



China Partnership Of Greater Philadelphia

PHL-TEDA EcoPartnership on Urban Clean Energy Infrastructure

The Greater Philadelphia (PHL)-Tianjin Economic-technological Development Area (TEDA) joined the U.S.-China EcoPartnerships program in July 2014 to jumpstart innovative “Urban Clean Energy Infrastructure” solutions in both regions. This unique combination of real-world technology demonstrations and product showcases will get viable new infrastructure breakthroughs quickly into Chinese and U.S. markets with support from the two national governments.



2012 CPGP-TEDA Signing w/ 2 Mayors



Project Locations In Tianjin



2014 U.S.-China EcoPartnership Ceremony

PHL and TEDA have assembled public-private partnerships comprised of a network of business leaders, local officials, and non-profit organizations that will contribute to: (1) Piloting breakthrough technologies and technology platforms including clean water, low-carbon buildings, and smart electricity and (2) Launching a permanent U.S.-China Urban Clean Energy Infrastructure Cooperation & Transfer Center at TEDA to feature the solutions from these pilot projects and showcase hundreds of other emerging technologies.

Project 1: Wetland Urban Water Management (WUWM) in Nangang Industrial Zone



The WUWM project seeks to demonstrate a viable green alternative to traditional industrial waste-water treatment processes. A hybrid-wetland approach mimics natural wetlands to more sustainably treat wastewater such that the treated water can be reused in manufacturing processes and/or used safely for irrigation (see Figure 4). By imitating the natural process of wetlands to clean and disinfect industrial-process water, this hybrid treatment system uses 40% less energy and has 60% lower operating costs than traditional systems. Importantly, it functions without the use of conventional water treatment chemicals. The PHL region has direct participation in commercial-level deployments of this technology through the Department of Community of Economic Development of the Commonwealth of Pennsylvania. Allegheny County, Pennsylvania is home to one of the leading installations of this technology worldwide. To promote this solution, the EcoPartnership is requesting USTDA support for a Reverse Trade Mission (RTM) by leaders in the TEDA consortium to Philadelphia and Pittsburgh in the fall of 2015. The visit will include technical demonstrations of available tools and technologies

for industrial waste-water management that can be tailored for China. The goal is to match vendors with new customers as well as to exchange insights on current policies and best practices in both countries.

Temple University and its National Science Foundation-supported Water & Environmental Technology Center (WET Center) have the lead role in supporting this project with related research.

Project 2: Low-Carbon Built Environment (LCBE)



Under the LCBE project, PHL consortium members such as the Delaware Valley Green Building Council and the Consortium for Building Energy Innovation are working together with the U.S. Business Council for Sustainable Development (USBCSD) and the World Business Council for Sustainable Development (WBCSD) to develop technology tools and collaborative models relevant to the PHL-TEDA EcoPartnership (and to TEDA EcoCenter's new showcase Low-Carbon Showcase Building). This high-impact project aims to inspire and enable energy-efficient building (EEB) collaborations in and around the TEDA Central Business Zone and throughout the region. Underpinning all levels of collaboration in this project (commissioning procedures, technology tool-suite, and city-level EEB Lab collaboration), is the complementariness of the building stock in the PHL and Tianjin urban areas.

The University of Pennsylvania and its Kleinman Center for Energy Policy have the lead role in supporting this project with related research.

Project 3 : Online Monitoring System (OMS) in TEDA Central Business Zone



The OMS Project integrates energy utilization data from 79 sensor-networked industrial and pilot sites at TEDA and provides -- on an integrated, real-time basis -- an online monitoring system (or "dashboard") that will enable better operations and maintenance to ensure peak performance and load management among groups of buildings (see Figure 6). The goal is to demonstrate solutions for reducing peak electricity load and reduce overall energy consumption in the industrial and commercial buildings sector.

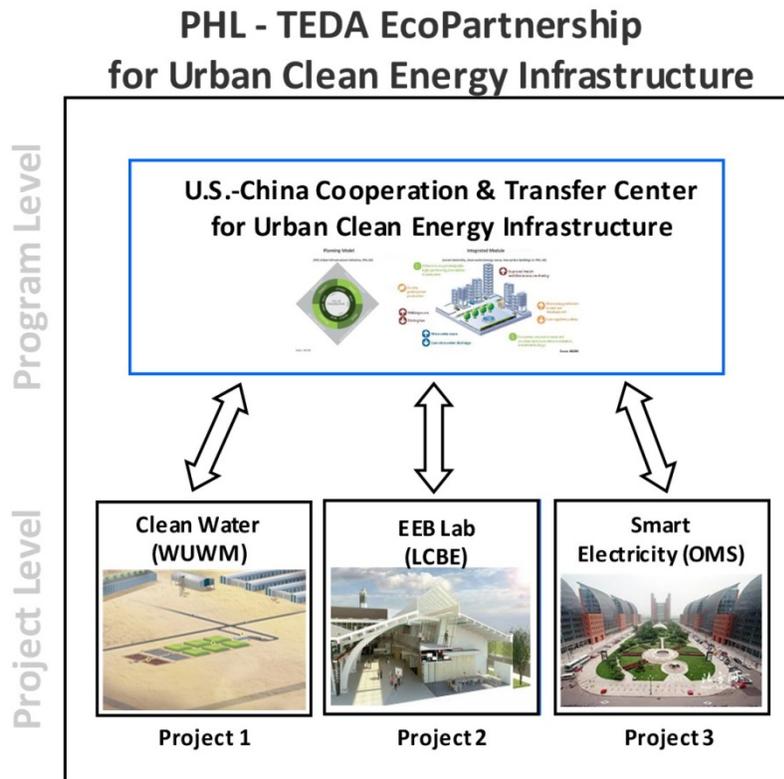
Drexel University and its AJ Drexel Institute of Energy and the Environment have the lead role in supporting this project with related research.

U.S.-China Urban Clean Energy Infrastructure Cooperation & Transfer Center

Based on Philadelphia's work-to-date on the WBSCD's Urban Infrastructure Initiative and its experience with TEDA on the initial three urban clean energy infrastructure pilot projects, the EcoPartnership is establishing a permanent platform for showcasing this category of clean energy technology solutions. The U.S.-China Urban Clean Energy Infrastructure Cooperation & Transfer Center, a funded program at TEDA, will help foster and amplify collaboration on urban clean energy infrastructure projects involving vendors and clients from PHL and TEDA consortia stakeholders.

The Center is being built out as a 300-square-meter exhibition hall and virtual online exhibition hall at the new premises of the TEDA EcoCenter. Initial PHL-TEDA EcoPartnership joint activities in the center will include:

- o 6 clean-tech trade missions or similar business-to-business exchange activities;
- o Trade facilitation services to help 100 U.S. companies introduce their technologies or services to the Chinese market;
- o Online services for 500 U.S. companies and Chinese companies to increase exposure, via virtual exhibitions, in each other's respective markets.



The Center will leverage TEDA's position as an economic driver – municipally, regionally and nationally – in China. Initially, the focus is on promoting technologies for projects in the large precincts of TEDA proper, which encompasses 33 square kilometers. Then, the 'Jing-Jin-Ji' program to promote economic growth and sustainability in Beijing, Tianjin and Hebei Province will be targeted. Over the longer-term, opportunities associated with development of the Binhai New Area (a proposed growth engine for China's northeast quadrant comparable to Shenzhen in the south and Pudong in the central coastal regions) and various initiatives to upgrade and expand leading national-level science and technology parks (among which TEDA has been ranked #1 for twelve consecutive years) will be pursued throughout China.