Department of Political Science

Master's Degree in International Relations

Course of Energy And Climate Change Policy

ECONOMIC AND POLITICAL DIMENSIONS OF CHINA'S ENERGY MARKET: THE CONFLICT BETWEEN SUSTAINABILITY AND INDUSTRIAL GROWTH

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Table of Contents

INTRODUCTION

An ancient Chinese proverb states: '*The journey of a thousand miles begins with a step'*; this saying encourages us to take the first and most difficult step towards the goal, even though the path may seem daunting and full of pitfalls, doggedness leads to success. It is not pretentious to affirm that China in the second half of the 20th century travelled a thousand miles in a single step. This is largely due to the Chinese economic reform of 1978, championed by the paramount leader of the People's Republic of China (PRC), Deng Xiaoping, with the aim of stimulating economic growth and improving the living standards of the population which transformed the country into a power second only to the United States. This reform enabled the establishment of Special Economic Zones (SEZs), offering tax and regulatory incentives by attracting foreign capital, encouraging joint ventures and the establishment of private companies. From there on, economic development was rampant, making the country a global superpower.

This apparent paradox is the result of a need to balance the ecological transition with the energy needs of an ever-expanding economy, which requires reliable and low-cost sources to sustain industrialisation and urban growth. China's presence in the global energy market is also reflected in the country's significant role in importing and exporting energy and technology; the PRC is thus the world's largest importer of oil and natural gas, resources that are crucial to fuelling the industrial sector and growing consumer demand. However, while the country is dependent on imports for fossil fuels, it is also emerging as a dominant exporter in the green energy technology market. With world leadership in the production of solar panels, wind turbines and advanced batteries, Cina is redefining the global energy landscape, transforming itself from a simple consumer to a provider of solutions for the energy transition.

Albeit these successes, China faces crucial challenges in its energy development path. Ensuring energy security remains a central matter, as dependence on oil and gas imports exposes the country to geopolitical risks. International competition is escalating, particularly with the US, with whom China vies for control of supply chains of critical raw materials, such as rare earths, which are crucial for future technologies.

With the imminent arrival of the 15th Five-Year Plan, China will have to define its strategy for the coming years, seeking to strengthen its independence from imports,

accelerate technological innovations and consolidate its position as a global power in the energy sector. The way China tackles these challenges will not only determine the future of its own development but will also have a significant impact on global energy and geopolitical balances. In this multifaceted context of uncertainty and unpredictability, the aim of this thesis is to understand how the Chinese energy market is evolving in response to the energy transition, energy security and geopolitical scenarios, and to try to comprehend what role the 15th Five-Year Plan will play in this transformation.

The purpose of this thesis is to identify the critical issues and successes of the People's Republic of China and the role that the energy supply chain plays in determining a country's domestic and foreign policies. A quote attributed to Henry Kissinger is, "*Whoever controls energy can control entire continents*". China's goal is to emerge as an absolute world power, and it needs to achieve energy security, which in future may be undermine by international crisis. In fact, the risk of a blockade of the Strait of Malacca, through which most of the oil destined for China passes, frightens Beijing's government. Furthermore, becoming too dependent on one country for energy (such as Russia for gas) is a great risk. China's dominance in the rare earths supply chain is the country's greatest weapon against the US. Semiconductors, the military and energy sectors depend on these materials, and the PRC exploits them as a tool of international influence.

How the energy market influences policies and the economy, with all its contradictions, is the research question addressed in this text. To answer it, an analysis will be carried out on the Chinese energy system, the country's economy, and domestic and foreign policies. This thesis will first conduct a quantitative analysis, verifying the available energy data (mostly provided by the Statistical Review of World Energy), economic, and political data in a continuously changing situation. Once the data is collected, an entire chapter will be dedicated to a qualitative analysis of the future choices that China might have to pursue.

The first chapter will analyse the composition of the Chinese energy market. The following discussion will address production, imports, exports and political and economic choices related to energy sources (namely coal, oil, gas, nuclear and renewables) for China. In addition to energy, this chapter will examine the supply chain of critical minerals, which are essential for technological development. Finally, domestic demand

will be scrutinised, with a particular focus for three sectors of paramount importance to the country: industry, residential, and transport.

The second chapter focuses on the role that China's five-year plans have played in the country's economic transformation. It examines the development of the People's Republic from Mao to the present day, focusing on the leader who changed the face of the country forever: Deng Xiaoping. Particular attention will be given to the 14th five-year plan (2021-2025), which has had to face numerous challenges such as the real estate market burst and COVID-19.

The third chapter will provide an in-depth examination of the geopolitical landscape of China, with a particular focus on the competition with the United States in various sectors, including economy, technology, energy, strategic minerals, and infrastructure. In the following section, the relationship between the two nations and an ally, often considered inconvenient, Russia, will be examined.

Finally, the fourth chapter will provide a resolution to the aforementioned research question. Following a thorough analysis of the various issues facing the country, a number of themes for the upcoming 15th five-year plan are to be proposed. Indeed, the plan's potential priorities encompass economic stability, technology, energy, demographics, geopolitics and domestic security.

CHAPTER 1- China's Energy Mix And Sectoral Consumption

1.1. Chinese energy mix composition

China's energy mix is an exemplary case of transformation and diversification, where traditional sources and technological innovations are intertwined to meet the demand of economic growth and demographic scale. The country's strategy is to maintain a highly diversified energy mix both in terms of sources and imports, in order to avoid highly dependence on a single major supplier. While it makes extensive use of domestic resources, above all coal, it has also made large investments in clean energy technologies.

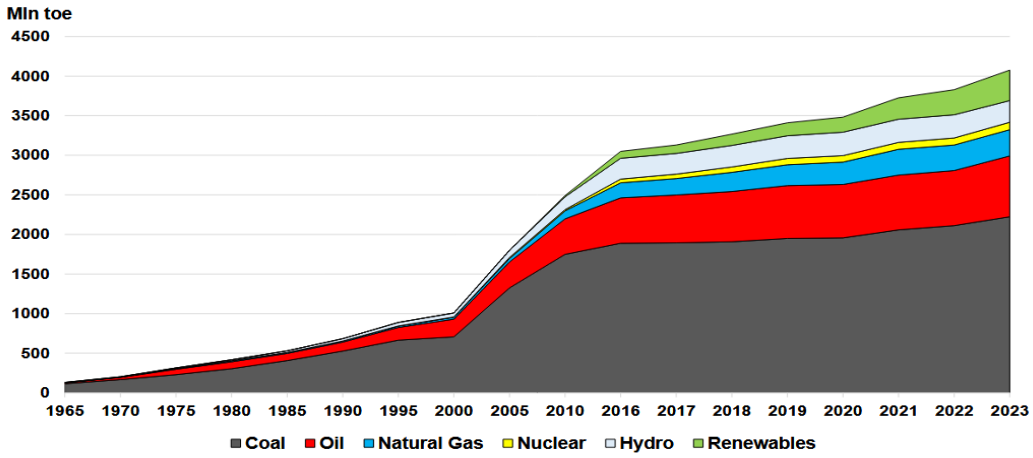

Figure 1.1- China Energy Consumption 2023. Source: Statistical Review of World Energy 2024

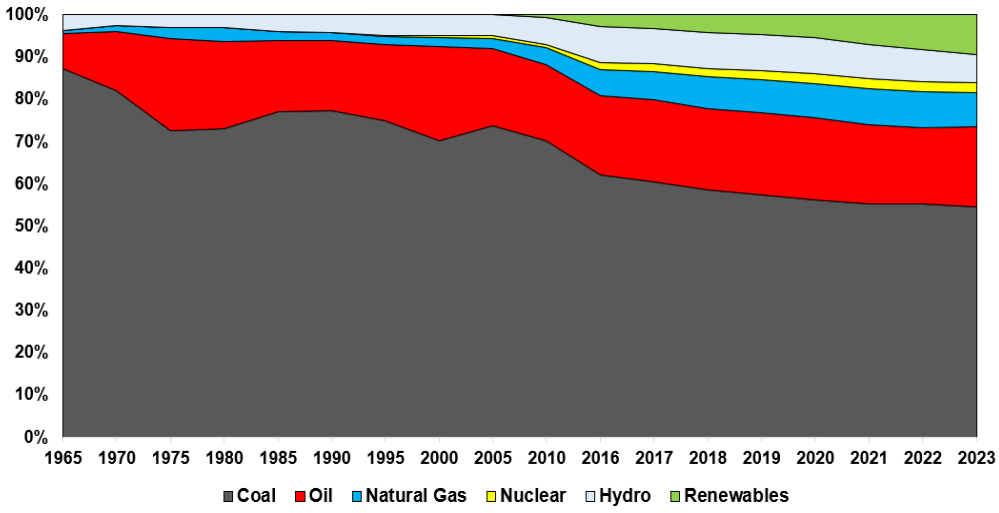

Figure 1.2- China Energy Consumption share 2023. Source: Statistical Review of World Energy 2024

These graphs illustrate the evolution of China's energy mix between 1965 and 2023, indicating the variations in absolute values and in the share of different energy sources.

Coal has been the backbone of the country’s energy system for decades. In 1965 it accounted for between 85% and 90% of the total. In 1980, shortly after the beginning of China’s economic reform, its share was around 70-75% of the total, reflecting China’s heavy reliance on this resource to fuel its rapid industrial development. In the following decades, the share of coal gradually decreased, with a more noticeable decline starting in the 2000s, when the Chinese government started to implement the energy transition policy. Nevertheless, in 2023 coal still accounted for 61% of the energy mix confirming its central role. Moreover, although the percentage of use of this energy source is declining, its consumption continues to grow, standing at around 2,200 million toes, marking the fact that China’s highly dependence on coal.

Oil played an increasing role in the 1960s and 1970s, reaching a share of around 20% in 1980, thanks to China's efforts to develop its oil industry, which focused mainly on production in regions like Heilongjiang and Xinjiang. Although consumption percentages are decreasing, oil consumption has continued to rise, albeit at a slower pace, since 2015. The country's heavy reliance on this energy resource makes it potentially vulnerable in terms of energy security.

Natural gas played a marginal role until throughout the late twentieth century, when it made up about 2-3% of the energy mix in 1980. However, in the early twenty-first century, natural gas came to be considered as a less polluting alternative to coal, resulting in a continuous increase in its percentage contribution to overall energy output. In 2023, natural gas accounted for nearly 8% of the country's energy mix, with around 400 billion of cubic metres of consumption. The use of this energy source is growing steadily, although the country remains very cautious about increasing import from Russia.

Nuclear power was hardly present in the Chinese energy mix until the 1980s. In 1980, the share was less than 1%, as the Asian giant's first commercial reactors did not come on stream until 1991 with the commissioning of the first nuclear power plant in Qishan. However, from the 2000s onwards, nuclear power has grown steadily to account

for approximately 3-5%, thanks to the Chinese government's massive investment in new power plants.

In 1980, hydropower accounted for approximately 3% of the total energy mix, a figure that has increased steadily in the subsequent years, largely due to the construction of large dams, above all the Three Gorges Dam which is the largest hydropower plant in the world. Hydropower continues to represent a substantial share of the energy generation mix, serving as a significant alternative to fossil fuels.

Prior to the 2000s, the contribution of renewables to China's energy matrix was negligible; however, the country has since invested substantially in clean energy sources, thereby attaining a global leadership position in the production of solar and wind energy and their connected system. Projections indicated that renewables constitute about 10% of China's energy mix in 2023, including hydropower. This indicates the fastest growing sector and the main future substitute for coal. This development is indicative of the nation's substantial economic growth and diversification.

The 1980s marked a pivotal moment when coal and oil were the dominant sources. Since then, structural changes have progressively reshaped the energy landscape. Oil has suffered a sharper decline, while natural gas has grown only moderately. Nuclear and hydropower remained stable, while renewables are the only steadily expanding sector destined to play a key role in China’s energy future. Although the energy transition is underway, the path to full decarbonisation still appears long and complex. The aim of this chapter is to examine the components of the different energy sources that make up the Chinese’s energy mix, with a focus on coal, oil natural gas, nuclear and renewable energy. By analysing a country’s energy sector, is possible to not only understand the distribution of resources used for electricity production, but also to interpret the economic, industrial, political, and environmental choices that have determined its evolution over time.

Energy is central to China's economic growth, influencing both its internal development and its relations with the global geopolitical context. The need to ensure energy security, reduce dependence on fossil fuels and promote a sustainable transition is a complex challenge, intertwined with industrial development goals and the dynamics of international competition. China, which is the world's largest coal consumer and a major importer of oil and natural gas, faces the daunting challenge of finding a balance between

environmental sustainability and production needs amid intensifying international pressure to reduce emissions. The PRC's energy sector exerts considerable influence on geopolitical relations, shaping supply strategies and alliances. A comprehensive understanding of China's evolving energy mix is therefore critical to deciphering not only its domestic policy decisions, but also its strategic positioning in the global economic and political landscape.

1.1.1. Coal

China's abundant coal reserves have historically been a pivotal element in the nation's economic development, particularly during the 20th century. Following the establishment of the People's Republic in 1949, coal emerged as the predominant source of energy, underpinning the nation's industrialisation. It provided the essential power for industrial plants, including factories and steel mills, as well as for various infrastructure projects. During the period known as the "*Great Leap Forward*" (1958-1962), the government intensified coal mining and utilisation to accelerate the country's economic growth and transform China into an industrial powerhouse (Naughton, 2007). Following the economic reforms in the late 1970s, promoted by Deng Xiaoping, the PRC continued to rely on coal to support accelerated industrial and urban expansion. It remained the cornerstone of power generation and manufacturing, contributing substantially to the country's economic growth. However, the extensive use of coal has resulted in considerable negative environmental impacts, including air pollution and increased greenhouse gas emissions. These environmental challenges persist as China seeks to transition towards more sustainable development (Brussato, 2024). China is the world's largest consumer of this energy resource. According to the Statistical Review of World Energy[1], in 2024 alone the country accounted for around 56% of global coal consumption, using more than the rest of the world combined. Coal consumption has grown steadily since 2016, rising from 78.03 to 92.16 exajoules in 2024. This shows that although the share of coal consumption is declining, the country remains heavily dependent on its consumption, and its use is rising.

[1] The Energy Institute is an organization that produces data in the energy sector on consumption, trade, and production capacity for each energy resource by country. Every year, it compiles a report with the data from the previous year. https://www.energyinst.org/__data/assets/pdf_file/0007/1658077/Statistical-Review-of-World-Energy.pdf

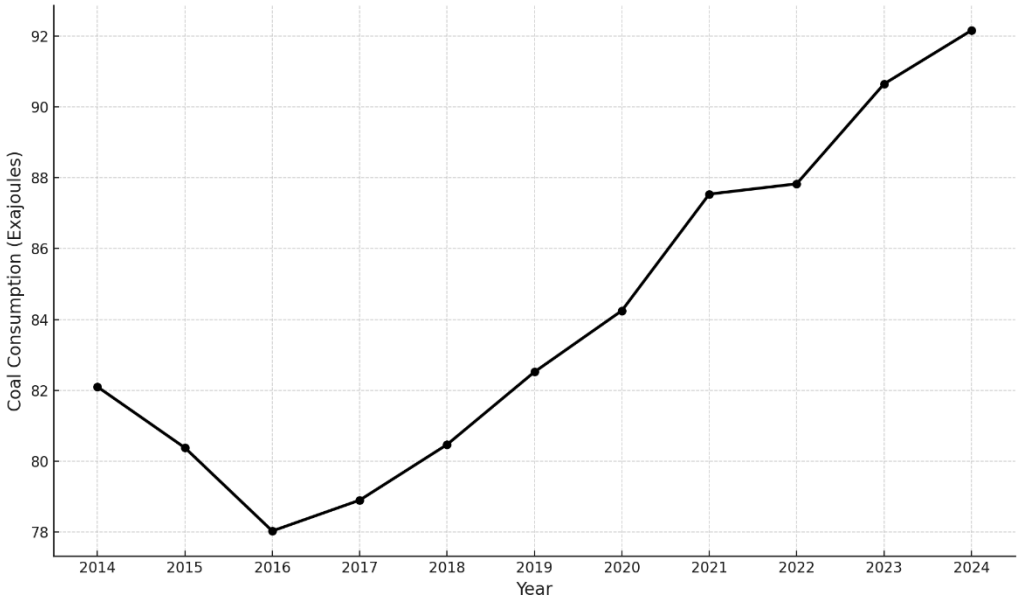

Figure 1.3- China's coal consumption (2014-2024). Source: Statistical Review of World Energy 2025

China’s vast coal reserves enable the country to rely almost exclusively on domestic production. In fact, the PRC’s appetite for coal, largely driven by demand for new power plants that generate energy for cities, has shown no sign of halting. The country has dominated global coal production for decades and is expected to remain the leading producer in the foreseeable future. In 2022 alone, it mined over 3.8 billion tonnes, accounting for more than half of the total global output. According to China's National Bureau of Statistics report, coal production reached a record 4.76 billion tons in 2024, marking a 1.3% increase from the previous year. Compared to its enormous production, China exports only a small amount. According to the Observatory of Economic Complexity[2] (OEC), in 2024, China exported coal briquettes worth $1.27 billion, mainly to Japan, Indonesia and South Korea.

[2] The Observatory on Economic Complexity (OEC) provides detailed data on global trade, allowing users to explore trade patterns, compare economic performance, and generate reports quickly using clear visualizations. In this case, analyse the production, imports, and exports of coal in China https://oec.world/en/profile/bilateral-product/coal-briquettes/reporter/chn

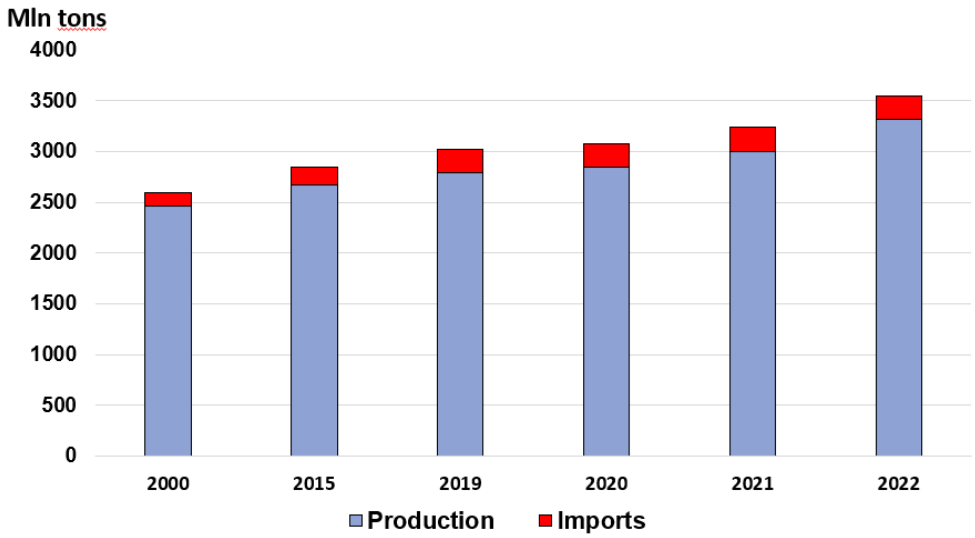

Figure 1.4-China Coal's production and imports. Source: IEA-WEO 2023

Although modest compared to domestic production, the country is one of the largest importers along with Japan and India. In 2024, imports rose by 14.4% compared to the previous year, reaching 542.7 million metric tons, according to China's General Administration of Customs. However, this trend is expected to slow down in 2025. Coal imports are facing increasing constraints, with two of the largest industry bodies, the China Coal Industry Association and China Coal Transportation and Distribution Association, calling for restrictions on imports. This situation is due to several factors: domestic coal prices fell significantly in January and February 2025, profits margin on imports have decreased, port stocks are high, and China has imposed 15% tariffs on coal imports from the US as a result of trade tensions between the two major economies. Although US imports constitute a small proportion of imports and could be replaced by other foreign suppliers. Nonetheless, these factors are affecting domestic companies' enthusiasm for imports (Howe, 2025).

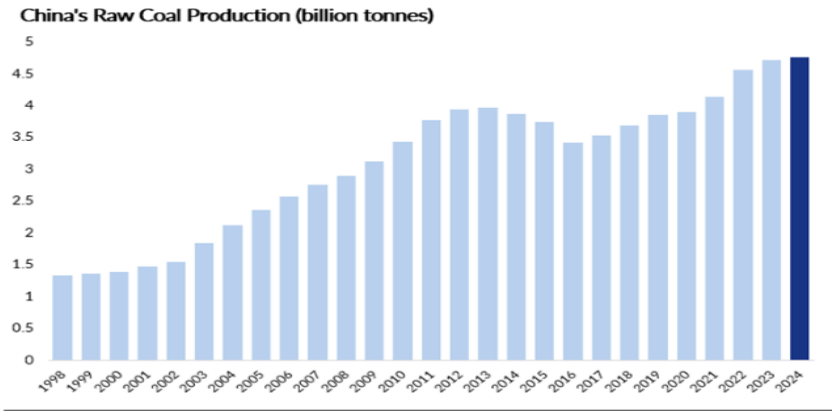

Figure 1.5- China's Raw Coal Production billion tonnes (1998-2024). Source: NBS, Mysteal

Coal is the most polluting energy resource. When burned, this fossil fuel releases significant amounts of carbon dioxide (CO_2) and other greenhouse gases into the atmosphere, thereby contributing to the pollution of the environment and climate change. However, in recent years China has launched a series of initiatives to reduce its coal-related emissions, aiming to balance economic growth with environmental commitments. Since the introduction of the 13th Five-Year Plan, numerous policies have been implemented, including capping coal use[3], removing dispersed coal from urban areas and switching from coal to natural gas for heating purposes. The term "*disposed*" coal refers to raw coal that has not undergone processing or washing in accordance with rigorous standards. This category includes coal utilised for domestic heating and cooking purposes.

The combustion process is inefficient, and the emissions are not filtered prior to their release into the atmosphere. Consequently, despite its negligible contribution to overall energy consumption, it generates 5 to 10 times more air pollution per unit of energy than industrial coal (Qin, 2020). These policies have been incentivised to reduce emissions at the local level. In 2020, President Xi Jinping announced that China would achieve carbon neutrality by 2060, with the aim of drastically reducing carbon emissions. In October 2021, the country announced significant plans to reduce its use of fossil fuels. For the first time, at COP26 China committed for the gradual reduction of coal.

[3] The capping of coal use, which generally involves government policies, imposes a limit on coal consumption. It may include quantitative targets, moratoriums on new coal-fired power plants, replacement with other energy sources, or fiscal and regulatory policies to discourage use. The goal of all this is to reduce CO_2 emissions by promoting the energy transition.

Additionally, the government released the *Mid-Century Long-Term Low Greenhouse Gas Emission Development Strategy*, promising to generate 80% of its energy from renewable sources.

Furthermore, this report considers carbon capture, utilisation and storage (CCUS) to be fundamental to reducing emissions. This technology could enable the sustainable, large-scale use of low-carbon fossil fuels, contributing to the development of a low-carbon industrial system. CCUS can reduce emissions, making it an important and indispensable component of China's technological system for achieving climate neutrality. However, despite these promising statements, China has never ruled out building additional coal-fired power plants, including in its 14th Five-Year Plan, and no limits have been set on production and domestic capacity.

1.1.2. Oil

Although oil plays a central role in China's energy strategy, it also represents one of the country's greatest vulnerabilities in terms of national security. The PRC has a significant crude oil production capacity. According to the Statistical Review of World Energy it produced about 4.3 million barrels per day in 2024, corresponding to 4.4% of world production.

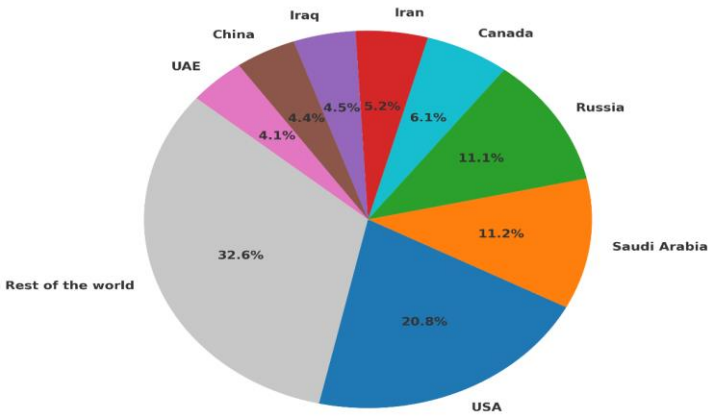

Figure 1.6-The share of global oil production in 2024. Source: Statistical Review of World Energy 2025

However, this production is insufficient to cover domestic demand, which the same report estimated to be 16,473 thousand barrels per day in the same year. This has made the country the world's largest importer of crude oil: in 2024 alone, China imported approximately 12.1 million barrels per day, occupying the 19.3% of the total oil imports share. Dependence on foreign supplies has prompted the PRC to develop a complex supply network that includes economic and energy agreements and the acquisition of strategic assets in the Middle East, Africa, Latin America and Russia, using large state-owned oil companies as a foreign policy tool. In 2024, China exported about 554 million tonnes of oil.

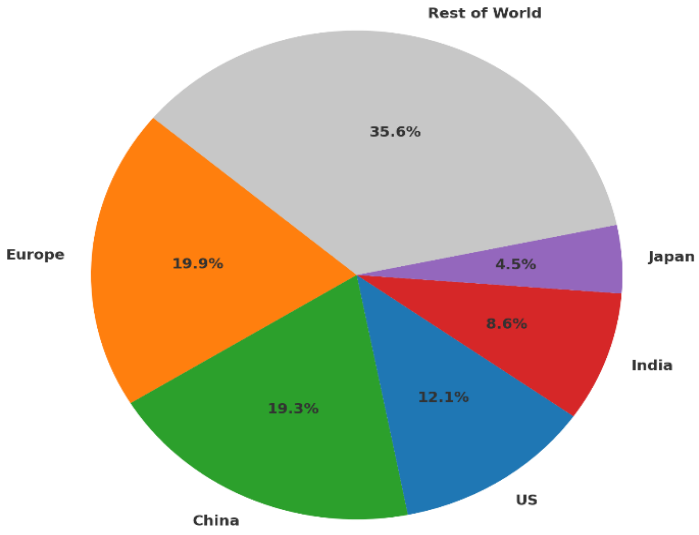

Figure 1.7- The share of global oil imports in 2024. Source: Statistical Review of World Energy 2025

As previously mentioned, the country has established a complex and diversified network of imports from various regions around the world. The country from which it imports the most is Russia, with 803 million barrels, corresponding to 108.5 million tonnes of crude oil.

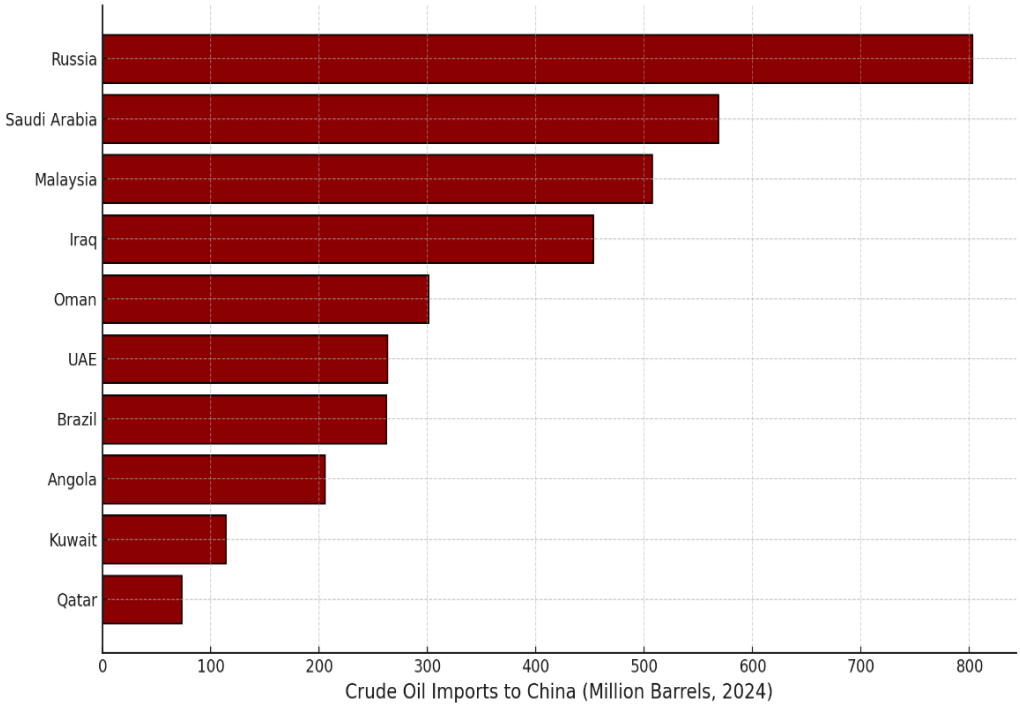

Figure 1.8- China's Crude Oil Import Sources in 2024. Source: Customs of China

Imports from the Russian Federation have rapidly increased due to the war in Ukraine, further deepening rendering Russia's dependence on its complex relations with China. However, almost all the crude oil comes from the Middle East. Saudi Arabia is the second largest exporter, followed by Iraq, the United Arab Emirates, Oman, Kuwait and others. The PRC also imports large quantities from Angola, Brazil and Malaysia, improving its geopolitical influence.

Two countries are often excluded from oil export calculations, as is difficult to establish a precise quantity due to sanctions. Venezuela and Iran, both members of OPEC, sell their oil both directly and covertly, concealing the origin of the oil by passing through third countries. This practice is known as *shadow rebranding* and involves relabelling oil from countries subject to international sanctions. This crude oil is often sold at more competitive prices, making it economically more attractive. In this context, Malaysia seems to be playing the role of intermediary. Indeed, the Asian nation exports a disproportionate amount of crude oil compared to its national production capacity, which is estimated at around 500,000 barrels per day. This suggests that some of the crude oil exported does not originate in Malaysia, but comes from other countries, such as Iran and

Venezuela, via tankers before being imported into China under a flag of convenience (Soltani, 2024).

Simultaneously, the country is investing in diversifying its routes and building strategic reserves, thereby reducing the risks associated with regional crises, geopolitical tension and global market instability. Approximately 36% of the oil that China imports pass through the Strait of Hormuz, a potentially risky area. A blockade of the Strait of Hormuz would have dramatic consequences for Beijing. Moreover, another critical point is the Strait of Malacca, where the US has strategic agreements with countries in the area. For this reason, the central government is considering greater involvement in international security dynamics with government policies aimed at maximising the diversification of energy sources.

Due to being the biggest importer of crude oil, China has a large number of refineries. According to estimates, China's refining capacity has grown steadily since 2016, reaching a refining capacity of 18,514 thousand barrels per day in 2024, distributed among private plants operated by the largest companies and smaller independent plants, known as *teapots*, which are particularly prevalent in the Shandong region. These emerged to meet industrial and economic needs to satisfy growing domestic energy demand.

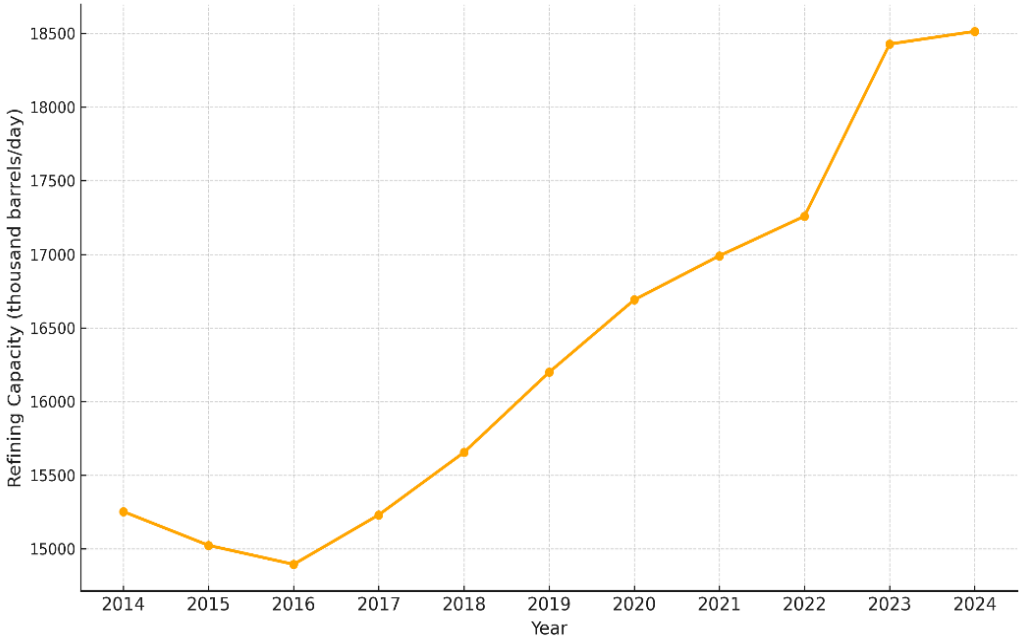

Figure 1.9- China Refining capacity (2014-2024). Source: Statistical Review of World Energy 2025

However, teapots are currently experiencing a period of crisis for various reasons, chief among them the US sanctions, which have led to the closure of some of them. These companies, which account for a quarter of the PRC's processing capacity, are key buyers of discounted crude oil from Iran, Venezuela and Russia. They are the hardest hit by the US's tougher stance on exports from the three countries, including the January 2025 sanctions that led to a significant slowdown in flows from Russia to China. In addition, in April 2025, the US sanctioned Shandong Shengxing Chemical Co. for purchasing more than $1 billion worth of Iranian crude oil. United States' goal is to reduce Iranian exports to zero, weakening the Iranians' shadow fleet. By doing so, the US is weakening both countries, which are considered its main adversaries (US Department of State, 2025).

High oil imports are a source of extreme vulnerability for China. Indeed, sanctions and the risk of a blockade of the choke points through which oil passes are a risk that the Chinese government is seeking to alleviate. Taking into consideration of the huge imports for the security, the country has built a large Strategic Petroleum Reserve (SPR). Such reserve is aimed to mitigate potential energy crises caused by geopolitical turmoil, supply disruptions, or market fluctuations. Due to the lack of reliable data on the actual volume of oil reserves, estimates vary. According to Vortexa, the country has approximately 290

million barrels of oil with a storage capacity of approximately 511 million barrels. In addition, Beijing has reportedly asked its major companies with the strategic reserve with 60 million barrels (Aizhu, 2024).

1.1.3. Natural Gas

The trade in natural gas is heavily dependent on a country's geography. As with oil, it is extracted from below the ground or below the seabed. Some of the gas is transported via pipelines from extraction sites to end consumers, who may be located thousands of kilometres away. When the geography is not favourable, another method of transporting this energy source has been developed. Natural gas liquefaction (LNG) enables gas to be transported by sea, and it is preferred because technical problems can arise during construction, such as being unable to lay pipes at a certain depth or distance. Furthermore, building pipelines creates a security problem by tying one country too closely to another. This process involves cooling the gas to a liquid state, thereby reducing its volume. Upon arrival, the gas is directed to regasification plants, where it is converted back into a gaseous state for distribution. A major drawback of this method lies in the high infrastructure and transportation costs it entails.

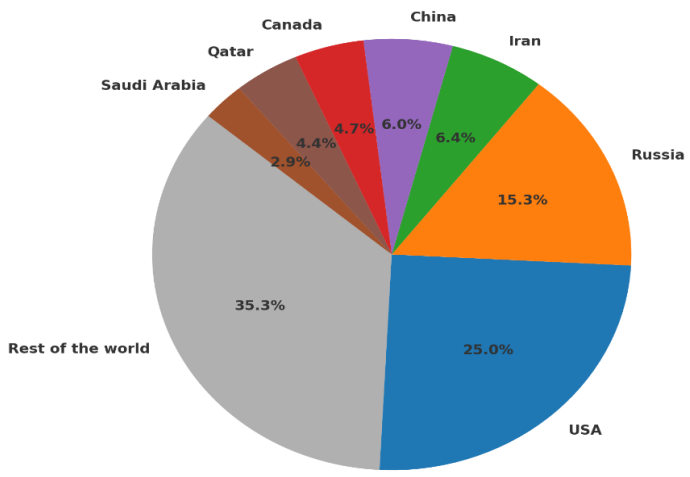

Figure 1.10- Global Natural Gas Production Share in 2024. Source: Statistical Review of World Energy 2025

According to estimates by the China National Energy Administration (NEA), the country consumed 434 billion cubic metres of natural gas in 2024, which is a significant

increase of around 30 billion cubic metres compared to the previous year. Moreover, China is the biggest importer of this natural resource. The nation is increasing its gas consumption in order to replace coal, a much more polluting fuel. China has significant natural gas reserves within its territory, both onshore and offshore. Indeed, more than half of the country's gas demand is met by domestic production: by 2024, 57% of gas consumption was covered by domestic production, which amounted to around 248.4 billion cubic meters.

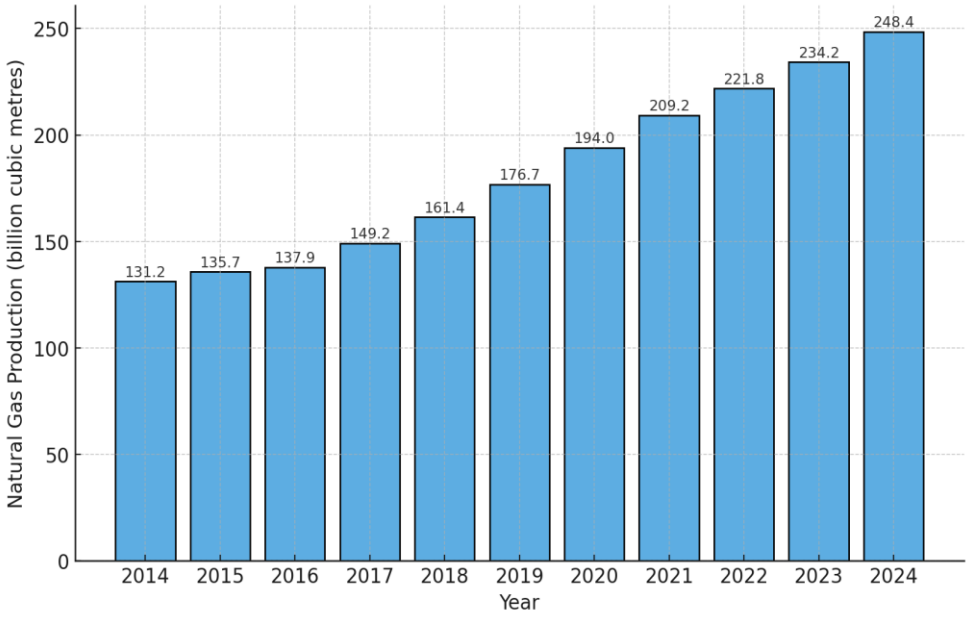

Figure 1.11- China's Natural Gas Production (2014-2024). Source: Statistical Review of World Energy 2025

According to the International Energy Agency (IEA)[4], gas production alone cannot meet growing domestic demand, which is expected to continue until 2040. Russia is one of the main partners for gas imports and has increased its exports following the sanctions imposed as a result of the war in Ukraine. For reasons of convenience and cost, gas exports are mainly carried out via pipelines.

[4] The International Energy Agency (IEA) is an intergovernmental organization that analyses and provides data on the energy sector, in order to provide policy recommendations.

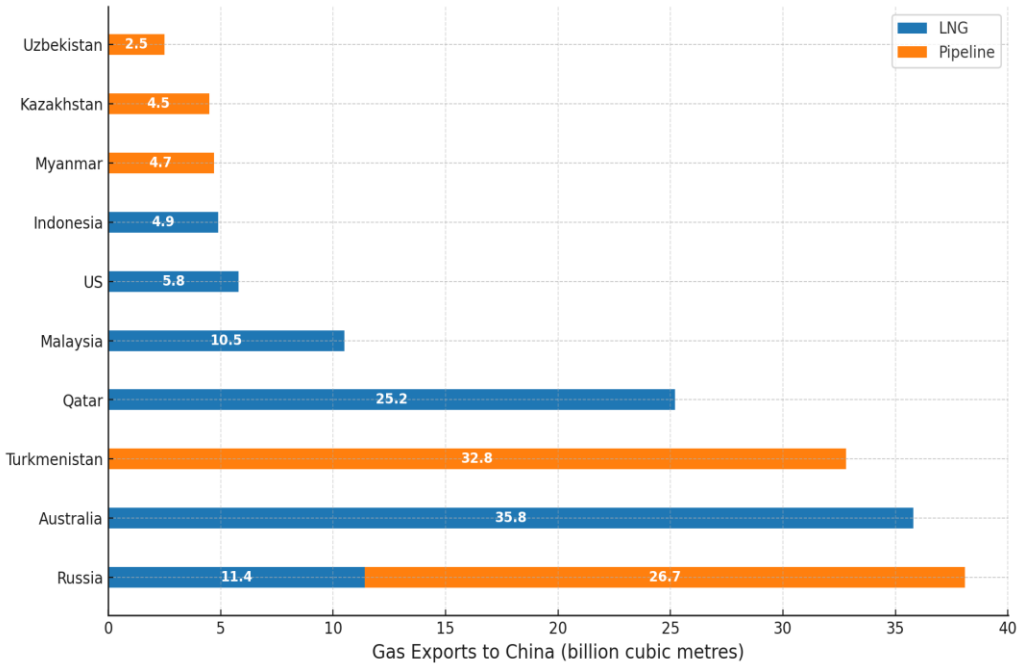

Figure 1.12- Gas Exports to China in 2024. Source: Statistical Review of World Energy 2025

Although Power of Siberia-1 has a capacity of 38 billion cubic metres of gas, China imported only 22.7 billion cubic metres in order not to become overly dependent on Russia. Another conduit, the Far East Pipeline, entered construction since 2024, and a third pipeline, Power of Siberia-2, has been under negotiations. Due to China's caution, which does not want to find itself dependant on another country, agreements for the implementation of this project remain very complicated, even though talks about the implementation of this pipeline have been re-opened in August 2025. This would have an annual capacity of 50 billion cubic metres of gas. According to the Energy Institute's 2025 report, China has imported 38.1 billion cubic metres of gas from Russia in 2024, both via pipeline and LNG.

The PRC also imports a large volume of natural gas from Central Asia, with Turkmenistan being the main partner exporting 32.8 billion cubic meters of gas. The Central Asian Gas Pipeline connects Turkmenistan, Uzbekistan and Kazakhstan, and new projects are under discussion in this area. Another important partner is Myanmar, from which China imports 4.7 billion cubic metres of gas.

Figure 1.13- China's pipelines and LNG terminals. Source: OIES

The LNG market is much more diverse. As there are only economic constraints on transport, rather than geographical ones, the PRC imports gas from numerous countries around the world. In 2024, the countries that exported the most LNG, out of a total of around 105 billion cubic metres, were Australia (35%), Qatar (24%), Russia (11%) and Malaysia (10%). Imports from the United States totalled around 5.8 billion cubic metres, though trade tariffs introduced in the last years are likely to cause a sharp fall. Further regasification stations are being built along the coastline of the country. However, LNG imports declined in the first six months of 2025 for two main reasons. Firstly, domestic gas production has steadily increased, rising from around 131.2 billion cubic metres in 2014 to the current level of 248.4. Secondly, the Chinese economy is experiencing a sharp slowdown. Growth in China looks set to slow significantly in the coming years. Moreover the PRC, keen to reduce its dependence on the USA and Australia, is considering the possibility of selling LNG abroad to reduce regasification costs and geopolitical risks.

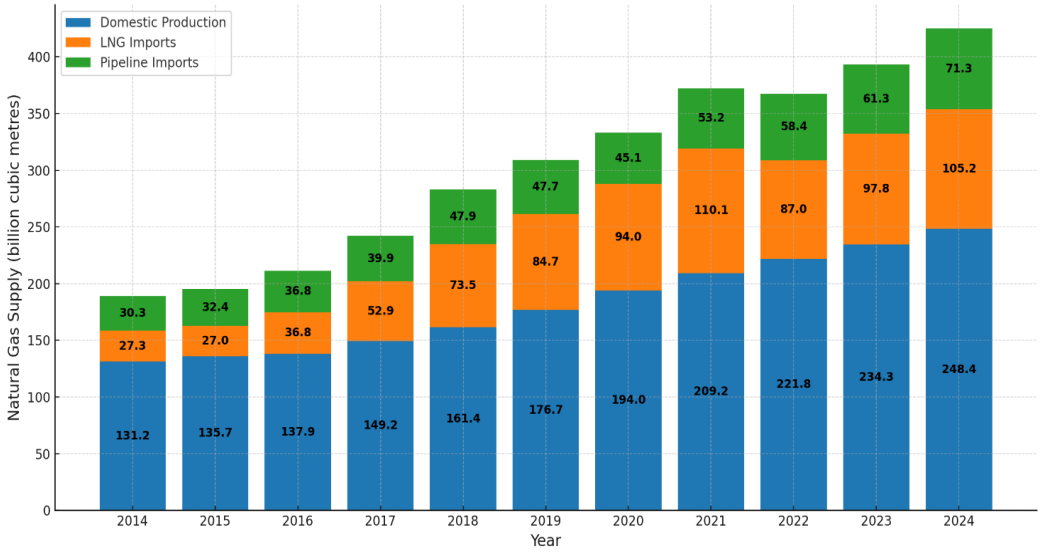

Figure 1.14- China Natural Gas Supply by Source (2014-2024). Source: Statistical Review of World Energy 2025

1.1.4. Nuclear

Among the energy sources discussed thus far, nuclear power is the first classified as a clean energy resource. It is essential for the energy transition because it combines efficiency and low emissions. China is heavily investing in this energy resource. However, this is not the only reason for the investment. Indeed, having a domestic energy source is pivotal for security, as it allows for greater diversification and reduces dependence on other countries. Xi Jinping is aware that the country's reliance on oil and gas poses a significant vulnerability. For instance, a disruption of the oil flow through the Strait of Hormuz would severely impact China's oil imports and would increase its dependence on Russian gas, which would affect the balance of power in the alliance between the two countries. Therefore, investments in domestic energy sources aim precisely to resolve this *security dilemma*.

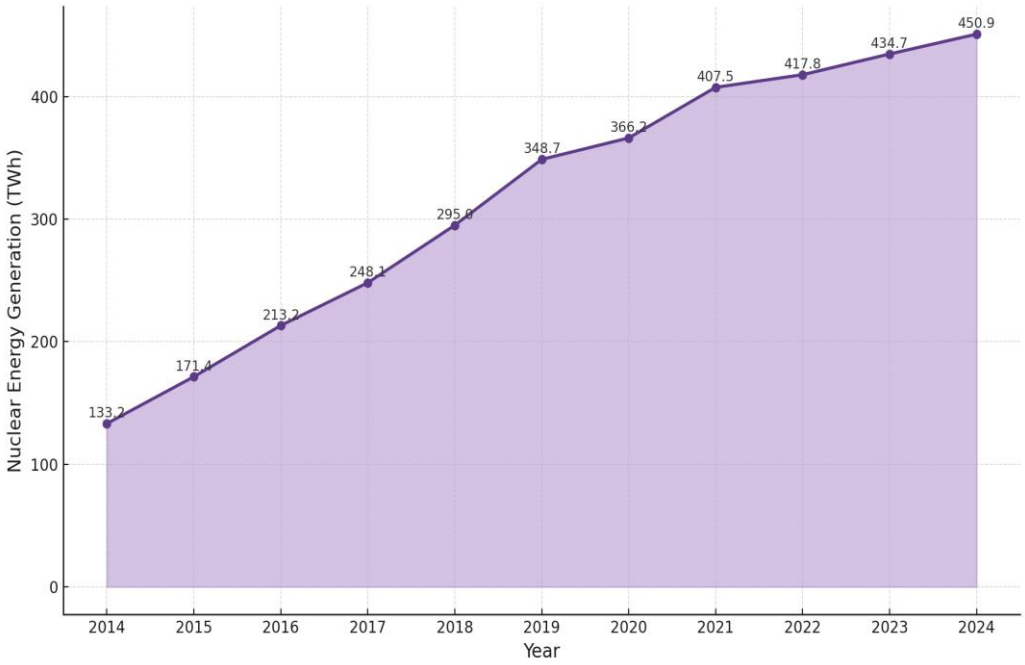

Figure 1.15-China's Nuclear Energy Generation (2014–2024). Source: Statistical Review of World Energy 2025

China currently operates 58 nuclear reactors and 32 more are under construction, supplying approximately 5% of the country's electricity. The country has gone from an energy generation production of 133.2 TWh in 2014 to 450.9 TWh in 2024. This huge growth has made China the second largest nuclear power generator in the world after the US. The targets set out in the 13th and 14th five-year plans include, for example, using 20% non-fossil primary energy by 2030, covering 10% of electricity consumption with nuclear power by 2035 and achieving carbon neutrality by 2060.

Figure 1.16- China's reactors map. Source: World Nuclear Association

Nuclear power in the country began in the 1970s but was suspended in 2011 in the aftermath of Fukushima, only to resume with improved safety standards. Most nuclear reactors are located in coastal areas, far from coal fields and close to areas where economy is rapidly growing. The PRC uses advanced third-generation nuclear reactors, often imported from other countries such as France and the US. One notable example is the Hualong One reactor, a domestically developed model that has already been exported to Karachi, Pakistan (World Nuclear Association, 2025).

Safety standards are managed by the National Nuclear Safety Administration (NNSA), which operates under the Department of Environmental Protection. This agency is responsible for issuing licences, conducting safety inspections, managing waste, transporting nuclear materials and maintaining relations with the International Atomic Energy Agency (IAEA). After the Fukushima disaster, in its 12th five-year plan, the NNSA approved a $13 billion plan to improve the safety of operating reactors. The IAEA itself provided a positive assessment of China's safety efforts. China's nuclear capacity is growing every year. In 2025, operational capacity will reach 56.93 GWe, placing it third

globally after the United States and France, as the image displayed in the article by the World Nuclear Association (2025) "*Nuclear Power in China*".

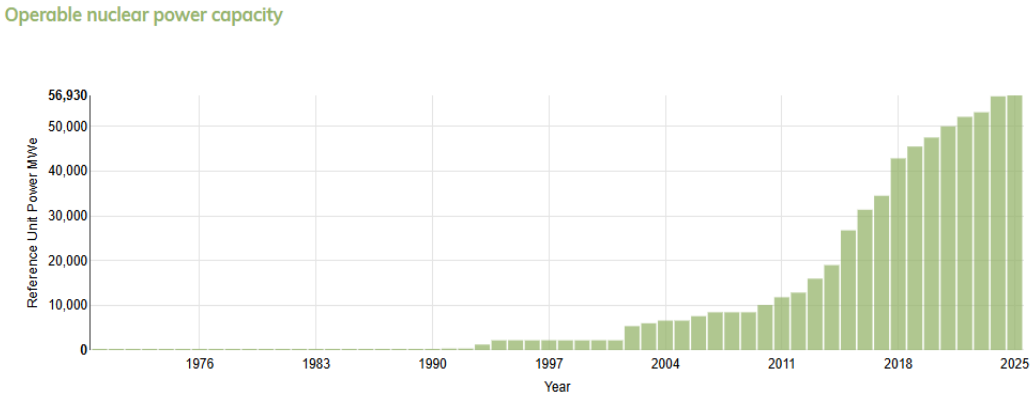

Figure 1.17- Operable nuclear power capacity. Source: World Nuclear Association

1.1.5. Renewables

Energy is responsible for most of the greenhouse gas emissions that cause climate change, mainly due to the burning of fossil fuels. China is the world's largest emitter of CO_2, primarily due its dependence on coal, which accounts for 61% of its energy mix and it is responsible for 79% of its emissions. According to IEA data, in 2022 the country emitted nearly 13 billion tonnes of CO_2, more than double that of the United States, which was second on the list. This equates to 32% of all global emissions. However, this growth trend is likely to reverse in the future due to the green policies included in China's latest five-year plans. The 14th plan (2021–2025) has ambitious sustainable development goals, including reducing carbon intensity, increasing the proportion of renewable energy in the energy mix, and promoting a circular economy. The plan aims to grow the Chinese economy while considerably reducing CO_2 emissions. To achieve this target, the country is investing heavily in various renewable energy sources, including solar, wind, hydroelectric power and bioenergy. Notably, China is responsible for half of the renewable capacity added globally in 2023. According to the IEA, renewables account for 10.1% of total energy supply in 2023.

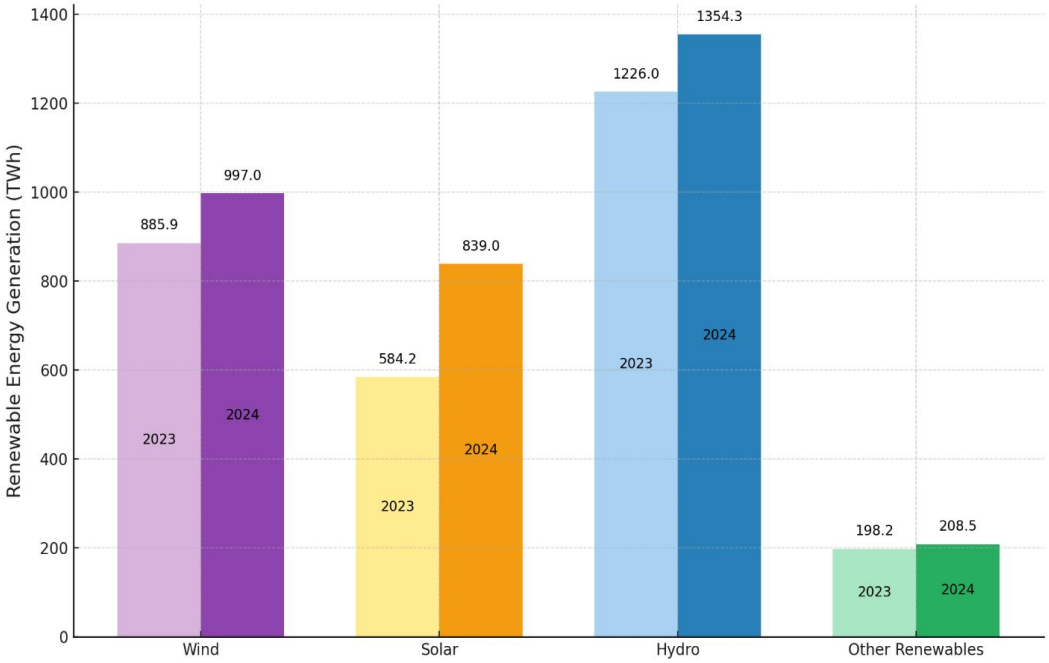

Figure 1.18- China's Renewable energy Generation by source (2023-2024). Source: Statistical Review of World Energy 2025

According to the Statistical Review of World Energy, renewables generation accounted for 3398.8 TWh in 2024, making the country by far the largest generator of renewable energy. The US, the second largest generator, reaches 1068.7 TWh. In the same year, the country installed 278 GW of solar and 79.8 GW of wind power, reaching 1,400 GW of total renewable capacity, six years ahead of its 2030 target. The contradiction in China is that, alongside the growth of green energy, coal continues to be used on a massive scale. The usage of this fossil fuel is necessary for the country's energy stability, but growing investment in renewables indicates that coal is reaching peak consumption, leaving room for alternative energy sources. Investing in renewables, in addition to the stated emission reduction targets, should be regarded as a geopolitical tool. Energy diversification is one of China's strategies for reducing its reliance on foreign energy sources. Domestic energy production is a fundamental means of ensuring energy security.

1.1.5.1. Hydroelectric Power

Among renewable sources, hydroelectric power accounts for a significant portion of China's clean energy production. The country is the global leader in hydropower development, with a generation of 1354.3 TWh in 2024, corresponding to 30.4% of the

world total. For comparison, China's hydroelectric production was more than three times higher than that of its closest competitor, Brazil, with 413.2 TWh.

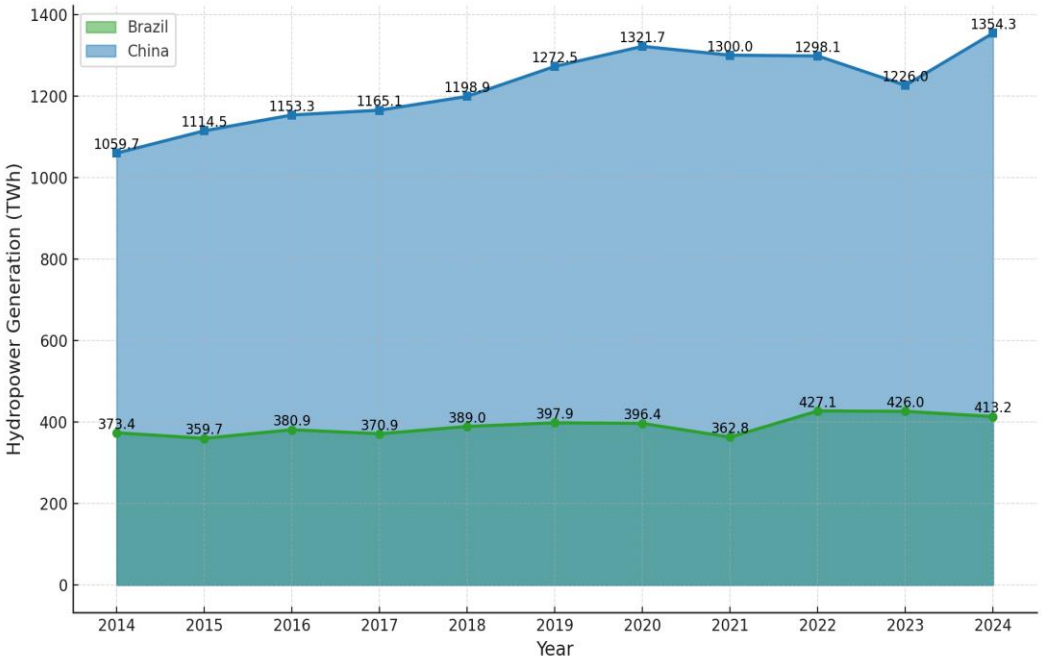

Figure 1.19- Hydropower Generation in China and Brazil (2014–2024). Source: Statistical Review of World Energy 2025

This output is attributable to China's vast water resources. The three most important rivers are the Yangtze River, the Yellow River and the Pearl River. The first of these is the third longest river in the world and is home to the largest hydroelectric dam in the world: the Three Gorges Dam, with an installed capacity of 22,500 MW. Furthermore, in 2024, Beijing completed the world's largest pumping station[5] in Fengning, aiming to reach 80 GW of pumped storage hydroelectricity capacity by 2027 (Moss, 2024). Although considered a 'clean' energy source, hydroelectric power has several negative aspects. The construction of the Three Gorges Dam displaced around 1.4 million people, who were relocated to other areas. Furthermore, the flooding caused by the dam has destabilised the environment surrounding the infrastructure, causing extensive damage to the region's flora and fauna.

[5] There are various types of hydroelectric power plants, one of which is the pumped-storage plant. Although all types work in much the same way, with water passing through a turbine to generate energy, pumped storage allows for the accumulation and scheduling of energy production. In this system, water is accumulated in an upper basin and then released to flow through the turbines.

Additionally, China uses dam constructions as a geopolitical instrument. The PRC is building various infrastructures projects globally, especially in Africa, where hydropower is a key component of its strategy to expand geopolitical influence. The concept of the "*Chinese Water Machine*" (CWM) was introduced to describe the network of Chinese actors and institutions involved in the management of these infrastructures. Through these investments, they exert influence over the local authorities (Han, Webber, 2020). Finally, China is planning to build a dam that will have approximately three times the annual generating capacity of the Three Gorges Dam: the Medong Hydropower Station. The latter will be built on the Yarlung Tsangpo River in Tibet, which flows through India and Bangladesh. In addition to its energy objectives, this construction carries a geopolitical function in water control. The governments of New Delhi and Dhaka have expressed concern about the possible change in the river's flow, causing water shortages and altering the ecological balance of the region (Ramirez, 2025).

1.1.5.2. Solar Power

China is the world's leading producer and consumer of solar energy, with the largest operational solar energy capacity and rapid installation rates. In 2024, the PRC installed more new solar capacity than the rest of the world combined. This increase is due to both domestic demand and China's dominance in solar panel manufacturing. According to data from the Statistical Review of World Energy, China has installed a capacity of 887.93 GW, accounting for 47.6% of the global total. The US remained at 177.47 GWh in 2024, with a share of 9.5%.

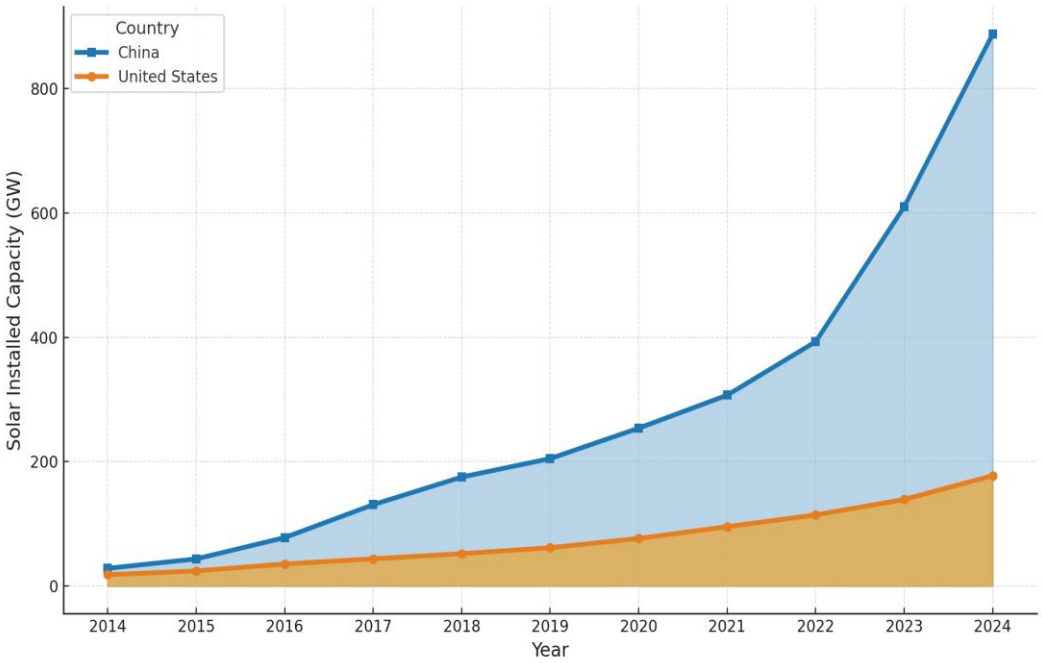

Figure 1.20- Comparative Trends in Solar Capacity Growth: China vs United States (2014–2024). Source: Statistical Review of World Energy 2025

The country has some of the largest solar parks in the world, taking advantage of its desert regions. Currently, the largest photovoltaic park is Midong in Xinjiang, covering 133 km^2. In addition, the Great Wall Solar Power Plant in Inner Mongolia is set to become the world's largest solar park by 2030. Spanning 400 km in length and 5 km in width, it will have a maximum production capacity of 100 GW (Antonio, 2025). The PRC continues to increase its solar energy capacity, installing 93 GW in May 2025 alone. The country also dominates the construction of components. In 2023, China was the leading manufacturer of solar photovoltaic cells, with a 91.8% share of the global market (Statista, 2024). As the global leader in the sector, it exports its technology to other countries. Large solar field projects in countries such as Morocco, Vietnam, Argentina and others are built and developed by Chinese companies (PowerChina, 2025).

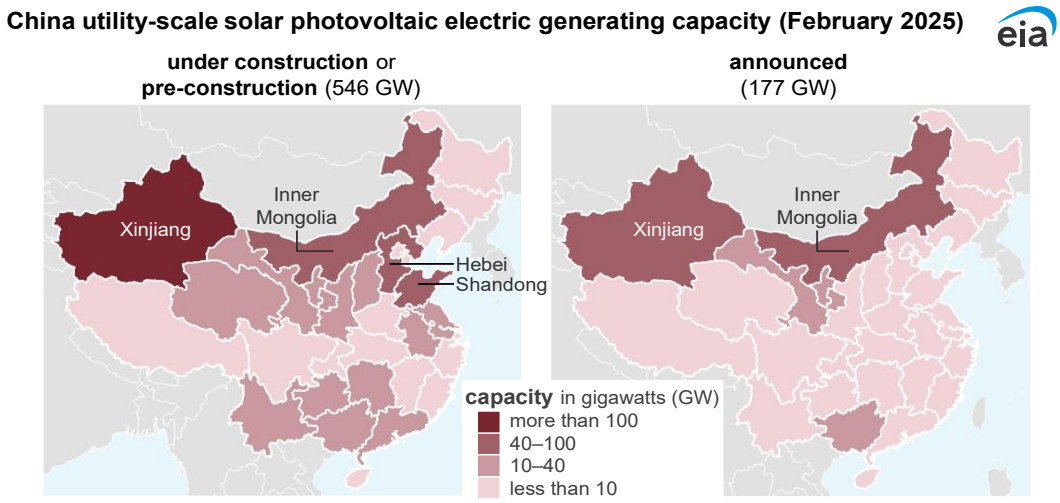

Figure 1.21- China utility-scale photovoltaic electric generating capacity (February 2025). Source: EIA.

1.1.5.3. Wind Power

Even in the case of wind energy, China is the world leader with 46% of the world's installed wind turbine capacity in 2024 (521.8 GW). The country has extensive wind farms both offshore and onshore. The Gansu Wind Farm, the largest in the world, comprises 7,000 turbines with a planned installed capacity of 20 GW (Energy Source & Distribution, 2024). The Chinese government is also building wind farms in various countries around the world, including Ethiopia, Pakistan and Argentina. Indeed, the PRC is the global leader in turbine manufacturing, exporting them all over the world.

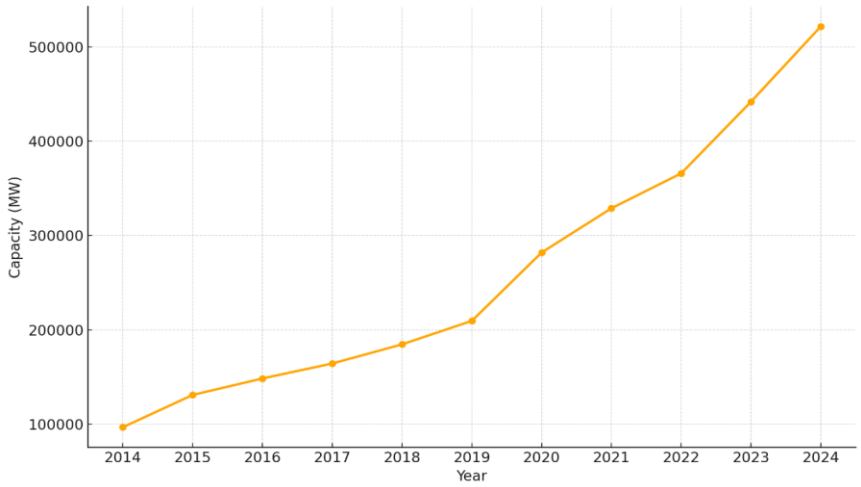

Figure 1.22- China Installed Wind Turbine Capacity (2014–2024). Source: Statistical Review of World Energy 2025

In recent years, the PRC has been focusing heavily on wind and solar energy. According to the NEA, in 2024 China's wind power capacity increased by 18%, while solar capacity rose by 45.2%. with these numbers, the country has achieved its 2030 installation target six years ahead of schedule and at this rate solar power capacity will exceed that of coal in 2030. Moreover, according to the Financial Times 74% of global solar and wind projects are in China. By the end of 2025, the country is expected to add 246.5 GW of solar and 97.7 GW of wind power. This trend is moreover evident from the fact that in the first quarter of 2025, solar and wind energy accounted for 22.5% of total electricity consumption, despite the continued construction of new coal-fired power plants. This ambivalence demonstrates that China's real goal is not to reduce greenhouse gas emissions, as the country is currently responsible for one-third of global emissions, but rather to reduce its dependence on gas and oil imports by increasing its energy security.

1.1.5.4. Bioenergy

Bioenergy is obtained from biomass, namely organic matter of plant or animal origin that can be used to produce electricity, heat or biofuels. Although it represents a small percentage of the energy mix, China is a global leader in this field. According to Global Energy Monitor, the country accounts for over a quarter of all global bioenergy generation capacity, at 19.19 GW, and almost 40% of the world's potential capacity in 2023. China's dominance in bioenergy is largely due to its prominent role in the agricultural sector and its extensive forested areas, making it one of the countries with the highest availability of biomass in the world. Although they are considered clean energy sources, they still emit CO_2 and other pollutants into the atmosphere. Traditional first- and second-generation biofuels are obtained from organic waste, wood, corn and sugar cane, among other things. These fuels are burned to obtain energy, affecting the environment. Only the latest generation are produced by advanced technologies and reduced impact on environment.

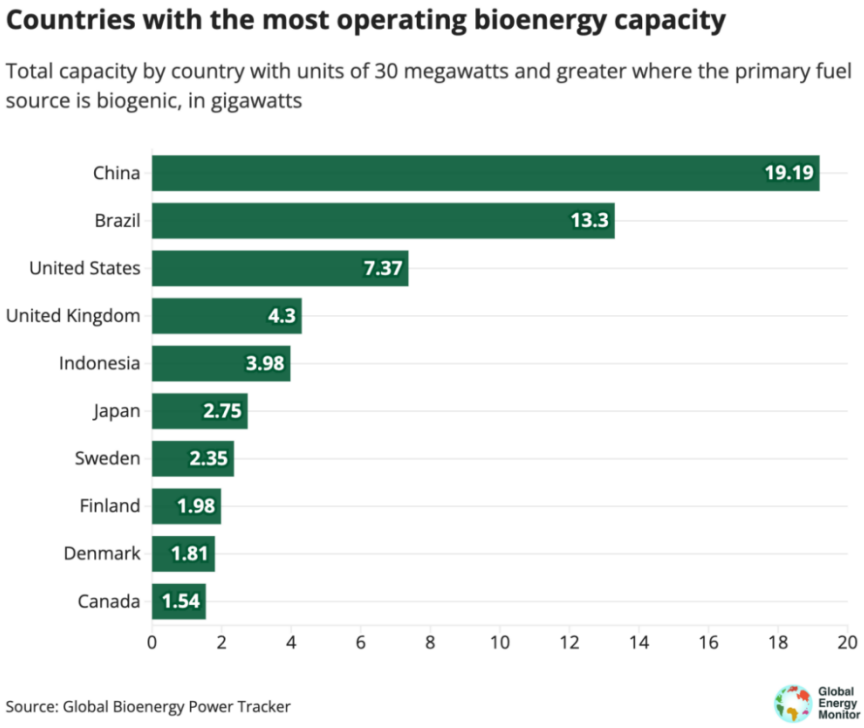

Figure 1.23- Countries with the most operating bioenergy capacity. Source: Global Bioenergy Power Tracker

1.2. Critical minerals

China's dominance in the field of renewable energy is also due to its control over critical minerals and connected processes. These include rare earths, a group of 17 elements, as well as other minerals such as cobalt, nickel, graphite, lithium and copper. These irreplaceable substances are essential for applications in strategic sectors such as renewable energy, electric mobility, aerospace and defence. Devices such as smartphones, microchips, radar systems, batteries, computers, wind turbines, and solar panels all rely on these high values materials. In 2023, global trade in raw materials and semi-finished products reached $2.57 trillion in imports and $2.52 trillion in exports, accounting for over 10% of global trade. Asia is the main importer with $1.5 trillion, and China accounts for 40% of these imports. The main exporter of these materials is Australia, which represents Beijing's main trading partner with $95 billion in bilateral trade in 2023 (UNCTAD, 2025).

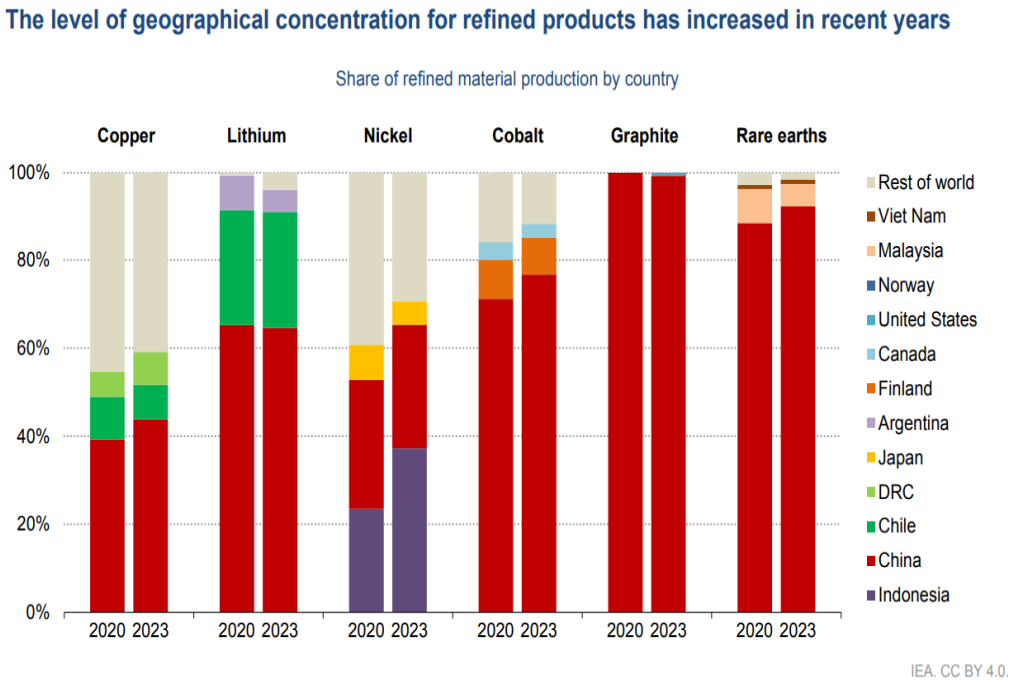

Figure 1.24- Share of refined materials production by country (2023). Source: IEA

The graph illustrates that the PRC has a significant advantage over all other countries when it comes to critical minerals, particularly rare earths. Accounting for around 70% of rare earths production and 90% of refining capacity, the nation's dominance in this field is rising geopolitical tensions with the US, given the strategic value of these materials. Overall, China produced nearly 60% of all critical materials globally in 2023 (Sulgiye et al., 2023). The country is investing heavily to ensure self-sufficiency in the critical minerals value chain. This involves promoting the expansion of domestic mining capacity, as well as acquiring resources abroad through investment and joint ventures.

China is the global leading producer of rare earths and has the world's largest deposit in the autonomous region of Inner Mongolia, making it a key player in domestic internal extraction. The country also extracts other materials, such as lithium and graphite. However, domestic reserves are insufficient to sustain the enormous expected growth in demand, and is expanding its global presence, currently ranking as the world’s largest importer of critical minerals for processing. For instance, numerous Chinese companies operate in the Democratic Republic of Congo, which is believed to hold over 60% of the world's cobalt reserves, a vital component in battery production. Beijing's influence also

extends to other African countries and South America, particularly Argentina and Chile, due to their high lithium reserves, as well as Indonesia for its nickel reserves. Competition with the United States continues in Greenland, where huge quantities of critical minerals are present. This is one of the reasons behind Trump's statements regarding control of the island (Maruf, 2025). China's strategy is to maintain the largest global reserves of these materials to control this crucial market. Although China does not export raw materials extensively, it is one of the largest exporters of semi-finished products and strategic components. Exporting ion batteries, solar panels, modules, and strategic components enables China to control global supply chains and enhance its geopolitical influence.

1.3. Domestic demand: key sectors that drive consumption

China has experienced remarkable economic growth over the past few decades. Although largely driven by exports, infrastructure investment and industrialisation, this growth has recently begun to decelerate. Considering the decline in global trade, economic clashes with the US, rising geopolitical tensions, and the emergence of domestic priorities, the Chinese government has embarked on a transformation of its development model. At the heart of this shift lies the need to bolster domestic demand as a driver of its own growth. This strategy is reflected in the concept of "*dual circulation"*, introduced in 2020 by Xi Jinping and included in the 14th Five-Year Plan.

This distinctive approach, referred as "*Xiconomics*", enclose the contemporary Chinese method to development. The first circulation is internal, aiming to strengthen Chinese autonomy by focusing heavily on domestic consumption, innovation and national technology. The aim is to promote a development model centred on the domestic market, reducing dependence on exports and foreign capital by replacing critical supplies with local production. The second circulation is external and involves global trade, foreign investment, and international economic cooperation. China does not wish to abandon globalisation, but rather to adopt a more selective and strategic approach, opening up only in areas it deems beneficial for national security or development purposes. The main target of this strategy is to stimulate domestic consumption in order to create an economic environment that is less vulnerable to external shocks (McAlary, 2023).

Three key sectors stand out for their contribution to domestic demand growth: the industrial sector, which reflects the modernisation of consumption and production of goods; the residential sector, which has represented a transformation in lifestyles but has suffered a sharp slowdown; and finally, the transport sector, which has helped to increase mobility within the country, boosting domestic trade.

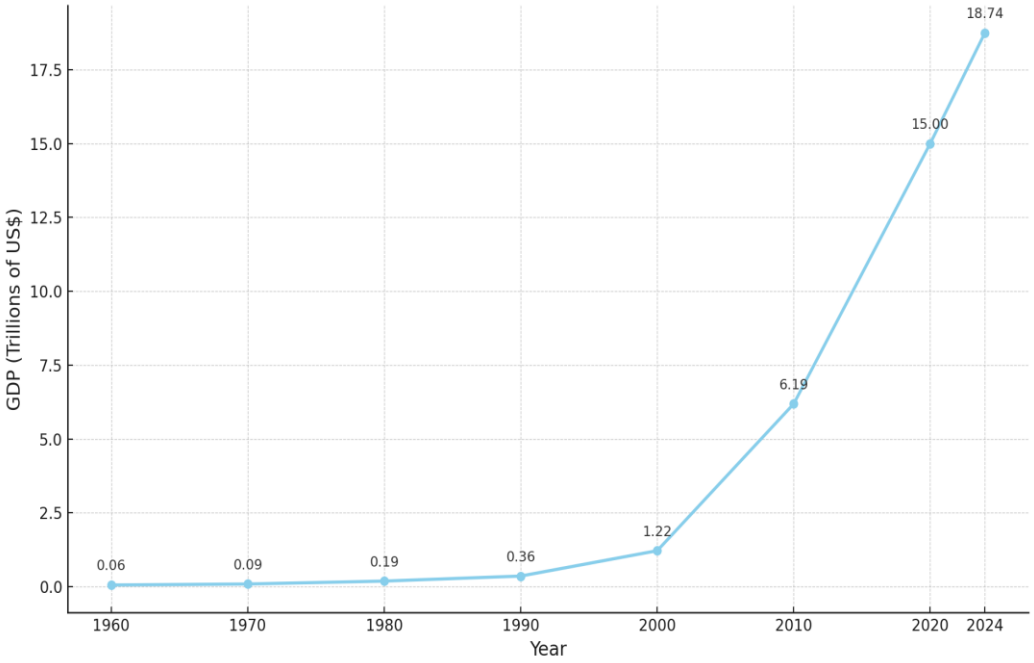

Figure 1.25- China GDP (Current US$). Source: World Bank.

1.3.1. Industrial sector

Since the late twentieth century, China has achieved extraordinary progress in industrial development by opening to the global market and implementing reforms. This development unfolded in various phases. The first phase began in 1978 with Deng Xiaoping's economic reforms marking a pivotal shift in the country's development policy. The involved initial opening up to the international market, as well as balancing agriculture and industry, both light and heavy industries. As a result of these reforms, the Chinese economy began to grow rapidly in the mid-1980s. The concept of *"industrial policy"* was introduced in the 1986 7th five-year plan. This plan's main objectives were to develop the energy system, strengthen transport and telecommunications, promote the service sector, and encourage the growth of the technology sector.

Since the 1990s, the country has sustained to grow despite the Asian financial crisis and has further developed sectors such as technology and energy. However, it was in 2001 that China's approach changed significantly. By joining WTO, Beijing opened itself up completely to the global economy. With the increased involvement in international trade, the country has also been able to promote new technologies by developing sectors such as IT and biotechnology. In addition, services such as logistics, finance and ICT have grown.

However, the 2008 global financial crisis severely impacted foreign demand. The country turned to domestic demand as a mean to maintain growth. This changed the role of industrial policy from simple support to a tool for recovery. In 2009, the government launched a sectoral recovery plan with the aim of developing key industries such as the automotive, energy, electronics and raw materials sectors. This marked the beginning of increased investment in clean and renewable energy, new materials, ICT and biotechnology. The new direction for the industrial sector is set out in the 5th five-year plan (2011-2015), which defines six priorities: strengthening manufacturing, investing in strategic emerging industries, promoting efficient energy use, building a modern transport system, digitising the economy and, finally, developing a strong maritime economy.

Since 2012, China has been on a path to becoming an advanced industrial power, focusing not only on rapid growth but also on high-quality growth. A ten-year programme called Made in China 2025 (MiC 2025) was launched in 2015. This plan focused on smart manufacturing, high-end equipment, electric vehicles, new technologies, and new energies and materials. It also aimed to reduce dependence on foreign technology, increase the domestic market share in high-tech sectors, and improve productivity, quality and innovation (Jigang, 2020).

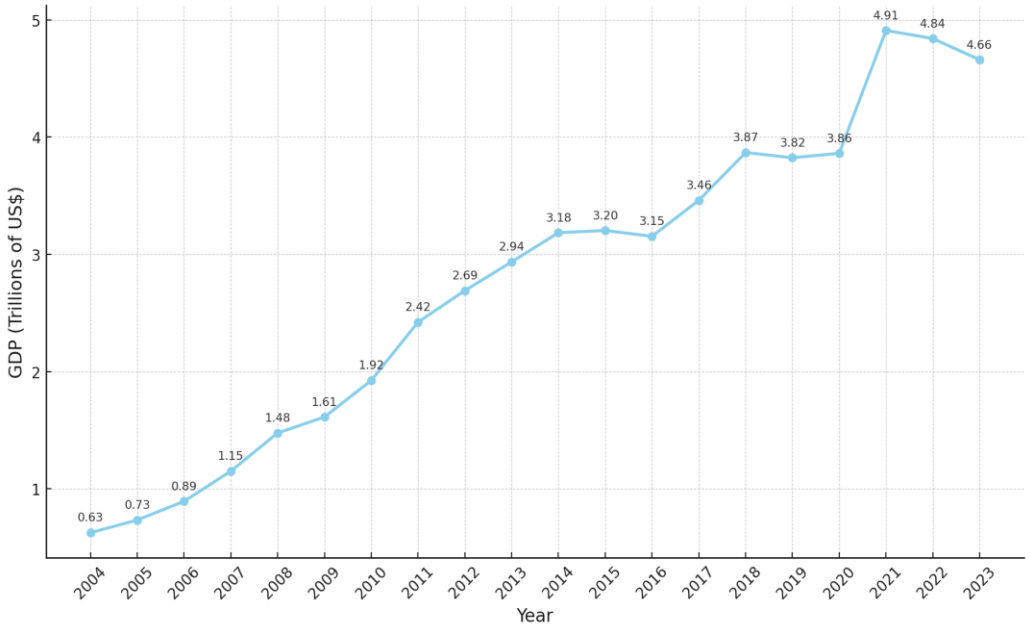

Figure 1.26- China Manufacturing Output (2004-2023). Source: Macrotrends.

1.3.1.1. Present, Future and AI

China has become the world's leading manufacturing country. Manufacturing has a fundamental impact on the structure of the Chinese economy. According to China Briefing, manufacturing accounts for approximately 26% of China's GDP in 2025, despite a transition towards a more service and high-tech-oriented economy. However, since 2004, manufacturing's share of GDP has declined.

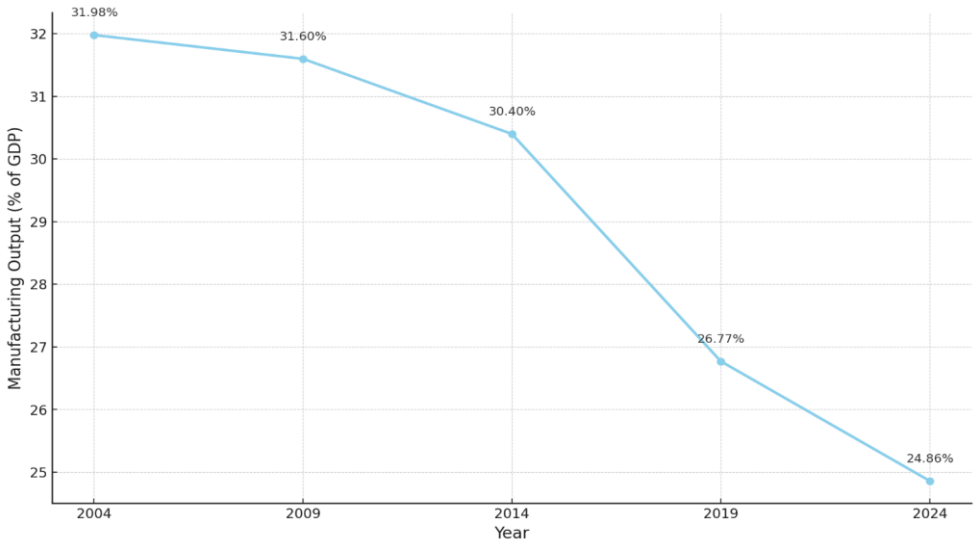

Figure 1.27- China Manufacturing Output % of GDP. Source: Macrotrends.

To assess the health of this sector, the growth rate of manufacturing added value is used. This indicator measures the change in industrial production over a given period by evaluating short-term trends. The latter covers three broad sectors: mining, manufacturing, and the supply of utilities and resources. Manufacturing value added growth remained above 5% in the last two years, except in August 2024.

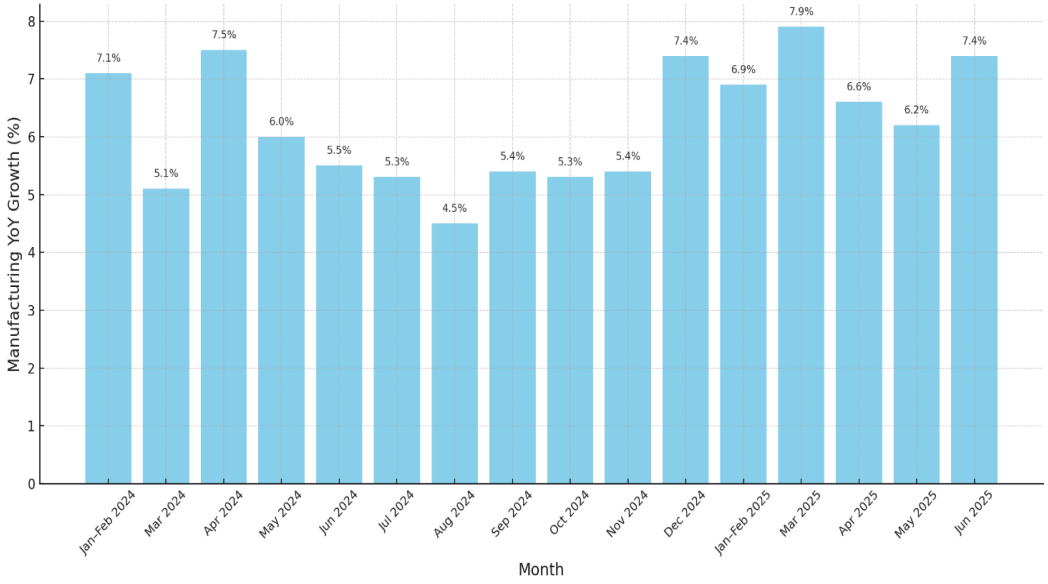

Figure 1.28- Monthly Growth in Manufacturing Added Value. Source: National Bureau of Statistics

Another key indicator to understand the strength of China's industrial sector is through exports. The high volume of exports indicates strong international demand and confirmed China's competitiveness in the global market. According to Trade Int., in 2024 China exported manufactured goods worth approximately $3.58 trillion, representing 30.1% of global merchandise exports. The United States remains China’s largest export destination, accounting for 15% of its total exports. However, the recent trade tension sparked by Trump's tariffs strategy has posed significant challenges to China’s export sector.

While MiC2025 has made positive progress, several critical issues remain. China has become the world leader in green energy, producing 75% of world’s lithium and dominating the electric vehicle market. Technologies such as high-speed rail, telecommunications and robotics are also being exported all over the world. However, China is still heavily dependent on other countries, such as the US and Taiwan, for

semiconductors production. The country continues to face challenges in sectors such as pharmaceuticals, biotechnology and aviation. The Chinese government has decided to adopt a new transition programme called “Made in China 2.0” for 2035. The latter includes the already mentioned “dual circulation”, higher quality development and technological sovereignty. This new policy focuses on integrated, sustainable and responsive manufacturing. Expected features include computational factories, where physical production and digital coordination coexist, as well as new industrial quality standards that can be exported globally, advanced materials, and the fusion of biotechnology and robotics into production processes.

Additionally, artificial intelligence plays a pivotal role as an industrial operating system. Whereas artificial intelligence is mainly seen as a consumer product in the West, in China it is seen as a strategic tool for enhancing industrial performance. It can improve every stage of the industrial production process. This approach, known as “*AI+*”, highlights the widespread applicability of this technology in every sector and process. AI is used directly in so-called smart factories to optimise production processes. In China, there are around 30,000 of these factories. These industrial unit use algorithms to optimise energy use, reduce waste and anticipate faults.

In accordance with Horizon Grand View Research, the Chinese smart manufacturing market has already generated revenue of approximately USD 49,835.7 million in 2024 and is expected to reach USD 126,837.8 million by 2030, with a compound annual growth rate of 16.3% between 2025 and 2030.

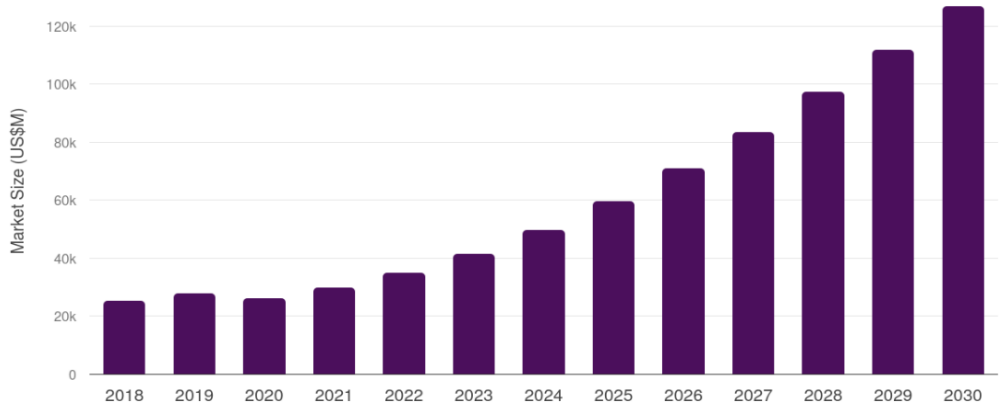

Figure 1.29- China smart manufacturing market, (2018-2030). Source: Horizon Grand View Research

Moreover, one of the distinctive features of Chinese manufacturing today is the synergistic nature of its industrial development. The numerous sectors do not develop in isolation but rather reinforce each other. For instance, the widespread of AI across several divisions has contributed to their growth. These sectors include logistics, agriculture and healthcare. This has created a self-perpetuating flywheel effect of innovation. Technological innovations are initially tested on a small scale: if they successfully work, they are consequently industrialised. This continuous interaction between the laboratory and the factory, where feedback is always present, is one of China's main strategic advantages. Hence, the production generates data which fuels AI models. The latter optimizes manufacture processes which improve production (Kuo, 2025).

Furthermore, this sector is the biggest energy consumer in China. According to the IEA, in 2023, 48% of total final energy consumption came from the industrial sector, and this figure has been growing steadily since 2000. The share rises to 60% if only electricity consumption is considered, thus excluding fuels.

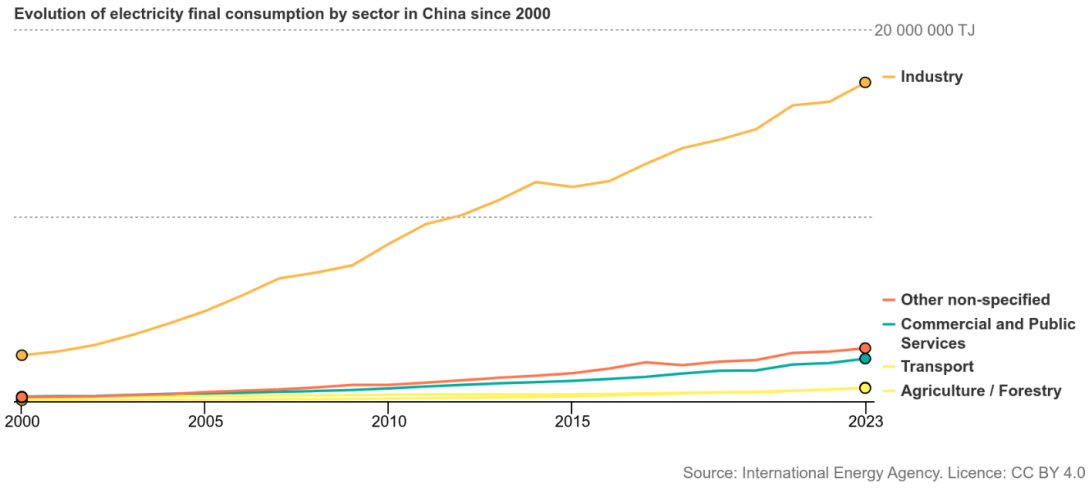

Figure 1.30- Evolution of electricity final consumption by sector in China since 2000. Source: IEA

1.3.2. Residential sector

The enormous demographic growth and economic reforms in the 1980s, led the residential sector to become a key component of China's GDP. According to data from the People's Bank of China (PBOC), direct investment in the real estate sector amounted to $1.18 trillion in 2020, accounting for approximately 7.4% of GDP. Data from the

National Bureau of Statistics (NBS) show that the construction sector, based on real estate, contributed an additional $1.15 trillion, or 7.2% of GDP of the same year. In addition, employment in construction peaked at 62 million people in the same year, as showed in Viktor Rojkov graph (2024) contained in his article.

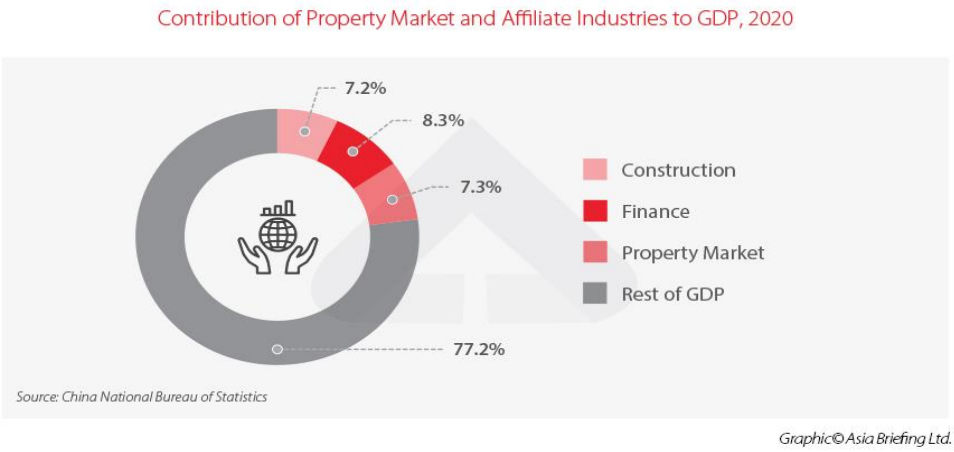

Figure 1.31- Contribution of Property Market and Affiliate Industries to GDP, 2020. Source: China National Bureau of Statistics.

The growth came to a halt in 2021, when the sector entered a severe crisis. This development had generated unsustainable levels of debt, prompting the Chinese authorities to intervene in the summer of 2020. In fact, a situation had developed in which local governments relied on land sales, families invested in real estate as a form of savings, and developers accumulated debt by selling pre-sale properties to finance their operations. The government imposed strict limits on access to credit with the dual aim of reducing systemic financial risks and discouraging the use of real estate as a speculative tool. The introduction of the "*Three Red Lines Policy*"[6] led to a significant reduction in credit availability for developers.

However, this system led to a surge of insolvency cases. The turning point came in 2021 with the collapse of Evergrande, one of China's largest real estate companies. This fuelled a crisis of confidence that affected consumers, investors and credit

[6] The "Three Red Lines Policy," introduced by the Chinese government, required real estate companies to comply with three financial indicators: a debt-to-asset ratio of less than 70%; a net gearing ratio, or the ratio of net debt to equity, of less than 100%; and a cash-to-short-term debt ratio of at least 1. The system worked like a traffic light. If all three criteria were met, (green light), the company was allowed to increase its debt by up to 15%. However, if one, two, or all three lines were violated (orange, yellow, and red light), the debt could not exceed 10%, 5%, or 0%, respectively.

institutions. Sales fell by 50% from their peak, new construction declined by 60% from pre-COVID levels, and real residential property prices sharply declined.

Figure 1.32- Real Residential Property Prices for China. Source: Bank for International Settlements.

To address the crisis, Beijing's authorities have started to ease restrictions. Since the second half of 2022, mortgages have become more accessible, restrictions on property purchases have been relaxed, and incentives have been introduced to complete unfinished construction projects. These policies have mitigated some of the effects of the crisis. The number of completed homes has risen, and the decline in new projects has begun to stabilise. Additionally, the government has encouraged local authorities to purchase unsold homes and convert them into social housing.

This situation has led to a decline in the real estate sector's share of GDP. In 2022, its contribution to GDP fell by 0.3 percentage points, and by another 0.1 in 2023. Conversely, the construction sector, which also includes public infrastructure, maintained a positive contribution, albeit reduced, with growth of 0.5 percentage points in 2023. The graph developed by Luís Pinheiro de Matos (2024) illustrates the relative weight of the real estate and construction sectors in GDP.

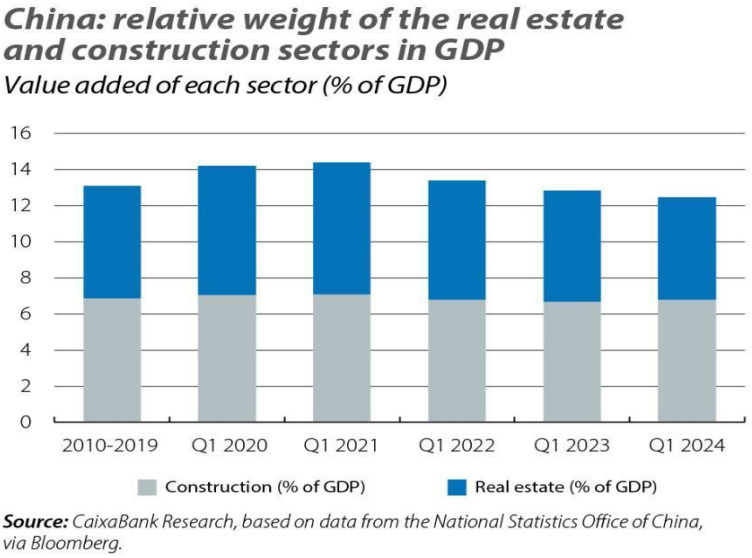

Figure 1.33- China: relative weight of the real estate and construction sectors in GDP. Source: CaixaBank Research.

A major problem encountered was that the crisis did not affect the country uniformly. Some cities, such as Shanghai and Beijing, saw growth in urban areas. In the capital, there was a 15% increase in 2021, demonstrating that demand remains relatively strong, local governance remains more solid, and some projects are more stable and better funded. In other areas, such as Chongqing and less developed areas, declines of more than 15% were recorded, with a contraction in real estate activity, a growing risk of unsold properties and construction sites at a standstill. This situation is a sign of weaker domestic demand. In addition, the fiscal capacity of the provinces is highly uneven. The less affluent provinces depend mainly on land sales to developers to finance their budgets. With the construction market stalled, their revenues have sharply declined. In contrast, wealthy cities have greater capacity to sustain active policies (CaixaBank, 2024).

Furthermore, weak demand in rural areas is due to China's significant demographic imbalance. In compliance with Worldometer, it is projected that 67.5% of the population live in urban areas in 2025. Population growth's trend in cities has been ongoing since the 1950s, with many rural areas becoming depopulated. The issue of growing regional divergence will have to be addressed by the Chinese authorities, as there are risks of social tensions and fiscal fragility.

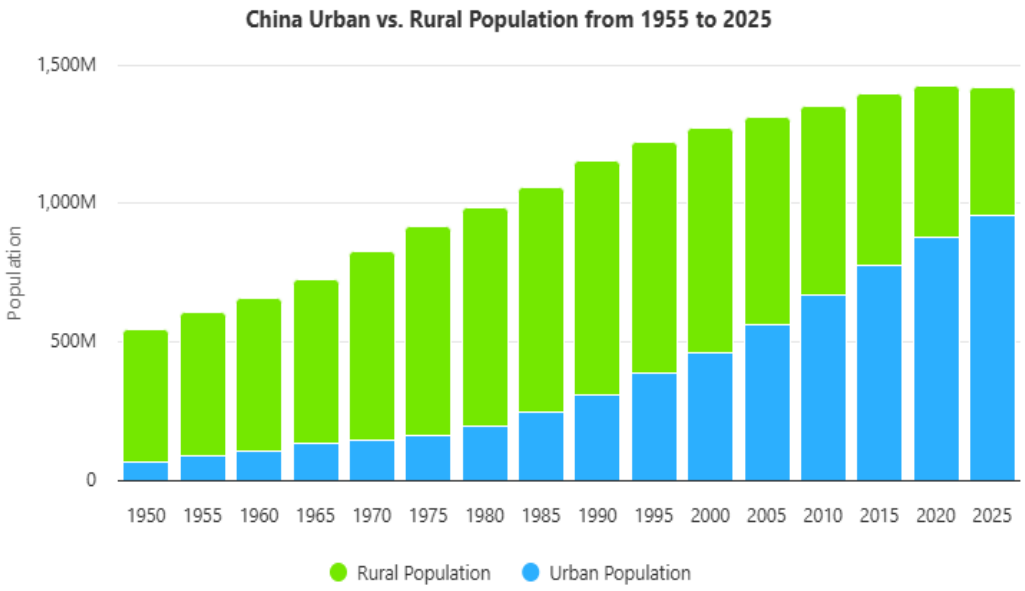

Figure 1.34- China Urban vs. Rural Population from 1955 to 2025. Source: Worldometer.

In 2025, the Chinese real estate market is expected to continue to experience a severe crisis. Weak demand, oversupply, falling prices and growing economic tensions with the US are exacerbating instability, prompting increased state intervention in the sector.

Demand remains very weak, although there are signs of stabilisation. While there was a 14.08% year-on-year decline in 2024, the decline in the first quarter of 2025 was only 2.43%, with a shift in purchases towards finished homes due to fears of uncompleted projects, according to the National Bureau of Statistics. The data for the supply side remains extremely negative. In the first quarter of 2025, new projects fell by 24.27% and completions by 14.77%, with over 421 million square metres unsold. The government, to address the situation, is lowering the average mortgage rate and making it easier for banks to grant loans. In addition, the rental market is growing, with an increase in supply and a decline in prices. The government's target is to reach 8.7 million subsidised rental units by the end of 2025. The graphs contained in the article written by Nussupbekova (2025) with NBS data show this whole situation.

Figure 1.35- Total Area Sold New Residential Units, China (2010-2024). Source: NBS.

Figure 1.36- Residential Construction Dynamics, China (2010-2024). Source: NBS.

1.3.3 Transportation sector

The transport infrastructure network has experienced unprecedented growth in terms of size and quality. The country's vast expansion required a system able to connect its far corners, transporting and good via highways, railways, waterways, and airports. The development of transport infrastructure in China is considered essential for three reasons: national economic growth, consolidation of national defence and unification of the country. Furthermore, the development of a leading-edge transport system is crucial for the colossal Belt and Road Initiative (BRI) project.

China has become a model country for the construction of highways and high-speed trains. In accordance with CEIC, the length of motorways in 2023 was approximately 5,436,845,000 kilometres, a dramatic growth since 2012.

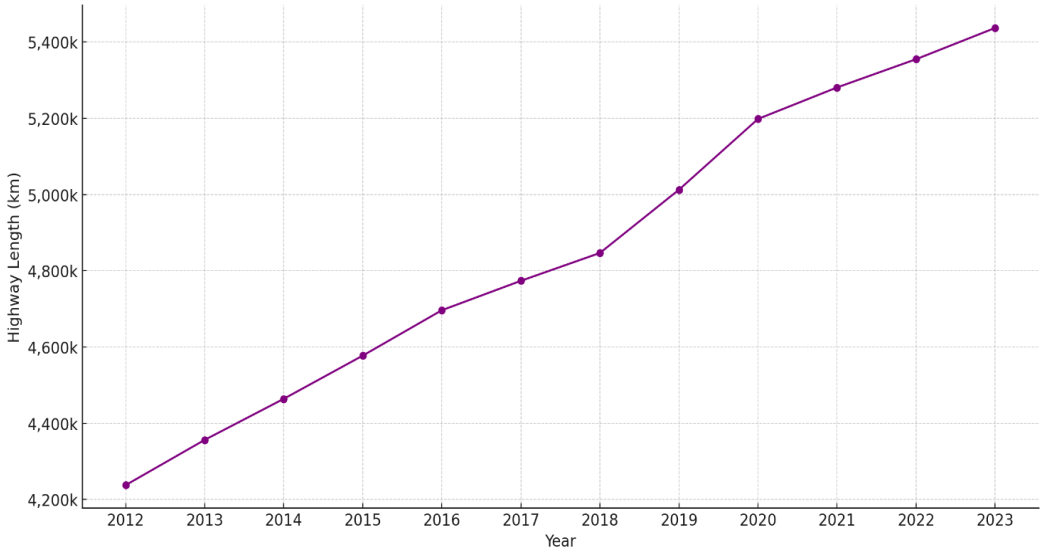

Figure 1.37- Highways growing length (2012-2023). Source: CEIC.

Although they cover a large part of the country, most highways are concentrated on the eastern side, where the main cities and seaports are located. In Xinjiang and Tibet, the number of motorways is significantly lower, partly due to the geological conformation of the regions and their distance from the centres of power. Although roads have been built on the Qinghai-Tibetan plateau, they are extremely difficult to navigate due to the high altitudes. This has improved local mobility and has significant geopolitical and military importance (Lewis et al., 2025).

The growth of the automotive industry has had a significant impact on the development of roads and highways. China is the largest country for car manufacturing and the largest automotive market. Throughout 2024, it produced 31.3 million vehicles, up from 2023, and sold 31.44 million cars on the domestic market, of which 18 million were manufactured in China. Production of new energy vehicles (NEVs) increased by 34.4% compared to the previous year, with 13 million units. Battery-electric vehicles (BEVs) account for 60% of the NEV market, with plug-in hybrids making up the remaining 40%. Furthermore, with 5.86 million vehicles sold abroad, China is the world's largest vehicle exporter (Bekker, 2025).

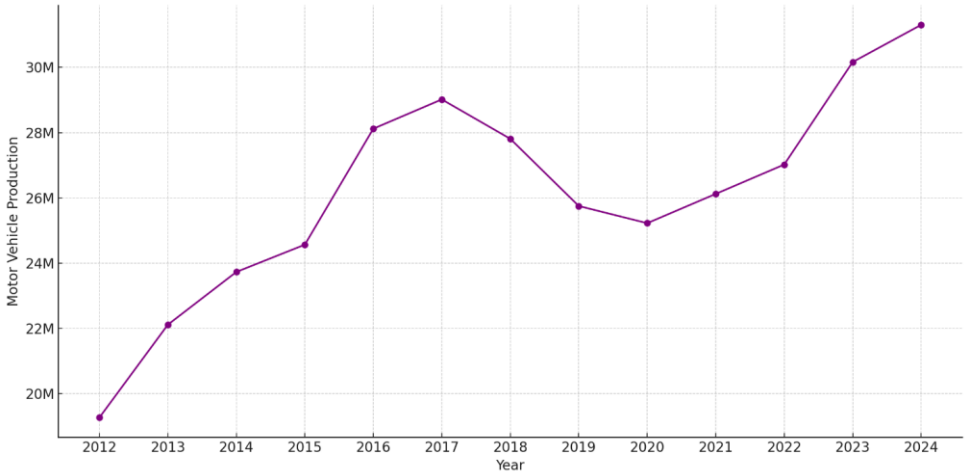

Figure 1.38- China's Motor Vehicle Production (2012-2024). Source: CEIC.

Rail transport has always been a pillar of the entire Chinese logistics system. For a long time, coal was the main energy resource and therefore the main commodity transported. With the growth of the oil and natural gas industry, special railway lines were built to connect production areas with consumption areas. The CEIC estimates that in 2023, the length of the railways was approximately 158,737,300 km, also continuing to grow since 2012. Approximately 48,000 kilometres of these are high-speed lines.

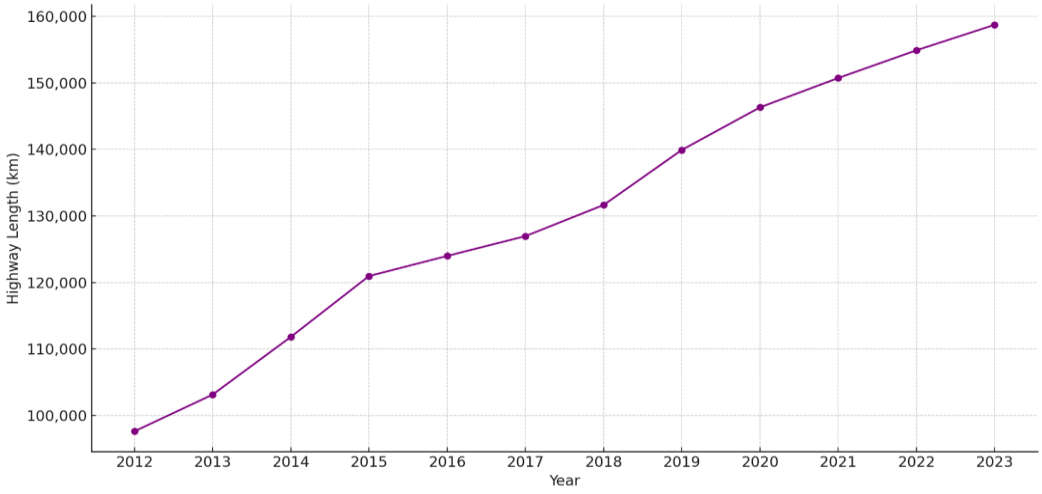

Figure 1.39- Total Length of Chinese Highways (2012-2023). Source: CEIC.

Today, the Chinese railway network also extends to foreign countries to facilitate trade. According to the State Council of the People's Republic of China, freight trains are connected to 25 European countries, exceeding 100,000 trips since 2011, and 11 Asian countries. As a key component of the Belt and Road Initiatives, an efficient railway

network enhances transport speed, with reduced costs and less environmental impact. Beijing's goal is to achieve a network of 180,000 kilometres by 2030, with 60,000 kilometres of high-speed rail. Additionally, China has developed technology that allows the new CR450 trains to reach speeds of 400 kilometres per hour.

In terms of water transport, China has many navigable rivers, such as the Yangtze and the Pearl River. These waterways are used to transport goods efficiently and at low cost. The Yangtze is 6,300 kilometres long and can be navigated by large vessels, accounting for around a third of the country's river traffic. This mode of transport is primarily employed for heavy and bulky loads where railways are not viable. In addition, China has the world's longest artificial waterway. The Grand Canal, which is approximately 1,776 km long, connects Beijing to the city of Hangzhou, crossing numerous river basins.

With over 14,000 kilometres of coastline, China has made substantial investments in port development and, consequently, in maritime transport. The main shipping areas are in the north, around Shanghai and, in the south around Guangzhou. In recent decades, ports have been mechanised and expanded, making them more modern and capable of transporting large quantities of goods, becoming a global logistic superpower. Additionally, for its trade China built ports in other parts of the world, such as Gwadar in Pakistan and Chancay in Peru.

Finally, the Chinese aviation sector is experiencing significant growth and transformation. This is characterised by a large domestic market, an increase in international routes, and ambitious national aircraft development programmes. Government policy heavily influences the sector, focusing on infrastructure development, technological innovation, and expanding its international presence. According to the State Council of the People's Republic of China, the aviation sector transported 730 million passengers and 8,982 million tonnes of cargo in 2024. China is home to some of the world’s busiest airports, such as Beijing Capital, Shanghai International Airport and Daxing International Airport.

CHAPTER 2 - Planning Prosperity: The Role Of Five-Year Plans In China's Economic Transformation

2.1. Chinese Economic Development

The growth of the Chinese economy is one of the most notable and discussed events of the 21st century. In a few decades, the People's Republic of China has developed its economy, making an unprecedented qualitative leap from a position of relative isolation and backwardness to a position of leadership in the global economy. According to World Bank data, the GDP per capita has increased from approximately $95 USD per year in 1949 to $13,303 USD in 2024. From 1949 to 1980, per capita GDP remained substantially stable, with an initial decline: in 1962, the lowest point of $71 per year was recorded. The Chinese economy took flight under the leadership of Deng Xiaoping (1980s), and the trend does not seem to have ended yet.

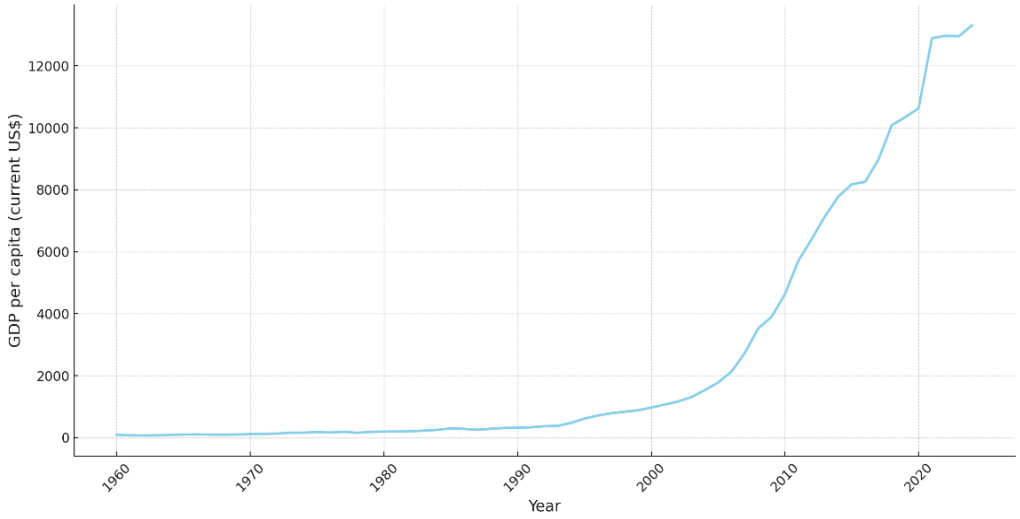

Figure 2.1- GDP Per Capita (Current US$) - China (1960–2024). Source: World Bank

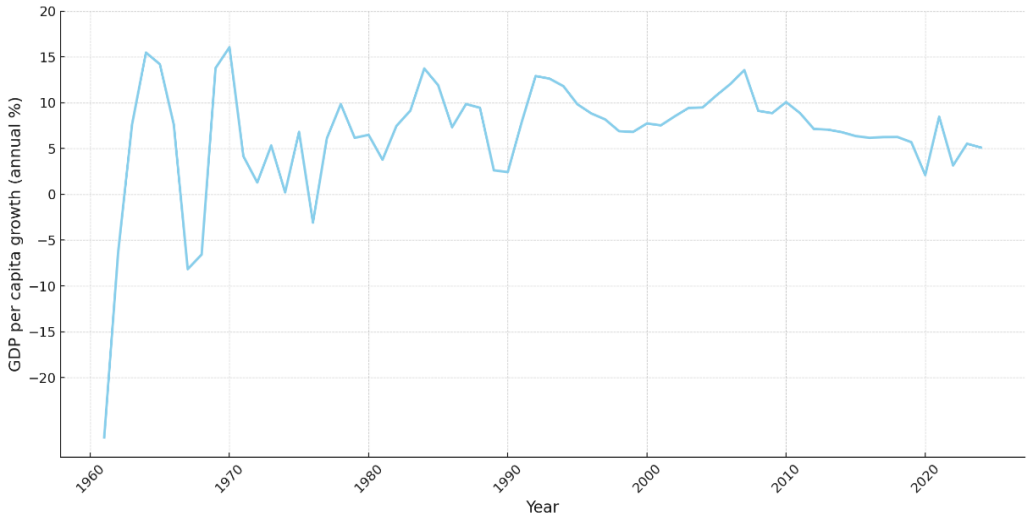

Figure 2.2- GDP per capita growth (annual %) - China. Source: World Bank

In 1949, the country's share of global GDP was relatively modest, estimated at around 4-5%. At the beginning of Deng Xiaoping's reform period in 1978, China's GDP accounted for only 1.7% of the world economy, while in 2025 it is the world's second largest economy with an estimated share of global GDP of around 19.8%.

This rapid economic development is the result of the transition from a centrally planned economy under the control of the Chinese Communist Party (CCP) to a mixed economy combining state control with market efficiency: “socialism with Chinese characteristics”. This model is a unique example: it has enabled the country's rapid economic growth while posing a constant challenge in adapting central planning to changing domestic socio-economic conditions and an equally changing global economy. Therefore, it requires continuous adjustments to keep the economy on track to meet its targets.

2.1.1. Mao’s Foundations: Setting the stage for reform.

In the Maoist period (1949-1976) in which following the establishment of the People's Republic of China in 1949, the Chinese economy transitioned from a largely agrarian system to a centrally planned economy, heavily influenced by the Soviet model. This involved nationalizing industries, collectivizing agriculture, and prioritizing capital-intensive industrialization in heavy industries. Agricultural workers were forced to abandon their family farms and move to collective farms, where they were required to produce a set quota of agricultural products each year. Household agriculture was

abolished in favour of collectives, firstly named "Agricultural Producer Cooperatives" and later "Rural People's Communes". Industrial production (output) and the resources employed (input) were allocated according to a plan developed by the State Planning Commission. Under this planning system, industrial salaries were set by the state and did not rise with productivity gains. There were minimal exchanges with the outside world, based on the idea that the economy should be self-sufficient. Inspired by the Soviet model of five-year plans, which were first introduced by Stalin in 1928, the PRC approved its First Five-Year Plan in 1953. The aim of this plan was to accelerate the country's industrialisation.

The second five-year plan, the so-called "*Great Leap Forward*" (GLF), was approved in 1958. The GLF policies were blamed for much of the economic failures that followed, both in industrial and agricultural sectors, culminating in the great famine between 1959 and 1961, which resulted in an estimated death toll of between 20 and 50 million. In particular, the criticism advanced by the reformist wing of the Chinese Communist Party (CCP) focused on the inability of agrarian collectivization to incentivize farmers' work and generate significant increases in production and productivity: farmers were not encouraged to produce food beyond the quotas established by the state. The subsequent adjustment attempts to decentralize economic planning to local authorities, granting them the right to set their own production targets, both agricultural and industrial did not bring the expected results: repetitive and incompetent investments by regional governments and the lack of national coordination led to disastrous consequences. The critical analysis of the economic failures was conducted within the Communist Party, where the reformist faction opposed to Mao's leadership emerged, led by Liu Shaoqi and Deng Xiaoping, who proposed modernizing the country without resorting to collectivization of agriculture, but rather by tolerating an emerging free market, (Cheremukhin et al., 2015).

At the Chinese Communist Party's Seven Thousand Cadres Conference (1962), Liu Shaoqi, the China's second president and successor to Mao in 1959, formally attributed 30% of the famine to natural disasters and 70% to human error, or rather, to the rigid choices of centralized planning. The failure of the Great Leap Forward was deemed so disruptive that the five-year plans were suspended until 1966. This also symbolically marked a break with the original Soviet-inspired Maoist economic model, and the

subsequent path that was taken. However, it was not until 1978 that this new path received solid political support, when the reformist faction led by Deng Xiaoping prevailed in the Chinese Communist Party.

Subsequent Five-Year Plans, (in 1966 and 1971), were more ideological. The third Five-Year Plan began the same year that Mao, riding the wave of youth and student protests, returned to party leadership starting what was called "Cultural Revolution" (1966–1976), a chaotic period of internal warfare between orthodox communists and reformists in which economic development stopped again. During the Cultural Revolution, Deng Xiaoping and Liu Shaoqi were accused of being "revisionists," "rightists," and "supporters of capitalism," which led to their purges in 1967. Liu was persecuted and died in prison in 1969. Deng Xiaoping was initially targeted and marginalized. However, he was not completely expelled from the CCP and retained some political influence. Economic performance in the Maoist period was difficult to measure. In the decade from 1949 to 1960 China published unverified data, likely exaggerated by political propaganda. After 1960, given the reality of famine and, more generally, a poor economy, the government simply stopped publishing statistics on economic performance. Many analysts therefore had to reconstruct the leaked data. The publication of increasing amounts of official data, starting in 1979, filled in some of the gaps in the previous literature.

Nevertheless, economic literature converges in considering the Maoist period as a period of economic growth with about 3.5-4.0 percent average rate of growth of real GDP per capita. A thirty-year period of growth marked by ups and downs. In the early years (1949-1958) with an average growth of 6% per year. Followed by periods of stagnation and decline culminated by famine during the Great Leap Forward (1958-1961) with a massive GDP drop. After a period of recovery (1961-1965), there was a new period of stagnation during the Cultural Revolution (1966-1976) when living standards fell.

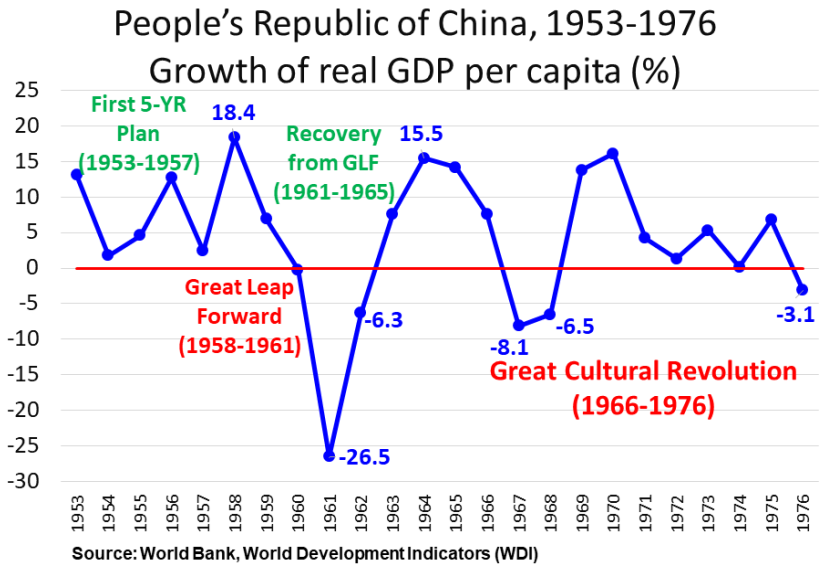

Figure 2.3- PRC 1953-1976 Growth of Real GDP per capita (%). Source: World Bank, World Development Indicators (WDI)

During the Maoist period the economy did not experience a structural transformation. In 1952, the primary occupation for 83 percent of the working-age Chinese population was agriculture. This percentage declined very slowly (apart from the brief period during the GLF when about 20 percent of the labour force temporarily moved from agriculture to manufacturing), remaining above 80 percent until 1970 and declining to 75 percent in 1977. At the same time, agriculture's contribution to GDP was initially estimated to be over 70% of the added value, before gradually decreasing to 30% in 1977.

However, the Maoist state pioneered the reforms that were subsequently implemented, creating solid foundations, including land reform and redistribution, substantial investment in heavy industry, public health, literacy, electrification, and transportation. By 1978, China's economy was relatively small, with a GDP of $149.5 billion, accounting for only 1.7% of the global economy (Hofman, 2018).

2.2. The "reform and opening up" policies of Deng Xiaoping.

With Mao's death in 1976, Deng Xiaoping became China's de facto supreme leader (the office of President of the People's Republic was abolished in 1970 and reintroduced only in 1982). Under his leadership, China's economic transformation took place through the five-year plans of 1976, 1981, 1986, and 1991, opening it up to the market economy. The

theoretical justification for what was called "reform and opening up" is well summarized in Deng Xiaoping's Talks in Wuchang, Shenzhen, Zhuhai, and Shanghai from January 18 to February 21, 1992:

"Planning and market forces are not the essential difference between socialism and capitalism. A planned economy is not the definition of socialism, because there is planning in capitalism too; a market economy is also implemented in socialism. Planning and market forces are both instruments of controlling economic activity."

And again: *"Poverty is not socialism, and socialism means the elimination of poverty; one cannot say that socialism is being built if the productive forces are not developed and the people's standard of living is not raised".*

The ideological compromises of his economic philosophy were pragmatically resolved with his famous quote: "*it doesn't matter whether the cat is black or white, as long as it catches mice*" (China Daily, 2014).

2.2.1. Four Modernisation and Special Economic Zones (SEZs)

The concept of the "Four Modernizations" refers to China's modernization plan, proposed by Zhou Enlai in 1963 and recalled by Deng Xiaoping in 1978, to be implemented as core part of his "reform and opening up" policy. The launch of the Four Modernizations Plan was made at the Third Plenary Session of the 11th Central Committee of the Communist Party in December 1978, considered by historians as the turning point in the country's transition from its initially shaky economic trajectory to a more sustainable path.

The "Four Modernizations" were objectives for the development of the four strategical sectors: agriculture, industry, defence, and science and technology. Deng Xiaoping used the term "xiaokang family"[1] to describe the goal of these innovations. The Four Modernization plan represents a fundamental change in China's economic and social model, moving from a system of guaranteed employment and welfare towards a more market-driven economy focused on individual prosperity and a moderately well-off society. One of its assumptions was the impossibility for everyone to achieve the common prosperity of xiaokang at the same time. And this is true between individuals and, at a

[1] "Xiaokang society", is a Chinese term, originating from Confucianism, used to describe a society composed of a large middle class with a moderate prosperity, often associated with specific economic and social indicators, such as per capita GDP, income levels and access to education and healthcare.

broader level, between geographical areas or activities. Unequal growth would necessarily have entailed compensation between unequal individuals or communities. Thus, coastal regions would be the first to achieve this goal, favoured by their superior geographic location and infrastructure inherited from the colonial period. These zones would then be able and obliged to "provide greater assistance" to inland regions. This example finds a concrete realization in the Special Economic Zones (SEZs).

The key factor was identified as the development of science and technology. It would have been impossible to build a modern agriculture, industry or national defence without them. The rapid development of the economy was made possible through them. The introduction of advanced technologies was one of the main objectives of the five-year plans from 1986 to 2005 (from the 7th to the 10th). Deng Xiaoping warned of the risk of falling behind the most technologically advanced countries: if China failed to embrace the new technological revolution that had accelerated the economic development of the Western world, it would condemn itself to permanent backwardness and find itself in a position of weakness like that which saw it succumb to the overwhelming power of Western capitalism and colonialism during the "century of humiliation[2]."

In 1978, the most dynamic sector of the emerging private economy was rural. Reforms decentralizing decision-making were introduced in agriculture, allowing farmers to sell their produce on local markets, thus beginning the transition from collective farming to a system of household responsibility. Under this new system, farmers were strongly encouraged to produce more than the state quotas (which were drastically reduced), since they could sell their produce on national markets. During the six years from 1978 to 1984, the average annual increase in national grain yields was 4.9%, the highest rate since 1949. At the beginning of the Chinese reform process, the focus was on state-owned enterprises (SOEs). One of the key themes of Deng's reforms was the decentralisation of decision-making, which increased the weight and power of local governments. The decentralisation process was beneficial for agriculture, but even more so for industry. The reform allowed them to retain part of their profits and benefit from

[2] "The Century of Humiliation" is a period that spans from 1839 to 1949. In China, this phrase is used to refer to a period in their history that stretch across the "First Opium War" to the establishment of the People's Republic of China. In fact, over those years, the nation suffered interventions and territorial losses at the hands of European powers and Japan. This period has shaped today's Chinese identity, increasing the desire to be a great power free from the influence of other countries.

improved factory performance in the form of higher bonuses and benefits, which was a strong incentive for SOEs and their employees (both figures 2.3 and 2.4 are contained in the article "*China's Economy: Historical Perspective and Future Outlook*" by Xu Bin).

Figure 2.4- Path of China's economic growth: From 1978 to 2022. Source: World Bank, World Development Indicators (WDI)

However, freeing state-owned enterprises from centralised control did not automatically transform their managers into efficient entrepreneurs. In the absence of competition and market-oriented decision-making, production targets were often not well aligned with demand. This led to a waste of resources, especially for those state-owned enterprises operating in strategic sectors, typically heavy industry. Conversely, local municipalities and provinces were able to invest in sectors they deemed most profitable, which encouraged investment in light industry. Deng's reforms shifted China's development strategy from heavy to light industry, with growth driven by exports. The shift from heavy to light, more export-oriented industry triggered greater entrepreneurial dynamism, accompanied by regulatory, banking and tax reforms.

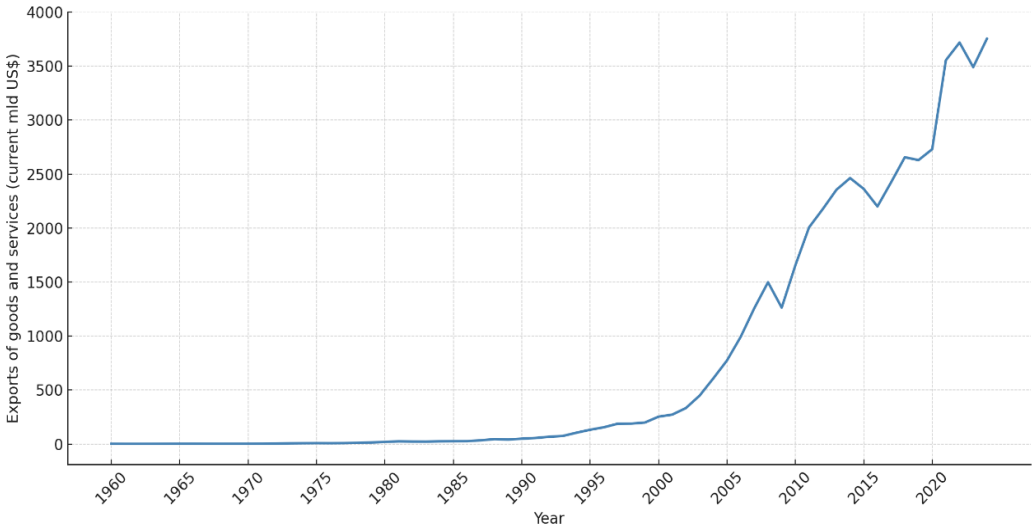

Figure 2.5- China's exports of goods and services (1960-2024). Source: World Bank

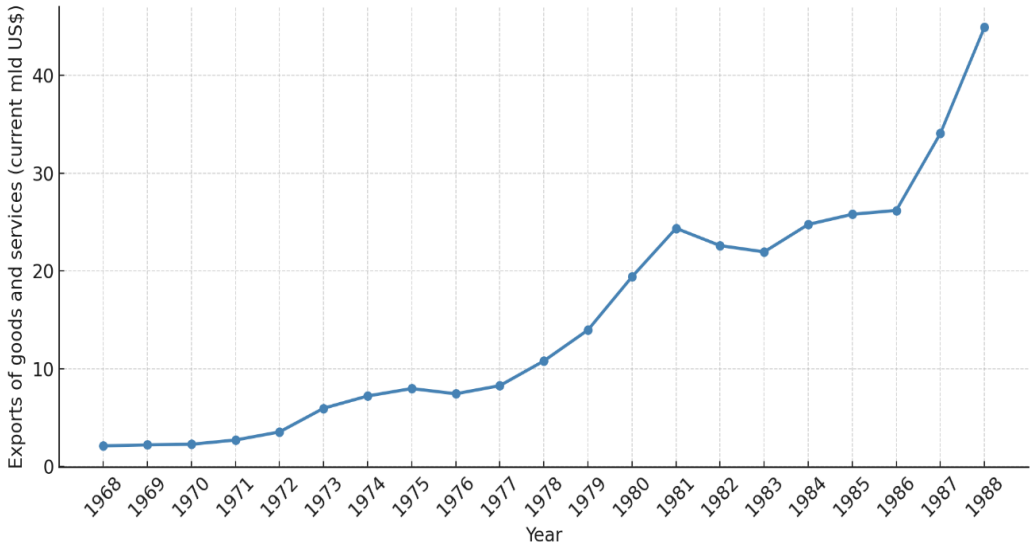

Figure 2.6- China's exports of goods and services (1968-1988). Source: World Bank

At the same time, the domestic market was further open to foreign investors, allowing the non-state economy (private economy, collective economy, and foreign-financed economy) to develop. The enactment of the Sino-Foreign Capital Joint Venture Law[3] in 1979 led to a significant inflow of foreign capital, which opened the door to new economic and technological opportunities. Subsequent reforms in the 1980s further contributed to economic growth, loosening price restrictions and allowing companies to

[3] The 1979 Sino-Foreign Capital Joint Venture Law was a watershed law in the "reform and opening" policies of Deng Xiaoping. The latter, allowed companies and individuals from other countries to form joint ventures with Chinese firms, attracting investment, capital, experts, and technology from abroad.

retain profits and set their own wage structures. These changes led to an increase in GDP from an annual average of 6% between 1953 and 1978 to 9.4% between 1978 and 2012, and to an acceleration of urbanization, resulting in a shift of the workforce from rural to urban areas.

The constitutional amendment, adopted during the Fifth Session of the Fifth National People's Congress (1982)[4], explicitly stated that "small enterprises operated by urban and rural residents are an integral part of the socialist public economy." This step established the legal status of small private enterprises, which became one of the most dynamic economic components in the process of market-oriented development. Deng Xiaoping did not have a model to refer to, unlike Mao, who had the Soviet model. However, experimentation with market mechanisms in limited areas (SEZs) certainly benefited from the example of the strong economic progress of the Asian Tigers in East Asia[5]. Foreign capital came primarily from these areas for the establishment of joint ventures, as well as direct investment from foreign companies motivated to relocate production to Chinese SEZs due to lower labour costs and preferential economic policies.

The creation of Special Economic Zones was authorized, allowing for the experimentation of more advanced market mechanisms without contaminating the entire economy. In these areas, more market-oriented business regulations were implemented than in the rest of the country, to attract foreign investment with tax and trade incentives, reduced customs duties, lower land prices, lower labour costs, and greater flexibility in negotiating labour and financial contracts.

Within these SEZs, export-oriented companies had the flexibility to respond more quickly to foreign market demand. The Deng Xiaoping period (1978-1997) was marked by significant economic growth, technological advancement, and social progress. At the same time, income inequality and environmental issues emerged. Economic policy opted for a “two-track approach”. On the one hand, key strategic sectors, steel, energy, petrochemicals, and transportation were tightly controlled, allowing them to gradually

[4] The Fifth Session of the Fifth National People's Congress in 1982 was an event of extraordinary importance as it adopted the current fundamental law of the People's Republic of China, providing the country's structural legislative framework.

[5] The "Asian Tigers" refer to Hong Kong, Singapore, South Korea, and Taiwan, four economies that experienced rapid industrialization and strong economic growth between the 1960s and 1990s, becoming symbols of success for developing nations.

adapt to market mechanisms. On the other hand, certain light industries, especially those with promising export markets, were allowed to apply market mechanisms more freely. The evolutionary process allowed individuals to lift themselves out of poverty. Opportunities for trade and entrepreneurship emerged while controls on private businesses and government intervention continued to decrease.

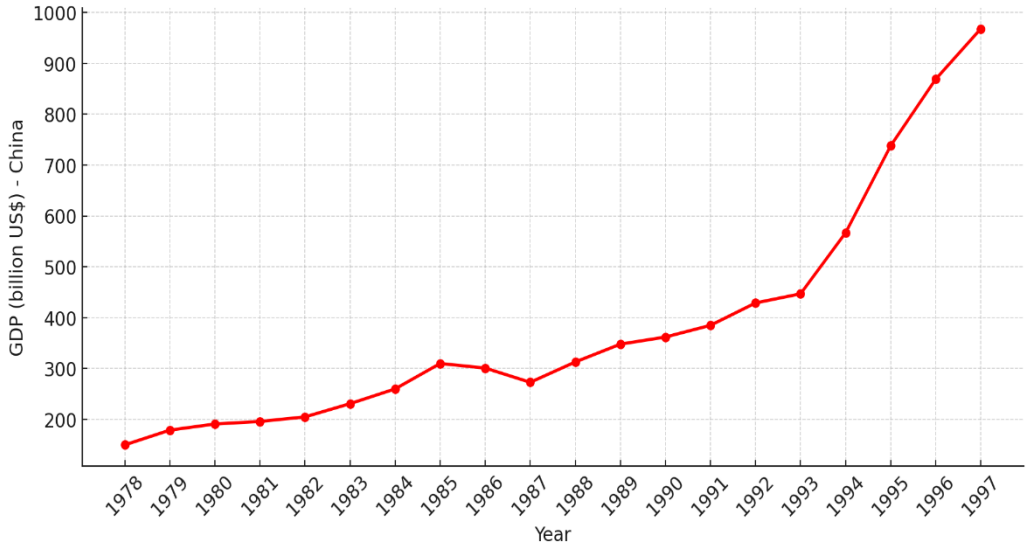

Figure 2.7- GDP Per Capita (Current US$) of China during the Deng Xiaoping period (1978-1997). Source: World Bank

Corruption and rising inflation fuelled discontent, which found expression in the Tiananmen Square protests and the 1989 massacre, sparking a conservative backlash. However, Deng not only maintained his reforms but in 1992, during his "Southern Tour[6]", declared the need to reinvigorate and accelerate them.

[6] It was Deng Xiaoping's trip to the south of the country, which lasted from January 18 to February 21, 1992. This trip is considered a critical point in modern Chinese history, as it ensured the success of the supreme leader's economic reforms and preserved the capital market.

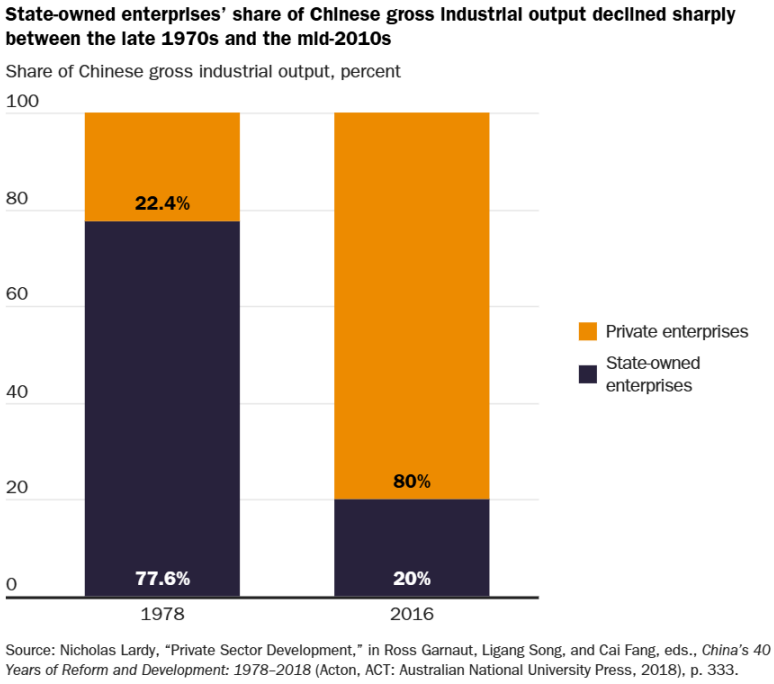

Figure 2.8- State-owned enterprises' share of Chinese gross industrial output declined sharply between the late 1970s and the mid-2010s. Source: CATO Institute

In 1990, the Shanghai Stock Exchange and the Shenzhen Stock Exchange were inaugurated. In those years, economic growth was driven by the non-state sector, while the state sector's inefficiency intensified. Privatization began to accelerate after 1992, and the private sector grew, (the graph below is contained in "*A brief history of China's economic growth*" by Hirst in 2023).

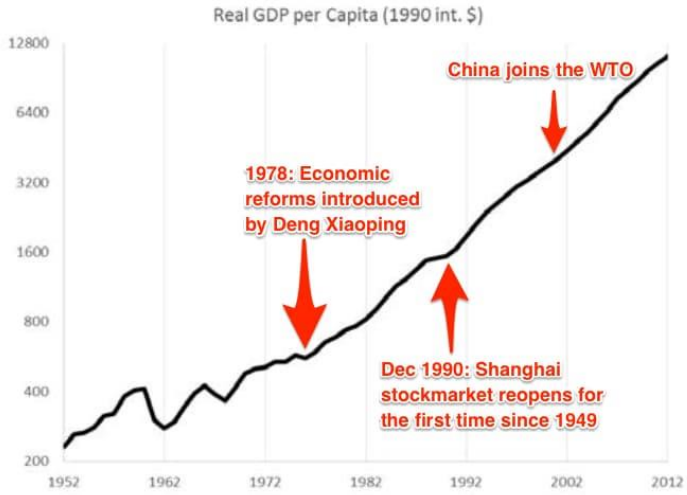

Figure 2.9- Real GDP per Capita (1990 int. $)- Source: World Economic Forum

The 1990s were marked by high GDP growth rates, the rise of the private sector, and increased urbanization. However, it also presented challenges related to managing the transition to a market economy and addressing income inequality. China sustained impressive GDP growth throughout the 1990s, averaging nearly 9% per year, with some years exceeding 14%.

2.2.2. The post-Deng Xiaoping Era

Jiang Zemin and Zhu Rongji, Deng Xiaoping's successors, continued the reforms following the "dual-track" approach, leaving strategic sectors in state hands and encouraging market-oriented private industrialization. Large-scale privatizations took place in 1997 and 1998, with the liquidation of numerous state-owned enterprises and the sale of their assets to private investors. Between 2001 and 2004, the number of state-owned enterprises decreased by 48%. The 10th Five-Year Plan for China, covering the years 2001-2005, focused on sustainable development, technological advancement, and improving living standards, promoting a more sustainable and inclusive growth model for China. The national private sector exceeded 50% of GDP for the first time in 2005 and has continued to expand since then. The non-state-owned enterprises contributed significantly to the impressive 9.4% as average growth rate of real GDP between 1978-2012.

Openness to foreign trade was instrumental in growth, particularly among non-state-owned enterprises. The number of Chinese enterprises authorized to conduct foreign trade increased from 12 in 1978 to over 5,000 a decade later. During the 90’s China's integration into the global economy accelerated, with a significant increase in both exports and imports. A further boost to trade and investment came in 2001 when China joined the World Trade Organization (WTO). By 2001, the number of enterprises engaged in foreign trade had reached 35,000. In 2003 the foreign trade share of GDP exceeded 50% reaching a peak of 64.48% in 2006 (Dorn, 2023).

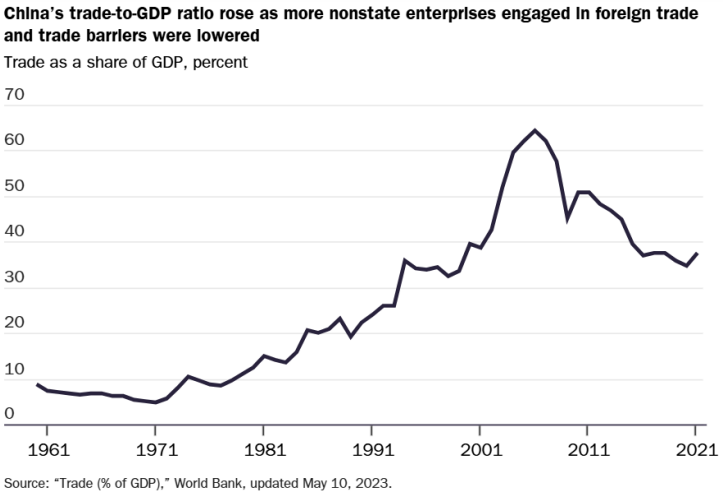

Figure 2.10- China's trade-to-GDP ratio rose as more nonstate enterprises engaged in foreign trade and trade barriers were lowered. Source: World Bank, CATO Institute

The transition towards ever greater integration into the global economy was accompanied by the "Going Out" or " Go Global" policy, launched in 2000 and later incorporated into the 11th Five-Year Plan (2006–2010). This new institutional framework supported the internationalization processes of Chinese companies. The policy incentivized Outbound Foreign Direct Investment (OFDI), both in developed and developing countries. This development has allowed Chinese companies to acquire new resources (raw materials and resources crucial for China's economic growth, particularly in commodity-producing countries) and skills abroad to increase their international competitiveness as Bellabona and Spigarelli (2007) showed in the graph below contained in the article "*Moving from Open Door to Go Global: China goes on the world stage*".

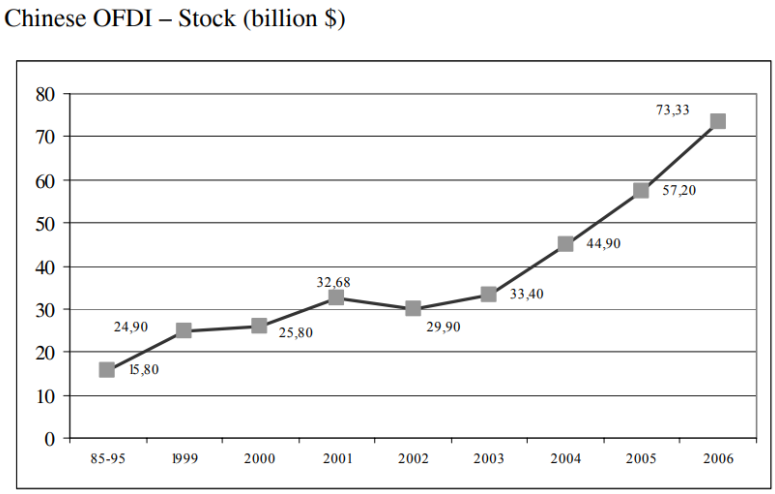

Figure 2.11- Chinese OFDI – Stock (billion $). Source: Unctad, Mofcom

The phase of "Go Global", following accession to the WTO coincides with the presidencies of Hu Jintao (2002-2012). During this period, the GDP growth rate remained at very high levels (about 10%) compared to those recorded in the rest of the world, as showed in the graph below contained in "*Unpacking China's GDP"* made by China Power (2024).

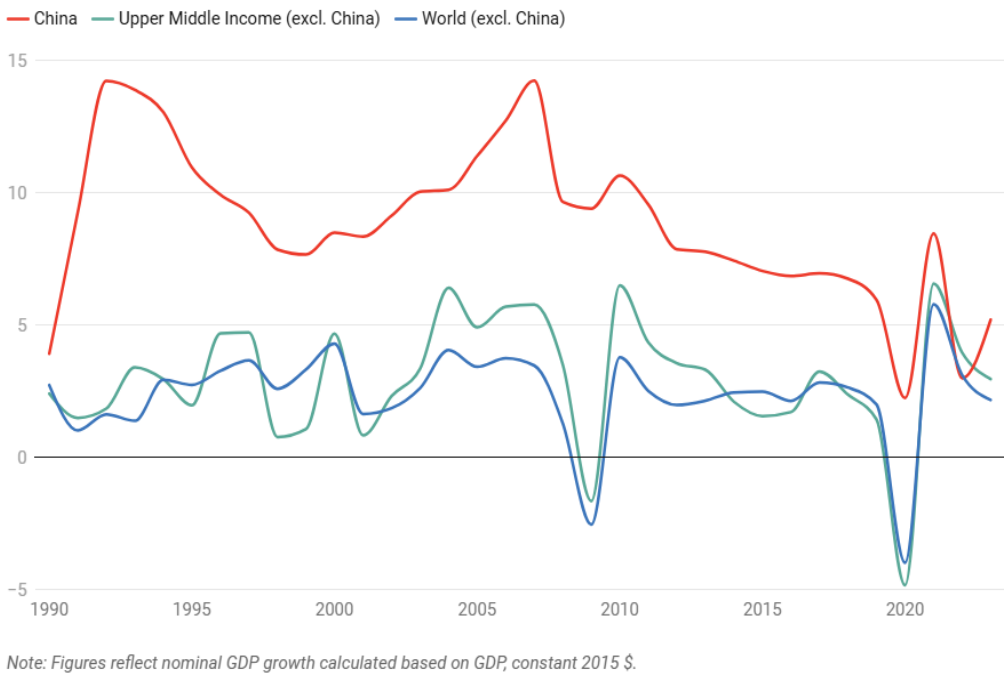

Figure 2.12- Comparison of GDP Growth Rates. Source: CSIS China Power Project; World Bank

2.2.3. 2012-2021 a period of slower growth: Xi's "new normal" theory

Since 2012, China's GDP growth has begun to slow, although it remains high by global standards. In 2012, China's GDP grew by 7.8%, a decline of 1.6 percentage points from the previous year. The worsening sovereign debt crisis in Europe and the slow recovery of the US economy had directly depressed foreign demand for China. Consequently, industrial production itself, despite growing 7.9%, slowed by 2.5% compared to the previous year. The reasons for this slowdown are to be found in Chinese integration into the global economy, which makes China more vulnerable to external economic shocks and financial crises. In December 2007, the US economy entered a recession. In 2008, several major financial institutions and interconnected financial markets experienced significant difficulties. By the fall of 2008, the economic contraction in the affected economies worsened, becoming so deep and prolonged to be named as the "Great

Recession", the world's largest financial crisis, originating in the United States but with global repercussions through all the interconnected financial markets.

Unlike Western economies, China's financial system was less integrated with global markets, which protected it from the initial financial contagion. The impact of the crisis in China was mainly felt through foreign trade. Due to the contraction of the economies receiving exports from the People's Republic of China, exports fell from 37% of GDP to 24% in 2008, and GDP fell from annual growth of 14% in the first quarter to around 6% in the third quarter. The country's strong economic fundamentals and the government's stimulus package contributed to a relatively rapid recovery. The Chinese government reacted quickly to this recession by implementing a countercyclical stimulus plan worth approximately $600 billion, equivalent to nearly 12.5% of GDP. Public spending increased by 26% in 2008, compared to 23% in the previous year. In 2009, public spending growth slowed, but stimulus continued, mainly through bank lending, which increased significantly in that year by 31% compared to 12% in the previous one.

The plan aimed to offset the crisis' impact on demand, resulting from declining exports, by injecting massive investment into various sectors of the economy. The Chinese government implemented a large-scale stimulus package focused on infrastructure projects, namely high- speed rail and highways, affordable housing, and rural development. Banks were then instructed by the government to provide substantial loans, primarily to state-owned enterprises but also to private companies, to finance this wave of investment, encouraged by interest rate cuts. The plan proved a short-term success, despite a significant increase in non-performing loans (NPLs). GDP growth returned to 10.6% in 2010, a level it has not reached since. However, it failed to halt and reverse a trend that represents the structural decline in China's economic growth (Fardoust et al., 2012).

In accordance with World Bank data, the effects of the Chinese government's countercyclical plan therefore served to sustain aggregate demand, partially replaced in its components by a greater boost from domestic demand to compensate for foreign demand, which had entered a significant crisis. GDP growth remained at around 10% in the years 2008-2012, in contrast to what was happening globally. However, the measures taken should be considered emergency measures and, as such, short-term. They did not

have a structural impact, reversing the trend of slowing GDP growth that has occurred since 2012.

The crisis highlighted China's dependence on exports and the need to rebalance its economy towards domestic consumption. The strong domestic recovery following the stimulus measures implemented by China also helped to stabilise the entire Asian region and supported global recovery efforts by creating demand for raw materials and goods from other countries. The global financial crisis of 2007-2009 affected China when its "extensive" economic growth, based on the mobilisation of existing national resources, the recruitment of a previously underemployed workforce and the accumulation of capital, had run out of steam. In this context, where it was already difficult to maintain the levels of growth recorded up to that point, the prolonged slowdown in the global economy, and in particular in global trade, deprived China of an important component of demand: high net exports. The trade-to-GDP ratio, or trade openness index, peaked in China in 2006 (64%), declined steadily in subsequent years, and stood at 37% in 2023, divided into imports (17.57%) and exports (19.74%).

Figure 2.13- Trade as shares of GDP. Source: World Bank, OECD, Our World in Data

Xi Jinping, the current General Secretary of the Chinese Communist Party went to power in 2012 and has been the President of the People's Republic of China since 2013. He has had to address the causes and implications of the slowdown in China's economic growth in an increasingly globalized context where domestic economic and industrial policies are influenced by those of others and by exogenous factors that are difficult to predict and control. In this new scenario, there is a resurgence of state-owned enterprises and a return to a more centralized role of the state in an attempt to govern the imbalance caused by excess production capacity and domestic consumption, but also, if not above all, to respond in a more cohesive manner to trade disputes and tariff restrictions with the United States and, although to a lesser extent, with the European Union. Tensions in trade and politics that further threaten the country's growth prospects, (Galetta, 2024).

Xi Jinping's leadership, recognizing the unsustainability of the expansive growth that had characterized the previous three decades, has focused on developing "new quality productive forces," identifying technological innovation and environmental sustainability as the drivers of growth. The new economic phase defined by Xi Jinping as the "New Normal" aims to transition China from "factory of the world" to "global technological leader." The New Normal concept was introduced in 2014 by Xi Jinping during a speech in Henan Province and reiterated at the Asia-Pacific Economic Cooperation (APEC) conference in Beijing that same year. A plan with a time horizon of 35 years that aims to establish China by 2049 as the leading world power in innovation (China Today, 2014).

Xi has implemented industrial policies aimed at stimulating structural changes in industry, institutions and society, seeking a new dimension of growth, necessarily at more moderate rates, oriented towards sustainability and quality in terms of industries with higher added value, less energy-intensive, and advanced services. At the same time, has been put greater attention to the environment, the domestic market and the selection of foreign investments, encouraging those linked to the Belt and Road Initiative expansion plan, as they are aimed precisely at providing an external outlet for domestic overcapacity. China's 12th Five-Year Plan (2011-2015) focused on principles such as the development of inland areas and second-tier cities, environmental and energy protection, boosting domestic consumption at the expense of exports, welfare and social assistance, and encouraging high value-added production. In the thirteenth Five-Year Plan (2016-2020), the Chinese authorities confirmed their willingness to move from a growth model based

on exports and industrial production with a high environmental impact to a new model focused on domestic consumption, the development of the tertiary sector and a renewed focus on basic science, new materials and semiconductors, artificial intelligence, efficiency and rationalisation of production processes, and green and sustainable development. Among the main policies developed to promote the structural transition of the Chinese economy is the "Made in China 2025" (MIC2025) plan. Launched in 2015, the Plan aims to guide China's transformation from a producer of low value-added goods in traditional sectors, including highly polluting and energy-intensive ones, to a creator and developer of innovation- and technology-intensive goods and services (Fasulo, 2025).

According to an analysis by the South China Morning Post in April 2024, over 86% of the 260 targets set by the "Made in China 2025" plan had been achieved. However, Bloomberg, examining 13 key technologies in October 2024, found that China had achieved global leadership in five of them (unmanned aerial vehicles; solar panels; graphene; high-speed rail; electric vehicles and lithium batteries), catching up in seven others (LNG carriers; drugs; large tractors; machine tools; robots; artificial intelligence; semiconductors) and falling behind only in the production of commercial aircraft.

China dominates key technologies: over 75% of global lithium-ion battery production, nearly 80% of solar module production and the largest share of global electric vehicle production. In other sectors, it has made progress that has narrowed the gap with global leaders. The implementation of the programme has attracted unwanted geopolitical attention. It has raised concerns in both the US and the EU, triggering export controls and investment restrictions that now weigh heavily on China's access to key technologies. Proof of this is the trade war with the US, which was started in 2018 by the first Trump administration and has continued with the 2025 tariff conflict and new diplomatic tensions.

2.3. 14th Five-Year Plan (2021-2025)

The 14th Five-Year Plan has four pillars: Dual Circulation, Scientific and Technological Independence, New Urbanisation, and Green Development. The concept of Dual Circulation refers to the goal of prioritising domestic consumption ('internal circulation' or "national") to make the Chinese economy more self-sufficient in key sectors, while remaining open to international trade and investment ('external circulation' or

'international'). This confirms the economic policy approaches already present in the 13th Five-Year Plan, whose objectives were not fully achieved, partly due to the impact of the Covid-19 pandemic in 2020. It is worth noting that the objectives do not mention quantitative GDP growth factors, which had been a priority since the 7th Five-Year Plan (1986-1990). This is intended to emphasise a different approach, one that is less rigid and more adaptable to the unpredictable developments that the domestic and international context may bring about, both for exogenous reasons, such as the pandemic that has not yet been eradicated, but also to leave the necessary adjustments to the changed economic circumstances to market dynamics. The interaction between the two dimensions, internal and external circulation, is intended to grow and rebalance the domestic economy by reducing dependence on foreign markets and the risks of their volatility. Domestic demand will be helped by a greater transfer of resources to households and a more equitable distribution of wealth.

The "Dual Circulation" also aims to stimulate the country's internal innovative capacity and make it independent from a scientific and technological point of view. The objectives set out in the 14th Five-Year Plan echo those of the "Made in China 2025"-MIC2025, giving priority to those strategic sectors most affected by US protectionist and tariff measures, paradoxically encouraging their domestic development, namely high-tech, artificial intelligence, microelectronics, blockchain, big data and cyber security. Among the solutions to increase the general well-being of citizens and reduce the gap between the richest and poorest segments of the population, there are plans to develop construction projects that promote "new urbanisation" in particularly rural areas. The aim is to raise the quality of life through social security and healthcare systems, also in response to the ageing population.

The final pillar of the 14th Five-Year Plan is "Green Development", which is considered essential for building an ecological civilisation, as indicated by the decarbonisation targets. It promotes "green and high-quality development" by reducing energy consumption per unit of GDP. China aims to bring its annual national energy production capacity over 4.3 billion tonnes of standard coal equivalent by 2025 and to increase the share of non-fossil energy in total energy consumption to around 20%. The 14th Five-Year Plan has set a series of decarbonisation targets, including reducing energy

consumption in line with China's overall “dual carbon” goals of peaking carbon emissions by 2030 and achieving carbon neutrality by 2060 (Vernole, 2022).

Three areas of focus in the fourteenth five-year plan are the economy, energy, and social issues. On the economic front, this plan focuses more on qualitative growth than quantitative growth. The major difference with previous ones is that the latter favoured massive investment in infrastructure and a strong export orientation. The vision of the current plan is to consolidate domestic demand, supporting slower but more solid growth. According to the World Bank, China's GDP in US dollars grew from 18.2 trillion to 18.74 trillion between 2021 and 2024, confirming slower growth. GDP growth rebounded strongly post-pandemic in 2021 (+8.57 per cent), followed by a sharp slowdown in 2022 (+3.13 per cent) and a more moderate recovery in 2023 (+5.41 per cent) and 2024 (+4.98 per cent). The sectors in which the most investment was made were those considered strategic, such as AI, semiconductors and telecommunications. In doing so, the country reduced its dependence on foreign supply chains. This plan highlights China's ambition to transform the country from the world's factory to a super-advanced technological and manufacturing powerhouse.

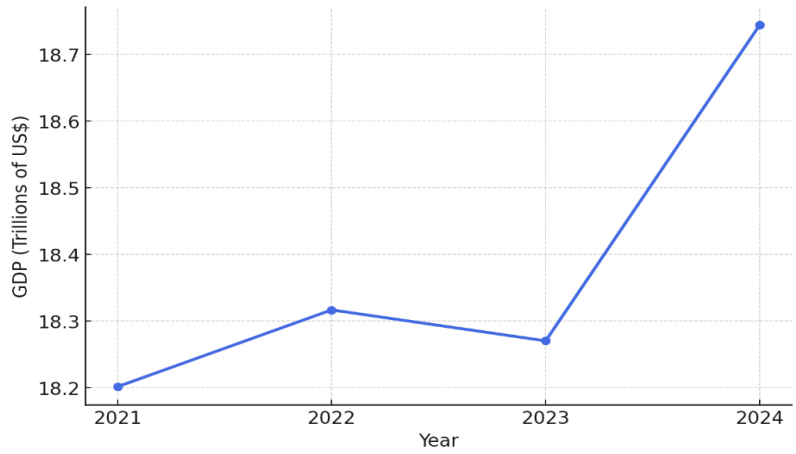

Figure 2.14- GDP (current US$) – China (2021-2024). Source: World Bank

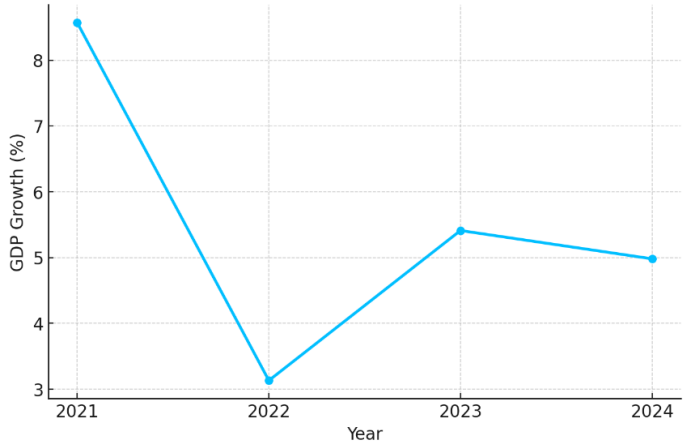

Figure 2.15- GDP growth (annual %) - China (2021-2024). Source: World Bank

Regarding energy, the green transition is one of the cornerstones, both in terms of industrial modernisation and in order to meet climate commitments. The PRC aims to achieve carbon neutrality by 2060, progressively increasing the share of non-fossil energy in its energy mix. However, it is pursuing a policy of building first, then revolutionising. In fact, China is first boosting alternative sources and only then will it significantly reduce its dependence on fossil fuels, especially coal. Ensuring energy security and a stable supply to support its enormous industrial base while simultaneously undertaking decarbonisation will be one of China's great challenges.

This dual strategy stems from the fact that when Xi Jinping became leader of the Chinese Communist Party in 2012, he identified foreign energy security as a strategic vulnerability. Investments in domestic energy production have been substantial, with an increase of 30% of the electrification of the country and dominance in the production of green technology and coal. The plan's goal was to increase the share of non-fossil energy sources to 20% by 2025. Although there has been significant investment in solar (with growth of 45.6% in 2024), wind (with growth of 18.1% in 2024), smart grids, storage systems and high-voltage transmission infrastructure, the share of coal remains at 60% and the development of coal mines and the production continues to expand. Additionally, coal production has been constantly increasing since 2016, with a sharp rise from 2020 onwards.

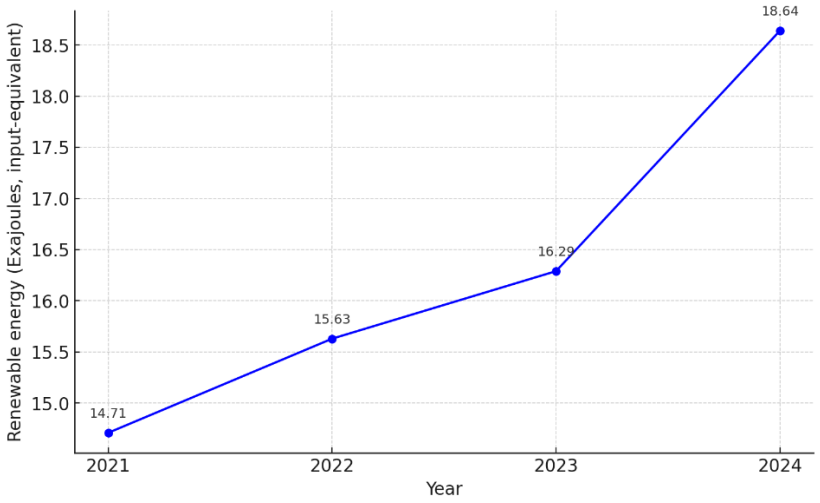

Figure 2.16- China's renewable power total energy supply (2021-2024). Source: Statistical Review of World Energy 2025

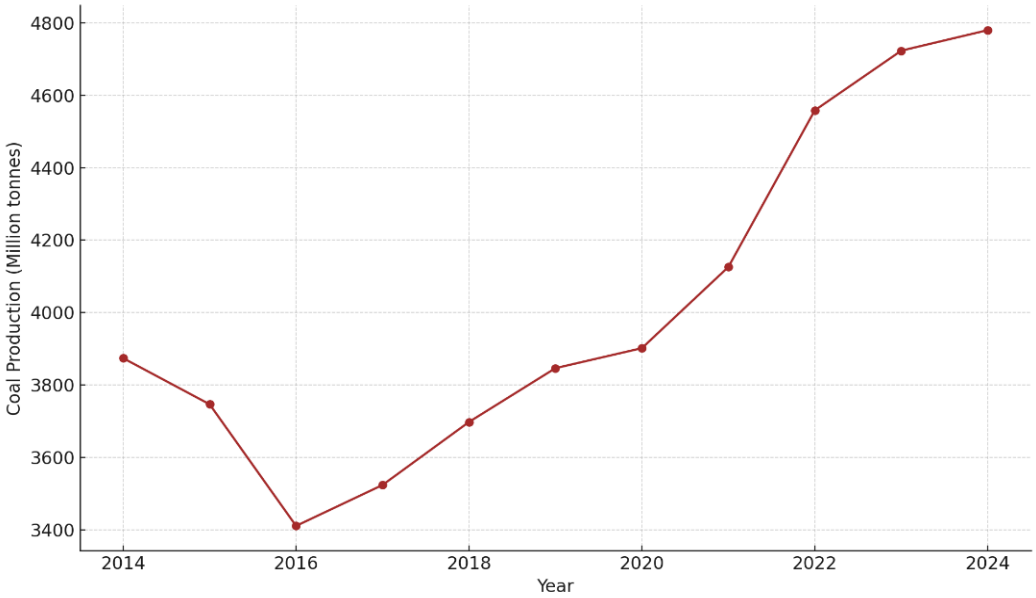

Figure 2.17- China's Coal Production (2014-2024). Source: Statistical Review of World Energy 2025

From a social perspective, the 14th plan contains numerous references to strengthening internal cohesion and reducing inequalities, which are particularly important in the wake of the pandemic crisis. The plan envisaged the creation of 11 million workplaces yearly, the modernisation of the education and healthcare system and, the reduction of the gap between urban and rural areas. According to data collected by

CGGTN, the PRC has managed to create 12 million workplaces yearly in the last years, investing and improving welfare, healthcare facilities and the education system.

However, the social and economic situation contrasts with the reliability of the data provided by the Chinese government. Despite achieving some of its goals, the country has faced numerous structural challenges. The real estate crisis has weighed heavily on financial stability, while the weakness of the youth market and stagnant incomes have slowed down one of the plan's main objectives: growth in domestic demand. Moreover, the trade war with United States makes it difficult to achieve the goal of strategic self-sufficiency. This precarious socio-economic situation has led to an increase in protests by the population against the government. In the first six months of 2025, there were over 1,200 worker protests, a sharp increase compared to the previous year. The causes of these protests are varied, including strikes and demonstrations linked to unpaid wages and pensions, conflicts related to the property sector or sudden company closures, and local governments in debt.

CHAPTER 3 - Geopolitical Involvements: Competition With The United States

Competition between China and the United States are at the midpoint of the analysis of the international relations, redefining the global balance of power. The challenges between the two countries take place at several levels, namely political, economic, technological, military and more. The US, historically the hegemonic power, is seeking to preserve its position of primacy, while China is pursuing the goal of establishing itself as a dominant player in the international system, sustained by long-term economic growth and strategic vision of consolidating its influence.

Within this framework, this chapter aims to question the competitiveness between these two nations, focusing on the economic dimensions and certain strategic sectors that are emerging as battlegrounds for future hegemony. The Sino-US rivalry is not limited to the ideological and military confrontation, but rather is expressed through control of resources, technology and infrastructures that shape the global order. The analysis of these sectors highlights the ways in which China is attempting to erode the US dominance and to assess the implications of this process for the stability of the international order.

3.1. Relationship with the United States

China and the United States have had a complex bilateral relationship since 1949, characterised by periods of cooperation and tension on issues such as trade, geopolitical influence, and Taiwan. Already from the end of the Second World War and the beginning of the Cold War, the two countries were on opposite ideological positions. The "*Red Scare*[1]", which condemned all kind of relationship with communist countries and factions, was born with Senator Joseph McCarthy. The first actual conflict occurred in the early 1950s with the Korean War, which saw the two countries on opposite sides. Tensions escalated in 1954 with the first Taiwan Strait crisis, in which Mao's army shelled islands that were part of Taiwanese territory. The US threatened to use nuclear weapons and signs

[1] Red Scare is a period of public fear about hypothetical increase in communist or socialist ideas in a non-communist state. The term is used to described two periods. The first occurred from 1917 to 1920, amidst a rise in organized labour movements. The second period, also known as McCarthyism, took place from approximately 1947 to 1954. During this time, any connection to communist ideology or groups was forbidden. Anyone suspected of being a spy ended up on a blacklist. This often meant immediate job loss, inability to be hired, and social stigma, as well as continuous FBI surveillance. Additionally, there have been cases where individuals have been accused of espionage and ended up in prison or even sentenced to death, (Martin, 2025).

a mutual defence treaty with Taiwan. At that time the island was considered the only true China by USA and the UN.

The easing of tension between the two countries began in 1969, when the Sino-Soviet split occurred. This rift was caused by ideological, strategic and border disputes between Russia and China. For the US, this fracture represented an opportunity from an anti-Soviet perspective, as the two communist regimes were no longer a single bloc, opening diplomatic opportunities with the PRC. In 1971 the so-called "*Ping-Pong Diplomacy*"[2] occurred. In 1972, Nixon made a historic trip to China, meeting with Mao and signing the Shanghai Communiqué, with the goal of normalizing relations and initiating a strategic dialogue. In 1979, President Carter officially recognized the PRC, acknowledging it as the Only China and breaking diplomatic ties with Taiwan, while maintaining defence and trade bonds. With Deng Xiaoping in power, in the 1980s China opened to foreign investment through economic reforms that attracted international businesses.

Ties between the two countries began to deteriorate with the Tiananmen Square crisis. The military crackdown led to US economic sanctions, freezing relations. President Clinton launched "Constructive Engagement" in 1993 to normalize relations with China once again. However, tensions remain over human rights. In 1996, a new Taiwan Strait Crisis further deteriorated relations. In the that year, the first Taiwanese presidential election by direct universal suffrage took place. The candidate, Lee Teng-hui, who was on the verge of victory, was known for his positions in favour of the island's independence. In response, the PRC launched missile tests to intimidate the electorate into voting for Lee. The U.S. responded by increasing its naval presence in the Taiwan Strait with a dual purpose: to deter Beijing from military escalation and to reassure Taipei of US support. The elections were conducted in a regular manner and Lee Teng-hui won. This crisis has solidified the American military presence, sending a strong signal to Mainland China.

[2] The US table tennis national team was invited by the Chinese government to visit the country, officially initiating contacts between the two states. In the same year, Beijing obtained a seat at the UN, became a permanent member of the Security Council, and President Nixon reduced the trade embargo against the country.

In 2000, the Clinton administration granted China Permanent Normal Trade Relations status, paving the way for China's accession to the World Trade Organization (WTO), which occurred in 2001. Since 2008, the economic interdependence between the two world powers has been growing. During the financial crisis, China became the United States' primary foreign creditor. In 2010, it officially became the second-largest global economy, surpassing Japan.

China's advance caused such concern that in 2011, the Obama administration launched a project called "*Pivot/Rebalance Asia*". The latter is a foreign policy strategy aimed at reorienting US priorities from Europe and the Middle East towards Asia, focusing on economic, political and military agreements. China reacted hostilely, interpreting this project as an attempt at destabilisation and containment, with a threat to its sovereignty, particularly on the Taiwanese issue. In addition to strengthening ties with regional allies like Japan, Australia, and the Philippines, and establishing trade agreements with several countries in the region, the results have been limited. In fact, the unfinished initiative has led to the creation of new alliances such as AUKUS between Australia, the United Kingdom, and the United States itself. Another intergovernmental alliance is the Quadrilateral Security Dialogue (QUAD), which includes the United States, Japan, Australia, and India. This alliance, in addition to limiting Chinese influence in the Indo-Pacific region, had another purpose: to bring India closer to the West in an anti-Chinese perspective. However, this is an informal alliance, without a statute that obliges the parties to behave in a certain course of action.

In 2017, newly elected President Donald Trump began his presidency on a conciliatory note, inviting President Xi Jinping to the United States for an informal meeting. The summit's themes were primarily two. The first concerns security, particularly regarding North Korea and its nuclear program. The second concerns bilateral trade, in order to reduce the US deficit and open Chinese markets to various goods and US financial services.

However, in 2018 the US' strategy suddenly changed. The Trump administration ruled a 25% tariff on over $50 billion worth of Chinese imports and 10% on $200 billion worth of Chinese imports. China responded with additional tariffs of 25% on several American products. In 2019, after a truce negotiations seemed close to an agreement, but

the PRC receded on numerous points. The Trump administration announced a 25% tariff increase on over $200 billion worth of Chinese imports, adding Huawei to the blacklist of Chinese products. In this manner, US prevented its companies from selling them technology without a special licence. Additionally, the Chinese government was accused of manipulating its currency after the yuan fell below the symbolic threshold of 7 per dollar.

It was not until 2020 that the tensions between the two countries were eased, with the signing of the "*Phase One Trade Deal*". In this agreement, China promised to acquire $200 billion in U.S. goods and services over two years. Instead, the United States promised an opening of the financial sector and greater protection of intellectual property rights, which was one of the causes of the trade war between the countries, (Reuters, 2020). Nonetheless, most of the tariffs remained in effect. The pandemic crisis further exacerbated the relations, as there were mutual accusations about the management and origins of the virus. The U.S. introduced travel restrictions and labelled SARS-CoV-2 the "Chinese virus," accusing China of a lack of transparency.

With Biden, the strategic rivalry becomes entrenched. The newly elected president maintains tariffs and expands restrictions in the technology sector. In 2022, following large-scale Chinese military demonstrations in the Taiwan Strait, then-Speaker of the House of Representatives Nancy Pelosi visits the island, angering China. The US imposed severe restrictions on exports of semiconductors and advanced technologies to the PRC in the same year. This strategy, occurred in order to reach two different aims: on one hand it was implemented to delay the development of China's most advanced semiconductor industry; on the other hand, it was applied to hit China's progress on the defence sector. In 2024, high-level visits between the two countries resumed. However, President Biden introduced new tariffs on Chinese electric vehicles and "green" products.

In 2025, Trump began his second term. The US President has started a trade war with the world but sees China as the main enemy. In fact, the Trump administration has threatened to impose 145% tariffs on all Chinese goods. The Chinese response was 125% tariffs on American goods and additional 15% taxes on energy, 10% on crude oil, and 10-15% on US agricultural products.

3.2. Economic and commercial dispute

The trade war between China and US has been ongoing since 2018, marking a profound change in the bilateral relations between the two super-powers and in the world equilibrium. Economic competition has become a complex global strategy. In addition to tariffs, which have caused a significant change in the trade balance between the two countries, this strategy has shifted to managing the mutual dependence and methods used to mitigate systematic risks. Particularly, the strategic sectors ate risk are technology, energy and raw materials. China is the world's largest exporter, while the United States is the largest importer. Traditionally, the two countries are each other's very important trading partners, with the trade balance profoundly in favour of the PRC.

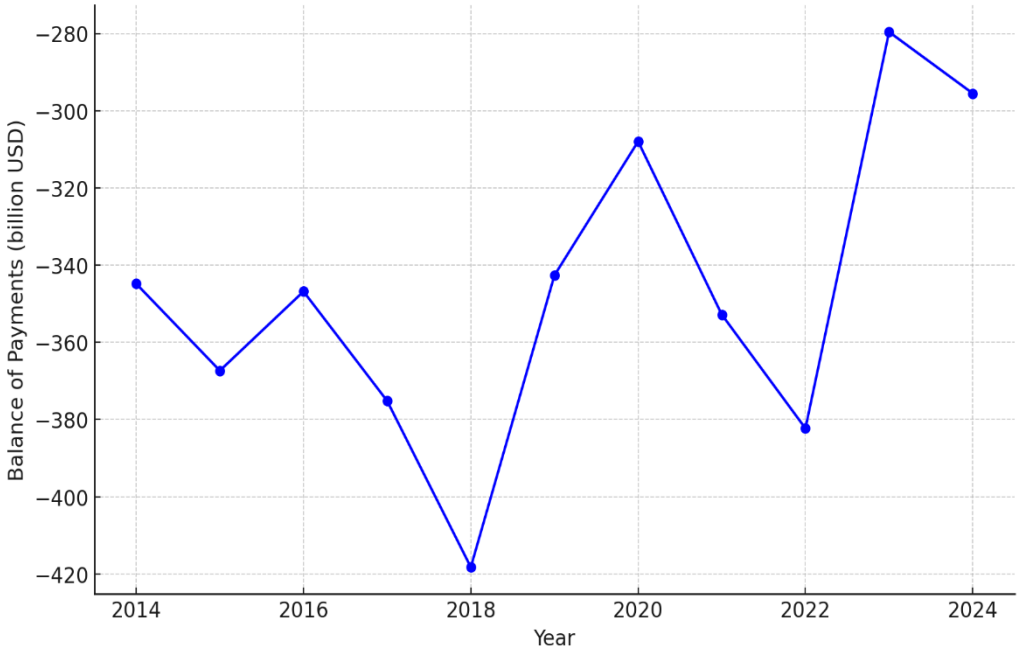

Figure 3.1- Balance of payments between US and China (2014-2024). Source: United States Census Bureau

Due to the mutual tariffs, the trade deficit has drastically decreased since 2018. The trade war started by Trump in 2025 has worsened the situation. In June 2024 and June 2025, Chinese exports to the United States fell from $34.2 to approximately $19 billion dollars, reducing the balance of payments in the first six months of the two years from $127,301.8 to $111,467.7 in absolute value. This benefits the United States. China is heavily dependent on exports to the US, and the latter is economically leveraging this situation; the tariffs serve this purpose. In the first 6 months of 2025, the balance of

payments in absolute value decreased from 31.74 billion US dollars to 9.51 billion US dollars. While American exports to the PRC remained roughly the same (from $9.9 billion to $9.44 billion), imports from China drastically decreased from $41.64 billion to $19 billion, lessening Chinese's surplus.

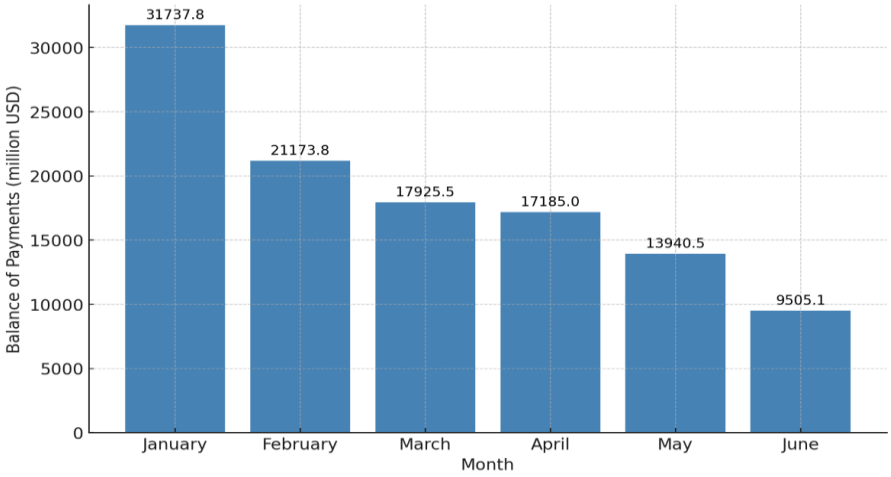

Figure 3.2- Balance of payments between US and China in absolute value (Jan 2025-Jun 2025). Source: United States Census Bureau

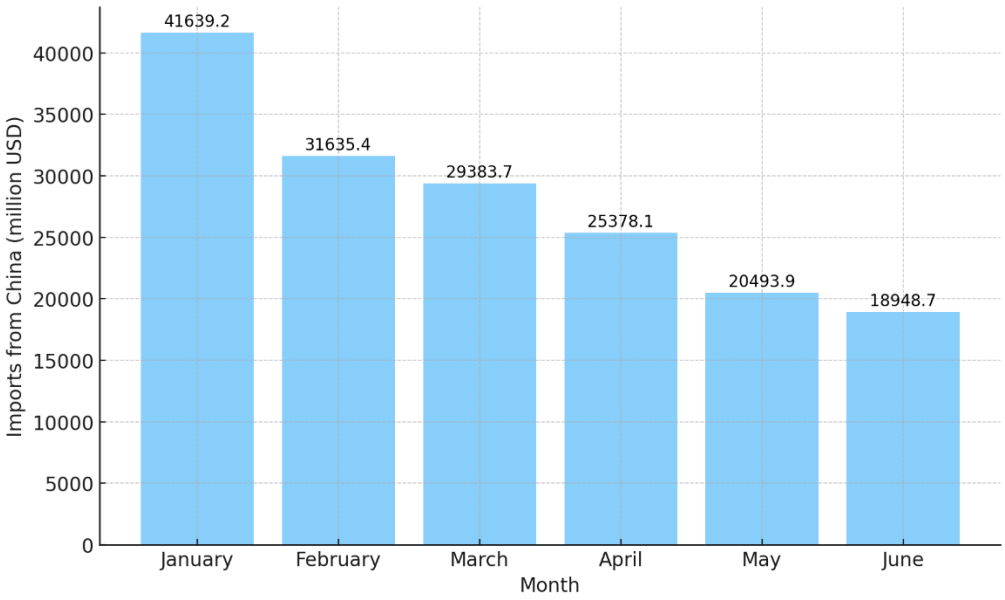

Figure 3.3- USA Imports from China (Jan-Jun 2025). Source: United States Census Bureau

For several years, the American strategy towards China has been that of "decoupling[3]," in which the main objective is to achieve a clear separation from Chinese strategic sectors in order to maintain leadership in the various sections involved, particularly the technological one, and for reasons of national security. Tariffs are a tool to achieve decoupling. 145% tariffs on almost all Chinese goods exported to the US are causing bilateral trade between the two countries to collapse, which in 2024 was approximately $582 billion. The Chinese share of U.S. imports in 2024 fell to 13.4%, compared to 21.4% in 2017, (Galani, 2025). Furthermore, mutual direct investment flows are declining. According to the official website of the US Embassy & Consulate in China, direct American investments in China in 2023 were worth $127 billion, while Chinese investments in the United States were $28 billion, a significant decline of 6.2% compared to the previous year. A tie that is still difficult to break is the Chinese ownership of approximately $756.3 billion in US Treasury Bonds in May 2025. However, the trend has been sharply declining, particularly since February 2025, it was about $784.3 billion.

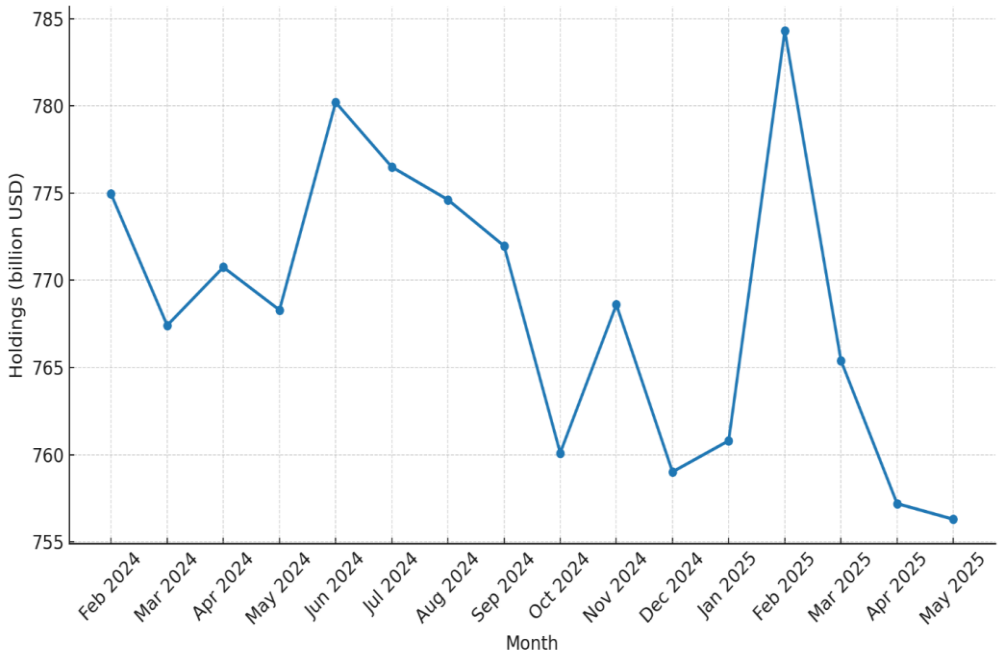

Figure 3.4- China Holdings of US Treasury Securities (February 2024-May 2025). Source: CEIC, US Department of Treasury

[3] In international economics, decoupling refers to the reduction in the dependence of one or more countries on the economic cycle of others.

On the contrary, to mitigate the economic consequences, the PRC is implementing the already mentioned "Dual Circulation" strategy and is trying to achieve technological self-sufficiency. In this way, the country seeks to reduce external vulnerabilities, strengthen internal innovation and expand foreign markets. In fact, China is trying to replace American imports, invests in research and development, and control raw materials like rare earth minerals. Additionally, projects like the Belt and Road Initiative, free trade agreements like the Regional Comprehensive Economic Partnership (RCEP)[4], and the strengthening of the BRICS are strategies aimed at breaking free from US dominance by finding alternatives.

Both nations have imposed three-digit tariffs on each other's goods. This trade war is at a standstill, as a trade truce has been opted for, avoiding even more increases in punitive tariffs. In fact, until November 10, 2025, China will maintain a 10% tariff on American goods and the US will maintain a 30% tariff on Chinese imports. The parties had already reached an agreement on these percentages of reciprocal tariffs in May 2025 in Geneve, but the ongoing friction and high-sounding declarations made it necessary to find this new trade truce agreement, (Chia, Sherman, 2025).

3.3. Strategic sectors

The conflict between China and the US is not limited to the economic and commercial sphere. There are several strategic sectors in which the two powers compete for supremacy, including technology, energy, strategic raw materials, and infrastructures.

3.3.1. Technology

The technology sector is one of the most destabilizing factors in the contemporary global order. In fact, two global technological blocs are being created, with a systematic confrontation regarding semiconductors, artificial intelligence, and more.

The semiconductor industry is currently at the centre of the technological competition between China and United States. Since 2022, the American state has imposed strict limits on the export of advanced chips, production machinery, and design

[4] The RCEP is an agreement between the 10 ASEAN members plus Japan, South Korea, China, Australia, and New Zealand. It is the largest trade bloc in the world, encompassing approximately 30% of global GDP and 27.4% of trade. This agreement eliminates up to 90% of taxes on traded goods. China is the biggest beneficiary, as through the RCEP, it has managed to find a viable alternative to the Western market for exporting its goods and weakens the US position in Southeast Asia, (Gili, Sciorati, 2020).

software. The purpose was to limit Chinese expansion in strategic areas such as artificial intelligence, while maintaining global leadership. The effects were immediate, disrupting the Chinese supply chain and increasing prices.

The PRC responded to the US sanctions by adopting various measures. First, it has limited exports of minerals critical to the production of semiconductors, such as gallium and tungsten. In addition, it has accelerated domestic industrial policies to strengthen technological self-sufficiency. For instance, the country has implemented new rules in public procurement by introducing various safety and reliability criteria for operating systems, semiconductors, and computers. The goal is to limit dependence on US chips, favouring Chinese suppliers and incentivizing domestic production. Additionally, the Beijing government has imposed sanctions on US companies involved in the sale of military technology to Taiwan, responding politically to the US and further delineating the red line on the island's political issue.

Taiwan is the leader in semiconductor production: in 2024, the island produced 20% of the world's chip production, 37% of logic chips, and over 90% of the most advanced capacity (<5nm). Taiwan Semiconductor Manufacturing Company (TSMC) alone controls 64% of the global contract chipmaking market. This is one of the multiple reason the US is keen on protecting the island sovereignty, (Najafi, 2025). For years, Taiwan has tried to maintain a balanced relationship with China, avoiding direct confrontation and continuing to export this type of technology. However, since June 2025, the Taipei government has taken a direct approach against China by including numerous entities such as Huawei in its strategic high-tech entity list. These restrictions require Taiwanese companies to obtain specific licenses to export chips to these entities. This shift holds great significance for Taiwan. By directly controlling the companies that produce critical chips and components, it can independently block supplies to China without having to convince other countries to respect these restrictions. This makes Taiwan an active geopolitical player, capable of redefining global balances.

Regarding artificial intelligence, it is one of the most revolutionary technologies of the 21st century. The United States and China are competing on the evolution of the latter, with significant investments. According to Investopedia, between 2013 and 2024, the US is the world's leading country in AI investments in the private sector, with $471

billion, of which $109 billion in 2024 alone. Instead, on the public front, the country allocated $328 billion between 2019 and 2023. China follows at a distance with private investments of $119 billion and public investments of $133 billion.

However, China is trying to bridge the gap as it has set a strategic goal of becoming a global leader in the sector by 2030. The country is implementing a significant industrial policy that covers the entire technology chain. Unlike the United States, which views it as a too for strategic competition, China has a more pragmatic approach. AI is seen as a device applicable in economies and industries, capable of modernizing traditional sectors and driving emerging ones. Indeed, the already mentioned smart factories are increasingly growing. Although China has some advantages, namely the ability to quickly build new power plants and renewable energy-powered computing hubs that enable the expansion of data centres, it must face numerous structural challenges. US restrictions on semiconductor exports limit the availability of high-end products and force Chinese companies to turn to domestic alternatives, which are not yet as high performing.

3.3.2. Energy

The energy sector is a crucial aspect of the strategic competition between China and United States, as is closely linked to economic stability, national security, and technological leadership. The US has also strengthened its position through the *shale revolution*[5], which has allowed it to reduce foreign energy imports and establishing itself as the biggest LNG exporter. In accordance with the data from the Statistical Review of World Energy, in 2024 the United States was the largest producer of gas (25% of global production) and oil (20.8% of global production), and the largest exporter of gas in general, with 206.2 billion of cubic meters exported, including 91 billion cubic meters exported to Canada and Mexico. Instead, China is heavily dependent on imports of fossil fuels, particularly oil and natural gas. To address energy security, the PRC has initiated a process of diversification, accumulation of strategic reserves, and development of green

[5] The Shale Revolution is a U.S. strategy that has led to a significant domestic production of gas and oil through the application of hydraulic fracturing and horizontal drilling technologies. The first involves injecting fluids at high pressure into shale formations to release oil and gas trapped in the rock. The second is a technique allows the drilling of horizontal wells, increasing the contact surface with the shale formation and thus improving the recovery of oil and gas. This strategy has changed the global energy landscape, with economic, geopolitical, and environmental implications.

transition technologies, being the global leader in the production of wind, solar, and battery power.

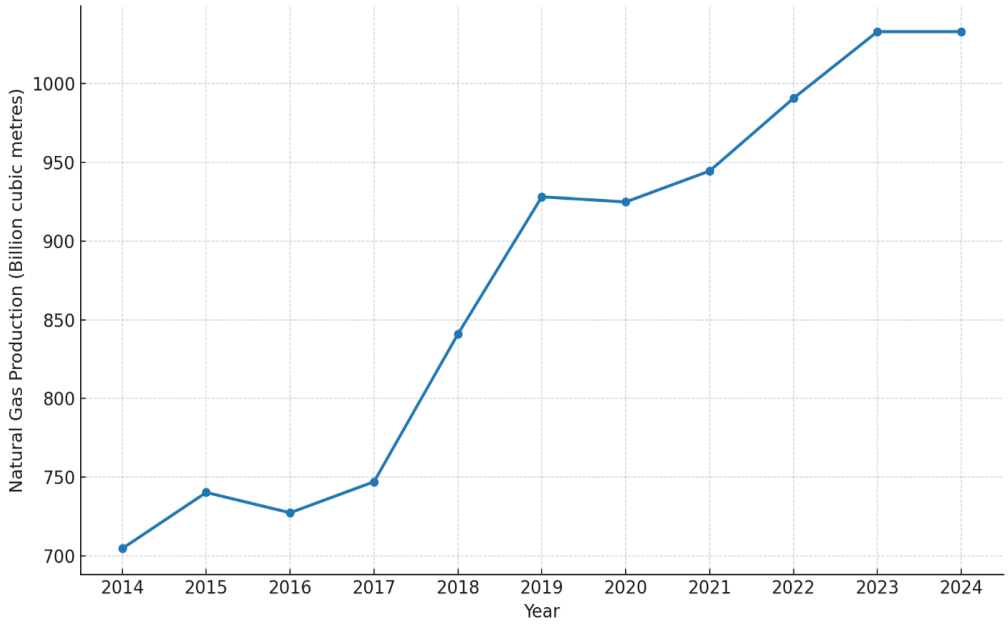

Figure 3.5- US Natural Gas production (2014-2024). Source: Statistical Review of World Energy 2025

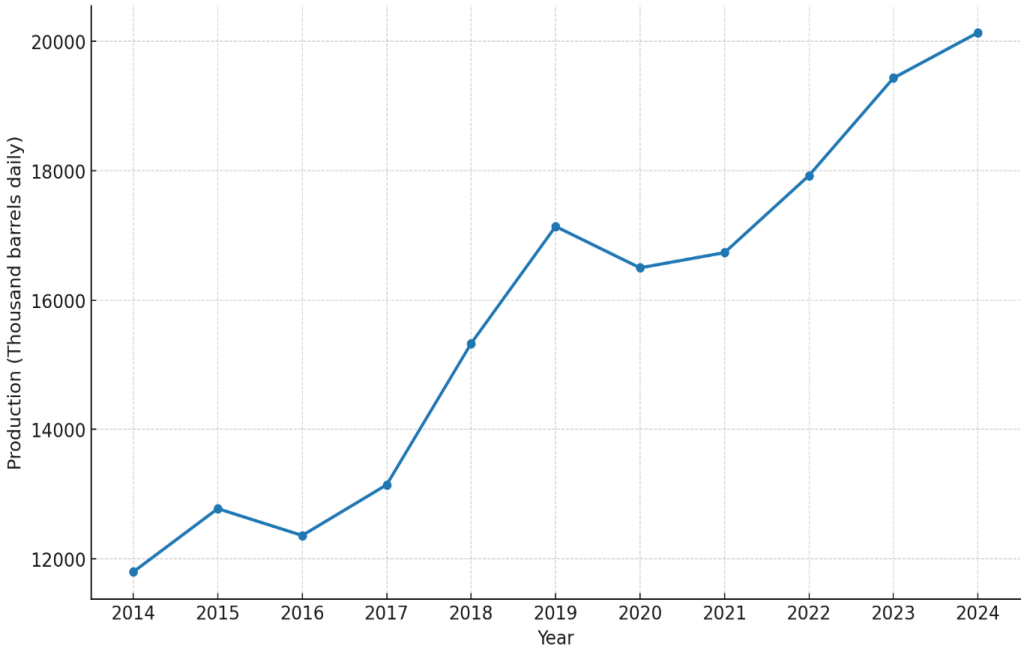

Figure 3.6- US Oil Production (2014–2024). Source: Statistical Review of World Energy 2025

Through this program, the United States has transitioned from a large importer to a large exporter of fossil fuels, taking on a crucial role in the international energy market. Considering LNG exports, they have increased from 0.4 billion cubic meters in 2014 to 115.2 in 2024. This change has made the country a major gas supplier in Asian and European markets, becoming a viable alternative to Russia, exporting 60.7 billion cubic meters across the European continent.

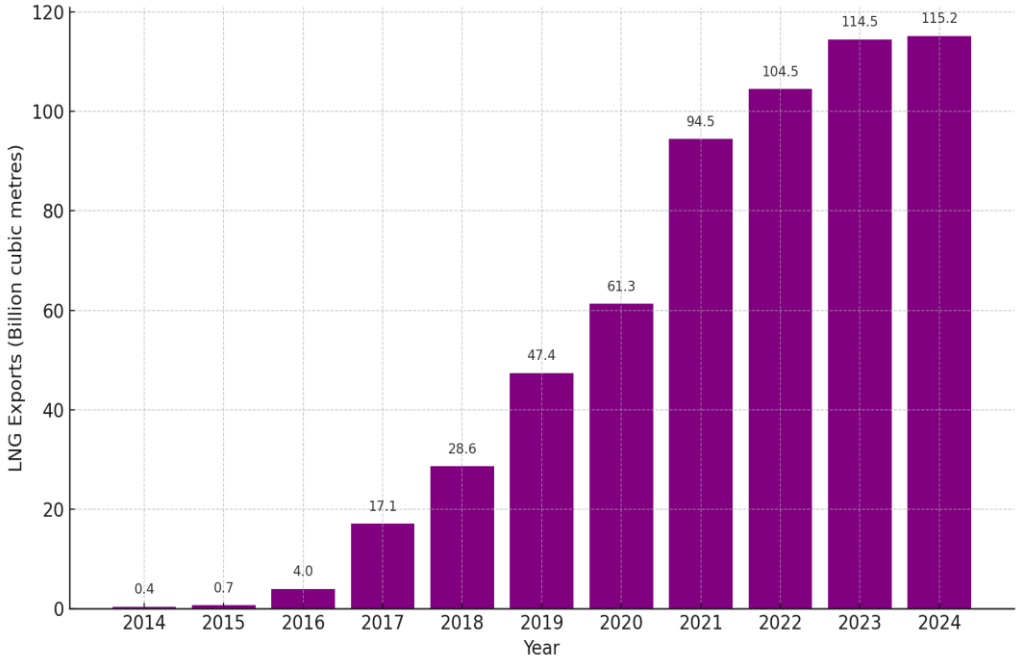

Figure 3.7- US LNG exports (2014-2024). Source: Statistical Review of World Energy 2025

Although China is the world's largest LNG importer, it only acquires 5.8 billion cubic meters of gas from the United States. Indeed, the country avoids dependence on the US by adopting policies based on portfolio agreements, intermediary contracts, and spot trading, allowing it to maximise acquired volumes while reducing ties with the American state. Additionally, the PRC resells some of US' LNG to other countries, reinvesting the profits in global infrastructures and renewable energy. Although this US strategy has numerous advantages, such as increased economic revenue, global energy security through leadership in energy markets, and increased soft power and alliances, it also has disadvantages. In fact, the country risks falling into a fossil fuel trap by becoming too dependent on them. This plays into the hands of China, which, thanks to the low cost of American LNG, is able to resell it and strengthen itself. This would create a reverse dependency, with the US becoming a strategic supplier to the PRC.

China is the world's largest energy consumer, accounting for 26.8% of the global energy supply. However, this condition inevitably leads to structural vulnerabilities. In recent decades, the development of the manufacturing sector, which consumes over half of the national energy supply, has created immense demand, with unstoppable growth of the latter. In addition, household consumption is also steadily increasing. Although energy efficiency has improved over time, the country remains less efficient than the United States, therefore overall demand is set to continue rising.

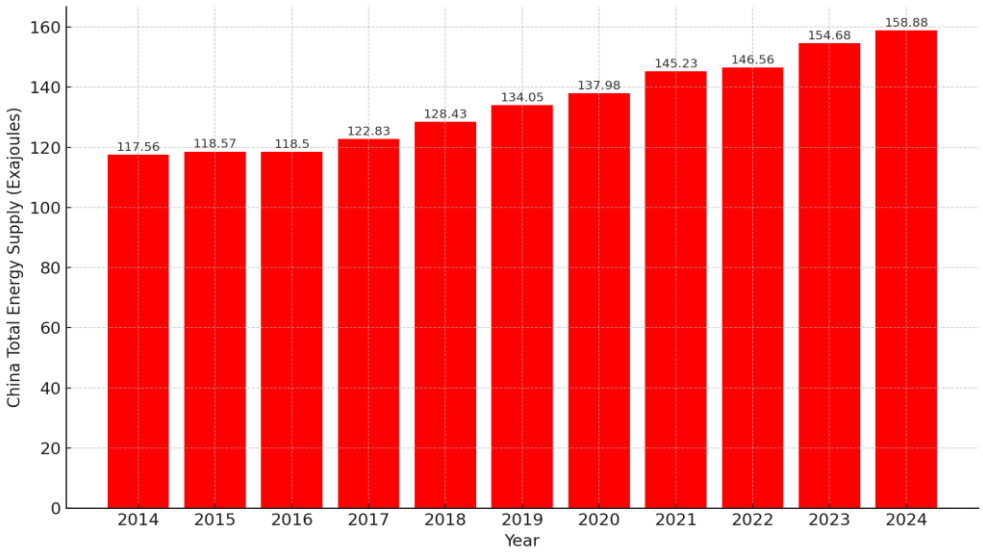

Figure 3.8- China's total energy supply. Source: Statistical Review of World Energy 2025

The growing demand cannot be met by domestic energy production, increasing dependence on foreign natural gas and oil. According to the Statistical Review of World Energy, in 2024 the country imported approximately 74% of its oil and 41.5% of its natural gas. The huge quantities of imported oil, represents a great potential vulnerability, as most of it has to pass through three risky choke points: the Strait of Hormuz, the Strait of Malacca and the Strait of Taiwan.

To overcome the problems associated with these straits, China is implementing various strategies. First, it is increasing its strategic storage of oil to ensure, as far as possible, that they can be used without any geopolitical disruptions. Furthermore, China is diversifying its routes and suppliers. Indeed, there has been a sharp increase in oil and gas imports via pipeline from Russia. New land routes with Moscow, Central Asian countries and Myanmar are under discussion. In addition, the Arctic LNG 2 maritime

route, which would use the Northern Sea Route less exposed to US controls, is also an alternative under discussion. However, the energy security dilemma is not only a matter of securing independence from the United States. The PRC maintains a cautious stance with its Russian ally, as it does not want to become too dependent on energy imports. Excessive dependence on the Russian Federation (RF) would reduce its room for manoeuvre, transforming China from an independent power into a partner of necessity, making the country more vulnerable to geopolitical and economic changes. Although, on this front this situation is constantly changing.

The United States ha d a constant military presence in the Strait of Malacca over the time. Military cooperation with Singapore, Malaysia and Indonesia, such as the US Navy Logistics Group Western Pacific, aims to control a key choke point for global trade. In response, China has strengthened its military fleet to protect energy and trade routes. Furthermore, one of the strategic aims of investing in foreign ports as part of the BRI is to bypass the Strait of Malacca.

Another way in which China is ensuring its energy security is through diplomacy. The two Middle Eastern powers Iran and Saudi Arabia, opposites for religious, economic and strategic reasons, began a process of easing tensions in March 2023, with China acting as a mediator. Neither the United States nor the European Union were involved in this operation. This process is a first step towards a new post-American era in the Gulf. This would benefit China, as it has a huge interest in maintaining stability in the Gulf for energy security reasons, thereby reducing American influence.

At the same time, China is advancing its project to internationalise the yuan. In the energy sector, it is pushing to increase the importance of the "*petroyuan*", fragmenting the international monetary system dominated by the US dollar. In December 2022, Xi Jinping proposed to Riyadh that the Shanghai Stock Exchange be used as a platform for payments in yuan for fossil fuels, and in March 2023, the first LNG transaction in yuan from the United Arab Emirates was recorded. Since then, other countries such as Angola, Iraq and Saudi Arabia have followed suit, increasing trade in yuan or investments in China, (Fantacci, Gobbi, 2023).

In 2015, the People's Bank of China launched an alternative messaging system to SWIFT, the Cross Border Interbank Payment System (CIPS), used mainly for trade and

energy transactions. An increasing number of institutions, such as Standard Bank and First Abu Dhabi Bank, have joined this settlement system. The political objective is to create a multipolar system, increasing global financial resilience and limiting the overwhelming power of the US dollar. Over the years, the yuan has gained considerable strength against the US dollar. However, since 2015, due to the slowdown in the Chinese economy, the strengthening of the dollar through interest rate hikes by the Federal Reserve and the trade war that began in 2018, the dollar has regained strength, but the trend has been very volatile. With the new trade war, the trend is even more unstable.

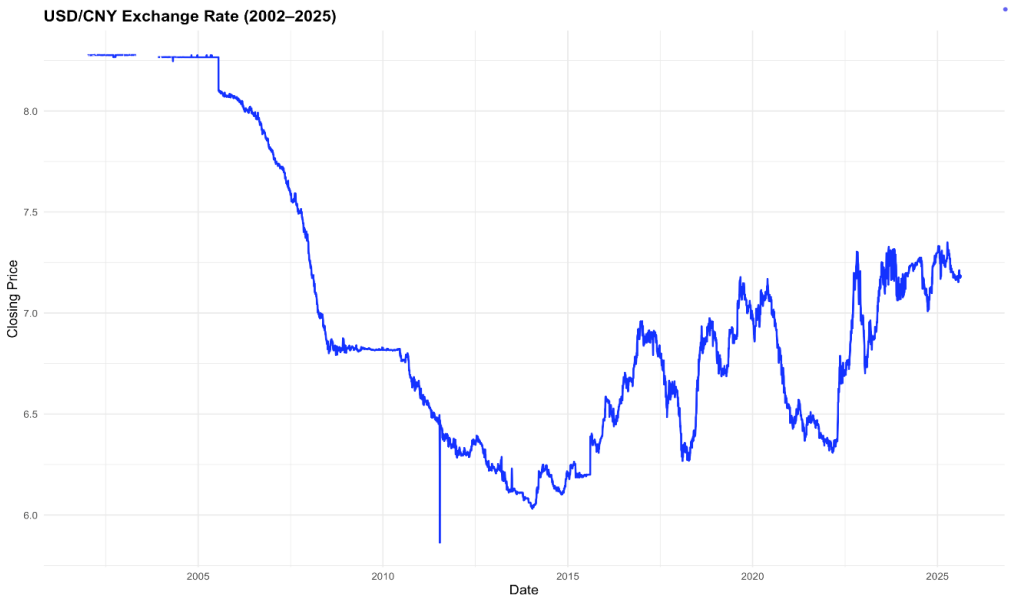

Figure 3.9- USD/CNY Exchange Rate (2002-2025). Source: Yahoo Finance

Figure 3.10- USD/CNY Exchange Rate (2024-2025). Source: Yahoo Finance

Energy plays a fundamental role in shaping the balance of the international system. Domination of energy allows control of an entire continent. The United States has an advantage in terms of resources, as its energy security does not depend on any other country; it is rich in resources and has only begun to export them on a large scale in recent years. Furthermore, through diplomacy built up throughout the 20th century, the US has forged relationships with countries that are strategic from this point of view. This is particularly true in the Gulf, where the Americans have long exercised their influence, as in the case of the two-pillar strategy[6].

Although China has strengthened its influence in the Gulf, it has a significant disadvantage in the energy sector. The country has always been aware that energy security is one of its weaknesses. Domestic production cannot meet the ever-growing demand for energy for its industries. Its dependence on oil makes it highly vulnerable and the United States is playing on this factor. The development of renewables alongside increasing coal extraction, is an attempt to increase domestic production and make the country less susceptible to geopolitical shocks. This demonstrate that the development of green energy is the result of geopolitical strategy rather than a desire to save the planet. However, this growth has partly backfired on China. The PRC expected more advanced progress in this type of technology and growing international demand, leaving much of the equipment unsold and unused.

However, China's energy disadvantage is offset by a sector in which the country is the absolute leader: critical strategic minerals.

3.3.3. Strategic raw materials

Technological dominance depends heavily on control of critical minerals. These materials are essential for semiconductors, defence, renewable energy, batteries and much more. The supply chain for these materials consists of five stages namely exploration, extraction, processing, refining and manufacturing. This process rarely takes place in a single country. Before entering the final products, these resources pass from one continent

[6] The U.S. strategy of the two pillars included what were at the time the two hegemonic countries in the Middle East: Saudi Arabia and Iran. This axis allowed the United States to maintain control over the Gulf area and its resources, which are essential for global energy security. This strategy ended in 1979, when the Iranian Revolution occurred and American diplomats were kidnapped at the US embassy, causing one of the two pillars to collapse. However, the United States continued to exert military and diplomatic control in the region by strengthening alliances with countries in the area.

to another, increasing geopolitical instability and price volatility. There are many critical materials, but China dominates production and reserves in almost all of them, 30 out of 50 in the US Geological Survey (USGS)[7].

According to the Statistical Review of World Energy, in 2024 China produced the 73.5% (1,270,000 tonnes) of natural graphite and has 21.2% of the world's reserves of this mineral. The second largest producer in the world is India with 116,400 tonnes. Natural graphite is an excellent conductor of electricity and can withstand high temperatures, and it is used in various fields. For example, it is present in almost all lithium batteries and is used in aerospace and defence because it is a heat-resistant and lightweight material.

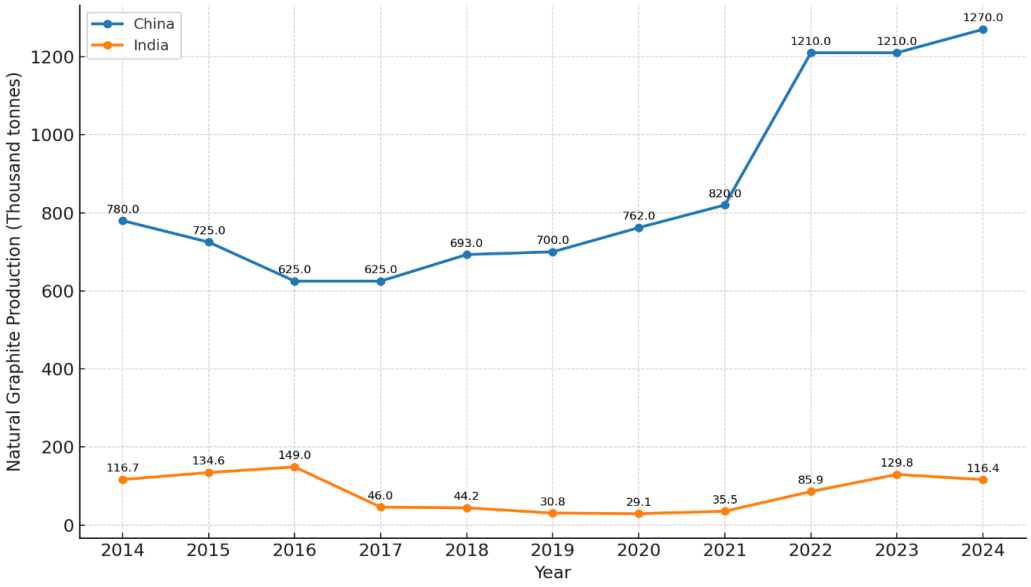

Figure 3.11- Natural Graphite Production: China Vs India (2014–2024). Source: Statistical Review of World Energy 2025

Deng Xiaoping once affirmed that Middle East has oil, China has rare earths. Among all key materials, China is the absolute leader in rare earth elements (REEs). These are a group of 17 different materials with innumerable uses. They can be found in electric car motors and wind turbines. REEs are essential for electronics, high-tech (screens, displays, mobile phones, computers) and defence (lasers, missile systems, radar)

[7] The USGS list of critical minerals identifies materials that are crucial to the national and economic security of the United States. This list is used to define federal policies regarding the procurement, research, extraction, processing, and recycling of critical materials.

and therefore have a very high strategic value. China holds 48.3% of global REE reserves and produced 270,000 tonnes in 2024. The United States, despite being the second largest producer with 45,000 tonnes, has only 2.1% of REE reserves. The low level of reserves can be attributable to the lack of investments. In 2015, the company responsible for the main US mine, the Mountain Pass in California, went bankrupt. Production only resumed in 2018 (Letzing, 2025).

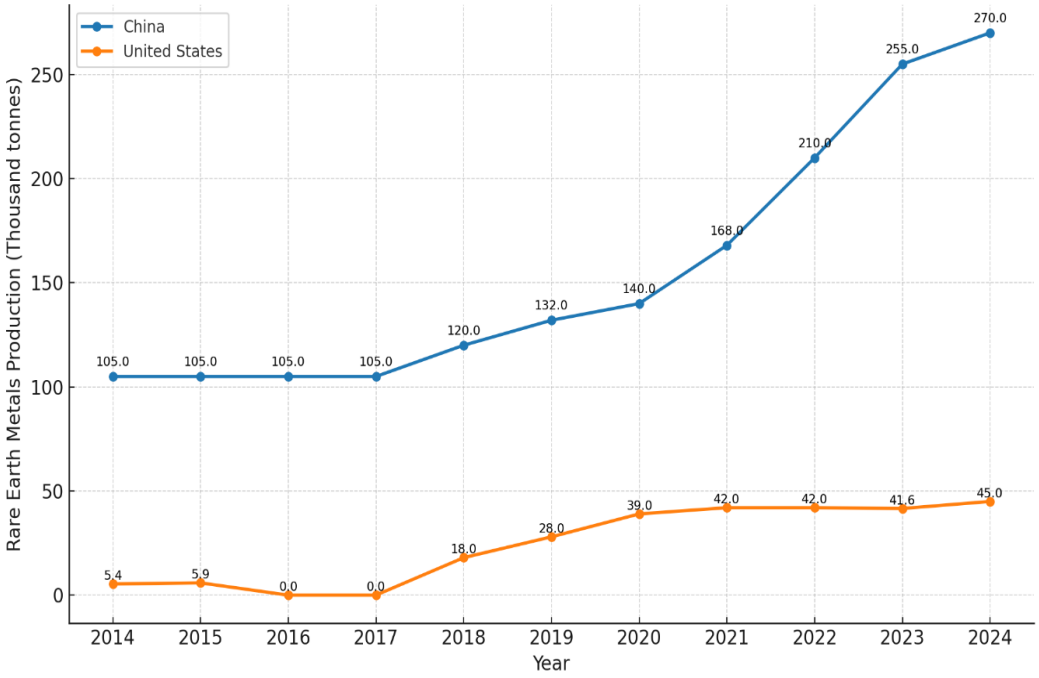

Figure 3.12- Rare Earth metals Production: China Vs US (2014–2024). Source: Statistical Review of World Energy 2025

China's dominance was built well in advance. The first discoveries of rare earths date back to 1927, but extraction only began in the 1950s. After numerous deposits were discovered in the country, the State Council created a National Rare Earth Development and Application Leading Group in 1975. The aim of institutionalisation was to coordinate research, extraction and processing, significantly increasing the budget for research and development. As a result of this early expansion, the rare earth industry was able to grow from the 1980s onwards, becoming one of the world's leading producers. In the 1990s, the country invested in refining, improving the quality of the extracted materials and reducing costs. This made it possible to export rare earths at low prices compared to other countries, with a remarkable impact on the competition market. From these years

onwards, strategic protection policies were implemented, classifying rare earths as strategic and protected minerals. For example, foreign enterprises could only participate in extraction through joint ventures with Chinese companies. Furthermore, since the 2000s, production and export quotas, taxes and bans have been enforced, further consolidating state control. With these policies, China has created a complete value chain, from extraction to refining and manufacturing of final products, assuming a near-monopoly position. The ultra-competitive prices that the country has managed to achieve allow it to control approximately 71% of extraction and 90% of global refining capacity (OIES, 2023).

China uses its dominance over rare earths as a tool for geopolitical pressure. The first time it used this resource as a weapon was in the 2010s against Japan, where, due to a diplomatic dispute, the production of rare earths to the country was blocked. In 2018, after the first trade war with the US, restrictions were placed on exports of these materials. Today, the US imports around 96% of its rare earths from the PRC. Tensions escalated in 2025, when President Trump decided to impose 145% tariffs on Chinese goods. The countermeasures included tariffs on American goods of 125% and severe restrictions on rare earth exports. This severely damaged the American automotive and military sectors, both of which are dependent on these resources. Although the Geneva negotiations led to a suspension of tariffs, Chinese pressure on rare earth exports remains very high.

After decades of neglect, the United States has been trying for years to remedy a situation that favours the PRC. Executive orders issued by Trump in 2017 and Biden in 2021 have initiated numerous measures such as the Inflation Reduction Act (IRA), the CHIPS and Science Act, the Infrastructure Investment and Jobs Act (IIJA), and the Mineral Security Partnership (MSP)[8]. Despite this, China maintains a huge advantage over the US. This is why the United States are developing targeted incentives (for electric cars, batteries, defence, semiconductors and strategic sectors); expanding domestic capacity and alliances by financing domestic refining facilities and supporting projects in

[8] The IRA is a legislative package that provides investments and tax incentives for the energy transition, domestic battery production, and critical minerals. The CHIPS and Science Act allocated approximately $280 billion to develop semiconductor manufacturing and research in the US. The IIJA allocates approximately $1.2 trillion for infrastructure, transportation, energy, and broadband, as well as $7.9 billion for critical minerals and energy. Finally, the MSP is a partnership of several countries to diversify and strengthen critical mineral supply chains.

resource-rich countries such as Australia; and extending benefits to a larger number of producing countries such as Chile, preventing their resources from continuing to flow to China.

Furthermore, the MSP aims to diversify and secure global supply chains. This cooperation includes the United States, the European Union, the United Kingdom, Canada, Australia, Japan, South Korea and Norway, and represents a tool for economic and industrial diplomacy. The MSP extends across multiple government departments, such as foreign affairs, energy and trade, and is supported by a financial network that facilitates the financing of mining and refining projects. In parallel, an MSP forum has been established, which includes producing countries such as Argentina, the Democratic Republic of Congo, Mexico, Kazakhstan and others. More recent measures introduced by the Trump administration include Executive Order 14241, which speeds up extraction permits, and Executive Order 14285, which authorises offshore exploration and deep-sea mining (Pouy, 2025).

The United States are doing everything they can to bridge what appears to be an irreconcilable difference, as these materials are at the heart of today's technological and military strategies. China's containment measures and the strengthening of alliance with producer countries such as Australia and Argentina are attempts to close the gap. However, Chinese production levels are extremely high, and the country has a substantial advantage in processing these minerals.

Nevertheless, China faces two problems in this area. Mining technologies are replicable, and the United States, Europe and Japan are investing in them to increase production and reserves of these materials. What is more difficult to replicate are semiconductors. The PRC is heavily dependent on imports from Taiwan and the US, as it lacks such advanced technology. For this reason, the US are blocking exports of advanced chips and other key machinery to China.

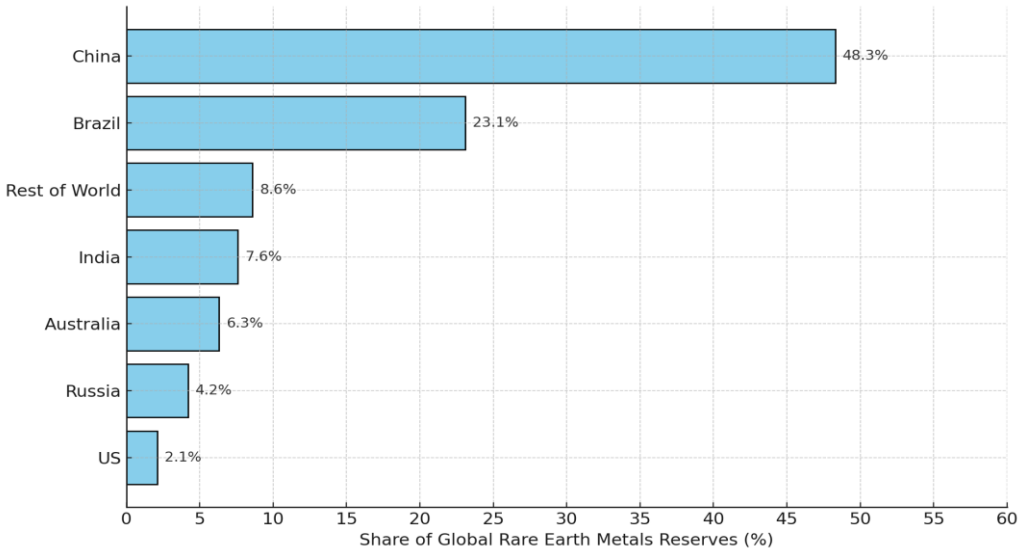

Figure 3.13- Share of Global Rare Earth Metals Reserves (%). Source: Statistical Review of World Energy 2025

3.3.4. Infrastructures

Over the past few decades, China and the United States have used infrastructure construction not only as an economic tool, but also as a lever for geopolitical influence. Ports, railways, energy and digital corridors are used to consolidate their presence internationally. The two main projects launched by the two nations are the Belt and Road Initiative (BRI) and the Partnership for Global Infrastructure and Investment (PGII).

3.3.4.1. Belt and Road Initiative

The BRI, a large-scale project launched in 2013 by Xi Jinping, involves approximately 150 countries with the goal of extending Chinese influence on the centre of global trade, energy, and infrastructure networks. The country has built various roads, ports, railways, energy corridors, digital connections, and more around the world and it is composed of both maritime and land corridors. To date, the most important projects have been the railway line connecting Europe to China, numerous high-speed railways in Asia and Africa, the Chancay port in Peru, and the China-Pakistan Economic Corridor (CPEC) that ends at the Gwadar port financed by China itself.

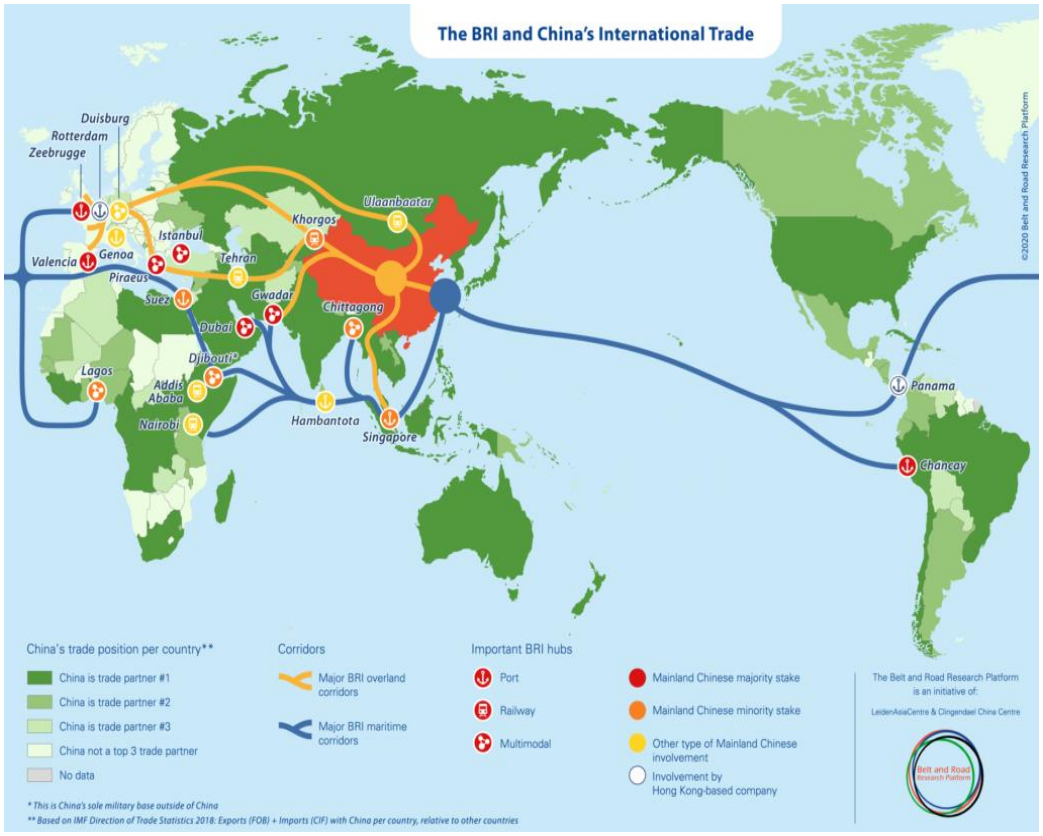

Figure 3.14- The BRI and China's International Trade. Source: Leiden Asia Centre

In accordance with the Green Finance & Development Centre, 2024 was the BRI's busiest year. Since the project was launched, China has invested $1.175 trillion (740 billion in construction and 470 billion in non-financial investments). In 2024 alone, it spent approximately $121.8 billion, of which $70.7 billion was in construction contracts and $51 billion in direct investments, as the figure below displayed in Christoph Nedopil Wang (2025) article "*China Belt and Road Initiative (BRI) investment report 2025 H1*".

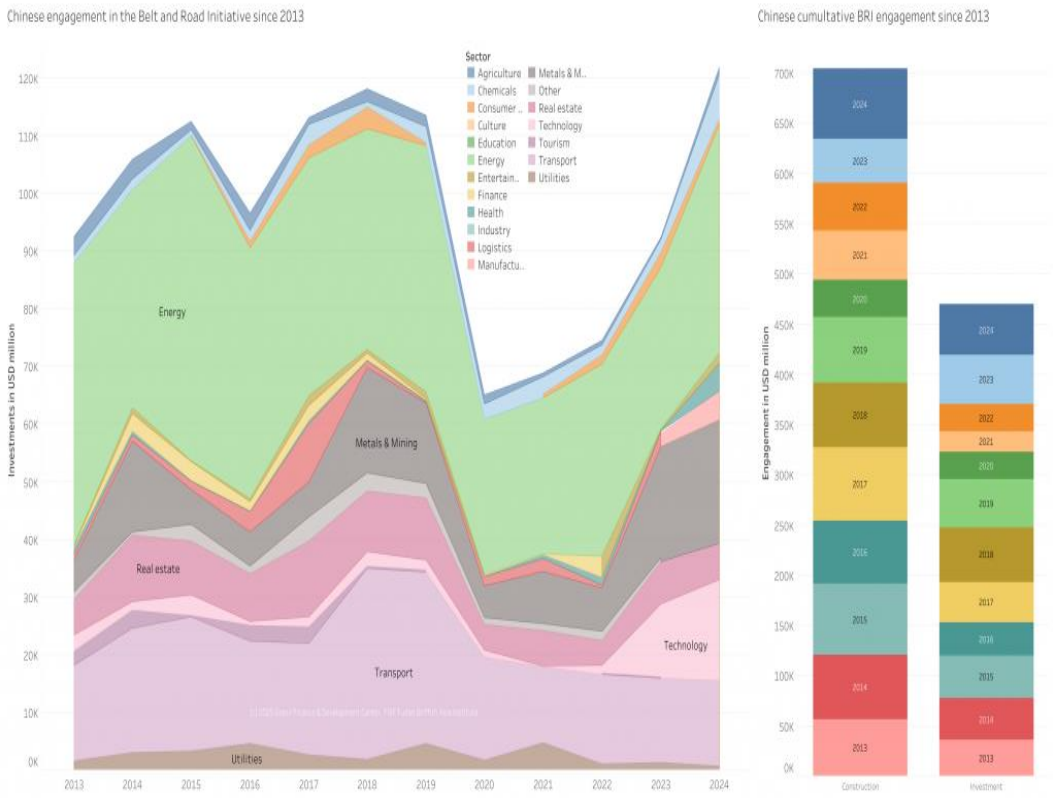

Figure 3.15- China's BRI engagement by sector 2013 to 2024 (left) and cumulative (right). Source: Green Finance and Development Centre

This project encompasses several areas of action. The main sector is energy, where $40 billion was invested in 2024 alone, the highest share within the BRI portfolio. Two seemingly contrasting trends can be observed in energy investments. The first is that investments in renewable energy reached an all-time high of $11.8 billion. A significant past investment was the Grand Ethiopian Renaissance Dam (GERD), which is crucial for Ethiopia as it has an installed capacity of 6.45 GW. The other trend shows that investments in fossil fuels are also increasing in this project. Investments in oil and gas reached their highest ever value ($24.3 billion), thanks mainly to large contracts signed with the Middle East, where the most important agreement, worth $8 billion, is for a new refinery in Iraq. On the other hand, investments in coal remain present, even though China committed in 2021 to no longer finance new coal-fired power plants abroad. This apparent ambivalence suggests that the increase in the use of and funds allocated to renewable energy has a strategic purpose rather than a desire to reduce emissions.

Another vitally important sector is minerals and metals. With a 10% increase over the previous year, $21.4 billion was invested in 2024. China's dominance in the sector is also due to direct investment in numerous countries around the world, such as the Democratic Republic of Congo, which controls 55.2% of the world's cobalt reserves, Chile, rich in strategic materials such as lithium, with 33.1% of global reserves, Indonesia, with 38% of nickel reserves, and many other countries. In this context, Chinese companies mostly employ equity investments[9] to ensure greater direct control of resources. This strategy amplifies China's control over the entire supply chain of strategic materials, guaranteeing access to minerals along the entire value chain.

The technology area reached an investment of approximately $30 billion in 2024, where the new three priority industries identified by the PRC are renewable energy, batteries, and electric vehicles. A significant investment of $3.2 billion has taken place in Spain, a country not directly involved in the BRI project. This indicates that China's goal is not only to finance infrastructure, but to create trade corridors and value chains in which most countries in the world participate, in order to exert its authority over them.

Although halved compared to 2018 and 2019, investment in transport remains significant, at around $15 billion. In 2024, the most expensive contract was for the construction of a new metro line in Riyadh, worth around $5.6 billion, as well as an airport in the same city. However, the PRC has been investing in this type of infrastructure for years. In many African countries, roads and highways have been built, improving transport links across the territory. Ports are vital to this project. In 2024, China acquired 51% of Singapore's NPH port, but the most significant port investments were in Gwadar and Chancay. The former, in Pakistan, marks the end of the CPEC.

This economic corridor worth a total of around $54 billion, is the largest project of the BRI. The latter connects Xinjiang to the Indian Ocean, providing direct access to the Arabian Sea, where the PRC acquires most of its oil, and reducing dependence on the Strait of Malacca. The construction of this corridor has been very complex due to the Himalayan Mountain range that divides the two countries, but today it includes roads, gas

[9] Equity investments are funding of own capital. This means that a company doesn't simply provide a loan but acquires shares or ownership in a project. In this case, Chinese companies aren't just building infrastructure, such as mining, but become co-owners, assuming risks but enjoying greater long-term influence.

pipelines, oil pipelines, railways and fibre optic cables. The ambitious Gwadar port project has encountered numerous limitations. Due to the region's political insecurity, the lack of efficient connections with the rest of Pakistan, and the absence of docks for oil, gas, and coal, the port has been unable to attract large shipping companies. Despite a projected annual capacity of 400 million tons by 2045, the port handled only 11 million tons in 2024, making nowadays the 2045 goal unrealistic (Anees, 2024).

Figure 3.16- CPEC map. Source: South China Morning Post

The other port of great importance is Chancay in Peru, inaugurated on 14 November 2024, which is the first major Chinese investment in South America. Thanks to this infrastructure, the route between China and Peru, and consequently also with the whole of Latin America, has been drastically reduced. In fact, the port is directly connected to the Pan-American Highway, improving logistics. This port has great geopolitical significance as it enhances Chinese influence in Latin America, which has always been considered oriented towards the United States.

To understand China’s soft power strategy in the world, it is useful to understand the geographical distribution of investments. The first destination area for Chinese funds, with approximately $40 billion, is Middle East. This is due to the huge projects in the

energy sectors, considered vital for the PRC's own security. In perspective the Middle East has surpassed Pakistan, which was the BRI's largest partner. Indeed, South Asia was the region that saw the largest drop in investment compared to 2023. This decline is mainly due to the reduction of funds allocated for the CPEC, which have decreased by 40%. Africa, with approximately $29.2 billion, is the second-largest destination for the BRI, due to its strategic importance as a supplier of natural resources. Southeast Asia is supporting stable fund growth, particularly toward Indonesia. Compared to previous years, direct investments in Latin America have also decreased. After the construction of the port of Chancay, large capital moved to Africa and the Middle East, although there remains a strong interest in projects related to the extraction of natural resources, as in Chile (Wang, 2025).

Such an extensive and ambitious project presents numerous challenges and attracts criticism from various quarters. China has often invested in countries with significant political and economic instability, such as Pakistan, Myanmar and Kenya, exposing projects to major security risks. Protests, attacks and demonstrations have halted work in several countries, causing huge economic losses. In addition, many projects have suffered from shortcomings in their assessment and design. The most emblematic case is the CPEC, which was supposed to be the main land corridor of the BRI, connecting the country to the Arabian Sea. Excessive optimism about profitability and timelines clashes with a lack of infrastructure, such as an efficient energy distribution network, exposing partner countries to ever-increasing levels of debt and causing delays with Chinese creditors. In addition, China, especially in Africa, applies debt-trap diplomacy. In this system, the creditor country offers projects and loans that are very difficult for the country in which the projects are to be carried out to repay. The latter is forced to make economic and political concessions to the creditor country, such as favourable prices for natural resources or direct control of certain infrastructure. Over the years, this scheme has attracted considerable international criticism.

3.3.4.2. Partnership for Global Infrastructure and Investment

The United States, together with the G7 countries, launched a project in 2022 in which one of the aims is to limit the growing influence that China is gaining through the BRI: Partnership for Global Infrastructure and Investment (PGII). The partner countries have decided to mobilise $600 billion by 2027, combining public and private investment with

the aim of reducing infrastructure gaps in the Global South. Some areas of intervention are climate, energy, supply chain resilience by reducing strategic dependencies, connectivity and the construction of effective health systems.

In addition to being an investment plan, the PGII is a geo-economic tool that aims to connect banks, governments and private individuals to propose an alternative model to the BRI, with a particular focus on the Indo-Pacific and Africa. One of the pillars of the PGII is the Just Energy Transition Partnerships (JEPTs), a cooperation tool that mobilises public and private resources to accelerate the energy transition and reduce the use of fossil fuels. Currently, $50 billion has been mobilised in countries such as Vietnam, Indonesia, Senegal and South Africa. In addition to the JEPTs, there are various projects pursued by the PGII, such as the African Green Industrialisation Initiative (AGII), which invests in the sustainable industrialisation of several African countries.

Other economic corridors that are part of the PGII include the Trans-Caspian Transport Corridor, which aims to strengthen links between Europe and Central Asia by ensuring greater energy security; the Lobito Corridor in Africa, which promises to build the first transcontinental rail link; and the Luzon Economic Corridor in the Philippines, which aims to integrate critical supply chains such as semiconductors. However, the most important project is the India Middle East Europe Economic Corridor (IMEC).

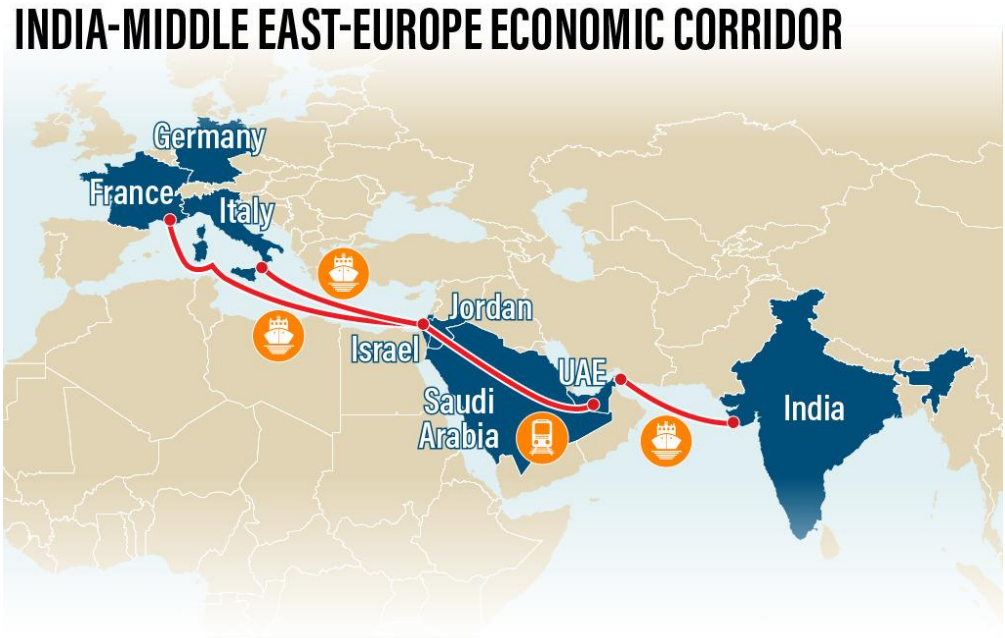

Figure 3.17- IMEC map. Source: Energy Research Letters

The IMEC, announced during the G20 summit in New Delhi in September 2023, is a connectivity project between Asia, the Middle East and Europe with the aim of reducing trade times and costs between these areas, while promoting logistics networks, energy and data corridors, and green infrastructure. In addition to the economic dimension, there is also the geopolitical dimension. In fact, this project is a direct response to the BRI. The difference between the two plans is that the Chinese project focuses on physical control of infrastructure and expanding the PRC's influence across various continents. In contrast, the IMEC designates a more integrated approach: it is a tool for multilateral cooperation that promotes multipolarity by combining logistics, energy and digital infrastructure. For the United States, this project has a significant importance as it would counterbalance Chinese influence, particularly in the Middle East.

Energy plays a central role in this project. India would strengthen its energy security by attracting new supplies of gas and oil from the Gulf, as well as improving logistical connectivity and promoting integration into global value chains. The European Union would diversify its trade routes, reducing its reliance on Russia. In addition to strengthening their role as traditional energy hubs, Gulf countries see IMEC an opportunity to facilitate integration of green hydrogen. By reducing Chinese influence, the US would strengthen its position, putting China’s energy security at risk.

3.4. The inconvenient ally

To date, China is the winner of the war in Ukraine. This conflict has weakened both the West and its Russian ally. The latter has been significantly deteriorated economically, and its energy exports have been redirected from Europe to China. This upsets the balance of power between the two nations, playing in favour of the PRC. However, as previously mentioned, this is a double-edged sword, since if President Xi Jinping makes the country too dependent on imports from the Russian Federation (RF), there could be a new imbalance that favours the latter.

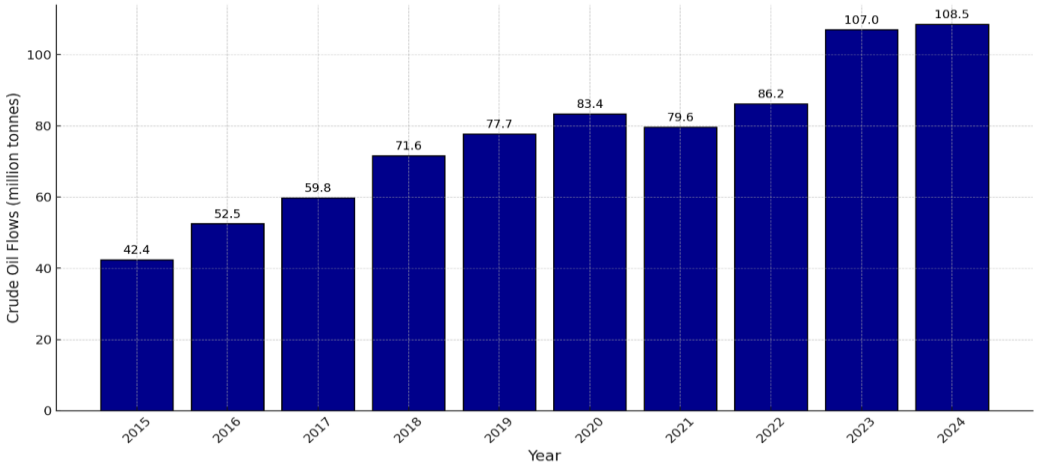

Figure 3.18-Crude oil flows from Russia to China (2015–2024). Source: Statistical Review of World Energy (2016-2025)

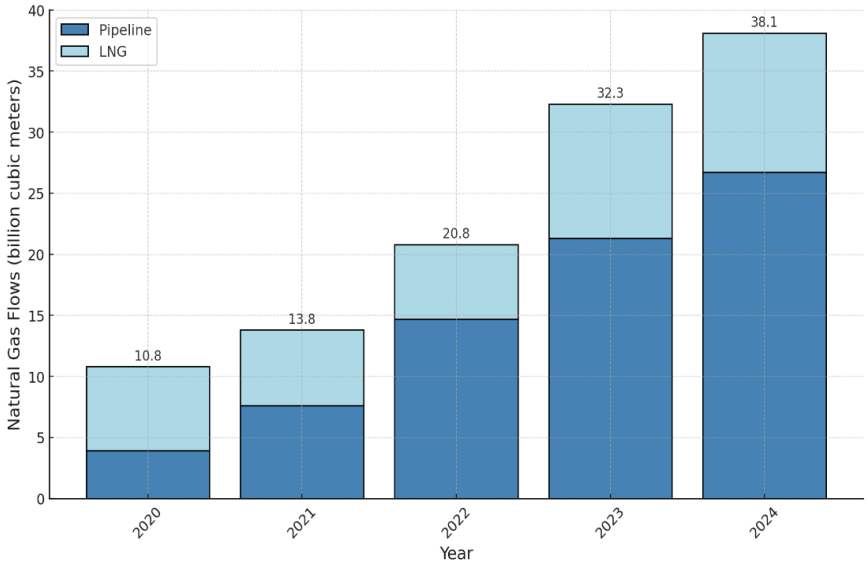

Figure 3.19- Natural gas flows from Russia to China (2020–2024). Source: Statistical Review of World Energy (2021-2025)

The relationship between the two nations has had a troubled history. Since the Russian Empire expanded into Asia, there have been numerous clashes between the two states for control of various territories. The two powers grew closer for ideological reasons: Mao Zedong and Stalin formed an anti-American alliance and fought together during the Korean War in the 1950s. Relations deteriorated again after Stalin's death and the election as president of the Soviet Communist Party first of Nikita Khrushchev and then of Leonid Brezhnev, who saw their Chinese ally as a threat. The latter led to the last

armed conflict between the two nations in 1969[10], which temporarily brought China closer to the US in an anti-Soviet perspective.

The two nations only truly reconciled after the dissolution of the Soviet Union in the 1990s, through numerous border demarcation and trade agreements. In the 2000s, military cooperation and energy exchanges increased. What united the RF and the PRC were their positions against US unilateralism, which had formed after the collapse of the USSR. In recent years, their relationship has become increasingly asymmetrical, with Russia as the junior partner and China as the dominant power, yet there are changes underway.

Since Trump's election, the Russian Federation has moved much closer to the United States than it was throughout the Biden administration. During his election campaign, President Trump promised to end the war in Ukraine as soon as possible, and in February 2025, there was a first meeting between the two countries in Riyadh. On this occasion, the two nations began working on a way to end the conflict, excluding the European Union and Ukraine from the negotiations.

In August 2025, a historic meeting between Putin and Trump took place in Alaska. The latter did not lead to any concrete agreement on the end of the conflict and the results that will come from it, but both leaders commented on the summit as ‘very productive’.

Indeed, the actual outcomes of this meeting are difficult to decipher, as the reports are varied and often contradictory. However, Russia benefited from this meeting. In fact, seems that the Russian Federation did not accept any binding conditions, no further sanctions were imposed by the US, and Trump opened up to Russian territorial concessions and Ukraine's non-membership of NATO. In addition to discussions for the cessation of the war in Ukraine, it appears that the United States has proposed a possible return of ExxonMobil to oil and gas projects in Russian territory, abandoned after the start of the conflict in 2022, and has discussed a possible purchase by Russia of U.S. technologies for LNG-related projects, including Arctic LNG-2. Nowadays, this proposal is very unlikely to be implemented, both because of the course of the war and because of

[10] The last conflict between Russia and China occurred at the Ussuri River border in 1969. Both nations claimed an island within this river, resulting in numerous casualties. However, this conflict did not expand on a large scale because it was inconvenient for both powers.

the heavy sanctions that the United States has imposed on Russia. All this serves the US to weaken the Sino-Russian axis, bringing the RF closer to American technology instead of Chinese.

China immediately sought to repair relations with Russia, drawing it closer by using energy as a bargaining chip. Although the PRC has always been wary of becoming too dependent on Russian gas, during this meeting a non-confirmed agreement was signed for the construction of Power of Siberia 2, which would transport 50 billion cubic metres of gas per year and a further increase in intermediate flows through the existing Power of Siberia. However, this agreement lacks key commercial details such as the price of gas, and construction of the pipeline will not begin before 2030. This project strengthens China's dependence on Russia while reducing the need for US' LNG (Hillie et al., 2025). This project would be contrary to China's clear energy security policies, namely diversifying energy supplies and avoiding excessive dependence on any single country. Indeed, the agreement has not been confirmed by any Chinese authority yet.

Not only the energy sector was involved in the new cooperation agreements between the two nations: AI, education, aerospace and many other bilateral agreements were agreed upon. Putin's strategy was to send a double message. On the one hand, to open up to the United States and demonstrate that he could deal with Trump on equal terms, testing American willingness to enter into economic and territorial agreements on the Ukrainian front. On the other hand, Putin sought to consolidate the Sino-Russian partnership, enhancing the role of the Russian Federation within the alliance and sending a message of credibility to the world as an alternative to the United States. Russia is currently engaged in a strategic shift. This endeavour is aimed by the ambition to re-establish its global influence. In this geopolitical context, USA and China, seeking to be the world's hegemonic power, are attempting to secure the support of the inconvenient ally.

CHAPTER 4 - China's 15th Five-Year Plan (2026–2030): Priorities, Tensions, And Future Prospects

The Chinese’s situation is utterly complicated: on the one hand, in continues to grow in terms of investments and resources; on the other hand, economic growth has begun to slow down, partly due to the pandemic, the crisis of the real estate sector, and competition with the United States has intensified significantly in 2025. Therefore, the future 15th Five-Year Plan (2026-2030) will be crucial for the development of the People's Republic of China.

The social and economic planning of this program will be vital for the country, as it will take place shortly before a larger goal: the socialist modernisation by 2035. This aim, strongly desired by Xi Jinping, has various purposes in the economic, political, social and energy fields. This modernisation is conceived as an alternative model to the Western one, strengthening national security and proposing itself as a possible world leader.

Knowing exactly what the 15th plan contains is complex, but following the analysis carried out and based on the continuity of the 14th plan, it is possible to hypothesise some topics contained in it. Some basic principles could be: strengthening domestic demand, thereby reducing dependence on investment and exports, and therefore also on American tariffs; moving towards technological self-sufficiency; balancing energy and green transition challenges, which are fundamental to national security and international legitimacy; responding to demographic changes; integrating geopolitical and security dimensions with economic planning, in a context of growing systemic rivalry with the West. This chapter will attempt to analyse how these basic principles can be incorporated into the 15th five-year plan, yet without first briefly reviewing the critical issues and results of the 14th plan.

4.1. Results and critical issues of the 14th five-year plan

The 14th Five-Year Plan was developed and implemented in a particularly complex context, characterised by slowing economic growth, the COVID-19 pandemic and deteriorating trade relations with the United States. The purposes set for the period 2021-2025 reflected this dual scenario: firstly, strengthening economic resilience and supply chains; secondly, the necessity to embark decisively on a path of “quality” development, focused on technological innovation, green transition and expansion of domestic demand.

This plan can be considered a transitional phase. The Chinese government has had to deal with a structural slowdown in growth, the bursting of the real estate bubble and declining consumer confidence, while continuing to support key sectors such as renewable energy. Although the results have been tangible, unresolved issues remain that will weigh on the next planning cycle. These include insufficient growth in domestic consumption, growing overcapacity in several strategic sectors, persistent regional inequalities and the failure to meet certain emission reduction targets.

Analysing the successes and challenges of the 14th Five-Year Plan is essential to understanding the priorities and choices that will guide the formulation of the 15th Five-Year Plan. The outcome that can be drawn from this analysis may outline the economic choices and political challenges that the Chinese Communist Party will face. For the PRC will be important to stimulate growth without fuelling imbalances, to ensure social stability in a context of slowdown and, simultaneously, to consolidate China's international projection as a technological and climate power.

The 14th Five-Year Plan stood out for its ambition to lead China towards a more balanced, innovative and sustainable development model, focusing more on qualitative rather than quantitative growth and laying the foundations for the strategic goal of socialist modernisation by 2035. Despite the difficulties generated by internal and external factors, the plan has achieved significant results in some key areas, although structural problems remain unresolved and are now influencing the definition of the new planning cycle. China continued its advance as a leading country in the field of renewable energy and electrification, installing unprecedented solar and wind capacity in 2024: according to the Statistical Review of World Energy it amounted to approximately 1409.7 GW. In fact, in 2024 alone, installed solar capacity increased by 45.6% compared to the previous year, while wind capacity increased by 18.1%. At the same time, it developed a high-capacity (UHV) electricity grid and advanced storage systems, consolidating its position as an "electro state".

Additionally, the country has fuelled its success in electric vehicles and new industrial sectors. Thanks to supportive policies and heavy investment, the country has overtaken the United States as the world's largest market for electric vehicles, capturing growing global market share. In April 2025, Chinese electric car giant BYD surpassed

Tesla in sales for the first time in Europe as well: 7,231 units versus 7,165. Tesla continues to decline, down 49% year-on-year, while BYD is up 359%. BYD arrived on the continent only in 2022 (Perinetto, 2025). Similarly, emerging sectors (batteries, photovoltaics, biotechnology) have consolidated China's international competitiveness. In the field of digitalisation and technological innovation, support for research and development has been strengthened, with the spread of technologies such as artificial intelligence, robotics and 5G. This has fuelled the transformation of traditional industrial sectors (smart factories) and the emergence of regional technology ecosystems. Although it is closing the gap, China still lags far behind the United States in these areas.

The period 2021-2025 has also been marked by significant challenges, particularly weak domestic demand. The share of consumption in GDP remained stagnant at around 39%, well below the levels of advanced economies, which stand at around 65%. Despite incentives, consumer confidence remained fragile due to the property crisis and high household savings propensity, with retail sales growth increasing by only 3% in 2024 (Marino, 2025). Furthermore, the severe crisis in the real estate sector, mainly due to an excess of supply causing a sharp contraction in demand, has had negative effects on the financial and employment sectors. Additionally, in sectors such as batteries, solar panels and electric vehicles, the rush to invest has led to overcapacity, resulting in reduced margins, destructive competition and risks of systemic inefficiency, leaving many equipment unsold and unused. Finally, numerous environmental targets have not been fully achieved, in particular the reduction of carbon intensity per unit of GDP has remained below targets. This is also due to the continued use of coal in response to energy and climate crises. Although China has stated in the past the willingness to reduce the use of this fossil fuel, production and the number of coal-fired power plants have continued to increase over the years, with only the percentage of coal in the country's energy mix being reduced.

The 14th Five-Year Plan has revealed the dual nature of Chinese growth. On the one hand, there is an extraordinary ability to concentrate resources in order to achieve leadership in the technological and green sectors. On the other, there is the difficulty of rebalancing the model towards domestic consumption, social cohesion and structural sustainability. These tensions define the framework within which the 15th Five-Year Plan should be developed, which will have to urgently address the issue of domestic demand,

the management of overcapacity and the transition to a more resilient and inclusive economy.

4.2 The possible priorities of the 15th Five-Year Plan (2026-2030)

While the 14th Five-Year Plan represented a period of transition, the 15th Plan will mark the need to consolidate the experiences of past years and address structural issues that can no longer be postponed. China is entering the new planning cycle at a crucial stage: the economy is growing at a slower pace than in the past, consumer confidence remains fragile, the real estate sector has not yet fully recovered, and geopolitical tensions, particularly with the United States, are limiting prospects for trade expansion. However, the country also boasts global leadership in several sectors, including absolute dominance in critical strategic minerals.

The 15th Five-Year Plan should have several features. First, it should focus on strengthening domestic demand, with the aim of transforming household consumption into a stable engine of growth and reducing dependence on debt-based investments. Secondly, it should focus on technology and innovation as pillars of future competitiveness, with particular attention to self-sufficiency in sensitive sectors such as semiconductors, where the United States and Taiwan are far ahead, artificial intelligence and biotechnology. Thirdly, it should place a strong emphasis on energy transition and security, not only as a response to climate commitments, but mainly as a national security and international projection strategy. Other pivotal issues should also be considered, such as addressing regional and social inequalities, revitalising rural areas and supporting welfare in the context of an ageing population. The combination of these lines of action will define China’s trajectory until 2030, with a view to the political goal set for 2035: the substantial realisation of socialist modernisation.

4.2.1. Welfare and strengthening consumption

The 15th Five-Year Plan needs to adopt a more decisive approach to domestic demand. The share of household consumption in GDP, historically considered the weak link in China's development model, has remained stagnant at around 39-40%, significantly lower than in major advanced countries, where the average is 55-65%. The weakness of household consumption as a share of GDP, combined with declining consumer confidence following the real estate crisis and a growing propensity to save, limits the Chinese

economy's ability to rely more on its own resources rather than on exports and public investment.

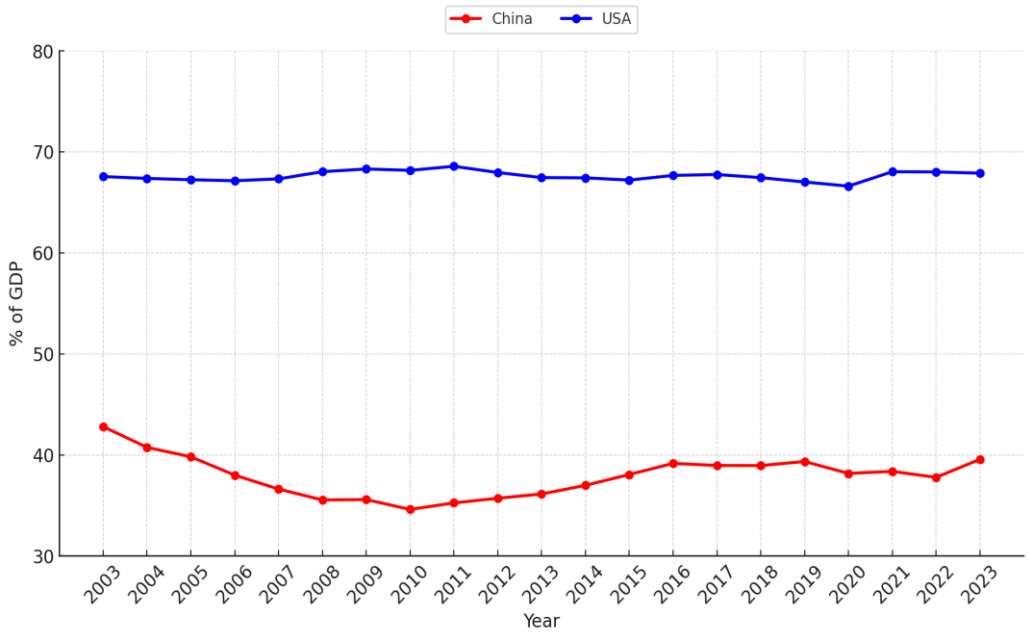

Figure 4.1- Households and NPISHs final consumption expenditure (% of GDP) China-USA (2003-2023). Source: World Bank

To achieve this, it is necessary to increase household income through targeted redistributive and social measures, such as increasing public spending on essential services, increasing transfers to low- and middle-income groups, and strengthening pension funds. The demographic context exacerbates the situation. Indeed, the population has been declining since 2022 and ageing is accelerating, reducing the active workforce and increasing social costs. In a fragile welfare system, households are encouraged to save rather than consume, which contributes to low demand. On the supply side, wages have had a low incidence in primary income distribution and have grown slowly relative to productivity gains. Some economists suggest that policies should be geared towards wages growing slightly faster than GDP and household incomes outpacing productivity in order to improve real purchasing power (Hairong, 2025).

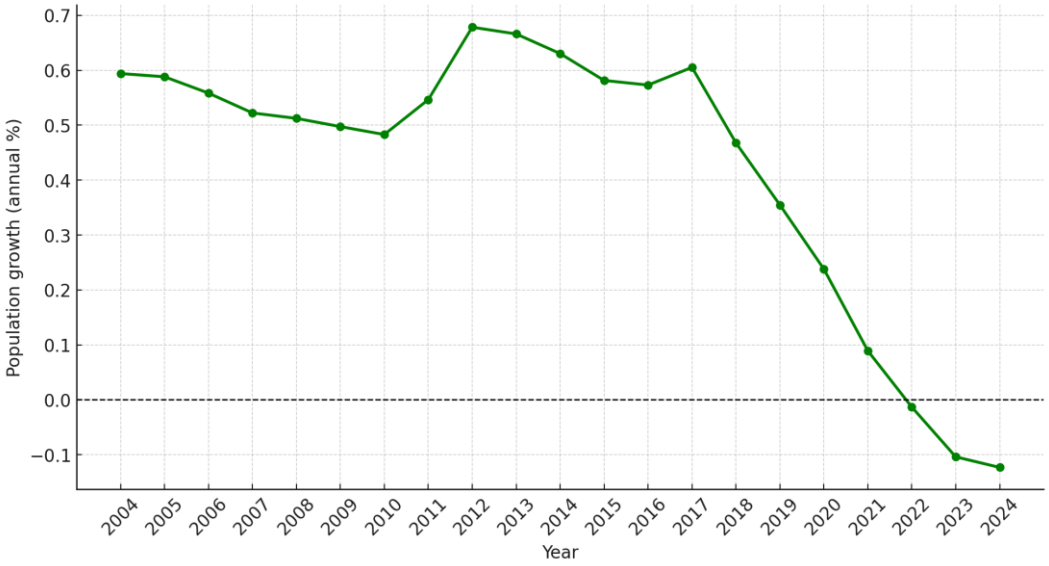

Figure 4.2- Population growth (annual %) – China (2004-2024). Source: World Bank

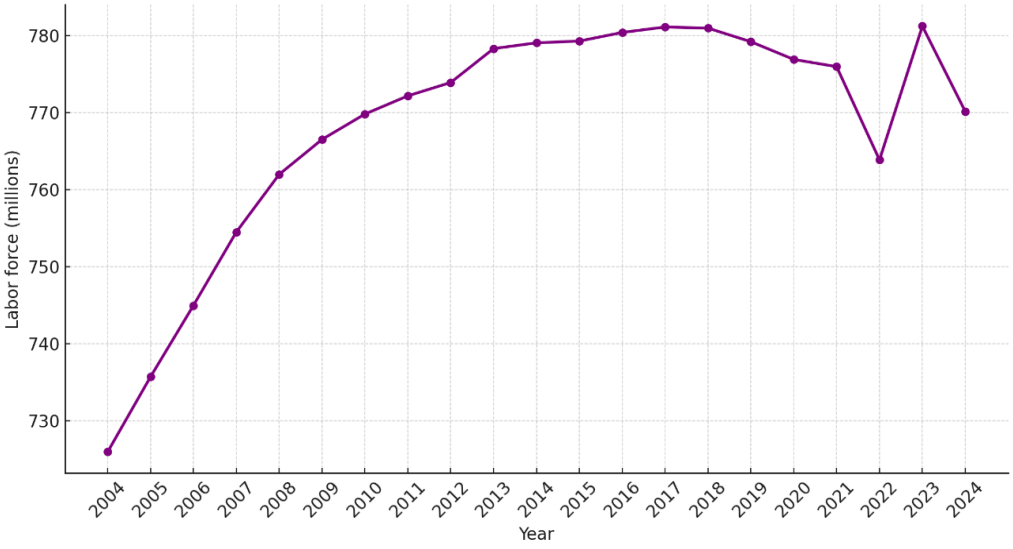

Figure 4.3- Labor force, total – China (2004-2024). Source: World Bank

Finally, there is a cultural and political aspect that should not be overlooked. The concept of *neijuan*[1] (involution), which has spread mainly among young generations since the pandemic, describes exaggerated competition in the work and educational systems, with no prospects for real social mobility. This climate of mistrust not only curbs

[1]This term describes the sense of frustration that young Chinese have developed in recent years due to the extremely competitive education and job sectors. This reflects a broad crisis of confidence that affects not only society, but also the economy, where strategic sectors such as technology risk falling into a sterile and non-innovative competition.

consumption but also poses a risk to long-term political stability. The 15th Five-Year Plan should therefore be called upon not only to launch economic policies but also to restore social trust by creating credible prospects for well-being and security.

4.2.2. Technology and innovation as the cornerstone of competitiveness

In the 15th Plan, the development of growth driven by the aim of technological self-sufficiency and innovation should be of crucial importance. As early as the 14th Plan, the Chinese government had placed these issues at the centre of the project, but the current geopolitical situation and the restrictions on exports of advanced chips imposed by the United States, force the People's Republic to achieve technological self-sufficiency in strategic sectors at the earliest opportunity.

During a summit in Shanghai in April 2025, Xi Jinping emphasized the need for the development of new quality productive forces, referring to forms of advanced innovation and productivity. Therefore, the 15th Plan may emphasize the modernization of traditional industries, the development of emerging sectors such as AI and biotechnology, and the realization of the industries of the future. The AI Plus program, which was launched in 2024 and is considered the pillar of China’s economic digitalization, should play an even more crucial role. The latter integrates artificial intelligence into key sectors such as manufacturing, public administration, and finance, with the goal of enhancing efficiency and productivity, but with inevitable repercussion on employment. Although the goal of technology supply chain in the semiconductor sector, heavily relying on high-end imports from abroad.

In the next Five-Year Plan, the PRC should aim to fuel the country's technological power to drive economic growth through innovation, advanced research and digitalisation. The success of this programme will depend on how the Chinese government combines the ambition for scientific and digital innovation with the modernization of existing industries, thereby strengthening competitiveness and generating new sources of growth. It will also depend on complex factors such as the ability to strike a balance between centralised political direction and market dynamism, the efficient allocation of resources, avoiding waste and duplication in sectors where there is overcapacity and, above all, managing technological competition with the United States, which represents the main external constraint on China's ambitions. The

achievements of this program will not only be measured in terms of industrial production, but also in its ability to consolidate a sustainable innovation ecosystem capable of positioning China as an indispensable and independent player in global value chains.

4.2.3. Energy and green transition

The energy sector is one of the most strategic topics. It is a crossroads between national security, international climate leadership and economic competitiveness. China is entering its 15th Five-Year Plan with remarkable results, but also with significant challenges inherited from previous cycles. While the country has consolidated its global leadership in energy transition technologies, becoming a world leader in solar panels, wind turbines, batteries and electric vehicles, it remains heavily dependent on fossil fuels, has a problem of industrial overcapacity and domestic energy demand that is not yet fully aligned with environmental purposes.

A key goal should be to enhance national energy security by reducing related vulnerabilities, such as closing critical choke points on which the country heavily depends. This objective can be achieved through three distinct strategies. The first is the diversification of strategic supply routes and the increase in strategic reserves. China has been seeking for years to increase its energy storage capacity, especially for oil, on which it is heavily dependent on imports. The surplus of millions of barrels per day has been steadily increasing since 2014, reaching double that in 2024. In the new five-year plan, in order to ensure greater energy security, there must be targets to expand these values, thereby increasing oil storage and exports of oil products.

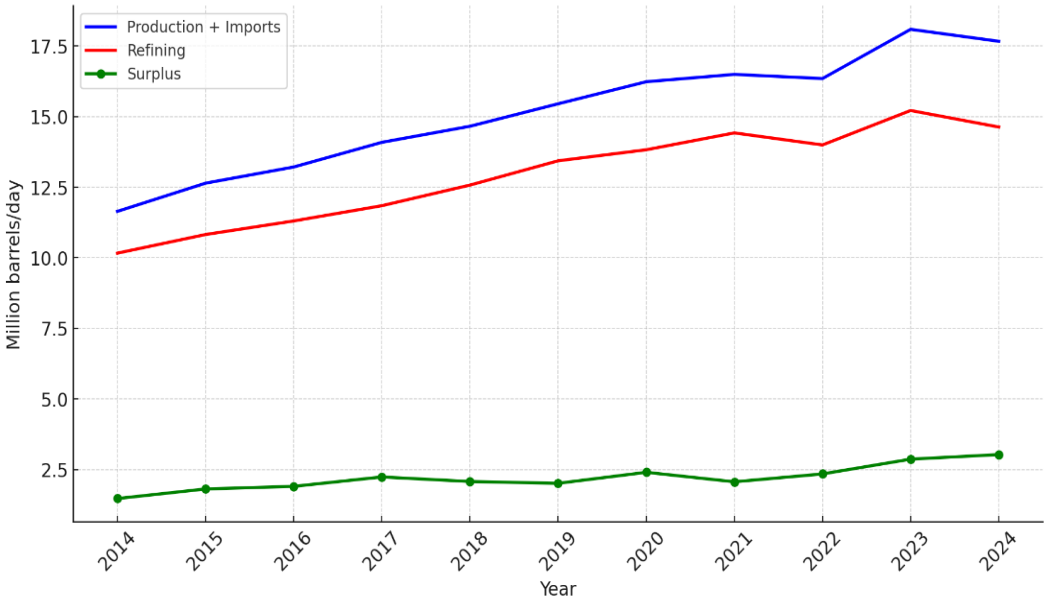

Figure 4.4- Oil production, imports, refining and surplus levels (2014-2024). Source: Statistical Review of World Energy 2025

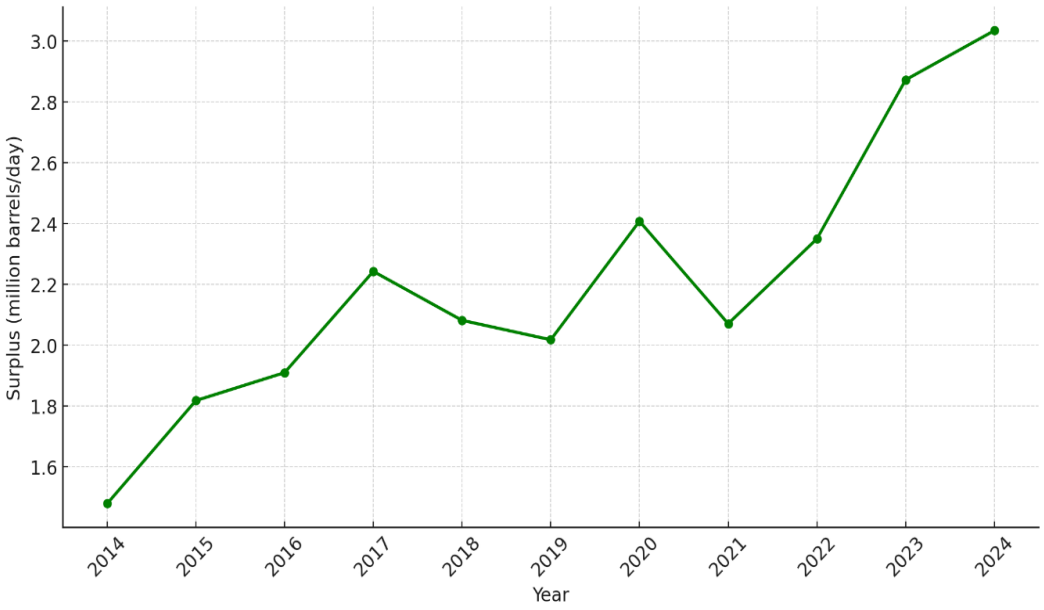

Figure 4.5- Oil surplus levels (2014-2024). Source: Statistical Review of World Energy 2025

As regards route diversification, China is building several energy pipelines with various countries, but its dependence on Middle Eastern oil remains very high. Moreover, the Chinese government will need to be able to balance Russian imports so as not to be overly dependent on the latter.

A second strategy should be aimed at increase domestic energy production from non-polluting energy sources, reducing dependence on other countries. In recent years, the country has been increasing domestic production of natural gas, nuclear power and energy from renewables sources. Between 2014 and 2024, China increased its domestic natural gas production from 131.2 to 248.4 billion cubic metres, nuclear generation from 133.2 to 450.9 terawatt-hours, and combined renewable electricity and biofuels total energy supply (including hydro) from 5.12 to 13.90 exajoules (input-equivalent). The five-year plan should need to continue to increase these figures in the coming years, investing in research and development of technologies and, in the case of gas, deposits as is happening in the South China Sea.

In terms of renewable energy, China is already a leader in all sources. However, the plan for the next five years should not focus solely on quantity to increase energy generation but should also target technological innovation and new materials. It should focus on new-generation solar cells (perovskite), which are considered to be up to twenty times thinner and more efficient than traditional panels; on the development of giant wind turbines to reduce the costs of offshore wind power; and on civil nuclear energy, with a particular focus on new-generation modular reactors. These technologies would not only fuel the domestic transition but also strengthen China's role as an exporter of green know-how and components.

China's enormous success in the renewable energy sector brings with it a problem: overcapacity. The country produces much more than the domestic market can absorb, resulting in reduced margins and compromising the profitability and financial stability of manufacturing companies. In 2024, the country produced 588 GW of solar cells, while domestic demand was only 277 GW and global demand was 174 GW. The government is torn between maintaining its global leadership and the need to drastically reduce capacity. This overcapacity in 2024 led to the elimination of approximately 90,000 jobs in the main Chinese solar companies (about 31% of the total workforce). Additionally, over 40 companies have gone bankrupt or been acquired since the same year. Instead, the 6 largest Chinese solar producers recorded $2.8 billion in losses in the first half of 2025 alone. Meanwhile, the Chinese government is pushing solar exports to various countries that are part of the BRI. The 15th plan should therefore have to address this problem by increasing

the coordination of investments between the central government and local administrations and promoting domestic demand in various sectors.

In addition to developing renewable energies, it should be essential to reduce coal consumption in an energy transition perspective. Despite progress, China remains the world's largest consumer of this fossil fuel and continues to build new power plants (in 2024, the construction of new coal-fired power plants with a capacity of 94.5 GW was initiated, with estimates of between 80 and 90 new plants), demonstrating the difficulty of balancing short-term objectives (growth, energy stability) and long-term climate commitments. The 15th Plan must clearly define the residual role of coal as a primary source and security reserve, used only to stabilise the electricity system. China must indeed honour its climate commitments, reaching peak emissions by 2030 and carbon neutrality by 2060. In addition to increasing the use of renewable energy and reducing the use of coal as an energy source, the 15th Plan must include measures to control energy consumption and carbon emissions, (in which the country is the largest emitter in the world with the 31.5% of total emission), such as the carbon capture, usage and storage, where the country is lacking in utilisation compared to other countries, even though it has increased significantly in recent years.

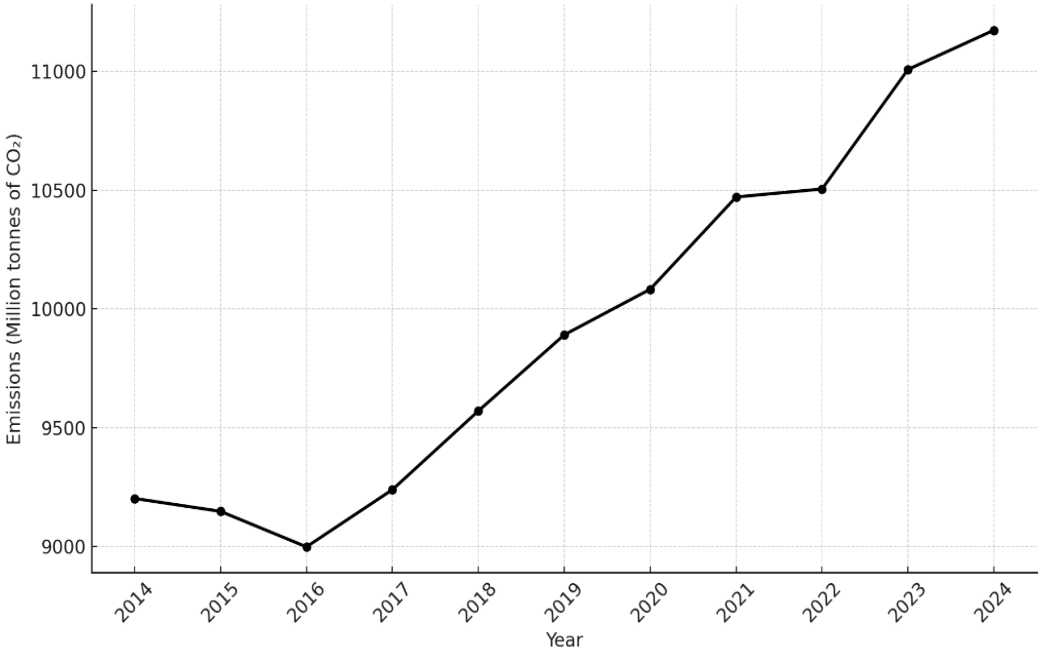

Figure 4.6- China's Carbon Dioxide Emissions from Energy (2014–2024). Source: Statistical Review of World Energy 2025

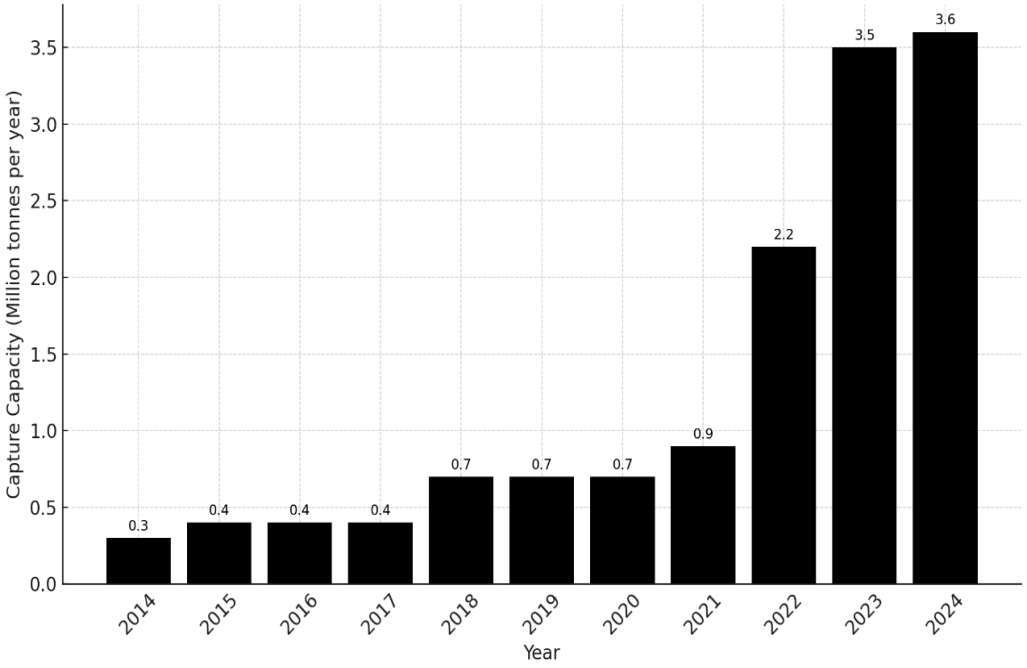

Figure 4.7- China's Carbon Capture, Usage and Storage (CCUS) Capture Capacity (2014–2024). Source: Statistical Review of World Energy 2025

The third strategy should be aimed to accelerate the electrification of end consumption in transport, industry and construction. This process is already underway with smart factories, and the development of artificial intelligence in the coming years will enable significant savings in logistics and energy consumption in certain processes. In addition, the Plan must strengthen investment in the ultra-high voltage (UHV) network, connecting renewable energy production through whole country; the development of energy storage systems; and the promotion of electric mobility as a tool for the electrification of consumption.

These measures will become increasingly urgent due to deteriorating relations with the United States, with further punitive tariffs, theta could also affect energy and component flows. The 15th Five-Year Plan must be a project of economic modernisation and international legitimisation. Its success will depend on the ability to address internal contradictions such as overcapacity, excessive use of coal and weak domestic demand, and to manage an increasingly conflictual external environment. The PRC will need to be able to balance economic stability and energy security, becoming more independent from other countries. This complex equilibrium would determine not only the future of the plan, but also the country's role in global climate governance.

4.2.4. Rural revitalization and demographic challenges

During the 20th century, China utilized its demographic expansion as a catalyst for socio-economic development. However, the situation has been changing in recent years. The population growth has slowed down and even in 2023 and 2024 there was a yearly percentage decrease of 0.1 each year. Moreover, the population is ageing increasingly, with a median age of 40.1 per cent and continuing to rise. Additionally, over the decades, there has been a reversal of population concentration between rural and urban areas. If up until the early 2000s most of the population lived in countryside areas, in 2025 67.5% of Chinese citizens live in cities (approximately 956,553,854 people). This imbalance leads to economic unevenness and inequalities, eroding social cohesion within the population.

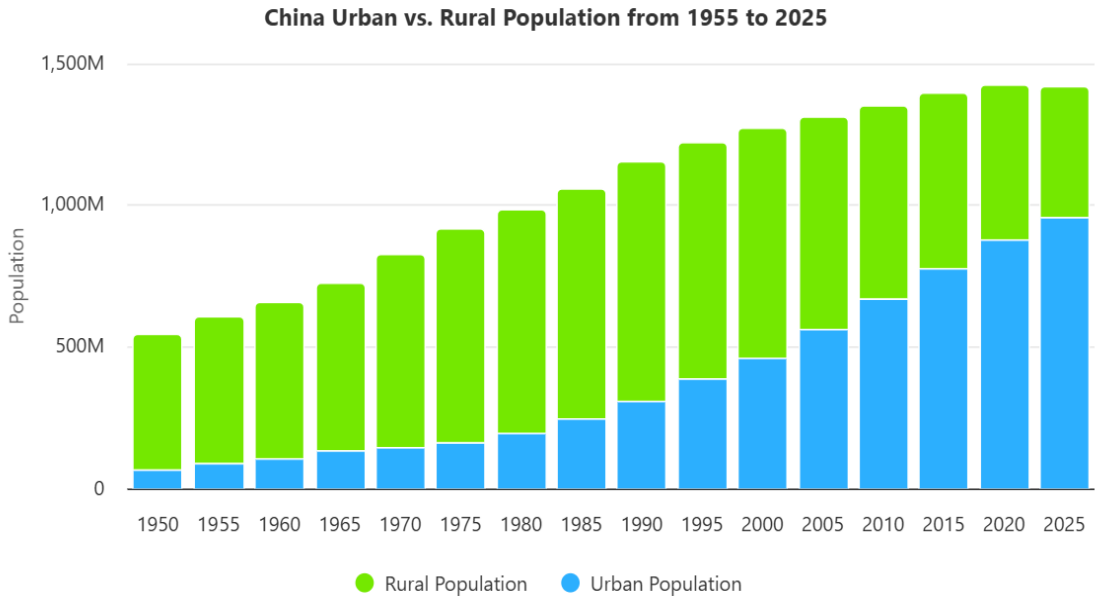

Figure 4.8- China Urban vs. Rural Population from 1955 to 2025. Source: Worldometer

The 15th Five-Year Plan must absolutely address the demographic issue that the country is facing in order to save the country's social cohesion. The Chinese government has been trying to improve the situation for years, especially by revitalizing rural areas, but in the coming years it will need to do so more decisively. The new five-year program should be able to consolidate the measures already initiated in the Global Rural Revitalization Plan 2024-2027. The pivotal points of this plan are modernising agriculture through the use of new technologies and the integration of agriculture, production and services; improving rural public services, such as greater access to education, healthcare and welfare, thereby reducing the gap with urban areas; infrastructure development and digitalisation.

4.2.5. Geopolitics and national security

In addition to economic planning, the 15th Five-Year Plan will be a document that should try to face the increasingly growing rivalry with the United States. The semiconductor export ban and the tariff war will force China to counter the actions of the US. The country needs to increase its soft power through projects like the BRI and through technologies. By increasing its influence in the Global South, by integrating technology, investment, and diplomacy, the PRC would achieve two results: reducing the influence of Western markets and reinforcing its position as a responsible global power. In fact, China can offer to the Global South's countries access to green technologies (solar panels, wind turbines, electric cars), infrastructure. Although, the connective financial problems have to be resolved.

The People's Republic should make great moves in diplomacy. Finding a balance with the United States will be of crucial importance, but rivalry and competition will remain. The country should enhance relations with Global South's countries, thus finding strategic alternatives. With the BRI, it will need to increase ties with countries that produce strategic raw materials. Finding other options for gas and oil, increasing trade relations with alternative suppliers and not being too dependent on the Middle East and Russia will be vital for national security. As for strategic minerals where China dominates the supply chain, the country will have to be able to not reduce its power by leaving no room for manoeuvre for the United States.

Moreover, the country should have to find an equilibrium with its allies Russia and India. To become too closely tied to the Russian Federation would be harmful for the PRC. The recent not confirmed agreement on the Power of Siberia-2 gas pipeline is an action to distance Putin from Trump, strengthening the axis between the two nations. However, this agreement would upset the balance of power within the alliance, limiting China's decision-making power. Furthermore, China has always been reluctant to extremely rely on Russia, as the two nations have always been at odds with each other and would risk becoming overly dependent on the RF. So far, no Chinese authority has confirmed or denied the real nature of the understanding of this Russian gas agreement. The friction between the two powers remains, what unites them beyond trade relations is the opposition towards the West.

Over the next 5 years, China should also have to manage its relations with India. For years, Xi Jinping has been trying to ease tensions with Prime Minister Narendra Modi. On August 31, 2025, the two leaders met and declared that their respective countries are allies capable of great opportunities for mutual development and not threats. This reconciliation comes after Trump imposed tariffs on Indian exports, which amount to 50%. From this meeting, the desire to normalize the situation on the Himalayan border, the facilitation of religious pilgrimages to Tibet, and the Chinese removal of some export restrictions, such as those on rare earth minerals, emerged.

However, over the next 5 years, China should try to resolve the persistent challenges with the Indian Republic. Chinese support for Pakistan is a topic that drives a wedge between the two nations, especially after China's support for the conflict in the Kashmir region in May 2025. Moreover, in the coming quinquennium, commercial relations are expected to increase. The trade deficit between the two countries has been approximately $100 billion in favour of China in the last years. This imbalance will need to be reduced if the PRC wants to have a strong ally in India and counter the economic war desired by the USA (Chen, Chu 2025).

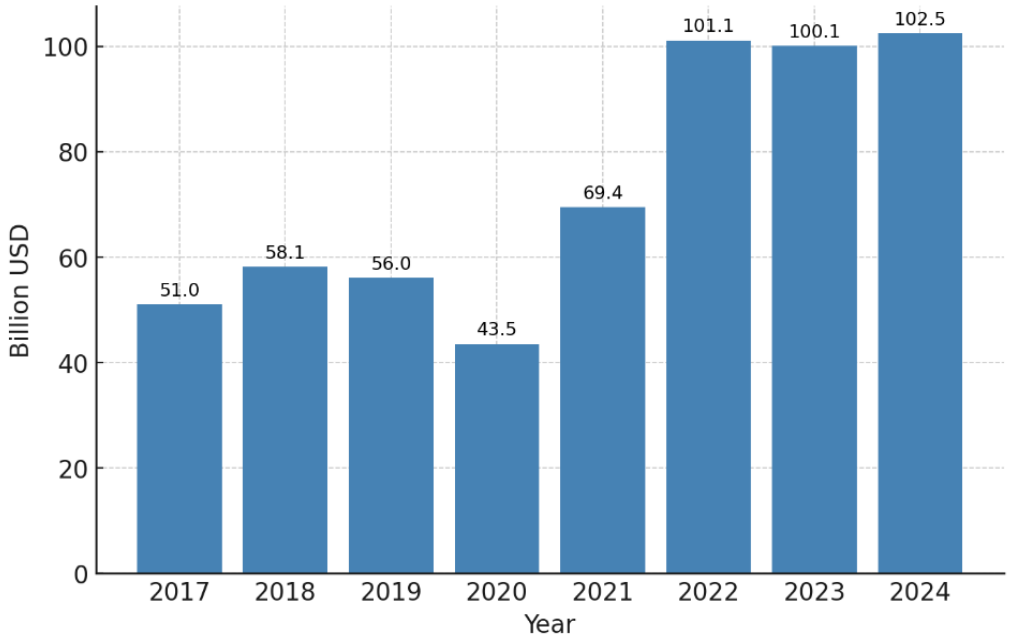

Figure 4.9- Balance of Payments China-India in absolute value (2017-2024). Source: The Observatory of Economic Complexity (OEC)

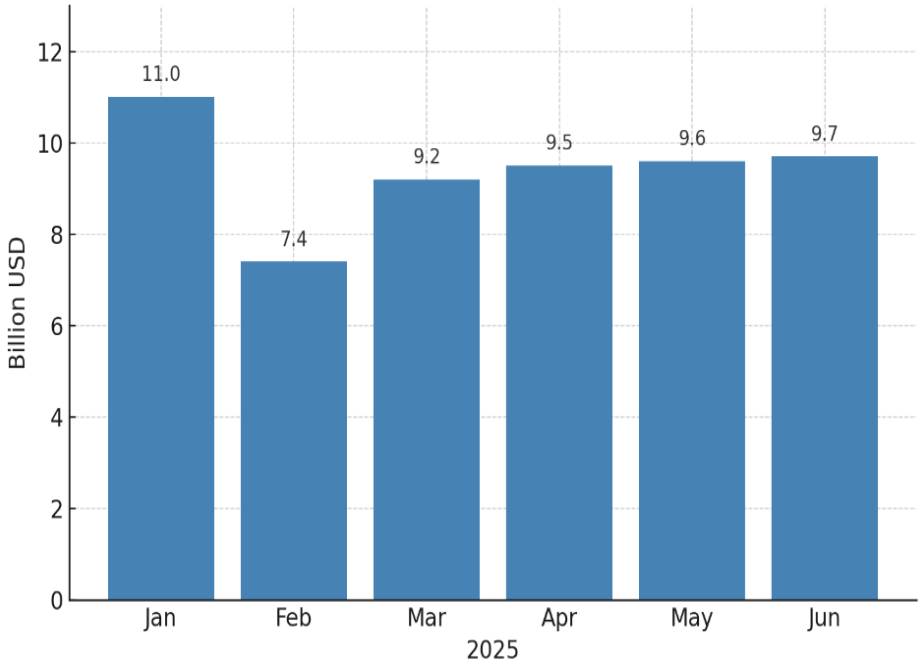

Figure 4.10- Balance of Payments China-India in absolute value (Jan-Jun 2025). Source: The Observatory of Economic Complexity (OEC)

The main challenge of the 15th Plan is to achieve several diverse and sometimes conflicting objectives, such as stimulating domestic demand, moving towards technological self-sufficiency, developing the energy transition, rebalancing social inequalities and strengthening geopolitical resilience. Recent Chinese plans have shown that economic growth is prioritised over redistributive or environmental purposes.

The 15th Plan should address at least three contradictions. The first is economic, linked to the difficult transition from a model based on investment and exports to one based on domestic consumption. Moreover, economic development conflicts with the green goals that the country has set itself. The second is social, with the risk that welfare and redistribution policies will not be able to compensate for growing inequalities and demographic ageing. The third is geopolitical, where selective openness and global integration should coexist with pressure of tariffs, sanctions and technological restrictions. Therefore, the 15th Plan would not only be judged on the basis of its objectives, but also on its ability to implement them. Transforming the planned objectives into concrete policies, avoiding both the trap of overproduction and the temptation to resort to measures that are only effective in the short term. Success will depend on the

government's ability to shift from a quantitative approach (industrial production, installed capacity, exports) to a qualitative approach (productivity, profitability, social welfare).

CONCLUSION

This thesis examined the economic and political dimensions of the Chinese energy market, focusing on the inherent conflict between sustainability and industrial growth. The basic research question was how the energy market influences politics and the economy in China guided the entire research process.

The analysis revealed that the energy sector is not a merely technical domain but rather a strategic area where national priorities, international commitments and geopolitical considerations converge. The expansion of renewable capacity and the adoption of sustainability-oriented policies demonstrate China's strategic ambition to position itself as a key player in the global energy transition. Conversely, persistent dependence on coal, industrial competitiveness pressure and the problem of overcapacity reveals the contradictions of a model seeking decarbonisation without affecting the high levels of economic growth. This highlights that the China’s primary aim is energy security, rather than reducing emission. Without a diversified and well-balanced energy mix, free from overdependence on any single country, a nation’s economic stability would be severely threatened. Industrial sectors would be significantly affected, with drastic economic consequences. Indeed, the energy sector is both a driver, (for investment, technological innovation and employment), and a constraint due to structural inefficiencies, regional imbalances and risks associated with assets that are no longer sustainable.

The analysis shows that China has consistently sought to reduce its dependence on imports by increasing domestic energy production. As a result, coal, nuclear and renewable energy production are growing simultaneously. This apparent contradiction aligns with China’s energy security policy: emissions continue to rise alongside the development of green energy, a sector in which China is a world leader.

Nevertheless, the People's Republic still faces numerous challenges, notably its heavy dependence on oil, particularly from the Middle East. These supply routes are vulnerable, as they pass through regions that could be subject to blockades. The alternative supplier is an ally that China deal with caution: Russia. Excessive dependence on the Russian Federation for both gas and oil would be highly risky, upsetting the balance of forces between the two countries and compromising China’s aspiration to global

leadership. Projects such as the Belt and Road Initiative aim to expand Chinese influence in the world by diversifying imports and trade routes, thereby reducing vulnerability on individual countries. Nonetheless, the BRI faces significant flaws: in numerous cases, its elevated costs have not been recovered: unfinished projects, political instability in the countries where investments are made, and unresolved debts will pose major challenges for the country in the near future. Moreover, the current geopolitical context present persistent threats to China's national security. The US has identified the PRC as a strategic competitor and a potential menace to its national security. Tariffs and the restrictions on exports of advanced semiconductors are aimed at further weakening China's expansion. One of China's key assets is its control over critical minerals, which are capable of limiting American actions to some extent. The country controls the entire supply chain, from domestic production to refining, in which China has 90 % of refining capacity. However, although its technological knowledge in areas such as semiconductors is advanced, it still lags far behind the US, preventing China from developing and dominating these types of sectors.

The economy, the driving force behind the People's Republic's growth, has sharply slowed due to both external and domestic factors, such as the crisis of the real estate market. The Chinese government must find a way to revive growth, and a viable, independent energy mix free from external dependence will be essential to achieving this goal. Yet China also faces profound internal challenges that extend beyond the economic sphere. Prioritising massive overseas has left behind some vitally important domestic issues. The explosive population growth of the 20th century has slowed dramatically. In the coming decades, the population will face rapid ageing, leaving China with an insufficient workforce to sustain its development. In addition, accelerating urbanisation is depopulating rural areas, historically vital since the Maoist revolution. These factors, together with declining job opportunities, delays in the payment of salaries and pensions, and the economic slowdown, have fuelled a rising number of social unrests.

Amid geopolitical upheavals, economic slowdowns, social unrest, and trade conflicts, the 15th Five-Year Plan will be crucial for the future of the PRC. The analysis offered here represents an interpretation of its content and the possible measures it may include. Undoubtedly, the plan will need to address many challenges outlined above.

Based on the evidence gathered, energy should be the starting point for resolving the key issues China faces.

From an economic and social point of view, an increase in domestic energy production would help to revive the country's development, while also contributing to the continued growth of the industrial sector. Energy growth must be accompanied by parallel technological development. Together with social policies, technology and energy could boost the economy in rural areas, creating jobs (provided that advances in AI do not have the opposite effect) and helping to increase the population in these areas.

From the perspective of international competition, the country will need to be able to avoid dependence on external variations in the coming years. Any supply blockage would be devastating, making it essential for China to increase domestic production and diversify external change. Technological development could help in the production of rare minerals and expansion of green technologies (such as solar panels and wind turbines) in order to increase production. The critical challenge will be achieving more advanced capabilities in semiconductors, an area where China remains significantly behind the United States. Finally, relations with Russia will need to be defined in the coming years. While projects such as the unconfirmed Power of Siberia-2 pipeline highlight growing cooperation, excessive dependence on Russian imports would constrain China’s strategic autonomy.

In conclusion, the Chinese energy market is both contradictory and decisive. Balancing industrial expansion and energy security on the one hand, and environmental goals and international pressure for decarbonisation on the other, creates a fragile equilibrium that requires constant political and strategic adjustment. Recognising and addressing these contradictions will be key to guiding future choices. The scale of China's energy system, the country's centrality in global value chains and its role in international governance mean that every step taken at the national level has repercussions beyond its borders. If China succeeds in transforming the conflict between sustainability and growth into a driver of innovation and cooperation, it will not only shape its own destiny, but also profoundly influence that of the entire planet.

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