

# **Suwon Conference on Low Carbon, Green Cities in North-East Asia**

**17-18 October 2011, Suwon, Republic of Korea**

## **SUMMARY OF THE CONFERENCE**

1. The conference was convened to review the current status of policies and programmes for low carbon, green cities and discuss policy approaches for improving eco-efficiency in the subregion. The conference also explored the role of local governments of North-East Asian cities in support of themes of the UN Conference on Sustainable Development (Rio+20). In particular, the conference proposed action plans for NEASPEC Eco-efficiency Partnership Programme and adopted a joint statement that suggests establishing a subregional partnership for low carbon, green cities. The joint statement is attached as the Annex.

### **A. Attendance**

2. The conference was jointly organized by the ESCAP Subregional Office for East and North-East Asia (SRO-ENEA) - the NEASPEC Secretariat, and the Suwon City in the Republic of Korea. The meeting was attended by high profile senior figures of Suwon City, including the Mayor, Vice Mayor and Chairman of the City Council, and more than 150 participants including 18 international experts and city officials from China, Japan, Mongolia and the Russian Federation.

### **B. Opening Session**

3. Mr. Tae Young YEOM, Mayor of Suwon City, first welcomed conference participants to Suwon City and expressed his gratitude for having distinguished government officials and experts attending the conference. Mr. YEOM pointed out that the subregion is facing a series of environmental challenges, especially climate change. He underlined that cities have great potential to play an important role in tackling environmental problems in North-East Asia.

Mr. YEOM indicated that Suwon City has been striving to shift toward to a low carbon, green city. He called upon policy makers, scholars and international organizations to work together to develop low carbon, green cities in the subregion to address climate change.

4. Mr. Jang Bong KANG, Chairman of the Suwon City Council, delivered the congratulatory remark. He welcomed all participants and expressed his appreciation to SRO-ENEA for organizing this conference. Mr. KANG stated that a series of activities have been undertaking to make Suwon City as the Environmental Capital city of the Republic of Korea (ROK). He expressed that Suwon City would like to work with any city and organization to achieve this goal.
5. Mr. Kilaparti Ramakrishna, Director of SRO-ENEA, delivered his keynote speech on climate change and low carbon cities in North-East Asia. He began with a brief introduction to the challenges of climate change in Asia and the Pacific and the major areas of North-East Asian region in addressing climate change. Mr. Ramakrishna highlighted key approaches of cities to improving eco-efficiency, promoting sustainable infrastructure, enhancing the assimilative capacity of natural sinks, and reducing carbon intensity of production and consumption patterns. In this regard, the eco-efficiency approach was introduced as a concrete tool for cities to shift brown pattern of economic and social activities to a greener pattern.

### **C. Policies and Strategies for Low Carbon, Green City**

6. This session reviewed the existing initiatives/plans/frameworks for low carbon, green cities in North-East Asia, especially the Republic of Korea, China and Japan. Mr. Jaejoon LEE, Vice Mayor of Suwon City, introduced the concept of low carbon, green city and elaborated on a number of case studies of low carbon, green cities in North-East Asia and Europe. He indicated that the concept of low carbon, green city evolved out of Garden City and Eco-City to meet the present needs of tackling global warming and ecological crisis. The emergence of this concept shows the increasing public awareness of environmental protection and sustainable development. Subsequently, Mr. LEE cited a number of case studies to emphasize that establishment of strategy for carbon reduction and promotion for green circulation play essential roles in successfully developing low carbon, green cities.
7. There are very few cities in China launched the local initiative for low carbon, green city but the Chinese government undertook a series of feasibility studies and launched several pilot and demonstration programmes. Mr. Guiyang ZHUANG, Deputy Secretary of the Sustainable Development Institute, China Academy of Social Sciences, highlighted three

pilot programmes including the *Five Low Carbon Provinces and Eight Low Carbon Cities* by National Development and Reform Committee (NDRC), the *Pilot Low-carbon Transport System* by Ministry of Transportation, and the *Comprehensive Demonstration on Financial Policies of Energy-saving and Pollution Reduction* by NDRC and Ministry of Finance.

8. Ms. Ikuyo KIKUSAWA, Researcher of Institute for Global Environmental Strategies, made a presentation on policies and practices of low carbon, green cities in Japan. In 2008, the Japanese government approved the revision of *Act on Promotion of Global Warming Countermeasures* and required large and designated cities to incorporate GHG reduction measures in the City's Action Plan. Since then, 94 percent of Japanese cities set up their own target of GHG emission reduction and 71 percent of them already implemented the action plans. Moreover, based on *New Growth Strategy* approved by the Japanese Cabinet in June 2010, the *Future City Initiative* was issued by the Cabinet Secretariat in the same year. This *Initiative* aims to create best practices of low carbon, green cities in Japan and disseminate the best practices both in Japan and abroad.
9. Mr. Teruo KOUGU, Director of Office for Environmental Future City Promotion, Kitakyushu City, provided a concrete example of low carbon, green cities in Japan. In 2009, Kitakyushu City initiated the *Green Frontier Plan* which targets to build a society with accumulated prosperity over generations and reduce CO<sub>2</sub> emissions by 40 percent in 2050. In addition, Kitakyushu City plans to promote its eco-model to other Asian countries through technologies transfer, knowledge sharing, information exchange and capacity building, and international business promotion.
10. Ms. Cuiping LIAO, Research Director, Guangzhou Institute of Energy Conservation (GIEC), Chinese Academy of Sciences, pointed out that Guangdong is the third top province in terms of GHG emissions in China and NDRC designated Guangdong Province to undertake demonstration projects in support of low carbon economy. Therefore, in 2010 Guangdong provincial government launched the Guangdong's initiative to pilot low carbon development in China. In response to the initiative, GIEC conducted comprehensive micro-economic analysis and scenario analysis for a technological and policy roadmap for low economy development in Guangdong Province.

#### **D. Concept of Eco-Efficiency in the Context of Urban Policy**

11. Mr. Kyu-In LEE, Professor of Ajou University, introduced five core elements of sustainable city planning, highlighting sustainable land use, green transportation system, resource recycling, energy efficiency and green space plan. In particular, Professor LEE illustrated the

*Go-Duk International City Plan* of Pyong-Taek. Go-Duk International City adopted the *Carbon Neutral City Planning Strategies*, highlighting low carbon green land use and transportation, low carbon green space, low carbon green energy resources and low carbon green architecture.

12. Ms. Insun REE, Head of Korean Division, ZEDfactory Ltd, stressed that it is important to design and construct buildings that meet the needs of sustainable development for the next generations. Rather than only focusing on green buildings and energy efficiency, ZEDfactory emphasizes on the zero carbon lifestyle and applies appropriate designs to reduce residents' dependence on traditional fossil fuel energies. For example, ZEDfactory encourages low carbon transport by providing a pool of electric cars to residents who live in ZED designed residential districts. Moreover, compared to the local average rate, the ZED designed buildings reduce 81 percent of energy use for heating, 45 percent of electricity use and 58 percent of water use.
13. Mr. Wee Kean FONG, Associate GHG Protocol China, World Resources Institute, made a presentation on challenges and way forward in implementing eco-efficiency at the city level, focusing on the question of how to quantify city wide GHG emissions. Mr. FONG noted that low carbon city planning needs an inventory of GHG emissions at city level and thus appropriate GHG accounting methods become very important. Mr. FONG's presentation reviewed the existing guidelines and standards of GHG emission accounting and indicated that an appropriate GHG accounting method should be able to consider both production-based emissions and consumption-based emissions to solve the problems on emission leakages, neglect of indirect emissions and etc.
14. The Solar City Mission of Daegu City was presented by Mr. Jong-dall KIM, President of International Solar Cities Initiative and Professor of Kyungpook University. In the early 2000s, Daegu City began to implement the *Solar City Mission* which aims to reduce GHG emissions and fossil fuel dependency by introducing renewable energy and energy efficiency technologies into the city. Since then, 17 projects have been successfully completed. In addition, Daegu City adopted a plan on *Solar City Daegu 2050* which provides guidance on creating a green and new economy in Daegu City. This plan is expected to direct Daegu to become a new industrial, energy innovative and eco-cultural city. In particular, this plan specifies that renewable energy will contribute 30 percent of total energy demand and 24 percent of electricity demand. Also, 50 percent of GHG emission reduction is expected to be reached under this plan by 2050.

15. Mr. Hyungun SUNG, Director of the Center for Future City, Korea Transport Institute, showed that transportation sector is a significant contributor to the total GHG emissions in the ROK. Considering the increasing demand in land and vehicles due to the population growth and urbanization, Mr. SUNG suggested developing 3-D compact cities in the ROK, which are designed to increase the city connection and walking accessibility through regional and district transportation systems.

### **E. Local Governance for Eco-Efficiency Partnership**

16. The vision and strategy of how to make Suwon City into Korea's Environmental Capital was presented by Mr. Jeong Soo KIM, Director of Environment Bureau of Suwon City. This plan was initiated in 2005 to tackle increasing energy demand and environmental degradation in Suwon City. Mr. KIM stated that Suwon's vision on Environmental Capital aims to find a sustainable development model which not only centers on economic growth but also pays attention to social and cultural values. In particular, it has three dimensions: 1) develop green transportation system, renewable energy and green industry to build a foundation for a low carbon, green city; 2) recover resource circulatory system, expand ecological greenbelts and revitalize urban farming to improve ecological city living in harmony with nature; 3) strengthen urban green governance through increasing civic participation. Regarding the GHG emissions, Suwon City has developed short and mid term plans to reduce GHG emissions, targeting at 5 percent, 20 percent and 40 percent of GHG emission reduction by 2015, 2020 and 2030 compared to the level of 2005.
17. Mr. Jongbu KIM, Deputy Mayor of Changwon City, elaborated on Chuangwon City's programme on "*Nearby Useful Bike, Interesting Joyful Attraction (NUBIJA)*". NUBIJA is a four year programme launched in 2008 in response to severe traffic congestion, air pollution, scarcity of parking space, etc. This programme aims to develop 300 bike terminals and 6,000 rental bikes by 2012. By the end of 2010, 230 terminals have been established with 4,500 rental bikes. In addition, 110,000 members have joined NUBIJA programme and the average frequency of usage is 20,000 times per day as of September 2011. Regarding the environmental impacts, NUBIJA programme saved KRW1, 800 per liter and 210g/km of average CO2 emissions. NUBIJA has been recognized and awarded as the first and best public bicycle system in the ROK.
18. Mr. Tetsuya Nakajima, Deputy Executive Director, the Climate Change Policy Headquarters of Yokohama City showed that Yokohama City is committed to be a pioneer of low carbon, green city. In 2008, Yokohama City was selected by the national government as one of the 13 *Eco-Model Cities*; and in 2010, Yokohama became the only Japanese city which was selected

by the World Bank as one of the first six *Eco2 Cities*. In addition, Yokohama City launched a demonstration project entitled “*Yokohama Smart City Project (YSCP)*” which is being implemented in collaboration with private enterprises and the City of Yokohama. YSCP aims to build the “Next Generation Energy Infrastructure and Social System” which could maximize CO<sub>2</sub> reduction in the forefront of innovation. In particular, YSCP sets up goals of GHG emission reduction ---25 percent by 2020 and 80 percent by 2050. Moreover, 27MW solar heating, energy management system for 4,000 homes and building energy management systems for 160 million square meters will be installed in the course of implementing the YSCP.

19. Mr. Douglas Whitehead introduced Global Environmental Institute (GEI), a Beijing-based international NGO, and their work on market mechanisms for urban energy efficiency improvement in China. Mr. Whitehead indicated that a series of policies on energy consumption reduction and carbon intensity reduction launched by the Chinese government directed GEI to build replicable models to assist cities in reducing CO<sub>2</sub> emissions and improve energy security through procurement and financing. GEI’s energy efficiency projects in Chongqing City and Nanyang City indicated that active stakeholder participation, involvement of financial institutions at early stages, local coordinating body and good auditing and technology selection make great contributions to successfully implementing these two projects. However the two case studies also showed that immature/non-diverse energy market and limited financial resources are major barriers to introducing effective market mechanisms on the improvement of urban energy efficiency in China.
  
20. Mr. Taedong LEE, Assistant Professor of Asian and International Studies, the City University of Hong Kong, elaborated on the C40 Cities Climate Leadership Group (C40 Cities Climate Network) and shared key findings of his research on the pattern of cross city cooperation under C40. In October 2005, the Mayor of London Ken Livingstone convened a meeting of 18 large cities to collaborate on climate change solutions and the city group was originally known as the C20. In 2006, the group forged a partnership with the Cities program of President Clinton’s Climate Initiative (CCI). The number of member cities expanded to 40 large cities and the new organization renamed as C40 Cities Climate Leadership Group. The leadership group tries to build a network among cities to tackle climate change collectively through knowledge sharing, experience exchange and inter-city collaboration. This network particularly pays attention to climate positive development, energy efficiency for lighting and green building. Mr. LEE suggested that it could be useful to develop an Asian City Network to address environmental problems and climate change in the region.

## **F. Workshop Session: Local Governments’ Strategies for Low Carbon, Green Cities**

21. Mr. Eric Walker, Head of Technology and Innovation, the Climate Group, presented the *China Redesign Project* which intends to build a leadership platform to support Chinese cities in planning and execution of low carbon growth plans. Mr. Walker stressed that the *China Redesign Project* enables the Climate Group to act as an incubator to facilitate the cooperation among education institutions, governments, enterprises and financial agencies. The *China Redesign Project* works on four tracks: capacity building, project support, policy & finance, and communication & outreach.
22. Mr. Peng WANG from Guangzhou Institute of Energy Conservation, Chinese Academy of Sciences, made a presentation on the low carbon path for Guangzhou City. Guangdong Province was selected by NDRC as one of the pilot provinces to implement low carbon demonstration projects. As the capital city of Guangdong Province, Guangzhou City conducted a series of studies on low carbon roadmap. Mr. Wang presented a scenario analysis which suggests that in order to decouple economic growth from environmental impacts, Guangzhou should take a series of actions, focusing on convenient transport, green building, fuel switch, industry decarbonation and low carbon electricity.
23. Mr. Wang Yu, Assistant Research Fellow of Dalian Municipal Government Development Research Center, presented strategic studies on building low carbon and eco-efficient society in Dalian City in China. These studies showed that Dalian's carbon emissions come from three main sources---industries, transportation and building sectors which account for more than 90 percent of the total carbon emissions in Dalian. In particular, one scenario analysis illustrated that the co-effect of industrial structural change and technology improvement lead to decrease in energy intensity by 46 percent and decrease in CO<sub>2</sub>-GDP ratio by 26 percent.
24. Ms. Jia HAN, Director of Administrative Office, the National Institute for the South China Sea Studies, made a presentation on how to promote a green and sustainable development for an island economy. Hainan Province of China located in the North edge of tropical zone, which is endowed with significant solar energy (47 billion KW per year), wind energy (8.2 million KW per year) and ocean energy. However, the geographic location of the Hainan Island results in a fragile ecosystem, weak environmental capacity and vulnerability to extreme weathers. In order to better use the natural resources while addressing environmental problems, the Hainan provincial government adopted four practices to implement its low carbon economy model. Firstly, in line with the national strategy, Hainan set its goal of reducing 12 percent of energy consumption during the 11<sup>th</sup> Five Year Plan period while its GDP would grow at the rate of 10 percent. It accomplished the target by

reducing 12.14 percent from 2005 to 2010. Secondly, the national government targeted alternative energy sources to meet up to 15 percent of the new energy requirements by 2020, whereas the percentage of renewable energy use in Hainan already occupied 30.6 percent of the total new energy consumption in 2009. Thirdly, the Hainan government provided great financial incentives to support low carbon development, highlighting subsidies for energy-saving lamp bulbs, aids for energy-saving reconstruction of road, lamps and light systems of public buildings, and investment of sewage and garbage processing plants. Fourthly, the Hainan government abandoned energy-intensive industries and largely promoted tourism and service industries.

25. Ms. ORGIL Batsukh, Environmental Specialist of Millennium Challenge Account Mongolia illustrated the adoption of energy efficiency products and renewable energy in the ger districts in Ulaanbaatar City. Ms. ORGIL stated that there is severe winter air pollution in Ulaanbaatar City and an estimated 90 percent of the air pollution comes from the ger areas. In addition, the primary source of air pollution is from combustion of raw coal in inefficient stoves for space heating in poorly insulated traditional gers and small homes. In December 2009, the Mongolian government submitted a project proposal to reduce air pollution in Ulaanbaatar to Millennium Challenge Corporation (MCC) which was established by the Mongolia government and the U.S. Government with the fund of 285 million US dollars. The Government of Mongolia, Ulaanbaatar city governors' office and land office and Xas bank are assisting the project by promising to decrease the electricity cost by 50 percent during night time for the ger households who purchased the energy efficient stove, by warning to invalidate the land ownership certificate of the ger households who are reluctant to purchase the energy efficient stove while offering cheaper price.
26. Mr. Dmitriy SAIKO, Leading Specialist of the center of the Environmental Protection, Ussuriisk City in the Russian Federation, introduced a long-term energy efficiency programme of Ussuriisk City. On November 23, 2009, the Government of Russian Federation issued a law on *"Power Saving and Increase in Power Efficiency, modification of separate acts of the Russian Federation"*. A long-term project, dubbed as *"Power Savings and Power Efficiency Increase for Ussuriisk City"* was developed based on this law to maintain rational fuel usage and increase power efficiency in residential areas in Ussuriisk City. This project is being implemented between 2010 and 2014. This project is expected to increase electric energy from 97.2 percent to 98.2 percent and increase the use of thermal energy by 64.5 percent by 2014 in Ussuriisk City.

## **G. Discussion Session: Local Governments' Partnership for Eco-Efficiency**



27. This discussion session showed that North-East Asia has a limited number of city networks or partnerships compared to the North American and European regions. This conference could be a good starting point for developing a city network in North-East Asia to strengthen the inter-city connection and cooperation.
28. Chinese city officials and experts showed a great interest in developing future cooperation with cities in other North-East Asian countries. Chinese participants stated that it is very important for China to learn experiences on low carbon, green cities from other North-East Asian countries, especially Japan and the ROK, to figure out the best practices of low carbon, green cities applicable to Chinese cities.
29. Japanese experts expressed their strong support for the cooperation among local governments of North-East Asian countries. They emphasized that local government cooperation should start with some concrete ideas and Japanese cities would welcome proposals for inter-city cooperation.
30. Participants of the ROK stated that great similarities shared among North-East Asian cities provide a sound foundation for inter-city cooperation in the subregion. In particular, they also suggested that four types of cooperation could be further developed among cities in the subregion: cooperation among policy makers, business cooperation, NGO cooperation and academia cooperation.
31. Participants also suggested that any city network in North-East Asia should include small and medium cities, especially emerging cities in developing countries. As these cities are still at the early stage of urbanization, it is much easier for them to shift into the track of low carbon, green city development.
32. The NEASPEC Secretariat indicated that since there are various international associations of local governments, such as C40 Cities Climate Leadership Group and International Council for Local Environmental Initiatives (ICLEI), the NEASPEC Secretariat, instead of forming a new association for local governments in North-East Asia, will focus on establishing an information platform to facilitate knowledge sharing and information exchange among North-East Asian cities. In addition, rather than promoting the ideal model solution for low carbon, green cities, the information platform should focus on the dissemination of creative ideas and practices through case studies in the subregion.

## **ANNEX: Suwon Statement on Low Carbon, Green Cities in North-East Asia**

1. The Conference on Low Carbon, Green Cities in North-East Asia was jointly organized by Suwon City and UNESCAP Subregional Office for East and North-East Asia (SRO-ENEA) on 17-18 November 2011 in Suwon, Republic of Korea. The Conference was attended by experts from research institutions, cities and NGOs in North-East Asia, and held to discuss the technical measures and policy instruments and strategies for developing low carbon, green cities in North-East Asia; review the existing and planned initiatives for low carbon city development and identify good practices in North-East Asia; and build a partnership among North-East Asian cities for developing and implementing eco-efficiency approach at the local level.
2. The Conference reviewed the significance of cities in addressing global, regional and national environmental challenges, in particular, climate change. While cities are home to about 50 percent of the world population, cities consume 75 percent of world's electric power production and emit 71 percent of global greenhouse gases (GHG) emissions. In particular, China is witnessing an unprecedented urban growth rate, which is likely to accelerate in the future. Compared to the level of 2000, its urban population increased by 36 percent and reached 620 million people in 2009. On average, urban population in China consumes three-quarters of the country's energy.
3. The Conference noted significant progress in the formulation of national initiatives in support of cities' action towards low carbon, green cities in North-East Asia. For example, the Chinese government has initiated several pilot and demonstration programmes including Low Carbon Pilot Provinces and Cities by National Development and Reform Committee (NDRC), Pilot Low-carbon Transport System by Ministry of Transportation, Comprehensive Demonstration on Financial Policies of Energy-saving and Pollution Reduction by NDRC and Ministry of Finance. In particular, the Government in August 2010 designated five low carbon provinces and eight low carbon cities.
4. For the case of Japan, the revision of Act on Promotion of Global Warming Countermeasures in 2008 mandated prefectural and large-size municipal governments to incorporate policies that reflect area-wide natural and social conditions into the current "action plans of local governments". As a result, 94 percent of the cities, which are designated by the Act, have set their action plan and 71 percent of all cities (1,750) have implemented the same as of 2010. Furthermore, the Cabinet Secretariat disseminated innovative approaches and provided comprehensive support through eco-model city

programme and designated special zone; the Ministry of Environment formulated basic policy for promoting low carbon cities in Japan; Ministry of Internal Affairs and Communications promoted the decentralized, independent and locally produced/consumed clean energy; Ministry of Land, Infrastructures, Transport and Tourism coordinated with urban planning, transportation and logistic policy for low carbon city development; Ministry of Economy, Trade and Industry introduced new energy in cities and promote energy efficiency at the city level.

5. The Government of the Republic of Korea in 2007 designated 8 cities as model cities for responding to climate change and in 2009 launched the concept of EcoRich city for supporting green growth of cities. Furthermore, the Low Carbon, Green Growth Basic Act in January 2010 requires local governments to set the energy saving target and target of GHG emissions reduction.
6. In that context, the Conference noted various ongoing initiatives of cities for low carbon, green cities. Such initiatives commonly encompass the areas of sustainable land use, green transportation system, resource recycling, energy efficiency, green space plan, etc. Some notable examples include as follows.
  - Suwon city adopted the plan for establishing low-carbon social structures of green city, green transportation system, renewable energy and green industrialization in order to reduce GHG emissions by 40 percent by 2030 from the level of 2005.
  - Guangdong Province prepared its Low-Carbon Development Policy Roadmap which consists of four major areas including regulatory policy, economic policy, market mechanisms and other incentives with specific quantified targets for each area.
  - Kitakyushu city in 2009 launched the green frontier plan which targets to build a society with accumulated prosperity over generations through reducing CO<sub>2</sub> emissions by 40 percent in 2050. This plan focuses on establishing low carbon industrial clusters, developing learning system, and enhancing low carbon social development.
  - Guangzhou City: A scenario for the city suggests that it could reduce GHG emissions by 46 percent from BAU between 2005 and 2030 with low carbon policies focusing on convenient transport, green building, fuel switch, industry decarbonation and low carbon electricity, in order to decouple economic growth from environmental impacts.

- Changwon City has implemented a ubiquitous technology-based public bicycle-loaning system, named “Nearby Useful Bike, Interesting Joyful Attraction (NUBIJA)” with 4,500 bicycles and 110,000 members since 2008.
  - Iida City has introduced Cooperative Solar Power Generation Project, in which the local government loans the roofs of public buildings for free of charge while a private energy company installs solar panels on those roofs and supplies electricity to the building users. One of the key aspects of this project is the utilization of citizens’ fund for the panel installation.
7. The Conference noted the need to further accelerate the development and deployment of policies and programmes for low carbon, green cities in North-East Asia and ideas for establishing a subregional partnership for low carbon, green cities. The major roles of such partnership could include promoting transfer of low carbon development technique, training experts in low-carbon technique, facilitating joint research on methodology, sharing information of policies and successful practices, etc. In this regard, the Conference proposed North-East Asian Subregional Programme for Environmental Cooperation (NEASPEC) to act as a locus of information platform for collecting, analyzing and distributing strategies and plans for low carbon, green cities in Northeast Asia, and as a catalyst for capacity development programmes among cities.
  8. The Conference also noted the significant potential of leading cities in the development of policies and techniques for low carbon, green cities for their contributions to inter-city cooperation as a source of innovative knowledge. In this connection, the Conference called for those cities including Suwon, Kitakyushu and other Eco-Model Cities in Japan to take initiatives for launching a new partnership for low carbon, green cities in this subregion.

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