

Talk From the Top: Mayors Speak Out

Part One: Promoting an Urban Recycling Economy By Huang Xingguo

Of the world's top 50 cities in terms of population, 31 are in China. Tianjin, the country's seventh largest city, is located in northern coastal China along the Hai He River. Like many of China's fast-growing cities, it is making considerable efforts to address environmental problems.

Mayor Huang Xingguo details the steps taken to turn Tianjin into a recycling economy.



THE DEVELOPMENT OF A RECYCLING economy is an inexorable requirement if we are to implement a scientific view of development, and this has great importance in carrying out the schemes of China's 11th Five-Year Plan, saving energy and reducing consumption, and ensuring economic growth is both accelerated and of good quality. With a view to circumstances in Tianjin, the city where I am mayor, promoting further development of a recycling economy will require deep consideration and bold exploration in terms of institutions, mechanisms, policies, management, technology and culture in order to seek out innovative paths of development. We must opt for scientific ways forward, seeking effective modes of development.

With breakthroughs in relevant technologies and the emergence of new theories and understandings, means and methods for the development of a recycling economy are diversifying constantly. In line with the scientific view of development and commensurate with our circumstances, we must constantly innovate our methods, taking practical steps to achieve the task of developing a recycling economy. Among these steps are:

- 1. Promoting recycled production among major enterprises:** Major industrial enterprises engaging in large-scale production consume substantial energy and resources, and they should be the focus in cutting down on consumption and waste. By building a three-tier energy management network, introducing cutting-edge equipment and methods, and through such measures as the recycling of waste heat

for power generation and the set-up of a water recycling system, the Tianjin Pipe Company Ltd., for example, reduced its overall energy consumption (per 10,000 units of output) from 1.47 tons of standard coal during the 10th Five-Year Plan to a current 1.08 tons, with use of fresh water resources dropping from 14.11 tons to 7.16 tons and the ratio of water reuse rising from 92.7 percent to 97.46 percent. This record was virtually unmatched in the national special steel industry.

2. Furthering integration of recycling within industrial parks: Enterprises in industrial development zones are in relatively close proximity to each other, and industries are generally rather centralized, offering favorable conditions for linking industries together in a recycling economy. Within existing industrial parks, industrial enterprises should undertake the necessary technological transformations, introducing linked enterprises in a targeted manner so that networks of waste and energy exchange emerge within the parks. Newly constructed industrial parks should apply the principles of a recycling economy in their original design and conception. By introducing complementary projects and upstream and downstream projects with state-of-the-art technology that comply with environmental protection standards, and by extending industry links, promoting tighter clustering and enhancing recycling networks, the Tianjin Economic and Technological Development Park, for example, was able to achieve closed-circuit recycling of materials and multi-level reuse of energy. In 2005, the Tianjin Economic and Technological Development Park recorded 0.18 tons of standard coal consumption per unit of industrial added value, and new water consumption of 6.91 tons, far below the national average.

3. Furthering comprehensive utilization of waste materials: A high volume of waste material is an unavoidable consequence of industrial production. Comprehensive utilization of this material advances the goal of environmental protection while at the same time reducing consumption and fostering new areas of eco-

Part Two: Keeping a World City Competitive: View From London By Boris Johnson

London is an absolutely fantastic world city. There really is no other choice of destination for the foreign investor looking for a base to do business with Europe and Western economies.

Apart from being the economic powerhouse of the United Kingdom contributing around £90 billion to the British economy, London is the world's top financial center employing hundreds of thousands of the brightest and best minds from around the world. They are drawn here by London's dynamism, prosperity and one of the most diverse social and cultural backdrops that is hard to match.

As Mayor, I know this success is not just driven from the shiny skyscrapers of the City of London and the large multinational companies based there but also from the wider metropolis's creative industries, its small and medium enterprises and its sole traders. I have a duty and responsibility to help support all business in whatever way I can either through direct intervention or as a loud voice representing their interests against central government or other bureaucracy and unnecessary regulation.

We have a great opportunity as host city for the 2012 Olympic and Paralympic Games which will transform London. However, we must not be complacent as the success

of world leading cities and financial centers rises and falls through global influences far beyond its boundaries and control. That is why soon after I was elected Mayor I asked Bob Wigley, Chairman of Merrill Lynch for Europe, the Middle East and Africa, to lead a

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review involving senior city executives working with the City of London Corporation to examine how London can sustain its position as the world's leading financial center.

I am also establishing the International Business Advisers Council for London which will bring together fifty CEOs, Chairs and board level management of multinational companies who will advise me on securing the capital's position as a top global city to live, work and visit and ensure that it maximizes the opportunities from future waves of globalization.

The paramount role of the Mayor is to ensure London has the right strategies in place to make the city and its economy work. To this end I am focusing on three areas. Firstly,

London must have a transport strategy that is fit for the 21st century. I am therefore chairing London's transport authority to oversee the urgent upgrade of our transport network and most importantly Crossrail, the largest new transport infrastructure project in the world which with other new rail lines and transport upgrades will make London one of the world's best connected cities.

Secondly, I am revising London's urban development strategy — The London Plan — to ensure that businesses have the opportunities they need to grow and access to markets to sell their products and services. In essence, I want to see that everyone living, working and doing business in London shares in the city's success and enjoys an improving quality of life.

Thirdly, if overseas businesses are to choose London as their gateway to Europe and the West they must come knowing that there is a ready supply of skills and talent and the recently published London Skills Strategy has purposefully been formulated by London's business community so that we deliver the skills base to match their needs in the coming years.

In such uncertain times, it is essential that the Mayor takes a positive lead and ensures the best possible conditions for London businesses — large and small. To achieve this I am determined to establish genuine communication channels between City Hall and London's business community. Only working closely with London's entrepreneurs and business leaders will our capital remain competitive.

Boris Johnson is the Mayor of London.

conomic growth. The Tianjin Beijiang Electrical Power Plant is among the first wave of national pilot projects in the development of a recycling economy. The first phase of the project is 2 one-million kilowatt generators coupled with a seawater desalination unit with a capacity of 200,000 tons per day, which employ ultra-supercritical pressure power generation technology to generate 11 billion kilowatt-hours of electricity annually and conserve one million tons of coal. Waste heat is used in the seawater desalination process, with an annual capacity of 65.7 million tons. The condensed by-products of the desalination process are delivered to the salt works to be processed into salt, with an annual production capacity of 500,000 tons. This salt production process in turn conserves 22.5 square kilometers of salt pans. The saturated brine from salt manufacturing is then put through a chemical production process to create a range of chemical products. The coal cinder byproducts of the power generation process are combined with calcium carbide residue to produce 1.5 million cubic meters of building materials annually. All of the solid wastes are pressed to the utmost in order reduce as much as possible the consumption of resources and enhance the use and recovery of energy.

4. Developing a social recycling system:

Urban domestic refuse, sewage and solid waste are natural byproducts of city life, widely distributed and having a major impact on social environments. The degree to which this waste is handled to ensure the least degree of harm is a reflection of a city's state of development and its image. Recycling economy projects undertaken in the public welfare require substantial investment and result in minimal profit, and so they depend on the input and active leadership of the government. Composting and landfill efforts to dispose of domestic refuse require massive land resources and carry the risk of secondary pollution. Tianjin's Shuanggang Refuse Power Station has enabled the processing of 400,000 tons of refuse annually while conserving 30,000 square meters of landfill space, producing 120 million kilowatt hours of electricity and re-

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ducing standard coal consumption by 48,000 tons. In order to deal with an increase of old and waste materials and such problems as environmental pollution, we have built the Tianjin Ziya Environmental Industry Park, which has reduced the mining and transport of copper ore by one million tons a year, aluminum ore by 380,000 tons, iron ore by 320,000 tons and standard coal by 320,000 tons, while at the same time reducing environmental pollution.

THE GOVERNMENT TAKES A LEADING ROLE

The development of a recycling economy is a long-term vision, and responsibility lies with the whole society. The government must take on a leading role, working hard to promote the development of a recycling economy.

1. A leading role in planning. The 11th Five-Year Plan sets out the city's overall development plan for a recycling economy that includes special planning for the conservation of oil, coal, electricity, water, and for the comprehensive utilization of resources. The plan formulates our strategy for implementing recycling measures in the manufacturing, agriculture and service sectors as well as in society. In light of our resource endowments and environmental capacity, the plan adjusts and optimizes regional development, industry distribution and planning for industrial parks, and selects a set of projects, enterprises, industries and parks for the development of a recycling economy. At the same time, it explicitly sets out the content of planning, including improvement of policy measures, organization and implementation. It is a practical exercise of the government's leading role, encompassing preparation, responsibility, policy, inspection and mechanisms for promotion.

2. Building a group of conservation-oriented enterprises. In order to develop a cutting-edge manufacturing industry, a modern service industry, and other enterprises with a favorable environmental impact, we must be firm in phasing out production capacity that is of low-quality, wasteful, polluting and inefficient, and we must accelerate the take up of advanced and applicable technology to transform traditional industries. We must work the concept of "reuse and recycle" into the entire process of developing a system of industries oriented to resource conservation, promoting resource saving and comprehensive energy regulation in accordance with industrial policy.

3. Improving policies, laws and regulations, and work mechanisms. We need to work to improve our system of policies, laws and regulations concerning the development of a recycling economy, and we must tighten up policies to encourage comprehensive utilization of resources. We must also increase our regulatory capabilities and price leveraging in order to build pricing mechanisms that benefit electricity and water conservation. We need to reform our managing institutions in order to

strengthen the government's overall capacity for coordination, actively resolving problems of government departmental redundancy, lack of responsibility and lack of uniformity that arise from departmental overlaps. We must also explore green GDP accounting systems, so that achievements along these lines can become part of the assessment and examination of the work of party cadres.

4. Building a technology support system. This will require making full use of the research and development strengths of colleges and universities, research academies and institutes, and large-scale enterprises, organizing and leading them to overcome technological bottlenecks inhibiting the development of a recycling economy. The focus should be on foundational, strategic and dominant technologies with market applications, and on the introduction, digestion and absorption of advanced foreign technologies.

5. Creating a favorable social environment. Party and government organs must set the example, leading the way in conservation and building waste-saving government. They must actively lead the public in prioritizing and appreciating conservation so that it becomes a life concept and way of life with wide acceptance in society. They must educate the public in the art and science of conservation, and they must build effective incentive measures that encourage the public to purchase products that conserve energy and resources.

**Huang Xingguo is Mayor of Tianjin, China.
Translated from Chinese by David Bandurski.**

Talk From the Top: Mayors Speak Out

Part Three:

From Old Industries to Innovation: Harbin's Path to Competitiveness

By Zhang Xiaolian

Harbin, China's 10th largest city, is one of the great urban centers of Northeastern China.

As the city faces the challenges of a global economy, Mayor Zhang Xiaolian has embarked on a comprehensive plan to promote a culture of innovation to rejuvenate the local economy and position the city to build on its past successes.



AS ONE OF CHINA'S OLD industrial bases, Harbin has a solid foundation on which to build itself as an innovative city. We must seize the opportunity and develop a group of industries with a capacity for independent innovation, with their own core competencies, so that innovation propels our city toward a new mode of economic development. This means promoting readjustment of industrial structures in order that Harbin can revitalize its inherent dynamism and maintain its leading status.

Our goals are: by 2010, to devote two percent of regional gross domestic product (GDP) to research and development, achieving a high-tech industry output of 200 billion yuan, with high-tech accounting for 13 percent of overall regional GDP; to register more than 5,000 patent applications, with applications for patents for inventions and applications for enterprise patents accounting for more than 40 percent of total applications; to achieve marked improvements in the efficiency of resource utilization, with a reduction of 20 percent in energy consumed for each unit of GDP; to ensure high-tech industries contribute to 53 percent of economic growth. By 2015, we hope to become the province's first innovative city, making it onto the national roster of innovative cities.

In line with these goals, we must prioritize promotion of independent innovation along five points to accelerate the building of an innovative city.

1. Guiding independent innovation through industry upgrading. We must energetically promote original innovation, integrated innovation

We must firmly break through a culture that focuses on prevention of error and seeks only safety and security, a culture that avoids risk taking and sticks to conventions.

and introduction and absorption of foreign technology for major strategic products and in those sectors in which we have an advantage, in this way achieving breakthroughs in key technology and raising core competencies. We must span key strategic sectors, strengthen ourselves in key strategic industries, develop key strategic enterprises and gather key strategic technologies in order to promote new and high technology industry development. At the same time, we need to improve the take up of new and high technology by traditional industries, promoting technology upgrading.

2. Promoting innovation through further opening. We must seize the opportunity for technological development afforded by the policy of opening, moving from a mode of passive technology exchange to an active and all-dimensional utilization of global technology resources to effect economic transformation, learning from and absorbing advanced international technological achievements on a broader scale and at a deeper level. We must thoroughly utilize our proximity to Russia, building and improving on the Sino-Russian Mutual Resources and Information Database and the Harbin

International Technology Transfer Service Center. We must strengthen the building of industrial bases for Sino-Russian technology cooperation and continue to prioritize the biennial Sino-Russian Technology Exhibition, implementing a series of Sino-Russian technology cooperation projects.

3. Supporting independent innovation through institutional innovation. We must accelerate the process of reform in the government's technology management system, breaking through the longstanding barriers of over-compartmentalization and self-containment. The goal is to create a technology management system conducive to a system of technology innovation that promotes the integration of production, teaching and research, with enterprises taking on a dominant role in consideration of market trends. Through policy measures in taxation, financing, government procurement, technology planning and other areas, we will encourage and guide enterprises to become leaders in technology innovation. We will work hard to raise the level of research and development at universities and at research academies and institutes, so that the results may serve overall social and economic development.

4. Using advanced culture to stimulate independent innovation. We must firmly break through a culture that focuses on prevention of error and seeks only safety and security, a culture that avoids risk taking and sticks to conventions. We must encourage an innovative culture tolerant of failure, encouraging success, embracing personality, advocating competition and promoting cooperation. We must guide and encourage enterprises and technology personnel to aim high.

5. Providing a favorable environment for independent innovation. We must strengthen our guidance and coordination of economic policy and technology policy, promoting and stimulating energetic innovation at our enterprises, universities and research institutes to the greatest degree possible. We must continue to develop research in strategic patents, expand the number of industrial enterprises engaged

in intellectual property pilot projects, and strengthen protection of intellectual property by administrative authorities. We must also accelerate transition of the government's role and function, building a system that serves innovation, employs modern management methods and techniques and promotes the efficient use of technological resources.

Building an innovative city is a broad endeavour of social change that concerns the future of Harbin, and it requires the coordination of a number of "innovative elements," including the government, production, education, research and capital, as well as the united efforts of broader society. The government bears responsibility for planning, guidance, service and promotion, and it should take the leading role, creating a favorable environment for institutional reform, mechanism improvement, capacity building and sound policy.

To achieve our goals, we must resolutely prioritize the "three promotions and three strengths" formula, building mechanisms for effectively promoting and incentivizing independent innovation.

The three promotions are:

1. Promoting the innovation of institutions and mechanisms. We must fully capitalize on the basic role of the market in allocating technology resources, building and improving on innovative institutions. This will mean deepening reform of development orientated research institutions, and comprehensively promoting the structural reform of non-profit research institutes, doing our utmost to stimulate those working in the technology sector. We must accelerate the building of an innovative technology system in which production, education and research are integrated, with activity focused on enterprises and taking its cues from the market. We must also accelerate innovation of technology management institutions, improving the assessment and dynamic management of technology projects as well as relevant award systems.

2. Promoting the building of innovative bases and platforms. In key strategic sectors, we must build a series of integrated and in-

novative laboratories focused on educational exchange. We must build a series of resource sharing platforms, enterprise incubators, technology exchange platforms and financing and investment platforms. This will raise our capacity to serve and support independent innovation. In line with our development goal of "multiple parks in each district," we must continue to build Harbin's development zone and the Hadaqi Hi-Tech Industrial Corridor, includ-

Building an innovative city is a broad endeavour of social change that concerns the future of Harbin.

ing the Harbin Institute of Technology (HIT) National University Science Park, the National Science Park of Harbin Engineering University, the Nangang Private Enterprise Technology Demonstration Area, the Harbin Agricultural Technology Park, and the Limin Pharmaceutical Technology Park. By strengthening these areas we must promote structural adjustment and a transition in the mode of economic growth.

3. Promoting advancement of strategic cooperation with Russia. We must develop and firm up the results of the China-Harbin International Science and Technology Fair, and we must use the opportunities presented by Russia's "Year of China" events to expand international technology exchange and joint projects, establishing Harbin as a service base for technology cooperation with Russia. We must improve the functions of the Sino-Russian Mutual Resources and Information Database and the Harbin International Technology

Transfer Service Center, creating a service and information platform that facilitates Sino-Russian exchanges nationwide.

The three strengths are:

1. Strengthening policy support and technology spending. We must promote the overall development of technology policy, technology planning implementation and innovation service system-building, ensuring that economic policies and technology-related policies can work in concert. We must also implement technology support projects, and build and improve coordination and examination mechanisms, so that relevant national, provincial and city policies can be implemented effectively. Spending for science and technology must also be expanded, with government spending in the lead and enterprises as the focus, and we must create a diversified investment system with participation by financial capital, venture capital and private capital. During the 11th Five-Year Plan, spending on science and technology should increase by a wider margin than regular financial revenue.

2. Strengthening manpower for innovation. We must carry out high-level projects for the training of talent, generating teams of top-notch technology personnel who can lead the drive for innovation. We must also improve incentive systems, permitting state-owned hi-tech enterprises to offer share incentives to key technology and management personnel. For core strategic technology projects, we should introduce existing teams, bring in core people, and attract top-notch talent from overseas. We must encourage commercial reforms, improving methods of assessing technology talent and encouraging acts of innovation.

3. Strengthening the creation, management, protection and utilization of intellectual property. We must promote intellectual rights protection for the results of technology innovation in order to raise the international competitiveness of our products, enterprises and industries. We must also carry out strategic patent research and raise our capacity to utilize the patent system, substantially raising our rate of penetration in core patented technologies. To

achieve this we must improve our policies, laws and regulations concerning patent protection and strengthen enforcement, bringing our legal environment for patent protection in line with international rules.

In conclusion, let me note that in line with the policies I have discussed, here are some of the major achievements we have made in promoting independent innovation:

- Professor Tan Jiubin of the Department of Precision Instrumentation at Harbin Institute of Technology (HIT) has received the country's highest award for invention six years running.
- In cooperation with Northeast Agricultural University, Harbin's Sanyuan Livestock Company Limited successfully cloned Min pigs, demonstrating that China is on the world's leading edge in cloning technology.
- A key project researching the problem of reducing soybean yields successfully developed disease resistant strains, breaking through technological bottlenecks to prevent crop infection. Harbin's Qiangr Biochemical worked successfully with Russian partners in a cooperative project to develop a biological pesticide to prevent rice blast disease.
- Haliang Group and the Harbin Institute of Technology jointly researched numerically controlled machine technology to reduce China's reliance on technology imports.
- Harbin GongDa Aurora Optoelectronics Technology Company has patented its own sapphire crystal growth and processing technology, making China the third nation after the US and Russia to develop such technology.

Zhang Xiaolian is Mayor of Harbin, China. Translated from Chinese by David Bandurski.