DIVERSIFYING THE ENERGY MIX IN A COMPETITIVE LANDSCAPE

MEXICO CITY WORKSHOP ON ENERGY REFORM
FRANCISCO BARNÉS DE CASTRO
MARCH 4, 2016
INDUSTRIAL ORGANIZATION UP TO 2015

Generation
- CFE
- IPPs
  - Self Supply
  - Cogeneration
  - Export

Dispatch, transmission, distribution and commercialization
- CFE
- CFE

CFE
Public utility vertically integrated
+ Private generators for self supply or supplying CFE
## Legal and Regulatory Instruments for Clean Energy up to 2015

### Legal Instruments for Clean Energy

- Legal mandate for a goal of 35% clean energy in 2024 (applied only to CFE)
- Clean energy defined as:
  - Renewable energy
  - Large Hydro
  - Nuclear
  - Efficient cogeneration (has to comply with minimum efficiency standards defined by CRE)
  - Biogas, biofuels, biomass
- Accelerated fiscal depreciation (only renewables)

### Regulatory Instruments for Clean Energy

- Energy bank
- Recognition of capacity
- Postage stamp for transmission charges
- Clean energy power plants were not subject to economic dispatch
INDUSTRIAL ORGANIZATION AFTER 2016
LEGAL AND REGULATORY INSTRUMENTS FOR CLEAN ENERGY AFTER 2016

LEGAL INSTRUMENTS FOR CLEAN ENERGY

✓ Legal mandate for clean energy (applies to all market participants):
  ▪ 25% in 2018
  ▪ 30% in 2021
  ▪ 35% in 2024

✓ Clean energy defined as:
  ▪ Renewable energy
  ▪ Large Hydro
  ▪ Nuclear
  ▪ Efficient cogeneration (only energy generated above the minimum to qualify)
  ▪ Biogas, biofuels, biomass (partial if supplementary fossil fuel is used)
  ▪ Municipal and agricultural waste (partial if supplementary fossil fuel is used)
  ▪ Hydrogen cells (minimum efficiency)
  ▪ CCS (minimum capture efficiency)

✓ Accelerated fiscal depreciation (only renewables)
### NEW LEGAL INSTRUMENTS FOR CLEAN ENERGY

- **Clean Energy Certificates (CECs)**
- Long Term *Public Auctions* for Capacity, Clean Energy and CECs
Legal and Regulatory Instruments for Clean Energy After 2016

Clean Energy Certificates (CECs)

- Generators will receive CECs in proportion of the clean energy they produce (1CEC = 1MWh)
  - All power plants that initiated operation after August 11, 2014
  - Power plants in operation before August 11, 2014 that increment their capacity
  - Self supply power plants that transfer part of their capacity to the new market rules
- Locally consumed clean energy will not receive CECs
- Distributed CE generation will receive credit for avoided energy losses in the grid
LEGAL AND REGULATORY INSTRUMENTS FOR CLEAN ENERGY AFTER 2016

CLEAN ENERGY CERTIFICATES (CECs)

- All market participants (suppliers and qualified users) must return CECs at the end of the year to meet the target established by SENER.

- Market participants may acquire CECs through:
  - by-lateral agreements,
  - public auctions, or
  - CEC spot market

- All transactions must be registered in the CRE clearing system.
**CLEAN ENERGY CERTIFICATES (CECs)**

- SENER defines the rules for CECs and establishes yearly targets three years in advance:
  - 5% in 2016
  - 6.8% in 2019

- CRE operates the system:
  - issues CECs to generators
  - registers all CEC’s transactions
  - receive CECs from market participants
  - fines non-compliers *(paying the fine does not liberate non-complier from their obligation)*

- CENACE operates the spot market
If electric demand grows at the expected average rate of 3.5% per year, in order to reach the 35% clean energy goal by 2024 established by law, the yearly target for CELs must increase at an average rate of 2.5% per year.
### Long Term Public Auctions for Capacity, Clean Energy and CECs

- Public auctions for capacity, clean energy and CECs will be organized yearly by CENACE, under CRE’s supervision
  - 15 yr contracts for capacity and clean energy;
  - 20 yr contracts for CECs
- CRE must establish requirements for how much capacity, energy and CECs future needs (1-18 years) all suppliers must cover in advance
- Suppliers of basic demand must cover all their future needs (capacity, clean energy and CECs) through public auctions
  - They will define the amount of each product they are willing to acquire in the auction and will establish the maximum price they are willing to pay for each product
  - CRE must approve the maximum price suppliers of basic demand are willing to pay
- Other suppliers and qualified users may participate in the public auctions
CRE has already established the requirements for energy, capacity and CECs that Suppliers of Basic Demand must have covered in advance.

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<th>Year</th>
<th>Energy</th>
<th>Capacity</th>
<th>CECs</th>
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<tr>
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<td>100%</td>
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<tr>
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<tr>
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<tr>
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<td>70%</td>
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<tr>
<td>13 to 18</td>
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# Requirements for Suppliers of Qualified Service

<table>
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<tr>
<th>Year</th>
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<th>Capacity</th>
<th>CECs</th>
</tr>
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</tr>
<tr>
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<tr>
<td>13 a 18</td>
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<td>20%</td>
<td>20%</td>
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</tbody>
</table>
Thank you very much

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