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A Thirsty Dragon

Rising Chinese crude oil demand and prospects for multilateral energy security cooperation

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Summary

From its founding in 1949 until the death of Chairman Mao in 1976, communist China was relatively isolated from global economic flows. Or rather, to be more precise, the coutry did not have strong economic ties with the West, though it was an active geopolitical force (e.g. intervening in the Korean War, developing a nuclear program, the Taiwan Strait Crises, the schism with Soviets, Ping Pong Diplomacy, etc.). The death of the great leader marked a significant watershed in China's history as Mao's successor, Deng Xiaoping, initiated a program of economic reforms called 'Socialism with Chinese characteristics'. China has since become a communist-run country that operates a full-fledged market economy. This program opened up the Chinese economy and, to a lesser extent, society, to the world. Ever since, China has not ceased to grow. Today, the country is the second largest economy in the world, just behind the U.S.

One of the most significant indicators of rapid industrialization and economic development in China is that of domestic energy consumption. In the last two decades, China doubled its energy needs, and domestic industry and consumers are demanding more energy to grow and develop from year to year. In 2011, China became the second largest automobile purchaser on the global market and the second largest energy consumer the year before.

With each passing year, Chinese society consumes more oil, natural gas, coal and electricity. However, the rise in energy consumption also has its negative side. Even though China has regions with abundant coal reserves, powerful rivers and strong winds, it lacks abundant deposits of the most important energy-generating fuel of all – crude oil. China is a significant producer of petroleum, but domestic reserves are simply not sufficient to satisfy its skyrocketing demand. This fact not only requires China to depend on imports, but has also induced Chinese leadership to embark on a global geopolitical crude oil hunt. Today, China competes directly with other powerful players such as the U.S., the EU, Japan and India in securing the flow of 'black blood', a commodity that is essential for any modern economy.

China has pursued a strategy of establishing long-term energy security through investment in oil and gas fields abroad and through diversifying its supply network. Chinese national petroleum companies have had the most success by establishing operations in countries that have shaky relations with the West – Angola, Sudan, Myanmar and Iran being the most notable examples. Beijing has taken advantage of the fact that these crude oil-producing states are not the preferred partners for Western political elites. Owing to poor diplomatic relations, the West has often imposed sanctions on the respective governments. Offering an alternative, Chinese petroleum companies have provided these states necessary financial and technological support. However, as the Chinese economy has continued to grow, the communist government seeks to further diversify its supplies; this has necessitated a penetration into traditionally Western supply markets such as Saudi Arabia and Libya.

Securing and protecting vast amounts of petroleum imports is a geostrategic challenge with far-reaching consequences. First, China made the decision to establish a sizable pe-

troleum storage infrastructure, referred to as the strategic petroleum reserves. This system is designed to provide emergency fuel capacity for several weeks. Second, present energy-generating facilities require refurbishment, and new energy efficiency technologies need to be introduced. The main goal of these projects is not only to reduce energy consumption, but also to allow the Chinese energy producers to capture and reuse significant amounts of energy that are currently being wasted. Third, Chinese national petroleum companies must utilize strategic mechanisms in order to locate, grant access to, and develop oil fields around the globe. Great success in this area has been evident in Africa and Asia. Last but not least, in order to secure its maritime fleets for transporting oil, Beijing has been increasing its naval military capabilities and has started protecting crucial sea-lanes and also building a network of deep-sea ports along the Indian Ocean.

The Chinese appetite for energy could potentially result in two scenarios. Each of these will systematically be developed and examined in the course of this paper. The pessimistic scenario foresees energy-driven foreign policy placing China in a dangerous confrontation with the U.S., Japan, the EU and India. American, Indian and Chinese navies are already competing across the Indian Ocean, with participants upgrading their naval forces, building deep-sea ports, constructing military bases and forging alliances across the Indian Ocean. They have not yet entered into conflict, but as their naval presence increases, the possibility of an armed clash grows. This scenario represents a 'nightmare option' that could have grave consequences for the entire globe, as the U.S., China, India and two EU members are all states armed with nuclear weapons.

Conversely, an opposite scenario can be envisaged. A liberal integrationist perspective offers huge potential for multilateral energy security cooperation. Despite all tensions, China, the West and India are oil importers, and, as consumers, they could work together in fostering common strategies. What is more, their economies are mutually intertwined, and any conflict would bring about fatal collateral damage to the economic well-being of all parties. In short, China and America and potentially India could synchronize approaches to energy issues and address worries about growing global competition for crude oil.

Being that as it may, China's further integration into multilateral energy organizations – notably the Organisation for Economic Co-operation and Development (OECD) International Energy Agency (IEA) – will not be an easy task. Introduction of the new standards and requirements could be a burden for Chinese economic development. Membership in the IEA would reduce freedom in energy policy-making as it requires intelligence-sharing, market liberalization and surrendering a certain degree of national sovereignty.

Hinderances in integrating China into the IEA are a factor of the organization itself. The IEA's efficiency depends on the willingness of its members to act and coordinate. The more coordinated and synchronized energy interests are, the more powerful the organization becomes. This means that the Chinese energy policy agenda as well as those of the other IEA members should increasingly converge. Should this not materialize, any conflict would prevent this organization from acting efficiently. This occurs whenever a member country exercises its veto power; in order to reach decisions, IEA member states

must unanimously agree on decisions. As a consequence, prospective Chinese membership into the IEA will imply a reform of the latter's operating practices.

In spite of the difficulties, China, the West and India would be better off using their power to foster common energy security rather than undermining one another. Instead of allowing tensions to rise, they could focus on designing an order that is legitimate, durable and in the interests of all. A stronger international energy security framework would reduce the enforcement costs of maintaining order due to institutionalization, and it could lock actors in favorable arrangements that persist beyond their power zenith. Working together and building mutual consensus on energy-related issues are, indeed, a greater challenge, but prove to be a better investment for the sake of international security.

The process of China's further integration into a multilateral energy system must be executed in phases that do not demand too much change in too little time nor lag behind the development of the conflict potential. Powerful parties need to have enough time to adjust their national policies, and simultaneously tackle the problems of rising global demand for petroleum. Initially, China could be offered observer status in the IEA. This option would allow Beijing to participate in the organization's emergency response exercises. If the initial phases prove successful, more daring options could be envisaged. Firstly, powerful countries could take crucial steps in depoliticizing the international oil market. Reducing political manipulation would diminish the prospects for armed conflict. Secondly, the IEA could be thoroughly redesigned and made into a new organization that grants China unconditional membership. There are many hypothetical options on the table, but the most important message this paper wants to convey is that multilateral cooperation is the only feasible strategy for preventing dangerous confrontation.

Contents

1. Introduction

Crude oil is still the most important energy source in the world. Petroleum has profoundly defined our economies and lifestyles since the time of Colonel Drake's drilling adventures in Titusville, Pennsylvania. This fact raises oil to the status of an extremely essential good, thus granting it high political saliency. It is the material that fuels our cars and trucks, heats our homes, allows fertilizers and pesticides to maintain the high productivity of modern agriculture, is the basis for plastics that have a multitude of uses in modern society, and has many other important uses in the twenty-first century. Oil is a common denominator in all economies: In order to exist and compete in the present-day world, crude oil is a primary requisite.

Concurrently, both the price and global demand for crude oil are rising. The year 2013 will represent a watershed for the international petroleum market as a majority of expert studies predict that oil consumption in the developing world will surpass oil consumption in the developed world (The Economist Intelligence Unit 2012). The main drivers of this trend are China, followed by India and Brazil. Meanwhile, almost two centuries of intensive petroleum consumption have exhausted easily accessible oil reserves. Newly discovered large oil fields are found in Arctic waters or in expensive to produce North American tar sands. In sum, these new trends will have a dramatic impact on energy prices and geopolitics.

The People's Republic of China (PRC) is the most populous and fastest-developing state in the world. In the last twenty years, the Chinese economy has grown at impressive double-digit rates and this trend does not appear to have any intention of stopping. Although economic growth has slowed down and some fears exist about inflationary trends, the PRC became the world's second largest economy in 2011, overtaking Japan for the first time in the modern era (BBC News 2011). The financial crisis in the U.S. and the EU has caused severe economic loss with America and Europe becoming poorer than they were five years ago. In contrast, China has emerged from the crisis with lower levels of public debt than any major Western economy.

Needless to say, fast economic development does not come without a price. The Chinese *wirtschaftswunder* poses many foreign policy challenges; the energy sector has been most intricately linked to security. Until the mid-1990s, the PRC satisfied 90% of its energy demand domestically (primary coal), but the PRC has lacked sufficient domestic petroleum reserves and is thus dependent on imports to satisfy demand (Dannreuther 2011: 1345). Rapid economic growth requires a stable and abundant energy supply (Liu 2006: 2), and politicians in Beijing are well aware of the challenge their country is facing. Ever since the mid-1990s, Chinese diplomacy has been actively working to improve relations with major oil-exporting countries, secure access to overseas energy hubs and control energy sources by investing in infrastructure projects.

Nevertheless, this has not been an easy task up to now, and will likely not be in the future either. The most important petroleum reserves that are easily accessible are located in the turbulent and volatile Middle East. Compounding this situation, Western and Indian navies patrol sea routes through which the majority of Chinese oil is transported (Pant

2012). Dependency on imported oil has motivated active Chinese involvement in conflict-ridden regions in Africa, making it difficult for the PRC to follow its traditional non-intervention principle.

The PRC's thirst for petroleum could result in two potential security scenarios. The pessimistic scenario predicts that energy-driven foreign policy will put China in a dangerous confrontation with the West and potentially India. The increasing Chinese presence in the Indian Ocean, Africa and the Middle East has raised strategic concerns in Washington, Brussels, New Delhi and Tokyo alike. The continuous growth in Chinese power has caused acute concerns not just among the U.S. and its allies, but also in Asia, most notably in India and Japan. The rivalry between the elephant and the dragon cannot merely be attributed to geographic considerations (Himalayan border dispute): though misguided, the power politics of the two states that compete on the global level could end in an armed clash, as was the case in 1962. Though the Indian economy may be growing at a slower rate, this global player is eager and willing to compete with China for international crude oil reserves (Chellaney 2010: 94-95).

On the other hand, China's rise could be interpreted in a more liberal integrationist perspective as offering the potential for multilateral energy security cooperation. This research paper argues for the second viewpoint; it examines a potential multilateral security cooperation framework aimed at finding a peaceful solution for rising Chinese petroleum demand. The study wants to demonstrate that no matter how complex, time-consuming and hard it may prove to establish stronger multilateral energy cooperation between China, India and the West, it remains a more effective solution compared to armed conflict as the ultimate method in dealing with the issues of diminishing reserves and rising consumption.

First, the paper addresses the impact of rising crude oil demand on Beijing's national energy security strategy, discusses Chinese options, and analyzes China's foreign energy policy. Secondly, the paper presents prospects and challenges inherent in this phenomenon in relation to the state of Chinese-Indian and Sino-Western relations, highlighting the risk of multiple naval rivalries and ensuing escalation risks. Finally, the paper proposes a multilateral mechanism that could be utilized to help the PRC attain energy security while, at the same time, avoiding confrontation with the West and *vice versa*.

2. China's Crude Oil Challenge

China has not always been dependent upon foreign petroleum supplies. Until the early 1990s, China was a net oil exporter. A recent analysis estimates the country's proven oil reserves to be at 20.4 billion barrels; currently domestic production is 4.5 million barrels per day with consumption at 9.2 million barrels per day (U.S. Energy Information Ad-

ministration 2012a)[1] Thus, current domestic consumption outweighs domestic crude production; import dependency has reached an alarming 52% of total consumption, making the PRC the second largest net oil importer behind the U.S.

Economic growth counts as the main driver of this phenomenon. As the domestic economy has developed, the average standard of living for Chinese citizens has increased accordingly. From 1985 to 2005, Chinese domestic oil demand doubled and this trend is expected to continue into the near future (Liu 2006: 3). According to the Chinese Academy of Social Science, the dependency percentage is set to climb to 64% by 2020 (Wan 2010). Some studies predict that this could even increase to 80% in the next two decades (Kennedy 2010/52: 138). At the moment, the majority of imported crude comes from the Middle East and Africa. The rise in oil consumption is widening the supply and demand gap, making China more and more dependent on imported crude.

Several years ago, the United States Department of Energy predicted that Chinese oil imports would rise to 15% of international petroleum production by 2025 (Li 2011: 3). One indicator that supports the predictions of the U.S. Department of Energy is the sales figure for automobiles in China in 2011, which was greater than any other Western nation, setting a historical precedent. While sales are dropping in the EU, Japan and America, demand for vehicles in China will grow from 66 million in 2010 to 67 million by the end of 2012 (The Economist 2010b). The fact that the country imported more than 5 million barrels of crude oil per day in 2011 indicates that China is immersed in mounting global competition and is exposed to volatile energy prices (Bloomberg News 2010).

At the moment, China's rising energy demand necessitates crude oil, but coal remains the main source. The country's economic growth is orientated towards the expansion of manufacturing and heavy industries; the energy demand of these sectors is met by coal. When combined with rapid growth in the transport sector – where energy demand is met by petroleum – collateral damage ensues on a grand scale. Economic development and growth in energy consumption cause increases in pollution and carbon emissions, engendering negative externalities on ecological systems (Yanqing 2012/35: 411-412). Chinese rural and urban areas are already feeling the consequences: high air pollution during the 2008 Beijing Summer Olympics caused troubles for athletes and organizers. As such, environmental issues make a strong argument for promoting non-carbon, green energy solutions for China.

An important step towards reducing dependency on crude oil is the diversification of energy resources (mainly in renewable technologies and expansion of nuclear power

1 There are less dramatic scenarios. If the non-peak oil assumptions are taken into consideration, the PRC should be able to precede with business as usual. Some analysts are predicting that areas like the frozen deepwater of the Arctic, heavy Canadian tar sands, and offshore pre-salt Brazilian reserves hide new Saudi Arabias that could be cost-efficiently extracted and refined with a near-minimum upgrade of current technologies. Although this is a scenario with detrimental environmental consequences, it will certainly calm global petroleum competition between the PRC and the West. Unfortunately, this is not a very realistic scenario. One could also argue that peak oil scenario would prevent the conflict because powers would not fight over empty oil fields.

generation) and development of untapped energy saving potentials in industry. Today, China is the largest producer of photovoltaic panels in the world with around two hundred producers creating 1,700 megawatts of capacity in 2007 (Biello 2008). The decrease in Western solar technology subsidies coupled with falling international prices for the main component in photovoltaic panels, polysilicon, have allowed Chinese producers to overtake the West. Even though most locally produced photovoltaic panels are exported to the West, the Chinese government could increase domestic subsidies with the goal of developing domestic renewable energy capacities. This could lead to a high energy saving scenario. However, in order for this to become reality, the Chinese economy would need to reproduce the success of solar technology in other renewables such as wind, geothermal, and biomass; generation fluctuations and insufficient energy density do not allow photovoltaics to bridge this gap alone. This optimistic scenario would reduce Chinese dependence on petroleum imports, instantly leading to a decrease in pressure on the global oil market; this, however, would require heavy investment in the next few years.

Investment policy in renewable and non-fossil fuel sectors has made progress recently, but policies are still not orientated towards wind, geothermal, or biomass. On the other hand, the government has invested heavily in the traditional renewable, hydro power, and in nuclear power plants. In early July 2012, the last gigantic turbine of the Three Gorges Dam was connected to the grid. This event marked the completion of one of the biggest and most powerful engineering project in the history of mankind. The total installed capacity of this multibillion-dollar project is 22.5 gigawatts and satisfies considerable domestic electricity demand (The Guardian 2012). The Three Gorges Dam had significant consequences on the local population: almost two million people had to be relocated. Furthermore, the construction may increase the long-term risks of earthquakes and landslides.

Currently, 40% or 27 of the nuclear reactors under construction worldwide are on Chinese soil (Bristow 2011). However, Beijing decided to halt the construction of a number of reactors in the aftermath of the Fukushima catastrophe, and this trend is likely to continue in the future. Presently, the PRC has 14 nuclear reactors that cover around 2% of electricity demand (World Nuclear Association 2012b). Further development of domestic nuclear capacity is under way; there are 25 more nuclear reactors in construction (World Nuclear Association 2012b). Prior to the Fukushima nuclear accident, the government claimed that it wanted to quadruple the total number of reactors in the decades to come (World Nuclear Association 2012a).

From the Chinese perspective, self-sufficiency in energy does not come without a cost. Expanding the nuclear sector will reduce carbon dioxide emissions and diversify the energy mix. Nevertheless, despite generally high security standards, accidents may still occur and can have catastrophic long-term consequences if they do. Furthermore, the time frame needed for licensing, planning and building a new nuclear power plant takes at least a decade. China's primary rationale in further developing the nuclear sector is the reduction of dependency on foreign imported crude oil.

3. National Energy Strategy

The Chinese leadership has drafted a number of strategic documents outlining policies *vis-à-vis* energy security. The 'Twenty-First Century Oil Strategy', adopted in 2003, allocated more than US $100 billion to the development of a domestic strategic petroleum system (Cheng 2008/55: 301). It was soon followed by the 'National Energy Strategy and Policy Report' with the formation of the State Energy Leadership Group. The 'Eleventh Five-Year Programme on National Economy and Social Development' adopted by the Party Central Committee focused on energy conservation, energy efficiency and technological development.

Maritime shipping moves almost 90% of the things we consume (food, consumer goods, energy resources, etc.). On account of its scale, maritime shipping takes up a special position in the eyes of policy makers and military leaders in all powerful states. In order to establish secure crude oil supplies, countries expand their navies and invest in port infrastructure. China is doing just both of these things, as one of the goals of the national energy security strategy is to protect crucial sea-lanes.

Running the second largest and the fastest-growing national economy in the world demands a multidimensional strategy towards crude oil imports. China is working on projects that will bring in this valuable resource from the Russian Federation and Central Asian states. The oil rich taigas of Western Siberia and dry steppes of Central Asia are closer to the Chinese market than the jungles of Venezuela or golden sands of Arabia. Penetration into these markets and the increase of crude oil imports from there would not only ease the tension with the West and India, it could significantly cut the cost of transport and relax the tension surrounding the Malacca Strait dilemma (see below). This would otherwise be an ideal solution if it did not lead to Beijing's potentially serious dependence on Moscow's crude oil supply. China is working on the exact opposite strategy as they do not wish to become dependent on Russia. Thus, Beijing feels the need to diversify imports or attain direct control of continental or offshore oil fields abroad.

This is the reason why the National Energy Security Strategy is explicit in its concern regarding crude oil imports. The government has likewise tried to promote initiatives that could reduce domestic consumption and develop nationally owned alternatives. Even if one disregards the situation in which skyrocketing prices dominate global markets, Beijing is aware that aggressive competition for resource dominance breeds economic and geostrategic risks. Energy security means security of both supply and demand. Even though Beijing is aware that it is not possible to attain complete petroleum self-sufficiency, the policies it has developed center "on limiting the encroachment of foreign companies and dependence on external powers" (Dannreuther 2011/87: 1346). Unmistakably, the thinking of Chinese leadership on energy security shows a strong mercantilist undercurrent; this trend represents a common thinking pattern among all powerful states.

4. Short-term Emergency Response: Strategic Petroleum Reserves

An important step in safeguarding a country from a potential supply shock is the creation of strategic petroleum reserves. The concept was developed by the OECD's IEA following the 1973 oil shock. The IEA was created in 1974 as a response of industrialized states to an energy crisis caused by a cut in oil production and selective embargo imposed by Arab oil producers in the course of the Yom Kippur War. The IEA's system proved to be successful in strengthening energy cooperation, hence, energy security among the OECD member states was preserved during the war between Iran and Iraq, the Gulf War of 1991, and the Iraq war of 2003. In short, the Chinese system was built on the experiences of developed countries.

Like many other non-members, China learned by observing the system created by the IEA. Beijing wanted to mimic the organizational and infrastructure system tailored by the OECD member states. China has been a member of the Asia-Pacific Economic Cooperation (APEC) since 1991, but APEC's Energy Working Group has had limited impact and does not compare to the influence of the IEA. Thus, the PRC has decided to develop a domestic system in order to coordinate emergency supply measures and to improve the governance of long-term energy issues.

The first phase towards reaching this goal involved constructing strategic petroleum reserve bases; facilities in Zhenhai, Daishan, Huangdao and Xinkang have already been built and are operational. All of the terminals are situated along the coast and China presently does not possess an effective inland petroleum reserve infrastructure. The Chinese government plans to build eight more storage facilities in the next fifteen years. Should this come to fruition, China will have a capacity to store 374 million barrels (equivalent to 38 days of reserves based on the 2012 national consumption rate) of crude oil (China Daily 2005). For the sake of comparison, American strategic petroleum reserves have the capacity to store 727 million barrels; an amount sufficient for 37 days of reserves based on the 2012 national consumption rate (U.S. Department of Energy 2012). Construction of the petroleum reserve capacity has been essential; without it, the PRC would only be able to satisfy only up to two weeks of domestic demand.

In addition, the PRC has close to 200 million barrels of oil held by national companies (Cui 2012). So-called 'double storage capability' has been developed for two reasons: national defence purposes and commercial security. These security measures are the most efficient defence mechanism to protect China from the potential of a temporary oil crisis. Another crucial measure has been the creation of an effective fuel-switching capability. In case of a supply disruption, it is essential to have a number of reserve options that could offset a decrease in petroleum supply. A natural disaster in Russia or armed conflict in the Middle East could cause price levels to swell. Being heavily reliant on petroleum imports, the Chinese energy security mechanism must simultaneously have reserve and fuel switching capacities at its disposal.

5. Long-term Options for Reducing Oil Demand

Heavy industry has been the main driver in the rise of Chinese crude oil demand. Recent research shows heavy industries (e.g. cement, aluminium and steel production) account for 54% of energy use; only a few years ago, industrial energy consumption amounted to around 39% (Rosen/Houser 2007: 14). One solution would be the promotion of better industrial energy utilization. Energy efficiency strategies would not only reduce energy consumption, but they could also help China capture and reuse considerable amounts of energy that is currently being wasted. Waste heat recovery has proven successful in the metal and cement industries; heavy industries in Japan and Germany achieved great energy efficiency success upon implementation of these measures. If successfully applied, waste heat recovery systems could unlock a hidden energy potential by capturing, converting, and reusing waste heat produced in heavy industry cycles.

However, such measures would require major changes in Chinese energy management. In 2008, an analysis of power plants in China by researchers from the Massachusetts Institute of Technology found that many energy-generating facilities operated with outdated energy technology and in the complete absence of related government regulation (Chandler 2008). While many new power plants have been built in accordance with the highest technological standards, there remain many highly inefficient and aged units (Chandler 2008). Under these conditions, it is difficult to implement a nation-wide strategy that would use a waste heat recovery system.

Currently, China relies on abundant domestic coal supplies. Although suitable as a switch element in power generation, coal is not very practical for use in transport. Besides waste heat recovery, a second option is nuclear energy, which, again, is applicable for electricity generation, but not in a transport sector that relies on combustion engines. Coal and nuclear energy can be used for electricity production that could power railways, mass transit trains, public electric buses and trams. Furthermore, bicycles and coal-fired turbine ships do not require petroleum to operate. These efforts could very well reduce crude oil consumption, but could not completely offset the role of traditionally powered automobiles.

6. China's Mercantilist Global Energy Strategy: Securing Overseas Resources

Import dependency has made 'oil diplomacy' into an important aspect of Chinese foreign policy. In the last decade, the Chinese government instructed three major Chinese national oil companies (the China National Petroleum Corporation, the China Petroleum and Chemical Corporation and the China National Offshore Oil Company) to conquer international markets. This resulted in more than 200 projects in about 50 countries with an estimated value of more than US $80 billion (Kong 2010: 465).

China's largest Gulf supplier is a long-standing American ally, Saudi Arabia. Being that the PRC did not, until recently, have strong historical or geopolitical linkages with the region, China decided to root its fossil fuel cooperation in strong trade relations. Beijing created partnerships that define trade relations not solely based on petroleum supply. In return for petroleum imports, the Chinese are supplying goods and services to the Gulf. Nonetheless, at least in China's point of view, petroleum represents the backbone of Sino-Gulf trade relations.

In 1999, Chinese and Saudi high officials concluded a strategic partnership agreement whereby "Saudi Arabia agreed to open up select portions of its upstream market (excluding equity oil) to China, and China agreed to open up its refining and marketing sectors to the Saudis" (Lee/Shalmon 2007/49: 14). On the one hand, China needs access to abundant Saudi crude and, on the other, having China as customer helps the Saudi oil industry diversify and reduce its dependence on the West. Aramco, a major Saudi state-owned national oil company, has built several large-scale refineries in China and continues to develop future business ventures in the PRC.

Besides Saudi Arabia and Angola, Iran is the third largest petroleum supplier to China (Chazan/Blas 2012). The fact that China is developing strong ties with America's number one ally as well as America's number one enemy in the Persian Gulf raises considerable concern in Washington (see below).

The second main area for Chinese oil diplomacy is Africa, notably Angola, Nigeria and Sudan (Ebel 2009: 50). After Angola, Sudan is the most important Chinese African petroleum supplier. Chinese trade with African countries – crude oil exports included – was based on a program that provides business consultation services and special funds managed through the China-Africa Business Council. Most of the investment was directed towards oil exploration, extraction and transport.

"Sudan was an oil importer before the Chinese firms arrived, and now earns some US $2 billion in oil export per year" (Fijałkowski 2011/29: 227). In 2011, South Sudan became an independent state, and, at the moment, oil revenues are divided 50-50. However, since China has warm relations with the Northern government, the South may decide to build stronger relations with the West. South Sudan completely depends on the North for infrastructure and refining, but 80% of Sudanese oil reserves are located on their territory (Trivett 2011). Chinese companies have used the opportunity to engage with regimes that were sanctioned by the West: for example, Myanmar and North Sudan. They have been ready to invest and develop oil fields in the parts of Africa where European and American companies were reluctant to inject their Foreign Direct Investment (FDI) (Rotberg 2008: 123-125).

As of the beginning of 2011, Russia commenced oil shipments to China. At recent bilateral meetings, the two governments talked about the construction of the Eastern Siberia-Pacific Ocean Pipeline, in addition to the currently operational Altai gas pipeline, and at least one border refinery. The joint effort will be financed by Chinese loans. Beijing has the intention of enhancing refining capacity from 10 million barrels per day to 13 million barrels per day by 2016 (Cutler 2011).

As China grows, international oil supplies are becoming scarcer, and the domestic economy is becoming tightly connected to oil price fluctuations in the international markets. Any disruptions that occur promise to have tremendous impact on national economic operations. A higher price for crude oil increases the cost of manufacturing and hence raises the price of exports. Increasing the price of exports hurts the Chinese economy that has the comparative advantage of producing cheap export goods. For of this reason, the PRC might desire to wield stronger control over energy markets.

7. The Other Confrontation: Hopes for Fossil Fuel in the South Chinese Sea

Apart from the Persian Gulf and potentially Africa, there exists a possible hot spot where energy considerations play a major role closer to Chinese shores. The South China Sea is one of the busiest shipping lanes in the world – including access to the crucial Malacca Strait, which is the gate for most of the Chinese seaborne oil supply. Before reaching the oil storage terminals and refineries alongside the eastern coast of China, close to 80% of oil imports must pass through the narrow passage of Malacca (Li 2011). Coastal states, including Brunei, Indonesia, Malaysia, the Philippines, Taiwan, and Vietnam, have varying levels of disputes with China in regards to various tiny islands. The Philippines, Vietnam and China have been most active in claiming small pieces of land scattered across the South China Sea.

These territorial disputes still remain unresolved. Tensions rose to alarming levels following speculation that the area may be rich in fossil fuels. The Spratly Islands, a group of more than 600 tiny islands located off the coast of Vietnam, are claimed by China as Chinese territory. Several minor naval clashes with Vietnam and the Philippines have already occurred. Similar clashes mark the contestation over the Paracel Islands claimed by the Philippines and other neighboring states. Vietnamese, Chinese, Taiwanese and Philippine armed forces already occupy some of the islands (Cutler 2011).

In addition to a crucial geographical position, the islands are rich fishing grounds. Initial surveys indicate that they may contain significant reserves of oil and natural gas. Estimates by geological research centers in local countries put the number at over 100 billion barrels; in 2000, a U.S. geological survey estimated reserves of 29 billion barrels (U.S. Geological Survey 2012). At the moment, tensions are present, but conflicts frozen and under control. What would happen if and when significant oil reserves are indeed proven remains to be seen? The U.S. position in Taiwan could have a significant impact in any dispute on the South Chinese Sea. It is probable that the U.S. would support countries like Vietnam, the Philippines and possibly Taiwan when it comes to their territorial claims there. It is in American interests to keep the PRC far away from the Malacca Strait. Extending Chinese rule on the Spratly Islands would not only provide the country with possible rich fossil fuel reserves, but would bring Chinese naval bases closer to Malacca.

8. Controlling and Securing Vital Sea Lanes

Controlling or having access to crude oil is important for two reasons. First, it provides a country with a steady supply of the resources that are the lifeblood of modern economic and industrial growth. Second, more control not only offers greater independence, but an opportunity to exert pressures on other rival states that are net oil importers.

The Chinese strategy of securing crude oil supply might call for an increased military presence in the Middle East and Africa in the future; Beijing is already establishing its naval presence in the Indian Ocean. This is the first step necessary in order to secure strategic sea lanes. A more dangerous development would be if China were to establish a permanent military presence in the Persian Gulf or Africa. In either case, Beijing will do its best to obtain access to crude oil and, in so doing, will challenge the interests of other powerful countries, most notably the U.S. Also, the rising regional rival India will likely not sit by calmly while Beijing tightens its grip around the Indian coastline.

Consequently, China's foreign petroleum investment is being accompanied by the development of its blue-water navy capability. Beijing desires naval forces capable of operating across the deep waters of open oceans so it is able to protect oil tankers traveling through the Indian Ocean and straits (like Hormuz, Bab-el-Mandeb and Malacca). Securing the energy supply is one central motivation in Chinese naval development (Kaplan 2010). The Chinese government is building state-of-art naval ports in Pakistan, Myanmar, Bangladesh, Sri Lanka, and the Seychelles (Kaplan 2010: 283). The Chinese navy gave these projects top priority, considering them essential for the protection of the main sea lanes across the Indian Ocean.

Among all Indian Ocean naval facilities under construction, those in Myanmar and Pakistan are of greatest importance. Both states have land borders with China and the naval facility projects there are complemented by infrastructural (rail, airport, pipeline and highway) investment. If these ports and the additional transport infrastructure are completed in the future, China would be able to decrease the significance of the Strait of Malacca by transporting a portion of its crude oil via the Indus and Irrawaddy River valleys. The main function of Gwadar and Kyaukpyu (Myanmar) deep-water ports is to surmount the Malacca chokepoint. Additionally, the facilities will have the capacity to host both commercial and navy ships (Fisher 2008: 63).

Myanmar and Pakistan do, however, both suffer from serious instabilities. Pakistan faces two main threats: spill over violence from Afghanistan and domestic internal ethnic instability (majority Sunni discrimination of minority Shia, and the Baloch question). Furthermore, Pakistan is controlled by a military intent on conflict with India and supported by a corrupt civilian elite (Hasnat 2011: 1). A weak state and acute socio-economic conditions fuel aggressive Islamic extremism, which is a widespread phenomenon across the country.

Future Chinese investment in Pakistan could be jeopardized by several circumstances. Indian military facilities are just across the border and, in case of a confrontation, the port of Gwadar with its rail and pipeline infrastructure could be within reach of the Indian

navy, army, air force, and rockets. Pakistani radical Islamist or Afghani Taliban forces could attack Chinese operations in retaliation for Beijing's oppression of Muslim Uyghurs in Xinjiang. Gwadar is located in the Pakistani province of Balochistan; local Balochs never accepted the dominance by Islamabad and are subject to constant discrimination (Siddiqi 2012: 52f). Lastly, on account of the poor infrastructure, the PRC would need to invest a good deal of funds to build necessary rail, pipeline and highway projects throughout one of the roughest terrains in the world.

The infrastructure project in Myanmar has made better progress. The project is centred on the construction of twin petroleum-natural gas pipelines that will connect the port of Kyaukpyu to the Chinese city of Kunming. Besides being a pipeline corridor, companies from the PRC are developing vast oil and gas reserves as well as mineral deposits. Kyaukpyu may look more peaceful, but isolated Myanmar has its own troubles. Myanmar has been a country ruled by a heavy-handed military regime for several decades. Even though resistance in Myanmar is generally weak, active guerrilla resistance by other ethnic groups – most notably Shan and Karen – has challenged the majority ethnic Burman dominated military.

At present, Myanmar is experiencing internal change: a political and economic reopening has followed the cautious democratic process that started in 2011. The U.S. government has begun actively working towards a revitalization of relations, while India and the EU have been following similar patterns. The Burmese government is trying to reduce its dependence on China, and Chinese-funded projects such as the US $3.6 billion Myitsone dam and an 800 kilometer-long pipeline currently under construction are being highly criticized by the public and are losing governmental support (Reuters 2012). Chinese presence in Myanmar has been linked to environmental degradation, land grabs, cronyism and corruption. Nevertheless, Myanmar will be hesitant in completely sacrificing its friendship with powerful China in the course of its reforms.

Realizing the problems they may face in Pakistan and Myanmar, the Chinese government is aware of its continued dependence on passage through the Malacca Strait. The importance of this passage might be reduced with Gwadar and Kyaukpyu, yet most crude oil will continue to sail through the Indian Ocean via Malacca to China's coast. With the intent of paving the way for heightened presence in the Indian Ocean in the future, the PRC is building four additional deep-water ports in the region: in Bangladesh, Sri Lanka, the Seychelles and Kenya.

Chinese government has invested US $1.5 billion to construct a state-of-the-art deep-water port in the Sri Lankan city of Hambantota; now, Chinese companies are investing an additional US $500 million in the expansion of the port in the capital of Colombo (Xinhua 2012). Port Hambantota on the Southern tip of Sri Lanka is of massive proportions and it is meant to become the central commerce port in the Indian Ocean.

Also, China has upgraded ports in Chittagong (Bangladesh) and Lamu (Kenya). The PRC has made ambitious promises to the government in Dacca; Beijing plans to invest US$ 9 billion in the coming decades in order to develop "an ambitious new deep sea port further along the coast and a motorway running all the way to China – via neighbouring

Burma" (Devichand 2010). In Kenya, China plans to inject billions of dollars in building a second port near the coastal city of Lamu, followed by the construction of a rail and road corridor that will connect the coast with South Sudan and Ethiopia in the North. The project is supported by the South Sudanese, Kenyan and Ethiopian governments. All three, for varying commercial reasons, would like to have a modern port that would increase the economic potential of the region.

All these sites are along specific strategic locations in the Indian Ocean. By building these ports, China is trying to create an infrastructural network that will eventually grant it more control of, and access to, the energy shipping lanes in the Indian Ocean. The Chinese leadership feels the need to increase both the military and commercial fleet presence in order to increase its energy security.

Technically, there have been no clear indications of intentions to use the ports for military purposes. Nevertheless, that option is not off the table. Up to now, all constructed infrastructure has been designed solely for commercial purposes, but, in all of the countries in question, China has given the highest amount of military and economic aid with plans of linking these regimes closer with the government in Beijing (Kostecka 2010).

The projects in Pakistan and Myanmar would diversify the transport of oil via land in order to decrease the number of tankers passing through Malacca. The diminishing significance of the Strait of Malacca eases Chinese geopolitical fears in regards to energy transport. Ports in Sri Lanka, Kenya, Bangladesh and the Seychelles will help the Chinese navy increase the scope of its power projection.

9. Improvements in China's Naval Capabilities: Recent Examples

Taiwan still remains the main priority of Chinese military defence, and is significant for both offence and defence capacities (Fisher 2008: 169f). Nevertheless, the People's Liberation Army's (PLA) leadership has other goals as well, such as projecting naval power capacity in the Western Pacific, modernizing the air force and developing anti-access/area denial capabilities. Military budget data show that "annual defence spending rose from over US$30 billion in 2000 to almost US$120 billion in 2010" (The Economist 2012). Even though this figure is almost four and a half times less than that of the U.S., it is clear that the PRC is expanding its armed forces.

China is vigorously working on advancing military arsenals and improving the effectiveness of its armed forces. The PLA has been developing two notable projects: *Chengdu J-20* (fifth-generation stealth twin-engine fighter aircraft) and the refurbishment of ex-Soviet *Admiral Kuznetsov* class aircraft carrier. In addition, the navy has made remarkable progress in the development of submarines and anti-ship missiles. In the long-run, the PLA is seeking to master the technologies necessary to produce high technology weaponry and increase the scope of its power projection. "The PLA's strategic priorities are gradually shifting from defence of China's borders to force projection within East Asia and

further afield, in order to secure sea lines of communication" (The Military Balance 2012/112: 216).

The *Shenyang J-15* is a carrier-based fighter aircraft that is being developed by the Chinese navy. Although this aircraft does not present a groundbreaking achievement in military technology, it is a clear statement that China is determined to project its regional blue-water naval capacity. "The *J-15*'s initial role will be linked to, and limited by, its first operational platform: a 'starter carrier' to project a bit of power, confer prestige on a rising great power, and master basic procedures" (Collins/Erickson 2011). Another indication of the growing might of the PLA is the current development of the *DF-21D*. This is considered to be the first anti-ship ballistic missile with the range of 3,000 kilometers. *DF-21D* is popularly referred to as an 'aircraft carrier killer machine'; the weapon is specifically designed to target carrier groups, and is, thus, a weapon to contain the Americans. However, to date, *DF-21D* has not yet been publically tested (Kazianis 2012).

Weaknesses do remain in China's military posture. Aircraft carriers used by the PLA are acquisitions of aging Soviet ships that are currently being upgraded with Chinese technology, and *Chengdu J-20* is presently a prototype undergoing operational tests. The *Admiral Kuznetsov* class is a conventionally powered test carrier with very limited attack capabilities due to the length of its flight deck. In sum, China is still in the process of learning.

The *Admiral Kuznetsov* class serves as a learning-by-doing project for possible future Chinese-made and upgraded aircraft carriers. The Chinese navy needs to invest much more time and money in developing the capacity necessary to execute effective expeditionary operations. Furthermore, the American military has several means at its disposal for reducing the effect of the *DF-21D* weapon: primarily electronic countermeasures and missile defence with the *Standard Missile 3* system. The PRC's navy will be able to protect ships carrying export goods and tankers destined for Chinese refineries; it could effectively annihilate any threat coming from pirates and terrorists. Still, the ability to conduct serious modern naval operations is doubtful.

10. Indian, American and Japanese Responses to the Rise of the Chinese Navy

10.1 India

Modern Sino-Indian rivalry does not have its origins in energy-related issues. Post-1947 border disputes have characterized bilateral tensions between the two. The most relevant episodes are: the Sino-Indian War of 1962, the Chola Incident in 1967, and the 1987 Sino-Indian Skirmish. As China builds a network of ports to gain more control of vital petroleum transporting sea lanes, it is entering the Indian sphere of dominance. For this reason, the story will continue.

India imports most of its oil from the Middle East even though the country is working hard on diversifying supply. Middle Eastern oil remains cheapest in terms of geographic proximity and cost of transport. Indian Strategic Petroleum Reserves Limited has the capacity to store 5 million metric tons at three locations (Indian Strategic Petroleum Reserves Limited 2012). The country has invested a lot in the refining sector and plans to become an important global energy hub. For example, refining capacities developed in Jamnagar in Gujarat are the largest in the world. The Indian Ocean and its eastbound and westbound gates (Malacca and Hormuz straits) is an area of vital concern for Indian energy security. Securing this area and protecting vital sea lanes is of utmost importance to the military and political elites in New Delhi.

The fear factor is not only persistent in New Delhi: Chinese party leaders are afraid of Indian growth and its 'catching up with China'. On several occasions, both Indian Prime Minister Manmohan Singh and Chinese President Hu Jintao implied that their countries are friendly Asian neighbors; often the politicians are keen to emphasize the growth in trade from US $270 million in 1990 to over US $60 billion in 2010 (The Economist 2010a). When public politics and media propaganda are left aside, the two giants are old rivals, emerging economies in competition, bad neighbours, nuclear powers and thirsty crude oil importers. What is more, they possess two of the largest armies on Earth with a combined total of four million troops.

The two Asian giants have not entered into open conflict since 1962. The Sino-Indian War was ignited by unsolved border issues as an aftermath of British colonial heritage, and involved disagreement concerning demarcation lines in the Himalayas (Gupta 2008: 29-30). The dispute has still not been solved. This has had an effect on India's water security, as several big rivers in north India, including the Brahmaputra, on which millions depend, have their springs in Tibet (The Economist 2010a). Beijing recently announced plans to construct a hydropower plant on the same river, which was interpreted as a direct provocation by the Indian government. In addition, Indian policy makers are concerned with China's 'grab' for natural resources in Myanmar and in Africa. The African continent has special significance for Indian foreign policy not only due to the fact that a large Indian diaspora resides on the continent, but also on account of strong bilateral relations with many African states through the Non-Aligned Movement.

Conversely, American-Indian friendship, especially cooperation in the nuclear sphere, is carefully monitored by China. As India feels encircled by the 'String of Pearls' – a term that refers to the network of Chinese infrastructure projects either existing or planned in the Indian Ocean – China does not feel comfortable with the American military campaign in nearby Afghanistan supported from U.S. military bases in Central Asia. Indian friendship with the West extends to Japan as well. Recently, Japanese businessmen announced that they planned to invest US $10 billion in an economic zone situated between New Delhi and Mumbai. Furthermore, the Indian and Japanese navies also engage in cooperation. In 2007, the Bay of Bengal witnessed a spectacular naval exercise in which Japanese warships trained with units of the Indian, Australian and Singaporean navies and two U.S. aircraft carrier groups (The Economist 2010a). Also, Indian and Western navies have paid friendly visits to the Omani port of Muscat and the Vietnamese port of Nha Trang.

Common Indian-Western military operations make Beijing feel uneasy not only because they surround China geographically, but likewise because they are carried out along the maritime lanes of the Indian Ocean, the Pacific Ocean and pipeline corridors of Central Asia.

India is sceptically and carefully observing its Chinese neighbour. India has not forgotten about the humiliation it suffered when Chairman Mao's forces rapidly defeated Nehru's army in 1962. "India sees China as working to undermine it at every level: by preempting it in securing supplies of the energy both must import; through manoeuvres to block a permanent seat for India on the United Nations Security Council; and, above all, through friendships with its smaller South Asian neighbours, notably Pakistan" (The Economist 2010c). The Indian Armed Forces had their fears revived in March 2012, when they found out that the PRC was considering building a military refuelling port on the Seychelles, adding one more pearl to its string. Strategic unease caused by the 'String of Pearls' is pushing India into a strategic alliance with the U.S.: Americans and Indians already signed a civil nuclear cooperation agreement in 2009 and have begun further military cooperation.

India has installed listening stations on Madagascar, the Seychelles and Mauritius. Besides four naval ports (Mumbai, Karwar, Kochi and Visakhapatnam) on the coast of the subcontinent, there is one more port (Port Blair) located close to the coast of Myanmar on the Andaman Islands, which harbors the only joint forces command in the Indian military structure and supervises entry into the Malacca Strait.

When China began working on Gwadar port, India developed a naval base in Karwar on its south-western coastline. In 2002, India helped Iran develop the port of Chabahar, just across the border from Gwadar. India intends to use this port in order to achieve more reliable access to Afghanistan, Central Asia, and be closer to the Strait of Hormuz. "India, Iran and Afghanistan have signed an agreement to give Indian goods, heading for Central Asia and Afghanistan, preferential treatment and tariff reductions at Chabahar" (Jaffrelot 2011). Behind the important economic façade that glorifies the importance of this project lays a stark strategic statement: India will not stand by while China extends its operations in the Indian Ocean.

Nevertheless, as Chinese projects in Gwadar suffer from many problems, so do Indian endeavors in Iran. Chabahar is located in Iranian Balochistan, where local Sunni insurgent troops have launched numerous attacks against government troops. Secondly, construction work has been behind schedule due to lack of necessary financial means.

Additional Indian projects include the active development of a medium multi-role combat aircraft program. In addition, the Indian government is cooperating with Moscow to develop the *BrahMos* stealth supersonic cruise missile that can be launched from submarines, ships, aircraft or land. This arsenal will extensively increase the strike capabilities of India's armed forces. India currently operates one aircraft carrier. Alongside the *INS Vikramaditya*, the country plans to acquire two more carriers in the near future. India has also acquired a *Boeing P-8I* maritime patrol and anti-submarine warfare aircraft. In order to decrease the gap in its nuclear submarine fleet, India leased out its first nuclear-

powered submarine, the *INS Chakra*, a Russian *Akula II* class attack submarine (ITAR-TASS 2011).

Indian military planning has been influenced by the continuous deterioration of the security situation in Pakistan and the rising power of China, with the second aspect definitely having a stronger geopolitical echo. While China is building deep-sea ports in the Indian Ocean, India is operating close to Chinese national waters. "The potential for friction between New Delhi and Beijing is shown by recent developments in the South China Sea, where India's Oil and Natural Gas Corporation, working with Vietnam, is carrying out exploratory drilling" (The Military Balance 2012/112: 216).

10.2 United States

The U.S. currently considers China to be its biggest rival. The Chinese government criticizes America for its development of military bases in Central Asia and for strengthening nuclear cooperation with India as well as for its strive for military superiority with missile defence. Nevertheless, China has an ambivalent position when it comes to the American engagement in Afghanistan. Strategists in Beijing are afraid that a rise of the Taliban following an American retreat from Afghanistan would have negative externalities in strengthening radical Uyghurs in Xinjiang. Moreover, Washington has repeatedly warned Chinese authorities against copying American intellectual property, for violating human rights and for breaking the rules of international trade. Energy is not the main focus of their tensions, but it is the one with a strong geopolitical component.

As the world's fossil fuel reserves diminish, there is much concern over a possible Sino-American collision scenario. Many security concerns have been raised in Washington regarding access to global petroleum reserves (Kemp 2010: 17f). The PRC's Middle Eastern and African petroleum incursions have incited fears among American political, military and business elites. Recently, the expansion of Chinese petroleum investments in production rights, exploration rights, and pipeline construction in a large number of countries has been understood from the American perspective as an attempt by Beijing to hijack energy resources. In 2005, the Chinese National Offshore Oil Corporation almost bought the American petroleum producer Unocal before the U.S. Congress blocked the deal (The Economist 2005). The company was eventually sold for a lower price to Chevron in order to prevent a potential rebid.

The core idea behind the American petroleum security strategy is centred on two principles (Duffield 2008: 214): The first is to reduce American dependence on foreign crude oil reserves. The second includes undercutting rival states from dominating the oil market and using petroleum as a strategic weapon against the U.S. (Moran/Russel 2008: 62-64). In the last couple of years, the U.S. has diversified petroleum imports by relying on African supply. Also, the government has invested a lot in developing alternative sources of energy. Nonetheless, Americans are still far away from completing a robust strategy; the vulnerability of deliberate disruption of supply and the petroleum hunt of emerging peer competitors are key challenges for national energy security.

Nevertheless, IEA's "World Energy Outlook 2012," predicts that the U.S. may become energy exporter in the near future. Organization's Executive Director Maria van der Hoeven stated: "North America is at the forefront of a sweeping transformation in oil and gas production that will affect all regions of the world, yet the potential also exists for a similarly transformative shift in global energy efficiency" (International Energy Agency 2012e). According to this scenario, due to success in mastering shale gas exploitation America will become a net natural gas exporter. As a result domestic crude oil consumption will decrease. But if this potential future trend can prevent Washington to discard any geopolitical interest in a secure crude oil supply for its partners and the global economy remains to be seen. Locations such as the Persian Gulf and South China Sea remain of high strategic importance for both U.S. and the PRC.

Washington has been particularly critical of China's relations with states such as Myanmar, Sudan, and Iran, all of them being oil-rich countries which have been in international disrepute and/or a hostile relationship with the West. Beijing justifies its relations with these regimes as a pursuit of the principle of non-interference in others' internal affairs (Wu 2008: 267f). The United States has also repeatedly criticized the mercantilist aspects of China's energy strategy. Beijing's political leaders see energy security in terms of establishing national control over energy resources and transportation routes. Chinese authorities brush such criticism aside and describe their energy strategy as neutral. They emphasize that it is not their fault if Western enterprises and governments are either unwilling or unable to invest in particular countries due to political reasons.

On the other hand, China criticizes the West for its 'neo-colonial' *modus operandi*. Beijing believes that U.S. policies are crafted with the intention of hindering China's development and retaining American hegemony (Zhu 2010: 222). The Chinese government is especially sensitive on this issue due to the historical events that shaped Sino-Western Affairs. During the Opium Wars (1839-1842 and 1856-1860), British, French, American and Russian forces worked together in occupying important Chinese ports and imposing discriminatory trade conditions. Today, Chinese remember that period as the 'century of humiliation'.

The U.S. is working on counterbalancing Chinese trade and energy-driven naval expansion. In the last two decades, American fears of Chinese expansion – the 'String of Pearl's being a primary example – have caused Washington to increase its military footprint in Asia. China's development of aircraft carriers, anti-ship missiles and cyber warfare capabilities are increasing the challenges to the U.S. Presumably, Washington is afraid that without retaining its military presence in the region, taking advantage of new partnerships, and technologies, Chinese power might seriously endanger its regional position and threaten the security of its regional allies (Japan, South Korea and Taiwan).

A significant step was taken in November 2011, when President Obama and Australian Prime Minister Gillard announced U.S. plans "to deploy 2,500 Marines in Australia to shore up alliances in Asia", a move that "prompted a sharp response from Beijing, which accused Mr. Obama of escalating military tensions in the region" (Calmes 2011). Several hundred troops came to Australia in April 2012, but the base will not be fully operational until 2017. Conversely, in April 2012, the U.S. agreed to redeploy 9,000 Marines from

Okinawa to Australia, Hawaii and Guam; all sites are located no great distance from China (U.S. Department of State 2012a).

The U.S. is vigorously working on further upgrading its military arsenal. Currently, it is the only country in the world that has started active production of the fifth generation jet fighter, the *F-35 Lightning II*. The *X-51* hypersonic cruise missile is another powerful weapon in development; this unmanned scramjet's main purpose is to travel at hypersonic speed (600 miles in ten minutes) and destroy targets by kinetic energy with high accuracy (Shachtman 2006). It is crucial to note that at present, the *X-51* is still under development; the last test in August 2012 failed and, for the moment, there are no plans to include a conventional or nuclear warhead.

10.3 Japan

Post-2000 Sino-Japanese relations could be best described with the phrase 'hot economics and cool politics'. China's rise has posed new challenges to its eastern neighbour. Japan has become quite wary about the PRC's military modernization, rapid economic growth, environmental impact and tremendous petroleum hunger (Rose 2010/22: 149). Rising Chinese demand for oil has a direct impact on Japanese energy security.

Most Japanese oil comes from the Middle East, a region where the Chinese presence has significantly increased in the last decade. The potential threat from China was identified in the 2007 Japanese Defence Yearbook, highlighting that the fast development of China "could have a destabilizing effect on global energy markets and is a risk to [Japan's] energy security" (Rose 2010/22: 162). Still, Japan is aware that the ultimate priority in Chinese military modernization is not orientated towards confrontation with Japan or energy security, but towards the issue of Taiwan's national sovereignty. "For the time being, [the PRC] will probably aim to improve its military capabilities to prevent Taiwan's independence and its military modernization" (Ministry of Defense, Japan 2012).

Japan is highly developed, densely populated and suffers from a lack of natural resources; a stable supply of crude oil is essential. Japanese petroleum import dependence is almost 100%, and 90% of the imported crude oil comes across the Indian Ocean from the Middle East (U.S. Energy Information Administration 2012b). The shortage of energy supply is a chronic problem for Japan; the country's export-orientated economy is extremely vulnerable to any supply disruptions.

As such, there are two main goals in the national energy security policy: enhancing the security and diversity of energy transportation routes and working closely with the IEA (Aso 2007). Rising demand for petroleum in China competes with high Japanese energy need. Both countries depend on the security of the same sea lanes for their energy imports from the Gulf. In order to protect its petroleum shipping routes, Japan primarily depends on the U.S. but is parallelly slowly modernizing and expanding its own navy. Since the end of the Second World War, Japanese leadership has developed strategies that avoid confrontation with China. They include fostering cooperation with Asian countries on developing an effective regional energy dialogue, cooperation in energy efficiency pro-

grams and improving communication on energy within international bodies (Rose 2010/22: 162).

However, fear of China is even more acute in Japan than in the U.S. or the EU. The main reasons are historical legacy and geographical proximity. The Land of the Rising Sun felt pressure from Chinese economic and military growth years before they were discussed in Washington and Brussels. China is Japan's neighbour; Beijing's rise may pose symbolic and existential threats for Japan. A stronger China will demand more energy and could possibly develop military capacities for control of vital Japanese sea lanes. At present, the situation is being exacerbated by the fact that the Japanese economy has been in a state of stagnation since the 1990s and the country is dependent on U.S. Armed Forces for its defence.

From 1945 until today, the military capacities of Japan have developed in a limited manner under the auspices of the Americans; the armed forces of Japan are organized according to self-defence principles. The capabilities of Japan's forces remain mainly defensive. The post-1945 Japanese constitution prohibits national armed forces from possessing military hardware such as aircraft carriers, long-range surface-to-surface missiles, ballistic missiles, strategic bombers, marines, amphibious units, and large shared reserves of ammunition.

The Senkaku Islands dispute with Beijing is an event that has raised fears in Tokyo even higher (Auslin 2012). Japanese defense planners now openly propose strengthening the protection of south-western maritime borders. But upon closer examination, the Senkaku Islands represent a minor part in the overall increase in Japanese defence spending.

11. Nightmare Scenario

For the sake of understanding the true value of the multilateral energy cooperation initiative, it is crucial to predict or try to imagine what a potential American-Chinese conflict would look like. Energy competition in the Middle East, followed by the expansion of the 'String of Pearls' and an increase of American military in the region (Asia-Pacific), could be the basis for accumulating aggressive tendencies in both camps. A small military incident could spark a larger conflict, as in most wars. China could unilaterally occupy territory in the Paracel Islands to secure both local resources and sea lane control, provoking Vietnamese counteraction combined with efforts by nationalists. However, previous tensions regarding Paracel Islands resulted in peaceful naval enounters and short-lived public demonstrations only.

Growing nationalism and strategic interests on both sides could weaken rational thinking. If an armed conflict arises, the U.S. would try to prevent China from achieving hegemony in the South Chinese Sea.

In such a crisis, the U.S. might strengthen its naval presence as in the 1996 Taiwan crisis. There would be the inherent risk that escalation might occur by accident or imprudent moves of local commanders. A similar confrontative scenario could emerge from

significant unrest in the Persian Gulf – say, a new revolution in Iran or even in Saudi Arabia. With further developed naval capabilities, China might seek a stronger presence in the area to protect its regional interests while the U.S. would do the same. Again, the risk of unwanted escalation would rise significantly.

12. A Military Solution is not an Answer to China's Energy Security

There is no doubt that China is the pivotal nation-state in East Asia, influencing political and economic developments beyond its borders. It is also obvious that its military, including naval, power is growing, absolutely and in relative terms, while the U.S. position of unchallenged supremacy is slowly on the decline.

Despite these developments, the bottom line is that, currently and in the foreseeable future, China would stand no chance against the coalition it would face in case of a militarization of an energy crisis, be it in the Persian Gulf, the Malacca Strait, or the South Chinese Sea. The more aggressive the policies that China pursues in the neighborhood and on the high seas, the more it would provoke the formation of a (informal or formal) counter-alliance. This would include countries that generally prefer to keep a balanced and neutral position but who might chose protection as the lesser evil if China appeared all too threatening in the future. To stand up to such a counter-alliance, Chinese resources would not suffice, even under very generous assumptions.

China maintains naval forces that comprise of the following units: 1 semi operational aircraft carrier, 13 cruisers/destroyers, 65 frigates, 5 nuclear-powered submarines, 3 ballistic-missile nuclear-powered submarines, and 1 principal amphibious ship (The Military Balance 2012/112: 34). In contrast, the U.S. navy alone includes the following main naval combatants: 11 aircraft carriers, 83 cruisers/destroyers, 28 frigates, 57 nuclear-powered submarines, 14 ballistic-missile nuclear-powered submarines, and 29 principal amphibious ships (The Military Balance 2012/112: 34).

The U.S. remains dominant in terms of active naval personnel and aircraft units. When compared to the American forces, their Chinese counterparts have less experience in open seas operations. Adding naval units from Japan, India, South Korea and Taiwan tremendously widens the gap. This alliance would seriously offset any capacities that Chinese currently have and are planning to obtain in the short and medium-term future. And this does not account for the possibility that other NATO members, notably Britain, might support the US.

Furthermore, Australia, with a middle-sized, highly experienced and capable navy, would also have to be counted in. In a conflict concerning the South Chinese Sea, the armed forces of major Association of Southeast Asian Nations countries would also most likely be involved, protecting their national security. The Chinese navy would have to operate more than 1000 miles from its own shores in waters surrounded by hostile nations whose ports, airports and military facilities would probably be available to Allied forces. Also, China would have a problem in finding regional allies apart from Pakistan,

which does not have strong naval forces. The rusty North Korean navy operates mainly within the 50 kilometers exclusion zone. China maybe able to protect its commercial vessels against pirates or a single hostile state, but it cannot effectively control the respective straits or extended areas on the high sea. Hence, this represents a powerful reason why China may consider cooperation as inevitable for the security of supply.

13. Incentives for Energy Cooperation

The risk of the conflict cannot be ignored; however, it should also not be exaggerated. The 'String of Pearls' demonstrates China's growth and desire to protect maritime routes, on which 80% of Chinese crude oil is transported. China knows that dominance of the Malacca Strait would be practically impossible. For the moment, Beijing wants to increase its presence in the vicinity of the strait in order to increase capabilities for potential rapid response.

The most important fact, however, is the impossibility for China to gain superiority over the overwhelming maritime coalition it would face in a serious crisis. This should induce additional prudence among an already fairly prudent leadership and lead the Chinese government to look for cooperative alternatives. Fortunately, incentives for cooperation are also found on the other side.

Despite all tensions, both China and the West are oil importers. As such, they could work together in fostering common strategies, which, in turn, could produce benefits for both as supply or price crises would be detrimental to all. All importing countries must deal with individual producers or cartel organizations such as the Organization of Petroleum Exporting Countries (OPEC) that determine international fossil fuels prices. By working together, China and the West could wage more influence over the international oil market.

Latest IEA report emphasized the idea that in the next decade the U.S. "is projected to become the largest global oil producer (overtaking Saudi Arabia until the mid-2020s) and starts to see the impact of new fuel-efficiency measures in transport" (International Energy Agency 2012f). Reduced American crude oil import dependency might ease the relations between Washington and Beijing, since increase in Chinese oil demand would be seen in less competitive and conflicting terms.

As the two largest economies and energy consumers in the world, the U.S. and China could work on coordinating and cooperating in their energy needs. "There is also a considerable logic to China's favouring cooperation with other large oil-importing states, such as the U.S., Japan and the EU, rather than with oil-producing states, such as Russia, Iran or Venezuela, which tend to promote a revisionist anti-Western foreign policy" (Dannreuther 2011/87: 1350). The Chinese economic strategy is based on further integration into a global economy.

Though energy security is of utmost importance, there are additional factors at stake. The U.S. and the PRC are economically interdependent. In 2011, mutual foreign trade

between the two powers amounted to almost US $504 billion (La Monica 2012). President Barack Obama and Premier Xi Jinping know all to well that deterioration in bilateral relations on account of crude oil would not be a productive option. China holds US $1.1 trillion of the American debt, which, combined with the other bilateral trade connections, should clearly set economic considerations before the military reasoning (Harper 2011). The American economy needs to borrow money from China to retain the current level of domestic consumption. On the other hand, the bloodline of the PRC's economy, which relies on exports, is the demand of American and European markets; the EU is the second largest export market for the PRC (European Commission 2012a). This interdependent relationship is fuelled by petroleum. In an energy conflict, China would lose its biggest export market and the U.S. would be left without a crucial external creditor. Any kind of conflict-related disturbance would hurt both economies at the same time, since both require crude oil to maintain their economic well-being.

China's dependence on the American domestic market for its current trade surplus means that Beijing will not provoke Washington into imposing protectionist measures as a consequence of political pressures within the U.S. Deterioration in trade relations could ultimately pose an even greater threat to China's national interests than energy security concerns. The success of the PRC's rise to a twenty-first century great power lies more in its economic than military might; it is critical that it is perceived as being a friendly trading partner rather than a military menace.

The two governments started cooperation in the energy security sphere in 2004 in the form of the United States-China Energy Policy Dialogue. Furthermore, in 2008, the two countries launched the Energy and Environment Cooperation Framework with the goal of exchanging information and best practices between the two countries (U.S. Department of State 2012b). Following the American example, the EU has entered into an energy-related bilateral initiative with the Chinese as well. Energy-related issues, such as petroleum supply security, have been discussed in this context. The European Commission has been conducting an annual energy dialogue with the National Energy Administration of China since 2005; the dialogue is designed to strengthen constructive areas of cooperation (European Commission 2012b).

Relations between China and the West are characterized by both anxieties and willingness for cooperation. Traditionally, relations have fluctuated between hopes and fears. Surely, the rise of China is a direct challenge to the West's hegemony. However, Beijing has, until now, shown little aggressive behaviour; the Chinese have been more interested in economic cooperation than in flexing military muscle.

The West sees an opportunity to integrate China into the world community. A powerful China is enthusiastic about the idea of being integrated into multilateral organizations which were originally Western-designed, but it will join only if Chinese power, values and interests are taken into consideration. The Western and Chinese economies are interlinked, and energy security of both entities is at the heart of their economic growth. A safer future lies in forming a consensus on mutual interests. Potential high-risk developments should be prevented. The best solution would be to act together in the framework of existing multilateral institutions.

14. Potential Chinese Membership in the IEA

14.1 Advantages Outweigh Disadvantages

When all is considered, it is clear that the best option is to make the Paris-based IEA the institutional site of energy cooperation between the West and China. Why is this the best alternative? First of all, though the Group of Twenty Finance Ministers and Central Bank Governors (G20) seems like a logical candidate, five of its members (Indonesia, Mexico, Saudi Arabia, Russia and Brazil) are major fossil fuel producing countries. They would block any consumer-driven initiatives in order to protect their domestic producer-driven interests. Second, the UN lacks competence in the energy field. Third, the International Atomic Energy Agency (IAEA) – an international organization of great security importance – seeks to promote the peaceful use of nuclear energy, but adding the oil component would significantly alter its nature and purpose. Fourth, organizations such as the World Bank and International Monetary Fund could hypothetically be included in the equation, but the restructuring necessary to emphasize an energy security component would demand gargantuan international effort and completely change the thrust of the organizations' mission.

India and China have established a partnership dialogue with the IEA, the aim to promote co-operation and dialogue in all aspects of energy policy and technology. "IEA cooperation with China and India would help in a number of ways, such as exchanges of information and expertise, improving transparency, identifying barriers to technology transfer, research and development, and wider policy cooperation on oil stock management" (Jia 2008). Certainly having China and India as members would improve overall international energy security. The end result would stabilize the world energy market and oil prices through coordinated actions in adjusting oil stocks and exchanging key information and technologies.

Chinese officials have shown serious interest in building a relationship with the IEA. In 2009, they issued a joint statement in which they identified key priorities regarding petroleum supply and demand security (International Energy Agency 2009). Non-OECD states account for more than half of international energy consumption. India and China are going to become the major consumers by 2030. Petroleum demand by OECD member states is declining, while China and the rest of Asia are rapidly increasing their consumption. On account of surging Chinese crude oil demand, the country requires not just sufficient reserves, but a safe market as well. The IEA monitors the market and influences current and future oil prices as well as dealing with emergency oil supply reserves. By joining the IEA as a member, China would become more transparent and share critical oil market data, which is currently only partially published. In return, China would gain by taking part in the energy security dialogue and energy technologies development.

Thus, the main option should be to integrate China into the IEA. Established in the aftermath of the 1973 Oil Shock, the IEA coordinates energy policies among its member states with the aim of mitigating the effects of energy supply disruptions. The organization has twenty-eight members, which hold emergency oil reserves equivalent to at least 90 days of net oil imports of the previous year (International Energy Agency 2012c). The

IEA was initially made to manage disruptions of crude oil supply for the OECD countries. Additionally, it has been used as an information source on statistics about the international petroleum market and as a monitoring center for other energy sectors. The organization has played a policy-advising role to its member states and developed a cooperative dialogue with important international players such as China, India and Russia. The core of all its operations concerns energy security, economic development, and environmental protection. Lastly, the IEA is actively working on campaigns that promote rational energy policies, development of renewable energy sources, and international energy technology cooperation.

The IEA could serve as an ideal venue for the U.S., the EU, India, Japan and China to coordinate approaches to energy issues and address worries about growing global competition for crude oil. Integrating China into the IEA would have positive implications: technology transfer in crude oil exploration, extraction and production technologies could benefit Chinese environmental and energy efficiency, while energy use and participation in the joint oil emergency system might defuse the risk of a competitive contest during a supply crisis.

Integration of China into the IEA would necessitate a modification of the 1974 Agreement on the International Energy Program. During the Senate Foreign Relations Committee hearing, Secretary Clinton implied that the American government would support such a move (The New York Times 2009).

Although there have been initiatives to integrate China into the IEA, it cannot legally join at present as the country is not an OECD member state. OECD is an organization that represents a forum of countries committed to democracy and the market economy, especially concerned with economic, environmental, educational and scientific issues. Its member states compare policy experience, seek answers to common problems, identify good practices, and co-ordinate domestic and international policies of its members (Jing 2008).

China would most likely not easily surrender a certain degree of its national sovereignty to an organization that necessitates democratic pluralism and human rights. Nevertheless, some bargain could be struck. If China were ever to decide to become part of the IEA, the OECD membership requirement in the organization founding charter could be dropped. In this manner, the West would show its willingness to accommodate Chinese needs and could use this concession as a bargaining chip.

In the case of a major oil supply shock, being outside the IEA could potentially benefit China as free rider, should IEA member states be boycotted by petroleum exporting states. Under this condition, IEA member states would reduce oil imports and use their strategic reserves to satisfy their needs and inject extra crude quantities into the global oil market. China could benefit from a situation in which more oil was available on the international market. However, the situation could be quite different if China alone were victim of an oil boycott; with the growing global influence of China, this could potentially happen. Finally, prospective membership would require China to bear some financial costs. Those costs would include rapid development of infrastructure: IEA members are

required to hold 90 days supply reserves of net petroleum imports, which both China and its regional rival India do not have at the moment.

Potential Chinese membership in the IEA would also bring additional benefits. IEA membership would grant the PRC access to the energy technologies exchange program. Chinese international oil companies could gain advantages from stronger partnership with Western international oil companies. This option remains off the table at the moment due to lack of cooperation. Lastly, active participation in this multilateral body would help "reduce geopolitical risk for China's effort to acquire energy supplies, energy technologies and energy investment opportunities abroad" (Kong 2011/2: 56).

Operating outside the IEA leaves China isolated from the world's most important oil consumer alliance, limiting China's say in the international energy dialogue. As the largest future global petroleum consumer, Chinese membership in the IEA could be realized under three conditions: OECD membership or a waiver on the membership clause, the equivalent of 90 days of net oil imports and the liberalization of the internal petroleum market.

Besides its main function of preventing and managing energy supply emergencies, the IEA has another extremely valuable operating mechanism. The organization is able to lend expertise to the development of policy and to share information among member states (International Energy Agency 2012d). This function focuses on the development of human capital and expertise within the member states, improving preparation in dealing with issues concerning energy security. Many member states have used this potential to develop and implement various national policies that improved energy efficiency.

China could definitely benefit from this option, as there is much room for improvement in domestic energy policy. Moreover, the IEA provides annual reviews of national policies for its member states; within this process, IEA member state policy makers share their experiences and define best practices. After such meetings, they inform their national governments, aiming to employ those experiences in domestic energy security strategies. This procedure could assist Chinese policy makers in achieving higher energy policy standards.

The organization makes an effort to foster dialogue with petro states and other large energy consumers (the status that IEA retains with China at the moment). One of the initiatives that resulted from such cooperation is the Joint Oil Data Initiative. The main goal of this organization is to "assess the oil data situation in their respective member countries in order to better qualify and quantify the perceived lack of transparency" (Joint Oil Data Initiative 2012). The IEA succeeded in obtaining the cooperation of, among others, OPEC and the UN for establishing a system that will improve information sharing and strengthen producer-consumer ties. One of the main topics discussed in the meetings is the future state of energy demand, definitely a topic of a great importance for the government in Beijing.

14.2 A Step-by-step Approach

Working on a slow transformation of the current Sino-Western energy partnership dialog with potential future integration of China into the IEA would be wise. The level of sys-

tematic coordination could be improved by increasing the intensity of dialogue between China and the West. Intensifying cooperation would increase the level of trust. The agency's Co-ordinated Emergency Response Measures (CERM) secures "a rapid and flexible system of response to actual or imminent oil supply disruptions" (Internationally Energy Agency 2012b). To be more exact, the organization conducts two different sorts of Emergency Response Exercise (Exercise in Capitals and Disruption Simulation Exercise) every two years. These exercises are designed to help member states practice, test, and review emergency response policies and procedures to make them suitable for real-world crises.

China could be encouraged to actively participate in this effort. In the past, there were some attempts to include Chinese participation, but due to reasons that remained publicly unknown they were not realized. The two camps must find a solution for including China into CERM. In the long run, Chinese participation in the CERM platform could improve monitoring, data gathering and communication between the parties. In the case of a serious disruption, both camps could much more easily coordinate reactions. The only problem of the less formalized relationship is the extent of IEA authority over China. Non-membership does not allow the IEA to have a direct influence on China as it does on its member states, and vice versa. But even without a common legal mechanism binding these two sides, they could try developing some procedures for rapid consultation and coordination.

In sum, there are two main advantages for integrating China into the IEA. The first is engaging China into the CERM. Having a country as large and important as China participating in the CERM would lower the chances of petro states blackmailing consumers and would encourage the West and China to cooperate rather than fiercely compete if there were a disruption of supply. The second advantage would be the development of long-term energy policy cooperation with a focus on mutual development of projects that promote energy saving technologies.

The IEA and China should work with developers and the business community in these ventures in order to accelerate the deployment and commercialization of new energy saving and renewable energy technologies.

15. Obstacles and Stumbling Blocks for Potential IEA Membership

15.1 Sovereignty Sacrifice

Promoting a stronger strategic partnership with the West would have tradeoffs for China. First, satisfying the IEA's conditions regarding storage and energy efficiency could be a burden for Chinese economic development as the country is not yet developed enough to fully comply with OECD standards. The secretariat does provide potential member states with the Accession Roadmap document, outlining a process that stipulates the steps that the candidate country must take and indicates the amount of resources required to cover the costs of the procedure. China would not have tremendous problems meeting the financial aspect. However, it does not yet satisfy all the benchmarks and standards at this point.

The bigger problem for the Chinese political elites would be that fact that becoming a member would include a partial loss of national freedom of action. Becoming a member of the IEA would cost China the benefits it has gained through bilateral petroleum import deals with the OPEC's member states (McPherson/Wood/Robinson 2004: 205f). Membership requires intelligence sharing, market liberalization and surrender of a certain degree of national sovereignty. China has opened up extensively since the death of Chairman Mao, but the Communist Party is still reluctant when it comes to political cooperation.

Another problem is contained in the structure of the domestic energy market in China, i.e. the tight control that the government exerts over oil companies. Many foreign companies have been permitted access to the Chinese market; however, their participation has remained restricted. They have only been allowed in the fields for which foreign technologies and skills are absolutely necessary (Andrews-Speed 292). Foreign investment in China's downstream sector has been restricted and subject to various legal constraints. With potential IEA membership, the domestic Chinese petroleum distribution and production sector would be required to undergo substantial transformation. At this point, Beijing is not ready to renounce control of the state-controlled pricing system for oil products. However, the Chinese state would have an opportunity to retain some degree of control over its energy economy. IEA member states, such as U.S. and France, have done so in the past. The U.S. was able to keep gas prices under its own control for years and the French government has been playing a crucial role in the development and monitoring of domestic energy sector.

Potential membership would increase the pressure on China to take on more responsibilities. Presently, the greatest major limitation to potential Sino-Western multilateral energy cooperation is the readiness of the Chinese government and national oil corporations to pursue relations with the countries which are stigmatized by the West: Venezuela, Iran and Sudan being the best examples. However, IEA membership does not preclude such relations.

Beijing considers itself to be so called 'late entrant' into the international energy markets, which were historically controlled and exploited by the Western-based international oil companies. The comparative advantage of Chinese national oil companies lies in states where access to energy resources incurs significant political or economic risk (Falola/Genova 2005: 85). Nonetheless, strengthening cooperation with the West would not please leaders of the states that have tense diplomatic relations with the West. However, their relations with China would, for all intents and purposes, not be endangered either. Profits generated by the huge Chinese markets would overshadow other risks.

15.2 Present Organizational Structure of the IEA

The problem of integrating the PRC lies within the IEA organization itself. The structure of global crude oil markets has evolved since the time when the organization was formed. In 1974, the major oil net import nations were OECD member states. Today, they are being challenged by India and China. The size and shape of new emerging economies

may make the IEA's mission more difficult under present circumstances. If a potential supply shock occurred, the IEA would have much more limited capacity to coordinate collective action than it did three decades ago as long as the new big consumers are not sitting at the table. Should a supply shortfall prove very serious, the organization would have to decide how much of the member states' strategic reserves should be brought on the market. This authority made the IEA more powerful in the past when the Western states had a larger share in the global economy and energy consumption. Taking China (and consequently India) in as members would help.

Effectiveness of the IEA depends on the willingness of its members to act and coordinate. Since an equal distribution and mitigation of an oil shortfall would serve as a common good, such willingness might be available. If a committed China (and India) worked with the U.S., the EU, and Japan, the IEA could endure challenges of a global scale.

Former U.S. Secretary of State Hilary Clinton stated that the IEA could benefit from potential Indian and/or Chinese membership (Alexandroff/Cooper 2010: 260). But India and China will not enter the organization as second tier members; they wish to have more influence in the decision-making processes. Routine decision-making in the IEA follows the consensus rule. In crises, on the other hand, the decision-making mechanism works on an outdated voting system; each member state is given three votes plus a number of votes based on their 1973 net oil imports (International Energy Agency 2012a). Energy consumption patterns have, however, changed over time.

There have been initiatives put forth to update the voting system, but some member states that were in a dominant position in mid 1970s – and are not in a similar position today –opposed them. Since powerful states benefit from the system in place, the initiative of updating the voting structure has never gained serious momentum. The voting system issue is one of the facts that create reservations against Chinese accession among present IEA member states: if the PRC (and India) became members, the voting structure would experience radical transformation. Post-Cold War members (mainly Eastern European states) have not insisted on serious Governing Board restructuring, but the same cannot be expected in the case of potential Indian or Chinese membership. Countries of that rank would surely insist on thorough restructuring, which would significantly dilute the role of many existing members. But this adaptation is the price for a more inclusive and thus more reliable system of promoting energy security for all.

Building a stronger, fairer and impartial multilateral energy organization would provide all actors with necessary energy security guarantees. Expanding and potentially reforming the IEA is necessary for developing a legitimate political energy security order in which members willingly participate and agree with the overall orientation of the system. A stronger international energy security framework would reduce the enforcement cost of maintaining the order on account of its institutionalization, and it might lock actors in favorable arrangements that persist beyond their power zenith. The choice exists between using power capabilities for immediate gains and investing in institutions that extend expected benefits into the future: Rules and institutions are simply more productive than conflict (Keohane 2005: 246).

16. Conclusions and Recommendations

Globally, there are worries that the rise of China (and India) will disturb existing energy relationships and regimes. Cooperation in the global political economy is very difficult to organize, but non-hegemonic cooperation is possible and can be facilitated by international regimes (Keohane 2005: 83f). The most transparent solution in dealing with future rising petroleum demand in China (and India) and the security of supply in the West would be through a multilateral organization such as the IEA. A multilateral body of this kind could encourage intergovernmental cooperation; the West and China would have the opportunity to draft joint policies and act as partners in the realization of petroleum security objectives. Multilateral cooperation through the international organization would facilitate trust; states feel more secure in this kind of environment (Ikenberry 2008: 58f).

The geopolitics of oil includes a strong military element. Armed forces can either be viewed as a mechanism for destruction or as a tool for cooperation. Military cooperation, especially the naval component, is already taking place in a limited way. In 1998, the American and Chinese governments signed the Military Maritime Consultative Agreement (marking the beginning of consultations on military maritime issues); China also has similar agreements with Vietnam, South Korea and Japan (Xinhua 2011).

The first deployment of the PRC's battle-ready naval unit was to the Gulf of Aden in 2008 (McDonald 2008). This fleet's top priority was to protect merchant ships, especially tankers transporting crude oil, from Sudan to mainland China. The Chinese navy used the opportunity to communicate and cooperate with warships of other countries in performing humanitarian rescue tasks. The American government welcomed the initiative as it allowed the US to exercise more control over China. Conversely, the PRC's navy used the opportunity to observe and learn from the NATO warships operating on the high seas. In September 2010, the Royal Australian Navy Frigate *HMAS Warramunga* conducted a joint live firing exercise with the Chinese navy off the Chinese cost (Royal Australian Navy 2010). Australia is not the EU, Japan, or the U.S., yet it is a very important American ally. Progress is on the horizon, and Western and Chinese militaries can, and should, cooperate.

China and the West should develop initiatives such as agreement on joint sea-lane patrol. In this way, energy transporting routes would not only be protected, but all sides could strengthen military cooperation. Patrolling could improve mutual trust as navies would be in constant contact and would need to work together on a daily basis. Finally, common naval patrolling can be understood as a mechanism that can divide labor requirements – having more participants saves resources.

When it comes to Sino-Indian bilateral relations, on the other hand, there are reasons for concern. However, neither country is ready or willing to enter into an armed conflict. At the moment, China and India are more interested in global commercial affairs than in armed deterrence. Nevertheless, as they flex their economic muscles, their developing economies will require more crude oil. In combination with unresolved border issues the Indian Ocean, rivalry could result in an armed clash. With the development of good Indian-

American relations, the US might be in a position to entice India into joint patrolling as well.

Chinese and Western attitudes towards one another are still characterized by a lack of mutual trust. On the other hand, both are facing the same problem of being net petroleum importers. Fortunately, there are some positive signals on both sides: China has an open cooperation dialogue with the IEA. The Chinese political leadership demonstrated the country's desire to present an image of a responsible rising power to the international community. Hence, we could hope that China will tend to play a more constructive role in global energy governance. The gravest stumbling blocks for progress are internal constraints in attitudes of the ruling regime, regulation of domestic oil market and strategic reserve capacities. Also, in order to take a further step ahead, Beijing requires more cooperation from the West. This includes, for example, avoidance in condemning the Chinese principle of non-interference in domestic affairs when it deals with petro states on a bilateral basis. Given the country's need to retain crude oil supply security, China will almost certainly contribute to enhancing the initiative for peaceful cooperation rather than military confrontation.

An integration of China into the IEA should happen in various phases and would involve compromises on both sides. The Chinese authorities need to become more transparent. Authorities in Beijing should allow the IEA to check the validity of information they are present with. Before any serious membership initiative, the IEA and China would need to raise their level of coordination. Coordination could be extended from the transparent exchange of data to building adequate communication and monitoring systems. The organization should invite China to participate as an observer in the emergency response exercises. These initiatives would reinforce cooperation on issues such as common response on serious supply disruptions.

The IEA is the most important energy consumer organization in the world, and China will become the biggest crude oil consumer in the next two decades. Ignoring each other would not be a smart option; on the contrary, it could have negative consequences at the global level. Potential decrease in future American crude oil demand might be a trend that will enhance mutual cooperation. In that case foreign imported oil will have less economic and political importance for the U.S. making cooperation over the same resource easier.

Hence, China could be invited to attend IEA working group sessions as an observer. Attending the working group meetings would give China an opportunity to actively participate in the IEA system, to become acquainted with its procedures and to learn the degree to which this cooperation accords with its own security interests in more detail.

Such participation could be used to discuss another promising option with Beijing: depoliticizing the oil market. Inevitably, this move would relax political influence and control over the petroleum business. The process of depolitization would go a long way in preventing the clash between China and the West. The key would be to allow cross-investment in all oil companies, to create a system of mixed ownership, and to reduce governmental interference with the companies' commercial decisions.

More radical recommendations could take a total refurbishment of the IEA into consideration and the organization could be entirely restructured. The new hybrid multilateral body could be a mix of the IEA member states, China and potentially India. The IEA was established on the lessons learned from 1973 Oil Shock; hence, the new global multilateral energy organization can be designed alongside the energy challenges humanity faces today. In the end, everything depends on the willingness of China and the IEA member states to join forces. Integration of China and India into the IEA represents a solid incentive to reform the agency with a goal of creating a multilateral body that would serve as a platform on which crude oil consumers can settle their differences. The situation as it stands today is not productive. Any future arrangement would require some sacrifices in the short-run, but these would be aimed at producing common long-term benefits.

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List of Abbreviations

APEC	Asia-Pacific Economic Cooperation
CERM	Co-ordinated Emergency Response Measures
EU	European Union
FDI	Foreign direct investment
G20	Group of Twenty Finance Ministers and Central Bank Governors
IAEA	International Atomic Energy Agency
IEA	International Energy Agency
NATO	North Atlantic Treaty Organization
OECD	Organisation for Economic Co-operation and Development
OPEC	Organization of Petroleum Exporting Countries
PLA	People's Liberation Army
PRC	People's Republic of China
U.S.	United States
UN	United Nations