HEBEI NINGJIN SALT CHEMICAL INDUSTRY PARK

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Introduction to Hebei Ningjin Salt Chemical Industry Park

Hebei Ningjin Salt Chemical Industry Park is located in south central of Hebei Province, which has planning area of 20.7km², belonging to provincial-level development zone of Hebei Province. Ningjin County where the park locates has gross area 1,046km², population 730,000, which has become the advantaged feature industrial base of photovoltaic new energy, electric wire and cable, textile and clothes and deep processing of food in the north of China. In 2010, it accomplished gross regional product 12.6 billion yuan, directly introduced foreign investment USD 60 million, total foreign trade value USD 590 million and financial revenue 1.21 billion yuan, which is the first batch of national opening-up county and first batch of power expansion county in Hebei Province. Through prospecting, Ningjin County contains abundant high quality rock salt resources, which is the largest rock salt mineral reserve has been discovered in China.

1. Develop the advantages of salt and coal chemical industries

(1) The resource advantages of rock salt, coal, methanol, benzene and other chemical raw materials are obvious.

Rock salt resources: Northeast of Ningjin County contains 100 billion tons of abundant rock salt resources. Salt mine resources cover an area over 400km², with thickness 100-300m, burial depth about 2,800m, content of sodium chloride over 92%, content of calcium sulfate less than 5%, belonging to rare high grade ore in China, especially suitable for developing sodium carbonate chemical industry and chlor-alkali chemical industry.

Coal resources: Periphery of Ningjin has ample coal resources. Xingtai City, 90km from the park, has recoverable reserves about 470 million tons, annual production of raw coal about 12 million tons; Handan City, 150km from the park, has recoverable reserves about 7.66 billion tons, annual production of raw coal about 25 million tons. It is 200km from Ningjin to coal producing areas of Shanxi Province, so Ningjin has geographical advantage of transporting coal in the west to east regions.

Methanol and benzene resources: Xingtai City where Ningjin County is located is coal chemical industry base of Hebei Province, methanol and benzene has formed large industrial scale. Annual output of methanol within surrounding 100km is more than 1 million tons and benzene over 150,000 tons, organic combination with chlor-alkali chemical industry in the park can be realized.

(2) Advantages of park location, product market and cost are obvious.

Location advantage: Ningjin Salt Chemical Industry Park is 80km from Shijiazhuang, capital of Hebei Province, and 40km from Beijing-Zhuhai Expressway and Beijing-Guangzhou Railway, close to 308 National Road and Qingdao-Yinchuan Expressway, 393 Provincial Road (Xiyang, Shanxi-Zhengkou, Hengshui, Hebei) crosses through the park. Park railway branch proposed to be built connects Handan-Huanghua Railway (Handan-Huanghua Port). The traffic is convenient and transport cost is low. Round trip

from Ningjin to Beijing, Tianjin, Jinan, Qingdao, Zhengzhou and Taiyuan can be realized in one day.

Market advantage: Ningjin County is located in south central regions of Hebei Province; the regions are joining areas of North China, northwest, East China and other several major economic zones. Its surrounding 350km area covers Beijing-Tianjin-Hebei Metropolitan Circle, as well as Shandong, Henan and Shanxi Provinces, population over 200 million. It has centralized essential production factors, abundant resources and active economy, belonging to Chinese northern most centralized consumption market and having tremendous demand for various chemical products and building materials.

Cost advantage: Depend on local high quality and abundant rock salt resources and coal resources, adopt vacuum salt with purity over 99.2% produced with quintuplicate effect vacuum evaporation technology, its purity is 7% higher than that of sea salt; cost of full-bittern caustic soda per ton is over 320 yuan cheaper than that of caustic soda made from sea salt, providing powerful low cost support for Salt Chemical Industry Park to develop sodium carbonate downstream, chlor-alkali downstream and fine chemical products, and improving comprehensive competitiveness of the products in the park.

(3) High attention of provincial and municipal governments highlights the policy advantage of park.

According to the development of salt mine resources in Ningjin and construction of Salt Chemical Industry Park, provincial governor came to Ningjin twice for investigation and proposed the requirements of "transforming resource advantages into economic advantages and developing advantages", and proposed to accelerate implementation of salt chemical industry project of Ningjin in Provincial Government Work Report for two consecutive years. Hebei Provincial Government approved Overall Park Development Plan and Industrial Development Plan as a special case, enabling Salt Chemical Industry Park to comprehensively enjoy the supporting policy given by provincial and municipal governments. Provincial Department of Land Resources approved 10km² of park construction land plan. Provincial Department of Water Resources formulated water supply program for the park and approved water utilization indicator. Beijing Railway Bureau has approved the program of railway branch in the park connecting from Handan-Huanghua Railway. Self-contained thermal power plant project of park will be implemented together with projects entered into park. Provincial Bank of China, China Construction Bank and Industrial and Commercial Bank of China have promised to provide 35 billion yuan of financing credit aid for park projects.

2. Planning and implementation of current park projects

According to Overall Development Plan and Industrial Development Plan for the park approved by provincial government, the park sticks to concept of circular economy, adopts development pattern of "integration of upstream and downstream of product chain", positions as green ecological park, circular economy park, feature industry park, mainly develops three industrial chains including chlor-alkali chemical industry, sodium carbonate chemical industry and carbon chemical industry, which has planned 50 industrial key projects, and the scale overall investment of industrial projects, utilities and infrastructure is around 80 billion yuan. It takes construction of domestic first-class chemical industry park as goal, plans to establish the largest salt chemical industry base in North China in 10 years.

Road network main road with length 8.06km and width 80m in the park will be completed in August 2011, "Nine accesses and one leveling" of the park has been comprehensively implemented. Huining Chemical Industry Co., Ltd. jointly established by Ningjin County Government and Jizhong Energy Group has started prospecting and mining engineering; Jizhong Energy Group has determined to invest 10 billion yuan to construct sodium carbonate with annual capacity 1 million tons, 300,000t caustic soda, 250,000t methyl chloride, 100,000t epoxy chloropropane and other projects. At present, sodium carbonate and caustic soda projects have been put on records, and are looking for strategic cooperative partners; 1.2 million tons vacuum salt production and national salt reservoir projects invested and constructed by China National Salt Industry Corporation will be implemented soon; China Power Investment Corporation and China Metallurgical Corporation have reached cooperative agreement concerning investment of thermal power plant and sewage treatment plant; deep processing project proposed to be invested by Samsung Corporation, Dupont America and other domestic and foreign famous enterprises is under demonstration and commercial negotiation.

In order to further speed up investment attraction of park and attract strategic investors to attend the park development and construction, Preferential Policy for Investment Attraction of Hebei Ningjin Salt Chemical Industry Park has been formulated, and part of investment attraction projects of park have been planned for investor's reference.

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Attachment: 1. Major Recommended Projects of Salt Chemical Industry Park 2. List of Projects Planned in Hebei Ningjin Salt Chemical Industry Attachment 1:

Major Recommended Projects of Salt Chemical Industry Park

1. Project of 1,000,000t/year Sodium Carbonate

Project Advantage Target market of this project is Shahe City and Xingtai City close to Ningjin County, these two places are important glass production bases in China, having a large batch of extra large glass production enterprises such as Shabo Group, Jingniu Glass, etc. Annual capacity of glass is around 120 million weight cases, accounting for over 18% of national total output, annual demand of heavy sodium carbonate exceeds 1.2 million tons. Taking Shahe City and Xingtai City as center, there is not any large sodium carbonate production enterprise within 300km effective transport radius. At present, over 95% of sodium carbonate required by glass industry in Shahe City and Xingtai City is supplied by Henan Jinshan Group, Shandong Haihua Group and Tangshan Sanyou Group. For the construction of sodium carbonate project of Ningjin Salt Chemical Industry Park, the products produced have competitive advantage of over 100 yuan per ton compared with currently most competitive Henan Jinshan Group only in the aspect of cost. After park project is put into production, regional competitive strength will be formed. This project also produces 1 million tons of ammonium chloride, forming project of supporting 2 million tons of compound fertilizer, which is able to meet the demand of surrounding agriculture.

Production Process This project adopts combined-soda process, which is Chinese unique Hou's soda producing production process, producing 1 ton of sodium carbonate while co-producing 1 ton of ammonium chloride.

Investment Analysis This project consists of 1.2 million tons/year vacuum producing salt, 400,000t/year synthesis ammonia, 1 million tons/year strong gas soda producing, 1 million tons/year ammonium chloride and supporting 2 million tons/year compound fertilizer. Overall investment of project is about 5 billion yuan, project construction period is 3 years. According to analysis of current market price and price of raw materials, after the project is completed and put into production, it can realize annual sales income about 11 billion yuan and after-tax profit about 700 million yuan.

Project Progress At present, this project has been put on records. Jizhong Energy Group is seeking for cooperative partners.

2. Project of 600,000t/year Caustic Soda

Project Advantage Ningjin has lots of underground rock salt resources, large reserves, high purity, and belonging to calcium salt type. The mined bittern can reach the quality requirement of first grade saturated bittern as long as it is simply refined. This project uses full-bittern process to produce caustic soda, compared with producing soda with sea salt and other kinds of solid salt, unit cost can be reduced over 300 yuan. Meanwhile, Ningjin County and surrounding areas have huge demand for caustic soda and chlorine, at present, nearly it is all supplied by caustic soda production enterprises of Hengshui City and Cangzhou City, and all of these enterprises produce soda with sea salt. In the aspect of caustic soda, annual consumption of caustic soda of Yufeng Group, Jianmin Starch Group, Xingda Chemical Industry Group, Ningfang Group and Jinglong Fengli Chemical Industry Company in Ningjin County exceeds 100,000t, Jinzhou City adjacent to Ningjin County is Chinese biggest cellulose ether production base, with annual demand of caustic soda more than 150,000t, adjacent Baixiang County has developed papermaking industry, demand for caustic soda is about 100,000t. In the aspect of chlorine consumption, Xingda Chemical Industry Group Company in Ningjin County possesses project of 60,000t/year chloroisocyanuric acid, with annual demand of chlorine 60,000t; Xinji City adjacent to Ningjin has over 10 chlorine fossil wax production enterprises, annual chlorine consumption is more than 100,000t; 20t/year methyl chloride project planned by the part has annual consumption of chlorine over 160,000t; peripheral chloroacetic acid production enterprises have annual consumption of chlorine about 100,000t. Therefore, the implementation of caustic soda project in Ningjin Salt Chemical Industry Park will bring about enormous cost and market advantage.

Production Process Full-bittern electrolysis with ion-exchange film process.

Investment Analysis Overall investment of this project is about 2 billion yuan. After the project is completed and put into production, it can realize annual production value about 2.5 billion yuan and after-tax profit about 600 million yuan.

Project Progress At present, this project has been put on records. Jizhong Energy Group is seeking for cooperative partners.

3. Project of 100,000t/year Methyl Chloride

Project Advantage Methyl chloride is mainly used for production of Class A chlorosilane and other organosilicon compound, which is also used for production of cellulose ether, silicone, etc. Jinzhou City and Gaocheng City adjacent to Ningjin are main methylcellulose ether production bases in China, with annual capacity of cellulose ether over 200,000t, annual consumption of methyl chloride over 240,000t, and annual consumption of caustic soda over 200,000t. At present, supply of local methyl chloride is all from Changzhou Jiangsu, Jiaxing Zhejiang, Chengdu and Chongqing, resulting in expensive freight and very big traffic safety problem. Construction of methyl chloride project in Ningjin Salt Chemical Industry Park can effectively utilize cheap chlorine source in the park and peripheral methanol resources, having obvious product competitive advantage.

Production Process This project adopts gas-solid phase reaction process of methanol and hydrogen chloride, yield of methane chloride is more than 99%, having mature process, safe and environmental friendly. 100,000t/year methyl chloride project has annual consumption methanol about 70,000t and annual consumption chlorine about 80,000t.

Investment Analysis Overall investment of this project is about 400 million yuan. After the project is completed and put into production, it can realize annual sales income about 560 million yuan and profit about120 million yuan.

Project Progress The Board of Director of Jizhong Energy Group has been decided to implement this project and is seeking for cooperative partners.

4. Project of 100,000t/year Organosilicon Monomer

Project Advantage Organosilicon monomer is the raw material for producing silicone oil, silicon rubber, silicon resin, silane coupling agent and other organosilicon compound. Due to its unique structure has characteristics of both inorganic materials and organic materials, organosilicon has many excellent features like antioxidant stability, weather resistance, flaming retardant, non-toxic, electrical insulation, physiological inertia, etc. It is widely used in aviation, aerospace, construction, transport, chemical industry, textile, food, light industry, medical treatment and other industries. As organosilicon quantity and varieties constantly increase, the application fields have been continuously expanded, forming a unique and important product system in the field of new chemical materials. Many varieties are essential and cannot be replaced by other chemicals. Organosilicon monomer is the foundation of the entire organosilicon industrial chain, Chinese consumption of organosilicon increases by 20% per year, demand of domestic organosilicon monomer market is enormous.

This project is downstream product of methyl chloride project in the park, which can make local methyl chloride products transform and update locally to strengthen the comprehensive competitiveness of two projects.

Investment Analysis Overall investment of this project is about 900 million yuan. After the project is completed and put into production, it can realize annual sales income about 1.2 billion yuan and profit about 200 million yuan.

5. Project of 100,000t/year Viscose

Project Advantage Viscose has many advantages including strong moisture absorption, easy dying, static resistance, easy spinning, soft textile after processing, bright color, comfortable wearing, etc. It is widely used in textile and clothes industries. Ningjin and Shijiazhuang have developed textile industry, annual viscose consumption of Ningfang Group, Hengfang Group of Ningjin County, Changshan Textile Group of Shijiazhuang and other enterprise exceeds 150,000t, and market prospect is quite broad. Main raw material for producing viscose is cotton flock and caustic soda. Production capacity of cotton flock within 100km of Ningjin periphery is over 150,000t, which is able to provide sufficient raw material for this project. Production of 1 ton of viscose consumes caustic soda about 2 tons, this project can consume 200,000t caustic soda every year, enabling most of products of 300,000t/year caustic soda project to be transformed and appreciated locally and jointly exerting advantages of two projects.

Investment Analysis Overall investment of this project is about 900 million yuan. After the project is completed and put into production, it can realize annual sales income about 1.3 billion yuan and profit about 200 million yuan.

6. Project of 100,000t/year Epoxy Chloropropane

Project Advantage Epoxy chloropropane is mainly used for producing epoxy resin, synthetic rubber, which is the intermediate of pesticide, medicine and dye as well, it can also be used as solvent and plasticizer of cellulose ester, ether and resin, the application is very wide. This project adopts glycerol process to produce epoxy chloropropane, compared with propylene process production, the cost difference is about 3,000 yuan/t. production of 1 ton of epoxy chloropropane consumes chlorine about 400kg, construction of epoxy chloropropane equipment in Ningjin Salt Chemical Industry Park can fully utilize cheap chlorine generated from 300,000t/year caustic soda equipment, which can avoid expensive expenses for transporting liquid chlorine and safety harm of transport. Annual consumption of chlorine about of this project is 50,000t.

Investment Analysis Overall investment of this project is about 1 billion yuan. After the project is completed and put into production, it can realize annual sales income about 1.3 billion yuan and profit about 230 million yuan.

7. Project of 150,000t/year Bisphenol A

Project Advantage Bisphenol A is important organic chemical raw material and important derivative of phenol and acetone, which is mainly used for production of polycarbonate, epoxy resin, polysulfone resin and many other high molecular materials, also able to be used in production of plasticizer, fire retardant, antioxidant and other fine chemical products. With constant development of downstream products, Chinese existing production equipment have not been able to meet the market demand, annual import volume is more than 600,000t. Both Beijing Yanshan Petrochemical and Tianjin Petrochemical near Ningjin County can supply raw materials for production of bisphenol A as well as raw materials for epoxy resin project planned for the park.

Investment Analysis Overall investment of this project is about 950 million yuan. After the project is completed and put into production, it can realize annual sales income about 2 billion yuan and profit about 280 million yuan.

8. Project of 200,000t/year Epoxy Resin

Project Advantage Due to the excellent characteristics of epoxy resin, its scope of application has involved all fields of national economy development. China is the biggest consumption country in the world, at present, there are more than 100 epoxy resin manufacturers in China, however, except small number of manufacturers in Yueyang and Wuxi, most of manufacturers have small scale, single mark and variety, backward equipment and low quality. High quality products are mainly imported. Chinese epoxy resin production plants are all centralized in southern areas, but main consumption market is centralized in the north. Main raw material of epoxy resin is bisphenol A and epoxy chloropropane, so construction of epoxy resin project in Ningjin Salt Chemical Industry Park can fully exert project advantage of bisphenol A and epoxy chloropropane, having obvious competitive advantage.

Investment Analysis Overall investment of this project is about 1.5 billion yuan. After the project is completed and put into production, it can realize annual sales income about 4.6 billion yuan and profit about 400 million yuan.

9. Project of 60,000t/year Chlorination Process Titanium White

Project Advantage Chemical name of titanium white is called titanium dioxide, which has high level of chemical stability, thermal resistance, weather resistance, good whiteness, tinting strength and covering power, belonging to one of the most important inorganic pigment and chemical raw materials. Pigment-level titanium white is mainly applied in paint, papermaking, plastics, rubber, printing ink, chemical fiber and other industries, non pigment-level titanium white is mainly used in enamel, capacitor, welding rod, etc.

Production methods of titanium white industry include sulfuric acid process and chlorination process. Chlorination process has high product quality, short process flow, small floor area, high level of automation of operation, chlorine recovery, little quantity of three wastes, easy treatment and other advantages, which has become the leading process for production of titanium white. This production process is in conformity with national industrial policy. Titanium white production with chlorination process needs large quantity of chlorine, 300,000t/year caustic soda project planned to construct in the park will provide this project with sufficient cheap chlorine resources and titanium slag, and will reduce the production cost of this project. Construction of chlorination process titanium white project in Salt Chemical Industry Park has tremendous competitive advantage.

Analysis of Investment Benefits Total investment of 60,000t/year chlorination process titanium white project is about 600 million yuan, annual average sales income 972 million yuan, annual average profit and tax amount 138 million yuan, annual average profit 96 million yuan, investment tax rate 23%, and profit rate 16%.

Attachment 2:

(10,000t/year, 10,000 yuan) Equipment Added Floor No. Scale Total Sales Tax Sum Profit Name Investme Sum Value Area of Income nt Project Phase 1 Combined soda 42.27 producing Synthetic 29.65 helium (including combined alcohol) 46.01 Caustic soda Methane 10.05 chloride Organosilicon 9.17 monomer Cellulose ether 5.13 8.21 Epoxy chloropropane viscose 12.4 NPK 25.96 compound fertilizer 4.53 Sodium percarbonate 4.21 Soda Granule 5.5 ammonium chloride Silicone oil 12.7 Silicon rubber 13.84 HFC-32 9.52 HFC-125 9.73 Green 5.55 refrigerant 8.6 chlorination benzene

List of Projects Planned in Hebei Ningjin Salt Chemical Industry Park

No.	Equipment Name	Scale	Total Investme	Sales Income	Tax Sum	Profit Sum	Added Value	Floor Area of
			nt					Project
19	Nitrochloroben zene	5	12000	20000	3183	2160	4540	4.51
20	Benzyl chloride	2	5800	15000	2146	1624	3060	4.51
21	Phenylacetic	1	6286	15000	2000	1379	2949	7.73
22	Chlorotoluene	2	6000	17500	1920	1440	2849	8.38
23	Chlorination process titanium white	6	60000	97200	13800	9600	18586	10.21
24	Chloroisocyanu ric acid	2	11973	20000	2926	2187	4467	9.47
25	Chlorinated polyethylene	4	18058	43290	4069	2328	5659	8.83
26	Hydrogen peroxide	15	13620	16500	4857	3522	6425	10.11
27	Stratiform crystallized sodium silicate	5	7000	11000	1900	1500	2700	5.41
28	Sodium metasilicate	5	8000	12000	2000	1600	3733	5.41
29	Hydrogen nitrate	10	15993	14500	4493	3011	6135	9.62
30	Aniline	5	15000	32500	4500	2700	5971	9.62
31	Methanol	20	22564	52000	6156	4065	9260	15.43
32	Paraformaldehy de	3	8250	16500	1805	1174	2894	4.3
33	Phenolic resin	2	4726	8000	1769	1456	2607	14.38
34	Urea formaldehyde resin	3	15485	21000	6140	4553	8972	14.38
35	Dimethyl carbonate	4	27095	32800	6738	4710	9173	20.11
36	Polymeric aluminium	5	3500	14000	2000	1250	2750	23.4
	Total		1293344	1955325	328877	229519	447608	447.84
2	Phase 2							
1	Combined soda producing	200	335752	593000	86580	61684	115895	84.44
2	NPK compound fertilizer	100	18618	140000	2905	2558	5708	25.96
3	Sodium percarbonate	5	8000	17500	1700	1300	2867	4.53

No.	Equipment Name	Scale	Total Investme nt	Sales Income	Tax Sum	Profit Sum	Added Value	Floor Area of Project
4	Soda	5	2800	6000	800	580	1533	4.53
5	Caustic soda	60	197025	193830	51227	37435	65362	75.89
6	Organosilicon monomer	10	95000	118505	34005	20403	41291	9.17
7	Silicone oil	1	6000	40000	3000	2100	3729	12.7
8	Silicon rubber	2	6500	72000	2200	1540	2964	13.84
9	Trichlorosilane	16	220000	284160	70680	53360	85252	45.38
10	Polysilicon	1	942306	770000	379965	228661	455629	50.21
11	Fumed silica	2	54000	60000	20000	14000	25858	41.9
12	Methane chloride	8	47094	44600	9741	6749	13605	10.05
13	HFC-32	1	6800	25000	3400	2400	4386	9.52
14	HFC-125	1	15913	41000	5150	3675	6787	9.73
15	Green refrigerant	2	19000	74000	6000	4300	7857	5.55
16	Benzyl chloride	2	5800	15000	2146	1624	3060	5.47
17	Phenylacetic acid	1	6286	15000	2000	1379	2949	7.73
18	Chlorotoluene	2	6000	17500	1920	1440	2849	8.83
19	Chlorination process titanium white	10	100000	162000	23000	16000	30976	17.05
20	Chloroisocyanu ric acid	2	11973	20000	2926	2187	4467	9.47
21	Polyvinyl chloride	30	66020	195000	11880	8580	17096	45.37
22	Cement produced with carbide slag	80	21130	17600	3349	2416	5358	65.2
23	Viscose	10	90000	124600	24300	17700	31229	12.4
24	Stratiform sodium silicate	5	7000	11000	1900	1500	2700	5.41
25	Sodium metasilicate	5	8000	12000	2000	1600	3733	5.41
26	Synthesis ammonia	80	389892	200000	40202	33271	59936	31.1

No.	Equipment Name	Scale	Total Investme nt	Sales Income	Tax Sum	Profit Sum	Added Value	Floor Area of Project
27	Hydrogen nitrate	10	15993	14500	4493	3011	6135	9.62
28	Aniline	5	15000	32500	4500	2700	5971	9.62
29	Polycarbonate	10	187367	210000	69643	53385	83526	35.01
30	Methanol- producing propylene	40	297307	540000	66925	49790	88594	37.51
31	Phenol acetone	20	98717	162080	23765	16712	31316	12.07
32	Bisphenol A	15	94107	172500	17015	11204	24237	12.07
33	Epoxy resin	4	29927	80000	6423	4280	9061	15.57
34	Epoxy propane	20	181440	250000	47655	32437	61281	17.71
35	Polyether	10	50350	130000	15715	10938	19811	11.43
36	Polyurethane combined material	2	34690	46000	9500	6620	12478	15.31
37	Carbon dioxide degradable plastics	10	76248	129167	20867	13775	26731	19.41
38	Polymeric aluminium	5	3500	14000	2000	1250	2750	23.4
	Total		3771555	5050042	1081477	734544	1374967	835.57
	Grand Total		5064899	7005367	1410354	964063	1822575	1283.41