
INDUSTRY OVERVIEW

This section contains certain information and statistics concerning the PRC fertiliser industry. We have derived the information and data partly from various official publications and partly from the CNCIC Report. We commissioned CNCIC, an independent third party to provide a market research report on the PRC fertiliser industry. CNCIC was set up in October 1992, which is a comprehensive information collection, information research information service and computer application technology development centre for China's chemical industry, and owns the Chemical Branch of the National Engineering & Technology Library, the International Exhibition Center, the Audio/Video Publishing Center and the Energy Conservation Center in China's chemical industry. It undertakes many key projects of the Ministry of Science and Technology and the Ministry of Commerce, and has been engaging in tracking the work chemical technology and economy development, analysing the development trends, industrial movements and technological advancement in the world chemical industry, developing information industry and promoting information services and exchanges at all levels. The total fee for the CNCIC Report was US\$20,000. We believe that the sources of the information of this section are appropriate sources for such information and have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information is false or misleading or that any fact has been omitted that would render such information false or misleading. In view of the background and credentials of CNCIC, the information has not been independently verified by us, the Sponsor, or any other party involved in the Introduction and no representation is given as to its accuracy.

The CNCIC Report was compiled based on various data collected by CNCIC through different means, including but not limited to, (i) consolidating their existing research with information gathered from published secondary sources (such as company websites, industry organisations, trade press, and national statistics), (ii) direct visits or telephone interviews with market participants, (iii) conducting telephone interviews with industry experts; (iv) making inquiries with relevant government departments; and (v) gathering a variety of published public information. In creating the market data, CNCIC took into account various factors, such as global and domestic economic growth, legislative changes, taxation changes, social changes, product lifecycle, export and import trends, and competitive environment. Furthermore, CNCIC made certain assumptions, including but not limited to (i) fertiliser is an important agriculture-supporting product, thus the volume consumption will not significantly decrease due to the economic downturn; (ii) the preferential policies on fertiliser will be gradually abolished in PRC; and (iii) the relevant governmental departments in the PRC will promulgate flexible fertiliser import and export policies.

GENERAL OVERVIEW

Fertilisers are chemical compounds containing plant nutrients and their application can promote plant and fruit growth and to achieve optimal yield and quality. There are three primary plant nutrients, namely nitrogen, phosphorus, and potassium, which have been widely used in agriculture around the world:

- Nitrogen is the basic constituent of proteins, enzymes and chlorophyll, and thus is vital in crop production. Nitrogen occupies a unique position as a plant nutrient because rather high amounts are required compared to the other essential nutrients. It stimulates root growth and crop development as well as uptake of the other nutrients. Therefore, plants usually respond quickly to nitrogen application.

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- Phosphorus is irreplaceable in those compounds on which life processes depend. Phosphorus is absorbed by plant roots from the soil solution mainly as orthophosphate ions, which is then transported to where it is needed and rapidly incorporated into those molecules. An adequate supply of phosphorus is essential to plant growth. Deficiency affects not only plant growth and development but eventually decreases the formation of fruits and seeds and invariably delays the ripening of cereals.
- Potassium, or potash, is required by plants to fulfil its role as an osmotic regulator in all cells. Plants well supplied with potash are more resistant to pests and diseases. Furthermore, there are beneficial effects of potash on the chilling tolerance of plants grown in a warm climate and to photo-oxidative stress under high light intensity.

According to the IFA, the world's total output of fertilisers in 2008 was to approximately 209.7 million tons, including approximately 134.2 million tons of nitrogen, approximately 39.4 million tons of phosphorus, and approximately 36.1 million tons of potash on pure nutrient basis.

Among the primary plant nutrients, nitrogen is the most important nutrient for farmers to grow plentiful, high quality crops to meet the world's demand for food. The nitrogen-based fertilisers include urea, ammonia, ammonium nitrate, ammonium bicarbonate, ammonium sulphate and calcium ammonium nitrate, among which urea is one of the most important nitrogen-based fertilisers, with approximately 46% nitrogen content. According to the IFA, the world's urea production in 2007 rose by about 6.6% to approximately 144 million tons, of which China contributed two-thirds of the global increase. In 2009, the world's urea production capacity was estimated at approximately 174 million tons. Furthermore, the world's urea production capacity is forecasted to reach approximately 200 million tons in 2012, which corresponds to a CAGR of 5.5% over 2007.

Currently, China is the largest urea producer in the world and will also remain in a strong net exporting position due to its abundant capacity.

Fertiliser prices are cyclical similar to any other commodity. The cyclicity is primarily caused by the fluctuations in their demand and supply additions resulting in periods of over-capacity and under-capacity. However, variations in raw material prices (coal, natural gas or crude oil) and grain prices (corn or wheat) could also materially affect the price movement of fertilisers.

OVERVIEW OF CHINA'S FERTILISER INDUSTRY

Production of fertilisers

Currently, China is the largest fertiliser producing and consuming country in the world, accounting for approximately 30% of the world's total fertiliser consumption. In 2008, China produced approximately a total of 58.68 million tons of fertilisers on pure nutrient basis, which increased by approximately 1.4% over the previous year. Such total output of fertilisers included approximately 43.3 million tons of nitrogen fertiliser, with an increase of approximately 2.8%; approximately 12.6 million tons of phosphate fertiliser, with a decrease of approximately 3.3%, and approximately 2.8 million tons of potash fertiliser, with an increase of approximately 3.4%, over the previous year. Apart from Beijing, Qinghai and Tibet, nitrogen fertiliser is produced in about 31 China's provinces and municipalities, while phosphate fertiliser production concentrates in the phosphorus ores-rich provinces, such as Yunnan, Guizhou, Hubei and Sichuan, and potash fertiliser production is highly concentrated in Qinghai and Xinjiang.

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Consumption of fertilisers

With the increase in demand from agricultural development, China's fertiliser industry has been growing steadily. Approximately 50% of grain yield increase in China is attributed to the application of fertilisers. The table below sets forth the development of crops planting area, grain output and fertiliser consumption in China from 2000 to 2008.

Crops Planting Area, Grain Output and Fertiliser Consumption in China

<u>Year</u>	<u>Crops planting area</u> (<u>'000 hectare</u>)	<u>Grain planting area</u> (<u>'000 hectare</u>)	<u>Proportion of grain in crops</u> (<u>%</u>)	<u>Grain output</u> (<u>'000 tons</u>)	<u>Fertiliser consumption on pure nutrient basis</u> (<u>'000 tons</u>)
2000	156,424	108,463	69	462,175	41,463
2001	155,708	106,080	68	452,638	42,540
2002	154,636	103,891	67	457,060	43,395
2003	152,415	99,410	65	430,694	44,118
2004	153,553	101,606	66	469,472	46,368
2005	155,487	104,279	67	484,024	47,662
2006	152,150	104,958	69	498,042	49,277
2007	153,464	105,638	69	501,500	51,078
2008	156,266	106,793	68	528,709	52,390

Source: Ministry of Agriculture, PRC

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The rapid development of agriculture in turn stimulates the demand for fertiliser. In 1980, approximately 12.7 million tons of fertiliser was consumed in China (on pure nutrient basis). In 2000 and 2008, the consumption of fertiliser reached approximately 41.5 million tons and 52.4 million tons, respectively, indicating an annual average growth rate of approximately 3.3%. Of all fertilisers, the consumptions of nitrogen fertiliser and phosphate fertiliser have increased relatively slowly and that of potash fertiliser has increased relatively fast, with an annual average growth rate of approximately 5.6%. The table below sets forth the fertiliser consumption in China between 1995 and 2008.

Fertiliser Consumption in China
(Unit: '000 tons, on pure nutrient basis)

Year	Total	Nitrogen fertiliser (N)	Phosphate fertiliser (P ₂ O ₅)	Potash fertiliser (K ₂ O)	Compound fertiliser
1995	35,947	20,224	6,326	2,685	6,713
1996	38,291	21,454	6,585	2,898	7,353
1997	39,809	21,717	6,894	3,220	7,978
1998	40,854	22,335	6,841	3,459	8,220
1999	41,246	21,809	6,970	3,663	8,803
2000	41,463	21,616	6,905	3,766	9,177
2001	42,540	21,641	7,060	3,998	9,842
2002	43,395	21,573	7,122	4,225	10,462
2003	44,118	21,500	7,144	4,380	11,099
2004	46,368	22,223	7,362	4,673	12,038
2005	47,662	22,297	7,438	4,898	13,036
2006	49,277	22,625	7,695	5,097	13,859
2007	51,078	23,895	7,971	5,249	13,970
2008	52,390	23,029	7,801	5,452	16,086

Source: Ministry of Agriculture, the PRC

Industry outlook

China is now the most populous country in the world. With its rapid economic development, population growth, and improvement of people's living standard, demands for crops and foods have continued to increase. However, with limited and ever-shrinking arable land, farmers have to increase their crop yield by using fertiliser in more efficient ways. Accompanying by a series of measures taken by the PRC government which increased the incomes of farmers and investment in agriculture, it is expected that fertiliser consumption in China would experience a steady growth in the future.

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OVERVIEW OF CHINA'S UREA INDUSTRY

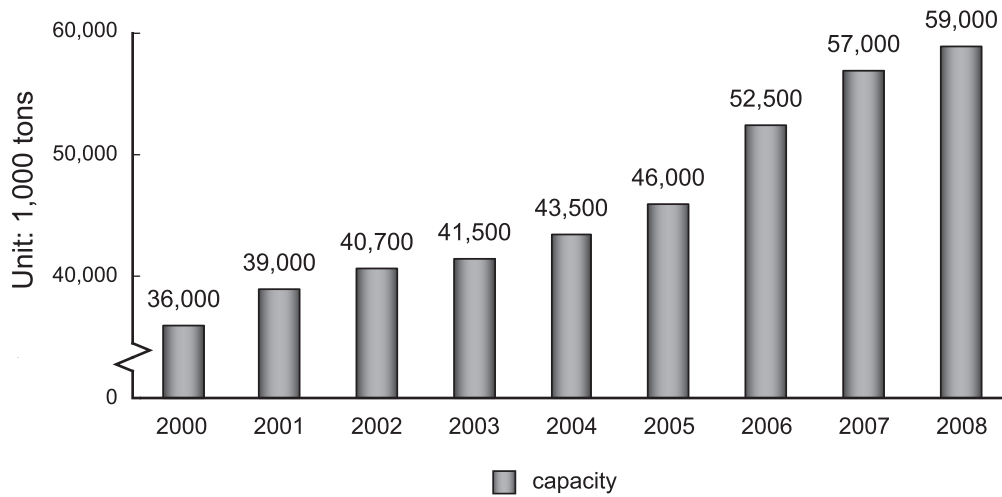
Urea as a neutral fertiliser can be used for all types of soil and for any crops as major fertiliser. It can also be used for base fertilisers or additional fertilisers and applied in no matter dry farmland or paddy field, as well as for compound fertiliser production.

Urea production capacity

Urea is widely applied in China's agricultural and industrial sectors. The production capacity of urea in China increased from approximately 36 million tons in 2000 to approximately 59 million tons in 2008, with CAGR of approximately 6.4%.

The PRC government's current agriculture-focused policy initiatives would give considerable boost to grain yield increase in China and therefore push up the demand for urea. With the rapid development of high-nitrogen compound fertilisers, the demand for urea will continue to increase. The chart below sets forth the urea production capacity in China from 2000 to 2008.

Urea Production Capacity in China



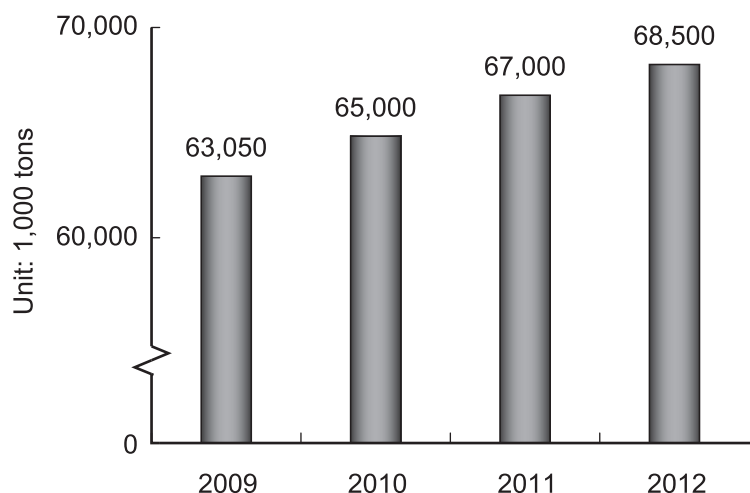
Source: CNCIC

According to the CNCIC Report, approximately 4.05 million tons of new urea production capacity would commence operation in 2009. It is expected that the production capacity of urea in the PRC would continue to expand steadily in the coming years but with a slower pace. The production capacity of urea in the PRC is expected to reach approximately 68.50 million tons in 2012.

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The chart below sets forth the estimated urea production capacity in the PRC for the period from 2009 to 2012.

Urea Production Capacity Expansion in China

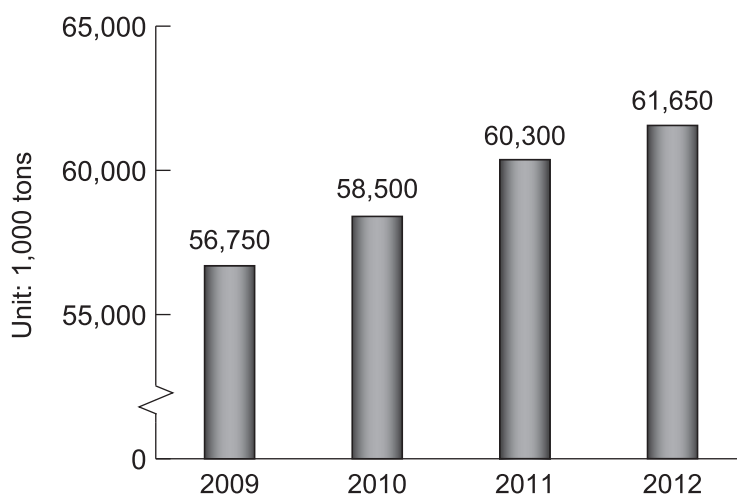


Source: CNCIC

Urea production volume and consumption

Since 2000, China has built and expanded many urea projects and its urea production volume has increased rapidly. From 2000 to 2008, China's urea production volume increased from approximately 30.7 million tons to approximately 56.3 million tons (actual quantity), indicating an annual average increase of approximately 3.2 million tons. It is estimated that with the construction of more new urea projects in the coming years, China's urea production volume will keep on rising steadily, however, at a slower pace. Based on a production capacity operating rate of 90%, it is estimated that China's urea production volume will be approximately 56.8 million tons in 2009 and approximately 61.7 million tons in 2012.

PRC's Urea Production Volume Forecast (actual quantity)



Source: CNCIC

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As urea is the leading variety of nitrogen fertiliser, urea production volume accounts for approximately 58% to 60% of the total nitrogen fertiliser production volume in China and its consumption accounts for over 64% of nitrogen fertiliser consumption. Therefore, nitrogen fertiliser consumption can reflect the demand of urea to a great extent.

The table below sets forth the top-10 nitrogen fertiliser consuming provinces in China in 2007.

China's Top 10 Nitrogen Fertiliser Consuming Provinces in 2007 (pure nutrient content base)

<u>Rank</u>	<u>Province</u>	<u>As total</u>
1.	Henan	10.4%
2.	Shandong	8.4%
3.	Jiangsu	8.0%
4.	Hebei	6.8%
5.	Hubei	6.2%
6.	Sichuan	5.6%
7.	Anhui	4.9%
8.	Hunan	4.7%
9.	Guangdong	4.1%
10.	Yunnan	3.8%

Source: CNCIC

In 2002, China resumed its urea import, which amounted to approximately 791,000 tons of urea. In the following years, its urea import decreased year by year. In 2008, it imported only 67 tons of urea, mainly from Japan, Taiwan, and the U.S. Compared with its own output, the import quantity can be ignored. With the increase of urea production capacity, China has been exporting more and more urea. In 2007, prompted by high urea price in the international market, China exported approximately 5.26 million tons of urea. In 2008, its urea export dropped to approximately 4.36 million tons. Owing to its large production capacity, China became the largest balance of urea producer and exporter in the world in 2007. However, China's export volume is impacted by supply and demand in domestic market, domestic coal-based producers' cost advantages over overseas natural gas based producers, and the PRC government's control on urea import and export via quota or tariff, etc.

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The table below sets forth the production volume, import, export and apparent consumption of urea in China from 2000 to 2008.

Urea Production Volume, Import, Export, Apparent Consumption in China (‘000 tons, actual quantity)

<u>Year</u>	<u>Production volume</u>	<u>Import</u>	<u>Export</u>	<u>Apparent consumption</u>	<u>Annual growth (%)</u>	<u>Self-sufficient ratio (%)</u>
2000	30,270	0.03	961	29,309	-0.3	103.3
2001	31,630	0.02	1,271	30,359	3.4	104.2
2002	34,820	791	413	35,198	15.9	98.9
2003	36,350	139	2,730	33,759	-4.1	107.7
2004	41,820	38	3,943	37,915	12.3	110.3
2005	43,370	71	1,571	41,867	10.4	103.6
2006	48,540	38	1,367	47,210	12.8	102.8
2007	54,040	0.5	5,257	48,784	3.3	110.8
2008	56,330	0.1	4,359	51,971	6.5	108.4

Source: CNCIC

Urea producers in China

According to the CNCIC Report, there were currently 189 urea producers, irrespective of the types of raw material used, in the PRC at the end of 2008, mainly located in East China, North China and South-western regions. There were 38 large-sized urea producers with annual capacity no less than 500,000 tons, 28 middle-sized enterprises with annual capacity ranging between 300,000 to 500,000 tons, and the remaining 123 small-sized producers with annual capacity below 300,000 tons. Major urea producing provinces include Shandong, Shanxi, Henan, Sichuan, Xinjiang, and Hebei. The top-three producing provinces, namely Shandong, Shanxi, and Henan accounted for approximately 40% of the total urea production capacity in the PRC. With respect to the production costs of the PRC urea producers with different types of raw material used, in 2008, the average production cost of coal-based urea producers is lower than that of crude oil based urea producers, but is higher than that of natural gas based urea producers. According to the CNCIC Report, in December 2008, the average urea production costs of coal based urea producers, natural gas based urea producers and crude oil based urea producers, in the PRC, were approximately RMB1,629, RMB1,146 and RMB3,200 per ton respectively.

The table below sets forth the top-10 urea producing provinces in China in 2008.

China’s Top-10 Urea Producing Provinces in 2008 (actual quantity)

<u>Rank</u>	<u>Province</u>	<u>As total (%)</u>
1	Shandong	18.0
2	Shanxi	11.9
3	Henan	11.8
4	Sichuan	7.1
5	Xinjiang	5.7
6	Hebei	5.3
7	Jiangsu	4.1
8	Hubei	3.9
9	Anhui	3.7
10	Yunnan	3.0

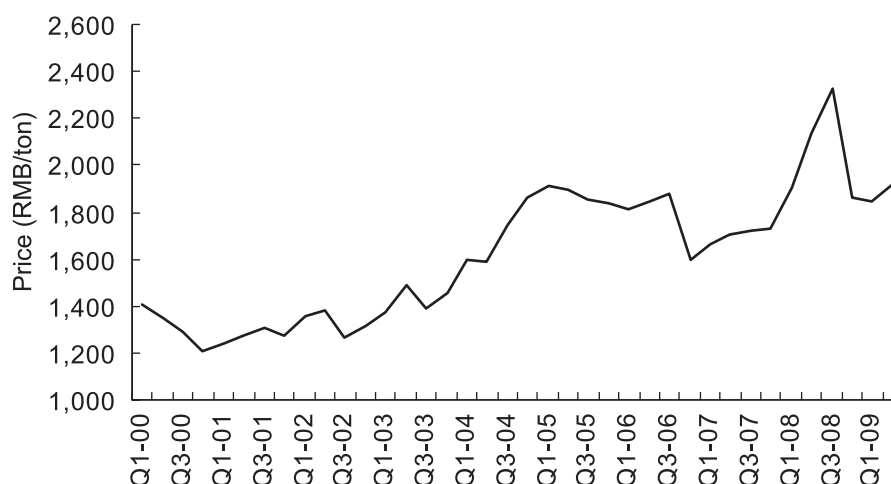
Source: CNCIC

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Historical prices of urea

The market price of urea is subject to fluctuation affected by various factors, including raw material costs, demand and supply changes and global market conditions. Stimulated by rising raw material prices and grain prices since the second half year of 2007, urea retail prices rose significantly in first half year of 2008 and peaked at approximately RMB2,350-2,400 per ton in July 2008. However, due to the commodity crash resulted from the global financial crisis since the third quarter of 2008, urea retail prices slumped to RMB1,800 per ton level in the fourth quarter of 2008. The chart below sets forth the historical urea retail price in China from the periods indicated.

Historical Urea Retail Price in China



Source: CNCIC

Recent government policy changes

Urea can be produced from coal, natural gas or crude oil. In 2009, approximately 69.9%, 27.5% and 1.9% of the urea production capacity in China use coal, natural gas and crude oil as feedstock respectively. Natural gas based urea producers in China have been enjoying preferential prices on natural gas supply, which are lower than its market prices. However, the government is contemplating a reform on natural gas pricing policy to allow gas prices to be determined by market. The PRC government also exercises stringent control over investment of any new natural gas based urea facilities.

OVERVIEW OF CHINA'S COMPOUND FERTILISER INDUSTRY

Compound fertiliser comprises at least two of the three primary ingredients, namely nitrogen, phosphorous and potassium. It contains a higher level of nutrients with balanced supply of nutrient components as compared to single element fertilisers. In addition, different types of soil and crops require different compositions in compound fertiliser.

Compound fertiliser production volume

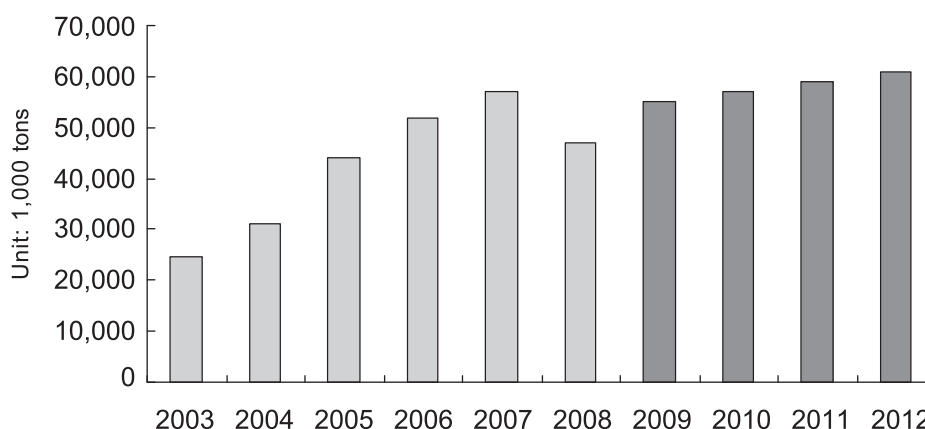
Since 2003, China's compound fertiliser production volume has been growing, but such growth began to slow down after 2005. In 2008, the compound fertiliser production volume showed negative growth, because the prices of raw materials have soared and high fertiliser price

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forced farmers to reduce their fertiliser consumption. According to the CNCIC report, notwithstanding the abnormality in the growth rate of the compound fertiliser production volume in China in 2008, the agricultural production will demand more compound fertiliser which will result in the steady growth in output of compound fertiliser in the future, at the estimated average growth rate of 10%.

The chart below sets forth the historical compound fertiliser production volume in China for period from 2003 to 2008 and the forecast of compound fertiliser production volume in China for the period from 2009 to 2012.

China's Compound Fertiliser Production Volume (actual quantity)



Source: CNCIC

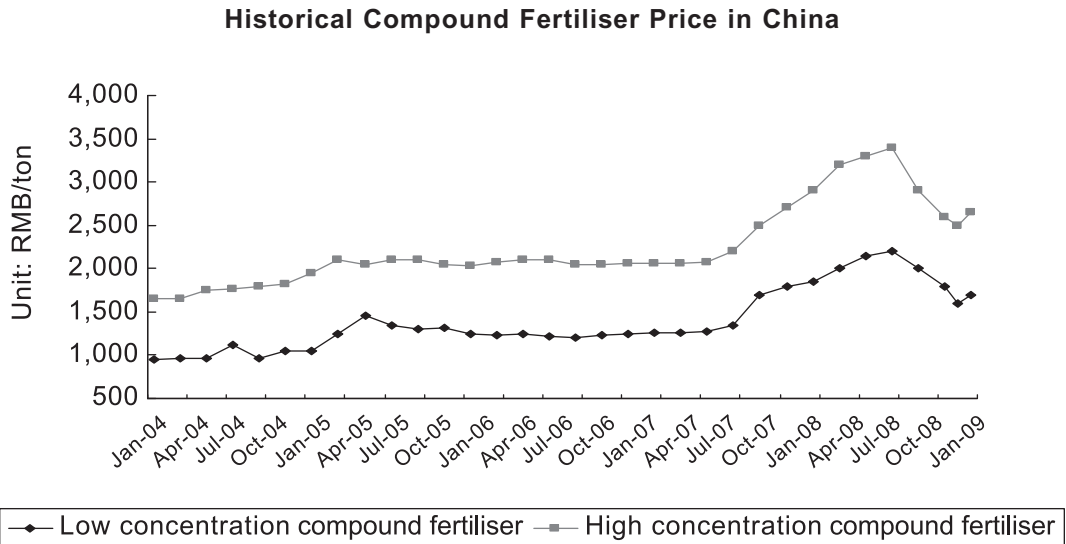
Since 2008, China has been capable of producing approximately 200 million tons of compound fertiliser per year. However, its actual output was only approximately 50 million tons, representing a utilisation rate of approximately 25%, in 2008.

Historical prices of compound fertiliser

The prices of compound fertiliser are primarily determined by the general supply and demand conditions and raw material costs, i.e. the costs of nitrogen, phosphorous and potassium. Higher fluctuation in raw material costs had resulted in greater variation in compound fertiliser prices from January 2008 to January 2009.

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The chart below sets forth the historical compound fertiliser prices in China for the period from January 2004 to January 2009.



Source: CNCIC

Compound fertiliser outlook

The PRC compound fertiliser industry has developed rapidly over the past few years. According to the CNCIC Report, China's fertiliser industry will develop towards having large-scale fertiliser producers which produce specialised compound fertilisers and conduct fertiliser application in a scientific way. Those high-cost enterprises will be eliminated and those competitive enterprises, such as the enterprises with cost advantage, will be encouraged to expand their output and capacity. China's total production volume of compound fertiliser was over 47 million tons in 2008, which was approximately 17.5% lower than that in 2007. However, as the relatively cheaper nitrogen fertiliser and phosphate fertiliser has driven down compound fertiliser prices and attracted rising demand, the output of compound fertiliser in 2009 is estimated to be approximately 55 million tons.

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OVERVIEW OF CHINA'S METHANOL INDUSTRY

Methanol is an important material for the organic chemical industry and is used as raw material for the production of formaldehyde, MTBE, acetic acid and other chemicals for industrial use. Methanol is also an important by-product of coal-based urea producers in the process of ammonia synthesis. The manufacturers can flexibly shift between ammonia and methanol production by adjusting reaction conditions and changing synthesis reactor and catalyst. The process will generally improve the efficiency of ammonia synthesis, and this can reduce the production costs of fertilisers and allow the producers to develop downstream methanol products.

Methanol production capacity

According to the CNCIC Report, in 2008, China's methanol production capacity reached approximately 24.7 million tons, with an increase of approximately 50.8% compared with that of 2007.

The table below sets forth the production capacity, consumption volume, production volume, import and export of methanol in China between 2005 and 2008.

Methanol Production Capacity, Consumption Volume, Production Volume, Import and Export in China (Unit: 1,000 tons)

<u>Year</u>	<u>Production capacity</u>	<u>Consumption volume</u>	<u>Production volume</u>	<u>Import</u>	<u>Export</u>
2005	6,500	6,662	5,356	1,360	54
2006	10,970	8,560	7,623	1,127	190
2007	16,394	11,046	10,764	845	563
2008	24,724	12,329	11,263	1,434	368

Source: CNCIC

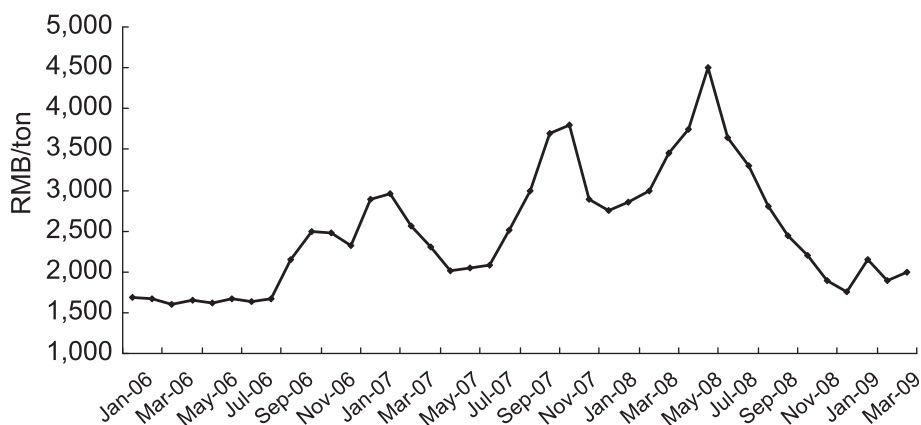
In China, coal is the main raw material for methanol production, where nature gas and coke oven gas come next. As of September 2009, among all 214 domestic methanol producers, production capacities based on coal, natural gas, coke oven gas and other materials accounted for approximately 61%, 27%, 10% and 2% of total methanol production capacities in China respectively. Approximately 70% of domestic methanol production capacities are located in coal-rich or natural gas-rich regions, such as Shandong, Henan, Hebei, Sichuan, Inner Mongolia and Shanxi.

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Historical prices of methanol

As methanol can be produced from crude oil, natural gas or coal, its prices are highly affected by costs of crude oil, natural gas and coal, as well as international trading conditions. General economic conditions also have important impact on the demand for methanol. The chart below sets forth the historical price of methanol in China for the period from January 2006 to March 2009.

Historical Methanol Price in China



Source: CNCIC

Methanol outlook

Following the rapid development of the methanol industry in the last ten years, the total annual production volume of methanol in the PRC has grown from approximately 2.0 million tons in 2000 to approximately 11.2 million tons in 2008, representing CAGR of approximately 24.1%. The rapid growth in its production volume was mainly driven by rising demands resulting from the increasing usage of methanol fuel and other application areas in the PRC. According to CNCIC Report, it is estimated that the rapidly growing demand for methanol in China will result in its methanol demand reaching approximately 12.5 million tons in 2010, accounting for approximately 30% to 40% of the total worldwide methanol consumption.