State EIA Certificate

Ref No: #3205A

Dazhou Dazhu Koyo Chemical Co., Ltd.

Project of 400 kta Synthetic Ammonia and 450kta Urea

Environmental Impact Assessment

(Abstract)

Sichuan Research Institute of Environmental Protection

August, 2008, Chengdu

I Project Background

Dazhou Dazhu Koyo Chemical Industry Co., Ltd.（"Koyo"） is a wholly owned enterprise, invested by HK Koyo Development Co., Ltd through the acquisition of original Dazhu Ammonia Fertilizer Factory in 2004. It is located at Bolin Town, Dazhu County, Dazhou,Sichuan, with a coverage of 119,400m^2, total floor space of 50,100m^2 and fixed assets of RMB44 million. There are over 550 employees (including 1 with senior professional title, 11 with intermediate professional titles, and 30 with junior professional titles) in the company. Dazhou Koyo (Bolin Branch) has a production capacity of 60kta synthetic ammonia, 80kta urea and 120kta ammonium bicarbonate.

Dazhou Koyo intends to make use of the abundant natural gas resources available in Dazhou, Sichuan Province to expand the production by setting up a Greenfield 400kta ammonia/ 450kta urea plant (hereinafter "the Project") and produce commodity urea for the market.

The Project belongs to those encouraged and supported of the state and complies with the related industrial policies. In 2006, Sichuan Provincial Department of Commerce issued File [2006]#82 OFFICIAL APPROVAL OF CAPITAL INCREASE OF DAZHOU KOYO CHEMICAL CO., LTD., and LETTER OF CONFIRMATION ON DOMESTIC AND FOREIGN PROJECTS ENCOURAGED BY THE STATE (2006-7-2500002) to permit the Project, the total investment of which is about RMB 766,409, 800.00.

The Project is located at Group 3, Baihuacun Village, Heshi Town, Daxian County, Dazhou, Sichuan Province ("the site"), with a land coverage of about 460 mu. The Site is within the general chemical product region of Dazhou Natural Gas Chemical Industry Park ("the Park"). Dazhou Planning and Construction Bureau has approved the selection of the Site in File [2006]#34 *Permission Notes for Location.* The Project is constructed in compliance with the state industrial policies as well as Dazhou urban planning and the planning of the Park. It may yield considerable social and economic benefits.

1 Products and Scale

400kta synthetic ammonia (liquid ammonia), and 450kta urea.

256.5kt out of 400kt liquid ammonia will be internally used for the production of 450 kta urea; 23.5kt will be transferred to the Bolin Branch. The rest 120kt of liquid ammonia will be contracted to Sichuan Hongyu Chemical Co., Ltd which has obtained the State Hazardous Chemicals Business Operation License for distribution. Upon completion of the 2nd phase construction, there will be no redundant liquid ammonia available for outside sales.

2 Process Technology, Equipment, and Scope of Work:

Process & Technology: the energy-saving Kellogg natural gas technology for the ammonia and Stamicarbon CO_2 stripping for the urea.

Imported second-hand equipments from USA: a 400kta synthetic ammonia plant with Kellogg natural gas technology; a 450kta urea plant with Stamicarbon CO_2 stripping process; synthetic ammonia system purge gas unit and steam condensate recovery unit; urea process condensate

hydrolysis unit and stripping recovery unit; a 75t/h and a 86t/h gas boiler; a 5000t liquid ammonia storage tank.

Follow-up construction: packing building, water feed system, chemical water treatment station, water circulating station, nitrogen station, air compressor station, chemicals warehouse, main substation, repair workshop, quality control and analysis building, wastewater treatment station, accident water pit and other utilities and auxiliary devices; office building, the factory canteen and other living facilities.

Natural gas necessary for the Project will be transferred from Puguang Gas Field Purification Plant to the Park. The gas distribution station of the Park is located in Sinopec Qilu Fertilizer Plant 500m northwest of the Project Site. Koyo will build a pipe from the above station to its plant and get the gas.

This Project excludes the construction of road, transportation, water supply, electricity supply, and sewerage pipe etc. out of the boundary.

II Environmental Management Requirement

According to China Environmental Impact Assessment Law, the Project needs to pass the EIA examination. Koyo authorized Sichuan Research Institute of Environmental Protection to make the EIA Report. Sichuan Administration of Environmental Protection issued on May 21st, 2007 in File [2007]#629 OFFICIAL REPLY TO EIA REPORT OF DAZHOU KOYO 400 KTA SYNTHETIC AMMONIA AND 450KTA UREA PROJECT for its approval.

III Energy saving and Clean Production Level

The Project has represented the idea of “Clean Production” in terms of pollutants discharge and energy consumption. Advanced technology and equipment, reasonable layout of process lines, and complete automation control system, as well as a serious of energy consumption measures such as the recycling of the wastes and the exhaust heat have all contributed to a great reduction of energy and material consumption, production cost, and the discharge of pollutants. The pollutants of the Project are all stably discharged within the standard. The original design of energy consumption is 33.23 GJ/t for the ammonia and 0.4 GJ/t for the urea。Later, the Design Institute and the owner adopted MDEA technology to further lower the energy consumption of the ammonia unit to 31.43GJ/t_{NH3}。

The clean production level of the Project is around Class 1 of HJ/T188-2006 Cleaner Production Standard–Nitrogenous Fertilizer Industry (internationally advanced level on clean production).

Meanwhile, the energy consumption of the ammonia plant complies with World Bank EHS Guideline for Nitrogen Fertilizer Production Table 3 requirements (28.4~32.0 GJ/$t_{NH3,}$ European Fertilizer Manufacturers Association EFMA (2000) standard); the energy consumption of urea unit complies with World Bank’s EHS Guideline for Nitrogen Fertilizer Production Table 3 requirements (0.4~0.45 GJ/ $t_{urea,}$ EFMA (2000) standard, and EUIPPC (2006)

IV Pollutants and Control

1 Waste Gas

- Ammonia process purge gas, NH_3 storage tanks fugitive emissions;

Adopt the deep refrigeration separation technology to recover H_2 and NH_3 of the purge gas. Ammonia storage tank gas is compressed and condensed to liquid ammonia via friger and the tail gas will all be transferred to the primary reformer as fuel without any direct emissions. In this way, pollution of ammonia to the environment may be effectively reduced, and energy and "the Three Wastes" can be completely taken use of.

-Primary Reformer Flue Gas

With the adoption of the traditional natural gas steam reformer, the flue gas will be vented via 50m-high exhaust stack in accordance with GB9078-1996 Emission Standard of Air pollutants for Industrial Kiln and Furnace.

-Offgas from Urea Synthetic Process

The offgas enters H.P. scrubber and is absorbed by recycled carbamate solution, the inert gas containing small amount of NH_3 and CO_2 enters the absorber for further recovery of ammonia so as to minimize the content of ammonia in the exhaust gas which is vented via 60m-high exhaust stack. The emission velocity (7.4kg/h) complies with Grade II of GB14554-93 National Emission Standards for Odor Pollutants (75kg/h requiring the control of emission velocity only). The emission concentration (6234mg/m^3) can not meet World Bank EHS Guideline for Nitrogen Fertilizer Production Table 1 Air Emissions Levels for Nitrogenous Fertilizers Manufacturing Plants (50mg/m^3).

-Urea Solution Evaporation Offgas

The secondary steam of urea solution evaporation system is transferred to the surface condenser for condensation after pressurization via the ejector. When the non-condensable inert gas is scrubbed, the ammonia in tail gas is vented via 60m-high exhaust stack. The emission velocity (4kg/h) complies with Grade II of GB14554-93 National Emission Standards for Odor Pollutants (75kg/h requiring the control of emission velocity only). The emission concentration (48192mg/m^3) can not meet World Bank EHS Guideline for Nitrogen Fertilizer Production Table 1 Air Emissions Levels for Nitrogenous Fertilizers Manufacturing Plants (50mg/m^3).

- Offgas from Prilling Tower

Istall new prilling spry to ensure the content of urea dust ≤30mg/m^3 over the prilling tower. NH_3 and dust is vented via 87m-high exhaust stack. The dust complies with Grade II of GB16297-1996 Integrated Emission Standard of Air Pollutants Table 2; Ammonia emission velocity (33.8kg/h) complies with Grade II of GB14554-93 National Emission Standards for Odor Pollutants; the emission concentration (60mg/m^3) can not meet World Bank' EHS Guideline for Nitrogen Fertilizer Production Table 1 Air Emissions Levels for Nitrogenous Fertilizers Manufacturing Plants (50mg/m^3).

All the above process offgas can meet World Bank EHS Guideline for Nitrogen Fertilizer Production Table 1 Air Emissions Levels for Nitrogenous Fertilizers Manufacturing Plants (50mg/m^3) with the exception of NH_3 emission concentration. Since the design and

environmental impact assessment were conducted in accordance with relevant laws and regulations of China before IFC investment of the Word Bank, the Project owner has promised to take effective measures to collect emitted NH_3 within two years from the operation of the Project, so as to meet World Bank EHS Guideline for Nitrogen Fertilizer Production Table 1 Air Emissions Levels for Nitrogenous Fertilizers Manufacturing Plants (50mg/m^3).

- Gas Boiler Flue Gas

The two gas boilers are fuelled with the clean energy-natural gas. The flue gas will be vented via 40m-high exhaust stack, which complies with GB13271-2001 Emission Standard of Air Pollutants for Coal-burning Oil-burning Gas-fired Boiler (region II Period II).

2 Waste Water

Process condensate and turbine steam condensate from low temperature shift gas separator and methanation gas separator of the ammonia plant is recovered and treated by the refining machine, and then used as boiler make-up water. There's no discharge to the outside.

Process condensate in the urea plant (containing the non-condensable inert gas scrubbing water) after deep hydrolysis and conversion and containing NH_3, CO gas, is routed back to the production system. The residual water may be used as boiler make-up water after treatment in the chemical water treatment station. There's no discharge to the outside.

The process waste stream and waste water of the Project are all at zero discharge, which eliminates the impact of hazardous substance to the ground water, also the water and raw materials are economically used.

The effluent from the circulation cooling system and chemical water treatment station is clean and may be directly discharged to the rainwater pipe.

Waste water of the Project mainly comes from the sanitary sewage, workshop rinsing water, waste heat boiler and gas boiler (282.7 m^3/d) effluents, and initial storm water in the production units and ammonia tank area. A SBR process-based wastewater treatment unit with capacity of 20m^3/h (480m^3/d) will be built to ensure the wastewater discharge complies with GB13456-2001 Discharge standard of water pollutants for ammonia industry (Table 2 Large-size Enterprises Standard).

The concentration of NH3-N (40mg/L), TSS (50mg/L) of the effluent can not meet World Bank EHS Guideline for Nitrogen Fertilizer Production Table 2 Effluents Levels for Nitrogenous Fertilizers Manufacturing Plants (NH3=5mg/L, TSS=30mg/L). However, the effluent of the Project is not directly drained to the ground surface water, Instead, it flows to the central wastewater treatment plant (CWWTP) of the Industry Park and get treated in accordance with relevant regulations before draining to the surface water- the Zhouhe River.

3 Industrial Solid Wastes

The spent catalysts and desulfurizers replaced from the scheduled turnarounds of the ammonia and urea system will be categorized and collected in iron and wood barrels and stored temporarily in the chemicals warehouse south of the plant, and finally returned to the

manufacturer for regeneration or recovery. The waste molecular sieves belong to the type of general industrial solid waste and will be transferred to the proposed industrial solid wastes yard in the Park for disposal. The wastes are properly handled and make no pollution to the surrounding environment.

4 Noise

The introduced equipments are erected in open air with low sound power levels. Acoustic enclosure made of insulation materials is designed for major equipments causing radiant noise; the silencer is installed in steam and gas vent pipes; the air compressor is equipped with a built-in silencer. All of these help the equipment noise level to be controlled ≤85dB (A) and comply with the noise standard at boundary limit after distance attenuation. The circulation water station and boiler house are reasonably located at the west and south of the plant respectively far from the office building in the layout. With no residents within 200m nearby, the Project will not bother the residents.

5 Total Amount Control

Although the pollutants of the Project can be discharged within the limit, the total amount of discharge cannot be reduced by itself. It needs to be mediated and solved in the region.

The recommended total amount of pollutants for the Project is as the following:

Offgas**:** SO_2 38t/a; dust 210.7 t/a; characteristic pollutant NH_3 361.6t/a, NO_X 466.3 t/a；

Wastewater**:** COD 9.4 t/a, NH_3-N 3.77 t/a;

The above figures have been approved by Dazhou Bureau of Environmental Protection.

CO_2 emission for the ammonia plant: 467kta. The redundancy of liquid ammonia caused of unbalanced capacity of ammonia and urea production results in an extra CO_2 emission of 187kta. The owner promises to build another 300kta urea plant within two years to balance the capacity of ammonia and urea production, and solve the problem of the extra CO_2 emission.

CO_2 emission for gas boiler: 172kta.

V Regional Natural and Social Environment

1 Dazhou Natural Gas Chemical Industry Park

Dazhou Natural Gas Chemical Park(“the Park”) is located in the hilly area east of the Zhouhe River and south of the Huofengshan Hill with a Paper Mill to its north, Shiban to its south, Dazhou-Chongqing Expressway to its east, and the bank of Zhouhe River to its west. The Park lies in the downwind and downstream of urban Dazhou, where Nanwai Town, Binlang Town and Heshi Town of Daxian County meet together, with provincial highway No. 218 crossing its east and the Zhouhe River passing its west from north to south. Close to Daxian gas distribution station, and to the south of Muhe Highway, the Park lies in the outer ring of the city. The planned area of the Park reaches 30km^2, among which 27km^2 has been developed and 4.2 km^2 reserved. The population shall reach 30,000 by 2010 according to the short term plan and 80,000 by 2020 under the long term plan. The Park is 6km away from urban Dazhou and is barricaded by the

Huofengshan Hill and Cuipingshan Hill whose relative height is over100m. No residential zone is planned in the Park, and the houses for employees and the resettlement will be built in a planned area. The Park covers 4 villages of BinlangXiang Town, 5 of Nanwai Town and 5 of Heshi Town involving a total population of 19,484 which is not evenly distributed, with Mugua Village having the largest one of 2422 and Baihuacun Village having the smallest one of 894.

The Park lies in the open bottom of east Sichuan paralleled ridge valley, featuring in hilly terrain, high in the north and low in the south. The area consists of various landforms and topography, including mountains, hills, valleys and plateaus with hills occupying a large portion of it. The land looks fragmentally due to water erosion. The northern part is medium cut while the central and southern parts are lightly cut with gully development, which is usually shallow and wide. According to the altitude and cutting depth, the Park is divided into 2 level 1 topography, namely the low-mountain and the hill, and for the hilly topography, it is further divided into slopes, gullies and river stair lands. A special railway-line is planned to be built in the Park which will be connected to Daxian County Heshi Station of the Xiangfan-Chongqing railway line. Crossing the Zhouhe Riiver, it will reach Daxian County Pingqiao Station of the Daxian-Wanzhou railway line finally. Loading facilities for solid and liquid materials, hazardous material warehouses and platforms are planned in the east of the Park, 3km away from the Site. The planned special railway-line extends 19.5km, with a capacity of 1000kta. The construction started in December of 2006 and to be finished and put into use at the end of 2008.

Situated in the sub-tropical moist monsoon climate zone, with low mountains, hills and valleys whose absolute elevation all below 600 meters, the Park boasts mild climate, sufficient heat and ample rainfall, as well as typical seasonal features. The annual average temperature is between 16□ to 17□; multi-year average relative humidity is between 80-85%; the annual average rainfall on a multi-year basis is 1075-1260mm, annual evaporation intensity is1052-1351.6mm; dominant wind in the NE direction has a frequency of 28.5%, secondary wind in the NNE direction has a frequency of12.1%, calm wind has a frequency of 30.9%.

2 Project Site

The Site is selected at Group 3, Baihuacun Village, Heshi Town, Daxian County- mainly a rural and agricultural environment. Within 1km of the Site (still in the planned area of the Park), there are 105 families with 378 people from Group 3 of Baihuacun Village, Group 4 of Dianzicun Village, and Group 1 to Group 5 of Xiongjiacun Village. This area is planned to be used as general chemicals region in function. According to the general plan of the Park all residents in this area will be relocated outside.

The land allocated to the Project is around 400 mu. With a maximum length of 650m from east to west and a maximum width of 450m from north to south, the area forms in an irregular trapezoid. The designed area of this Project is 280.61mu. The highest altitude within the site is 375m and the lowest 320m, providing a relative great altitude difference. Being in the deep hilly area, and consisting of paddy fields and slopes, the height difference varies randomly. The altitude of the planned roads in the Park is high in the NE and low in the SW. The engineering,

hydrological and geological conditions are good in the Site.

3 Environment Restraint Factors

The assessed area is mainly rural environment with no natural ecological protection zone inside, or any historic site, cultural relic, scenic place or valuable and rare species that requires special protection. No significant environmental restraint factor is found.

VI Regional Environmental Quality

1 Ambient Environment

TSP daily average value, and SO_2 & NO_2 hourly and daily average concentration in the assessed area all comply with GB3095-1996 Ambient Air Quality Standard (grade II); NH_3 hourly average concentration meets TJ36-79 Sanitary Standard for Industrial Enterprises Design (Maximum Allowable Concentration in the Residential Area) . The air quality is good in the Project area.

2 Surface water

For the evaluated section of the Zhou River, BOD_5 offspec ratio is 33%, exceeding 25% of the limit standard at the most. The rest indicators have all reached the standard. The surface water of the Project is in good quality and meets GB3838-2002 Environmental Quality Standards for Surface Water (water type III).

BOD_5 offspec occurs as a result of the location, at the down stream of the city and close to Dazhou Wastewater Treatment Plant, the water is easily affected. Furthermore, the wastewater treatment rate in Dazhou is less than 40% and a huge amount of urban sanitary wastewater is directly drained without treatment, which has greatly impacted the Zhouhe River quality.。

The following recommendations are provided after analysis of the offspec reasons in the EIA of the Park: ① Reinforce the urban infrastructure construction and sewerage pipe construction to increase the interception rate of urban wastewater treatment system. Accelerate the construction of 2^{nd} phase wastewater treatment plant to improve the treatment rate. Increase the effluent discharge limit for the urban wastewater treatment plant. The effluents from newly built wastewater treatment plant must comply with GB18918-2002 Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant (Class 1-A).

BOD_5 is not the main pollutant of the Project. In addition, the wastewater will not be drained to the Zhouhe River directly, instead, it is treated onsite and discharged to the central wastewater treatment plant for further treatment in accordance with the requirements and then discharged to the Zhouhe River. The effluent of the Project has little impact on the Zhouhe River.

3 Underground Water

The underground water is in good quality in the assessed section, with only NH_3-N beyond the limit, and the rest have all reached GB/T14848-93 Underground Water Quality (Class II). It is mainly the pesticide and fertilizer application in the neighboring farmland that has contaminated the environment and caused the NH_3-N offspec. With the adoption of impermeable measures,

the Project will not pollute the underground water.

4 Acoustical Environment

The environmental noise of the Project is within the limit of GB3096-93 Standard of Environmental Noise of Urban Area (Class 3). The Project area has good acoustic environment.

VII Environmental Impact

1 Impact During the Construction

The execution of this Water and Soil Conservation Plan will reduce the water loss and soil erosion arisen from the construction period, and alleviate the buildup of downstream watercourse across Dazhou Downtown in the Zhouhe River and contributes a lot in the flood control. Furthermore, the execution of the plan will reduce the annual water loss and soil erosion in the Project area, and lower the soil erosion modulus down to the target value and in compliance with the permissible value of the Project area, thus achieving a good water and soil conservation effect.

The pollutants arisen from the construction period may impact the surrounding environment, however, the pollution can be minimized provided that the construction is carried out strictly in accordance with regulations, and effective measures are taken on the water and soil conservation and the dust and noise prevention, while the disposal and management of the debris and waste water is reinforced. Upon completion of the construction, the impact will disappear.

2 Ambient Environment

The impact of the dust and the offgas NH_3 and Nox of the Project to the ambient environment is within the limit of state Environmental Air Quality Standard Class 2.

Starting from the boundary of synthetic ammonia unit, urea unit, and ammonia tank area, a safety buffer area within 700m outwards in all directions is built in which scattered a few households of farmers. According to the Project progress, the farmers living there will be fully relocated by the local government before the Project is put into operation. According to the planning of the Park, there will be no new dwellers or other environmentally sensitive facilities in the area.

3 Surface water

1) Normally, the wastewater will be drained via the sewage pipelines of the Park to central wastewater treatment plant (CWWTP) first, which will not be drained to the Zhouhe River until it has reached appropriate standard. Therefore, the waster water may not impact the surface water – the Zhouhe River directly.

2) If CWWTP of the Park is unable to be built prior to the operation of the Project for whatever reasons, the wastewater will be treated on site and drained to the surface water – the Zhouhe River near Xiongjia Village via the sewage pipelines. The Koyo effluent quality meets relevant regulations, and has little impact on the Zhouhe River. The effluent won't result in the exceeding

of COD and NH_3-N and meets GB3838-2002 Standards for Surface Water Category III.

4 Acoustical Environment

The main noises of the Project at the boundary will not exceed the limit of GB12348-90 Standard of Noise at Boundary of Industrial Enterprises (category III). There are no residents within 700m nearby, so residents won't be disturbed.

5 Solid Wastes

The industrial solid wastes are properly treated, which make no pollution to the surrounding environment. There is no self-built waste slag yard.

6 Impacts on Ecological Environment

The Project is located in the suburban area which is deeply impacted by human activities. It is a typical rural ecological environment. The land is served for agriculture and forestry. There's no natural distribution of rare, endangered, and protected animals and plants.

The Project has little impact upon animals and plants and will not damage the biogroup structure. Offgas within the emission limit has little impact on the ambient environment. The Project won't cause a pollution zone and has little impact on the ecological environment.

The Site is in the planned Park with little requirement on the landscaping. There's no significant impact to the landscaping.

The Project won't lead in landslides, mudslides, collapses of the slopes, surface breaks and depressions or any other geological disasters.

7 Social Environment Impact

The land acquisition involves the relocation of 228 farmers in 65 households. 150 farmers in 40 households in the safety buffer area need to be moved out, whose major income is farming. The relocation is financed by the enterprise and operated under the management of the government. According to the general plan, the relocation of the Project is incorporated into the relocation program of the Park. The immigrants will be fully relocated out of the Park, and the Park is responsible for the general relocation. The living standard of the immigrants is safeguarded, and the negative impact is small. The relocation work can be smoothly progressed and the living condition of the immigrants will be improved with proper communications, workable measures and appropriate polices in place.

VIII Environmental Risk

The potential risk of the Project includes the leak of hazardous substances, fire and explosion. Hazardous resources mainly exist in the ammonia unit, the urea unit and the ammonia tank area. Hazardous substances are NH_3, CO, and H_2S. Liquid ammonia storage tank has the potential risk to impact the external environment. The unit with fire and explosion possibilities is the boiler. The transportation of liquid ammonia is also likely to happen to the potential environmental risk.

The construction of the Project will inevitably involve environmental risks. Proper utilization of risk prevention measures and continuous improvement of risk management system will effectively reduce the accident ratios and eliminate the accident potentials.

Risk prevention measures of the Project include ammonia tank cofferdam and drencher system, annular ditch around the plant, spill-resistant ground, accident water pit and shutting of gate valve at the discharge outlet if needed.

Environmental risk may be spread within 700m around. When all dwellers in the safety buffer area (700m) are relocated, the environmental risk for the Project is controlled to an acceptable level. The environmental risk prevention and mitigation measures are effective and workable. The site selection is feasible. The Project is feasible from the view of environment risk assessment.

Koyo has signed Letter of Intent for the exclusive sales of 120kta redundant liquid ammonia with Sichuan Hongyu Chemical Co., Ltd, who has obtained the Operating License for Hazardous Chemicals, and with Nanchong Kaixiang Chemical Co., Ltd for its transportation which has made Road Transportation of Dangerous Goods Contingency Plan. It is defined in the LOI that Sichuan Hongyu is responsible for all the risks occur at the interface of the tanker and the storage tank during the unloading, as well as all safety and environmental issues during the transportation.

IX Public Opinion

The EIA was disclosed to the public twice in the media, and 100 public questionnaires were distributed in the affected areas.

The 1st disclosure: July 19th- July 21st, 2006, on Dazhou Evening Paper;

August 1st – August 10th on Koyo Corporation website (http://www.koyochem.com) and Sichuan Environment Monitoring Center website (http://www.scemc.cn) .

The 2nd disclosure: Nov., 4th – Nov., 7th, 2006, on Dazhou Evening Paper;

Nov., 2nd – Nov., 15th on Koyo Corporation website (http:www.koyochem.com) and Sichuan Environment monitoring center website (http://www.scemc.cn)

The survey shows that the public pays high attention on the impact of the Project to the local environment, economic development and living conditions, which has represented the major concerns.

Of the investigated the supporters account for 89%, and 8 voiced opposition, accounting for 8%. The objectors all worry that the Project may worsen the pollution, degrade the environment, reduce agricultural product output and result in resettlement. Most people agree that the Project may help improve the local living standard and promote the development of local economy. They hope environment protection can be strengthened during both the construction and the

operation phase. Generally speaking, the public opinion survey shows that the Project is supported by the local people.

Koyo should put in place the measures and recommendations provided in EIA for the prevention, alleviation and elimination of negative environmental impact during the construction and operation of the Project to ensure that the main public concerns be properly addressed. In addition, Koyo needs to make explanations to the objectors, clear their worries and obtain their final understanding and support.

X. Conclusion

The Project imports from the USA the internationally advanced second-hand complete set of ammonia and urea units and uses the abundant natural gas resources available in Dazhou to build a large-scale nitrogen fertilizer factory with capacity of 400kta synthetic ammonia and 450kta urea in Dazhou. The introduced equipment adopts the energy-saving Kellogg technology and Stamicarbon CO_2 stripping technology respectively for the production of ammonia and the urea. The Project belongs to those encouraged ones of the State and comply with relevant policies. The Site is selected in the designated general chemical product area of Dazhou Natural Gas Chemical Industry Park, in conformity with the planning of Sichuan Dazhou Natural Gas Chemical Program, Dazhou municipal government, and the Park. The Project only generates a small amount of pollutants with the adoption of advanced technology and equipment and the best use of exhaust heat and the “three wastes”, and the discharge of which can meet relevant standards after effective treatment and recovery. The waste discharge load is well controlled for the consideration of total amount in the region. Clean production Class 1 (internationally advanced) can be achieved which has little impact on the environment and won’t change regional environmental function situations. The environmental risk is controlled to an acceptable level. The majority of the public support the Project, which may yield obvious social and economic benefits. There are no environmental restraint factors near the area. The Project is workable in view of environmental protection.

XI Requirements and Recommendations for Sustainable Improvement

1. Requirements

1) From the boundary of the ammonia unit, the urea unit, and the ammonia tank area, define a safety buffer area within 700m outwards in all directions, which shall be filed in the local authority for reference. The dwellers in the region must be relocated prior to the commissioning of the Project. It is forbidden to plan or build any environmentally sensitive facilities, such as commercial buildings and recreation centers.

2) The general outlet of wastewater should be built in accordance with the requirements and equipped with on-line monitoring devices. Sampling holes on offgas exhaust stacks need to be prepared with beacons.

3) An accident water pit with effective volume of 2000m^3 should be built and connected to the ammonia tank cofferdam, annular ditch around the plant, and the wastewater treatment unit.

The general outlet of wastewater and rainwater should be equipped with a gate valve which can be shut off in case of accidents. The accidental water cannot be discharge until it has reached relevant standard after treatment.

4) The investment to environment protection facilities must be guaranteed in the design and budget. Strictly implement the principle of “Three simultaneous execution” i.e. the design, construction and operation of environment protection facilities must commence simultaneously with that of the main engineering.

5) Strictly obey operation instructions, actively push towards clean production and reduce the occurrence leakage. Reinforce the operation management and the maintenance of environmental protection facilities, ensure pollutants discharged stably up to relevant standard, and prohibit any accidental discharge. Establish pollutants management archive, including the complete operation logs of pollutant treatment facilities.

6) Install the accident flare system in accordance with Design Code of Environmental Pechochemical Industry.

2 Improvement Recommendations

1) Initiate the construction of follow-up facilities ASAP, and avoid any potential risk due to the external transportation of liquid ammonia; reduce CO_2 emission.

2) Take effective measures within two years of the operation to recycle NH_3 which comes from the offgas of urea synthesis process and urea solution evaporation process, and the flue gas of the prilling tower, to meet World Bank EHS GUIDELINE FOR NITROGEN FERTILIZER PRODUCTION Table 1 requirements.

3) Install wind vanes at important positions such as liquid ammonia storage tank to identify the wind direction for the convenience of rescue work in case of accidents. Install in the ammonia plant and at the boundary CO and NH_3 auto detection devices respectively.

4) Establish complete environmental risk contingency plan, and update and improve the prevention measures and the emergency plan according to survey on similar production units home and abroad and the actual operation conditions of the Project to ensure its full coverage and workability. Keep close contact with the local environmental protection, firing, and sanitary authorities, as well as the neighboring enterprises and institutions, to obtain their understanding, support and emergency aid.

Environmental and Social Action Plan (prepared by Dazhou Koyo)

#	Action Item	Project Phase	Date
1	public consultations on environmental issues	EIA process	July-Novembet,2006 (Completed)
2	safety preliminary evaluation; accidents mitigation measures; contingency plan	feasibility study	completed
3	environment impact assessment	feasibility study	May 2007 (Completed)
4	environmental protection measures mentioned in the EIA report, such as the recovery unit of ammonia purge gas; recover unit of process condensate and steam condensate; wastewater treatment station; accident water pit; on-line monitoring system of wastewater discharge; sampling holes on offgas exhaust stacks,etc	design, procurement, and construction	December 2008
5	environmental protection plan during construction phase; water and soil reservation, environmental supervision	design and construction	December 2008
6	set up an E&S department with responsible officers and staff	pre-construction	August 2008
7	relocation of all households within the 700m safety buffer area	before operation	October 2007 (completed)
8	environmental protection facilities completion acceptance report	3 months from the commissioning	March 2009
9	public opinions survey	completion acceptance	2008
10	safety assessment; abatement and mitigation measures; contingency plan	design and completion acceptance	December 2008
11	monitor wastegas, wastewater, and noise regularly	operation	January 2009
12	recover NH_3 of urea process offgas, urea solution evaporation offgas, and the prilling tower offgas		two years within the operation of the Project
13	upgrade the reactor and build a new 350kta urea plant to reduce CO_2 emission	design	two years from the operation of the Project
14	post land acquisition assessment	on progress	IFC last disbursement

Upon completion of the reactor upgrade (to expand the ammonia capacity from 400kta to 460kta) and the addition of a newly built 350kta urea plant, the energy consumption of the ammonia unit will be further lowered to 30.48 GJ/tNH3, and the extra emission of CO_2 caused of the redundant ammonia can be reduced.