May 2016

PACE UPDATE

A Newsletter on the U.S.-India Partnership to Advance Clean Energy (PACE)

175 countries sign the Paris Climate Change Deal

On Earth Day, April 22, 2016, the United States and India, along with 173 countries, signed the historic Paris Agreement that aims to limit global temperature rise to well below 2 degrees Celsius. To meet this overall target, each country will have to set its own internal target for reducing emissions and take corrective measures for sustainable growth. The deal will particularly facilitate the mobilization of funds for technology development and capacity building for developing countries to scale up their efforts in addressing climate change.

The non-binding treaty, approved in Paris in December 2015, will come into effect only after at least 55 countries, accounting for 55 percent of global greenhouse gas emissions, deposit their instruments of ratification. As of now, only 15 countries, mostly small island nations, have submitted their instruments of ratification.

"The power of this agreement is the opportunity that it creates. The power is the message that it sends to the marketplace. It is the unmistakable signal that innovation, entrepreneurial activity, the allocation of capital, the decisions that governments make, all of this is what we now know definitively is what is going to define the new energy future."

John Kerry, U.S. Secretary of State
at the Opening Ceremony of the United
Nations Signing Ceremony of the Paris
Agreement on Climate Change

Photos courtesy of U.S. Government websites and agencies (or as otherwise indicated).

Clean Energy Finance

• **Memorandum of Understanding (MOU) between USAID and ADB for Solar Parks:** USAID and the Asian Development Bank (ADB) signed a MOU to facilitate USD 848 million in funding to develop solar parks in India. Through the agreement, USAID will align the technical resources of the PACE-D TA Program to support ADB's investments in the development of solar parks in the state of Rajasthan. The focus will be on designing and developing public-private partnership models for solar parks.

Jonathan Addleton, Mission Director, USAID/India and M. Teresa Kho, Country Director, India Resident Mission, ADB at the MOU signing ceremony

• **Funding for Solar Projects:** OPIC's Board of Directors have approved a USD 250 million Master Financing Facility to finance solar power projects under the Government of India's Jawaharlal Nehru National Solar Mission (JNNSM). The proceeds will be utilized by special purpose subsidiaries of ReNew Power Private Ventures Limited as senior debt capital to finance individual JNNSM solar projects approved by OPIC. This will facilitate the much needed long-term debt capital to enable ReNew to bid for nearly 200-300 MW of solar energy projects.

• **Solar Rooftop Evaluation Tool (SRET):** Financing of solar PV rooftop projects has not taken off in a big way in India largely due to limited knowledge and capacity amongst banks to evaluate such projects and determine their credit worthiness. To address this challenge, the USAID PACE-D TA Program has developed the SRET that can help investors to understand the key parameters that drive the viability and sustainability of solar PV rooftop projects. Based on this, the Indian Renewable Energy Development Agency Ltd. (IREDA) requested the Program to establish a risk rating framework for its solar rooftop loan product. The Program developed and submitted the framework to IREDA in December 2015. IREDA and its credit agencies are now using the new risk rating framework to evaluate the loan applications received by them for financing of solar PV rooftop projects.

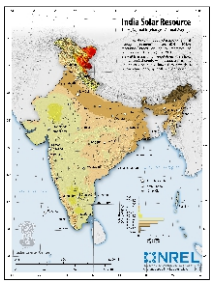
• **Energy Audits at Substations:** The transmission and bulk supply licensee in the state of Rajasthan--Rajasthan Rajya Vidyut Prasaran Nigam (RVPN)--transmits bulk power from generating stations to interphase point of power distribution companies. RVPN reached out to the USAID PACE-D TA Program to identify energy efficiency and conservation measures to reduce the electricity consumptions in its 400 plus substations. The Program selected ten substations, and initiated the energy audits and submitted the report to RVPN in March 2016. Energy Efficiency Services Ltd. (EESL) is likely to invest in these substations to make them energy efficient. The investment is estimated to be around USD 3.3 million.

Paresh Karan, Marketing Manager, Mitva at the Product Showcase in Mumbai

• **Microfinance Investor Forum and Product Showcase:** Microfinance institutions have a key role to play in addressing the fundamental challenge of reaching those who do not have access to clean and sustainable sources of energy. The USAID PACE-D TA Program organized an investor showcase in Mumbai on February 29, 2016 to introduce the opportunity of energy lending to the investor community. Investors including IFC, Global Environment Fund, Yes Bank, Grameen Capital, Acumen Fund, TripleJump and IntelleGrow participated in the forum. Similarly the Program organized a Product Showcase on March 1, 2016 wherein firms such as Frontier Market, Dharma Life, Mitwa, ONergy, Biolite, Greenway Grameen Infra and Envirofit presented their clean energy product range including solar home lighting systems, cook stoves, etc.

Renewable Energy

• **Solar Resource Maps and Data:** In March 2016, the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) published updated solar resource maps and data for India, providing 15 years of hourly information on a free, online platform. These enhanced maps and datasets help identify high-quality solar energy project locations, which can help accelerate the deployment of solar energy in India. The USDOE and partner institutions in India, including the National Institute for Solar Energy, co-hosted one-day workshops in Bangalore, Delhi, and Mumbai on April 11-15, 2016 to share the updated resource datasets and maps with solar developers and financiers in India. Access more information at http://www.nrel.gov/international/ra_india.html



- **Regional Training on Solar Rooftop:** Capacity building of utility staff is critical for the efficient and accelerated solar PV rooftop deployment. To facilitate the same, the USAID PACE-D TA Program is organizing a series of regional training programs on "Implementation of Solar Rooftop by Utilities" to sensitize the utility staff on the concept and design of solar PV rooftop systems, the key policy, regulatory and technical challenges impacting the deployment of these systems at the ground level and the role of the utility in the whole implementation process. The first two regional training programs were organized in Jaipur in January and March 2016 in collaboration with the state distribution utility - Jaipur Vidyut Vitran Nigam. Similarly, the third training was organized in Kolkata in April 2016 in partnership with the West Bengal State Electricity Distribution Company Ltd. The Program plans to organize four more regional training programs for utilities across the country in the current year.

- **Roundtables on Clean Energy and Energy Access:** Brookings India hosted U.S. Assistant Secretary of State, Charles Rivkin for a by-invite-only roundtable on clean energy in India. Participants included industry leaders through the U.S.-India Business Council, as well as Indian Government, industry and scholarly leaders in both clean technology and the financial/banking sectors. The discussions focused on standardisation of bidding documents, states and counter-party risk, and a pilot on funding to hasten the flow of large, stable, debt for RE projects in India. Another roundtable meeting was organized by USAID with off-grid energy access entrepreneurs to discuss the role of innovation and entrepreneurship in addressing the global energy access challenge. The delegation examined how young entrepreneurs are delivering the developmental impacts, the challenges faced by them and the role of development agencies. The delegation also visited the manufacturing operations of Imergy, a clean technology firm in the energy storage arena.

- **Study Tour to the U.S.:** USAID organized a study tour for key renewable energy stakeholders to the U.S. in April 2016. The study tour was organized to facilitate knowledge exchange and sharing of learnings between Indian stakeholders and their international peers on emerging thematic areas that can accelerate clean energy deployment in India. The study tour, comprising senior representatives from the Ministry of New and Renewable Energy, Indian Railways, and state utilities, included site visits and meetings with the USDOE, Solar Energy Industry Association of the U.S., California Energy Commission, American Council on Renewable Energy, Sacramento Municipal Utility District, and the National Renewable Energy Laboratory.

U.S. Study Tour Delegates

Smart Grids

- **Training for Smart Grid Pilot:** The USAID PACE-D TA Program organized a training program for Tripura State Electricity Corporation Limited (TSECL) on January 19, 2016. The training focused on introduction to Smart Grids, key applications and components of Smart Grid, demand response and peak load management, and regulatory and customer engagement aspects. TSCEL is the state power utility responsible for implementing the Smart Grid pilot project in Agartala, Tripura. The Program organized the second training workshop for TSECL officials on April 26, 2016 which focused on data analytics.

***From left to right:** Apurva Chaturvedi and Mark Newton, USAID/India and B N Sharma, MOP*

- **Executive Orientation Program on Smart Grid:** For Smart Grid projects to be successful, it is important for the top management of the distribution utilities to have a broad understanding of Smart Grid technologies and key applications. To facilitate this, the USAID PACE-D TA Program conducted an orientation program for the top management of distribution utilities in January 2016. Mr. B. N. Sharma, Additional Secretary, Ministry of Power gave the keynote address at the orientation program which also included a site visit to the General Electric's John F. Welch Technology Centre.

Building Energy Efficiency

- **Stakeholder Consultations on Technical Update of Building Code:** The PACE-D TA Program is supporting the Bureau of Energy Efficiency (BEE) in the technical update of the Energy Conservation Building Code (ECBC) 2007. As a part of this initiative, the Program organized regional stakeholder consultations in January-February 2016 in Mumbai, Kolkata and Bengaluru to highlight the scope and purview of the updated code and get expert feedback. Recommendations made by the participants are currently being collated in the interim ECBC Stringency Analysis Report and will be sent to BEE for finalization.

Priya Sreedharan, USAID/India at the ECBC workshop in Kolkata

- **Driving Energy Efficiency in Buildings:** As a part of a USDOE project to support city-level implementation of India's ECBC, the USDOE's Pacific Northwest National Laboratory (PNNL) jointly organized trainings and stakeholder meetings with GIFT City in Gujarat on February 23, 2016; and with the Visakhapatnam Urban Development Authority in Andhra Pradesh on February 25, 2016. At the workshops, stakeholders discussed the benefits of energy efficiency in buildings, options for implementing ECBC in India, and lessons learned from the U.S. experience with building codes. Insights from these stakeholder meetings will inform city specifics roadmaps on ECBC implementation for Vizag and GIFT City, currently under development by PNNL.

Workshop on Energy Efficient Data Centers in Bengaluru

- **Energy Efficient Data Centers:** Experts from the USDOE's Lawrence Berkley National Laboratory (LBNL) visited India in late March/early April for meetings with industry experts and government officials as part of an initiative aimed at optimizing energy use in India's data centers. The initiative, which is jointly funded by the USDOE and U.S. Department of State, is being led by the Confederation of Indian Industry (CII), in collaboration with LBNL, and under the overall guidance of BEE. As a part of this initiative, LBNL and CII convened an industry stakeholder workshop in Bengaluru where they shared the findings from their recently released report "Accelerating Energy Efficiency in Indian Data Centers".

Upcoming Events

Regional Training Program on Solar Rooftop: The training program, targeted at the utilities in Telangana and neighboring states, will focus on technology, policy, regulatory frameworks and business models on PV solar rooftop.

- May 6-7, 2016, Hyderabad

Organizer: USAID PACE-D TA Program. For more information please contact aawalikar@nexant.com

National Stakeholder Workshop on ECBC: The recommendations from the interim stringency analysis report on ECBC will be shared with stakeholders at the national workshop that will also include specific technical sessions on mandatory and prescriptive requirement for various ECBC components.

- May 27, New Delhi

Organizer: USAID PACE-D TA Program. For more information please contact sramasamy@nexant.com

About PACE: Launched in 2009, the U.S.-India Partnership to Advance Clean Energy (PACE) seeks to accelerate inclusive, low-carbon growth by supporting research and deployment of clean energy technologies and policies. PACE combines the efforts of several government, non-governmental, and private sector organizations on both the U.S. and Indian sides and contains three key components: Research (PACE-R), Deployment (PACE-D), and Off-Grid Energy Access (PEACE). In September 2014, Prime Minister Modi and President Obama agreed to strengthen and expand PACE through a series of priority initiatives that build on PACE's ongoing work.

PACE Secretariat
14-A & B, Vasant Square Complex, B-5, Vasant Kunj, New Delhi-110070, India. Email: info@pace-d.com