

Develop Recycling Economy, Realize Sustainable Social and Economic Development in Liaoning

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Excellencies

Ladies and Gentlemen, Dear Friends,

Liaoning is China's important base for raw material and manufacturing industry, and has made great contribution for China's industrialization and modernization in the past decades. At the same time, due to the traditional extensive economic development pattern, intensive exploitation and consumption of natural resources, the ecological environment in Liaoning has been seriously polluted and damaged, which has already affected the sustainable social and economic development. After the reform and opening-up policy was adopted, we have been earnestly implementing the strategy of sustainable development and principle national policy of environmental protection, with environmental protection and ecological construction combined with the renovation of old industrial bases in Liaoning. At an annual GDP growth rate of about 9%, pollution and ecological damage have been effectively alleviated; environmental quality in some areas have witnessed obvious improvement, As an industrial base, Shenyang is no longer listed among the 10 most polluted cities in the world, even designated as the pilot city for sustainable development by UN. Renowed as the Northern Pearl, Dalian was awarded the titles of Best Progress Model of Inhabitation Environment and Global 500 Best.

Entering the new century, we need to grasp more opportunities in the construction of a new Liaoning and speed up development, with problems solved in the process of development. Starting from Liaoning's real condition, the concept of recycling economy, based on the most efficient resource exploitation and environmental protection, should be incorporated into the restructuring, upgrading and technical renovation in Liaoning, which is a must choice for the harmonious developments of economy and environment.

Under the guidance of SEPA, some pilot programs for recycling economy have been carried out in Liaoning. Through a thorough research and demonstration, it's estimated to take 5 years time to set up a batch of recycling enterprises, ecological industrial parks, and several resource recycling cities, energy efficiency greatly improved, regional resource recycling industrial bases established, thus to cultivate new economic growth point. The concept of recycling economy should be promoted throughout our society, a new mechanism and framework of recycling economy should also be preliminarily set up. Based on the above measures, we can get to the

track of sustainable development featuring advanced production, well-off livelihood and sound ecological environment.

1. In economic restructuring, vigorously disseminate cleaner production practice, and establish a batch of recycling enterprises. At present, Liaoning is undergoing momentous period of restructuring and fast development. In order to get into a new industrialization track featuring high-tech, good profit, low resource consumption, less pollution and full use of human resource, within the process of restructuring, resolutely we closed a batch of enterprises and discard backward technique and equipment with wasted resources and severe pollution; within the process of technical renovation, cleaner production programs have been carried out in 230 enterprises, which means annual saving of 30m kwh electricity, 70m tons of water, over 100m tons of sewage emission, totaling 500m RMB. By the end of the 10th five-year-plan, all the 600 most polluting enterprises should meet cleaner production standards, thus to make the main industrial sectors and products meet or approach domestic and foreign advanced level in terms of energy, raw material and water consumption. Emphasis will be placed on metallurgy, thermal electricity, coal and petrochemical, vigorously spread the re-use of semi-treated water and realize zero emission of sewage. By the end of the 10th five-year-plan, the re-use ratio of industrial water will reach 80%, 130m tons of re-used sewage added and 75% ratio of reuse being reached. In large-sized enterprises such as Anshan Iron&Steel Complex, Fushun Petrochemical Company, key linkage technology will be introduced, grading energy use and recycling will be carried out, forming a new eco-industrial chain, maximizing resource efficiency and minimizing pollutant emission. Anshan Iron&Steel Complex has already set up sewage treatment plant with daily capacity of 220t tons, 180t tons of re-used water, reaching re-use ratio of 91%, a series of projects including comprehensive use of slag, recollection of fine powder and ecological recovery of mines, has been implemented. It's estimated to take 3 to 5 years time to build it into recycling model enterprise in China's iron&steel industry.

2. Introduce the theory of industrial ecology and establish ecological industrial park in economic transformation of resource exhausted areas, construction of economic and technological development zones and renovation of heavy chemical industrial areas. In the past, the leading industrial clusters in many cities originated from one or several mineral reserves. With the over exploitation and consumption, some areas are facing the crisis of exhausted reserve plus deteriorating city, which poses a globally challenging task of economic transformation in resource exhausted areas. Based on the principle of industrial ecology, Fushun city, the past coal capital, carried out 1 mine plus 4 factories plus 1 gas project in Fushun Mineral Group, which includes restoration of east open mine, comprehensive utilization of shale and slag, gangue brick, coal bed methane; the city also carried out treatment project in Hunhe River, develop tourism spots and establish ecological industrial park. Coal and electricity city of Fuxin, within the pilot program of economic transformation, has already set off on a economic rejuvenation track by vigorously developing

replacement industry, optimizing the structure of second industry, emphasize the development of modern agriculture and service industry.

By implementing the project of “Environmental Management of China's Industrial Parks” initiated by UN Environmental Planning Bureau, Dalian Economic and Technological Development Zone established Ecological Industrial Park as well as the operation mechanism for solid waste recollection, treated water reuse system combining enterprise management and socialized service. The park has taken a new look at the same pace with its economic development, being titled “ISO14001 National Model Zone” by SEPA.

By applying Industrial Ecology Theory into practice, within the framework of industrial restructuring and enterprises relocation, Tiexi Industrial District in Shenyang has removed 30 severely polluting enterprises, closed 30 bankrupt enterprises and upgraded 20 key enterprises. Centering large enterprises like the Northeast Pharmacy Ltd.etc, the district has introduced key projects in chain, established the ecological network of symbiosis and metabolism among enterprises, thus to realize the integrated system of water, logistics and energy, and sharing of information and infrastructure facilities, minimize waste, lower production cost, improve ecological environment in urban area, strengthen regional all-round competitiveness

3. Focus on sewage and solid waste reuse, establish recycling society.

Liaoning province faces water shortage and serious water pollution which, on the other hand, means great potential of sewage reuse. In recent years, we have been focusing on the construction of urban sewage treatment plants in the overall treatment projects for Liaohe River Basin and Bohai Sea Region. At present, Liaoning has finished 12 urban sewage treatment plants with daily treatment capacity of 1.61 million tons; By the end of the 10th five-year-plan, more than 50 sewage treatment plants will be completed, with estimated total daily capacity of 6 million tons. The water quality and the natural ecological environment are gradually improving. At the same time, we should vigorously promote water saving and sewage reuse programs, speed up the construction of treated water recycling systems in sewage treatment plants, inhabitation communities and scenic spots, etc, reaching treated water reuse ratio of over 30% in urban area. Dalian and Anshan cities have already reached reuse capability of 300,000 tons in sewage treatment plants.

From the perspective of social macro-cycle, according to the principles of "minimize, resourcing and harmless", solid waste sorting and recollection systems will be established first in Shenyang and Dalian, the construction of solid waste treatment plants will be sped up. During "the 10th five- year-plan", 26 urban solid waste treatment plants will be constructed throughout the province, reaching treatment ratio of 60%. The treatment ratio will reach 80 % for waste plastic, waste battery, waste electric appliance, waste computer etc. and 90% for waste metal package.

Making full use of Liaoning's advantages in economy, technology and location in Northeast China, the province will construct a batch of resource regeneration projects from which regional resource regeneration centers can take shape with new economic growth point, and the turnover in resource regeneration will hit 4 billion RMB. A regeneration management system has already been set up in Shenyang, including hazardous waste exchange and treatment, collection and utilization of urban restaurants, sorting and treatment of living solid waste; a batch of projects have been completed for the production of cement and hollow brick utilizing gangue and powder coal.

4. Strengthen urban environment construction, introduce the concept of "City Management", realize a win-win situation for both economy and environment.

Through urban energy restructuring, infrastructure construction, enterprise relocation, greenery plantation, urban ecological environment has been improved, the overall value and competitiveness of cities appreciated. Dalian city sticks to the principle of environment representing the city, its urban environment has taken on a new look after over 10 year effort. Beautiful and comfortable urban environment is becoming Dalian's brand, which has attracted endless foreign investment and prompted fast development of new industries such as tourism, finance, information service and high-tech. The value of the city has increased dramatically. It realized a win-win for both environment and economy, serving as a model for implementing sustainable development strategy in heavy industrial northern cities. Panjin city sticks to the principle of ecology goes first, great efforts is made in developing ecological agriculture, improving ecological demonstration zone and building the city into National Environmental Protection Model City. Through the campaign National Environmental Protection Model City, Shenyang, Dandong and Huludao are working on upgrading cities' taste and style as well as improving economic efficiency. Fushun city strengthens urban ecological construction by planting trees and grass, vows to turn "Coal Capital" into "Green Capital". During "the 10th five-year-plan", Liaoning will vigorously plant forest belt surrounding cities, urban greenery coverage reaching 35%; dismantle 10 thousand boilers and 8,000 chimneys, urban central heating ratio reaching 85%; cleaner energy ratio reaching 40% in end consumption.

5. Build up mechanism, framework and social environment for the development of recycling economy.

Recycling economy is still in its initial stage in China. Therefore government should play the role of planning, guidance, regulation according to laws, organization and publicity. We should speed up the establishment of related legal systems, identify the rights and obligations of various levels of government, enterprises and individuals in recycling economy, formulate favorable policies regarding finance, tariff, financial loan and industries, thus to offer guidance and support for the development of recycling economy. With market mechanism, we should form a multiple investment and fund-raising system, with enterprises as the main entity and joined by both domestic and foreign investment. Theoretical research

and training on recycling economy should be strengthened, and public participation awareness should be further raised through different kinds of mass media promotion. Encourage the public to purchase environmentally friendly products, reduce over-consumption and realize waste sorting. Government should call for green purchase and promote the establishment of green offices, green communities, green schools and green families thus to create a social atmosphere for developing recycling economy.

SEPA has identified Liaoning as the pilot province to implement recycling economy in China. It is of strategic significance for Liaoning to promote its industrial restructuring and upgrading, create new economical development model and implement sustainable development. We would further strengthen the leadership and coordination in regard to this task, stick to the mechanism of "governmental guidance, market promotion and public participation", depend on scientific and technology progress, learn from domestic and international experiences, try to obtain support from related international organizations and national departments and steadily achieve the set targets. We believe the day we establish the pattern of recycling economy in Liaoning will be the day we rejuvenate Liaoning's old industrial base and realize a well-structured economic development. At that time, a new Liaoning with flourishing economy, civilized society and beautiful environment will be emerging before us.

Thank you for your attention.

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