

MEXICO AND THE 21ST CENTURY POWER PARTNERSHIP

Paving the Way to a Cleaner, Smarter, and More Resilient Power System

Mission and Objectives

The 21st Century Power Partnership's program in Mexico (21CPP Mexico) is carried out in cooperation with government and local stakeholders and draws upon 21CPP's international community of power system expertise. The overall goal of this program is to support Mexico's power system transformation by accelerating the transition to a reliable, financially robust, and low-carbon system. 21CPP Mexico activities focus on achieving positive outcomes for all participants by addressing critical questions and challenges facing policymakers, regulators, and system operators as they implement Mexico's strategy to promote clean technologies. In support, 21CPP Mexico taps into deep networks of expertise and professional connections. The primary objectives of the initial phase (2014–2017) of the 21CPP Mexico program included:

- **Accelerating “next generation” power system planning** by supporting regional and national power system roadmaps and modeling, grid expansion planning in priority renewable energy zones, policy to support distributed generation, and comparison of power system planning tools.
- **Providing operational support for grid integration**, including technical assistance on grid operational practices for renewable energy integration.
- **Expanding distributed generation and smart grid deployment** by enhancing regulation and public policies, implementing smart grid roadmap recommendations, and modeling various solar PV scenarios.

- **Assisting with implementation of Mexico's energy reform directives** including the long-term auction process, distributed energy, energy efficiency and smart grid technologies, wholesale market monitoring, and improved data management.

Objectives for the next phase (2018–2021) of the 21CPP Mexico program include:

- **Deepening subnational assistance** by providing capacity building and analysis to increase deployment of renewable energy projects and enactment of state-level policies and strategies for energy transitions.
- **Assessing and supporting clean energy programs** aimed at providing social benefits in priority areas.
- **Supporting national and regional power system planning** by providing tools and capacity building to federal and state public institutions and civil society.
- **Expanding distributed generation and smart grid deployment** by providing technical analysis, enhancing regulation and public policies.

Structure

21CPP Mexico is sponsored by the Children's Investment Fund Foundation (CIFF), which acts as an advisor for all 21CPP Mexico activities, and the U.S. Department of Energy. The government of Mexico coordinates all 21CPP Mexico activities through the Ministry of Energy (SENER) and the Energy Regulatory Commission (CRE).

About the 21st Century Power Partnership

The 21st Century Power Partnership is a multilateral effort of the Clean Energy Ministerial and serves as a platform for public-private collaboration to advance integrated policy, regulatory, financial, and technical solutions for the large-scale deployment of clean energy in combination with deep energy efficiency and smart grid solutions.

The operating agent for the 21CPP is the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) and its institutional affiliate, the Joint Institute for Strategic Energy Analysis (JISEA), which direct the activities of the 21CPP Mexico program in consultation with the government of Mexico.

Stakeholder Engagement

A Steering Group provides input on the 21CPP annual program, sets the direction of its activities, and supports program implementation. The group includes the

Ministry of Energy (SENER), Energy Regulatory Commission (CRE), Federal Electricity Commission (CFE), National Center for Energy Control (CENACE), Ministry of Finance (SHCP), Ministry of Economy (SE), Mexican clean energy private sector companies, academia, NGOs, international donors, NREL, JISEA, and CIFF.

In 2018, SENER and the Latin American Energy Organization (OLADE) launched a new CEM campaign for distributed generation in strategic regions, starting with Latin America. The campaign will convert to a pillar of the 21CPP in 2019 to focus on all Distributed Energy Resources.

2018–2019 Activities

Technical Studies

- Support for national long-term power system planning including roadmap development and scoping of modeling efforts in conjunction with CENACE, SENER, and others
- Evaluation of regional and national solar and wind scenario studies with technical support from SENER, CENACE, and CFE
- Assessment of distributed generation penetration scenarios based on conservative, moderate, and high-growth expectations
- Analysis of regional Renewable Energy Zone (REZ) processes necessary for Mexico's expansion of transmission and development of renewable energy auctions in high potential zones.

Energy Reform Support

- Providing assistance to the independent wholesale power market monitor
- Regulatory assistance on compensation mechanisms for future demand response programs in Mexico
- Technical assistance to the regulator for evaluation of various energy storage technologies.

Staff Exchanges

- CENACE and international system operators participated in workshops hosted by ESIG on forecasting and modeling practices to enhance electricity network operation with high penetration of renewables, use of energy storage and demand control solutions, and integration of wide-area monitoring for real-time operation.
- CRE hosted an exchange for regulators to analyze market monitoring tools and improve CRE's market surveillance capabilities, and a forum for designing demand response programs for market participants.
- As part of the CEM Distributed Generation campaign, NREL facilitated a study tour with representatives from eleven Latin American countries to learn about policy, regulation, and technical solutions for deployment of distributed generation technologies.

Multilateral Peer-to-Peer Workshops

- Supporting multilateral workshops on best practices for developing distributed generation public policies, demand response compensation mechanisms, storage technologies and their applications for integrating renewable energy, and modeling variable renewable energy for grid expansion planning.

Thought Leadership Reports

- Co-authoring reports on smart grid programs in Mexico, distributed generation public policies, and demand response programs.

WWW.21STCENTURYPOWER.ORG



The 21st Century Power Partnership is a multilateral effort of the Clean Energy Ministerial and serves as a platform for public-private collaboration to advance integrated policy, regulatory, financial, and technical solutions for the large-scale deployment of clean energy in combination with deep energy efficiency and smart grid solutions.

www.21stcenturypower.org

15013 Denver West Parkway
Golden, CO 80401
303-275-3000 | www.nrel.gov

NREL/FS-7A40-73781 | May 2019
NREL prints on paper that contains recycled content.

Front page photo: iStock 16542720