Building on more than two decades of collaboration with Mexico, and similar models of successful collaboration with China and India, Berkeley Lab's **Mexico Energy Initiative** seeks to play an important role in supporting Mexico's transition to greater clean energy production, more efficient use of energy, and aggressive carbon emissions reductions, as articulated by Mexico's contributions to the 2016 Paris Climate Agreement. More broadly, the Mexico Energy Initiative seeks to foster increased high impact, collaborative clean energy research between the US and Mexico that will benefit Mexico, California, the US, and the world.

A Unique Opportunity

Already the second largest Latin American economy, Mexico is now emerging as a clean energy leader in the developing world and is actively pursuing strategic partnerships to advance its renewable energy and energy efficiency goals. California, for its part, has become a national and global leader in clean technology investment and policy development. The current political and economic alignment between Mexico and California in support of clean energy development and implementation is both opportune and unprecedented, offering real economic and environmental benefits for both countries, and will likely serve as a compelling model for developing economies across the globe.

The possibilities for California and Mexico to carry out high-impact collaborative research to accelerate clean energy technology development and deployment have never been greater:

- At the **Paris climate conference** (COP21) in December 2015, 195 countries adopted the first-ever universal, legally binding global climate deal. To date, 180 countries have signed it.
- Equally ground breaking, these carbon reduction commitments extended to developing countries for the first time, with Mexico making particularly strong emission reduction commitments.
- These commitments were further strengthened in June 2016 at the North American Leadership Summit with the announcement of the **North American Climate, Clean Energy, and Environment Partnership**.
- Mexico's **Energy Transition Law** passed in December 2015 links energy market liberalization to aggressive clean energy targets, further underscoring Mexico's role as an emerging regional climate leader.
- Furthermore, California Governor Brown recently **signed MOUs with Mexico** to foster scientific and technical staff exchanges in the energy sector and in environmental protection. These agreements set the stage for immediate and substantive cross-border collaboration.
- Last but not least, UC President Napolitano launched the **UC-Mexico Initiative**, which includes an emphasis on energy, further setting the stage for California-Mexico clean energy collaboration.

As a global leader in the field with a long history of collaboration with Mexico, Berkeley Lab is uniquely positioned to serve as a focal point for clean energy research and collaboration with the Mexican government and academic and private sector institutions. The potential benefits of this work are many. Specifically, clear opportunities exist to leverage Berkeley Lab's core expertise to help Mexico make lasting progress in the areas of policy development, scientific exchange, capacity building, and implementation of energy efficiency programs.

Approach

The Berkeley Lab's Mexico Energy Initiative (MEI) has the overarching goal to support successful implementation of Mexico's climate mitigation goals. Its activities seek to perform, enhance, and catalyze a broad range of clean energy research projects, including technology demonstrations and deployment. MEI also seeks to develop joint research proposals and demonstration projects involving researchers and funding from both sides of the US-Mexico border. A key strategy is to facilitate collaboration between academic and government technical staff, including Berkeley Lab staff, students, postdoctoral fellows, and faculty. A second key strategy is to help leverage and build synergy between clean energy work in Mexico being carried out by parallel institutions, including the US Government, international development agencies, development banks, and philanthropy.

Initial Achievements

Since its launch in June 2016, MEI has made progress toward its goals in several areas:

Postdoctoral Exchange Program

Last fall, three postdoctoral fellows from the Institute of Renewable Energy (IER) at the National Autonomous University of Mexico began a fellowship at Berkeley Lab with the support of Mexico's SENER-CONACYT Energy Sustainability Fund (FSE). A welcome reception was held at Berkeley Lab on November 9, attended by Consul General of Mexico Gemi José González López and IER Director Antonio del Río Portilla, together with Berkeley Lab leadership, to mark the occasion and highlight the importance of this collaboration. The Mexican postdocs will be working at Berkeley Lab for two years, conducting research on the reliability of low cost photovoltaic materials and solar cells.

"Collaboration Towards Energy Efficiency Buildings and Cities" Workshop

This collaborative workshop, co-sponsored by SENER, the CONACYT-SENER Energy Sustainability Fund (ESF), the Energy Working Group of the UC-Mexico Initiative, and Berkeley Lab's Mexico Energy Initiative, was held in November 2016 at Casa de la Universidad de California in Mexico City. The event brought together researchers from 10 Mexican institutions, UC Davis, UC Irvine, UC Berkeley, and Berkeley Lab to develop research proposal concept notes designed to help accelerate the transition to energy efficient buildings and cities in Mexico. Participating Mexican institutions included UNAM, Tec de Monterrey, Tecnológico Nacional de Mexico, National Commission for the Efficient Use of Energy (CONUEE), National Institute for Electricity and Clean Energy (INEEL), Mario Molina Center, Technological Institute for Construction (ITC), Association for Norms and Certification (ANCE), and the World Resources Institute (WRI). Topics covered included energy efficiency strategies for commercial buildings, HVAC technology, policy and market promotion, building energy efficiency policies, water-energy efficiency in municipal utilities, and deployment strategies for efficient high quality street lighting.

In March 2017, Mexico's SENER-CONACYT Energy Sustainability Fund unveiled a new RFP, "**Collaboration Projects in Energy Efficiency**," that will award up to $10 million to fund joint energy efficiency research and demonstration projects by Mexican research institutions in collaboration with UC Campuses, including Berkeley and Livermore labs.

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