



Netherlands Enterprise Agency

# Sector Report: The Chemical Industry in Shandong

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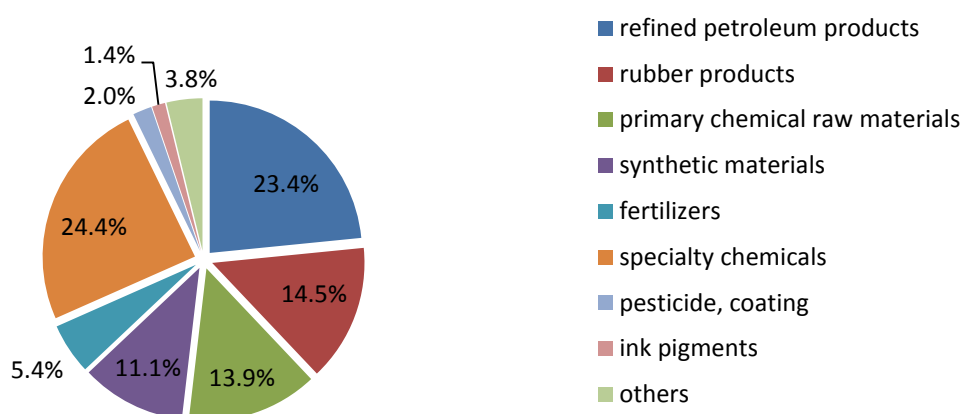
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### Overview

Shandong province lies in the east of China covering a land area of 158,000 km<sup>2</sup>. Shandong is the 3<sup>rd</sup> GDP power and 2<sup>nd</sup> most populous province in China with nearly 100 million inhabitants. For decades, chemical industry has been a pillar industry of Shandong and a main contributor to local economy. This was mostly because Shandong used to be an important base of fossil fuels such as crude oil and coal. It has established a rather complete chemical industrial chain with a broad range of products including petrochemical, chemical fertilizer, organic and inorganic chemical, rubber and tires, fine chemical and synthetic material. Now, Shandong is the top producer and exporter of chemical fertilizers, tires, primary chemical products, and the largest petroleum refiner in China. In 2015, the main business revenue of Shandong chemical industry totaled RMB 2.93 trillion, roughly 1/5 of China's total.

### Fact and figures about Shandong chemical industry (Statistical year 2015)

Number of chemical production enterprises	9,069
Number of enterprises with main business revenue > RMB 10 billion (2014)	25
Number of China Top 500 Chemical Enterprises	100
Number of chemical industrial zones	199
Main business revenue	RMB2.93 trillion



Proportion of main business revenue of Shandong chemical industry (2015)

### Challenge

On the one hand, Shandong is the top chemical province in China and chemical industry has long been a key accelerator for Shandong economy. But on the other hand, it is probably the most criticized industry due to its negative environment impacts in recent years. Shandong's chemical industry has wildly expanded to an extremely huge scale, but poor in quality and technological development. It produces and exports too many primary chemical raw materials which are actually in the low end of the value chain, while at the cost of natural resources and the environment. Just in early January 2018, Shandong government was criticized by the central government for the disorderly development in chemical industry.

Actually since 2012 when the new leadership came to power, ever stringent rules and measures have been taken against industrial pollution and overcapacity throughout China, and chemical industry was undoubtedly at the core of the plan. During this period, numerous small workshops and outdated facilities in Shandong that could not meet the minimum standards were wiped out and the entire industry was required to improve and upgrade to a cleaner and more sustainable model. Even so, chemical players are still facing challenges ahead.

Firstly, the overall level of Shandong chemical industry is still low and most of the output is primary raw materials with low added-value. Secondly, the raising public concerns to environmental problems and stringent environmental rules are calling for a cleaner chemical industry. Neglecting environmental costs which used to be a competitive advantage for chemical players in international trade will no longer exist. Thirdly, as more and more chemical industrial zones have been constructed and chemical production will be required to relocate into those zones in the future, how to build and operate sustainable and circular chemical zones will be on government's agenda. Fourthly, in the long term, chemical industry will still be a main driving force for China's economy. However, balancing between economic growth and healthy livelihood for people is a big challenge. Chemical companies must comply with corporate social responsibility (CSR) requirements in order to keep up with the sustainable development of the chemical industry.

### ***Opportunity***

Given even bigger pressure by central government, Shandong is most likely to speed up its transformation and upgrading in chemical industry. To this end, Shandong chemical industry needs to overcome the knowledge gap, where Dutch expertise may find business opportunities in collaboration in scientific research and product innovation, as well as providing advanced solutions for energy saving and diverse environmental pollutions that caused by the industry. For more information and relevant future activities, please feel free to contact us.

### ***Top university in chemical sciences***

- *China University of Petroleum*: China top university in petroleum related sciences and technologies. It has two campuses in Dongying and Qingdao. <http://english.upc.edu.cn/>
- *Qingdao University of Science and Technology*: Formerly as Qingdao Chemical Engineering Institute, a leading institute specializing in chemical sciences. <http://en.qust.edu.cn/>

### ***Potential government counterpart***

- *Shandong Science and Technology (S&T) Department*

S&T Department is the key supervisor and investor to research and innovative activities in Shandong. Collaborating with Shandong S&T is a good approach to gain a better understanding of Shandong's chemical industry and find business opportunities by organizing joint events, for example matchmaking meetings.

### ***Dutch investment in Shandong chemical industry***

- DSM (4 production sites in Shandong, respectively in animal feed nutrition, pharma chemical raw material, high polymer material, and pectin businesses.)
- Akzo Nobel (1 production site in oleochemical business in Shandong.)
- Royal Vopak (chemical terminal in Rizhao Lanshan Port, minority shareholder)

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