

China Chlor Views

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Focus On China

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The future development blueprint for calcium carbide industry

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Dialogue

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Special visit on Ms. Zhuying, REACHLaw China Co. Ltd General Manager

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*Special visit on Ms. Zhuying, REACHLaw China Co. Ltd
General Manager*

Focus On China

Product oil and electricity prices are trending upwards under high-value energy age

By Chennan, CCAON Research Center, industry analyst, Chennan

On 19th June, NDRC announced that product oil price and electricity price increase RMB 1,000/mt and RMB 0.025/Kwh respectively. In addition, a series of policies have been published on limiting price fixing of coal for power generating. Two days later, in order to control the CPI increasing caused by upward energy prices, NDRC and Ministry of Supervision of P.R. China together emphasized that it must be forbidden to increase price without governmental permit. It seems that this increase in energy prices will push heavy chemical into a high-value era of energy.



(One of gas station in Shanghai)

With the increasing Oil prices, the oil subsidy has been strengthened

As for the notification published by NDRC on 19th June, gasoline and diesel oil prices increased RMB 1,000/mt to RMB 7,540/mt and RMB 7,040/mt respectively, and jet fuel picked up RMB 1,500/mt to RMB 7,450/mt.

However, the charges of railway passenger transport, bus, taxi, liquid gas and natural gas remained stable at previous levels.

As almost half of crude oil supply in China depends on imports, the domestic oil refining companies are running



under deficit netbacks with the continual hike in crude oil price in international market. Even several oil refining factories had to shut down or cut

operating rates sharply, resulting in a tight supply of product oil in China.

However, Chinese government are cautious to make a adjustment on product oil prices. As long as the inflation index continues to go upwards, the upward adjustment on product oil prices will be impossible due to it will push the CPI upwards further, a player from petroleum industry said.

According to the CPI of May this year, it increased 7.7 percents yr-on-yr, first time of reduction since the year 2007. It seems to release some pressure on NDRC.

Electricity price increased, the prices of coal for power generating were fixed



(Gate of State GRID)

In the same day, NDRC also announced that the electricity prices have picked up RMB 0.205/Kwh in China except Tibet. However, the electricity price for residential usage, agriculture production and fertilizer production are unchanged, and in the provinces of Sichuan, Shaanxi and Gansu, the electricity price was also unchanged in most regions, where were damaged seriously by the earthquake. Meanwhile, a notification published by NDRC indicated that the coal price for power generating was beginning to execute the price fixing, which was the high conclusion price for 19th June business.



(One coal plant)

According to statistics, the price of coal for electricity generating increased RMB 25/mt averagely in the year 2007. There have been two round increases in price this year, and RMB 60/mt increase in coal price caused the power generating company being under deficit newbacks. It was said that main five power generating companies except Huaneng Group, emerged serious deficit this year.

Several analysts indicated that the financing of rescue for earthquake in Sichuan and storm in South China has been out of finance budget. Under current situation, the continual subsidy has brought more great exppressures on Chinese government finance expenditure.

In addition, NDRC also announced that the coal price

for power generating has been frozen at high level of conclusion price on 19th June. It is the first time of Chinese government intervening market price directly after opening the coal price in 1990s. An expert said that this increase in price maybe a temporary adjustment, and another increase will happen after Beijing Olympic Games. The price fixing could release a little upward pressure on power generating cost, and it also could result in a tight coal supply, he added.

As for chlor-alkali industry, this increase in electricity price brought a RMB 60/mt increase in cost of caustic soda, and the calcium carbide cost has been pushed upwards RMB 100/mt at least. As a result, how to absorb this increase becomes one of most important issues facing domestic chlor-alkali producers.



Special Report

The future development blueprint for calcium carbide industry

— The Fourth Forum on the healthy development and technological communication of calcium carbide industry

By Nancy Hao, CCAON

10th-12th June, China Petroleum and Chemical Industry Association, China Carbide Industry Association and CCAON together held The Fourth Forum On The Healthy Development And Technological Communication Of Calcium Carbide Industry in Yinchuan, Ningxia. There were more than 300 people attended the conference, and it was the largest industry conference from now on. The participating representatives had discussed the relative issues about the current development situation and the problems that needed to be resolved urgently.



"High cost" might change the pattern of industry development

Since the year 2007, with the continuous adjustments on state energy and environmental policy, as well as the international energy prices continued to rise, the production cost of calcium carbide had increased, and domestic calcium carbide prices hit the highest level, the price in Southeast China had been higher than RMB 4,000/mt. However, the participating representatives



said that the price increase of calcium carbide did not bring benefit for carbide producers, and there were some producers got

less profits than before due to the increased cost of coal and electricity, which had caused a slowdown in the growth of calcium carbide output.

Downstream PVC producers had to face the situation that supply of calcium carbide was tight and price was at a high level. Several



players pointed out that in the past under the pressure of high costs, there were many calcium carbide producers, but less producers considered the technology research; there were many technical innovation on calcium carbide furnace, but there were less criterion design for the calcium carbide furnace; there were many producers pursued the profit, but less producers worried about the social benefits. Experts considered that it is necessary to change the current development mode, and the objective situation and macro-policy environment had set higher requirements for calcium carbide industry.

Rely on new energy-saving technology to reduce energy consumption for unit product, it should adjust and upgrade the industrial structure in time and continuously expand the size of the scale and technical advantages to extend the industrial chain, becoming the common choice that producers to resolve the cost pressure.

New technology and energy-saving equipment lead the direction of energy-saving and emission reduction



In this forum, there were some suppliers of energy saving and environmental protection equipments and technology suppliers for calcium carbide industry gave several special speeches on current advanced technologies of saving energy and reducing emission.

The technical experts introduced including the development on large obturating furnace of calcium carbide, which is generally concerned by calcium carbide enterprises, the production process for oxygen method of calcium carbide and gas processing and comprehensive utilization of calcium carbide furnace.

The new equipments and technology that displayed in the forum were all around this core issue of energy-saving and emission reduction. Several experts pointed out that in the meeting: On the one hand, new technologies and new equipments could effectively help producers to resolve the cost pressure by energy-saving and emission reduction; on the other hand, the high-efficiency gas furnace also could extend the product chain, improve resource utilization and help producers to increase profits.



(Mr. Zhang Peichao, Vice General manager of CCAON)

Several conference delegates pointed out that energy supply shortage had become the major bottleneck, which restricted the economy development with a high rate. The high pollution and high energy consumption characteristics of calcium carbide means that its policy environment is complex, so energy saving and environmental protection was very important for the health development of calcium carbide industry.

Although calcium carbide industry is still facing with the problems of pollution control and less efficient usage of resources, there is lack of oil and abundant of coal in China, so calcium carbide is the main resource in downstream chemical industries, especially in chlor-alkali industry. There might be both opportunities and challenges in the future for calcium carbide industry, and how to resolve the problems of production and policy pressure is the main issue that most calcium carbide producers must consider in the future.

Capital market show the industry development trend

— Analysis for the annual report of publish companies in chlor-alkali industry

By CCAON Research Center

Edited By Nancy Hao, nancyhao@ccaon.com

Financing from the stock market break the bottleneck

In recent years, with the increased expansion of domestic chlor-alkali industry, there are more and more competition in domestic market and resources. And with the rising cost of raw material from 2008, its total profit presents a decreasing trend. It can be foreseen that China chlor-alkali industry will suffer a new round of re-integration in the future.



(Shanghai Stock Exchange)

Because of the high concentration of resources and capital, the chlor-alkali industry needs lots of money, and with the distinct change of out industries and policy, it is not enough for the rapid expansion of core operation only just using the loan and proprietary fund, especially under the condition of monetary tightening. Therefore, it is one of the main issues whether have a more efficient and low-cost financing channel.

With the incessant development of finance capital market, and by the right of low-cost and high-efficient, stock market has become the main financing channel besides the loan. In the recent two years, it can be seen that some big chlor-alkali enterprises come into the market for financing. From present impact, it can provide the capital guarantee in a certain extent.

From the view of capital market, through the stock market, enterprises can solve the problems in the fields of expanding the production scale, improving the technology and solving the capital deficiency such as Zhongtai Chemical, Mingtian Technology, Taihua Stock, Yangnong Chemical, Jiangshan Stock, and so on. Besides, it also can perfect the management structure, build the directorate, realize the separation of management and ownership and accept the supervision of stockholders. It also can extend the reputation and confirm the social value.

Capital market shows the development track of the chlor-alkali industry



As the basic industry, there are two main products of chlor-alkali industry, caustic soda and PVC, applied in various industries. At the same time, it has relative connection with economic and the same developmental cycle. The macro-economical environment directly

affects the demand for its productions. From 2003, with the rapid development of economic and the recovery after PVC anti-dumping case, the chlor-alkali industry has developed rapidly. As the strong demand, the chlor-alkali enterprises continually increase production capacity. Compared with the huge capacity, low industry concentration and lacking diversity in products, the competition is serious.

Especially from the 2006, the domestic chlor-alkali industry faced the unprecedented complicated situation in the fields of market and policy environment. At present, its development is limited by the following factors: 1. the relative over-supply; 2. the high cost of energy and material; 3. the protective policies for energy and resources.

As a historical traditional chemical industry, the chlor-alkali industry has mature technology and market, so its profit doesn't like some new industries. According to the finance report in 2007, the equal payoff ability of all industries is 51.44, and it is 41.41 for the chlor-alkali industry. Therefore all the chlor-alkali enterprises have high profit. Such as Sanyou Chemical, Hubei Yihua, Yangnong Chemical, Yinglite, Changzhou Chemical, Nantong Chemical have high profit index and all exceed 70. These enterprises have great profit ability.

So the public finance data of listed company of chlor-alkali industry can represent the developmental tendency of whole industry in a certain extent. There will be continued to analyze the finance data, and then find a more clear developmental route.

Interpretation of the financial reporting through resources, technology and diversified operations

At present, the domestic chlor-alkali market is relatively over-supplied, and market competition is drastical. However, the product cost is increasing under the background of continuing rising of global energy price and the governmental policies for heavy chemical industry to implement industry structure upgrade. Therefore, under present condition, the resources, technology and industry chain have become the main factors to measure enterprise's strength.

Resource decide the cost competitiveness



At present, the main materials of domestic chlor-alkali industry are coal, electricity and salt. And the main electricity supply is firepower especially in North China, so the resources of coal and salt are the necessary precondition to develop chlor-alkali industry. The distribution of coal and salt has obvious regional characteristic. The salt resources mainly include solar salt, well salt and lake salt. The solar salt is mostly in eastern littoral, especially in the provinces of Shangdong, Hebei, Tianjin and Liaoning. The well salt and lake salt are mainly in Midwest China. Compared with this condition, the coal resource mainly distributes in the northwestern area. The southwestern and northern areas also have abundant coal. As a large demand for resources, it is very important for chlor-alkali industry to match the local resources condition. At present, the distribution of domestic chlor-alkali enterprises most coheres with that of resources.

The finance index of some public chlor-alkali companies in 2007

Producer	Income (10K RMB)	Operating cost (10K RMB)	GPR (%)	NPR (%)
Xinjiang Tianye	398512.05	299634.43	24.81	6.81
Xinjiang Zhongtai	240862.99	179445.64	25.5	9.06
Yinglite	156585.76	110393.82	29.5	5.8
Jinlu Group	220945.08	185387.54	16.09	3.66
Nanhua Chemical	182222.01	150697.3	17.3	3.75
Chlor-alkali Chemical	509881.78	451922.55	11.37	1.12

GPR: Gross profit rate
NPR: Net profit rate

Through the finance data in the above table, it can be found that these western enterprises which locate in the area that have abundant coal and salt resources still develop well (the main reason for the decreasing of 2007 taking of Jinlu group was the FenGu Alcohol was not included; and if remove the correlative data of FenGu Alcohol, it actually increase 4.03%). Especially the enterprises, such as Xinjiang Tianye, Yinglite, Zhongtai Chemical, realize a rapid development by the

rights of salt, salt and electricity resources. From the index of payoff ability, the retained profits of aforementioned three enterprises obviously excelled others, and also high than the average retained profits margin which is 4.77. It fully explains the importance of resource for present chlor-alkali enterprises.

➤ **Comparing of the two major PVC production process through the financial date**

The finance index of some PVC companies from 2003 to 2007 (%)

Producer	Production Process	GPR				
		2007	2006	2005	2004	2003
Chlor-alkali Chemical	ethylene based	1.26	-3.95	-4.41	12.62	15.58
Yinglite	acetylene based	21.78	21.63	29.62	43.88	42.73
Xinjiang Tianye	acetylene based	19.18	18.28	16.04	19.33	-
Xinjiang Zhongtai	acetylene based	21.29	19.55	-	-	-
Jinlu Group	acetylene based	11.31	10.07	14.1	19.09	22.56
Nanhua Chemical	acetylene based	3.49	5.21	7.28	23.75	20.82
Yaxing Chemical	acetylene based	5.64	5.3	12.87	20.95	22.77

➤ **Acetylene based PVC: Cost differences between East and West China**

Since Chinese coal, electricity distribution is not balanced in eastern and western regions, so acetylene based PVC producers are different in East and West China.

The gross profit rate of some published PVC companies from 2003 to 2007 (%)

Producer	Region	GPR				
		2007	2006	2005	2004	2003
Yinglite	West	21.78	21.63	29.62	43.88	42.73
Xinjiang Tianye	West	19.18	18.28	16.04	19.33	-
Xinjiang Zhongtai	West	21.29	19.55	-	-	-
Jinlu	West	11.31	10.07	14.1	19.09	22.56
Nanhua Chemical	East	3.49	5.21	7.28	23.75	20.82
Yaxing Chemical	East	5.64	5.3	12.87	20.95	22.77

New technology enhances the industry profitability



(Ion exchange membrane electro bath)

At present, China's caustic soda production process mainly include the diaphragm grade and membrane grade electrolysis means. The weakness of diaphragm grade production became increasingly

outstanding. However, the membrane grade electrolysis mean have the advantage of environmental protection, high effect and energy saving, which could improve the harmonious development of enterprises and the environment, while maximum extent possibility to reduce the production costs and enhance the company's profitability. In 2007's "industrial restructuring Catalog", government had list the membrane grade electrolysis means to the encouragement industries, which must be the prevailing trend in the future market of China.

China's membrane grade caustic soda production equipment had increased, and its output rose quickly. At present, Zhongtai chemical, Shandong Haihua, Sanyou Chemical and Xinjiang Tianye had all used the membrane grade electrolysis means. From the listed companies in the financial data analysis, we can find that membrane grade producers had a higher gross margin, and the producers with membrane grade means completely had more outstanding competitive advantage than others.

The gross margin of caustic soda in chlor-alkali industry in 2006-2007 (%)

Producer	Production technics	gross margin in 2007 (%)	gross margin in 2006 (%)
Zhongtai Chemical	M grade	40.28	30.33
Sanyou Chemical	M grade	42.75	39.22
NingXia YingLiTe Chemicals	M grade/D grade	23.51	22.86
Jiangsu Chemical	M grade/D grade	27.09	24.17
Yaxing Chemical	M grade/D grade	32.98	24.3

M grade: Membrane grade
D grade: Diaphragm grade

Nevertheless there are some problems in China's membrane grade caustic soda industry. Up to the present, the ion-exchange membrane is still import absolutely, which is with high price, and it is disadvantage for the industry safety in a long time. In addition, it was need larger amount of initial investment for the membrane grade caustic soda plant. As a result, there might be membrane grade and diaphragm grade production route continue to coexist for a long time, but the proportion of membrane grade route would increase.

High-quality financial statement highlight the advantage of industrial chain

With the adjustment of the national industrial policy, competition of domestic chlor-alkali industry extended from the terminal product to the cost level gradually. Acquirement of stable and reliable resources, vigorously expanding business scope, establishing a complete industrial chain, and the development of recycling economy will be the necessary choice for

chlor-alkali producers to decrease the market risk.

"Coal-electricity-salt-chemical"--industry chain. There are some domestic public companies do a lot of works on design of product chain. Based on the resources with lower cost, these companies developed the recycling economy and the integration of upstream and downstream industries, in order to improve the benefit and develop healthily. For example, NingXia YingLiTe Chemical and Zhongtai Chemical provide generate electricity and calcium carbide production equipment for themselves, which have improve the resource using rate and the payoff ability. Shandong Haihua and Sanyou Chemical vigorously improve the slat chemical industry chain based on the slat resources advantage with lower price, which could decline the production cost. We can see the payoff ability of following producers is higher than the average level of the industry.

Main business mark of the chlor-alkali producers with advantage of industry chain from the year of 2005-2008 (%)

Producers	NPR 2008 Q1	GPR 2008 Q1	NPR 2007	GPR 2007	NPR 2006	GPR 2006	NPR 2005	GPR 2005
Xinjiang Tianye	5.25	22.93	6.81	24.81	6.98	23.49	5.26	18.43
Yinglite	7.08	30.3	6.2	29.5	3.56	21.37	7.73	23.42
Zhongtai Chemical	7.23	23.04	9.16	25.5	7.5	22.68	11.66	28.93
Hubei Yihua	9.8	22.92	7.65	22.31	7.31	19.61	7.24	16.83
Sanyou Chemical	14.72	27.8	8.35	24.76	5.86	25.14	5.91	22.12
The average gain level	-	-	5.15	-	3.17	-	4.11	-

Recycling economy development model:

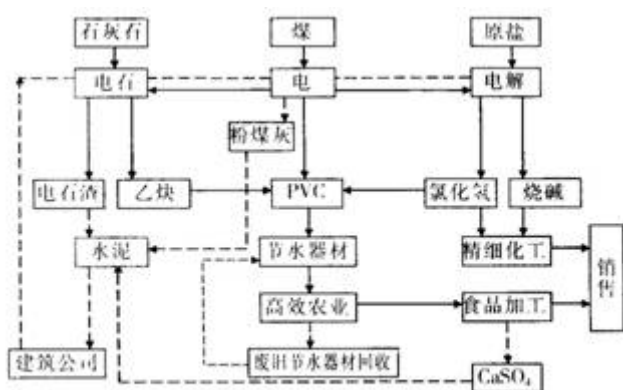


图1 新疆天业(集团)有限公司循环经济产业链示意图

(Recycling economy model of Xinjiang Tianye Chemical)

Chlor-alkali is an industry with variety products, long industry chain, and much environmental treatment works, which recycling economy development model would brought huge economy benefit and social benefit.

For example, there were two recycling economy industry chains built in Xinjiang Tianye, one is the industry chain of coal, limestone, thermoelectricity, calcium carbide, chlor-alkali, polyvinyl chloride, and the water-saving equipment, which could decline

production cost and increase the profits by the integrative industry recycling. Another one is the industry chain of waste water, exhaust gas and waste residue, which could achieve the clean production and change waste into valuable productions. Producer use the waste residue to produce cement, and the using rate of waste residue had reached 90%. Sanyou Chemical use the waste water from soda ash production to produce calcium chloride, and transport caustic soda to the adjacent chemical fiber companies by popelines, which had declined the cost and saved the resources, and enhance their ability to withstand market risk.

Recycling economy development model not only maximize the synergy effect of related industries in the industrial chain, but also achieve the efficient use of resources, which is a typical intensivism pattern of development .

Main business mark of the chlor-alkali producers which are using the recycling economy development model from the year of 2005-2008 (%)

Producer	NPR 2008 Q1	GPR 2008 Q1	NPR 2007	GPR 2007	NPR 2006	GPR 2006	NPR 2005	GPR 2005
Xinjiang Tianye	5.25	22.93	6.81	24.81	6.98	23.49	5.26	18.43
Sanyou Chemical	14.72	27.8	8.35	24.76	5.86	25.14	5.91	22.12
The average gain level	-	-	5.15	-	3.17	-	4.11	-

The variant industries development model:

In order to develop long in the competitive market, some chlor-alkali producers get into the diversified areas to play their synergies effect in different departments to get the maximize profits, resist market risk and enhance their competitiveness in the market.

Main business mark of the chlor-alkali public producers which are with the variant operations from the year of 2005-2008 (%)

Producer	NPR 2008 Q1	GPR 2008 Q1	NPR 2007	GPR 2007	NPR 2006	GPR 2006	NPR 2005	GPR 2005
Hubei Yihua Chemical	9.8	22.92	7.65	22.31	7.31	19.61	7.24	16.83
Cangzhou Dahua	11	33.2	5.25	28.3	6.44	21.97	10.22	22.01
Yunan Salt & Salt Chemical	3.28	24.72	6.64	26.46	8.21	35.15	13.62	48.42
The average gain level	-	-	5.15	-	3.17	-	4.11	-

From the above table, we can find that for example, except the chlor-alkali operatin, Hubeiyihua is the supreme fertilizer producer, also is the supreme well salt producer in Asia. There are also abundant product structure in Cangzhou Dahua and Yunnan Salt & Salt Chemical, and the synergies effect between difficult industries was obvious, and the competitiveness of producers has been strengthened.

With the macro-economic policies strengthen to prevent the economy overheating, the advantages of lower financing costs and high efficiency was the main fund source for chlor-alkali industries. As more chlor-alkali producers join, we could see the business performance in the capital market through the publish report forms, which could offer more scientific and accurate basis to understand the development statement and future development trend of chlor-alkali industry in China.

International companies are walking on the localization road

By Yangsen, Chief Director, CCAON Research Center,

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With the rapid development of Chinese economy, China chlor-alkali industry made a miraculous progress at the beginning of this century. Both caustic soda capacity and polyvinyl chloride capacity became No.1 in the world from the year 2003 to 2007. Meanwhile, lots of international chlor-alkali producers, polyvinyl chloride producers and relevant companies are keeping a close eye on China market, reflecting investment, business and technology export in China chlor-alkali industry. In fact, strong Chinese demand is an attractive factor determining the overseas investments in China.



Investing in industry

As the low-cost labour force and strong demand market, several international producers invested in China in recent years. These producers will be shown as follow:

Company	Building time	Investors	Main product	Raw material from	Product flow to
LG Dagu	1995	KOREA LG TIANJIN BOHAI CHEMICAL INDUSTRY GROUP	340,000 mt/yr PVC(Ethylene)	VCM from LG Bohai	China main land Export
LG Bohai	2005		240,000 mt/yr caustic soda (Membrane grade) 350,000 mt/yr VCM	Korean ethylene	VCM: LG Dagu Caustic soda: China main land Export
Formosa Plastics (Ningbo)	2002	Formosa Plastics	400,000 mt/yr PVC(Ethylene)	VCM from Formosa Plastics	China main land
Changzhou Hanhe Resin	2005	Changzhou Xindong Chem Japan Tosoh Japan Marubeni	80,000 mt/yr PVC(Ethylene)	VCM from Japan	China main land Export
Tosoh Guangzhou	2004	Japan Tosoh, 67% Japan Mitsubishi, 18% Japan mitsui, 7.5% Japan Marubeni, 7.5%	220,000 mt/yr PVC(Ethylene)	VCM from Japan	Offering to downstream PVC goods manufactrers
Huasu Plastics	1992	Westlake Group, 42.77% Norsk Hydro A.S. Jiangsu Suhua Taicang Petrochem	130,000 mt/yr PVC(Ethylene)	VCM from Japan, Korea and Taiwan	China main land Export
SP Chemicals (Taixing)	1995	Singapore Sp Chemicals	450,000 mt/yr caustic soda (Membrane grade) 200,000 mt/yr VCM	Salt from Australia and Mexico	VCM: China Main land Caustic soda: China main land Export

Note:

- Hanwha Chemical's 300,000 mt/yr PVC project in Ningbo and 300,000 mt/yr PVC and 240,000 mt/yr caustic soda project of Indian Zoon cooperated with Sichuan Jiuda Penglai Salt Chem Group have not been built, so these projects have not been listed in this table.**
- All materials are sourced from open channels.**

It seems that these overseas investors are all large chemical groups in chemical industry, and they have many advanced technologies and global marketing channel. In addition, various products could meet diffenent usages from consumers and downstream manufacturers.

These investors, except from Westlake Group and Norsk Hydro A.S., are mainly from NE. Asia,

Especially Korea, Japan and Taiwan. They determined to invest in China mainly due to below reasons.

- These NE. Asian countries or regions are island or peninsula countries, where have less resources for chemical production and limited consumption

market. As a result, the chlor-alkali industry in these regions need to move out. Eastern coastal regions of China become the preferred region for them.

- After the China PVC Anti-dumping case, tonnages from Japan, Korea and Taiwan could not flow into China freely. However, their investments in China on building PVC plants could ensure them to share the big demand market directly. In addition, Polyvinyl chloride plants all adopting ethylene route are determined by the supply of ethylene and EDC/VCM is in their hands. From material to product, the whole chain of PVC is under their control. According to the statistics data from China Custom, there is a half volume of ethylene, VCM/EDC imported as general trade, and others are imported as processing trade with material. This means a half of products flowing into China market, and others are controlled to flow into world market. Although there has been a difference in business operation between domestic producers and overseas producers, they both enjoyed the rich profit from rapid development of China chlor-alkali market. However, with the coming of potential adjustment caused by the capacity explosion, increased cost, slowdown of demand and heavy competition, the overseas companies in China will also adjust their strategy and show economic viability in the coming years.

Successful business: Global marketing channel



These companies are active in China chlor-alkali industry, having more experiences on Imp. & Exp. business and wide business scope. Their advantages are shown as follow:

- Strong capital support.
- More experiences on chlor-alkali business and stable global marketing channel.
- Huge global logistic system.
- Firm business structure.

Imp. & Exp. condition has changed

		2003	2004	2005	2006	2007
Solid Soda	Imp	1.47	1.72	1.69	1.69	2.02
	Exp	26.57	17.69	28.58	42.19	44.73
Liquid Soda	Imp	9.05	7.40	3.01	1.00	1.23
	Exp	10.72	11.37	54.81	90.92	102.69
PVC Pure Powder	Imp	175.86	162.82	130.75	114.70	110.07
	Exp	2.17	1.71	11.86	46.03	71.17
EDC	Imp	36.03	34.34	49.24	43.91	35.11
	Exp	—	—	—	2.05	2.55
VCM	Imp	76.16	77.84	89.83	100.00	86.79
	Exp	—	—	—	—	0.31

Note: The volume below 100 tons is shown as “—”.

With the break of soda and chlorine balance, China liquid soda export will increase yr-on-yr. On the other hand, the chlorine demand will show an upward trend theoretically in China in the future. As PVC is the main product of chlorine consumption in China, PVC import market only shows a slow drop, but export market presents a rapid increase in recent years. The global marketing channel seems to play a role in determining future competition. Facing with the slowdown of world economy, the global strategy to domestic chlor-alkali producers will be more important.



China Market (Brief News)

- **Calcium carbide:** Carbide prices climbed due to the tight supply in July.
- **Salt:** Domestic salt price increased due to the decreased output which was influenced by the rainy weather.
- **Soda ash:** Soda ash prices began to rise tentatively because it was the traditional times for maintenance of soda ash producers.
- **Caustic soda:** Caustic soda price declined slightly in July.
- **Chlorine:** Chlorine prices declined due to the transportation problems and the weak demand from downstream producers.
- **Hydrochloric acid:** Price was almost stable although there was some price decline in limited regions due to the decreased output of hydrochloric acid.
- **Polyvinyl Chloride:** PVC prices climbed slightly due to the increased production cost and low operation rate for most producers. However, conclusions were still insipid in July.
- **Price list (Only For Reference)**

Product	Price Range (RMB/mt)	USD/mt (only For reference)	Remark
Salt	285-383	41-56	ex-work price
Calcium carbide	3550-4050*	519-592	ex-work price
Soda ash			
Light	1900-2100	278-307	
Dense	2050-2250	300-329	
Caustic soda			
30% D-G	765-825	112-121	
32% M-G	810-880	118-129	
Chlorine	1200-1700	175-249	
Hydrochloric acid	500-600	73-88	
Polyvinyl Chloride			
Ethylene based	8950-9125	1308-1334	
Acetylene based	8700-8725 [△]	1272-1276	
Methanol	3500-3600	512-526	Average price (Chemnet)
Dichloromethane	4600-5000	673-731	
Chloroform	4700-5100	687-746	
Epichlorohydrin	15500-16000	2266-2339	FD price
PO	17000-19000	2485-2778	ex-work price

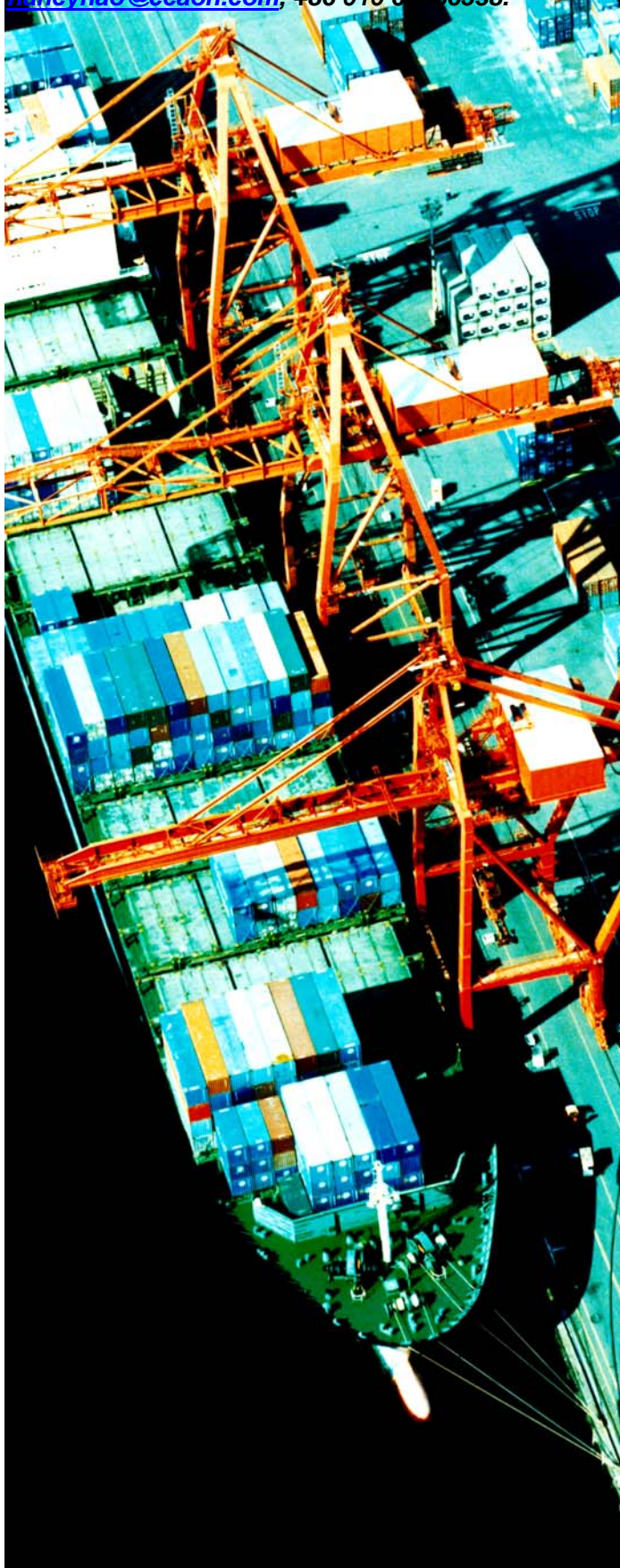
Most of data was prices in North China;

Data* : prices in Northwest China; Data[△] : prices in South China;

Rate of exchange: 21th April, 2008;

All data was prices from 14th April, 2008 to 18th April, 2008.

More information is contained in the China Chlor weekly and monthly newsletter. If you are interested in the market intelligence, please contact with us. nancyhao@ccaon.com, +86 010 6536538.



Project Views

100,000 mt/yr chlor-alkali project of San Tai had went into operation successfully

At 12:00 AM of 28th May, 100,000 mt/yr chlor-alkali project of Gansu Northern Santai Chem Corp had went into operation officially, confirmed safe and stable after 24 hours producing incessantly.

This RMB 653 million worth project was invested by Luzhou North Chem Corp, Yin Guang Chem Corp and Yin Zhu Electricity Co., Ltd and constructed by two steps. Step one, from Oct. 2006 to 28th May of 2008, formed 60,000 mt/yr capacity and was RMB 244 million worth. Step two, starting from Mar. 2008 and intending to finish in June 2009, will form 100,000 mt/yr caustic soda and 120,000 mt/yr PVC capacity, which was RMB 410 million worth.

Near 100 tons 32% caustic soda and more than 20 tons liquid chlorine had been produced until recent days, all products reached quality request.

3×15MW biomass generating project with 100,000 tons output of caustic soda per year had established in Changde

Recently, the project invested by Hunan Li Ang environmental protection & power resources investing Co., Ltd had established in Changde in Hunan province officially.

There had been RMB 1.53 billion put into this project and it will be constructed by two steps.

Step one, starting from September of this year, three product lines will be constructed and this step will finish in next year, which can handle 1,800 tons Bio-materials per day and can generate 450 M kwh/yr.

Step two, start from 2010 and two product lines will be constructed, and one is for 100,000 mt/yr caustic soda, the other one is for 150,000 mt/yr cleaning products. The whole project will form RMB 1.5 billion annual income and RMB 120 million taxes per year.

400,000 tons PVC and Caustic soda Project of Jun Zheng Group in Wuhai city start working

The project started at 5th June and was a main construction of Jun Zheng Chemical Engineering and Energy Co., Ltd, planning to produce 720,000 tons PVC, 600,000 tons caustic soda and 3,000,000 tons cement per year. First-stage construction of 400,000 mt/yr PVC project was invested RMB 1.90 billion and will go into operation in 2009, which will form RMB 1.8 billion annual income, RMB 450 million taxes and 800 new jobs.

The second-phase construction of Jilantai Salt Chem Group PVC project start working officially

1,000,000 mt/yr PVC project of Jilantai Salt Chem Group had constructed the second-phase construction and will finish at the end of this year, when it could produce 400,000 mt/yr PVC. At present, the acetylene and polymerization working procedure were constructing. This project will speed Construction of New-Style Industrialization of Alashan Meng, achieving production intensification of salt chemical industries, improving comprehensive utilization of resources and optimizing regional development and industrial allocation.

Plenty of Chlor-Alkali projects in Jianguo province had finished and went into production

Pei country in Jianguo province tries their best to build salt chemical industry base and lots of projects had went into production. Details are as following.

Company	Project (annual worth)	Investment (RMB)	Stage	Process
Wuxi Yi Duo Group	300,000 mt/yr PVC and 300,000 mt/yr Caustic soda	3 billion		Finished and went into production
Tian Cheng Chlor-Alkali Corp	100,000 mt/yr PVC and 100,000 mt/yr Caustic soda		I	Finished and went into production
			II	Started
Nankai Tian Yuan Chem	45,000 mt/yr calcium hypochlorite			Started
Rui Da	5000 mt/yr			Started

Chem	cyclohexane and 2000 mt/yr carbon-white			
Zhong Xiong Chem	10,000 mt/yr trichlorosilane			Finished and went into production

Wenshan Investment Promotion Bureau still attracted investment for relevant projects, 200,000 mt/yr caustic soda and 250,000 mt/yr PVC, which will be totally invested over RMB 1 billion.

200,000 mt/yr PVC project and relevant projects of Ya'an Haosen Corp began to be built

The projects invested by He Sen power company had held foundation stone laying ceremony on 19th June at Cao Ba industry concent rating Area in Yucheng city, including 200,000 mt/yr PVC project, 2,000,000 mt/yr cement project and 300,000 mt/yr calcium carbide project.

These projects are invested by RMB 2.2 billion, produce RMB 3 billion annual income pay taxes RMB 1 billion per year including RMB 300,000,000 cash and create over 1,000 new jobs. The PVC project is invested RMB 980 million, cover an area of 283,335 m² and last for 18 months, which could produce PVC 200,000 mt/yr and membrane grade caustic soda 160,000 mt/yr, have sales income RMB 2.2 billion per year and pay tax RMB 600 million per year.

300,000 mt/yr PVC project contract has been signed by HanWha Corp and Da Xie Development Zone of Ningbo province

Nowadays, this project had been signed officially. It is invested by USD 380 million with annual capacity 300,000 mt/yr capacity PVC, which will get sale income RMB 2.3 billion/yr.

Jin Lu Colophony Corp recovered production step by step in June

Two of three whole product lines had resumed production and first productions of 14 tons liquid chlorine and 120 tons sodium hypochlorite had sent to Shifang City, which was destroyed seriously in the big earth quake.

800,000 mt/yr alumina project of Yunnan Aluminium Corp started building

The first-stage construction has started building on 5th June, and this plant is located at Ma Tang Industrial Park in Wenshan City, Yunnan province. Meanwhile,

1.6 million mt/yr alumina project of Guangxi Huayin Alumina Co.,Ltd had finished

On 18th June, the project had finished and went into production, which has been built for 3 years, including 4 product lines.

The first-stage construction had the of 1.6 million mt/yr capacity alumina and had static investment RMB 8.5 billion, including functions of mine exploitation and producing alumina. This project is the biggest and having the most investment for one time in history.

On 23th May 2005, the project was approved by National Development and Reform Commission.

On 18th June 2005 it was started to be built.

On 28th December 2007, the first product line went into production.

On 31st May 2008, the fourth product line went into production.



Brand show

Company	Brand
Shanghai Chlor-Alkali Chemical Co., Ltd	
Yibin Tianyuan Group Co., Ltd	
Xinjiang Tianye (Group) Co., Ltd	
Tianjin Dagou Chemical Co., Ltd	
Sinopec Qilu Co., Ltd	
Juhua Group Co.	

WATER)				
APPARENT DENSITY(G/CM ³ MIN)	0.50	0.53	0.54	0.55
VCM CONTENT	10PPM MAX (8ug/g MAX)			
PACKAGE	25KGS/PAPER PLASTIC BAG,16.5--17MTS/20'FCL 600KGS/ BIG BAG 12MTS/20';24MTS/40'FCL			

CAUSTIC SODA FLAKES/PEARL 99%		
CONTENT	NaOH	99%MIN
	NaCl	0.05%MAX
	Na ₂ CO ₃	0.5%MAX
	Fe ₂ O ₃	0.005%MAX
CAUSTIC SODA PEARL (SIZE:1.0-1.6MM;1.6-3MM)		
CONTENT	NaOH	99%MIN
	NaCl	0.03%MAX
	Na ₂ CO ₃	0.05%MAX
	Fe ₂ O ₃	0.008%MA
PACKING:25KG/BAG 22-24MTS/20'		

BEIJING ENJOY PIONEERING ECONOMIC & TRADE CO., LTD
5D GUOBIN BUILDING JIUXIANQIAO ROAD, BEIJING, CHINA
INDUSTRIAL AND COMMERCIAL BANK OF CHINA, BEIJING MUNICIPAL BRANCH, BEIJING, PRC
NO.2 SOUTH FUXINGMEN ROAD, TIANYIN MANSION, BEIJING, PRC, 100031
A/C: 0200003509000041835
SWIFT CODE: ICBKCNBJBJM

Business

Beijing Enjoy Pioneering Economy & Trade Co., Ltd., is a company of Imp. & Exp. Business. We cooperate with many domestic Chlor-Alkali manufacturers in China, our main export products are: **PVC RESIN and CAUSTIC SODA.**

Our main partners:(also the export supply goods base)

- **SHANGHAI CHLOR-ALKALI CHEMICALS CO., LTD.**
- **YIBIN TIANYUAN GROUP COMPANY LIMITED**
- **XINJIANG TIANYE CO., LTD.**
- **XINJIANG ZHONGTAI CHEMICAL CO., LTD.**
- **TIANJIN CHEMICAL PLANT**
- **TIANJIN DAGU CHEMICAL CO., LTD**

Main chemicals for export:PVC RESIN;CAUSTIC SODA FLAKES/PEARL

PVC RESIN (ETHYLENE PROCESSED & CARBIDE BASED)

TYPE	SG-3	SG-5	SG-7	SG-8
APPEARANCE	WHITE POWDER			
AVERAGE POLYMERIZATION DEGREE	1300	1000	800	700 (+/- 50)
K-VALUE	72-71	68-66	62-60	59-58
VOLATILE CONTENT(INCLUDING	0.4%MAX			



Technology

The technology conference on caustic soda industry was held in Shanxi successfully

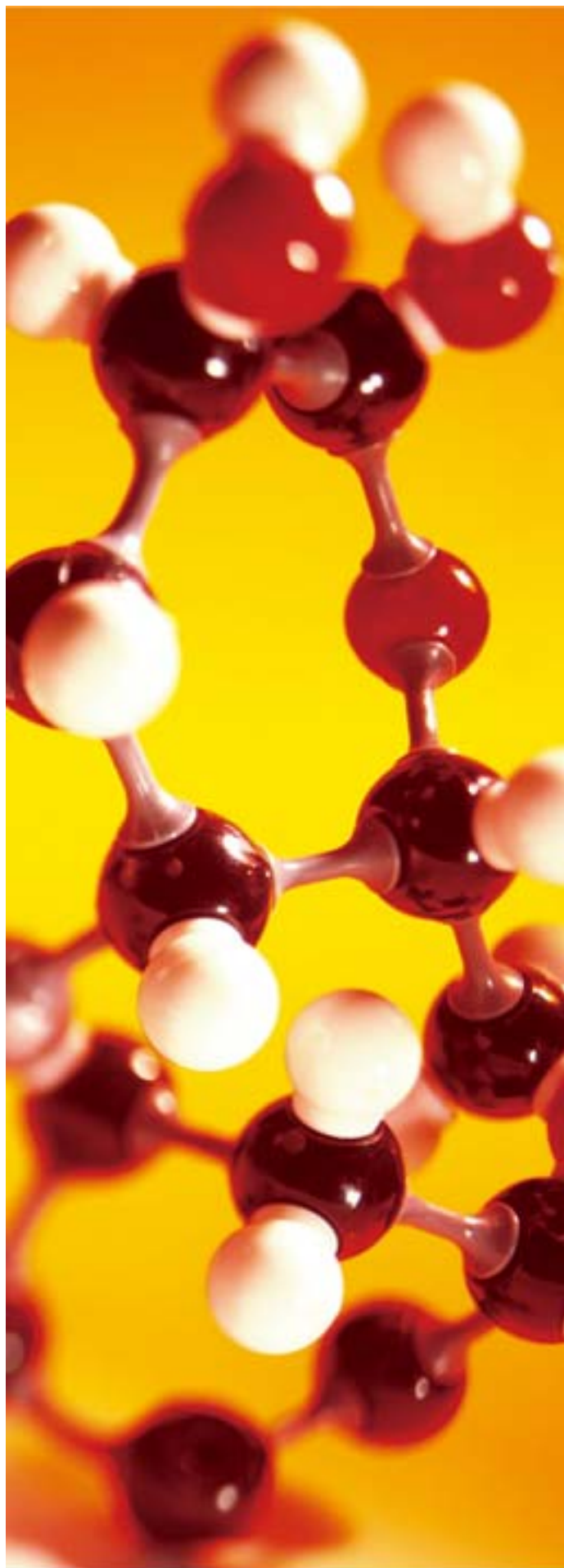
The annual technology conference on Caustic soda sponsored by CCAIA was held in Shanxi on 13th June this year. There were almost 130 chlor-alkali companies and over 100 equipment manufacturers, 380 delegates attending this conference.

The conference by topic

- ***Ion-exchange membrane*** (ASAHI KASEI, AGC CHEMICALS, DUPONT)
- ***Ion-exchange membrane electrolyzers*** (BEIJING BLUE STAR, ASAHI KASEI)
- ***Electrode maintenance*** (DENORA)
- ***The filtration technology of getting rid of impurity in salt solution*** (Hyflux, Shanghai Xi'en, Jiangsu Jiuwu, Rohmhaas, Gore, Pall)
- ***The technology on dealing with chlorine and hydrogen***
- ***The evaporation technology*** (Bertrams)
- ***Recycled Sulfuric Acid for Chlorine Drying*** (Bertrams)
- ***DCS system for chlor-alkali production*** (SPUCON)
- ***Online system of detecting instrument in chlor-alkali industry*** (FPI)
- The packing technology on (L & S)caustic soda and liquid chlorine (Dalian Kehuan)

Several reports have been made by Chinese chlor-alkali producers, introducing the managing and operating experience. In addition, Asahi Kasei also introduced its experience on safety issue of chlorine production and emergency measures for dealing with chlorine accident.

If you are interested with caustic soda production technology and want more detailed information, please contact with us, allenzhang@ccaon.com.



Dialogue

REACH regulation became effective, Chinese companies are groping their way

Special visit on Ms. Zhuying, REACHLaw China Co. Ltd General Manager

Reporter: CCAON



(Ms. Zhuying)

CCAON: EU chemicals legislation REACH law entered into force on 1 June 2007. Could you explain what the function of Pre-Registration in the process of Registration of REACH?

Ms. Zhu: The available date of Pre-Registration is from 1 June 2007 to 1 December 2009. According to REACH regulation, from 1 June to 1 December 2008, phase-in substance must be pre-registered, and then the Chinese exporters have pre-registered could get a temporary period determined by the substance and the export volume to EU. If the company did not take part in the pre-registration, its product also could export to EU from 1 June to 30 November this year, but after 30 November once EU would find the substance has not be pre-registered, this exporter should be punished. In addition, once the deadline of pre-registration is over, any substance of non pre-registration could not export to EU.

Through the pre-registration, registrant could get a temporary period of 2.5 years, 5 years and 10 years in terms of the volume of substance. And during this period, the registrant could share the database information of substance with other registrants who have pre-registered the same substance. And they could share the registration cost and decide the testing scheme. As a result, the pre-registration is simple, and it needs the information of registrant and substance, CAS of substance and so on.

However, many domestic chemical producers misunderstood the pre-registration. They only thought that they could buy a period of two-years through the pre-registration, and they also could export to EU in this

period unrestrictedly. Sources from ECHA expressed that the registrants have completed pre-registration must decide whether take part in the registration before the SIEF founded. Only the registrants could stay in the SIEF, and non-registrants of SIEF who have taken part in the pre-registration would lose the export right to EU.

At present, ECHA has not declared the explanation, and China REACHLaw Company will keep eyes on the further movement.

CCAON: The Body of registrant restricted by REACH must be EU corporation and natural person, so the non EU exporter how to complete the pre-registration and registration work?

Ms. Zhu: According to REACH regulation, the registrant must be a legal entity in the EU, contained in the scope of manufacturers, importers and Only Representative of non-EU manufacturers in EU. As for the Non-EU importers, they could register by three ways. One is to found a corporation in EU in order to keep secret of information and control import chain. Second is the importers in EU being in charge of registration. However, there maybe more limitations for Non-EU manufacturers, such as the offtakes will be controlled by importers. Third is to choose OR as registrant.

CCAON: Could please introduce us current response to REACH from China and other non-EU manufacturers?

Ms. Zhu: In general, the chemical manufacturers are all keeping an eye on pre-registration all over the world presently. However, official sources from ECHA showed that only more than 1,000 companies have pre-registered. It is estimated that over 30,000 companies in EU should take part in pre-registration. This phenomenon is mainly due to the lack of experiences for responding to REACH and the heavy wait-and-see attitude.

The manufacturers and importers in EU have prepared the pre-registration in advance, and several main manufacturers have begun to collect substance information database in order to get a big room in SIEF.

At present, In China most manufacturers and consulting companies are in the midst of exploring period of getting more experiences. Especially they are cautious to choose OR. Most domestic potential registrants are considering that they expect to get an interim through the pre-registration. In addition, many consulting companies that could help Chinese manufacturers and importers to pre-register REACH have emerged in China. And how to choose a powerful consulting company is a main issue facing domestic manufacturers and exporters.

CCAON: As the registration of REACH needs lots of labor cost and financing cost, domestic potential registrants are paying more attentions on "Joint Submission", which could reduce cost. Could you tell us what is the meaning of Joint Submission and

the potential obstacle in real operation?

Ms. Zhu: As for the same substance needed to be registered, REACH requests that non-EU manufacturers, importers and OR should together submit substance information with other EU manufacturers, importers and OR, and this is Joint Submission, which is explained definitely.

However, the Joint Submission was misunderstood in China. Some domestic companies expect to unite to register one substance and get a submission number. Firstly, this operation using one same submission number is not admitted by REACH. And in the real procedure, OR and all relevant clients are under great illegal risk. Secondly, as some companies use one same submission number, their all business in EU must be dealt with by the actual owner (OR or found a company in EU). And this will result in their clients information opening to other companies. Finally, once one partner's products emerging quality problem causes an obstacle of using submission number, others partners' export business to EU would be impacted directly.

For considering to reduce registration cost of domestic manufacturers, REACH Law China created a service mode, federation submission. The companies that want to register one same substance could cooperate with one same OR in EU, and this OR could be deputized for some companies to get more profit in SIEF. And then these companies only need to share the total cost. In addition, these companies could get their own submission number.

CCAON: As the REACH is still amended, is there any change in the executer period in the future?

Ms. Zhu: Sources from EU indicated that REACH is still amended, even new explanation is announced every month. On the other hand, the schedule time of REACH has been defined in law. Although there is a possibility of amending law in theory in order to change schedule time by applying to European Parliament, it is so complicated to amend in actual operation.

The impact on global chemical industry exerted by REACH is still elusive. This uncertain factor is mainly representing in registration. For example. SIEF is a public place for global manufacturers expressing their opinions. And some advices formed in SIEF could be a guidance of estimating index.

END

