EcoPartnership in Brief

EcoPartnership Program

U.S. Department of State

The EcoPartnership program is an effort by the U.S. Department of State and the Chinese National Development and Reform Commission (NDRC) to formally link U.S. and Chinese stakeholders in a productive exchange of knowledge and best practices in the fields of clean energy and sustainability. The EcoPartnership program was established as part of the Ten Year Framework on Energy and Environmental Cooperation, a set of agreements through U.S. and China's Strategic and Economic Dialogue convened in Washington and Beijing every year.

The program's goal is to facilitate the exchange of information and best practices between the two countries to stimulate innovation and develop solutions to a variety of pressing energy and environmental challenges. As one of only a dozen such partnerships, Duke Energy's EcoPartnership is designed to help both public and private stakeholders leverage the experience and technical expertise of all parties to advance their respective environmental, energy, and economic goals.

Duke Energy helped form a public-private EcoPartnership between Duke Energy, ENN Group and the cities of Charlotte and Langfang. The signing ceremony took place on May 10th, 2011 at the U.S. State Department. Photo (left to right): David Mohler, Mayor Anthony Foxx, Dr. Zhongxue Gan, Mayor Aiming Wang and the State Department's Eric Maltzer (standing).

About the Partners

DUKE ENERGY is one of the largest electric power companies in the United States, supplying and delivering approximately 35,000 megawatts of energy to over 4 million customers.

THE CITY OF CHARLOTTE is the 18th largest city in the United States in total population and the 5th largest urban area serving more than 731,000 residents across 280 square miles. Charlotte has a growing energy sector that looks to attract both energy production as well as energy efficiency related businesses. Charlotte is the corporate headquarters location for Duke Energy.

City of Charlotte

ENN is the leading clean energy company in China serving more than 45 million customers in over 100 cities. Duke Energy and ENN will collaborate in developing solar power generation, community battery storage, grid and residential management optimization, and swine waste energy generation processes, as well as algae carbon sequestration technology. ENN is currently constructing an EcoCity in Langfang, China, which is a commercial and residential scale deployment of many of these technologies.

THE CITY OF LANGFANG has a population of 4.1 million and a GDP of $20 billion. Langfang is the national demonstration zone of sustainable development and the national model city of environmental protection in China. Langfang is the corporate headquarters for ENN and is located an hour outside of Beijing.

City of Langfang

Early Successes

Duke Energy has already seen the benefits of technology and knowledge transfer with ENN. In 2010, both companies completed a three month test of an algae photobioreactor built by ENN and deployed at Duke Energy's East Bend Station. Duke Energy and ENN personnel collaborated daily in the lab and at the generating station to study the ability of multiple strains of algae to remove CO_2 from flue gas.

EcoPartnership Projects

SOLAR POWER DEVELOPMENT

Duke Energy and ENN are already conducting field trials of the ENN photovoltaic panels in North Carolina against a range of other types of panels to better understand how panel types, such as thin film, are affected by regional differences. Going forward the companies would like to use these testing results to improve solar panel efficiency through a joint effort.

COMMUNITY ENERGY STORAGE

Duke Energy and ENN will use ENN's build out of the EcoCity to test community and home energy storage. The companies can then compare and contrast the trial results against Duke Energy's field testing at the McAlpine substation to fine tune critical functions like peak shaving for renewable power sources.

SMART GRID TECHNOLOGY AND MANAGEMENT

Duke Energy and ENN will use their respective test sites at McAlpine and the EcoCity to further understand the benefits and best practices associated with various smart grid technologies. Everything from smart meters to communication nodes will be closely monitored and analyzed to find the right mix of technology and management techniques.

SWINE WASTE ENERGY GENERATION

The two EcoPartnership companies are evaluating a potential project in North Carolina to explore the use of swine waste to generate electricity.

Benefits of Cooperation

The EcoPartnership program is a unique opportunity for Duke Energy to work alongside its Chinese partners to develop cutting edge low-carbon and smart-grid technologies and apply these technologies to the fastest growing energy markets in the world. This partnership compliments Duke Energy's commitment to building a low-carbon, efficient fleet. By innovating collaboratively, exchanging technical expertise, and sharing best practices, both Duke Energy and ENN will gain a deeper understanding of how to successfully create the energy systems of the future and the cities of Charlotte and Langfang will improve their community's energy efficiency practices.

Ultimately the EcoPartnership may benefit Duke Energy shareholders and customers because the program will further Duke Energy's leadership on environmental issues and better position the company to adapt to future needs of the U.S. and global energy sector.

Next Steps

Moving forward the four parties will identify human, financial and technical resources to meet the agreed upon objectives of the EcoPartnership. Regular dialogue is ongoing among the parties and several on-site trips and exchanges are planned between the U.S. and China for both executive leadership and Working Group members. The EcoPartnership goals remain shared among all: by working together, both U.S. and Chinese cities and companies can exchange information and best practices that will stimulate innovation and develop solutions to a variety of pressing energy and environmental challenges.

Secretary of State Clinton greets Duke Energy's David Mohler.

ENN mobile algae photobioreactor testing platform.

ENN demonstrates the features of the EcoCity in Langfang.

Model of the ENN EcoCity in Langfang.