

Experts' Interview—How to build a low-carbon city

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2010.08.25 Beijing, China

Most cities working on low-carbon construction in China cannot be regarded as low-carbon cities; Their work can only be called as low-carbon city planning.

To become low-carbon, a city needs to get a clear inventory of carbon emissions, however, the basic statistics especially energy statistics of all the domestic provinces are incomplete and inaccurate.

The biggest problem now is to determine whether the government is willing to set the standards of carbon emissions as an explicit criteria for city development and planning. There are currently no standards of this kind in China.

At the end of August, The National Development and Reform Commission (NDRC) launched a national low-carbon province and low-carbon city experimental project, which will be implemented in five provinces and eight cities, covering economically developed coastal regions and developing western cities. The construction of low-carbon cities tends to drive on a fast track.

This brought us to the question question of how to build a low-carbon city. ***Southern Weekly*** invited some experts specializing in low-carbon planning and designing to put forward their views. They are: Konrad Otto-Zimmermann, secretary general of ICLEI, which has thousands of international city members and is the world's largest local governments alliance to promote urban sustainable development; Jiang Kejuan, the researcher from energy research institution of NDRC; Ye Zuda, planning and development director of ARUP engineering consulting company who led lots of domestic low-carbon community design; Bo Asmus Kjeldgaard, the mayor of Copenhagen.

Southern Weekly: We have many concepts of what constitutes a low-carbon city – how do you define low-carbon city?

Jiang Kejiong: Low-carbon city refers to cities which emit comparatively lower carbon dioxide. Besides, we have another concept called low-carbon

city actions, which refers to cities have comparatively higher emissions of carbon dioxide, which however try every means or take actions to lower their emission standards. Most of the domestic cities working on low-carbon construction in China cannot be regarded as low-carbon cities, their behavior can only be called as low-carbon city actions or plans.

Konrad Otto-Zimmermann: Low-carbon cities minimize the burning of fossil fuels (coal, mineral oil, natural gas) heating/cooling, transport, and energy sectors. A smart low-carbon city combines natural concepts - such as using sun power, the bicycle and natural cooling processes - with advanced technology.

Ye Zuda: In contrast to the concrete definition of eco-city and green city, low-carbon city is comparatively less controversial. Since low-carbon city reduces our carbon emissions on urban level by means of urban development in the process of tackling global climate change, and carbon emission is an explicit criteria.

Bo Asmus Kjedaard: From our points of view, any cities which take actions after making their plans of reducing the emission of carbon dioxide. Copenhagen is determined to be the world's first carbon neutral city in 2015. This is aligned with green city, climate friendly city and eco-city.

Southern Weekly: What are the necessary steps or procedures a city should follow to becoming low-carbon?

Bo Asmus Kjedaard: First the city should have an ambitious strategy, which is supported politically, so that the plan could be carried out immediately. Meanwhile, to realize our goal of climate mitigation, a dialogue among government, cooperates and citizens of Copenhagen is necessary. Building relationship with energy companies creates long-term and green investment, benefiting the public.

Konrad Otto-Zimmermann: A city should begin by recognizing its co-responsibility for global warming and then officially embark on a process to reduce greenhouse gas emissions emanating from its own territory. This can be done by a city council resolution stating the city will develop a climate action plan and commit to a CO₂ reduction target or to the goal of becoming climate neutral.

Once this process starts, a city would then need to conduct a greenhouse gas emissions inventory and establish its baseline emissions in relation to definable targets. This process will help gauge progress and identify main pollution sources.

A climate action program would then be developed, containing the most cost-effective measures to reduce carbon and other greenhouse gas (GHG) emissions.

Over 1000 cities have joined ICLEI's international Cities for Climate Protection (CCP) program to obtain guidance and advice from our experts. Cities are usually more effective in developing new policies if they are working in tandem with other cities. This way, they can exchange experiences during the process and encourage each other to overcome obstacles.

Ye Zuda: First, a basic research to centralize a concrete low-carbon planning area is necessary, clarifying the main sources of emissions (traffic, energy and industry) ; Second, make out stage plans by scenario analysis; Third, carry out plans by various political means; Forth, active observation.

Southern Weekly: As is emphasized by experts, to build a low-carbon city a carbon emission inventory must first be taken. How can we acquire comparable statistics in this area?

Ye Zuda: So far we are in lack of a centralized methodology of accounting the urban carbon emission. In the low-carbon projects that I participated in, including Caoheidian and Taihu Wuxi, we mainly consulted the IPCC method of UN. It goes without saying that all the thoughts would be dreams if not quantizing mitigating criteria as concrete mitigating amount.

Konrad Otto-Zimmerman:

ICLEI - Local Governments for Sustainability will soon launch the global Cities Climate Registry wherein cities will officially and transparently report their CO₂ emissions. This registry is run by "carbons" – the Center for Local Climate Action and Reporting based in Bonn, Germany, the seat of the United Nations Climate Secretariat. Once cities disclose their carbon emissions through the Registry, the world will be able to determine which cities are truly low-carbon.

Cities have applied a variety of methodologies until now which means emissions and reductions cannot be compared from one city to the next. "carbonn" and the Cities Climate Registry will allow cities to account and report their climate data in a transparent, quantifiable way.

Jiang Kejuan: What really worries me is the basic statistics and energy statistics of all the provinces in China, which are neither complete nor accurate. Some cities that take actions to build low carbon infrastructures so far as I know, don't have good energy statistics, it is very hard to control the process.

Southern Weekly: Concerning the conflict between low-carbon development policy and current urban planning policy, do you have any suggestions on how to integrate the two?

Jiang Kejuan: The priority of our present research is to investigate the rest of existing policies which haven't been integrated to the strategy of low-carbon development. Take Shenyang as an example, it has already taken plenty energy saving methods, however, after we refer to the experience of NewYork, Chicago and Northern European countries and incorporate the omitted traffic mitigation, the result turned out to be efficient and salient. Besides, as for the renewable energy project which is always included in the policy of energy saving and emission reduction, if efforts are intensified, this part could be more effective on mitigating carbon dioxide emission. The relation of energy saving and emission reduction with low-carbon city is: right now we are not proving a city is low-carbon by means of the energy saving and emission reduction methods, but scanning the shortages of current policies to encourage urban transformation in a frame of low-carbon city construction.

Southern Weekly: In your practice of low-carbon city design, what's the biggest challenge for you?

Jiang kejuan: I don't think low-carbon development is supposed to be so political, but in actual operation people still treat it as a harsh political mission. In terms of our observation, many cities are active in the beginning when applying to be pilot low-carbon cities, however, once admitted into experimental stage, they become comparatively conservative, which turns out to be a general mind among those pilot cities.

Ye Zuda: The biggest challenge comes from people's ambiguous idea about low carbon. The key point of building low-carbon city is synthetic consideration, which includes technology, economy and interest coordination. Moreover, whether the government is willing to set the carbon emission criteria as an explicit standard for urban planning is also one of the biggest problems that we face today.

Jiang Kejuan: In contrast to the low-carbon development of London and New York, many cities in China haven't proposed ambitious and strategic goals, for example, try best to get emissions peaked in 2020. We hold that if China wants to build low-carbon cities, these pilot cities' carbon emissions are supposed to peak in 2020, otherwise it would be impossible to peak throughout the nation in 2030. Beijing, Shanghai and Shenyang are hitherto several advanced cities in this context in China.

Bo Asmus Kjedaard: Attracting the investment of green corporates or new investment is very crucial as for building low-carbon city, we face great challenge at this point since Copenhagen has to compete with cities all over the world.

Southern Weekly: Do you have any suggestions for China's low-carbon pilot experiment?

Ye Zuda: Our urban developing methods and systems should be applied properly to the implementation of carbon emissions. When the aim of reducing 45% intensity of carbon emissions breaks down to the local government, who's going to implement and observe? What are the respective responsibility of industrial department, construction sector and environmental protection department? These are all the questions that local governments should ask themselves.

Konrad Otto-Zimmermann: Chinese municipal governments are experienced and familiar with mid-term and long-term plans. It should not be difficult for them to engage in low-carbon planning; I would rather assume Chinese cities can go the low-carbon route much faster than cities in many other countries. I would like to see Chinese cities joining the international Cities for Climate Protection program and reporting their emissions through "carbonn".