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Mexico Energy Sector Reform
On December 20, 2013, the Mexican Government published the Energy Sector Constitutional Reform with the following main objectives:

- Attract investments to modernize the energy sector.
- Increase Mexico’s competitiveness.
- Increase energy export and reduce dependency on imports.
- Reduce energy costs.
- Increase national energy security.
**Energy Secretariat (SENER):** Conduct the country's energy policy, within the current constitutional framework, to guarantee a competitive, sufficient, high quality, economically viable and environmentally sustainable supply of energy that is required for national development.

**Energy Regulatory Commission (CRE):** Coordinated Body on Energy that autonomously, transparently and efficiently guides the interests of users and regulated subjects to the development of a competitive and sustainable energy market, for the benefit of society.

**National Energy Control Center (CENACE):** Decentralized public body whose purpose is to exercise the Operational Control of the National Electric System, the Wholesale Electricity Market Operation and guarantee impartiality in the access to the National Transmission Network and the General Distribution Networks.
- December 20, 2013: Constitutional Reform

- August 11, 2014: Electricity Law.

- October 31, 2014: Regulation for the Electricity Law.

- April 2015: Guidelines for Clean Energy Certificates. (Solar, Wind, Biomass, Cogeneration, Hidro, Nuclear.)

- November 19, 2015: Call for Long Term Energy Auction (clean energy only).
Electricity Sector Planning
Clean energy generation targets

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>25%</td>
</tr>
<tr>
<td>2021</td>
<td>30%</td>
</tr>
<tr>
<td>2024</td>
<td>35%</td>
</tr>
</tbody>
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Clean Energy Obligations

<table>
<thead>
<tr>
<th>Year</th>
<th>Obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>5%</td>
</tr>
<tr>
<td>2019</td>
<td>5.8%</td>
</tr>
<tr>
<td>2020</td>
<td>7.4%</td>
</tr>
<tr>
<td>2021</td>
<td>10.9%</td>
</tr>
<tr>
<td>2022</td>
<td>13.9%</td>
</tr>
</tbody>
</table>
Mexico has adopted the global best practice of clean energy certificates

- Mexico's clean energy portfolio standard of 35% in 2024 is among the most ambitious in the world
PRODESEN is an instrument that contains the planning of the National Electric System (SEN), with regard to generation, transmission and distribution activities and has among its main objectives to:

- Guarantee the efficiency, quality, reliability, continuity and safety of the SEN.
- Encourage the diversification of the electricity generation matrix, as well as national energy security.
- Promote the installation of sufficient resources to meet the demand in the SEN and meet the objectives of Clean Energies.
- Provide the necessary infrastructure to ensure the reliability of the SEN.
- Encourage efficient expansion of generation, considering quality, reliability, continuity and security of the network criteria that minimizes the costs of providing service, by reducing congestion costs.
Mexican Electricity System

- **SBC**: Capacity 4,457 MW, 19,427 GWh
- **SIN**: Capacity 67,768 MW, 296,894 GWh
- **Mulegé**: Capacity 205 MW, 380 GWh
- **SBCS**: Capacity 812 MW, 2,567 GWh

40 million users

SOURCE: CRE
EXPECTED INVESTMENTS 2016-2030

According to the Program for the Development of the Electricity System 2016-2030, Mexico will need to invest **131.6 Billion dollars** in the next fifteen years.

<table>
<thead>
<tr>
<th>Total Investment (Billion dollars)</th>
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<tbody>
<tr>
<td>Generation</td>
</tr>
<tr>
<td>98.686</td>
</tr>
</tbody>
</table>

SOURCE: SENER
While SENER carries out most of the modelling associated to the information contained in the PRODESEN, the transmission expansion information included in it, is provided by CENACE. They carry out their own electricity system modelling to provide the most cost-effective transmission expansion plan to be instructed by SENER to the Transmission System Operator.
Competitive procurement
Mexico opted, for its long-term market, for a hybrid sealed envelope and descending price auction design to carry out its procurement of electricity sector related products. One of the products in these long-term auctions, is the Clean Energy Certificate, which is used by obliged parties to comply with their clean energy obligations.
LONG-TERM ELECTRICITY AUCTIONS

1ST AUCTION
- Companies: 18 winning offers from 11 companies participating in 7 Mexican States.
- Investment: 2.6 billion USD (in 3 years)
- Energy: 2,085 MW of installed capacity awarded
- CECs: 5.4 million of clean energy certificates awarded
- Power: Not allocated

MARCH 31ST, 2016

2ND AUCTION
- Companies: 56 winning offers from 23 companies participating in 8 additional Mexican States.
- Investment: 4 billion USD (in 3 years)
- Energy: 2,871 MW of installed capacity awarded
- CECs: 9.3 million of clean energy certificates awarded per year
- Power: 1,187 MW per year

SEPTEMBER 23RD, 2016

1° AUCTION AVERAGE PRICE: 47.78 USD
- Wind: 19%
- Solar: 81%

2° AUCTION AVERAGE PRICE: 33.7 USD
- Wind: 43%
- Solar: 54%

3RD AUCTION
APRIL 2017. OPEN FOR PRIVATE BUYERS
The two Electric Auctions attracted diversified international investment.

**Origin of the Investment**

Approx. 6.6 billion dollars of accumulated investment.

<table>
<thead>
<tr>
<th>Investor countries</th>
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<tbody>
<tr>
<td>Mexico</td>
</tr>
<tr>
<td>United States</td>
</tr>
<tr>
<td>Spain</td>
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<tr>
<td>China</td>
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<td>Canada</td>
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<td>United Kingdom</td>
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<td>Germany</td>
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<td>Italy</td>
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<tr>
<td>Korea</td>
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<tr>
<td>Netherlands</td>
</tr>
</tbody>
</table>

15 states selected for investment in new projects.
MEXICAN AUCTIONS, Praised by Observers around the World

Mexico's first power auction was marked by drama, first in a false-start announcement of the wrong winners then later by producing the lowest subsidy-free solar project contract we have ever seen. The auction contracted 5.6TWh of clean energy power from wind and solar and another 5.4m clean energy certificates (CEls) at an average price of $47.9/MWh.

SOURCE: SENER
The current auction process was designed to be carried-out through an IT Platform.

The bid announcement, the bid rules publication, the Q&A sessions of the clarification meetings, the prequalification and reception of sale and purchase offers, the auction run, and the auction results publication are all executed inside this platform. This has considerably increase the efficiency and effectiveness of managing auctions of this magnitude, while providing increased transparency and accountability to the whole process.
The first two auctions included a single buyer. The actual third auction now allows for multiple buyers and sellers to participate in it. To support this new scheme, a mechanism was needed to simplify operations and reduce associated risks.

The mechanism selected was a “contracts and guarantees management clearinghouse”, which acts as a buyer for all sellers and as seller for all buyers.
The transmission expansion process needs to keep up or exceed requirements set by the current successful auctions. Congestion is now identified as a critical element for future auctions success.

A robust transmission expansion plan has been instructed to the Transmission System Operator, and a new model for private sector participation has been designed to accelerate transmission development, increase reliability and reduce associated costs.
The Transmission Network will be strengthened in the next five years.

Strengthening the network to interconnect the new power plants.

Anticipating the new infrastructure required to take advantage of Clean Energy resources.
Two Contractual Schemes

Contract subscribed by CFE

SENER
- Instructs CFE to carry out the project

CFE
- Establishes the bidding process (bases)
- Report auction results

Private investor (Contractor)
- Directly pays the winning bidder

CRE
- Rates: Regulates for existing system + (annuity) for bided projects to users rates

SENER
- Contract for the management and operation of the necessary infrastructure for the public transmission service

Private Investor Trans. Contractor

CRE
- Rates: Regulates for existing system + (annuity) for bided projects to users rates

SENER
- Agreement for Technical & Commercial Operation

CENACE
- Collects and directly pays the winning bidder

Could participate in the auctions by association with other companies

SOURCE: CRE
Thank You!