

ECO PARTNERSHIPS

Program Overview

The U.S. – China EcoPartnerships program offers subnational organizations from each country a unique opportunity to pair-up and demonstrate breakthrough clean energy, climate change, and environmental solutions. Businesses, universities, localities, and non-profits regularly test new concepts, but transitioning from the lab to the mainstream is a significant challenge. The U.S. Department of State and China's National Development and Reform Commission established the program in 2008 to offer recognition and support for getting such promising innovations into the market.

A solicitation is held each year welcoming new applications to the program. Partnerships must involve at least one organization from each country. Successful proposals specify high impact, unique and viable solutions that will be piloted over three years. Something tangible — a new technology, policy, or program — has to be developed and demonstrated. Getting selected is a great achievement. It is highly competitive, and only a handful of new EcoPartnerships are chosen annually among dozens of applications. These select few are afforded high-profile recognition and custom-tailored support. Recognition starts with a prestigious signing ceremony during the U.S. – China Strategic & Economic Dialogue that is headlined by top officials and covered by the media, and continues during regular intervals over the course of the EcoPartnership.

The Secretariat that oversees the program is staffed by officials who keep in regular contact with the EcoPartnerships, helping them navigate unexpected hurdles and identify ways to promote their work. Although no funding is provided, support can include arranging visits by delegations to EcoPartnership demonstration sites; securing presentation opportunities at major events (e.g. U.S. – China Climate Leaders' Summit); issuing official public relations announcements; heralding accomplishments in speeches by senior leaders; and connecting participants to outside resources. In September 2015, for example, the Secretariat worked with The American Institute of Physics to publish a special volume of its acclaimed Journal of Renewable and Sustainable Energy that featured in-depth articles on 15 EcoPartnerships, giving their work a far larger audience (circulation of 35,000 readers) than might otherwise be possible.

In exchange, EcoPartnerships publicly share non-business sensitive insights from their projects to help foster broader replication in the U.S. and China. They graduate upon satisfactory completion of their pilot projects. The program has matured to the point that with those completing their involvement being replaced by new EcoPartnership each year, there is a consistent cohort of approximately 25 EcoPartnerships. This scale allows for a diverse array of projects, while retaining a focus on, and prestige for, only the best of the best.



Signing Ceremony for the 2014 Class of EcoPartnerships at the Great Hall of the People in Beijing, China

"We are harnessing the ingenuity and innovation of the private sector, universities and civil society in order to promote economic growth, energy security and environmental sustainability. Our EcoPartnerships program is a tremendous jumping-off point to help us do exactly what we need to do in those three objectives."

– Secretary of State John Kerry
EcoPartnerships Signing Ceremony July 2014

Current EcoPartnerships



Wilson Solarpower - Shenzhen Enesoon Science & Technology Co.: Pilot a 20 MW concentrating solar power plant using innovative Brayton Air Cycle technology that operates 24/7; 1000 MW plant by 2020.



Environmental Defense Fund - Shenzhen Low Carbon Development Foundation: Integrate mobile emissions into Shenzhen's landmark emissions trading system (transportation emits 30 percent of its GHGs).



Boeing - Commercial Aircraft Corporation of China: Produce and thoroughly test aviation biofuels, enhance air traffic management procedures, and promote lean aircraft manufacturing and recycling.



GE - Harbin Electric: Develop and deploy the top performing gas turbine combined-cycle power plant that reduces emissions without compromising output.



Port of Los Angeles - Shanghai Municipal Transportation Commission: Deploy shore-based power systems to reduce emissions and noise relative to diesel generators; optimize docking and idling practices.



Sapphire Energy - Sinopec: Develop and cultivate algae strains for conversion into algae-based crude oil that is suitable for making distillates, at a viable cost and with far fewer emissions than fossil fuels.



U.S. - China Business Councils for Sustainable Development: Establish and recruit participants in an online materials marketplace that links manufacturers so waste streams from one can serve as feed stocks for another.



Columbia University - Baotou Steel: Separate iron oxide and rare earths from steel slag for use as new feedstocks; sequester SO_x, NO_x, and CO₂ from ironmaking flue gas; and produce highly pure CaCO₃.



University of Kentucky - Jiangsu Wisdom Engineering Technology Co.: Pilot a 1 MW facility that captures volatile organic compounds prior to combustion in energy-intensive industrial plants.



Natural Resources Defense Council - Beijing Energy and Environmental Protection Center: Establish a demand side management program to cut 800 MW of energy use in Beijing's buildings.



Raven Ridge Resources - Guizhou International Cooperation Center for Environmental Protection: Capture and utilize coal-bed methane to improve mine safety, reduce emissions, and generate power.



City of Portland - City of Kunming: Promote low-carbon urban development through transit-oriented planning, bicycle networks, green buildings and growth boundaries in both cities.



Stony Brook University / Oberon Fuels - Tongji University: Capture and utilize methane from municipal solid waste for cost-effective conversion into transportation and power generation fuels.



Ramboll Environ / IMACC - Suzhou National Environmental New & High Tech Industrial Park: Install emissions monitoring equipment at chemical industrial parks; issue safety alerts; inform new standards.



State of Utah - Qinghai Province: Commercialize mercury detectors to map coal impacts; deploy agricultural waste-to-fuels systems using anaerobic digesters and water filtration systems at off-grid farms.



Center for Climate Strategies - Global Environmental Institute: Equip provincial officials with training, tools, and methodologies to create aggressive and viable low-carbon development plans.



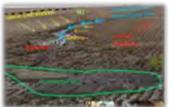
Lawrence Berkeley National Laboratory - Shandong Academy of Sciences: Equip city officials with training, tools, and methodologies to create aggressive and viable low-carbon development plans.



Greater Philadelphia - Tianjin Economic Development Authority: Showcase advanced building technologies, district level energy performance monitoring, and industrial waste water treatment solutions.



The Coca-Cola Company - Yangtze River Delta Circular Economy Institute of Technology: Develop and commercialize bio-plastics suitable for beverage containers and other packaging applications from agricultural residues.



Purdue University - Chinese National Academy of Sciences: Assess degradation of terrestrial natural resources due to land use changes and population growth, and develop resource management strategies.



The Nature Conservancy - Yangtze River Fishery Administration: Conduct the first tagging and sonic telemetry study in China to track fish populations and promote sustainable fisheries in the Yangtze River system, and mitigate invasive carp in the Mississippi River system.



Franklin County / Columbus, Ohio – Hefei, Anhui / Hefei Institute of Technology: Advance water quality, watershed management, and clean transportation technologies and best practices in urban areas.



International City / County Management Association - China University of Political Science and Law: Conduct training and capacity building on good governance and environmental sustainability in cities.



Institute for Sustainable Cities - National Center for Climate Change Strategy and International Cooperation: Develop the capacity of nonprofits to plan, implement, and work collaboratively with local government and other stakeholders to champion sustainable development initiatives at the local level.



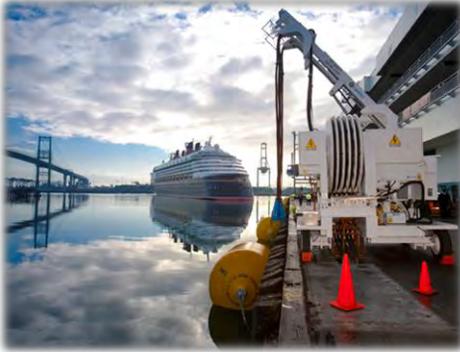
New York Institute of Technology - Peking University: Deploy tools for monitoring water quality in urban environments, and facilitate U.S.-China collaborations on the water-food-energy nexus.



Sea Turtles 911 - Hainan Normal University: Foster conservation research, sustainable seafood practices, ecotourism, and student exchanges that empower local communities to safeguard the health of the ocean by saving sea turtles from extinction.

Recent EcoPartnership Successes

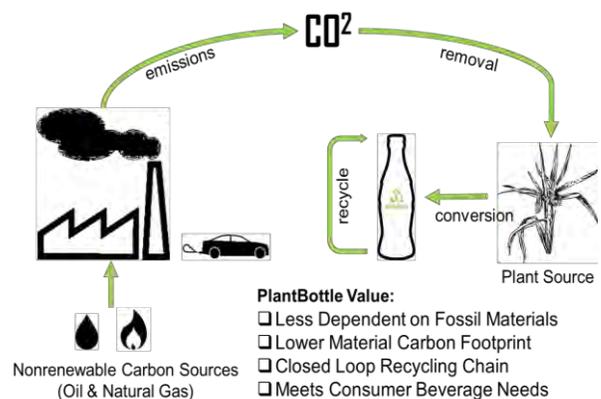
The Port of Los Angeles (POLA) and Shanghai Municipal Transportation Commission are testing a variety of technologies



and operating practices to significantly cut energy use, emissions, and pollution from ships at berth in their harbors. Rather than running on diesel generators while docked, for example, ships are now able to plug-in to the electric power grid onshore. POLA equipped an initial 25 berths with this groundbreaking configuration the year it joined the EcoPartnerships program, and it is now recognized as a world leader in effectively deploying these systems. In 2014, alone, 815 ships used shore power at POLA. On average, nearly 9 metric tons of CO₂ is reduced per call at each berth. According to Chris Cannon, POLA's Director of Environmental Management, "The Eco Partners program has provided an excellent vehicle for helping establish a partnership with the Port of Shanghai and get the word out to other ports."

The Coca-Cola Company, the Yangtze River Development Circular Economy Technology Research Institute and other partners

achieved a major research and technology development breakthrough that is unlocking the first-ever use of Chinese agricultural waste for bio-PET and biopolymer - the main building blocks of the plastic used in soft drink bottles, food packaging, textile fibers, and other consumer and industrial goods. Lignocellulosic feedstocks will enable the partners, and a wide variety of companies operating in China, to reduce their reliance on fossil-fuel based materials. PlantBottle packaging has been used in other markets to avoid annual emissions of more than 315,000 metric tons of CO₂, which is equivalent to the emissions from using 743,000 barrels of oil or the annual emission of 67,000 vehicles. The next generation of this technology that is being perfected by this EcoPartnership should be commercially available in China in the next few years.



Stony Brook University and Tongji University and two California-based startups are perfecting how to economically remove



impurities and produce clean fuel for transportation, heating, and electricity generation from the methane emitted by municipal solid waste (MSW) sites. Stony Brook is getting its state-of-the-art sulfur removal technology ready for pilot-scale demonstration in early 2016. Tongji created a new model for estimating MSW emissions, and is starting to validate it with data from the city landfills in Brookhaven and Laogang. Oberon Fuels developed a novel commercial process to use clean CH₄ and CO₂ as feedstocks to produce a clean diesel substitute that could eventually displace 1% of China's petroleum imports. All Power Lab just released a range of 20 – 100 kW capacity gasifiers that can produce clean power from MSW sites. Together, the partners are exploring new business models that will power our vehicles and businesses while reducing potent and highly prevalent greenhouse gases.

Get Involved

Consider joining the ranks of these outstanding organizations by forming a new EcoPartnership! There must be at least one organization from the U.S. and from China that work together to achieve more as a team than either can do on their own. There is no fee to apply, but those selected must have the resources necessary to demonstrate their innovative concept. Another option is to simply reach out to any organizations already in the program and explore how you might get involved with their work. Full details on how you can get involved are available at www.ecopartnerships.gov.