

**ASIA PACIFIC ECONOMIC COOPERATION (APEC)  
NEW AND RENEWABLE ENERGY TECHNOLOGIES EXPERT GROUP (EGNRET) MEETING  
42TH MEETING**

**China's Completed and On-going APEC projects**

**Mr. Lin WAN  
Hawaii, April, 2014**

# APEC China 2014



- Leaders' Summit
- Ministerial Meeting
- EWG Meeting, May 2014, Kunming
- APEC projects



# Low Carbon Town Promotion

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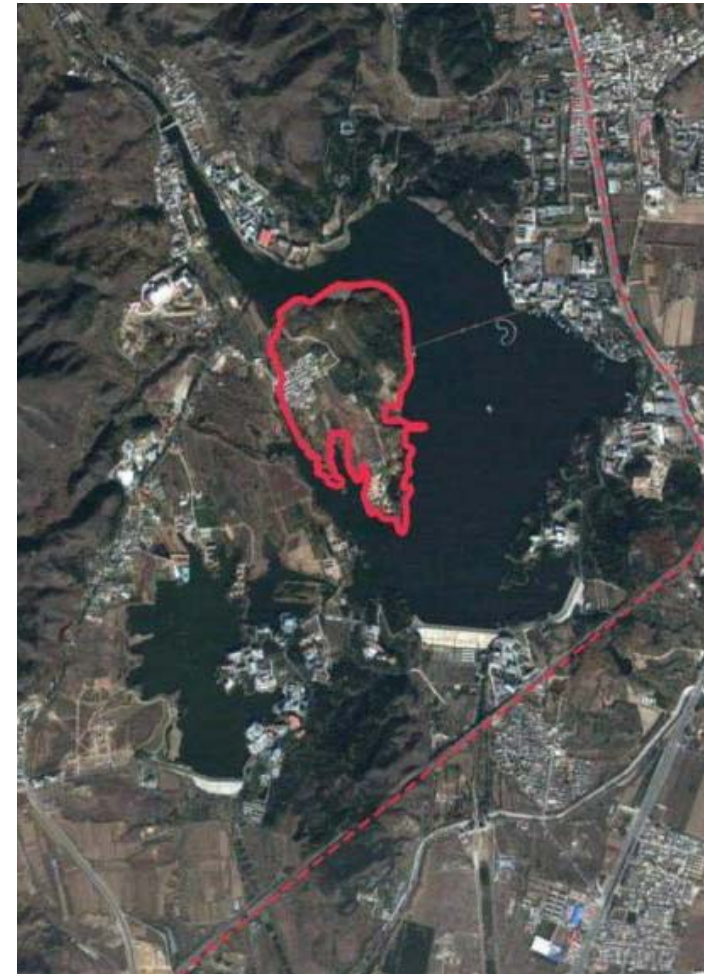
- China's National Energy Administration (NEA) hosted a conference of Low-Carbon Town Promotion in Beijing in 2013
- A series of measures will be taken for the promotion of low-carbon towns, such as:
  - Setting up Low-Carbon Town Project Database
  - Selections of pilot cities and pilot towns
  - Advanced technology, concepts, and development modes will be introduced with international organizations.



# LCMT -- Yanxihu Project



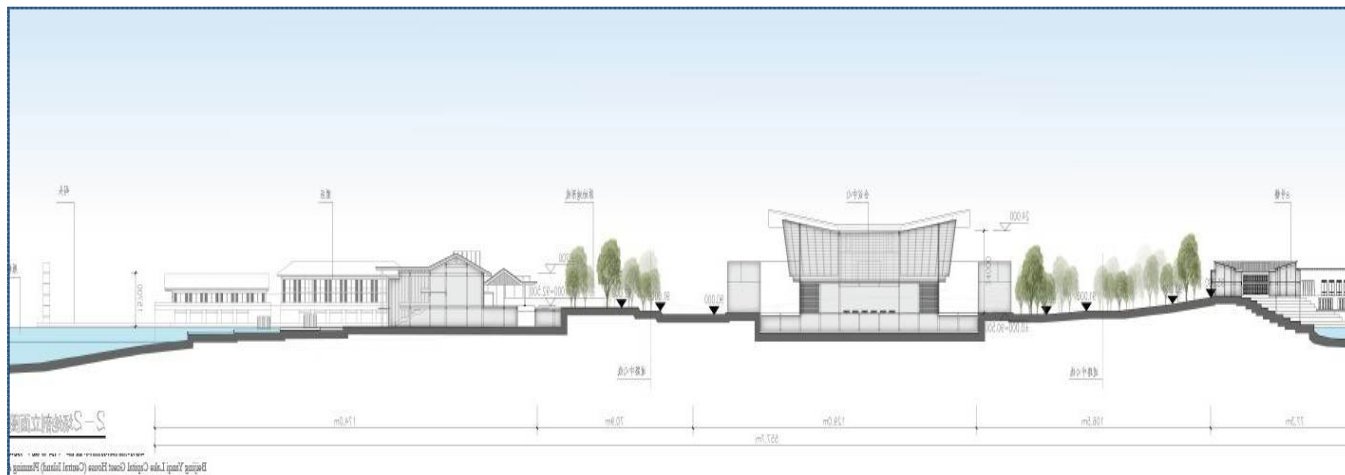
- Located in Yanqi Lake Peninsula, Huairou District, Beijing, the Demonstration Area is a part of the North China ecological shelter and an important alternative water head site of Beijing. The total land area of the island is 650,000 m<sup>2</sup>, including 41,900 m<sup>2</sup> built-up area of the international conference center.



# LCMT -- Yanxihu Project



- Design principles: Chinese-style, Low-carbon, Science & Technology Innovation
- Goals: Portal of Beijing International communication, International ecological development demonstration area, tourist resort with high quality ecological culture.



# LCMT -- Yanxihu Project

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- Low-Carbon urban planning: Good distribution of urban functions and traffic flow; ecological framework based on the protection of the local ecological environment; special site analysis and landscape design taking account of water sensitive regions and the lake shore.



# LCMT -- Yanxihu Project



- Landscape nodes: Arrange landscape nodes considering overall distribution; arrange landscapes in Summer Garden, Winter Palace and villa district with traditional Chinese gardening techniques.



# LCMT -- Yanxihu Project

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- Architectural design:  
Located in the center of this area, the conference center is connected with nature and reflects the essence of oriental architecture by using the idea of the quadrangle.





# LCMT -- Yanxihu Project



- Low-carbon energy
- Solar Energy Generating Systems will be installed on the conference center, which can meet part of lighting needs. Meanwhile, lake water or ground source heat pump will be used to meet the heating requirements, and light guide technology will be used to illuminate internal corridors and conference rooms while LED lights are used in public spaces. Cornices are extended to shadow the conference center and vacuum insulation glass is used to maintain the temperature inside.





- Study of Demand Response's Effect in Accommodating Renewable Energy Penetration in the Smart Grid
- The feasibility and benefit analysis of improving Renewable Energy consumption by demand response
- Business operation model and policy mechanism of demand response
- Pilot implementation project mode of demand response

# EWG 16 2012A

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- Research on the Application of Physical Energy Storage Technology with Renewable Energy in a Low Carbon Town
- May 25-26, 2013
- Changsha, Hunan, China
- Hunan University
- The Hong Kong Polytechnic University
- University of Kansas
- More than 120 papers from all over the world are included in this proceeding, mainly about advanced technology about how to build and reach Low-carbon Town and new physical energy storage technology for energy conversation with phase change material



- Promoting Stable and Consistent Renewable Energy Supply by Utilizing Suitable Energy Storage Systems
- Development Status of the Energy Storage Industry
- Energy storage applications in the new energy field
- Advancing Wind Farm Development with the Use of Energy Storage
- Advancing the development of distributed generation and micro grids via the application of energy storage systems
- Impact of the national government on the practical economics of energy storage
- The active role of rational application of energy systems in industry



- APEC Low Carbon Town Plan and Design Contest
- Development of low carbon towns supports excellent opportunities to reduce energy consumption.
- Design methodology for low-carbon buildings and towns is very different to traditional process.
- To promote the concept of low-carbon towns, enhance the public awareness of low-carbon buildings, demonstrate the effectiveness of green building design, share knowledge on low-carbon town design.

# EWG 05 2013A

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- APEC Low Carbon Model Town Capacity Building Development
- To strengthen capacity of greenhouse gas quantification and improve the conscious of operation data quantification people (stakeholders) who involved in sustainable project, in order to create a common Ghg database for LCMT projects, and make the carbon reduction target more touchable and accountable.
- To create an inspiring young talent cultivation mechanism on sustainable research area as well as back up the development of innovative high green technical industries accompany with the data collection and analysis process, in order to reduce the cost of implementing and managing LCMT by increase the active participants in development of LCMT projects and other sustainable city projects, especially in developing countries.
- To provide digital back up information and reference for 2014 APEC Energy Ministerial Meeting, which will hold in China in 2014.



- Promote APEC Low Carbon Town Development with District Energy System
- Create a framework of District Energy System with Multiple Forms of Supply in low-carbon town.
- Share experiences among APEC economies about successful energy programs using District Energy System with Multiple Forms of Supply in Low-Carbon Town, such as widely applying renewable energy and distributed energy system.
- Develop recommendations on Reducing Energy Intensity and Developing Low-Emissions Strategies measures in APEC economies.



- APEC Photovoltaic Application Roadmap and Model Study (PVARM)
- Case study and SWOT analysis to typical PV project, including casualty and losses, in different area and environment
- Suggestion of possible PV application roadmap for APEC economies' reference
- Compare and discuss the advantages and weakness of different PV development models, including large size ground-mounted power plant, industrial and commercial project, residential project, and application in agriculture, transportation, and to summarize the best practices.
- A workshop will be held in China as APEC chair in 2014 and a written report will be shared in APEC and EGNRET website.



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- APEC Low-Carbon Model Town Development Model and Tool Kit Study (LCMT-DMTK)
- Procedure that help to improve development efficiency
- Solution, from existing project, research and other industry,
- Tool kits, especially feasibility study and planning, etc., on the basis of China-EU cooperation, and the Solar Decathlon competition held in China in August 2013.
- The deliverable achievement of this project will be a published research report, and one symposium in China in 2014

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- APEC Photovoltaic Communication and Cooperation Platform (PVCCP)
- Establish a PV System Life-cycling Risk Management Scheme, to identify and control potential risks of different periods including planning, design, manufacturing, construction, maintenance, etc,
- Develop PV Risk Analysis Tool Kits to carry out risk analysis, mainly focus on three stages: design, construction and maintenance,
- Provide support to EGNRET and related stakeholders who wish to evaluate the risk and quality of specific PV project,
- Provide content and tool support concerning PV to the Knowledge Sharing Platform (KSP) of Energy Smart Communities Initiative (ESCI).
- A workshop will be organized in China in 2014.



- APEC Low-Carbon Model Town Energy Management System Development and Application Research
- Briefly review the latest development, technology, solution and research concerning EMS in APEC region.
- Analysis the advantages and potential risks or weakness of EMS application.
- Summary the proper procedure and process, key points to develop EMS.
- Best practices of different EMS development and application, including residential house, building, renewable energy power plant, harbour, etc.



- Study of APEC Low Carbon Model Town Development Index System
- Create APEC Low Carbon Model Town development Index System to guide LCMT development.
  - position APEC LCMT well, and propose development ideas for LCMT planning and construction.
  - Puts forward basic LCMT construction frameworks, helping local towns build their own index.
  - To reasonably evaluate and examine project planning effects.
- Make it easy to share replicable types of low-carbon demonstration towns (such as tourism type, industry type, etc.) among member economies.
- Provide an analytical framework for rational assessing and developing LCMT to facilitate LCMT development among member economies.



- District Energy Systems Development Roadmap Study in APEC Economies
- Case studies including site visits and interviews, seminars, and workshops shall be organized to study a number of selected DES cases in APEC economies, led by an expert team. A comprehensive research report shall be created to summarize and categorize the case studies in selected APEC economies.
- A set of practice guidelines shall be developed by the expert team to specify the techniques and protocols of certain DES systems.
- An international DES symposium shall be organized to involve stakeholders from main APEC member economies for technique and policy communication to share the research fruits. The guideline development and symposium shall both take place in China in 2014.



- APEC Low-Carbon Model Town Heating System Application Model and Best Practices
- Summarize the latest development of research, product and solution of different economic heating system.
- Analysis best practices, advantage and weakness of different heating system.
- Provide application model to help related stakeholders to choose or analysis different heating system.

# Thank you for your precious time



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- Mr. WAN Lin graduated from Renmin University of China in 1994, majored in Industrial Economics and International Economics.
- He joined China Classification Society, CCS in 1994, having worked as strategy researcher, production inspector, project manager, cooperation department manager, assistant to Chairman of International Association of Classification Society (IACS). He was appointed as the general manager of China Classification Society London branch in 2003.
- In 2005, he acquired the Master degree in MSc Shipping, Trade and Finance at CASS business school, City University, London. He went to the US for Tri-State (New York, New Jersey, Connecticut ) Maritime Cluster Research sponsored by the Baltic Exchange scholarship in 2005.
- He joined China General Certification Centre (CGC) as vice president in 2008, in charge of PV, solar thermal business, as well as Strategy & International Cooperation.
- He is CCAA Senior Auditor, member of China's national PV standard committee and IEC, and main contact window in renewable energy cooperation between China and US, EU, AFRICA, APEC, BRICS, Mainland and Taiwan, as well as Co-Chairman of WG Standard, Testing & Certification in China-US RE cooperation, and steering committee member of PV Quality Assurance Forum.