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## Regional Development Mission for Asia (RDMA) U.S.-China Sustainable Buildings Partnership



*Large new commercial office buildings tower over older low-rise buildings in the city of Shanghai, China's largest and fastest-growing commercial building market. In recent years, total new building area has increased by approximately 2 billion square meters annually across China, not only in large cities in China's east and south, but also in a large number of "second tier" cities with populations of several million.*



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**CHINA'S SUSTAINABILITY CHALLENGE** China recently surpassed the United States to become the largest emitter of greenhouse gases in the world. China's energy requirements will continue to increase as developing cities demand more power to support growing infrastructure. New and existing building stock is growing not only in major cities such as Beijing, Shanghai, and Guangzhou, but also in 109 large, fast-growing second-tier and third-tier cities supporting populations of over a million.

Buildings in China represent one of the largest and most achievable targets for responding to current energy challenges and reducing associated greenhouse gases. Buildings account for more than 19% of China's total energy consumption, and this proportion is expected to increase to over 30% in the coming years.<sup>1</sup> This makes building energy a significant, controllable opportunity to reduce China's energy consumption and greenhouse gas emissions.

### **ABOUT THE USAID U.S.-CHINA CLEAN ENERGY PARTNERSHIP**

The US-China Sustainable Buildings Partnership (SBP) promotes demand-side energy efficiency in China's building sector. It is accomplishing this by providing policymakers and the marketplace with tools and frameworks to drive large scale action. The work of the SBP is intended to complement a growing body of minimum regulatory standards for building energy use, and a newly evolving voluntary green building certification program in China. The SBP is focused on working with policymakers and market to increase participation in these existing initiatives, and on demonstrating new "reach" strategies for promoting higher levels of exemplary energy performance through voluntary approaches. Voluntary, market-based approaches represent a new and as-yet-underutilized strategy for achieving large scale reductions in energy use in Chinese buildings.

In the market, the SBP works directly with building owners, developers, designers and managers to develop voluntary, portfolio-wide approaches for improving the energy performance of buildings. These approaches provide potential models for organized, national-level voluntary building energy programs. At the same time, the SBP is working directly with policymakers to provide specific tools and approaches, such as a building energy use benchmarking rating system, to facilitate more robust participation of the China buildings community in existing and emerging building energy programs.

**APPROACH** The SBP works to engage both private and public stakeholders. It supplies technical implementation support to building developers, owners, operators, and service providers to improve building performance through voluntary actions. The SBP also shares international experience in voluntary, market-based approaches with key Chinese policy institutions, and promotes dialogue within the policy sphere to strengthen linkages between policies, programs, and implementation strategies that govern building energy use. A key focus is on identifying and developing specific tools, frameworks, and strategies to assist the buildings market in participating actively in existing and new programs, to support reductions in building energy use on a mass scale. A lack of these types of facilitating mechanisms is a substantial barrier to achieving broad-based and significant reductions in building energy use under the existing policy and program environment.

The SBP is being implemented through several integrated initiatives:

- Engaging large portfolios of existing buildings in a voluntary, portfolio-wide energy performance improvement process that includes documenting energy use over time and implementing improvement strategies (primarily no-cost and low-cost operational measures by building managers).
- Collaborating with key Chinese building policy and program designers to develop a comparative building energy performance benchmarking rating system – a powerful analytic capability designed to provide a single metric for rating the efficiency of thousands of buildings easily and cost-effectively, which can form the basis for large scale implementation of policies directed at achieving improved energy performance.
- Working with China’s new voluntary green building certification program and other institutions to strengthen the uptake of certification in the market.
- Collaborating with major Chinese residential property developers to demonstrate voluntary approaches for reducing energy use in residential buildings through improved building design and operating practices.
- Collaborating with key Chinese and international institutions to increase the demand and strengthen the market for energy management services in the commercial building sector.



*A Shanghai building manager discusses his commercial building’s automation system and energy consumption during a walk-through assessment.*

- Engaging Chinese policymakers in discussions on new approaches market transformation in the Chinese building sector—particularly voluntary approaches that encourage exemplary performance on a broad scale.

#### **GLOBAL DEVELOPMENT ALLIANCE PARTNERS**

China Business Council for Sustainable Development, Clinton Climate Initiative, the Energy Foundation, US Green Building Council, and Vanke.

#### **IMPLEMENTING ORGANIZATIONS**

ICF International, China Academy of Building Research, Tongji University, China Standard Certification Center, and Questions & Solutions Engineering, Inc.

<sup>1</sup> Fridley, David; Zheng, Nina; Zhou, Nan. “Estimating Total Energy Consumption and Emissions of China’s Commercial and Office Buildings.” Ernest Orlando Lawrence Berkeley National Laboratory. March 2008.

#### **Contact: Orestes Anastasia**

Regional Development Mission for Asia (RDMA)  
 U.S. Agency for International Development (USAID)  
 GPF Witthayu Tower A, 10th Floor, 93/1 Wireless Road  
 Bangkok 10330 Thailand  
 Office +66-2-263-7468  
 Fax +66-2-263-7499  
 Email: oanastasia@usaid.gov