

Analysis of the Present Situation of Chemical Industry in Changzhou and New Ideas for its Future Development

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Abstract. Under the background of "green development", Changzhou Chemical industry needs to be transformed urgently. But the specific development direction needs to be analyzed in combination with its present situation. Based on the SWOT analysis method, this paper analyzes the strengths and weaknesses, opportunities and threats of the development of Changzhou chemical industry, puts forward the development strategies of Changzhou Chemical Industry, and analyzes the development ideas, main objectives, key tasks and implementation paths.

Keywords: Chemical industry; Changzhou; Development.

1. Present Situation of Chemical Industry in Changzhou

Changzhou is in the center of the core area of the Yangtze River Delta Urban agglomeration, and is the most developed area in China, adjacent to the Yangtze and Taihu Lake, and has become an important manufacturing base. The implementation of "263" plan in Jiangsu Province, as well as other issues also put forward challenges to the development of Changzhou chemical industry. How to find a balance in economic development and ecological protection is an urgent need for Changzhou Chemical Industry to consider.

2. SWOT Analysis of the Development of Changzhou Chemical Industry

2.1 Strengths Analysis

2.1.1 Geographical Advantages

Changzhou, located in the core area of Yangtze River Delta Urban agglomeration, belongs to the important part of Jiangsu Yangtze River Urban Agglomeration, is an advanced manufacturing base and a cultural tourism city, forming Suxichang Metropolitan area with Wuxi, Suzhou.

2.1.2 Industrial Advantages

Changzhou Chemical Industry, developed for a long time, has a complete chemical production system, with basic chemical raw materials, fine chemicals and other categories, and it has outstanding advantages. The industrial advantage is embodied as follows: Salt Chemical Industry: According to Jiangsu Changzhou Inspection and Quarantine bureau related personnel introduction, China Salt Jintan Salinization limited liability company's annual output of solid, liquid salt is more than 5 million tons.

Pharmaceutical and Chemical Industry: In recent years, Changzhou Pharmaceutical Chemical Industry develop fast. According to Changzhou Bureau of Statistics data, in 2017, Changzhou biomedical industry output value growth 6.2%.

2.1.3 Campus Advantages

Changzhou Binjiang Economic Development Zone, was shortlisted in the "2018 China chemical Park" List of the top 12, accumulated fixed assets Investment (single ranking) of the top 5. The park, which takes new chemical materials as its pillar industry, has now formed three major industrial sectors including new materials, equipment manufacturing and port logistics, and it attracts more than 2000 domestic and foreign enterprises into the residence.

2.1.4 Advantages of Talent Research

According to Changzhou Bureau of Statistics, in 2018, 65 R&D institutions 11 new provincial industrial design centers and 13 industrial enterprises with more than four stars were established, which is ranked first in the province. In addition, taking university town talents as an example, Changzhou University Institute of Petroleum and Chemical industry has two primary disciplines master's degree and more than 50 invention patents.

2.2 Weaknesses Analysis

2.2.1 Insufficient Innovation Ability and Lack of Core Competitiveness in Products

According to the 2018 annual Changzhou National Economic and Social Development Statistics bulletin released by Changzhou Bureau of Statistics, in 2017, Changzhou only completed 41858 patent applications, of which only 13648 were independent invention patents, accounting for only one-third of all patent applications.

2.2.2 Lack of Transition to the "Green Development"

Many companies in Changzhou still let themselves immersed in the mode of heavy production. As a result, they have been hit hard. In 2017, Changzhou City shut down 315 chemical production enterprises, accounting for 35% of its total number.

2.2.3 The Overall Level of Intensive Utilization of Industrial Land in Changzhou is Low.

About 21% of the industrial land in the city has a plot ratio of less than 0.5, and most of them are distributed in townships and towns. The proportion of industrial land and residential land in urban areas is 1:0.9. According to statistics, in developed countries such as France, the proportion of industrial land and residential land is 1:5. Changzhou has a big gap compared with them.

2.3 Opportunities Analysis

2.3.1 China Big Paint Market

According to the 2017 Annual statistical report released by the coatings coating Professional Committee of the Chinese Chemical Society, in 2017, the total production of Chinese coatings is 2041 million tons, while in the Chinese paint market, industrial coatings account for 68% , of which traffic paint accounts for about 49% .But the six groups that currently occupy the monopoly position of Chinese automobile origin paint are from abroad.

2.3.2 Requirements of the "Green Development" Policy

According to the data released by Changzhou "263" special action work annual dispatch meeting, in 2017, from January to November, the city shut down 315 chemical production enterprises. The closure of a large number of small and medium-sized chemical companies has freed up space for the remaining chemical companies and environmentally-conscious companies.

2.4 Threats Analysis

2.4.1 Lack of High-end Talent

There is a certain talent bottleneck in the development of Changzhou chemical industry chain: The gap between high-end talents and compound talents is large, and there are difficulties in talent introduction, which cannot meet the needs of enterprises to become intelligent and new.

2.4.2 Lack of Supporting Capacity in Productive Services

The development of productive services such as finance, scientific and technological services, modern logistics, software and information services, business services and so on in the chemical industry chain lags behind the development of manufacturing industry. Their total amount is small, the structure is partial, the scale brand enterprises are few, the proportion is low, the number of specialized talents is relatively insufficient, and the quality of talents needs to be improved.

2.4.3 The State has Increased the Intensity of Ecological Environmental Protection

In April 2018, General Secretary Xi Jinping mentioned in the symposium on promoting the development of the Yangtze River Economic Belt in Wuhan that it is necessary to insist on the restoration of ecological environment in an important position to promote the development of the Yangtze River Economic Belt. "Grasping great protection, not engaging in great development", and taking the road of ecological priority and green development.

2.4.4 Changzhou Industry Chain is Deficient in Integrity

The problems existing in the industrial chain of Changzhou mainly show its lack of upstream raw material support, oil and coal and other chemical raw materials and that fuels need to be transported from far areas. The substances that the chemical industry needs to transport are mostly inflammable and explosive dangerous goods. Once being leaked, they will bring significant losses.

Table 1. SWOT Analysis Table of Chemical industry in Changzhou city

Strengths	weaknesses	Opportunities	Threats
(1) Geographical Advantages (2)Industrial Advantages (3)Campus Advantages (4)Advantages of talent research	(1) Insufficient innovation ability (2)A lack of environmental protection. (3) Low overall level of intensive utilization of industrial land	(1) China's large paint market (2) Requirements of the "green development" policy	(1) Lack of high-end talent (2) Insufficient supporting capacity in productive services (3) The State's efforts to protect the environment.

Table 2. Changzhou Chemical Industry Development Strategy analysis and response table

Strength-Opportunity strategies	Weakness-Opportunity strategies	Strength-Threat strategies	Weakness-Threat strategies
(1) Rely on chemical park to improve competitiveness. (2) Use preferential policies to improve the production system. (3) Develop new chemical materials industry.	(1) Use the advantages of industrial parks to improve industrial agglomeration. (2) Respond to the government's call of "green development" strategy and enhance the social responsibility of corporate .	(1) Strengthen cooperation with other areas to attract high-end talent. (2) Promote the formation of industrial clusters and improve the support capacity of productive services.	(1) Improve the ability of independent innovation and enhance the level of enterprise management. (2) Open up the paint market.

3. Development Ideas and Main Objectives

3.1 Development Ideas

3.1.1 From the Government's Point of View

Changzhou municipal government should take environmental protection measures, and establish a practical environmental regulation of production and development of chemical enterprises.

3.1.2 From the Point of View of Enterprises

Chemical enterprises should respond to the government's call to monitor and evaluate internal emission targets, seek the views of local authorities and residents, take the concerns of various sectors of society into account, and ensure a smooth communication mechanism with local government departments and residents' committees, improve production techniques on the basis of the will of the people, so as to reduce the phenomenon of being reported by the residents.

3.2 Main Objectives

- (1) Develop new chemical materials industry and increase the added value of chemical products.
- (2) Upgrade cleaner production technologies, especially in the discharge of waste water, reduce emissions and raise emission standards.
- (3) Improve the efficiency of energy use and promote the clean energy utilization technology.
- (4) Establish the standard system of green chemical industry and improve the accuracy of production monitoring data.
- (5) Improve the ecological evaluation system, control the development of chemical industry ideas.

4. Key Tasks and Implementation Paths

4.1 Develop New Chemical Materials Industry

Changzhou can combine its own advantages, focusing on the development of carbon fiber, energy storage materials, electronic materials and other new chemical materials.

4.2 Learn from the Experience of Developed Countries

According to the EFPIA, Switzerland's drug research and development expenditure in Europe is rank in 4. High R&D investment brings high quality and high reputation to Swiss medicine.

Changzhou has a strong industrial base, on the basis of which we can increase the expenditure on R&D investment to improve the added value and get rid of the low added value of products.

4.3 Industrial Restructuring

(1) Extend the industrial chain, increase the added value of products and the diversify of raw materials. Promote the concentration of enterprises, the formation of product clusters.

(2) Optimize the industrial structure, promote the transformation and upgrading of traditional industries, and realize the rational allocation of resources. Develop advanced manufacturing industries, such as the photovoltaic industry, eliminate backward production capacity.

4.4 Optimize the Layout of Industrial Parks

Nowadays, the main layout of Changzhou chemical enterprises is in the Yangtze River area. We should restore the Yangtze River ecological environment through the relevant policies to guide and implement the industrial park to a reasonable area.

4.5 Implement the Concept of "Green Development"

The concept is in the transformation and upgrading, from "pay attention to economic efficiency" to "economic and environmental benefits" .

4.6 Support Backbone Enterprises and Key Projects.

That is, new energy vehicles and auto end rail transit equipment, aviation equipment, energy conservation and environmental protection, intelligent manufacturing equipment and smart grid. Improve the market share of industrial chain products, enhance the integrity of the industrial chain.

4.7 Expand the Scale of Foreign Trade, and Introduce Foreign Capital Actively

Today, China has close contacts with emerging countries in Africa and other places. Changzhou chemical enterprises can seize this opportunity to improve import and export situation.

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