

# Study on the Energy Situation and Energy Policies in China

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## **Abstract**

The development of socialist economy and market in China is rapid, which raises people's demand for energy in daily life. The development of energy industry has, to a large extent, boosted the development of national economy. In the current society, in order to increase GDP in an all-round way, China should take full advantage of clean energy and economical energy in the development of energy. This thesis will analyze the energy situation and energy policies in China, in the hope of promoting the sustainable development in China.

**Keywords:** *Energy Situation; Energy Policies; China*

## **1 ANALYSIS ON ENERGY SITUATION IN CHINA**

### ***1.1 The Energy Output in China Keeps Rising but It is Still not Enough to Satisfy Demand***

Energy is critical to the current development of China, as it plays a key role in the development of all areas and drives the development of society. In recent years, as science and technology advance, energy output is increasing on a yearly basis, which effectively fills the gap between market demand and energy supply. Since the reform and opening up, the development of energy in China has witnessed different trends. As related researches suggest, they can be concluded into three stages: Stage one is 1978 to 1996. In this period of time, with the development of productivity, national economy boosted the increase of resource consumption. However, China was still short on energy back then, which more or less hindered its economic development. Stage two is 1997 to 2000. In this period of time, the energy market in China had gone through the transition from seller's market to buyer's market. With the surplus of energy supply, the energy market developed at a slow pace. Stage three is the time after 2001. In this period of time, in addition to the development of economy, all aspects of the society conducted professional analyses on energy surplus, which alleviated the problem of energy surplus. However, as energy consumption kept climbing, China was then hard up for energy again. Take the year 2003 for example, although the energy output and crude oil import hit a record high by reaching 15.9% and 31.3%, the energy was still not enough to meet the demands.

### ***1.2 Energy Structure Keeps Improving but is Still not Enough to Satisfy Demand***

With the development of economy in China, the demand for primary energy, like hydroelectricity, crude oil and coals, has sharply increased. Thus, in the current development of energy, China pays extra attention to the development of new energy and the use of renewable energy. In recent years, the proportions of clean energy and fat in energy structure are rising, which is conducive to improving the energy structure in China and enhancing the utilization efficiency of energy. Although China has put emphasis on the development of clean energy and renewable energy, it is estimated that coal will still be the dominant energy source in China by 2025. Such energy structure -- a structure that is dependent on primary energy -- can give rise to environmental pollution, higher pressures on transportation and the drop of utilization efficiency of energy. China is putting a lot of efforts into improving its energy structure, but compared to developed countries, there is still much room for improvement. Therefore, China has to work harder

on the development of new energy sources and adjusting its energy structure. So far, China has basically mastered the ability to construct large open-pit coal mines and mining areas. Besides, with the development of science and technology, a lot of advanced technologies have been put into the production of coals. As a result, now China already has advanced large coal mines. It also has great advantages in the development of electrical equipment, which are up to state-level advanced standard.

### ***1.3 Failure to Totally Break Through the Restriction of Energy System***

The production and sales of coals in China have been marketized. The price of coals is tightly connected with supply and demand in the market and market competition has been introduced into the reform of energy system, which can greatly reduce the costs for production and increase energy regeneration efficiency. Although the reform of energy system in China has come to fruition and has shown the importance of market in resource distribution, the energy system still fails to totally break through its restrictions. That requires further improvement.

### ***1.4 The Conflict Between Energy and Resources and the Conflict Between Development and Environment are Intensified***

As the economy in China develops, all aspects of the society and the government are paying more and more attention to sustainable development. China has deemed environmental protection as an important policy, which has been effectively implemented. Starting from the 1980s, measures were already taken in electric power industry to control the emission of smoke and dust. After decades of implementation, as more fossil-fuel power stations are built, the emission of smoke and dust, however, are not reduced. Compared to developed countries, China has three shortcomings: One, China lacks advanced energy development technologies and that will cause more pollution. Two, the safety during the production of energy is not guaranteed. Three, China has low utilization efficiency of energy, which can lead to the waste of energy.

## **2 RESEARCH ON ENERGY POLICIES IN CHINA**

### ***2.1 Optimize the Energy Structure in China as Hard as Possible***

The energy structure in China still lags behind those of developed countries. Thus, based on current situations, China should set environmentally friendly, diverse and multifunctional goals to guide the adjustments to the energy structure in China, in an effort to increase the proportions of clean energy and renewable energy in the energy structure. Thus, China should make timely analyses on the direction of the adjustments to determine how much different energies should account for in future society. It should make constant efforts to reduce the use of primary energy, optimize coal-fired power as much as possible, take active measures to develop hydropower projects, encourage the development of new energy, pick up the pace in the construction of nuclear power stations, optimize traditional electric power resources and enhance electricity transmission patterns among regions.

### ***2.2 Increase Energy Utilization Efficiency***

Extensive economy, lack of advanced energy technologies, improper organizational settings and unscientific management are major causes for the low energy utilization efficiency in China. As China has entered a new era of development, related departments should analyze current development status and the missions for economic construction in order to adjust the plans for the energy development in a timely manner, pay more attention to the utilization efficiency of all sorts of energies, make full use of energy and boost the development of economy. While developing the economy, China should pay due attention to saving energy and increasing utilization efficiency. Related departments should formulate regular energy saving plans and radically change the traditional economy pattern in China to establish a conservation-oriented society and push forward the sustainable development of the society.

### ***2.3 Put More Emphasis on Environmental Protection***

China has become the largest coal consumer in the world and coal takes up a lion's share in the energy structure in China. Thus, it is necessary to pay attention to the combination of regeneration of energy and environmental

protection and put emphasis on the development of clean energy. When attempting to protect the environment, China should not overlook the importance of energy combination. It should develop its energy structure with coal as the major energy and at the same time develop other energies. Step by step, it will develop an energy development structure that features coal resources, centers on electricity and coordinate the development of new energy and gasoline. The government should also encourage the development and use of clean energy and renewable energy, protect the environment while developing economy, implement policies to reduce the influence of energy development on environment as much as possible, adjust economic development to reduce its pressures on social environment so as to boost the sustainable development between mankind and nature. At the same time, it can strengthen the cooperation on energy with other countries. By purchasing resources from other countries, it can fill the resource gap in China and achieve the diversity of resources.

#### ***2.4 Strengthen the Exploitation of Resources in West China***

As related researches suggest, west China has abundant coal resources, gas resources, hydroelectric resources and oil resources. Other than that, because of its terrain and location, it has abundant wind energy and solar energy resources, which make it full of potentials. China has implemented policies of strategic significance, like western development strategy, West-to-East natural gas transmission project and West-to-East electricity transmission project, which not only transform the resource advantages in west China into economic advantages but also promote the co-development and use of resources.

### **CONCLUSION**

In conclusion, we have understood the problems in the energy development in China and the actual implementation of energy policies. It is hoped that the government can reduce the pressures on environmental protection and achieve the simultaneous development of energy and environment. This will boost the sustainable development of China and contribute to the modernization construction of China.

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