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**Stephen A. Hammer, PhD**  
**Executive Director, Energy Smart Cities Initiative,**  
**Joint US-China Collaboration on Clean Energy (JUCCCE)**

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**Hearing on China's Green Energy and Environmental Policies**

Mr. Reinsch, Mr. Shea, and other distinguished members of the US-China Economic and Security Review Commission. Thank you very much for the invitation to join you this morning. It is an honor to be here.

My name is Stephen Hammer, and I am the Executive Director of the Energy Smart Cities Initiative, a project of the Shanghai, Beijing and Washington DC-based NGO known as JUCCCE – the Joint US-China Collaboration on Clean Energy. For the past three years, JUCCCE has been working to change the way China uses and supplies its energy.

I am an urban energy and climate specialist, so my views this morning will likely approach the topic from a decidedly different vantage point from most other speakers today. Before I joined JUCCCE in January I taught and ran a research program at Columbia University focused on energy policymaking in cities. I joined JUCCCE because of what I saw as both the extraordinary opportunity and imperative to work directly with local government officials in China on energy and climate matters.

A brief recap of some basic facts will clarify why I think it is both important and helpful to view China's energy policymaking through an urban lens.

- There are currently roughly 600 million people who live in cities in China, and this number is expected to grow by more than 350 million over the next 15-20 years.
- By 2025, there are likely to be over 200 cities in China with populations exceeding 1 million people. In the US, there are only 9 cities of this size; in Europe, only 35 cities exceed this size threshold.

- McKinsey and Company predicts that by 2025, there will be 40 billion m<sup>2</sup> of new floor space constructed in Chinese cities, requiring 20,000 to 50,000 new skyscrapers over 30 stories tall.
- A significant portion of China's industrial energy consumption has been driven by the need for concrete and steel to construct China's growing cities. Given the country's current urban growth trajectory, this situation will not change any time soon.
- China's growing middle class is increasingly purchasing energy consuming products, ranging from cars to air conditioners to computers. Although the Chinese government is promoting improved efficiency standards for these products, overall growth in demand far outstrips these efficiency gains.
- All told, McKinsey predicts that by 2030, Chinese cities will be responsible for fully 20% of global energy demand

Crafting policies to address this situation means looking at the problem through a different lens. Mayors become more prominent players in the policymaking picture, and in China, I can report that there is growing appreciation and awareness of energy and climate topics at the local level.

Part of this interest has been driven by central government policies forcing local governments to reduce the energy intensity of their cities. Part of this has been driven by concerns of local officials over the adequacy of the local energy infrastructure, including the reliability of energy derived from power plants located far outside of their city.

Part of this has also been driven by local officials trying to address their growing pollution problems, both from coal-fired power plants and from vehicle emissions.

Cities in China are deploying new subway and bus rapid transit systems, pursuing tree planting programs, improving the efficiency of their water delivery and treatment networks, and promoting the deployment of solar hot water heaters on residential rooftops. Local authorities are also working with local businesses to reduce their energy consumption, in some cases going so far as to shut down the least efficient firms altogether.

We're also seeing a jump in the number of initiatives where NGOs partner with local government to promote urban sustainability. JUCCCE runs one of those programs, training mayors on energy solutions relevant at the city scale. The Chinese government requires Mayors from around the country to attend our trainings, which vary in length from 1 to 10 days. I head to Beijing next week for our next session, which is scheduled for April 17<sup>th</sup>.

Other international NGOs like WWF, the Climate Group, the Institute for Sustainable Communities, and the Energy Foundation have also established low carbon city programs in China, sharing international best practice strategies with local officials

around the country. Chinese mayors are visiting their counterparts in the US, and attending energy and environmental training programs at Harvard, Yale, Columbia, and Stanford.

I see a high level of receptivity to this programming, although naturally there are challenges translating ideas that work internationally to China's unique political, government, and market context.

In tackling these issues, mayors in China are fortunate that they tend to have significant policymaking powers, exceeding those of their counterparts here in the west. They have particularly strong land use controls, and often have full or partial ownership of key local energy system assets. Cities are also increasingly being encouraged to experiment with new technologies or policies, in the expectation that successful pilot programs would quickly be deployed at scale in cities across the country.

It is too early to say how successful these initiatives will be, but it does indicate a growing appreciation for how cities must play a role in shaping China's energy future.

At the same time, however, that progress will be challenging. I could talk about many factors, but I will focus my time this morning on three topics.

First, project financing is a problem at the local level, with many local authorities reporting difficulties accessing the capital necessary to make energy efficiency upgrades. In the west, we often rely on Energy Service Companies (ESCOs) to help pay for this work, but that model has been slow to gain traction in China. Carbon instruments have obviously helped finance a great many projects across China, but there are many more opportunities for which these project-based instruments are ill suited.

Second, at the local level, long-term planning tends to take a back seat to the dominant planning paradigm in China, the 5-year plan. This leads local authorities to emphasize strategies that will deliver on 5-year plan commitments or have a quick payback period, rather than projects with a longer time horizon or less tangible benefits. This situation is exacerbated by the fact that the average mayor in China only holds office for 2.5 years before moving onto their next post.

Finally, in a situation that parallels concerns in the US, local officials in China consistently express concern that excessive focus on energy and environmental matters will slow local economic growth. Because local officials are expected to deliver 6-8% GDP growth each year, and because the 'report cards' used to evaluate local official performance are so heavily skewed toward economic indicators, meaningful progress may take some time.

I should emphasize that if you asked me to comment on how local governments in the US are approaching energy and climate matters, I might well say similar things. The reality is that urban energy planning is difficult, regardless of the locale. Many institutional barriers exist that make it difficult to deliver quick progress.

But I conclude by restating the message I started with a few minutes ago: it is at the local level in China where progress *must* be achieved.

Energy use in Chinese cities is growing fast, and will continue to grow for many years to come. Local authorities and provincial and central government officials across China must all work together if they are to tackle this issue in a meaningful way. Other countries can also take action to help Chinese cities do better on energy and climate matters. The Obama administration appears to be quite supportive in this regard, and we are fortunate that mayors across the US are willing to share what they know with their counterparts in China.

Time is running short, however, and as this Commission moves forward, I urge you to keep this urban-focused theme in mind. Cities are growing at a frightening rate in China, and unless we help them grow in a manner that promotes energy efficiency, the implications will be both long lasting and dire.

Thank you for your attention, and I welcome any questions you may have about my comments.