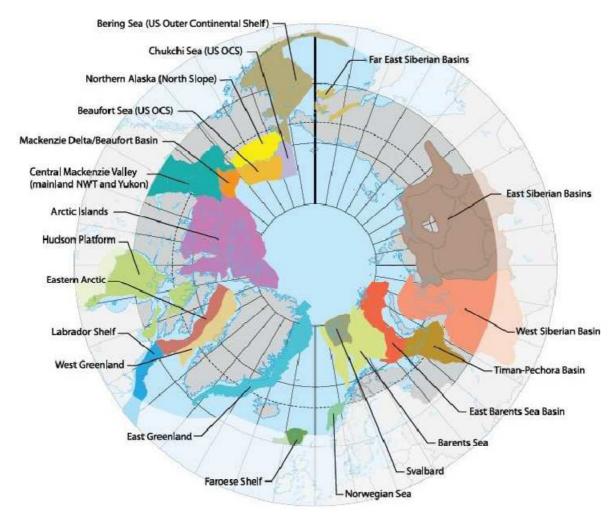


Fig. 6 – Oil and natural gas basins in the Arctic region (source: Maria MORGUNOVA, "Arctic offshore hydrocarbon resource development. Past, present and vision of the future", Division of Sustainability and Industrial Dynamics, Department of Industrial Economics and Management of KTH Royal Institute of Technology in Stockholm, Sweden, April 2015, p.23).

of undiscovered oil, which corresponds to about 54 percent of the total undiscovered Arctic oil. Among these, approximately 2.5 billion barrels of oil have already been discovered in large fields in both the Amerasia Basin and the Northwest Canadian

Interior Basins, but have not been produced yet.⁹⁹ It is clear that the Eurasian side of the Arctic is more natural-gas-prone, while the North American side is more oilprone. Most of the undiscovered Arctic hydrocarbons reside mostly in the West Siberia Basin and in the East Barents Basin, which account 47 percent of undiscovered Arctic resources, with 94 percent of those resources being natural gas and NGL.¹⁰⁰

It must be borne in mind that the development of Arctic resources entails both significant costs and risks due to the claims of economic sovereignty discussed before; in addition it must be considered: the laws and regulations of each country concerning the environmental sphere that could only complicate issues related to sovereignty, the harsh climate that could damage offshore structures and that needs a large number of equipment and personnel, the limited number of existing infrastructure that are expensive to build (so the fields are developed if and when they are expected to generate sufficient profits), the problems linked to possible spills that are more complex than conventional ones because of the climatic and logistical considerations, the harsh competition (especially with regard to the gas sector), and the long time of realization of the projects that could cause changes between a project's beginning and ending dates.¹⁰¹ Arctic infrastructure it can be so costly that sometimes some fields remain undeveloped. It is the case of the Alaska North Slope with its 6.3 billion barrels of oil: due to the absence of transportation infrastructure its natural resources remain unexploited. 102 Or else, the physical environment of the Arctic presents too many special challenges and this makes it really difficult to develop the basins as happened in the Yamal Peninsula in Russia, where the

⁹⁹ Philip BUDZIK, "Arctic oil and natural gas potential", U.S. Energy Information Administration Office of Integrated Analysis and Forecasting Oil and Gas Division, October 2009, p. 7.

¹⁰⁰ United States Geological Survey (USGS), "Circum-Arctic Resource Appraisal (CARA): Estimates of undiscovered oil and gas North of the Arctic Circle", 2008.

¹⁰¹ Ernst and Young, "Arctic oil and gas", 2013, p. 5.

¹⁰² Philip BUDZIK, "Arctic oil and natural gas potential", U.S. Energy Information Administration Office of Integrated Analysis and Forecasting Oil and Gas Division, October 2009, p. 3.

permafrost, the wind, the water, the friable ground and the distance to cities make it hard to use its oil and natural gas fields.¹⁰³

The high costs related to business in the Arctic make it only possible to the largest oil companies in the world, most likely those who participate as partners in joint venture projects, to have the financial, technical, and managerial skills to realize the expensive, long-term projects dictated by Arctic conditions. Political issues stem from the overlapping and controversial claims of economic sovereignty, as discussed before, while environmental issues concern the conservation of unique animal and plant species for the Arctic, notably tundra vegetation, caribou, polar bears, seals, whales, and other Arctic sea life. Oil spills and other types of pollution arising from oil and natural gas-obtaining activities can naturally damage ecosystems, but the magnitude of the impact depends on many factors. For example, seabirds and some marine mammals are particularly susceptible if oil deposits on feathers or fur, which they depend on for insulation. Animals of this kind living in Arctic cold conditions are particularly vulnerable in this respect. Arctic plants and animals could be exposed to a large number of compounds released by oil and gas activities in various ways. In any case, the levels of oil hydrocarbons are below the known thresholds for most of the Arctic territory and, until now, there have been no major oil spills in the Arctic seas. Even human health can obviously suffer from this possible pollution, although it is true that exposures to petroleum hydrocarbons at levels high enough to cause adverse health effects are rare outside employment situations and accidental releases of spills. Spills may also lead to changes in the quality, quantity or availability of foods considered to be traditional.

However, it remains difficult to find a balance between economic benefits and any risks of damaging the environment or the ecosystem. The adverse effects of oil and gas activities in the Arctic can only be minimized if existing rules are actually

 $^{^{103}\} Cambridge\ Energy\ Research\ Associates,\ "Conquering\ Yamal",\ October\ 2007,\ Cambridge,\ Massachusetts,\ p.\ 4.$

implemented and if new standards are developed. The application of regulations requires a lot of commitment on the part of governments, and is often demanded through strong public pressure. For example, in Alaska and Canada, land claim settlements and agreements have given, and continue to give, indigenous people a role in environmental assessment and regulation of oil and gas activities.

One of the biggest challenges in remote and icy environments like the Arctic is being able to react to large oil spills, especially in those areas where there is ice. Indeed, many of the Arctic coastal areas are vulnerable to spills linked to oil and gas activities since they do not have the necessary equipment to cope with a similar scenario, in particular, they do not have the necessary transport infrastructure, not even in the vicinity. At the moment, most of the oil spill prevention equipment available for Arctic deposits is designed for use in non-ice-covered waters and is therefore inadequate to combat spills under typical Arctic conditions. The research to find suitable technological solutions and techniques to oil spills has progressed in recent years and, as a result, there have been new technologies and techniques with a better potential; however, these still have to be properly assessed. The importance of these innovations stems from the experiences of leaks from older pipelines. This underlines the need to use better and higher engineering and environmental standards. Oil transport in the Arctic seas has also improved, in particular from Norwegian and Russian fields, and there is indeed the probability that its quality will increase.

Oil and gas producing countries in the Arctic have different laws, regulations, regulatory regimes and implementation. Some countries have enacted and enforced laws and regulations, thus providing a vigorous regulatory regime regarding petroleum and gas activities. However, further measures could be implemented in areas where there are vulnerable ecosystems that are difficult to access. In particular, laws and regulations refer to: how to minimize the negative effect and maximize the

positive ones in regard to oil and gas activity on the environment and society, the domestic and international standards used in this industry, the guidelines for oil and gas activities in the marine environment, the legal framework for planning and controlling oil spills, oil and gas companies' obligations and duties, the environmental assessments, and the indigenous presence in the Arctic.¹⁰⁴

3.5 MILITARY ARCTIC

Arctic security, both environmental and social (such as indigenous communities), focuses on the political and military aspects of security in view of the geographic particularity of the region. From a geopolitical point of view, starting from the Cold War to the present day, the world's terrestrial power, Russia, and the power of the sea, the United States, meet in the Arctic sea. Both powers have long regarded the Arctic as a crucial area for the installation of war material. The security dynamics of the Arctic after the Cold War have evolved from militarization to demilitarization, and then back to militarization. This transition is determined by Arctic states, especially the coastal ones, which aim at defending national security and safeguarding sovereign rights in the context of globalization and ongoing climate change. The Arctic is a critical area not only for the installation of war material, but also because climate change further increases its strategic value and accelerates competition for Arctic maritime routes, resources and rights on the continental shelf. For this reason security in the Arctic is vitally important.

The end of tensions between the Soviet Union and the USA kicked off regional governance in the Arctic. The Arctic states, including Russia and the United States, came to the common accord that stopping the arms race in the Arctic area was in

¹⁰⁴ Arctic Monitoring and Assessment Programme (AMAP), "Arctic oil and gas 2007", Oslo, 2007.

everyone's interest in order to create favorable conditions for effective cooperation. This assumption established the Arctic Environmental Protection Strategy (AEPS) in 1991, a non-binding agreement on the protection of the environment signed by the eight Arctic States (A8); the AEPS then created the Arctic Council. Within the agreement, there was the Strategic Arms Reduction Treaties (START) between the Soviet Union and the United States, which contributed to a substantial reduction in the strategic offensive weapons installed in the Arctic. The Treaty on Conventional Armed Forces in Europe (CFE) finally put an end to the combat force in the Arctic, through the destruction of excess weapons; it also fixed ceilings for the conventional use of weapons in large areas ranging from the Atlantic to the Ural Mountains.

In the post-Cold War era, both Russia and the United States have dedicated themselves to the process of demilitarization in the Arctic by reducing military spending, conventional armed forces and nuclear weapons deployed in the Arctic. But nevertheless, the States were not able to find an alternative that avoided the recurrence of the tensions that had occurred during the Cold War. This instability is also reflected in the vulnerability of being influenced by external factors, in particular by the impact of climate change on the Arctic geopolitical environment, by the fluctuating relations between the United States and Russia, and by repercussions of geopolitics happening outside the Arctic region, such as the Ukrainian crisis. In these circumstances, the Arctic states have changed course regarding their Arctic interests and have returned to prioritize their military presence in the region, in order to safeguard their sovereign rights, such as the security of navigation and civil security. For these reasons there has been a revival of arms race in the Arctic, also due to recent Russian activities, such as the Russian flag placed on the Arctic seabed in 2007 and the continuing tensions with Ukraine since the end of 2013.

The Russian move to plant its flag on the Arctic seafloor reflects Russia's attempt to violate its geographical limitations, to claim sovereign rights over the

extension of its continental shelf in the Arctic Ocean and to send a signal of improvement of its Arctic naval supremacy. The United States and Europe therefore feel threatened, both in economic and military terms. In addition, the Ukrainian crisis poses questions about how the extra-regional borders can affect regional security in the Arctic. The other great Arctic powers hence seek to limit the influence of Russia, which relies on Western technologies, capitals and markets, through the sanctions imposed on investments and technological transfers in Russian oil and natural gas industries. In response to economic sanctions, Russia has stepped up its efforts to modernize its Arctic military capabilities.

In this scenario, non-regional organizations have entered into Arctic security issues and some Arctic states have decided to create some bilateral and multilateral cooperative mechanisms on security and collective defense. Among these, there are the Nordic Defense Cooperation (NORDEFCO) and the North American Aerospace Defense Command (NORAD). Moreover, the development of cooperation has sparked the debate whether organizations such as NATO and the OSCE (Organization for Security and Co-operation in Europe), which cover wholly or partially geographically the Arctic territories, possess the legitimacy, competence and intention to address the issues of security in the Arctic. For example, Norway appealed to NATO for military help in order to be "protected" from Russia. In fact, the Nordic States, such as Norway, Denmark and Iceland, are beneficiaries of NATO's collective defense provisions, and their national security strategy is highly dependent and closely related to NATO. Since its founding, NATO has established air bases in Keflavik, in Iceland (withdrawn in 2006), and Thule, in Greenland. Russia, on the other hand, strongly opposed to NATO's presence in the Arctic, as it questions its legitimacy in the region. In reality, NATO has been rather cautious in intruding on Arctic issues and has never filled in any official document for an Arctic policy. Its role in the Arctic is of deterrent defense for its Arctic Member States against potential

threats from Russia. In fact, the military presence of NATO aims to ensure the safety of the territorial waters and airspace of the Member States.¹⁰⁵ Anyway, many Arctic states make military practice in the Polar area, like Canada that since 2007 has performed a military exercise routine called the "Nanook Operations", which revolves around strengthening the jurisdiction of the navigable Northwest Passage.¹⁰⁶

In the absence of a general security system for the Arctic, the future development trend and the main path of the Arctic security mechanism is to reinforce the creation of security measures in the Arctic region through the opening, launching and deepening of institutional cooperation in the field of low military and non-traditional security within the framework of the cooperation of the Arctic Council. Although there are no effective armaments controls in the Arctic region, its governance is facilitated by agreements and conventions. In addition to coastal guard cooperation through SAR (Search and Rescue), states have been allied to reinforce borders control in all Arctic states in the prevention of smuggling, trade of human beings, terrorism, strengthening nuclear safety for civilian use, and in improving the ability to respond to natural hazards. Arctic states are optimistic about achieving in the short term the objectives of military transparency, arms control and nuclear disarmament.

China, as a non-territorial country, has no sovereignty, sovereign rights and conflicts of judicial interest with the Arctic states, but this does not mean that the security of the Arctic is irrelevant to China. Firstly, as interested in the use of the Arctic and of its resources, China's participation in Arctic development must create a peaceful and stable regional security environment. Secondly, China wants to

¹⁰⁵ DENG Beixi 邓贝西 and ZHANG Xia 张侠, "Shixi beiji anquan taishi fazhan yu anquan jizhi goujian" 试析北极 安全态势发展与安全机制构建 ("An analysis of the security dynamics and the construction of security regimes in the Arctic"), Taiping Yang xuebao 太平洋学报 (*Pacific Journal*), Vol. 24, No. 12, December 2016.

¹⁰⁶ DENG Beixi 邓贝西, "Zhongguo shounao beiji xibei hangdao de guize shijian jiqi kaifa liyong qianjing" 中国首航北极西北航道的规则实践及其开发利用前景 ("Legal practice of China's first transit through the Northwest Passage and evaluation on the prospect of the Passage utilization"), Taiping Yang xuebao 太平洋学报 (*Pacific Journal*), Vol. 26, No. 7, July 2018, p. 20.

guarantee the future of the commercial challenges of the Arctic navigation. Thirdly, China tries to avoid that Arctic states expand the outer borders of their Arctic continental shelf, as they would have private domain in the Arctic. Therefore, by closely monitoring the development of the Arctic security position, China would participate in the low Arctic political level or in the non-traditional security areas of multilateral cooperation, such as ice research and prevention of oil pollution, in a way to establish security and political confidence with Arctic, and in order to create a favorable peaceful development of the Arctic security environment for China.¹⁰⁷

China is concerned about any kind of military concentration in the Arctic, particularly, it fears the return of a Cold War mentality if tensions between the United States and Russia continue to increase. However, contrary to what Western countries think, China also understands that Russia must be able to defend its territory and its national interests in the area. Moreover, the Chinese government believes that a better Russian military presence could provide better Arctic governance, thanks to the research and rescue capabilities put in place by the Russian coastguard in the Arctic. In the same way, present Arctic economic development and common security efforts are doing great thanks to the increase of Russian investment in infrastructure in the Arctic.

Anyway, not only the Russian presence began to increase, but also the Chinese presence, through the People's Liberation Army (PLA), is developing, as the Arctic is becoming of greater prominence in Chinese governance. In September 2015 the ships of the People's Liberation Army Navy (PLAN) were first sighted to pass through the Bering Sea after completing the joint military exercises with Russia in the North Pacific, arriving within 12 nautical miles from the U.S. coast. Chinese naval ships included three battleships, an amphibious landing vessel, and a replenishment ship.

¹⁰⁷ DENG Beixi 邓贝西 and ZHANG Xia 张侠, "Shixi beiji anquan taishi fazhan yu anquan jizhi goujian" 试析北极 安全态势发展与安全机制构建 ("An analysis of the security dynamics and the construction of security regimes in the Arctic"), Taiping Yang xuebao 太平洋学报 (*Pacific Journal*), Vol. 24, No. 12, December 2016.

The crossing was carried out in accordance with the UNCLOS rules, but it was certainly also a reminder of China's naval capabilities, as well as of its focus and interest in the Arctic growth. In October of 2015, PLAN vessels, made up of a missile destroyer, a missile frigate and a replenishment ship, visited Denmark, Finland and Sweden. It is unknown the real purpose of these visits, but the message that China is expanding its maritime interests and that it has a great naval capacity, as well as the growth of its interest in the Arctic region, certainly went through.

It is probable that the Chinese military presence in the Arctic rises to the pace of the opening of the Arctic; in addition, Chinese naval capacities grow as Chinese interests in the Arctic area further strengthen.¹⁰⁸

CHINA'S ARCTIC INVOLVEMENT

China's Arctic interests can be divided into three categories.

First of all, the Chinese government is trying to gain access to potentially lucrative raw materials, such as fossil fuels, minerals and metals, which can be easily found in the Arctic due to the melting of the ice. With the annual increase in oil and gas imports in China, aimed to cope with the economic growth of the country, the Chinese government looks with great interest on the Arctic and its potential in resources. The region beyond the Arctic Circle can even become a "new Middle East" and provide a "new lifeline" for China. In short, in China's eyes the Arctic is turning into a base of energy supply. With regard to this aspect, China seeks to avoid policies aimed at an evident collection of these resources.

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¹⁰⁸ Camilla SØRENSEN and Ekaterina KLIMENKO, *Emerging Chinese-Russian cooperation in the Arctic:* possibilities and constraints. SIPRI Policy Paper 46. June 2017, pp. 35-37.

possibilities and constraints, SIPRI Policy Paper 46, June 2017, pp. 35-37.

109 Sina Military, "Junkeyuan fabu zhanlüe pinggu baogao: Zhongguo mianlin san da taikong weixie" 军科院发布战略评估报告:中国面临三大太空威胁 ("Army Research Institute released a strategic assessment report: China faces three major space threats"), 19th June 2014 (https://mil.news.sina.com.cn/).

Second, the potential opening of the Arctic sea routes, in particular the Northeast Passage through the northern Siberian coast, are of great interest to China as it seeks to export goods to Europe and beyond, thus saving on travel times and costs. To achieve this, China is collaborating with other Asian countries in order to be able to take advantage of future trans-Arctic shipping.

Third, China hopes to play a greater role within the Arctic Council, and not be only an observer (role obtained during the forum of 2013). China cannot try to become a full-fledged member, as its territory does not reach the Arctic Circle, nor is considered as an Arctic region (even though it is considered a "near-Arctic state"). However, it must be acknowledged that China's proximity to the Arctic region and the effects of regional climate change on Chinese weather has led China to a strong commitment in dealing with Arctic affairs. China has more than 6.000 kilometers of coastline, more than 5.000 islands, and a large number of large and medium-sized cities overlooking the sea, such as Dalian, Tianjin, Qingdao, Shanghai, Hangzhou, Xiamen, Guangzhou, Hong Kong, Macao and Shenzhen; the Eastern coastal zone of China is the most densely populated, the most economically developed, here the construction of infrastructure is the most complete of China, so it is inevitable that there is fear of water raising. At the same time, the change of Polar environment has led to the increase in global natural disasters, which has caused many adverse effects on agricultural production and the lives of people in the world. Chinese scientists have demonstrated that due to the decline of Arctic sea ice, the temperature in most parts of China has decreased every January, while the July precipitation has increased and the extreme time frequency such as floods and drought in China has increased, also food production has been reduced due to the increase in extreme

weather. Not only the coastal cities, but also the main cereal-producing areas, such as the Pearl River Delta and the Huzhou-Jiaxing plain, can be submerged.¹¹⁰

Nevertheless, the expanded role advocated by China within the Arctic Council may be influenced by the presence of other new Asian observers, including India, Japan, Singapore and South Korea, and by the increasingly agitated relations between Western states and Russia because of the crisis in Ukraine and the annexation of the Crimea region. It is then to be considered that the Arctic region is increasingly taking on global importance and China does not want to be left out of future decision-making processes, especially considering that Russia and the United States are full members in the Council and that they could arrange for increasingly problematic strategic relationships.¹¹¹

Even though China is not an Arctic country, the latter wants to be among the first states to exploit the region's natural resource wealth and to travel regularly through Arctic sea routes. For this reason, China has recently developed its own Arctic strategy, because the situation in the Arctic now is no longer to be considered of the states discussed so far (i.e. USA, Russia, Denmark, Norway and Canada). As a matter of fact, Arctic has become of vital interest to countries outside the region and to the international community as a whole. In this overview, China is an active participant and has not spared efforts to contribute to the development of the Arctic region under the prerogative that every nation does have rights in respect of scientific research, navigation, over flight, fishing, laying of submarine cables and pipelines in the high seas and other relevant sea areas in the Arctic Ocean, as well as rights to resource exploration and exploitation in the area. 112 China wants to be

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¹¹⁰ CHU Zhangzheng 褚章正, "Lun Zhongguo canyu beiji huanjing zhili de guoji huayuquan goujian" 论中国参与北极环境治理的国际话语权构建 ("The governance of the Arctic environment regarding the construction of China's international discourse"), Jianghan luntan 江汉论坛 (Jianghan Forum), May 2018, pp. 45-46.

¹¹¹ Marc LANTEIGNE, *China's emerging Arctic strategies: economics and institutions*, Institute of International affairs, Centre for Arctic policy studies, University of Iceland, 2014, pp. 32-40.

¹¹² "China's Arctic Policy" by the State Council Information Office of the People's Republic of China, January 2018.

China's polar extension to Silk Road

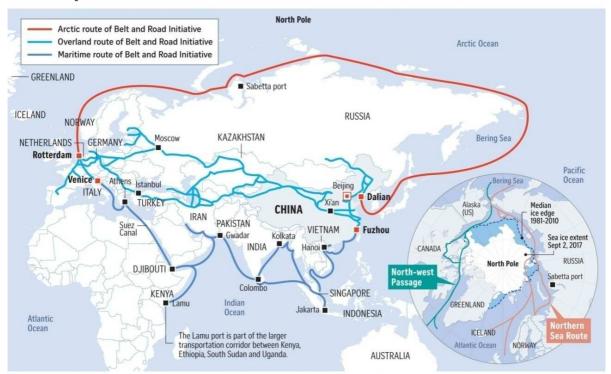


Fig. 7 – China's polar extension to Silk Road (source: "China's polar ambitions cause anxiety", The Straits Times).

present into Arctic affairs, but it feels it is inconvenient to prove it directly. So, instead, China uses a circumlocutory diplomatic language about respecting the sovereignty of Arctic countries, hoping that the Arctic countries will be able to resolve their differences quickly, so as to foster not only the Arctic counterpart, but also the international communities. China wants to prevent its fear of the division or Arctic resources from coming true, that is, European and North American powers could divide the Arctic and its resources among themselves, excluding all the others.¹¹³

Beside its interest, China is an important stakeholder in Arctic affairs as it is one of the continental states that are closest to the Arctic Circle. Moreover, changes in the Arctic have a direct impact on China's climate system and ecological environment and, in turn, on its economic interests in agriculture, forestry, fishery, marine industry and other sectors. These reasons make China closely involved in the

¹¹³ David Curtis WRIGHT, A dragon eyes the top of the world: Arctic policy debate and discussion in China, CMSI Red Books, Washington, DC: U.S. Naval War College China Maritime studies Institute, August 2011, pp. 1-4.

trans-regional and global issues in the Arctic, especially in such areas as climate change, environment, scientific research, utilization of shipping routes, resource exploration and exploitation, security, and global governance. China's capital, technology, market, knowledge and experience is expected to play a major role in expanding the network of shipping routes in the Arctic and facilitating the economic and social progress of the coastal states along the routes.

For China it is important that the Arctic remains a global concern and that non-Arctic states can access to the region and its resources. In fact, China hopes that Arctic countries continue to protect the balance between the interests of states with shorelines in the Arctic Ocean as well as the shared interests of the international community. China's fear is that its access to Arctic waterways could be denied by Arctic countries, even if in its opinion every country in the world has an equal right to exploit the Arctic Ocean as it should not be treated as the backyard of any country. In order to understand, protect, develop and participate in the governance of the Arctic, as wrote down in its White paper ITS, China will participate in Arctic affairs in accordance with the basic principles of "respect, cooperation, win-win result and sustainability" as it follows.

- "Respect" is the key basis for China's participation in Arctic affairs. Respect should be reciprocal. It means all States should abide by international treaties (...). They should respect the sovereignty, sovereign rights, and jurisdiction enjoyed by the Arctic States in this region, respect the tradition and culture of the indigenous peoples, as well as respect the rights and freedom of non-Arctic States to carry out activities in this region in accordance with the law, and respect the overall interests of the international community in the Arctic.
- "Cooperation" is an effective means for China's participation in Arctic affairs. (...) Through global, regional, multilateral and bilateral channels, all stakeholders including States from both inside and outside the Arctic, intergovernmental organizations, and non-state entities are encouraged to take part in cooperation on

¹¹⁴ David Curtis WRIGHT, *A dragon eyes the top of the world: Arctic policy debate and discussion in China*, CMSI Red Books, Washington, DC: U.S. Naval War College China Maritime studies Institute, August 2011.

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¹¹⁵ A White paper is an official report published by a national government or an international organization on a particular subject or field of activity.

- climate change, scientific research, environmental protection, shipping route development, resource utilization and cultural activities.
- "Win-win result" is the value pursuit of China's participation in Arctic affairs. It means all stakeholders in this area should pursue mutual benefit and common progress in all fields of activities. Such cooperation should ensure that the benefits are shared by both Arctic and non-Arctic States as well as by non-state entities, and should accommodate the interests of local residents including the indigenous peoples. It should also help to promote coordinated development of activities in all fields to ensure the harmony between natural conservation and social development.
- "Sustainability" is the fundamental goal of China's participation in Arctic affairs. This means promoting the sustainable development of the Arctic by ensuring the sustainability of environmental protection, resource utilization and human activities in the area. It means realizing harmonious coexistence between man and nature, better coordination between ecological protection, economic growth and social progress, better balance between utilization, management and protection, and intergenerational equity.¹¹⁶

3.7 CHINESE SCHOLARS' VISION ON THE ARCTIC TOPIC

The Zhongguo Haiyang Daxue xuebao 中国海洋大学学报 (Journal of the Ocean University of China), of the Ocean University of China, has been a prominent outlet for discussion of China's Arctic interests and has recently published a numerous of important articles on the subject. The Arctic thus becomes a topic of discussion not only among academics, but it is also taken up by the Chinese media and the government itself. For instance, scholarly articles in Chinese typically discuss China's interests in the Arctic, but there are differences of opinion on what the Chinese interests should be and how much China should participate in these matters. In any case, most of the articles favor a strong and decisive voice from Chinese government on Arctic affairs.

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¹¹⁶ "China's Arctic Policy" by the State Council Information Office of the People's Republic of China, January 2018.

The predominant opinion among the local media is expressed by Li Zhenfu 李振福.¹¹⁷ China's involvement in the development of marine routes is the way with which China is accessing Arctic affairs. From there it will be possible to expand into other issues, including the development of natural Arctic resources. Chinese media believe that China should study the appropriate time to make its entry, and therefore it needs to determine the appropriate opportunities before entering into specific issues. In fact, it would not be necessary for China to participate in issues requiring its presence at this time if international mechanisms or principles, which are essential in order to tackle the various problems, have not yet been clarified. By doing so, when international mechanisms will be formed properly, China will be in an advantageous position. China should adopt a "winning strategy", namely, it should seize the opportune moment, and actively participate in the formulation of harmonized mechanisms relating to Arctic sea route issues, so that China acquires the rights and interests it deserves.

Moreover, in order to be more present in the region, the media advise to develop and improve ships, so that China would have ice-breaker ships and ships carrying liquefied natural gas resistant to ice. This development is essential as the issue of the Arctic sea routes is becoming increasingly important, due to the early dissolution of the Arctic Ocean.

But Chinese interests in the Arctic are not only linked to the commercial sphere. As on the line of the Chinese thought, China's interests also connect with world peace. China should respond directly to the transformations that are occurring by taking into account the rights and interests of the routes passing through the Arctic Sea, in order to protect world security and at the same time giving its contributions to the sustainable development of mankind. Its contributions can be

¹¹⁷ LI Zhenfu 李振福, "Zhongguo canyu beiji hangxian guoji jizhi de zhangai ji duice" 中国参与北极航线国际机制 的障碍及对策("China's participation in international Arctic Route mechanisms: obstacles and countermeasures"), Guoji Guanxi Xueyuan xuebao 国际关系学院学报, Zhongguo Hanghai 中国航海 (*Navigation of China*) 32.2, 2009.

given by active participation in formulations, revisions and improvements of international mechanisms dealing with Arctic affairs. This is an effective method and the best choice to realize the rights of China's Arctic sea routes, and to accelerate its economic and social development. In doing so, China comes into play as an important responsible power in the international arena (and also manages to accelerate the rationalization and democratization of international relations).

According to Li, there are three serious impediments or obstacles to effective Chinese participation in Arctic mechanisms. First of all, the five Arctic littoral states (also named as the A5: Canada, Denmark with Greenland, Norway, Russia, and the United States) are physically there. The second major impediment is the sector principle¹¹⁸ and the continental shelf system. Regarding the sector principle, Canada was the first one to announce its sector, which holds that Canadian territory and territorial waters extend in a pie-shaped (or fan-shaped) wedge all the way to the North Pole. It was followed by the Soviet Union in 1926, which announced that all land and islands within its bounds as yet discovered or not were Soviet territory. This shows that if Arctic countries insist on this principle, this will undoubtedly lead to the Arctic Sea routes being placed within the sovereign spheres of the Arctic states, and that China will thus lose its strategic position in the routes of Arctic sea. Another obstacle that arises between China and its goal of posing itself as an influential subject in the Arctic is the legal concept of the continental shelf. If the islands of the Arctic fall into a clear national jurisdiction, then countries will have territorial sovereignty over them, and in accordance with UNCLOS may once again designate their territorial waters and sea areas on which there is national jurisdiction. Therefore, according to the principles formed by this, the current "public territory" in the Arctic will be very beneficial for the coastal states of the Arctic Ocean, and in particular for Canada and Russia, as they have many islands in the North. In accordance with this

 $^{^{\}rm 118}$ From 1925 the Arctic is divided in sectors given to states.

development, the difficulties for China's participation in the international mechanisms dealing with Arctic routes increase considerably and affect China in a negative way with regard to obtaining the relevant rights and interests. The third and final obstacle to Chinese participation in Arctic affairs is theoretical, as the current international mechanisms are based on the "Western" values of freedom, equality and democracy. There are obvious discrepancies between the theories of international mechanisms formulated by Western countries and the basic social system and the traditional ideology of China. As a result, China's participation in international mechanisms is contained, and this in turn has led to the creation of gaps in the theories of international mechanisms.¹¹⁹

The government of China should protect and develop China's sea power in the present and in the future geopolitical issues pertaining to the Arctic and Arctic sea routes. China should first of all, abide by relevant regulations in UNCLOS and also effectively make advantageous use of the Convention in protecting the country's geopolitical rights and interests in Arctic sea routes. ¹²⁰

3.8 CHINA'S ARCTIC POLICIES

Chinese policies regarding the Arctic refer to different aspects, including scientific research, environmental protection, rational utilization, law-based governance and international cooperation. The Arctic issue is mainly considered as a regional issue by China, but it also involves climate change, shipping, and other

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¹¹⁹ LI Zhenfu 李振福, "Zhongguo canyu beiji hangxian guoji jizhi de zhangai ji duice" 中国参与北极航线国际机制 的障碍及对策 ("China's participation in international Arctic Route mechanisms: obstacles and countermeasures"), Guoji Guanxi Xueyuan xuebao 国际关系学院学报, Zhongguo Hanghai 中国航海 (Navigation of China) 32.2, 2009.

¹²⁰ LI Zhenfu 李振福, "Beiji hangxian diyuan zhengzhi de fuza wangluo tezheng yanjiu" 北极航线地缘政治的复杂网络特徵研究 ("Research into the unique complex network features of Arctic sea route geopolitics"), Gangkou jingji 港口经济 (*Port Economy*), 2010, p. 32.

trans-regional problems that require reinforced collaboration, not only at regional level, but at international one too. Arctic cooperation has continually escalated, widened, and is becoming more complex: working together is now the mainstream of Arctic affairs, and China respects the sovereignty and jurisdictional authority enjoyed by states in the Arctic region in accordance with international law. China is willing to strengthen mutually beneficial collaboration with all parties involved in relevant Arctic issues as it aims to work diligently for the peace, stability, and sustainable development of the Arctic region. Through its White paper of January 2018, China acknowledges for the first time that its Arctic interests are no longer limited to scientific research but that they extend to a variety of commercial activities. The White paper stresses China's commitment to uphold the institutional and legal framework for Arctic governance and to respect the sovereign rights of the Arctic states. On the other hand, it asserts China's right as a non-Arctic state to participate in Arctic affairs under international law. China's Arctic policy suggests a strong desire to push for the internationalization of the Arctic's regional governance system.

As far as the **scientific** sphere is concerned, China plays an important role in multi-disciplinary research including Arctic geology, geography, ice and snow, hydrology, meteorology, sea ice, biology, ecology, geophysics and marine chemistry. Its participation in these studies is to monitor and estimate climate and environmental changes, and at the same time study carefully what concerns atmosphere, sea, sea ice, glaciers, soil, bio-ecological character and environmental quality through the establishment of stations capable of observing the Arctic in its entirety. To improve its position, China has decided to improve its capacity in Arctic expedition and research, strengthening the construction, maintenance and functions of research stations, ships and other supporting platforms in the Arctic, and promoting the building of icebreakers for scientific purposes. However, in order to

¹²¹ HU Zhengyue 胡正跃, "Zhongguo dui beiji shiwu de kanfa" 中国对北极事务的看法 ("China's perspectives on Arctic affairs"), Shijie zhishi 世界知识 (*World Affairs*), n. 15, 2009, p. 55.

understand, use and protect the Arctic, China needs appropriate technical equipment. For this reason China is trying to keep up with Arctic countries and their vanguard tools through the development and innovation of polar technical equipment and technologies aimed at drilling and exploiting Arctic oil and gas, as well as the construction of new types of icebreakers.¹²²



Fig. 8 – A Chinese view of Arctic sea routes. The North East Sea Route is in red, while the North West Sea Route is in blue (source: map drawn by Hao Xiaoguang 郝晓光, https://www.hxgmap.com/).

China's policies do not only refer to its own actions, but also to the support put in place to help countries and organizations directly on the spot by increasing investment in scientific research and building modernized research platforms in order to advance research in the fields of natural science, climate change and

¹²² "China's Arctic Policy" by the State Council Information Office of the People's Republic of China, January 2018.

ecological environment. By doing so, China hopes deepen the training of its personnel, to raise awareness of the Arctic, to support higher learning and research institutes on the Arctic, to build scientific disclosure and education centers. Furthermore China encourages Chinese scientists to carry out cooperation on the Arctic and encourages Chinese higher schools and research institutions to become part of the Arctic University network.

China is concerned about the Arctic **environment** and for this reason is committed in respecting the laws and regulations of environmental protection of the Arctic states, but it also requires more effective management and cooperation on this issue. The marine environment is a key area for Arctic environmental protection. So, in order to effectively protect the marine environment of the Arctic, China supports the Arctic coastal states in their treaties, and undertakes the task to raise awareness of the environmental responsibility of its citizens and enterprises, especially with regard to the enhance control of the sources of marine pollution, such as ship unloading, offshore dumping, and air pollution. The Arctic is home to several endangered species of wild fauna and flora from around the globe. To seriously protect the biodiversity of the Arctic, China has worked to investigate the impact on the Arctic ecological system caused by global climate change and human activities.

Tackling **climate change** in the Arctic is an important part of global climate governance. In order to cope with the changes of the climate, China has set important foundations at national level through its more recent five-year plans, and has also signed the Paris agreement. As China is one of the most polluting countries in the world, the emission reduction measures put in place have had a positive impact on the climate and ecological environment of the Arctic (although there is still a lot of work to be done). In order to further improve its commitment, China is strengthening advertising about this sensitive subject, so as to raise awareness of the public and promote international cooperation.

Despite its fragile ecosystem, the Arctic has abundant **resources**. China claims that all the states involved in the region, whether they have sovereignty over the territory or not, must respect the treaties such as UNCLOS and the Treaty of Spitsbergen, which explains the subdivision of the sovereignty of nations in the Arctic region, but must also respect the international law and the laws of the Arctic states. All this aims to protect not only the territory, but to ensure also that everyone uses the resources of the region in a rational way, always respecting the ecoenvironment of the Arctic and the interests and concerns of indigenous peoples.

As a result of global warming, Arctic maritime routes, i.e. the Northeast Passage, the Northwest Passage and the Central Passage, are likely to become important transport routes for international **trade**. China insists that the management of the Arctic shipping routes should be conducted in accordance with treaties, including the UNCLOS and the general international law, and it argues also that disputes over the Arctic shipping routes should be properly settled in conformity with international law. These Arctic routes are essential for China and its plan to build a "Polar Silk Road". In order to make its project take life, China asks national companies to contribute to the construction of infrastructures for these routes and to conduct commercial test trips. China does not want to put aside the security of navigation on Arctic shipping routes, so it conducts studies on these itineraries. China request in exchange that international cooperation is strengthened with regard to the construction of infrastructures and the operation of Arctic routes.

In order to obtain the possibility of exploiting oil, gas and mining resources in the Arctic, China requires its enterprises to comply with the laws of Arctic states in areas subject to their jurisdiction in accordance with international law, taking into account the interests of residents in the region. The Arctic region also boasts the presence of several renewable resources, such as geothermal, wind and other clean energy resources. China is therefore committed to strengthening cooperation in the field of clean energy with Arctic states, through technological exchanges, personnel and experiences.

The Arctic is also becoming tempting for the fish market, as fishes are moving further north because of climate change. However, fishing must not be aggressive, as it is necessary to consider the scientific role of the Arctic and the use of its potential rationally. China is committed in doing this through binding international agreement on the management of fisheries in the high seas portion of the Arctic Ocean, and demands that all other states also organize themselves in such a way as to fulfill their obligation to conserve fishery resources and the region's ecosystem. China is committed in being part of the Arctic governance by setting its citizens, businesses and other organizations to regulations, in order to respect the laws of international law and national legislation with regard to environmental protection, conservation of resources and sustainable development.

International cooperation on the Arctic implemented by China can be divided into two levels, which are global and regional. At global level, China bases its thrust on the "One Belt One Road" initiative and on the cooperation between countries in accordance with the principles of extensive consultation, common contribution and shared benefits, as well as on policy coordination, infrastructure connectivity, unhindered trade and financial integration. Among the ultimate objectives there is the construction of a maritime economic passage linking China and Europe through the Arctic Ocean. Globally speaking, China is actively involved in formulating standards for the global environment, climate change, international maritime issues and the management of deep-sea fishing, and in fulfilling all its international obligations in conformity with the law. This is done by promoting energy savings, reducing emissions and developing a standard of living with low carbon levels. China in the first place is committed in complying with climate protection commitments (through the Kyoto protocol and the Paris climate agreement); in

addition, it urges developed countries to do the same and helps developing countries to fulfill their obligations. At regional level, China is an accredited observer at the Arctic Council, the main intergovernmental Forum on environmental issues and on sustainable development of the Arctic. Its role as an observer is to participate in the work of the Council, through the assistance of experts. China also abides to the Agreement on Cooperation on Aeronautical and Maritime Research and Rescue in the Arctic, to the Agreement on Cooperation on Marine Oil Pollution in the Arctic and to the Agreement on Scientific Reinforcement. China supports international cooperation through platforms such as the Ministerial Meeting of Arctic Science as well.

Finally, peace and stability in the Arctic offer a significant guarantee for all activities in the region and are therefore of fundamental interest to all countries, including China. In exchange for the peaceful use of the Arctic, China is committed in maintaining peace and stability and ensuring the security of maritime trade, operations and transport in the region. China claims that disputes over the territory and sea must be resolved peacefully by all stakeholders, in accordance with the United Nations, UNCLOS and international law in general. China also strives to strengthen cooperation with the Arctic states on issues such as maritime and aviation research, and information sharing in order to adequately manage security challenges, like maritime accidents, maritime pollution and maritime crimes.¹²³

The melting of Arctic sea ice will impact China's environmental, energy, and trade circumstances. But China is largely excluded from regional politics and

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¹²³ "China's Arctic Policy" by the State Council Information Office of the People's Republic of China, January 2018:

DING Huang 丁煌 and YUN Yulong 云宇龙, "Zeren qianru: Zhongguo canyu beiji anquan zhili de lujing xuanze" 责任嵌入: 中国参与北极安全治理的路径选择 ("The embeddedness of responsibilities: the path choice of China's participation in Arctic security governance"), 湘潭大学学报, 哲学社会科学版 (Journal of Xiangtan University, Philosophy and Social Sciences), Vol. 42, No. 2, March 2018;

And YANG Jian 杨剑, "《Zhongguo de beiji zhengze》 jiedu" 《中国的北极政策》解读 ("An interpretation of China's Arctic policy"), 太平洋学报 (*Pacific Journal*), Vol. 26, No. 3, March 2018.

regulatory management of Arctic resources, so, in order to advance its interests there, China has pursued a low-profile approach in its policies toward the region, because it has to rely on the invitation and cooperation of the Arctic states.

3.9 Chinese past presence in the Arctic

Table 5: Main China's activities in the Arctic. 124

1925	China accedes to the 1920 Svalbard (Spitsbergen) Treaty
1996	China joins the International Arctic Science Committee (IASC)
From 1999	China has supervised scientific expeditions in the Arctic with the 1993
	Ukraine-built ice-breaker polar research vessel Xue Long 雪龙
2004	China builds the Arctic Yellow River Station (Huanghe zhan 黄河站) in Ny
	Ålesund/Spitsbergen
2007	China expresses interest in gaining observer status in the Arctic Council
2007 - 2009	China participates in the Polar Year program
2013	China is admitted to the Arctic Council as an observer
2013	The cargo vessel Yong Sheng, operated by China's China Ocean Shipping
	Company Group (COSCO) marks China's first commercial transit through
	the Northeast Passage off Russia's northern coast
2014	China emanates a navigation guide to the Northern Sea Route region
2015	Five People's Liberation Army Navy (PLAN) warships travel through US
	territorial waters off the coast of Alaska
2016	COSCO sends five vessels through the Northern Sea Route
2016	China releases a navigation guide for the Northwest Passage off the coast of
	Canada
2016	Launch of the construction of Xue Long 2, the first Chinese-built nuclear-
	powered icebreaker polar research vessel
2017	Xue Long for the first time crosses the Central Arctic Area

China's first involvement in the Arctic area dates back to 1925 when it signed the Spitsbergen Treaty. In 1995 a group of Chinese scientists and journalists travelled

¹²⁴ Inspired by Gisela GRIEGER, "China's Arctic policy. How China aligns rights and interests", European Parliamentary Research Service, May 2018, p. 2.

to the North Pole on foot (the first research expedition by sea took place in 1999) and conducted research on the Arctic Ocean's ice cover, climate and environment. China began to being more involved in Arctic affairs thanks to its membership in the International Arctic Science Committee in 1996, a non-governmental organization that aims to facilitate multidisciplinary research on the Arctic region and its role in the earth system. From 1999 onwards, China organized numerous scientific expeditions in the Arctic through the help of its research vessel Xue Long 雪龙 (Snow Dragon), purchased from Ukraine in 1993, which was also used as a platform. Xue Long is the world's largest non-nuclear icebreaker, it is 163 meters long and has a displacement of 21.000 tons. 125 In 2004, China built the Arctic Yellow River Station in Ny Alesund in the Spitsbergen Archipelago. 126 In 2009 the Chinese government decided to expand its presence in the Arctic by building others icebreakers. In 2005 China was the first Asian country to host the Arctic Science Summit Week, held at Kunming 昆明 in the Yunnan Province, a high-level conference on Arctic affairs, and in 2013 China became an accredited observer to the Arctic Council. From March 2007 to March 2009 a group of Chinese polar experts worked in the International Polar Year program, an international scientific program that focused on the Arctic and Antarctic. 127 In recent years, Chinese companies begun to see the opportunity of creating new businesses related to shipping routes that pass through the Arctic Ocean. It can therefore be said that China's activities in the Arctic are going beyond simple scientific research: they have expanded into platforms of global governance, regional cooperation, and bilateral and multilateral affairs, and into disciplines as

¹²⁵ Linda JAKOBSON, "China prepares for an ice-free Arctic", SIPRI Insights on Peace and Security, n. 2010/2, March 2010, p. 3.

¹²⁶ By the end of 2017, China has carried out eight scientific expeditions in the Arctic Ocean, and conducted research for fourteen years with the Yellow River Station as the base.

¹²⁷ Linda JAKOBSON, "China prepares for an ice-free Arctic", SIPRI Insights on Peace and Security, n. 2010/2, March 2010, p. 4.

scientific research, ecological environment, climate change, economic development, and cultural exchanges.¹²⁸

Through the Silk Road Economic Belt and the 21st-century Maritime Silk Road ("One Belt One Road" initiative) China predicts to bring opportunities for parties concerned to jointly build a "Polar Silk Road", and facilitate connectivity and sustainable economic and social development of the Arctic. China hopes to establish a maritime route linking the Pacific and the Atlantic Oceans through a way passing in the Arctic Ocean, thanks to the routes along the Siberian coast (Northwest Passage) and along the Canadian coast (Passage to the Northeast), which together go to form the Northern Sea Route. China's participation in the development and construction of the Arctic waterway will further improve the interconnection network implemented by OBOR, improve the efficiency of the interconnection between the regions and promote economic development and cooperation between Asia and Europe. 129

3.10 China's Arctic institutions

The main Chinese institutions dedicated to Arctic research are:

• The Polar Research Institute of China (PRIC) in Shanghai, founded in 1989. The institute coordinates Chinese polar research and places important infrastructures at its disposal, e.g. the research ice breaker Xue Long and research stations in the Arctic and Antarctic. It carries out international cooperation and academic exchange activities and it is the Chinese

¹²⁸ "China's Arctic Policy" by the State Council Information Office of the People's Republic of China, January 2018.

¹²⁹ JIANG Wei 姜 巍, "Huan beiji guojia jichusheshi touzi jiyu yu Zhongguo celüe" 环北极国家基础设施投资机 遇与中国策略 ("Infrastructure investment opportunities in the Pan-Arctic countries and China's strategy"), 学术前沿 (*Frontiers*), June 2018, pp. 50-51.

research center in the field of comprehensive studies of the Polar region. The institute is in charge of Key Laboratory of Polar Science of the State Oceanic Administration. Research at the institute focuses on: polar glaciology, polar oceanographic science, polar upper atmospheric physics, polar biological science and polar information platform.¹³⁰

The China Institute for Marine Affairs (CIMA), which is the research department within the State Oceanic Administration (SOA) in Beijing. The CIMA is the core unit of China's research on marine policy, law, economy and equity. It was founded in 1987 and is a subordinate institution of the State Oceanic Administration. Its main function is to carry out research on marine development strategy, policies and regulations. Its strategy is based on marine law and rights, marine policy and management, marine economics and technology, and marine environment and resources. CIMA has many responsibilities. First, it carries out long-term research on strategic issues such as marine rights, security, law, policy, economy and resource environment. Second, it executes the research on the theory, practice and development trend of the international law of the sea, and puts forward the countermeasures and suggestions on the construction of marine legal system, law enforcement and solution. Third, it carries out maritime delimitation, national island reef disputes, resource development and other maintenance of marine rights and interests. Moreover, it develops strategy, theory and practice of marine economy and research on marine industry policy; it elaborates strategies and policies for marine science and technology development, and participates in the development of marine science and technology planning; it executes research on issues related to marine management system and mechanism;

¹³⁰ Jidi zhi men 极地之门, Gate to the Poles. Accessed on 18th August 2018 (http://www.polar.org.cn/index/).

it does basic research on policy and theory of international ocean management, development and protection; it researches on policies and measures for the protection of marine use, coastal zone and island development in China, and on policies and measures for the development of marine resources at home and abroad, ecological environment protection, prevention and control of Marine disasters.¹³¹

• The Institute of Oceanology, under the Chinese Academy of Sciences (IOCAS), located in Qingdao, Shandong Province. It was founded in 1950 and it is the first ocean research institute in China. The institute is specialized in the fields of experimental marine biology, marine ecology and environmental sciences, ocean circulation and wave studies, marine geology and environment, as well as marine corrosion and protection. The institute has also hosted several international scientific conferences and is actively involved in about 100 international marine research programs. 132

In addition, researches related to the Arctic are also conducted by: the Ocean University of China in Qingdao, the Dalian Maritime University, the Xiamen University, the Tongji University in Shanghai, the Chinese Antarctic Centre of Surveying and Mapping at Wuhan University, and the Research Centre for Marine Developments of China in Qingdao. Although there is not a Chinese institution dedicated exclusively to research on Arctic politics, there are still some experts who have published articles or books that focus on Arctic strategies and geopolitics. In any case, Chinese researchers and officials have expanded their participation in international seminars focusing on commercial, legal and geopolitical Arctic issues. Moreover, in September 2007 the Chinese Government launched a research project

¹³¹ Haiyang fazhan zhanlüe yanjiusuo 海洋发展战略研究所 (China Institute for Marine Affairs, CIMA). Accessed on 18th August 2018 (http://www.cima.gov.cn/).

¹³² Zhongguo Kexueyuan haiyang yanjiusuo 中国科学院海洋研究所 (Institute of Oceanology, Chinese Academy of Sciences). Accessed on 18th August 2018 (http://www.qdio.cas.cn/).

entitled Arctic Issues Research involving scholars and officials from all over China so as to be able to improve China's understanding of the political, legal and military dimensions of the Arctic.¹³³ The ten research topics introduced in this study are: the Arctic and human society, Arctic resources and their exploitation, Arctic scientific research, Arctic transportation, Arctic law, Arctic politics and diplomacy, military factors in the Arctic, China's Arctic activities, the Arctic's strategic position, and China's Arctic policy and recommendations.¹³⁴

3.11 RELATIONS WITH ARCTIC STATES

China's increasing dependence on energy and natural resources imports has been the main factor that has made China enter into economic agreements and strategic partnerships with countries in Africa, Latin and South America, Central Asia and the Middle East. The current restructuring of the Chinese economy also leads to the expansion of Chinese investments in and acquisition of foreign companies.

According to this perspective, China has also intensified its efforts in creating relations with all Arctic actors and has gradually increased its presence and influence in the Arctic institutions. In addition, more and more Chinese investments and infrastructure projects are taking place in the Arctic, mainly due to a growing Chinese interest in Arctic resources and Arctic maritime routes, which are now officially included in the One Belt One Road initiative. ¹³⁵ There are many technological challenges associated to the extracting of energy and mineral deposits

¹³³ Linda JAKOBSON, "China prepares for an ice-free Arctic", *SIPRI Insights on Peace and Security*, n. 2010/2, March 2010, pp. 4-5.

¹³⁴ WANG Hong, "Zhongguo haiyang nianjian 2008"中国海洋年鉴 2008 ("China ocean yearbook 2008"), Haiyang chubanshe 海洋出版社 (*Ocean Press*), 2008.

¹³⁵ Camilla SØRENSEN, "China as an Arctic great power: potential implications for Greenland and the Danish Realm", Policy Brief, Royal Defence College, February 2018, pp. 1-4.

in the Arctic, so, in order to exploit these polar resources, China needs to partner with foreign companies because it lacks of the proper technology.

Cooperation between China and **Norway** takes place mainly with regard to environmental issues and research. Talks between the two countries in regard of Arctic affairs were initiated in September 2008 and the first dialogue was held in June 2009 and it focused on climate change and polar research, but also on Arctic policies, energy issues and sea routes.¹³⁶

China has also built an Arctic research station in the Svalbard archipelago and has invested in cold-water drilling in exchange for know-how. The Svalbard islands are of great interest to China, especially for coal deposits. For this reason, the Norwegian government has been stormed by several countries, including Russia, the United States and other European states, which ask to contribute to the development of the area. But since 2010 there have been some diplomatic tensions due to Nobel Peace Prize given to the Chinese dissident Liu Xiaobo 刘晓波, causing China to stall and to halt economic and diplomatic relations with Norway. The post-Nobel Prize dispute has frequently spilled over into Arctic affairs in the past half decade: in September 2014, Norway turned down a request by China to build a large radar antenna on Svalbard; always in 2014 there was a controversial and unsuccessful bid by Chinese entrepreneur Huang Nubo to purchase Arctic land in Svalbard; in

¹³⁶ GOU Haibo, Chinese Ministry of Foreign Affairs, Personal communication, 15th and 26th January 2010; and Erik SVEDAHL, Minister Counsellor, Norwegian Embassy, Beijing, Personal communication, 13th January 2010.
137 CHEN Sijing 陈思静, "Beiji nengyuan gongtong kaifa: xianzhuang, tedian yu Zhongguo canyu" 北极能源共同 开发: 现状、特点与中国的参与 ("Joint development cases and Chinese participation in energy exploitation in Arctic"), Ziyuan kaifa yu shichang 资源开发与市场 (*Resource Development & Market*) 34 (8), 2018, pp. 1102-1103.

¹³⁸ Caitlin CAMPBELL, "China and the Arctic: objectives and obstacles", U.S.-China Economic and Security Review Commission Staff Research Report, 2012, p. 5.

October 2015 three Chinese naval vessels conducted a goodwill tour of the Nordic countries too but there were no stops in Norway. 139

The tensions between the two countries stopped at the end of 2016, with the consequent getting back in touch with Norwegian energy and shipping firms by Chinese companies. Anyway, Norway remains a potentially important actor in the Chinese Arctic developing economic interests.¹⁴⁰

Russia, as the biggest state that faces the Arctic region, controls many of its resources, but lacks both the technology and the capital needed to extract them. To cope with this, Russia has decided to accept the joint ventures that want to work in Russian waters that use the Chinese capital and Western or Brazilian technologies. In fact, the British Petroleum (BP), the Brazilian state-owned company Petrobas, the Royal Dutch Shell and the Norwegian company Statoil are the world's leading deep sea energy drillers. ¹⁴¹ China in particular, is attracted by the presence of large deposits of hydrocarbons and by the fish-rich area in the Russian jurisdiction. Russia has in fact mineral resources in the Arctic whose value exceeds \$30 trillion, but precisely the country does not have the capacity to carry out the development projects of the resources it possesses because of the lack of technologies and capital. ¹⁴²

China has agreed to help Russia and in March 2013, during Xi Jinping first voyage as president in Moscow, China signed an agreement for purchasing 620,000 barrels of oil per day of the Russian company OAO Rosneft, a majority owned oil company by the Russian government; moreover, during the same visit, China National Petroleum Corporation (CNPC) agreed to explore three offshore oil fields

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¹³⁹ Marc LANTEIGNE, "China and Norway: cold shoulder no more, following diplomatic thaw", *Arctic Deeply*, 3rd January 2017 (https://www.newsdeeply.com/arctic/community/2017/01/03/china-and-norway-cold-shoulder-no-more-following-diplomatic-thaw).

¹⁴⁰ Marc LANTEIGNE, *China's emerging Arctic strategies: economics and institutions*, Institute of International affairs, Centre for Arctic policy studies, University of Iceland, 2014, pp. 19-20

¹⁴¹ FSU Oil & Gas Monitor, "Rosneft seeks licenses for 30 offshore Arctic fields", 21st October 2009.

¹⁴² BAI Jiayu and Alexandr VORONENKO, "Lessons and prospects of Sino-Russian Arctic cooperation", *Advances in Polar Science*, September 2016, Vol. 27, No. 3, p. 188.

with Rosneft, and the joint development of a Pipeline that would arrive in China was discussed as well. These agreements consist of the first Russian deal that has an Asian interest in it, but they also help China to strengthen its position as an Arctic energy power. By doing so, China becomes the largest purchaser of Russian oil.¹⁴³

In May of 2014, China and Russia, through cooperation between CNCP and the largest Russian company Gazprom, agreed to a deal for the value of \$400 billion of natural gas. The agreement has not only greatly improved Chinese energy supplies, but also had strong political nuances, deteriorating relations between Russia and Western countries, which have accused the Russian government of shifting business to the East as a response to accusations addressed to her in regards of the Ukrainian issue.¹⁴⁴ In this context, China represents an excellent alternative because it has never presented any complaints and sanctions against Russia.

The Yamal Liquefied Natural Gas Project is a great example of how Sino-Russian cooperation can thrive in the field of mineral resource development. The Yamal Liquefied Natural Gas Project is an integrated project encompassing natural gas production, liquefaction and shipping. The project consists of construction of a liquefied natural gas plant with an output capacity of around 16.5 million tons per year, using the South Tambey Field as a resource base. The field's proven and probable reserves are estimated at 926 billion cubic meters. In this joint venture the Chinese state corporation China National Petroleum Corporation, which holds the 20 percent of the project, works together with the Russian partner Novatek (50.1 percent of share) for deposit exploration. At the beginning of 2016, the China's New Silk Road Foundation was also added to the joint venture, achieving a share of 9.9 percent (the remaining quota of 20 percent is owned by Total). One of the objectives

¹⁴³ Charles EBINGER, John P. BANKS and Alisa SCHACKMANN, "Offshore oil and gas governance in the Arctic: a leadership role for the U.S.", Energy Security Initiative, Policy Brief 14-01, March 2014, p. 9; and Marc LANTEIGNE. *China's emerging Arctic strategies: Economics and Institutions*. Institute of International

and Marc LANTEIGNE, *China's emerging Arctic strategies: Economics and Institutions*, Institute of International affairs, Centre for Arctic policy studies, University of Iceland, 2014, pp. 18-19.

¹⁴⁴ Fiona HILL and Bobo LO, "Putin's pivot: why Russia is looking East", Foreign Affairs, 31st July 2013.

¹⁴⁵ Yamal LNG (http://yamallng.ru/en/). Accessed on 3rd September 2018.

of this collaboration is to ship to China 3 million tons per year of LNG. This project is a good example of how Sino-Russian cooperation is a winner in the field of Arctic resource development, such as hardware construction, joint development and the implementation of new technologies, as well as geological exploration in the North Sea. China and Russia should use the positive experience of the Yamal LNG Project to strengthen and develop Sino-Russian cooperation in this sector. Additional opportunities may arise from the completion of the Power of Siberia Gas Pipeline (fig. 9), a Gazprom and China National Petroleum Corporation collaboration, which will create another path for resource shipments from Russia to China.¹⁴⁶

The Arctic collaboration between China and Russia is also the result of the recent Arctic policies put in place by the United States, especially those of Obama and even newer ones of Trump. The Obama administration had put in place restrictions against Russian exports, trying to constrain also all other participants in Arctic governance, while the Trump administration aims to strengthen the American energy giants, or Alaska. Moreover, with the admission of China as an official observer of the Arctic Council, the United States sought to restrict its freedom of action on the Polar territory (and the current administration seeks to reinforce this limiting situation). Some American officials have even said that China is one of the great destabilizing factors behind the Arctic climate change of Russia.¹⁴⁷

Since mid-1900 there have been energy ties between China and Russia, so it is no surprise that these two countries do business in the Arctic. In addition to natural resources, China looks with interest to the Northeast Passage, which runs along the northern border of Russia, from the Bering Strait to Nova Zemlya, a route that is 6400 kilometers shorter than the one passing by the Strait of Malacca, because China would benefit in terms of costs. But it also true that Russia imposes high passage fees.

¹⁴⁶ BAI Jiayu and Alexandr VORONENKO, "Lessons and prospects of Sino-Russian Arctic cooperation", Advances in Polar Science, September 2016, Vol. 27, No. 3, p. 188.

¹⁴⁷ LIU Huan 刘欢, "ZhongE beiji hezuo yanjiu" 中俄北极合作研究 ("Research on Sino-Russian Arctic cooperation"), Xiboliya yanjiu 西伯利亚研究 (*Siberian Studies*),Vol. 45 No. 2, April 2018, pp. 38-39.

Moreover, Russia recently claimed the Lomonosov Ridge, and if its demand is accepted half of the Arctic region would go under Russian jurisdiction, creating strife with Greenland and Canada.¹⁴⁸

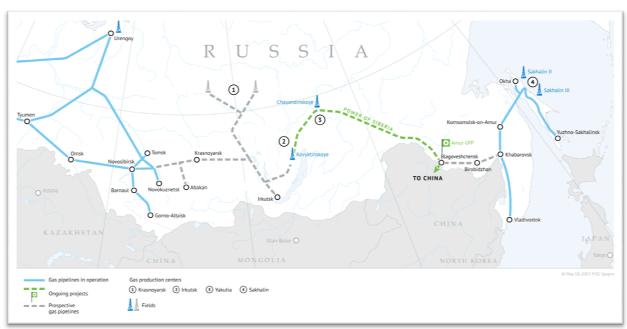


Fig. 9 – Developing gas resources and shaping gas transmission system in Eastern Russia (source: http://www.gazprom.com/about/production/projects/pipelines/built/ykv/).

China's growing interest in the co-development of oil and Arctic gas can also be observed in different areas of the **Canadian** region, where Chinese state-owned companies are purchasing shares in Canadian oil and gas projects. For example, in February of 2013, the China National Offshore Oil Corporation (CNOOC) managed to acquire the Canadian energy company Nexen, an upstream oil and gas company responsible of developing energy resources in the UK, North Sea, offshore West Africa, the United States and Western Canada, ¹⁴⁹ for US \$15.1 billion. The agreement solidifies the Chinese position in the oil sands sector in northern Alberta, but at the same time causes greater harshness of the laws regarding purchases of oil sands by

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¹⁴⁸ Caitlin CAMPBELL, "China and the Arctic: objectives and obstacles", *U.S.-China Economic and Security Review Commission Staff Research Report*, 2012, p. 6.

¹⁴⁹ Nexen (http://www.nexencnoocltd.com/). Accessed on 3rd September 2018.

foreign State enterprises. ¹⁵⁰ Other examples of participation by Chinese national oil companies are the Sino Canada Petroleum, a collaboration between the Chinese SINOPEC Group and the Canadian Synenco Energy in order to develop the Northern Lights project, an integrated mining, extraction and upgrading project located in Sturgeon County (Edmonton); the Christina Lake project put in place by CNOOC (17 percent stake) and MEG Energy Corporation, which focuses on oil sands development; and the collaboration between Enbridge Inc. and Petro China International Company Limited on the development of the Gateway Pipeline and supply crude oil from Canada to China. ¹⁵¹

Despite recent economic and diplomatic conflicts, China has decided to largely invest in Alaskan oil companies in the **United States**. An example is the coordination between Alaska Gasoline Development Corporation (AGDC), the State of Alaska, China Petrochemical Corporation (SINOPEC)¹⁵², CIC Capital Corporation (CIC Capital), and Bank of China (BOC), which have announced a joint development agreement to advance Alaska LNG, Alaska's strategic gas infrastructure project. The agreement was signed in the presence of United States President Donald Trump and China President Xi Jinping, and it formulates the interests they have in common with regard to the preparatory work of Alaska LNG. The project is composed by an integrated LNG system formed of a three train liquefaction plant in South-central Alaska (Nikiski), a gas pipeline, a gas treatment plant on the North Slope of Alaska, and various interconnecting facilities to connect the Prudhoe Bay gas complex to the gas treatment plant.¹⁵³

¹⁵⁰ Marc LANTEIGNE, *China's emerging Arctic strategies: economics and institutions*, Institute of International affairs, Centre for Arctic policy studies, University of Iceland, 2014, p. 18.

¹⁵¹ National Energy Board, *Canada's oil sands: opportunities and challenges to 2015: an update*, an energy market assessment, June 2006, p. 11.

¹⁵² SINOPEC is the largest oil and gas company in the world by revenue.

¹⁵³ Alaska Gasoline Development Corporation, "Alaska and China sign historic development agreement: developing America's largest energy export project", November 2017.

Further Chinese interests in Alaska reside in the tourism industry. There are in fact tens of thousands of Chinese people who visit Alaska, so this could be a good field where China and the United States strengthen their cooperation. Not only that, but there is also a great development of fishing in the Alaskan sea due to the melting of the ice, and the two countries can therefore collaborate to develop the technologies in this field and to build fishing ports.¹⁵⁴

In recent years there has been an exponential growth of political, economic and scientific links between **Iceland** and China; it also seems that the Icelandic people consider the political and scientific commitment with China in a positive or neutral way. Sino-Icelandic dialogues are progressing well: in 2013 was inaugurated the China-Nordic Arctic Research Centre (CNARC), which provides a platform for academic cooperation, in order to increase awareness, understanding and knowledge of the Arctic and its global impacts, as well as to promote cooperation for sustainable development of the Nordic Arctic and coherent development of China in a global context;¹⁵⁵ in October 2013, the Chinese company CNOOC made an agreement with the Icelandic energy company Eykon for the joint exploration of oil and gas in the Dreki region, located in the North Atlantic area, between Iceland and Norway;¹⁵⁶ Iceland supported China's 2013 application for observer status on the Arctic Council and its entry into Arctic governance more generally; in July 2014 the two countries have signed the first free trade agreement (FTA) between any European Economic Area country and China.¹⁵⁷

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¹⁵⁴ PAN Min 潘敏 and XU Liling 徐理灵, "ZhongMei beiji hezuo: zhidu, lingyu he fangshi" 中美北极合作: 制度、领域和方式 ("Sino—US Arctic cooperation: institution, fields and methods"), Taiping Yang xuebao 太平洋学报 (Pacific Journal), Vol. 24, No. 12, December 2016, pp. 89-90.

¹⁵⁵ The China-Nordic Arctic Research Centre (https://www.cnarc.info/). Accessed on 4th September 2018.

¹⁵⁶ Marc LANTEIGNE, *China's emerging Arctic strategies: economics and institutions*, Institute of International affairs, Centre for Arctic policy studies, University of Iceland, 2014, p. 19.

¹⁵⁷ Jesse HASTINGS, Edward H. HUIJBENS, Gustav PETURSSON and Jennifer SMITH, "Chinese chess in the wild West: how Icelanders view the growing Iceland-China relationship", Institute of International affairs, Centre for Arctic policy studies, University of Iceland, Reykjavik, 2015.

One of the most important aspects of Chinese presence in the Arctic is mining and the development of trade in metals and minerals. In this respect, China has tightened a deep diplomatic bond with **Greenland**, which has been greatly influenced by recent climate change. As a matter of fact, its vast polar cap was affected by the melting of ice, which has brought to the surface suitable lands for mining activities. In fact, the withdrawal of the ice sheet has opened up more possibilities for the extraction of precious metals, minerals and precious stones, including copper, gold, iron, nickel, platinum, titanium and zinc, together with diamonds and rubies. Greenland is part of the Kingdom of Denmark and obtained the "home rule" in 1979, while it reached self-government only in 2009. Denmark actually retains the right to determine its policy in the areas of defense and foreign policy. But Greenland is not satisfied with the current situation and the last governments have been in favor of independence. 159

Although so far there have not been many contacts between China and Greenland, in May 2016 the State Oceanic Administration (SOA) of China signed a memorandum of understanding with the autonomous Government of Greenland on scientific cooperation between the SOA and Greenland's Ministry of Education, Culture, Research and Religion, which threw a solid foundation for the establishment of the Arctic Science Research Station in Greenland and the conduct of the Arctic Expedition.¹⁶⁰

It is also important to highlight that currently more than 90 percent of rare earth elements (REEs) in the world are extracted in China, and this near-monopoly has raised doubts by Western countries, as security problems may be created because

¹⁵⁸ Home rule is the power of a constituent part (administrative division) of a state to exercise the state's powers of governance within its own administrative area that have been decentralized to it by the central government.

¹⁵⁹ Marc LANTEIGNE, *China's emerging Arctic strategies: economics and institutions*, Institute of International affairs, Centre for Arctic policy studies, University of Iceland, 2014, pp. 20-26.

¹⁶⁰ XIAO Yang 肖洋, "Gelinglan: Danmai beiji zhanlüe zhaunxing zhong de maodian?" 格陵兰: 丹麦北极战略转型中的锚点? ("Greenland: the anchor of Danish Arctic strategy's transformation?"), Taiping Yang xuebao 太平洋学报 (*Pacific Journal*), Vol. 26, No. 6, June 2018, p. 83.

of the increasing value of REEs, used in the development and production of advanced technologies. China's various buyers accuse her of applying quotas on REEs, molybdenum and tungsten exports from 2010 in violation of the World Trade Organization (WTO) rules. So there is the question of whether the areas of Greenland can be developed as an alternative source of these elements. However, China has shown the interest of developing contracts with the aim of extracting REEs and uranium in Greenland¹⁶¹, which needs capital and expertise. The start-up costs are indeed exorbitant and there is a need for further external labor and infrastructure and China is one of the few countries that can cope with all these problems. Two Chinese firms have been engaged in prospecting in Greenland, namely the Jiangxi Zhongrun Mining and the Jiangxi Union. Another area of mining interest for China in Greenland is the potential development of an iron mine in Isua, located about 150km northeast of Nuuk, the capital.

But there is a heated debate about the environmental impact of mines on the island's delicate ecosystem, and whether the matter falls in the economic level, thus returning under the exclusive jurisdiction of Greenland, or on the defensive sphere, as its radioactive nature and potential use in arms would authorize Denmark to decide what to do with it.¹⁶²

In the international context just presented, the cooperation on Arctic affairs has gradually become a new field of development of foreign relations between China and the Arctic countries. In the process of participation in Arctic governance, the way to deal with Arctic countries is a key factor affecting the success of China's Arctic diplomacy. China's international responsibility is growing as China's overseas

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¹⁶¹ China however is not the only one of the many countries that have been interested in creating joint ventures in Greenland in order to develop the island's mining capabilities, but Chinese participation has received more attention due to the awareness of its economic growth and its diplomacy on resource security.

¹⁶² Marc LANTEIGNE, *China's emerging Arctic strategies: economics and institutions*, Institute of International affairs, Centre for Arctic policy studies, University of Iceland, 2014, pp. 20-26.

interests continue to expand. The Arctic has gradually become a new space for China's national interests to expand, which is closely related to its development, security and environmental security interests. As an extra-territorial country, China does not have the geographic and identity superiority to participate in Arctic affairs, and relations with the Arctic countries, international organizations and not governmental organizations are the key factors in achieving and expanding the national interests of Chinese Arctic.¹⁶³

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¹⁶³ ZHAO Ningning 化路径, "Zhongguo yu BeiOu guojia beiji hezuo de dongyin, tedian jishen" 中国与北欧国家 北极合作的动因、特点及深("The motivation, characteristic and deepen path of the Arctic Cooperation between China and Nordic countries"), *Journal of boundary and ocean studies*, Vol. 2, No. 2, March 2017.

CONCLUSION

China presents itself to the world as a still developing country, but perhaps it cannot really be defined in that way. Many countries, mainly the western ones, are of the opinion that this attitude of the Chinese government is just an excuse in order to behave in a certain way. China is currently a paradox: on one hand there are large rural areas where the inhabitants have lived in the same way for several decades; on the other there are large metropolitan cities where there are state-of-the-art infrastructures and problems of overcrowding. In addition, the giant steps that China has made in different fields, from the economic and scientific, up to that of relations, must be considered. China, once emarginated by other major powers, has become an important subject today, which must take part in all major international and regional issues.

One of the attitudes impeached to Chinese government by different nations is represented by the implementation of resource security. China is the most populated country in the world and several Chinese key sectors have experienced an extraordinary development in recent years. In order to cope with this, China had to use foreign resources, resources that it has managed to obtain thanks to its financial richness and its ability to make friendships. This statement is particularly true for the ties that China has made with the countries considered "south of the world", in other words those little developed or developing states that need help. For this reason, according to its ideology to forge collaborations that benefit all parties involved, China has decided to establish relations with countries in need of help but that are rich in raw materials.

Nevertheless, the Chinese government has also managed to shape links with developed countries, which do not always have all the necessary financial resources to develop national wealth, or which do not have enough manpower. These states, despite appreciating the aid arriving from China, fear that its presence could grow steadily, endangering their interests and sovereignty.

With the elaboration of my thesis I wanted to emphasize the importance of this arms race that China has put in place. The world is changing rapidly and radically because of climate change and human activity, and the forecasts of experts are alarming. China is unable to stay behind the pace of its growth, and national resources have not been enough for many years now. This policy is therefore vitally important. China has succeeded in obtaining advantageous agreements with the African countries, with the states of South America and with Australia; it has also recently developed links with the European Union, Canada and the United States, despite in recent times there have been some frictions. Meanwhile the Chinese government has a lasting and solid relationship with Russia since before the constitution of the Republic.

A problem that emerges from these relations is that now the resources present have been largely developed and are slowly ending. In this context, the Arctic region enters the natural resources scenario and it is showing that it has a strategic importance in several respects. The melting of the Arctic polar cap has brought to light not only hydrocarbons deposits and resources that could be used, but also the possibility of making the Arctic navigable and thus bringing benefits to the world economy and trade. This situation is more favorable to the Arctic countries of course, but also other nations want to be involved. The Arctic is an excellent opportunity, but problems of various kind begin to appear, such as those of who has right of sovereignty in the area or how to get the appropriate technologies in order to pull out the reserves discovered.

In recent years China has started to understand the potential of the North on a political, economic and military level, but wants to act prudently as it fears

countermeasures by the Arctic states. In fact, China is afraid that Arctic issues could lead to aggressive competition through the use of weapons, although up to now they have been tackled in a collaborative and peacefully way. The Chinese government hopes to build strong links with the Nordic states in order to broaden their cooperation in the area.

My opinion is that, despite having limited power in the Arctic region, China is making great efforts to succeed in its ideal of peaceful collaboration. After joining the Arctic governance, even if only as an observer, China has managed to expand its interests in the North and is making several friendships with all the countries involved in the region. These collaborations are essentially important since more forces put together can find solutions against the problems that arise from this inhospitable place. For example, the resources present are difficult to bring to the surface without the necessary technological innovation, so there is the need of capital and knowledge, skills that do not correspond to a single actor.

There are a number of questions that arise after deepening the current situation in the Arctic. How long will the various countries take to end the Arctic resources? Are these nations really making their interests while respecting the ecosystem and while trying to fight climate change? Will China succeed in having a role of importance in Arctic governance? Who more than anyone will benefit from ice melting?

It is inevitable that there will be changes in the Arctic in the future, but I believe that the aggressive exploitation of the Arctic region can lead to serious environmental and fauna transformations. The doubt is that those who work in the area do their own thing by neglecting what this implies. Within this prediction, it is difficult to understand what will be the part played by China due to its indirect language, which leaves uncertainties about its true intentions. It is clear in any case

the great efforts it has put in place to secure a position within the Arctic interests. China sees the possibility of using Arctic resources and routes, and that is why it is trying to establish peace and regional stability in order to retain its commitment to Arctic development cooperation. The problem for China is that its appointment tends to be labeled as an invasion threat and other states fear that it could transform the current Arctic order, changing its rights and interests.

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