

# Diversified management of coal enterprises in China: model selection, motivation and effect analysis

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**Abstract.** In the context of promoting the new energy revolution and economic development of the new normal, the coal industry to excess production capacity is one of the important aspects of structural reform of the supply side. The purpose of diversification of coal enterprises in China is to seize historical opportunities, create new models of development and improve operational efficiency. In the research on diversification of coal enterprises, exploring the mode selection, motivation and effect from the aspects of the industry is conducive to the realization of the smooth replacement and the sustainable development of enterprises, to further enrich the strategic management of coal enterprises, to provide effective reference for the formulation of enterprise management decision-making and implementation of diversification strategy.

## 1. Introduction

In the context of promoting the new energy revolution and economic development of the new normal, the coal industry to excess production capacity is one of the important aspects of structural reform of the supply side. From the beginning of 2016, with 3 to 5 years, the coal production capacity is decreased 5 tons and 5 tons reduction restructuring. With the improvement of the coal market and the requirements of "reduce production capacity" and "destocking", Chinese coal enterprises have chosen diversified operations to reduce operational risks. Large coal enterprises are almost all integrated coal enterprises. These comprehensive coal enterprises have diversified modes of operation with coal as the core, and also have diversified modes of operation, such as finance, tourism and logistics. Small coal enterprises are mostly specific or coal-based diversified management model. Coal enterprises should have clear goals and directions in their industrial choices, so as to carry out strategic positioning and planning, promote the optimization of resources and raise the level of comprehensive utilization.

At present, the study of diversification of coal enterprises is mainly based on the strategic safety of coal energy. It is pointed out that diversification is beneficial to improve the utilization ratio of national resources, and thus to ensure the development of national economy [1]. There are also studies from the perspective of diversification opportunities and paths to help coal enterprises identify market positioning [2]. Some scholars believe that the particularity of coal enterprise management determines the particularity of its diversification [3]. China's economy is in a period of transition, and the development of coal enterprises is under the dual influence of the economic situation and the oversupply. Exploring the mode selection, motivation and effect s from the aspects of the industry is



conducive to the realization of the smooth replacement and the sustainable development of enterprises, to further enrich the strategic management of coal enterprises, to provide effective reference for the formulation of enterprise management decision-making and implementation of diversification strategy.

## 2. China's coal enterprises diversified management motivation

### 2.1. Exogenous motivation

#### 2.1.1. Stabilize the status of the coal basic industry and ensure the safety of the national energy supply.

The coal enterprises in the diversification process, focus on the coal industry and maintains the dominant position. At the same time the coal industry engages in deep processing, and promotes the transformation and utilization of coal cleaning, which is conducive to the efficient supply of clean energy and ensure national security of energy supply.

#### 2.1.2. Dissolve coal overcapacity, requiring coal enterprises through diversification breakthrough.

2016 is the first year of China's supply side reform, and the main task of reform is to go to production capacity and inventory, and the most important thing is to resolve the overcapacity of coal. In the coal is no longer brilliant moment, on the one hand, coal enterprises reduce production capacity, on the other hand, extend the industrial chain, and hand out in the field, from the sale of coal towards diversification, in response to the "coal market winter".

2.1.3. Environmental protection requirements and favourable policies for the development of the three industries have prompted coal enterprises to find new ways. With the gradual integration of coal resources, restructuring and environmental costs increased, a large number of funds quit from coal related industries. Some provinces relying on the coal industry have gradually introduced policies to promote the development of the tertiary industry, which has prompted many coal enterprises to enter the new wave of industry and greatly enriched the industrial chain of coal enterprises. But it also makes the diversification of coal enterprises transformation thinking not clear, and in many business segments lack of operational experience and talent. The success of coal enterprise transformation needs market consideration.

2.1.4. Coal enterprises under heavy pressure to develop diversified operations, creating jobs for the community. In the prosperous "gold ten years" of the coal market coal enterprises with high income and good benefits, are required to undertake more social responsibility. Relevant policies have instructed coal enterprises to use their brand influence to invest in diversified industries, such as labour-intensive industries, in order to create employment opportunities. However, the development of diversified industries under such heavy pressure will not bring much economic benefits to the coal enterprises, and some diversified industries will even fail to operate because of "misleading" policies.

### 2.2. Endogenous motivation

2.2.1. Orderly withdrawal of inefficient and excess production capacity to promote the concentration of coal industry. Coal enterprises should promptly close to depleted, low-level and high hazard mines, and constantly promote the promotion of industrial concentration, concentrate on strengthening and strengthening the pillar industries. In particular, coal enterprises must actively transform high energy consumption, high emission and high pollution industries, develop alternative industries and substitute industries, reduce unnecessary operating costs, and maintain the core competitiveness of enterprises.

2.2.2. The construction pattern of development of non-coal industry diversified enterprises, and solve the re-employment problem of redundant staff. Coal enterprises may take the prosperity of the tertiary industry as the main breakthrough, take the development of tourism and logistics as the main direction, and attach importance to the high-end and pluralistic development of industrial transformation. It will

not only promote the transformation and upgrading of traditional coal, drive the development of resource rich regions and transform the economy, but also effectively solve the problem of redundant employees in coal enterprises.

*2.2.3. To promote diversification of science and technology, and take the road of innovation driven development.* The diversification of coal enterprises cannot be separated from the strategy of innovation driven development. Coal enterprise innovation passion and reform courage will gradually become a source of diversification of coal enterprises. In order to establish and perfect the diversified transformation support system as soon as possible, some large and powerful coal enterprises will improve their competitive strength through scientific and technological innovation and innovation mode.

### 3. Selection of diversified management modes of coal enterprises in China

There are two kinds of industrial directions for coal enterprises to implement diversified management. One is the coal-based diversification, which is a coal industry chain formed by the gradual transformation of the coal industry and closely linked with the industry. Another is non-coal industry diversification, which is related to the main coal industry, is not high, even unrelated to cross industry business.

**Table 1.** Diversified types of coal enterprises in China

	project	Characteristic	Representative project
Coal-based diversification	Coal-electricity	Relatively simple, widely used	Part of the strong enterprises: OPENCUT COAL
	Coal-electricity-aluminium industry	Commonly used mode of state-owned coal enterprises	YANZHOU COAL
	Coal-electricity-chemical industry	There are many types of products, and the investment risk is great	INNER MONGOLIA JUNZHENG ENERGY & CHEMICAL INDUSTRY
	Coal- electricity-aluminium industry - chemical industry- Construction business	The industry chain is longer, and the waste will be recycled in the process of coal production	JIZHONG ENERGY GROUP
	Coal-coke-aluminium industry	The earliest profit model	KAILUAN ENERGY CHEMICAL
Non-coal diversification	Capital (Technology) intensive diversification model	Able to use the abundant funds of coal enterprises to develop high-tech industry market	JIZHONG ENERGY GROUP has developed pharmaceutical industry
	Labor intensive diversification model	Developing the tertiary industry to solve the problem of reemployment of laid-off workers in Coal Enterprises	YANZHOU COAL enters retail area
	Diversification model of service industry	The cost of compression is used to increase the profits of the enterprise	SHENHUA railway and port transportation

#### 4. Effect evaluation of diversified operation of coal enterprises

When coal enterprises are diversified, they have positive effects and negative effects due to different motives. Because coal enterprises consciously and purposefully carry out coal-based diversification, and easily play synergies between industries to reduce related costs. The administrative intervention and non-coal diversification under the policy "misleading" not only do not have a good effect on promoting the performance of coal enterprises, but also increase the burden on enterprises.

##### 4.1. Positive effects of diversified operation of coal enterprises

4.1.1. *Promote the development of regional economy in China.* The diversified operation of coal enterprises makes the production chain to extend to various fields of regional economy, the effective use of other resources including potential employees, technology promotion, brand effect and brand effect of borrowing, share supply and marketing network, management and marketing experience gradually into the industry chain, so that the original is lagging behind the development of rich resources regional economic development.

4.1.2. *It is beneficial to optimize the allocation of resources in Coal Enterprises.* The diversification of coal enterprises should play a leading role in the market, and the market should optimize the allocation of resources. For example the selection of the diversified business model of coal - electricity ", the construction of power plants can not only establish an effective, long-term coal supply, but also to ease the problem of coal railway transportation tension, which is the integration of resources, promoting the economic strength of enterprises

4.1.3. *Help enterprises orderly exit inefficient industries.* Through diversification, coal enterprises can gradually withdraw from unprofitable businesses, develop alternative industries, reduce unnecessary operating costs, and maintain their core competitiveness.

##### 4.2. Negative effects of diversified operation of coal enterprises

4.2.1. *The synergy between diversified industries is low.* Under the government intervention of coal enterprise diversification is not in order to enhance the economic efficiency of enterprises, but to simply get rid of trade deficit and solve the problems such as redundancy. It will lead to no synergistic effect between industrial diversification. There is no way to make more effective use of common resources. It will compete for the resources of the enterprise and weaken the original industrial strength. The operational risks cannot be avoided.

Also did not play the role of business risk avoidance. It will not make synergy between diversified industries, cannot effectively use the original common resources, will scramble for enterprise resources, weaken the original industry strength, and also do not play the role of avoiding operational risk.

4.2.2. *It is difficult to harmonize the relationship between coal-based and non-coal industry by extensive mode of operation and growth.* Some coal enterprises to conduct new industry investment limited construction and ignore the enterprise funds, technology and management of resources, and the new industrial revolution and a large amount of resources, therefore, poor management, diversification of industrial business failure cases emerge in an endless stream. This extensive mode of operation increases the dispersion of the industrial structure and the tight utilization of resources, so that the operation of the coal enterprises is not reversed.

4.2.3. *The investment in science and technology is insufficient, and the diversification of coal enterprises is at a low level and redundant construction.* At present, there are many coal enterprises

still cannot get rid of the past light technology, heavy construction, light output, heavy investment, light quality development mode, and diversification is to follow other successful old coal enterprises. When coal enterprises transferred to other industries, the market situation was too late and the market was saturated, so they could not open the management situation. The traditional way of diversification is not clean and efficient, not only contrary to the low-carbon economy advocated by the state, but also won't be recognized by the public. Coal enterprises are still lack of technological innovation, and there is also a lack of innovative incentive mechanism inside the enterprises. The introduction of talent is not enough attention has also led to coal enterprise innovation driven development of the lack of manpower support. Some high and new technologies, such as supercritical circulating fluidized bed boiler technology and integrated gasification combined cycle power generation system (IGCC), have not been popularized in coal enterprises.

### **5. The diversification of the coal enterprises China improvement measures**

The main purpose of diversification of China's coal enterprises is to create market competitive advantages and improve the economic efficiency of enterprises. For the long-term sustainable development of coal enterprises, it is necessary to put forward a diversified strategy suitable for their own development on the basis of full understanding of their own conditions and external economic environment.

#### *5.1. Enhance industrial correlation, and strengthen coordination between upstream and downstream of industry chain.*

Industrial relevancy means that the implementation of industrial diversification strategy is easier to achieve the purpose of sharing resources and complementary advantages. Some of the small scale, limited strength of coal enterprises should avoid the blindness of non-related diversification, in the implementation of diversified development strategy generally pay attention to the selection of industry related degree of diversification, and try to avoid getting into those with low degree of industry association. Large and powerful coal enterprises should establish a good cooperation mechanism with the downstream power, chemical, building materials and other enterprises, and use the integration of upstream and downstream to develop. In the resource exhausted areas, coal should be dominated by non-coal industry, supporting the development of non-coal industry, prolonging the life of coal mines, and realizing the successful transformation and sustainable development of enterprises.

#### *5.2. Strengthen the trade-off between coal-based diversification and non-coal diversification*

In the market environment of decreasing coal demand, coal enterprises should optimize the product structure, reduce management costs and locate the market. Coal enterprises in coal-based diversified business should pay attention to tap the internal market, including raw materials, products and services. Non-coal diversified management should give full play to economies of scale, reduce overall management costs, and improve the level of professional management, resource utilization and economic efficiency by means of entrusted management and operation. Through the establishment of exchange platform and strengthen advisory services, and other ways to promote coal-based diversification and non-coal diversification orderly and standardized operation, forming a coal-based and non-coal diversified mutual promotion of benign development mechanism.

#### *5.3. Increase efforts to support science and technology and support personnel, and take a new road of diversification*

Coal enterprises cannot walk the same old tradition of low-end competition. Take scientific and technological innovation, and speed up other aspects of innovation, and strive to occupy the high-end industrial chain, make "six change" to do it deep. In order to carry out industrial diversification, coal enterprises must have specialized personnel in related fields and higher level compound talents. Coal enterprises can work together with scientific research institutes and institutions of higher learning to

carry out technical research, and make full use of the talents of scientific research institutions and institutions of higher learning so as to speed up the industrialization of scientific and technological achievements.

In view of the characteristics of the coal industry, China's coal enterprises should actively adjust the product mix, implement the diversified management strategy in line with the coal enterprises, foster new economic growth points, form a new continuous industry as soon as possible, Obtain long-term development of the market advantages, and achieve a successful replacement of the industry and sustainable development of enterprises, in order to realize the sustainable development of economy and resources, and finally realize the sustainable development of society and environment in a comprehensive and coordinated way.

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