# Geopolitical Dimensions of Energy in China (2005-2015)

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**ABSTRACT**

China's economic progress is dependent on energy security and sustainability. The establishment of a theoretical energy evaluation system is of theoretical and practical importance for guaranteeing the safe and sustainable development of energy security commensurate with the national development phase and reflective of the sustainable development of national energy. Sustainable energy security must not only take into account the security of energy supply–demand in the long-term and short-term, it must also focus on the coordinated development between energy and the Geopolitical Dimensions in China. This paper proposes Geopolitical Dimensions of Energy in China, based on the model, an empirical study of China's energy security is carried out with data from 2005 to 2015, and dynamic changing trends are analyzed accordingly. The results indicate that availability and develop-ability of Energy in China. China bears a hefty tax on the increase in global oil prices, since global demand is rising and reserve production capacity is falling, and it feels extremely vulnerable as a result of the continued betting on oil prices. The search for abroad energy supplies conducted by China's main energy companies as part of China's strategy has not produced as many successes as had been anticipated. Chinese companies have also acquired stakes in energy-related projects in Canada and Australia, and actions have prompted China to take a number of steps to strengthen its relations with oil-producing nations, including Russia, Canada, the Arabian Gulf, and others. China has ambitious aspirations to increase its nuclear power production, and its strategic goals are centred on increasing its nuclear power output capacity to 60 gigawatts by 2020. In order to conserve the environment and combat global warming, technological advancements in alternative energy investment are essential.

**Keywords:** Geopolitical, Dimension, Energy in China.

## Introduction

Energy geopolitics is the controllable force in a geographic scenario, similar to military geopolitics, diplomatic geopolitics, economic geopolitics, and trade routes that deliver those resources to customers. Natural resources and trade routes that bring those resources to consumers are essential in the study of geography. Early on in modern and contemporary history, energy resources were essential to international systems. While the British Empire's history in the 18th and 19th centuries served as the inspiration for the coal and steam age, China was one of the nations that relied on coal energy and its reliance on coal still accounted for a sizable portion compared to other resources. The import of oil and the export of products to countries around the world are two sides of the same coin in Chinese diplomacy, which is now moving in the Arab region, Central Asia, and Africa to provide oil sources to ensure its economic development. In contrast, political territories in

other parts of the world are undergoing rapid changes, particularly in economic aspects. To guarantee the continuous flow of energy supplies, it later extended to the US and Canadian markets. Although the Beijing government has been able to self-sustain oil for decades, economic growth pressures and the underwhelming performance of state oil enterprises forced China to purchase oil for the first time from abroad in 1993. Due to this, China is searching for new markets in order to expand and develop its industry fully while gaining access to foreign energy sources.

**Problem of Study**

Energy resources are the primary engine of the global economy, and because they are scarce in other nations, it has become difficult for the Republic of China to obtain enough of them to reduce its reliance on coal and its access to oil and gas while also utilizing its non-conventional energy sources (nuclear, solar, wind, hydroetic and thorodium) The following queries are raised by this reality and relate to the research challenge:

1. What factors contributed to the rapid growth of demand for energy sources and their limited supply?
2. What are the geopolitical and strategic consequences of this imbalance of increased demand and lack of supply?
3. How can the changing nature of international competition for energy sources affect the geopolitical map, particularly in future relations between China and other countries?

**The Hypothesis of Study**

The hypothesis is that the problem has been answered:

1. China's economic growth has contributed significantly to the imbalance between the growing demand for energy sources and their limited supply.
2. Such an imbalance would exacerbate geopolitical and strategic conflict between China, India and the United States for decreasing energy sources.
3. A giant oil market must be created through which China can fill the growing energy shortage by moving towards energy-producing countries.

**The Objective of Study**

To highlighting the significance of China's energy resources and how to secure them through the development of geopolitical ties, moving towards energy-producing nations, attention to detail, and discovery of alternative energy sources independent of fossil fuels.

**The Importance of Study**

The significance of China's energy geopolitics and its strategic position in relation to other nations and energy sources should be emphasized.

**The limits of Study**

1. China is located in the northern hemisphere, between two viewing circles (3:58 - 53:31:10) north. Between the longitude (73:22:30 - 135:2:30) eastward.
2. The time frame is limited to the period of research between 2005 and 2015.

**The Methodology of Study**

Methodology is the approach taken to achieve a goal or the means of gathering information and determining how to use it. The research requirements demanded that we rely on the descriptive analytical approach to analyse the data in order to prove the research's central hypotheses and provide answers to key questions.

**China's Economic Growth**

China's location on the eastern side of Asia is significant in terms of geopolitics due to its borders with 14 countries in Mongolia to the north, Russia to the east, North Korea, Kazakhstan, Kyrgyzstan, and Tajikistan to the northeast, Afghanistan, Pakistan, India, Nepal, Sikkim, and Bhutan to the west, Burma, Laos, and Vietnam to the south, the East China Sea to the east, and the South China Sea to the northeast. Then come Japan, the two Koreas, and the southernmost part of the South China Sea. China, with a population of 1.371 billion and an area of 9,596,960 km2, has started importing more than half of its crude oil consumption, which is expected to rise by 75 percent by 2030 due to the expansion of economic growth and industrial dominance of the international (Yu et al., 2019). It consequently qualifies as a Nation that aspires to increase its efforts to improve its geopolitical position. In spite of its troubled surroundings, it

is one of the regions where military readiness and tension are rising (Wang & Jiang, 2019).

## 1. China's oil demand forecasts

Due to its rapid economic development, China has gone from being an oil exporter to the second-largest oil consumer in the world, consuming 6.3 million barrels of oil daily (Abdullah & Al Obiedi, 2019). Since the year 2000, the Chinese market has been responsible for 40% of the rise in world oil demand. Its oil consumption is projected to reach 10–13 million in the next two decades. Despite the pressure on oil prices to rise, it comes in second among all energy producers worldwide (Mirzoev et al., 2020). Despite continuing to experience economic growth of (9.5–9.9%), China's increased energy consumption is not expected to slow down anytime soon. For example, the country's oil imports jumped sharply in 2004–2005, rising by (3.3–3.5 %). This means that China's demand for crude will rise by 12 percent per year until 2020. The International Monetary Fund (IMF) predicted an increase in crude oil consumption of 13.6 million in day, which is the largest estimate of any international agency or associated institution. As in the case of the United States of America and Japan, in order to accomplish this, we must look for energy resources and secure external energy supplies. China's dependence on foreign oil is currently close to (42%), but in less than two decades, it is anticipated to reach (60%) (Estes et al., 2018).

**Table 1:** China's Oil Demand Growth Outlook 2020 (Seaman, 2010)

| Source forecast | Version | The size of the forecast is one million barrels per day |
|---|---|---|
| U , S , Energy Information Agency | 2006 | 11.7 |
| China National Development and Reform Commission | 2006 | 12-10 |
| China National Petroleum Corporation | 2006 | 10 |
| Japan Energy Economics Institute | 2005 | 11.8 |
| International Monetary Fund | 2005 | 13.6 |
| International Energy Agency | 2005 | 11.2 |

## 2. Overseas Policy to Secure Energy Sources

High economic growth has forced major industrialized nations to look to other nations to secure their sources of oil and natural gas. Major industrialized nations and coal-dependent nations are still searching for alternative energy sources (Safari et al., 2019). China has therefore to formulate an oil reserve strategy, namely:

1. The development of its military, high-seas naval forces, is equivalent to that of the United States of America and Japan.
2. Addressing growing piracy in Southeast Asia, to protect oil tankers destined for their ports.
3. Beijing will prepare itself for a possible confrontation with the United States and Japan if it tries to clamp down on China's supply corridors (Markey, 2020).

China must reduce its energy use and work with important nations to secure the security of its oil supply in order to ease the energy problem through unconventional measures. However, the Chinese government should make use of additional energy sources known as non-conventional or renewable resources and work to promote more energy source diversification (Ma et al., 2019). The nine nuclear power reactors in China produce just 2.29 percent of all the country's electricity, which is still primarily produced from coal (compared to more than 30 percent in Japan). Despite having vast natural gas reserves, China only uses (2%) of the world's natural gas supply, which is far less than the global average of (23%). In addition, China has massive energy reserves in the form of wind, sunlight, and other renewable

energy sources (Kim, Kim & Yoo, 2022). The medium- and long-term energy development programme plan for 2005-2020, which included strategic reserves, energy conservation, diversification, security, and further exploration and environmental conservation, shows how China has been able to develop key techniques in its overall energy strategies. According to Chinese Vice-Premier Zheng Bian peiyan zeng, who stated during the 2006 General People's Congress that China is having issues, Beijing was urged to identify a number of obstacles affecting the energy sector:

1. Strong and sustainable energy demand is putting pressure on supplies.
2. Lack of resources limits energy industry growth
3. A structure that focuses on coal supply and is harmful to the environment.
4. Underdeveloped technologies that limit energy efficiency.
5. Fluctuations in the global market negatively affect domestic energy supplies.

To meet the above challenges, the Chinese leadership has set new priorities, including:

1. Highly efficient coal mining and pure burning technology.
2. Modifying the power supply structure in an effort to enhance efficiency.
3. Increase natural gas supplies.
4. Accelerate the development of new and renewable energy sources.
5. Creating oil reserves and improving the survey capacity of energy resources.

It is necessary to find solutions to these issues by looking for energy sources that will support the growth of Chinese industry, looking for energy sources beneath the seas to expand economic policy, developing international relations that contribute to closer political ties between China and energy-producing countries, and facilitating economic exchange in all trade fields that contribute to raising the national income of both countries that China engages in business with. The goal of China's 1999 "overseas" expansion policy was to obtain energy resources from Brazil and Africa to support its enormous economic growth machine (Batista Barbosa, 2021). It has also succeeded in establishing a presence in Europe. In 2010, FDI was approximately £6.1 billion, and by 2012, it had nearly tripled to be approximately £27 billion. Energy resources must be searched out in safer nations after the 2012 agreement was signed in Beijing between the Chinese Foreign Ministry and nations within or on the periphery of Europe. This was done to assure the continuance and development of economic growth (Stokes, 2020). Thus, China's interest in strategic oil corridors has risen, emphasising the fact that energy supplies are strongly related to China's future and national security. That approach was distinguished by its dependence on energy, the significant changes in policy, and its effects on the rest of the world. To develop a long-term strategy for getting such resources without getting into political or colonial conflicts with OPEC members as well as other nations like Canada and the United States of America (Zhou, He & Yang, 2020).

**Geopolitics Importance of China's Energy Sources**

Primary sources and secondary sources are the two different categories of energy sources. Traditional, non-traditional, and renewable energy sources are the three main categories. The measure of the energy source's renewability and sustainability is the criterion. Oil, natural gas, coal, and uranium are examples of readily available, irreversible conventional energy. Renewable, clean, and difficult to get non-conventional energy sources include wind, solar, water, geothermal, and biomass energy. Energy sources that are produced from primary energy sources, including electricity and hydropower, are referred to as secondary energy sources. It makes up a relatively minor portion (Paska et al.,2020).

**First: Energy Reserves, Production and Consumption**

Crude oil has been exported by a number of nations, including China. Due to increased industrial activity, it has had to travel to numerous nations in recent years to obtain energy resources. The geopolitics of energy started to alter the world's map as a result of the dominance of some nations in the energy

markets in Asia, and the United States is seeing an increase in demand for production. As a result, it has become a net importer of crude oil "When it comes to economic growth, Asia has resembled "a land zero" more. Concerns have been raised about energy consumption." According to this, the Indian and Pacific regions will account for 85% of the increase in global energy demand over the next 20 years (Li et al.,2020). If China's reliance on the Middle East grows, by 2030, 90% of India's oil imports will come from the Middle East, and China's reliance on the Middle East will be mitigated by China's growing reliance on Central Asia for energy (Pradhan, 2021). While the need for energy resources is greatest in the regions bordering the Indian and Pacific oceans. China has a variety of energy resources, however they are insufficient to meet the country's energy needs (Chi, Bai & Xu, 2022). Despite efforts to diversify energy sources, the primary energy source in China, coal, which continues to increase, is unlikely to affect the country's consumption pattern anytime soon.

**Secondly**: **Depleted Energy (Coal, Crude Oil, Natural Gas)**

**1. Reserve**

China is one of the major producers of fossil fuels, having a reserve of 762.9 billion tonnes of oil equivalents, of which 54.3% is coal, 23.9% is oil, and 21.8% is natural gas; it is primarily dependent on coal for energy use. China appears to be ranked third in the world for coal reserves in 2015, following the United States with 115,752 million tonnes of oil equivalent and the Russian Federation with 58,900 million tonnes of oil equivalent (Xue et al.,2021). The proven reserves of coal amounted to 58,900 million tons of oil equivalent as in figure (1). In addition to coal, China had 18 billion barrels of confirmed oil reserves in 2005, which decreased to 15.61 billion barrels in 2010, and oil reserves during 2005-2010 may appear to be diminishing. China has called for an increase in shale oil reserves to 25 billion barrels in 2015 in response to its high economic growth rate and industrial economic recovery, which have prompted it to take quicker steps to find alternative energy sources.

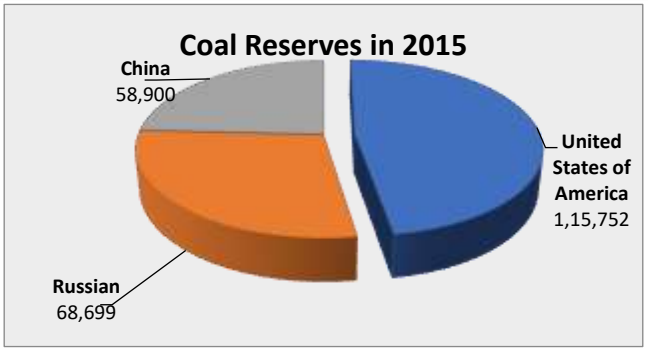


**Figure 1:** Coal reserves formed in 2015

**2. Production**

China, the United States, the European Union, and the Russian Federation play the most significant roles in fossil fuel production and energy in the world, based on production values. China is the world's largest coal producer, contributing 20,6 percent and ranking first when compared to other countries. In 2013, coal producers such as the United States and the Russian Federation accounted for 16.4 percent and 14.3 percent, respectively, of the world's production. In comparison, China's coal production accounted for 45 percent of the world's coal output, producing over 3,549 million tonnes. The world's projected 1,552,9 million tonnes of equivalent oil (Fragkos et al., 2021). In 2005, crude oil output reached 3,617.2 million barrels per day (bpd), which increased to 4,076.6 million barrels per day in 2010 due to higher oil prices. After 2008, the financial crisis or the real estate crisis, oil prices soared to more than $100 per barrel, while China's crude oil production dropped to 2.3638 million barrels per day in 2015, following a steep decline in oil prices at mid-year 2014. The decline in oil prices has contributed to a rise in oil imports by countries with rapid economic growth. China's oil production fluctuated between 2005 and 2015, as depicted in Figure 2.

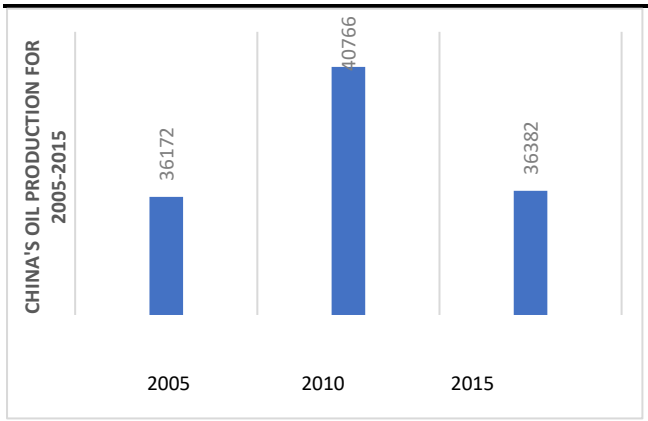


**Figure 2:** China's oil production for 2005-2015

## 3. Consuming

China is the largest energy consumer in the world. Despite the difference in population, the amount of energy consumed is nearly same to that of the United States, although energy sources vary. According to the U.S. Energy Information Administration, China's energy sources in 2012 included (70%) coal, down from (75%) in 2010. In 2012, oil consumption increased by (19%), up from 10 percent in 2010, and natural gas consumption increased from 3% to 4%. In 2010, coal usage increased by (15% to 18%), while oil consumption increased from (21% to 37%). In recent years, the United States has begun to rely on shale oil production to become an oil exporter, and natural gas output has increased from (22 % to 29%) (Solarin et al.,2020). During the period 2010-2012, the EU's reliance on crude oil ranged between (17.3 and 19%), while its reliance on natural gas ranged between (15 and 17%.) This contrasts with Russia, which relies more on natural gas than coal or crude oil, with consumption ranging between (13 and 15%) during the same period. China consumes over fifty percent of the world's coal, contributing to air pollution and harming public health. China is attempting to minimise its reliance on coal by expanding its use of either nuclear energy or natural gas (see table 2).

**Table 2:** Energy consumption in China, USA, EU and Russia from global consumption for 2010-2012

| Years | 2010 | | | 2012 | | |
|---|---|---|---|---|---|---|
| Country | Coal | Oil | Natural Gas | Coal | Oil | Natural Gas |
| China | 75 % | 10 % | 3 % | % 70 | 19 % | 4% |
| U S A | % 15 | 2% 1 | 22 % | % 18 | % 37 | 29 % |
| European Union | % 8.0 | 1% 7.3 | 15.6 % | 10 % | 19 % | 17% |
| Russian | 2.5 % | 3.% 2 | 13.2 % | % 4 | 4 % | 15% |

The United States, China, and the European Union are the largest consumers of oil and natural gas, and these resources are not sustainable due to their high production in comparison to their reserves. China's reserves to production ratio is 4,4 percent for oil and 2,1 percent for natural gas, which places it behind the European Union and the United States (Cséfalvay & Horváth, 2018). The EU's share of total oil reserves is (0.5%), while its production share is (2.6%). However, oil production in these countries is not sustainable, and Russia is the only country with high reserves, high shares, and matching natural gas, indicating that it is the most important player in the "natural gas era" (Beckman et al., 2020). Large consumers such as China and the United States are anticipated to use their coal reserves to fill the growing gap until future demand increases and supply decreases (Li & Huang, 2020). China ranked second in the world in energy consumption in 2015, with crude oil ranked second only to coal with a consumption of 6,302.7 million barrels/day, in 2005, which increased to 8,423.7 million barrels/day, with a compound annual growth rate of 0.43 percent from 2005 to 2010. Due to low oil prices and a high supply, China has encouraged an increase in imported quantities in order to maintain its reserves and continue to develop its industrial facilities, which have become major industrialised countries that dominate world

markets (Wang et al., 2021). However, China's crude oil consumption in 2015 was 7,200.0 million barrels per day, which was 1,223.7 million barrels per day (bpd) less than in 2010. (bpd). Table 3 displays the amount of crude oil consumed by the United States and China in 2015, as well as their share of the global total. China ranks second globally in 2014-2015 (Chen, Inglesi-Lotz & Chang, 2017).

**Table 3:** Crude oil consumption ratio of global consumption of the United States of America and China 2014-2015 (Bai & Koong, 2018).

| Country | 2014 | 2015 | World Consumption Ratio 2015% |
|---|---|---|---|
| **China** | 11.20 | 11.97 | 12.9 |
| **U S A** | 19.11 | 19.40 | 19.7 |

**Renewable Energy**

To fulfil its international obligations to combat climate change, China is the global leader in expanding investments in renewable energy projects. It has reduced its reliance on carbon-based fuels at rates that exceeded expectations, while slowing the growth of its electricity demand by nearly half. China's carbon fuel growth rate is decreasing after many years of growth, the United States and China are on track to meet their international climate change commitments, and China is leading the world in renewable energy use as it has taken ambitious steps to add renewable energy sources to its energy mix. including nuclear, solar, wind, and other energy sources (Engels, 2018).

**a) Nuclear Power**

China began construction of its first nuclear power plant in 1984, then hired French engineers and experts, and the Xinshan plant entered actual operation range and began producing nuclear power in 1984. In 1991, the Chinese government erected two 2,1 GW nuclear plants, giving Chinese authorities the go-ahead to construct approximately 9 GIGAwatts of nuclear plants in 2013. China remains the largest country in the world to construct new nuclear reactors, even if it is aware of the significance of nuclear energy and attempts to exploit it to the greatest extent possible (Andrews-Speed, 2020). China's nuclear energy consumption is (1%), which is negligible when compared to the United States, which consumes the equivalent of (9%), and the emphasis will be on producing more nuclear power to reduce coal use. Nuclear energy has frequently been one of China's most important means of expanding its energy production. China has twenty nuclear power plants in operation and is currently constructing an additional twenty-eight. China has ambitious plans to produce more nuclear power, China's strategic plans focused on increasing its nuclear power generation capacity to 60 gigawatts by 2020, which will call on China to become the world's largest nuclear power power in the next 15 years, surpassing the United States, which has 30 nuclear plants, and there are projections by the Nuclear Energy Agency that China will have 400 nuclear power plants by 2050 at a cost of more than $1 trillion and a generation capacity of more than a trillion kilowatt hours. China can produce approximately 80 percent of the total equipment used to operate nuclear power plants, but relies on French and Russian technology for more than 20 percent of its operations (Nguyen, 2018).

**b) Solar Energy**

In 2014, the amount of solar energy connected to China's electricity grids increased by 60 percent year-over-year, reaching 28.05 GW. In 2020, the National Energy Administration intends to increase the total by more than fifty percent. According to the administration, the figure represents 2.1% of China's total electricity generation capacity, reaching 1,360 GW at the end of 2014, and solar production increased by 75% in 2015, reaching more than 21,000 GW, or three times that of 2014. China aims to increase the proportion of energy derived from non-fossil fuel sources to 15 percent of total consumption by 2020, up from 11 percent in 2014, in an effort to reduce its reliance on coal, a major source of environmental pollution (Huo et al., 2018).

**c) Wind Power**

In addition to nuclear or solar energy, the Chinese government has collaborated with Greenpeace to construct new wind-generating structures in late 2005, and Beijing has

announced that it will invest $150 billion in renewable energy over the next 15 years (Dong et al.,2018). Wind power is one of the most important renewable sources and one of the cheapest sources, making it the focus of increasing attention from the world's governments. Wind power is generated by the passage of air through turbines, which generates mechanical power that is then converted into electricity for residential use. In 2010, China had more than 72 wind power plants with a total installed generator capacity of 964,000,000 kilowatts, accounting for 1.4% of the total installed capacity in China (Zhang et a., 2020). Only eight nations generate 80% of the world's wind energy, with China, the United States, and Germany leading the United Kingdom, France, and India, but no African or Latin American nations. Raylah's energy is one of the most important and cost-effective renewable sources of energy, so it has attracted the increasing interest of the governments of the world's nations (Poudyal et al., 2019). Table 4 displays the most significant countries that paid close attention to wind power production, with China in first place with a contribution of 33.6% of world production, followed by the United States in second place with 17.2% and Germany at 10.4%, while the remaining countries ranged from 5.5% to 2.4%. The wind energy generation industry experienced exceptional growth in 2015, with total global production increasing by 17.4 percent to 841 terawatt hours.

**Table 4:** Wind power production in some countries of the world in 2015

| Country | Production Capacity / MW | Contribution % |
|---|---|---|
| China | 145362 | 33.6 |
| U S A | 74471 | 17.2 |
| Germany | 44947 | 10.4 |
| India | 25088 | 5.8 |
| Spain | 23025 | 5.3 |
| U K | 13603 | 3.1 |
| Canada | 11205 | 2.6 |
| France | 10358 | 2.4 |

**Source** :World Wind Energy Council data and Statistical Review of the World Energy Issued by energy giant BP

2015

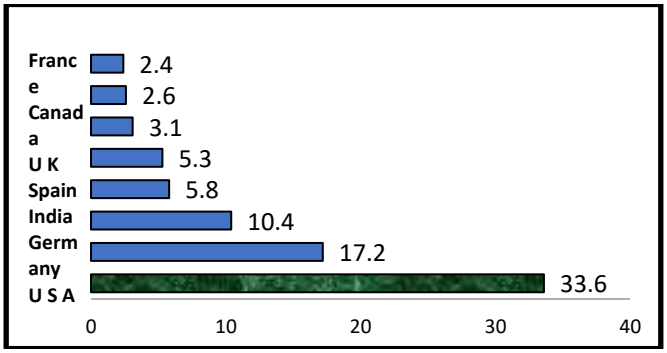


**Figure 3:** wind energy producing countries and their contribution percentage to global production for2015

One of the reasons why countries are turning to wind energy is that they are healthier and safer for the environment and that countries around the world can achieve the goals they have set themselves in combating climate change if they succeed in generating electricity by renewable means. In the EU, for example, 44% of the electricity generated in 2015 was from the contribution of wind power (Mahalik, Mallick & Padhan, 2021).

**d) Hydropower Energy**

Represents the exploitation or investment of water sources in the generation of electricity in countries with dense water catchments, a topographic system commensurate with the continuity of the flow of water catchments, regular rainfall and snow, and large areas with moderate heat that does not evaporate, resulting in the loss of water collected in dams or reservoirs for use when needed in the production of hydropower (Jia et al., 2018). There are still some efforts to generate electricity from tidal and wave energy. China's hydropower resources are expected to reach 402 million kilowatts, ranking it first in the world. During the period 2005-2015, the total installed generator capacity ranged from 250 to 531 million GW, with 100 million kilowatts of hydropower constituting (24.6%), therefore, significant efforts are required to develop renewable hydropower resources. In terms of hydropower production capacity in 2015, China ranked first, followed by the United States with 200 GW, Brazil with 100 GW, Canada with 80 GW, and Russia with 50 GW (see figure) (4).

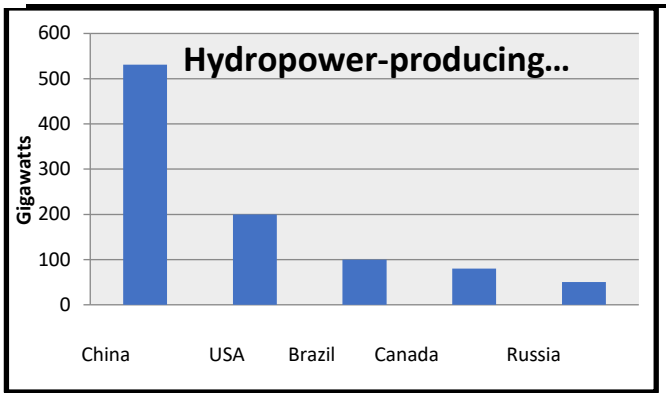


**Figure 4**: Hydropower Production Capacity (GW) for China and other countries for 2015

**e) Thorium**

China is pursuing safe, low-cost thorium energy as it makes its way to the world in order to obtain safe, clean, and low-cost nuclear energy from thorium and to abandon its uranium-fueled pressurised water reactors (Furukawa et al., 2011). The Chinese government's use of thorium in power generation may provide the necessary technology to lead Asia's industrial revolution and avert a major energy crisis as an additional 2 billion people adopt the Western way of life (Crane, Kinderman & Malhotra, 2010). With Norway, Japan, and India, China was not alone in undergoing this transformation. However, it has begun to flourish quickly. Thorium is one of the densest substances on Earth, and a small sample of this element produces more than 20 million times the energy of a piece of coal, making it an ideal energy source for our planet. It has the same energy characteristics as uranium and is considered an environmentally friendly natural element because its thorium component is derived from the Earth's composition (Kritsananuwat et al., 2015). It does not need to be extracted because there are mines for it, as is the case with coal and crude oil, which leads to environmental and other human harm from coal extraction. China has a geostrategic interest in developing thorium energy production for this reason. Due to the need to construct safe thorium reactors in order to combat global warming, U.S. scientists are preparing to trade oil for thorium. It will also produce energy that nourishes the earth and will not exceed 5,000 tonnes of thorium, which is sufficient to produce a year's worth of energy for the entire planet (Kamal, 2013).

**China's Geopolitical Imbalance in Energy**

Energy security faces numerous threats. There are geological, technical, economic, political, and environmental risks that have a direct effect on China's energy geopolitical imbalance significantly impacted by depleted resources or coal dependence. The depletion of energy sources is associated with geological hazards. In some far-reaching estimates that natural gas fields will be depleted by 2060, research, exploration, and attention must be paid to technological discoveries that may lead to these geological risks, and sometimes atmospheric factors have a significant impact on the presence of disruptions in energy supplies, including technical risks in hardware failures, thereby increasing the likelihood of such risks and resulting in decreased production (Collett et al., 2010). The geopolitical risks are that energy supplies from a country will be halted as a result of wars and political conflicts at the international or domestic level, such as civil wars in Libya and supplies to European countries, particularly Italy, or the suspension of energy supplies to Europe due to geopolitical issues surrounding Crimea and the suspension of Russian energy resources, or terrorist attacks on oil pipelines, as occurred in Iraq after 2003 (Su et al., 2021). Since the Middle East is one of the most prominent regions producing depleted energy resources, geopolitical risks in that region have a strategic impact on the imbalance, as demonstrated by Iraq's invasion of Kuwait between 1990 and 1991, the 1980-1988 Iran-Iraq war, the imposition of an economic embargo on Iran that halted iranian oil exports to China and other countries, and the US invasion and occupation of Iraq in 2003 (Mousavi Shafaee & Golmohammadi, 2022). It is true that oil was not the primary or most important reason for these wars, but it is also true that these wars posed challenges, risks, and threats to energy security, threats of an undeniable geopolitical nature, which had to be overcome or condoned. Environmental threats are caused by oil or radiation spills, which have a negative impact on energy security, worker strikes in large oil-producing industrialized nations, slow growth in oil production in non-

OPEC nations, declining reserve oil production capacity in OPEC nations, and limited refining capacity (Fearon, 2005). Due to the numerous variables that can influence demand, a number of variables can lead to a situation of equilibrium between supply and demand in the oil production industry. These changes are typically associated with economic development and high economic growth rates, and they result in an increase in oil demand. Despite the fact that supply-side changes may have contributed in some way to the recent imbalance, they are primarily time and technical interruptions (Norouzi, Fani & Ziarani, 2020). Significant changes on the demand side, particularly in fast-growing economies like China and continued global energy demand from the United States, have significantly contributed to the recent imbalance between supply and demand. For instance, the Chinese economy has grown by (9%) per year on average over the past quarter-century. This rapid economic expansion has significantly increased China's demand for natural resources, particularly oil. Since 1980, energy demand has increased by (4.3%) annually. Domestic oil demand has risen very rapidly, reaching 5.77 percent annually since the 1990s. As a result, China replaced Japan as the second largest oil consumer since 2003 (Lai & Li, 2013).

## 1. Geopolitics of Energy Dimensions

The imbalance is independent of political variables, but geopolitical and geoeconomic factors are a direct cause of fluctuating energy prices on the global market. These risks can be mitigated in the short term by relying, at least in part, on energy reserves previously imported from oil and natural gas, thereby reducing demand and lowering prices. Consequently, the International Energy Agency advises its Member States to maintain reserves sufficient for at least one day of consumption (International Energy Agency, 2009). China's position on the political energy map shifted from oil exporter to oil importer prior to 1998, due in part to the rapid increase in oil demand and the slow increase in domestic oil production. China's reliance on imported oil has increased since that year (Andrews-Speed, Liao & Dannreuther, 2014). This is primarily due to China's rapid economic expansion. This is evident from the following concerns voiced by Chinese leadership, which are as follows:

a) **Price increases:** The decline in oil prices on the global market is a source of concern for China's leadership, especially since such volatility could lead to economic weakness. A recession or economic downturn may result in political instability, a decline in the regime's legitimacy, and the inability to continue to govern.
b) **Source focus:** The increasing concentration of energy imports is one of the concerns of Beijing's politicians. Approximately 80% of China's imports in 2002 came from ten countries, with 60% coming from five countries in the Middle East and Africa, where oil processing disruptions are likely due to political unrest (Guo et al., 2021).
c) **Disputes With Maritime Neighbors:** China's disputes with its maritime neighbours over the continental shelf, exclusive economic zones, and islands with abundant oil and natural gas reserves have contributed to Beijing's leadership anxiety (Yee, 2011).
d) Chinese companies have also acquired stakes in energy-related projects in Canada and Australia and have taken a number of steps to reduce their exposure to risks associated with major shipping routes and choke points, for which China has advocated a number of steps (Seaman, 2010).

1. China's relations with countries that regulate maritime traffic and through which oil shipments pass have been strengthened.
2. China has intensified its efforts to join ASEAN coastal nations in bolstering security at chokepoints, such as the Malacca and Singapore Straits.
3. China relies on the U.S. Navy to secure oil shipping routes and choke areas like the Malacca Strait. China has explored alternative oil-transport methods.
4. China is constructing naval warfare capabilities so it can effectively compete in distant waters (Collin, 2019).

## Conclusions

1. Beijing deems it "unfair" to blame China for the significant spike in global oil prices, given that China bears a hefty tax on the increase.
2. China does not anticipate a decline in oil prices in the near future, since global demand is rising and reserve production capacity is falling, and it feels extremely vulnerable as a result of the "global oil whales'" continued betting on oil prices.
3. The search for abroad energy supplies conducted by China's main energy companies as part of China's "outward orientation" strategy has not produced as many successes as had been anticipated.
4. Increasing fuel consumption is a top objective of China's foreign policy toward the rest of the world, particularly Africa, due to the growth of all types of industries and the penetration of Chinese industry into global markets.
5. Chinese companies have also acquired stakes in energy-related projects in Canada and Australia, and China has taken a number of steps to reduce its exposure to risks associated with major shipping routes and choke points. These actions have prompted China to take a number of steps to strengthen its relations with oil-producing nations, including Russia, Canada, the Arabian Gulf, and others.
6. China has ambitious aspirations to increase its nuclear power production, and its strategic goals are centred on increasing its nuclear power output capacity to 60 gigawatts by 2020.
7. In order to conserve the environment and combat global warming, technological advancements in alternative energy investment are essential.

## Suggestions

1. China should rely on modern technologies and renewable energy sources to obtain energy.
2. Utilizing oil market crises that result in price reductions to secure sufficient energy supplies.
3. Reducing China's reliance on fossil fuels to conserve the environment, as China is one of the most influential nations damaging the ozone layer due to emissions from industrial facilities.
4. Utilize uranium solely for industrial purposes and refrain from developing it for uses that may be universally prohibited, such as nuclear weapons.

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