

U.S. Commercial Service Webinar

Electricity Reform and Renewable Opportunities in Mexico

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Background: Mexican Electric System

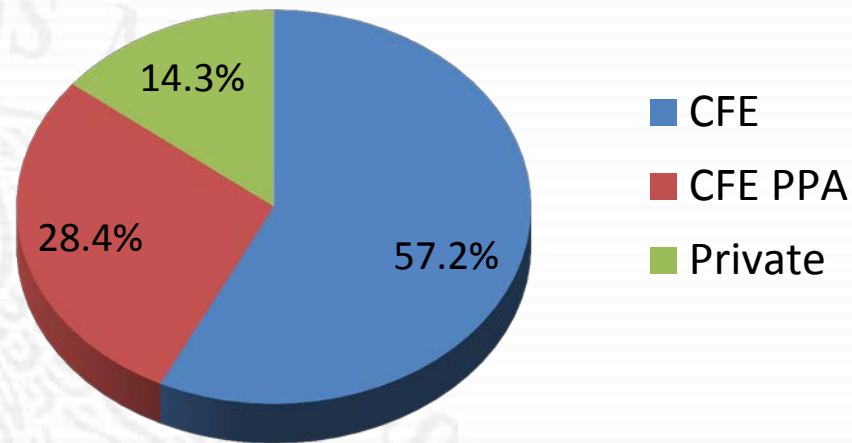
Generation Capacity (MW)	
Combined Cycle	23,309
Steam (Fuel Oil and Gas)	12,959
Coal	5,958
Simple Cycle	3,419
Internal Combustion	1,312
Multiple	1,573
Hydro	12,429
Wind	2,036
Geothermal	813
Solar	56
Nuclear	1,400
Biomass	180
Other	7
Total	65,452

Networks (km-c)	
400 kV	23,641
230 kV	27,543
Subtransmission (≥ 69 kV)	56,851
Distribution	683,226

Conventional
48,530 MW

Clean
16,921 MW

Generation by Type



Clean Energy Potential in Mexico

Clean Energy Goals:
35% in 2024, 40% in 2035 and 50% in 2050

Wind
Geothermal
Solar
Mini Hydro
Total

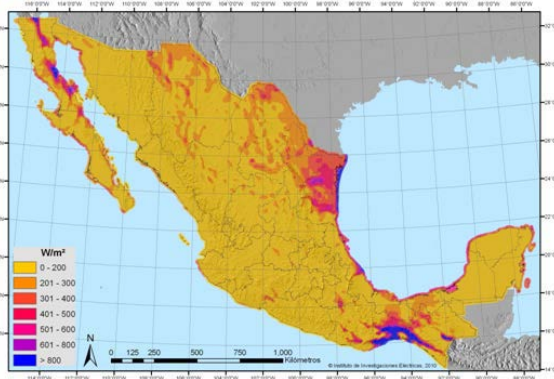
Installed Capacity 2° semestre 2014 (MW)
1,900
823
64
419
3,206

Renewable Energy Potential			
Actual Generation Year 2013 (% of total GWh)	Actual Generation + Proven Resources	Actual Generation + Proven Resources + Probable Resource	Actual Generation + Proven Resources + Probable Resources + Possible Resource
1.4%	5.3%	5.3%	34.8%
2.0%	2.2%	22.5%	40.0%
0.01%	0.6%	0.6%	2,189.4%
0.5%	1.7%	9.5%	24.4%
4.0%	9.9%	37.9%	2,288.6%

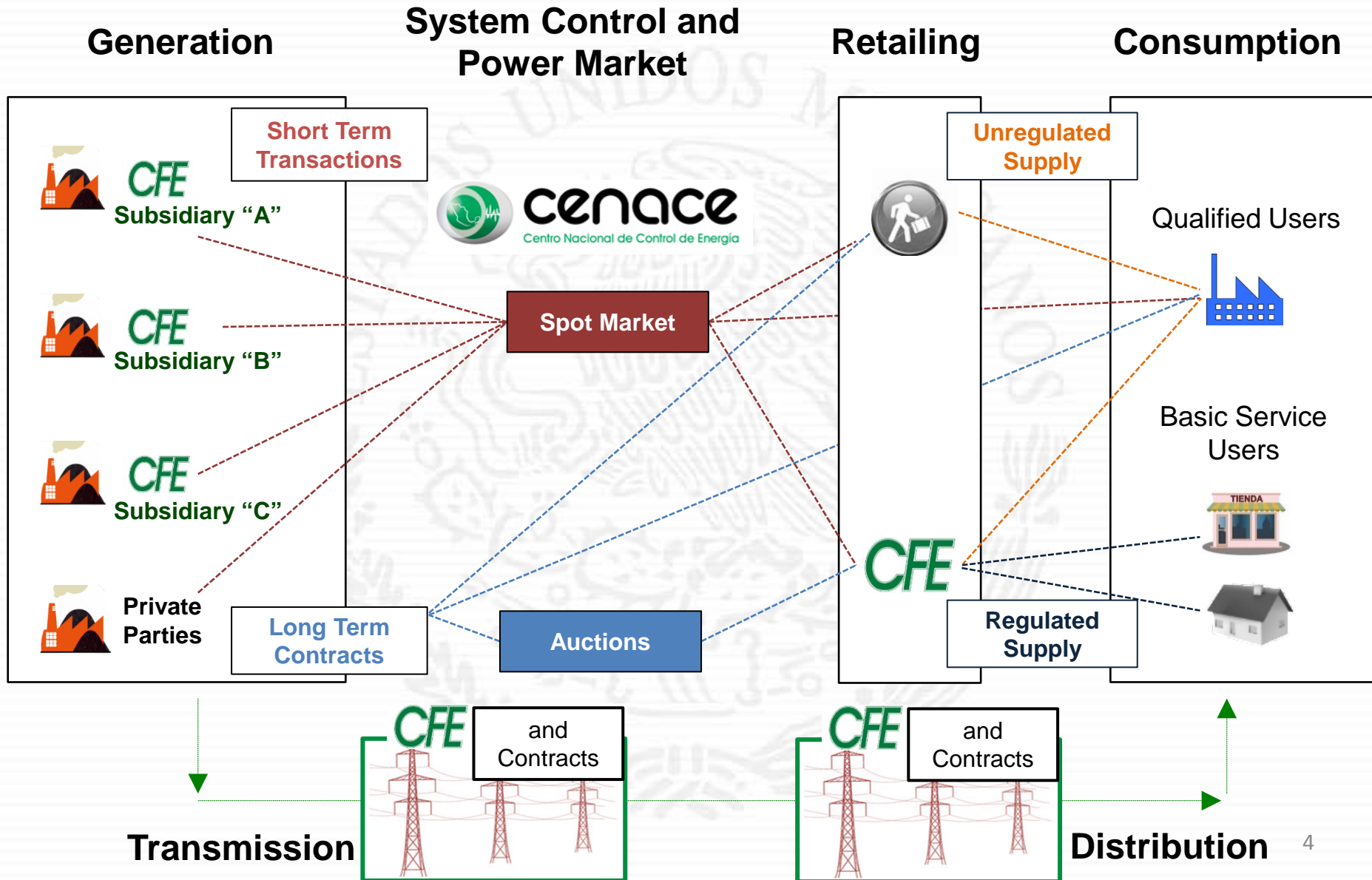
Solar Resources

Wind Resources

Geothermal resources



New Industry Structure



Market Features

Market	Periodicity	Market Type
Energy and Ancillary Services	Daily, Hourly	Cost Based
Capacity	Yearly	Administered
Clean Energy Certificates	Yearly	Unrestricted offers
Financial Transmission Rights	Yearly / Monthly	Unrestricted offers

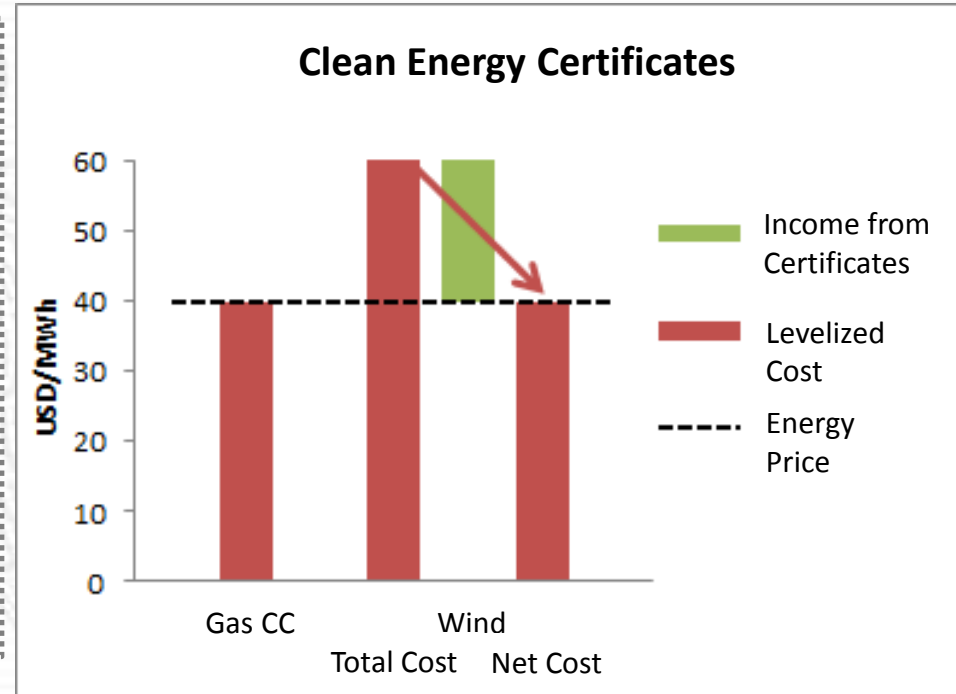
Auctions and Long Term Contracts

- CRE will set requirements for retailers to contract forward energy and associated products.
- Basic Service Retailers may only contract forward through auctions operated by CENACE.

Clean Energy Certificates

Objectives

- Solve the “missing money” problem for clean generators.
- Let the market make choices over technology
- Transparency regarding the cost of clean energy
- Maintain flexibility in case of cost surprises



Features

- SENER establishes requirements to use a percentage of clean energy.
- Retailers fulfill their requirements by buying Certificates.
- CENACE operates a market once a year.
- CRE verifies compliance and applies fines in case of non-compliance.

Long Term Auctions

Objectives

- Let all technologies compete between each other.
- Pay according to the real value of generation.
- Make projects bankable for generation companies, minimizing costs to the retailer.

Calendar

Milestone	Date
Publication of Tender	30 November 2015
Purchase Offers	20 January 2016
Technical Sale Offers	4-11 February 2016
Economic Sale Offers	28 March 2016
Adjudication	31 March 2016

Expected Results

- 103 companies have made total of 468 technical offers.
- Offers have totaled 102 TWh/year and 109m CELs/year
- Expected Result: Assign contracts for the majority of the 6 million CECs/year demanded in the auction
- Contracts will begin in 2018 and 2019 principally

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