1. Before Energy Reform
In 2012, there was a significant gap in the average industrial rate between the United States and Mexico. In 2012, the rate in Mexico, on average, was 84% higher than in the United States.
On the other hand, in 2012, the National Gas Pipeline network had a length of 11,347 km. By then, the Network was not interconnected and did not have elements of redundancy, so there was limited access to natural gas in most of the country.
In 2012, the pipeline network in the United States was 43 times larger than the National Gas Pipeline System in Mexico. Only the state of Texas had 8 times more kilometers of gas pipelines than Mexico.
In 2012, CFE presented technical and non-technical energy losses of more than 15% in the Distribution process.
Additionally, in 2012 CFE registered emissions of more than 93 thousand tons of CO$_2$ per day, as a by product of electricity generation with fuel oil.

This equates to daily emissions of around 11 million vehicles.
2. Energy Reform
Last year, we celebrated 80 years of our foundation

**1937**

Comisión Federal de Electricidad

- 38% of Mexico’s population had access to power
- Total Installed Capacity: 64 kW

**Generation**

One power plant

**Transmission & Distribution**

- 98.5% of Mexico’s population has access to power
- Total Installed Capacity: 55,040 MW

**Power Supply**

- Clients: 105,000

**2017**

Comisión Federal de Electricidad

- 186 Power plants: 157 owned, 29 IPP
- Transmission grid: 106,503 km
- Distribution grid: 801,496 km

**Generation**

**Transmission y Distribución**

**Power Supply**

- 2017 revenue: US$23.6 billion
- Clients: 42 million
In 2013 and 2014, the Federal Government approved the Energy Reform in Mexico, which has the following main objectives:

Main objectives:

- Reduce the costs of the electricity service
- Promote investment in the electricity sector
- Stimulate the growth of clean & renewable energies

With competition and lower costs:

- Improve the competitiveness of industry and commerce
- Promote the welfare of society
### CFE’s transformation / Energy Reform

#### Energy Reform: Transformation into a State Owned Productive Company

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<tr>
<th>CONCEPT</th>
<th>BEFORE</th>
<th>AFTER</th>
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<tbody>
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<td>Company</td>
<td>State Owned Enterprise</td>
<td>State Owned Productive Company</td>
</tr>
<tr>
<td>Commercial Business</td>
<td>Electricity</td>
<td>Energy</td>
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<tr>
<td>Business Structure</td>
<td>Vertically integrated monopoly</td>
<td>A Holding Company with 13 new subsidiaries and affiliate companies</td>
</tr>
<tr>
<td>Company Objective</td>
<td>Provide public electric power services</td>
<td>Generate value and profit to the State</td>
</tr>
<tr>
<td>Goals</td>
<td>Service indicators</td>
<td>Profitability indicators</td>
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<tr>
<td>Project Programming</td>
<td>Program of Works and Investments of the Electric Sector <em>(POISE)</em></td>
<td>Business cases with technical, financial and commercial feasibility</td>
</tr>
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</table>

*POISE* - Program of Works and Investments of the Electric Sector
The new CFE Corporate structure
CFE was divided into 13 new subsidiaries and affiliate companies.

Board of Directors
Chief Executive Officer

Legal | Internal Control | Strategy and Regulation

Procurement & HR | Engineering & Infrastructure Projects | CFO

Operations Division

CFE HOLDING COMPANY

Corporate Divisions

Subsidiary Companies

Affiliate Company

Business Units

Energy Trading

CFE’s Basic Supplier

CFE’s Qualified Supplier

ENERGY TRADING

CFE Energía

CFE Internacional

TELECOM

LAPEM

PAESE

GENERATION

TRANSMISSION

DISTRIBUTION

COMERCIALIZATION

Corporate Divisions

Subsidiary Companies

Affiliate Company

Business Units

12
Mexico’s new Wholesale Electricity Market after Energy Reform

CFE is no longer the only off-taker of energy in the market

Generators, CFE and privates, compete in the Wholesale Electricity Market (MEM)

CENACE is established as the ISO and manager of the wholesale electricity market

Energy suppliers buy energy for marketing it to the final clients.

41.2 million clients currently.
Institutional Roles after Energy Reform

### Generation
- Expansion plan

### Control/Dispatch
- Dispatch Rules
- Reliability standards

### Transmission
- Expansion plan
- Interconnection of power plants

### Distribution
- Approves expansion plan

### Supply
- Final rates
- Participation in final rates

### Pre-Reform
- Advisor on Generation Type
- Approves expansion plan
- Permits

### Reform
- Short and long term market operation
- Requirements for Clean Energies
- Contract requirements
- Manages CEL’s

- Independent System Operator ISO
- Initial Market Rules
- Reliability standards
- Market Supervisor

- Planning and interconnection studies
- Approves expansion plan
- Regulated rates
- Interconnection supervision

- Sets Minimum consumption to be a Qualified User
- Sets Service quality requirements
- Sets Final rates
3. First results
Since 2012, CFE has promoted the most ambitious electricity infrastructure program in the history of Mexico.
By the end of 2018 and during 2019, all of the 26 gas pipelines promoted by CFE are scheduled to begin operating, thus expanding the National Gas Pipeline Network by 75%, with over 7,400 kilometers of new infrastructure.
By the end of **2018 and during 2019**, due to projects currently under construction, our combined cycle power plants will have increased almost **28%** since 2012.

**New installed capacity: 6,235 MW**

**Investment: 3.4 Billion USD**
From 2012 to 2018, CFE has reduced its CO₂ emissions by 39%, which is the equivalent to removing 5 million vehicles from circulation during the same period.
CFE has decreased its electricity losses since taking control of the region that supplied the Valley of Mexico, from around 15% in 2012 to 11.24% in August 2018.
From 2012 to 2017, the gap between the average industrial rate in the United States and in Mexico narrowed. In 2012, the rate in Mexico was 84% higher than in the United States. As of September 2017, the Mexican industrial rate was in average only 24% higher.

Fuente: USA Energy Information Administration (EIA) y CFE
CFE generates more than 75% of the renewable energy in Mexico.

During 2017, CFE generated **257,416.93 GWh** of electricity, **18.99%** of which came from clean energy sources. Hydroelectric plants accounted for **62%** of clean energy generation.

Since 2012, CFE has increased its generation capacity from renewable energies by more than 6%.

*Other clean sources: Nuclear.

Thanks to the Three Long Term Auctions, renewable energy projects are being developed that will represent an installed capacity of more than 7,600 MW, developed by companies from 13 different countries.

These projects will be located in 16 states, for an investment of almost 8,970 million USD.

66 new renewable energy plants:
- 47 photovoltaic Parks
- 19 wind farms

<table>
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<tr>
<th></th>
<th>First Auction</th>
<th>Second Auction</th>
<th>Third Auction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average price per energy and CEL (USD)</td>
<td>48 Dollars MWh</td>
<td>33 Dollars MWh</td>
<td>21 Dollars MWh</td>
</tr>
<tr>
<td>Savings</td>
<td>38%</td>
<td>45%</td>
<td>65%</td>
</tr>
</tbody>
</table>

CFE works so that Mexico generates, in 2024, 35% of its energy from renewable energy sources.
On March 15\textsuperscript{th} 2018, CRE and CENACE announced the Fourth Long Term Electric Auction. The deadline for presenting offers is set for October 2018.
Next steps…

- Consolidate CFE transformation.
- Finalize regulatory framework.
- Strengthen institutions.
Comisión Federal de Electricidad