Mexico’s initiatives with respect to Renewable Energies

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Mexico’s Industrial Organization in the Electricity Sector

- Public service is a legal monopoly granted to CFE (State owned utility).

- Private sector is allowed to participate in what is considered **not to be** public service:
  - Self-supply;
  - Cogeneration;
  - Small production;
  - IPP;
  - Exports, and
  - Imports.

- Since 1994, CRE regulates the interaction between CFE and the private agents.
What does CRE regulate?

• Generation, exports and imports by the private sector (market entry and exit):
  – Permits.

• Capacity and electricity purchased by CFE:
  – Price determination mechanisms. No subsidies involved

• Transmission and interconnection services offered by CFE:
  – Issuance of:
    • Contract models;
    • Wheeling rates;
    • Interconnection rules.
Evolution of Renewable Energy (RE) regulation in Mexico

• Prior to 2008, all RE regulation was issued without the Commission having explicit powers on the subject.

• All instruments developed by CRE were based on its powers to regulate the electricity sector and were mainly directed to RE self-supply projects.

• CRE interpreted that its mandate to promote economic efficiency and competition within the sector implied the issuance of regulation meant to correct market failures such as:
  – Barriers of entry to RE technologies and
  – Externalities.
Specific regulatory powers on Renewable Energy (RE)

- In 2008, Congress approved the Law for the Use of Renewable Energies and the Financing of the Energy Transition*, which is aimed at promoting the diversification of the energy sources used to generate electricity through the use of RE.

- According to the Law, CRE has a specific mandate to promote clean energies through the following:
  - Issuance of methodologies to estimate:
    - Energy and capacity payments for RE generators;
    - Contribution of capacity to the system;
    - Efficient cogeneration.
  - Revision of dispatching rules.

* Ley para el Aprovechamiento de las Energías Renovables y el Financiamiento de la Transición Energética or LAERFTE
Renewable Energy: Main regulatory instruments

- Through self supply schemes:
  1. Energy bank (> 0.5 MW);
  2. Postage stamp minimum wheeling charges;
  3. net metering (low or mid tension);
  4. Coordination of open seasons for new transmission lines;
  5. Efficient cogeneration criteria.

- Using CFE monopsony condition:
  - Energy and capacity payments for RE private generators (maximum tariffs and auction mechanisms).
1. “Energy bank”: Basic characteristics

- Energy is delivered to the grid whenever it is generated;
- Consumption doesn’t need to match generation; energy can be “accumulated” in the grid and delivered in a different period of time;
- Energy exchange takes place at the prevailing tariff rate in the interconnection and load points;
- At the end of the year, the permit holder can sell the remaining “accumulated” energy at 85% of the marginal cost of the system;
- Capacity credit is granted based on the monthly average of power produced during the weekdays system peak period;
- Emergency energy sold to CFE is paid at 1.5 times the tariff rate.
1. A graph...

- **Actual generation**
- **Electricity demand**
- **Generating capacity**
- **Energy surplus**
- **Energy deficit**
2. Special wheeling rates for RE

- Traditional methodology to calculate transmission rates is based on energy flows and location of both generation and loads: transmission rates are higher when it goes with the flow than otherwise.

- Since this logic is not applicable to RE, because generation can not be located at will, CRE issued postage stamp type rates based on minimum variable costs.

- Rates are paid according to the tension levels used and are adjusted by inflation in a monthly basis and the values for January 2012 are:
  - High tension 0.03441 MX$/kWh
  - Medium tension 0.03441 MX$/kWh
  - Low tension 0.06882 MX$/kWh

- Rates do not apply for new infrastructure.
3. Small and medium scale net metering

- Typical 1:1 net metering mechanism for users which consume at the generation point (no transmission).

- Small scale:
  - Interconnection at low tension (below 1 kV).
  - Residential users, up to 10 kW.
  - Commercial users, up to 30 kW.

- Medium scale:
  - Interconnection at medium tension (below 69 kV).
  - All users, up to 500 kW.
4. Open seasons for transmission lines

- New infrastructure to transmit electricity from places where RE is located, has normally faced coordination problems between permit holders and CFE (building several transmission lines is uneconomic).

- To avoid these coordination problems, CRE has conducted open season processes through which is determined the capacity of a new transmission line to be built; they establish how this new capacity will be paid, and allocate transmission capacity among the different users.

- In 2008, over 2600 MW of transmission capacity was built through this process (2000 MW for private projects).

- CRE has recently organized 3 new open seasons for wind projects (Oaxaca, Tamaulipas and Baja California). It is expected that 5000 MW of transmission infrastructure shall be built.
5. Other regulation on renewables

- Dispatching rules
- Interconnection rules
- Capacity credit
- Renewable energy pricing
- Net metering for low and mid tension consumers
- Cogeneration
Thank you

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