

# Research on the Impact of Energy Supply-Side Reform on China's Economy

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**Abstract:** China is in a critical period of economic development and low-carbon clean transformation. The core of the energy production and consumption revolution is the energy supply side and energy consumption reform and innovation. As a major energy country, China has advantageous energy industries such as coal, electricity, oil and natural gas. However, in the past development of the energy industry, there were outstanding problems such as overcapacity, extensive operation, low proportion of clean energy, excessive redundant personnel in the industry, imperfect entry mechanism for high-quality talents, low supply of factors and low enthusiasm for clean energy investment. Energy reform is imminent. By studying the relevant theories and policies of the energy supply side reform and taking advantage of the strategic timing of supply-side structural reform, we will seek the ideas and strategies of China's energy supply-side reform from the "improvement", study China's energy industry, energy market construction, and accelerate Reforming the energy system, developing and utilizing new energy sources, reforming China's energy sector from a supply-side perspective, releasing vitality including labor, capital, technology, and institutions, giving full play to the decisive role of the market in promoting energy supply-side reforms, and building cleanliness A low-carbon, safe and efficient energy system will promote the better and faster development of the Chinese economy.

**Keywords:** Energy, Supply-Side, Economic Development, Industrial Structure

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## 1. Introduction

China has abundant energy reserves and has natural energy advantages [1]. However, due to the overcapacity and extensive operation in the use and exploitation of energy, the development of China's energy industry has been hindered [2]. For this realistic background, a comprehensive reform of China's energy industry will be carried out in the strategic timing of the supply-side structural reform [3]. The reform of energy supply-side is the best way to reform China's energy industry [4]. It can change the extensive operation of traditional energy sources, improving energy efficiency, and investing in new environmentally friendly energy [5]. This can not only motivate the competitiveness of China's energy industry but also plays a very good role in promoting China's economic development [6].

## 2. The Relevant Theory and Policy Analysis of Energy Supply-Side Reform

### 2.1. The Definition of Energy Supply-Side Reform

The energy supply-side reform is to change the existing traditional energy production mode, improve the original energy development model and structure, and develop new energy and renewable energy industries to replace the original non-renewable and polluting energy industry. The main goal of the reform is to improve the quality of energy supply, and to complete the supply of energy from quantity supply to quality supply according to different needs [7].

## ***2.2. Combination of Energy Supply-Side Reform and Other Policies***

The first is the combination of energy supply-side reform and sustainable development strategy. The focus of the energy supply-side reform is to change the traditional energy structure, because China's rapid economic development is on the basis of consuming a large amount of traditional energy resources, and most of these energy sources are non-renewable. The goal of energy supply-side reform is precisely to reform the structure of these energy sources and improve energy efficiency, which is the original intention of China's sustainable development strategy. The energy supply-side reform has broken the original energy system in China. The further promotion and implementation of the energy supply-side reform has enabled China's energy use to gradually develop towards green and clean energy. It is not relying on traditional non-renewable energy such as coal, oil and natural gas. The energy then solves the problem of high energy consumption. In the true sense, the sustainable development of energy is achieved, and a valuable energy wealth is left for future generations in accordance with the principle of sustainable development.

The second is the combination of energy supply-side reform and low carbon theory. The world advocates a green, environment-friendly, energy-saving and low-carbon life. The purpose of energy supply-side reform and the concept of low-carbon environmental protection coincide. The energy supply-side reform is to transform the existing traditional energy structure, promote green and clean renewable energy, which greatly reduce greenhouse gas emissions, and protect the environment. Low carbon is to reduce the emission of carbon dioxide from industries powered by the non-renewable energy of coal, oil, and natural gas. The combination of energy supply-side reform and green low carbon concept has played a very important role in improving the living environment of human beings.

## ***2.3. The Far-reaching Impact of Energy Supply-Side Reform***

The demand for energy in China's economic development is increasing, but the current volume of energy is declining year by year. Therefore, the reform of energy supply-side is the inevitable result of development. Through the combination of energy supply-side reform and sustainable development strategy, low carbon concept and other strategies, China's energy pollution, high energy consumption and other prominent issues can be solved. It also reduces the pollution caused by energy pollution to the environment and maintains an ecological balance. The reform of the energy supply-side is the best way to solve the energy problem. The energy problem must be solved in order to achieve a diversified and sustainable, better and faster economic development. In order to truly meet the strategic objectives of the 13th Five-Year Plan, it will lay the foundation for China, a prosperous, democratic and harmonious socialist country [8].

## **3. The Impact of Energy Supply-Side Reform on China's Economy**

### ***3.1. Changing the Industrial Structure of China's Economic Development***

China's energy reserves are abundant, but mainly based on the initial exploitation of energy with less deep processing. This leads to serious pollution in the mining, and develops relatively single industry. If China wants to develop a circular economy, it must adjust the energy industry, save the energy and protect the environment according to the requirements of the supply-side. Through energy supply-side reform, China's energy-based cities and enterprises need to deepen the reform, actively connect with external markets, and produce products that meet market demand. It is no longer an initial processing product in the past. The energy industries should be ready to achieve their potential under the guidance and help of the government. The energy supply-side reform will change the industrial structure of China's economic development, and actively promote the development of other industries while reforming the energy industry [9].

### ***3.2. Helping the Further Reform of Economy***

To cope with the challenges brought by supply-side reform to the energy industry and grasp the opportunity of supply-side reform, we must innovate the energy development system and mechanism, vigorously promote supply-side reforms in key industries and related fields closely related to the energy economy, and launch the reform measures to release the potential of the energy industry so as to help deepen the reform of the Chinese economy. Give full play to the leading role of energy supply-side reform to economic development, and mobilize the enthusiasm of other industries through in-depth energy industry reform to stimulate the vitality of China's economy. More use of new energy to replace the traditional energy industry can achieve a decline in net production capacity, promote the sound development of traditional industries, change the excessive dependence of China's economic development on the traditional energy industry, and achieve deepening reform of the Chinese economy [10].

### ***3.3. Optimizing Energy Structure to Promote Economic Development***

To maintain sustainable development, China's economy must change the structure of traditional energy development, adjust and optimize the energy structure, rationally plan for energy exploitation, allocate on demand, use energy at high quality, and develop new projects with new technologies to optimize energy structure and drive investment from all walks of life. On the basis of optimizing the traditional energy structure, we will develop new energy, build new energy demonstration projects, enhance the development potential of green new energy, increase the promotion of new energy development, and strive to provide energy supply with high

quality and excellent production. Energy supply-side reform needs to improve science and technology innovation to improve the utilization rate of traditional energy and new energy, reform the institutional environment needed for the development of energy industry, reform the investment and financing system of the energy industry, broaden the investment channels of the energy industry, and increase vitality of Chinese economy [11].

## 4. Suggestions on the Promotion of China's Economic Development by the Energy Supply-Side Reform

### 4.1. Improve the Construction of the Energy Market

Today, when modernization is popularized, it is necessary to innovate new technologies and promote the transformation of the energy industry. The combination of the Internet and energy is a bold innovation. On the energy Internet, the integration of energy information forms a new energy utilization system, which can realize the complement among primary energy, such as coal, natural gas and petroleum, and between the primary energy and secondary energy. It can also coordinate the energy industry's chains to achieve two-way supplementation of energy flow and information flow. In-depth energy supply-side reform must improve the energy market construction. The energy industry is an important national industry. How to build a sound and orderly energy industry market is the top priority of economic system reform. An effective market mechanism can efficiently allocate the energy industry, by using market-based methods to assist in the efficient use and complement of various energy sources to improve the competitiveness of new energy sources while improving the traditional energy market mechanism, improve the utilization rate of traditional energy sources, and change the original energy supply. The structure can truly accomplish the goal of energy supply-side reform [12].

### 4.2. Accelerating the Reform of the Energy System

To reform the traditional energy development system, and the current situation of low efficiency, we need to build a safe and efficient energy system, fully mobilize the enthusiasm of various sectors of energy reform, and promote the implementation of institutional reform policies [13]. For example, in the area of power supply, we can eliminate the cumbersome process and realize direct energy trading with strict control of electricity prices, open online sales and other sales methods. In the oil and gas supply, we can open pilot units throughout the province, on this basis, further the oil and gas quota system, keep the energy business independent and fairly open it, and establish a reasonable energy pricing mechanism. Nowadays, the new round of scientific and technological revolutions, industrial revolutions and the energy revolution around the world is ready. For new changes in the energy landscape and new trends in international energy, China should carry out thorough energy

supply-side reforms in conjunction with its own energy conditions [14].

### 4.3. Development and Utilization of New Energy Sources

With the development of society, the use of traditional energy brings many environmental problems. The unique environmental advantages of new energy make it a driving force for future economic development. New energy can meet the needs of energy use, improve the structure of traditional energy industry and protect the ecological environment. It is more prominent than traditional energy in the process of use. The development and promotion of clean energy such as wind, solar, hydro, and biofuels can not only achieve the sustainability of China's economic development, but also provide more jobs in the process of using such energy. New energy sources provide multiple energy supply modes with different consumption needs, adopt new technology to replace traditional energy pollution modes with energy pollution mode, improve the effective utilization rate of energy, and gradually expand the consumption ratio of consumers to new energy sources. Energy supply is achieved on the basis of controlling total energy consumption [15].

## 5. Conclusion

China's economy is in a special period of "new normal". Studying the energy supply-side reform has extremely important practical significance for energy transformation and upgrading, energy conservation and emission reduction, and has a profound impact on the development of China's economy. Through measures such as "improving energy market construction, accelerating energy system reform, and developing and utilizing new energy sources", we will promote deepening reform of the energy supply-side, provide new ideas and strategies for the development of China's energy industry, and provide valuable reference for other industrial reforms. The model is to promote the better and faster development of the Chinese economy.

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