



Comisión Federal de Electricidad

Meeting the Dual Goal of Energy Access and Sustainability - CSP Deployment in Mexico

May 2012

About CFE

Energy Access in Mexico

Renewable Energy in Mexico

The road ahead

A State Owned Utility

34 million clients

93 thousand employees

55 thousand MWs Installed Capacity

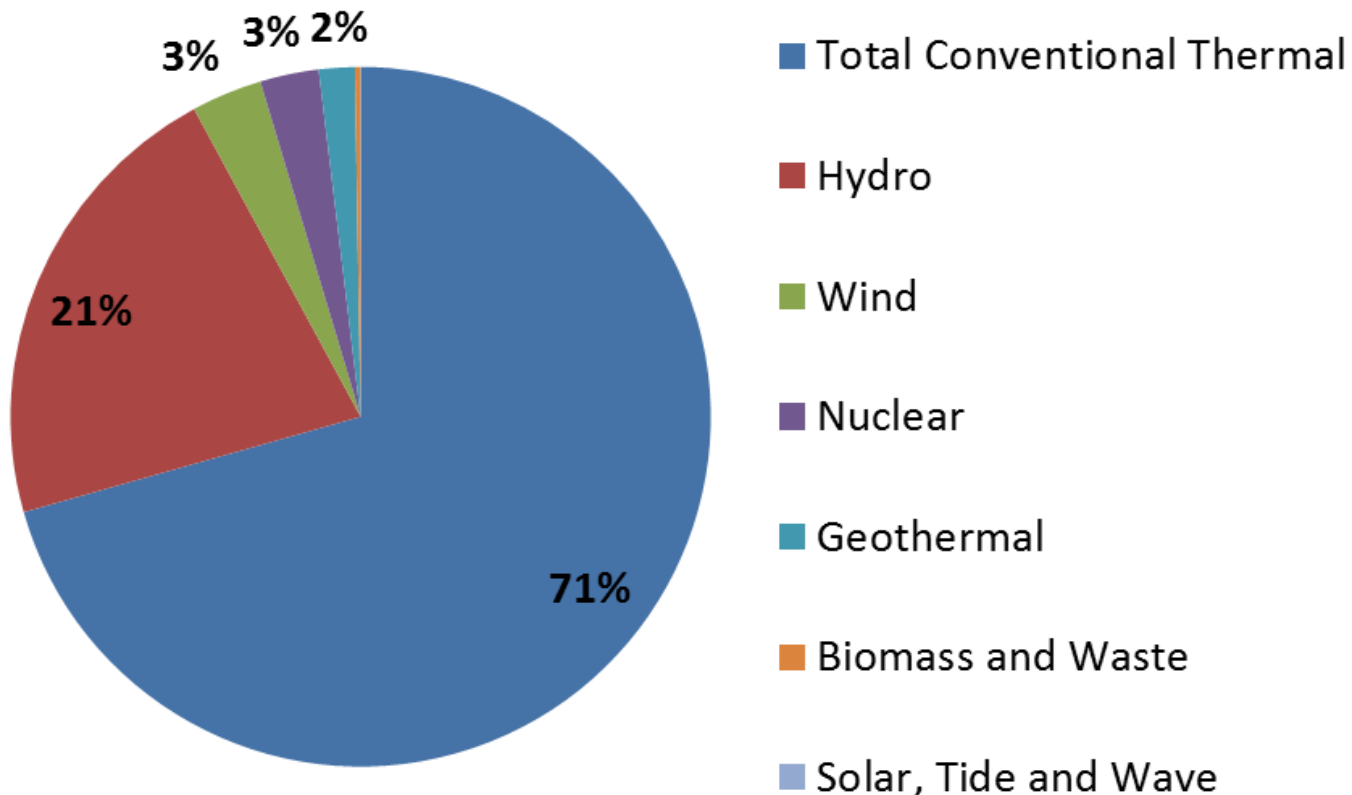
177 Generation Plants

468 thousand miles of T&D Lines

97.9% Electrification Rate

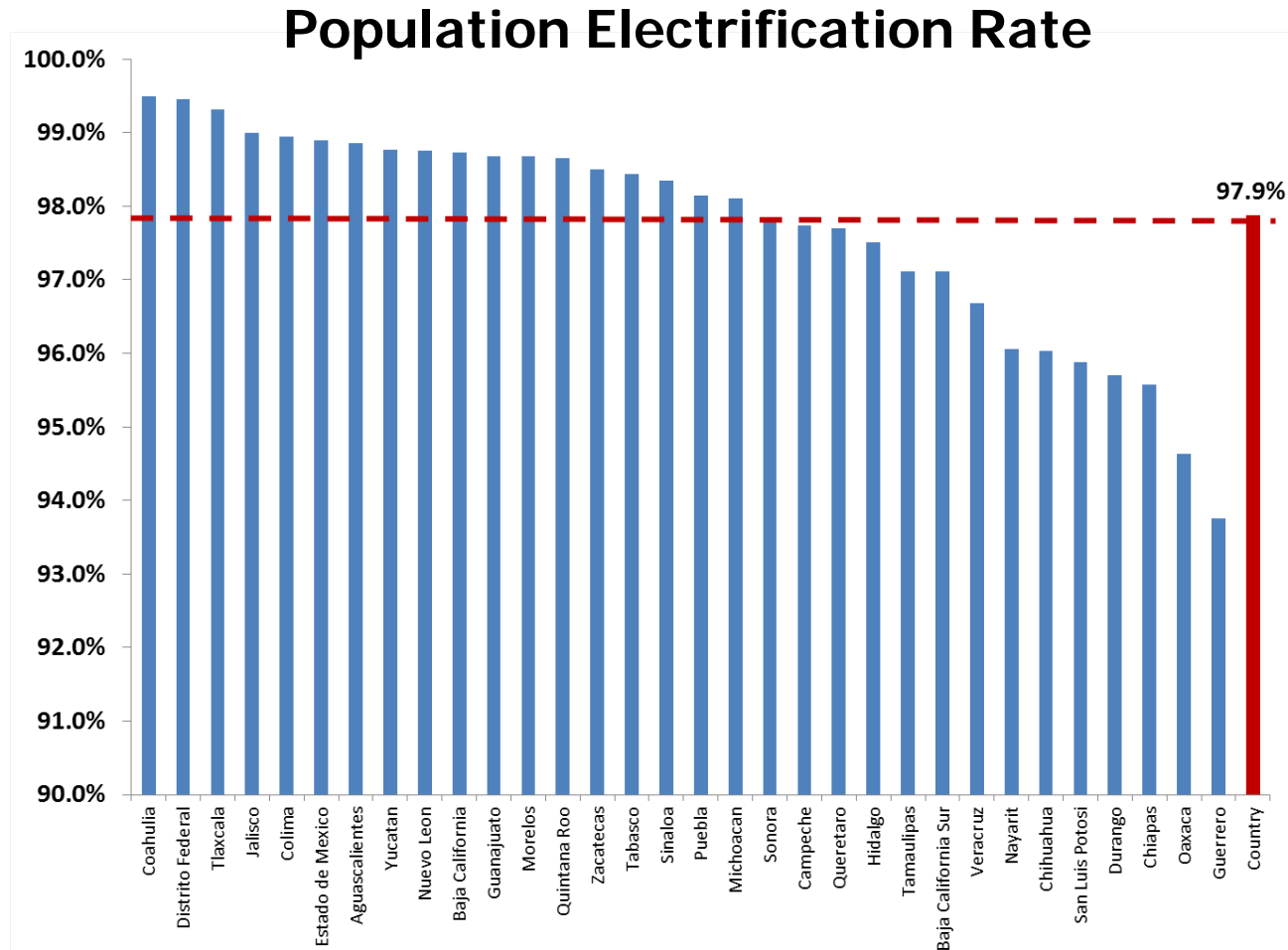
CFE's installed capacity is based on Natural Gas and Hydro Power, renewables are increasing their participation:

Mexico Installed Capacity by Technology



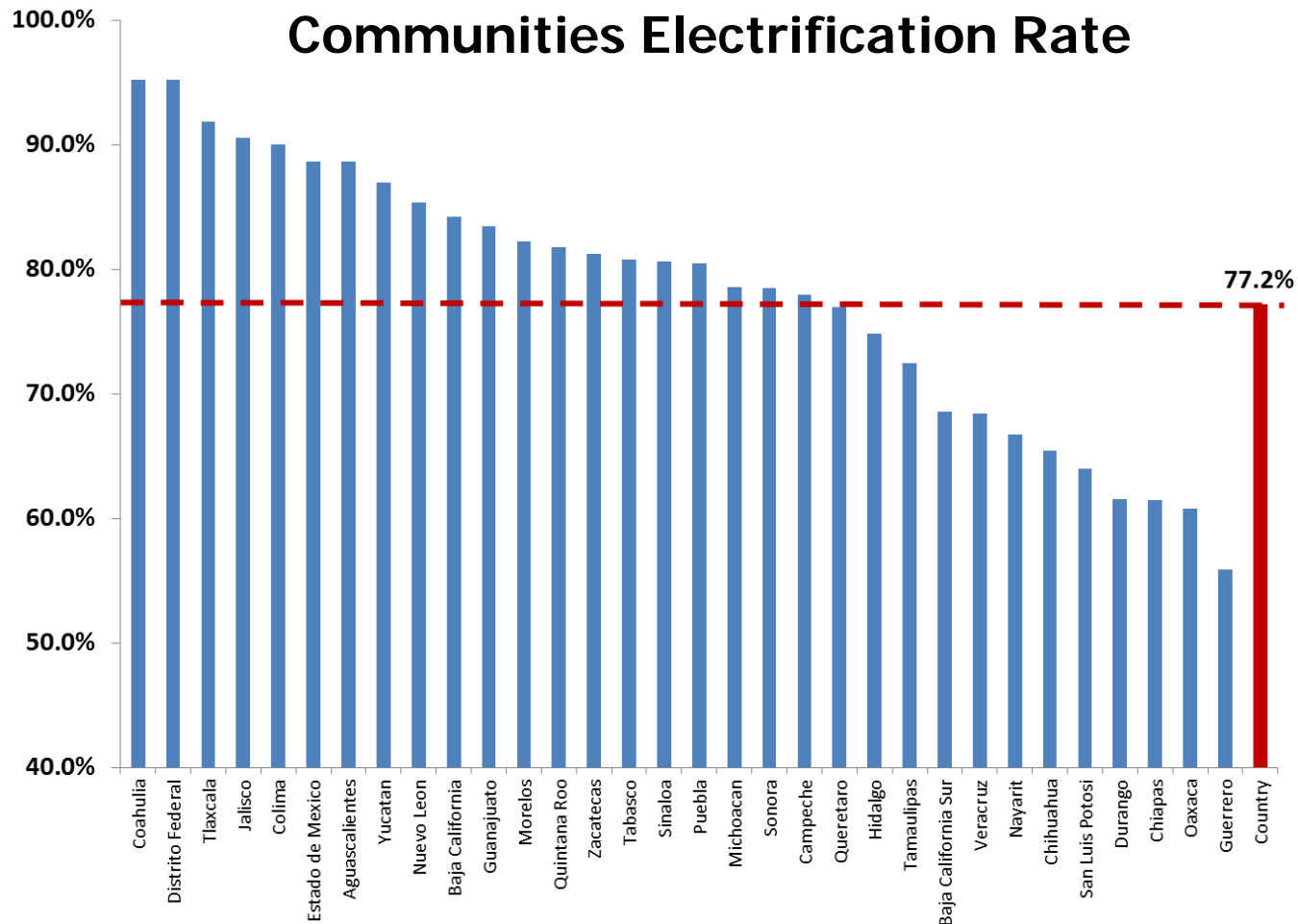
Energy Access in Mexico

Approximately 98% of the Mexican population has access to electricity.



Energy Access in Mexico

There are nearly 130 thousand small communities without access to electricity.



The gap between Population Electrification Rate and Communities Electrification Rate indicates that Communities without access are disperse and don't have large population.

Taking this into account CFE jointly with State Governments started in 2011 an aggressive campaign to bring electricity to these communities by using small photovoltaic plants (30 KWs).

Additionally a joint effort with NGO's is being deployed to bring single house installations to remote communities.

Recent changes in regulation have created new incentives to deploy renewable energy in Mexico:

- Reduced transmission costs (0.004 Cents per KWh transmitted)
- Accelerated depreciation for renewable energy infrastructure
- Net metering
- Virtual Electricity Bank

4 schemes to incorporate Renewable Energy in Mexico:

CFE´s Investment Projects

- Pilot Projects to assess new technologies

Independent Power Producer

- The acceptor of the bid provides the financing, builds the plant, operates it, and owns it

Remote Self-Supply

- Agreements between renewable power producers and large electricity consumers, CFE participates in transmission activities

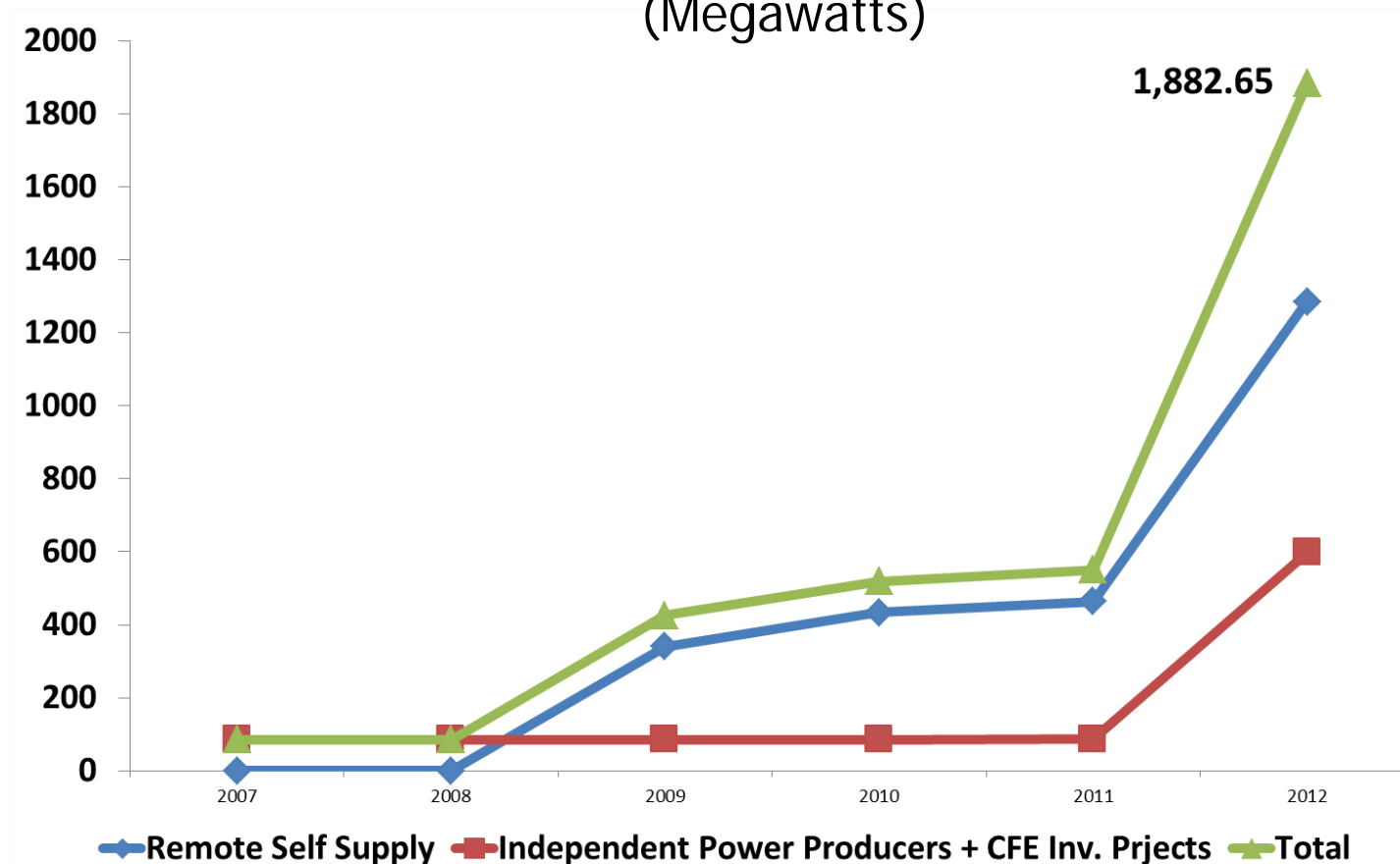
Small Renewable Producer

- Below 30 MWs CFE is obliged to buy renewable electricity

Renewable Energy in Mexico

The main impact of these new schemes has been in wind energy given its levelized cost of generation:

Wind Energy Installed Capacity in Mexico (Megawatts)



Solar Power plants are at an early stage and it is expected a significant increase in the next years:

- A 1 MW Photovoltaic Solar plant is currently operating.
- A 5 MW Photovoltaic Solar plant is under construction.
- 30 KWs solar plants are being installed to take electricity to rural communities.



A 500 MW Hybrid Solar Thermal Project is under construction in Agua Prieta, expected to start operations in 2013.



14 MWs will be generated with CSP technology which was financed by the World Bank.

This project will allow to have on the ground experience and CFE is currently analyzing other sites to replicate this type of projects and upgrade it with energy storage.

- New clean energy generation goals are being set by the Federal Government and Congress.
- This implies diversification from the current tendencies in clean energy and provides a big opportunity for CSP in Mexico.
- The Agua Prieta CSP project is providing important benefits for the population regarding employment creation.
- In order to continue developing CSP projects it is required budgetary funds to provide grants or reducing the risk for private capital projects.