



# 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 an 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.



# 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).

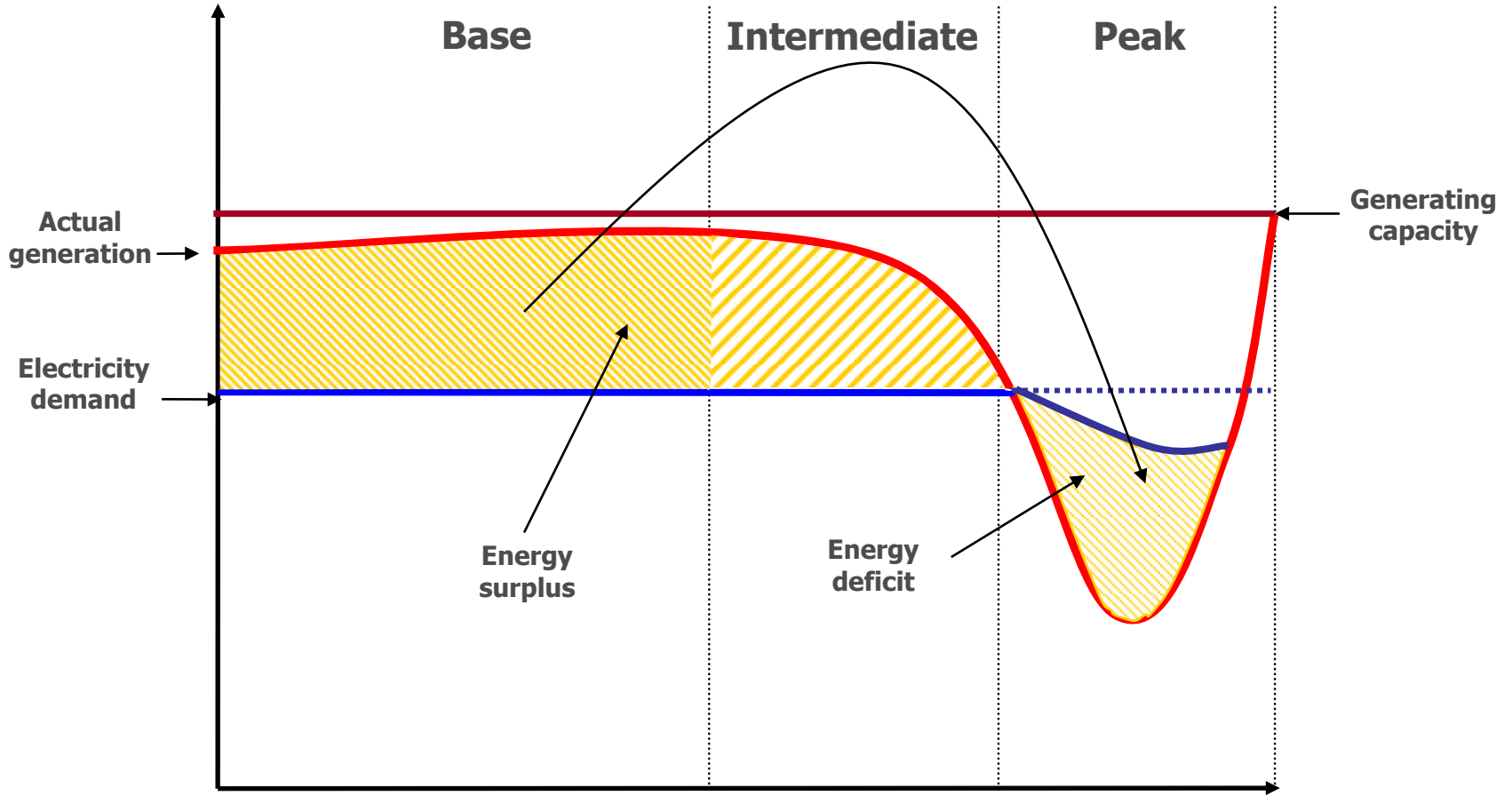


# 1. “Energy bank”: Basic characteristics

- 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...







## 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

[www.cre.gob.mx](http://www.cre.gob.mx)