
Integrating the electricity markets in Mexico and US:
Legal framework and perspectives

Mariano Ornelas López

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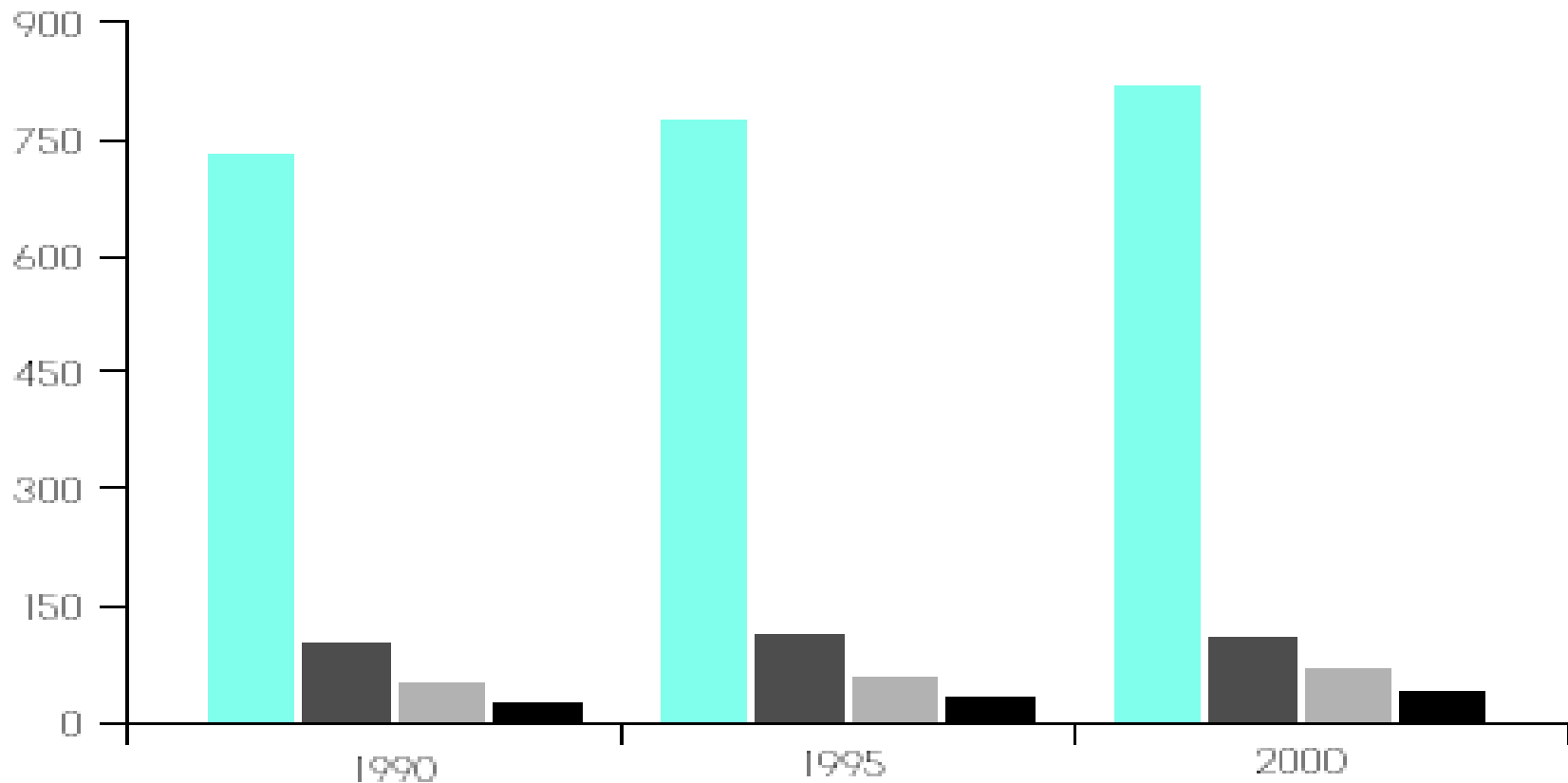
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- ◆ Current state of the Mexican electric system
- ◆ Legal framework for exportation and importation
- ◆ Benefits and problems of an integration
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Mexican electric system characteristics

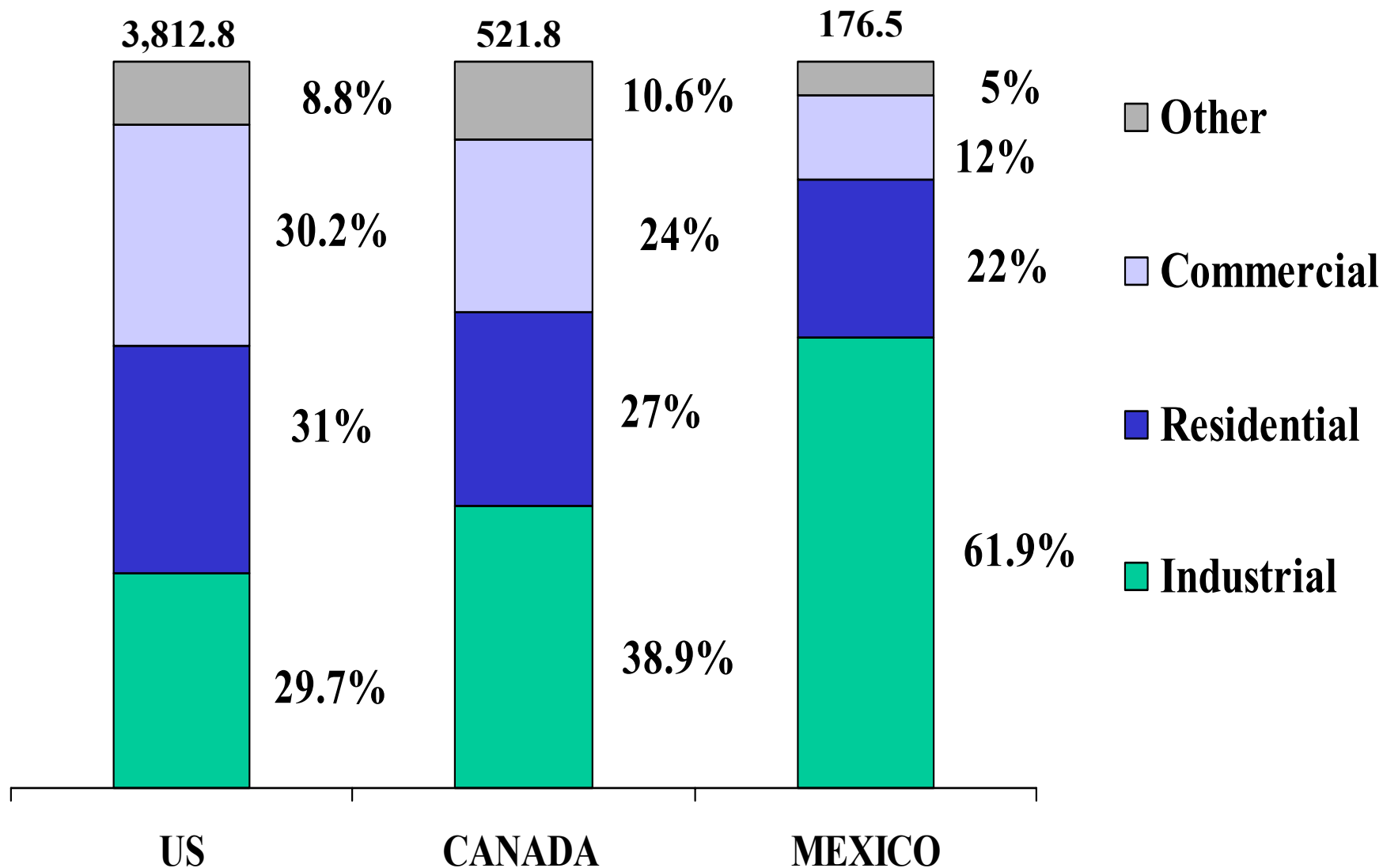
Issue	Quantity
Sales	157,204 GWh
Generation Capacity	42.4 GW (CFE 85.4%)
Users	24.8 millions

Generation capacity 2000



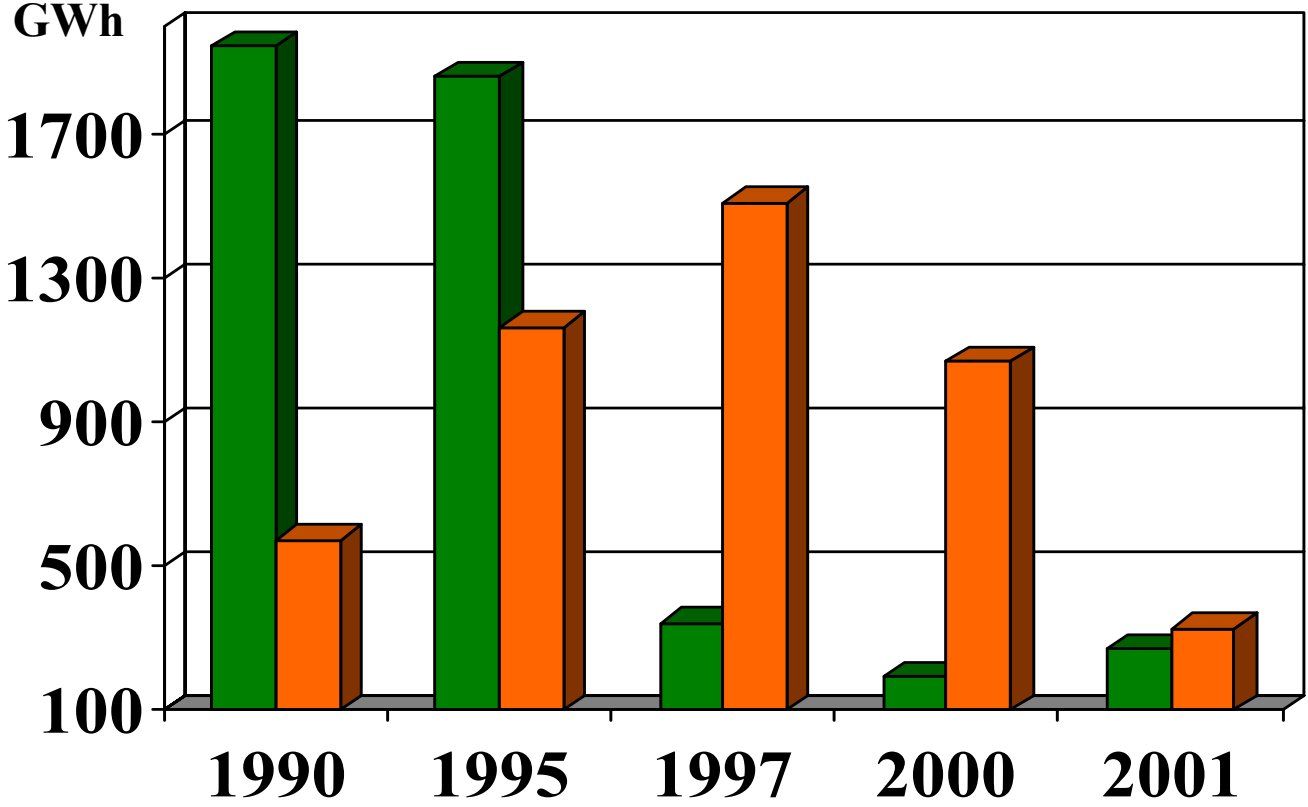
 EUA	733.0	776.4	819.2
 Canadá	104.1	115.5	111.0
 Brasil	53.0	59.1	71.8
 México	28.3	35.8	40.6

Electricity consumption by sector 2000 (TWh)

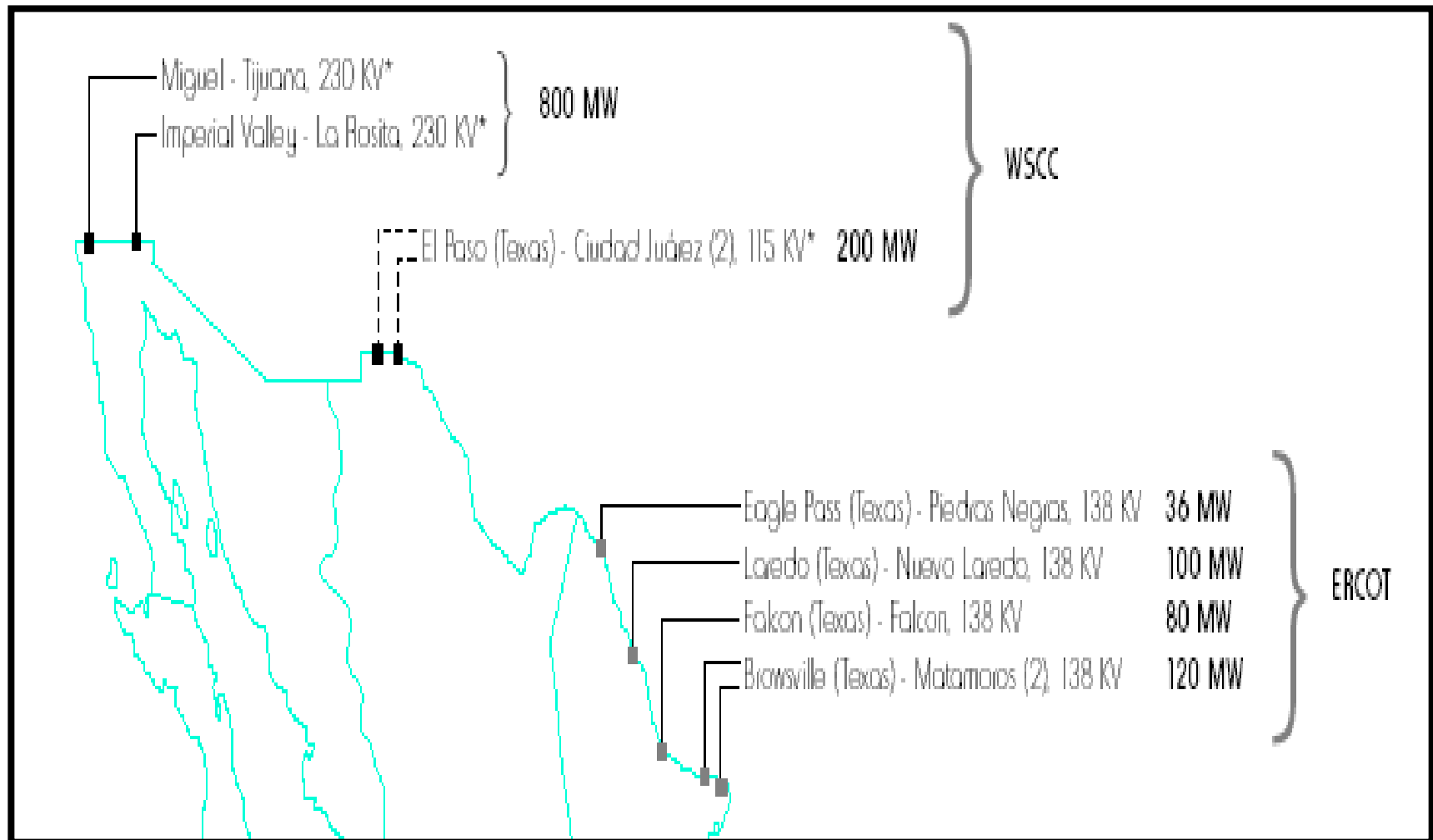


Source: Mexican electricity sector Prospective 2002-2011. Ministry of Energy.

Exportation and importations in Mexico (CFE)



Currents points of interconnection (CFE)



Importation permits (9)

Permitee	Maximum load MW	Seller	Own transmission lines	Site
Daewoo electronics*	4.5	Arizona Public Service	✓	San Luis Río Colorado, Sonora
Energía Azteca X	20	Coral Energy	✓	Mexicali, B.C.
Energía Baja California	20	Coral Power	✓	Mexicali, B.C.
Termoeléctrica de Mexicali	12	Sempre Energy	✓	Mexicali, B.C.
Mecox	1.6	Arizona Public Service	✓	San Luis Río Colorado, Sonora

* On construction

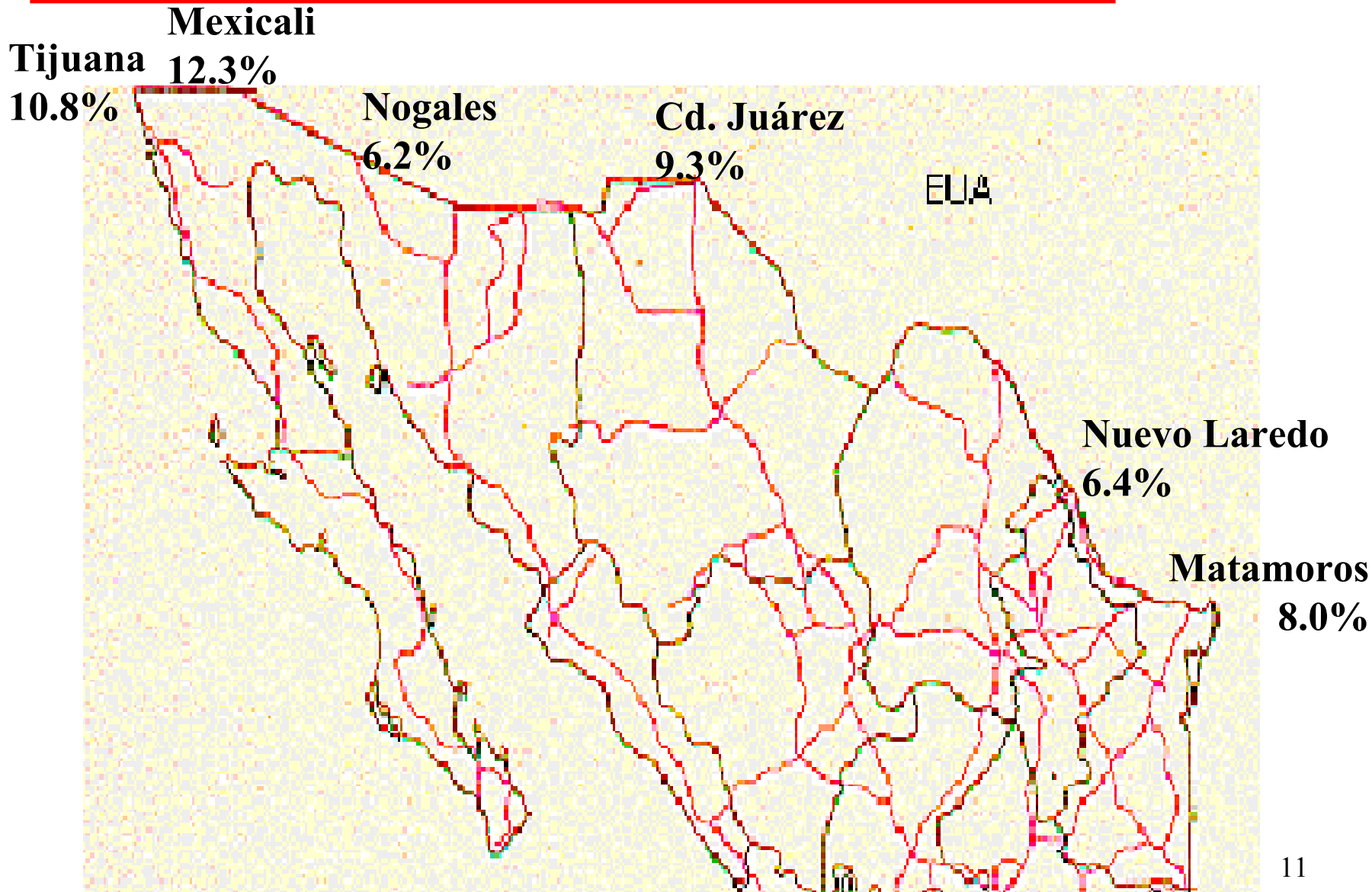
Importation permits

Permitee	Maximum load MW	Seller	Own transmission lines	Site
Hyo Seugn de México	0.5	Arizona Public Service	✓	San Luis Río Colorado, Sonora
Paulson Mexicana	0.55	Arizona Public Service	✓	San Luis Río Colorado, Sonora
Minera Muzquiz	.75	Rio Grande Electric Cooperative,	✓	Múzquiz, Coahuila
Bose	4	Arizona Public Service	✓	San Luis Río Colorado, Sonora

Exportation permits (6)

Permitee	Generation Capacity MW	Buyer	Site
AES Mérida III	15	Belize Electricity	Yucatán
Fuerza Eólica de Baja California	300	Clipper Wind Power	Tecate, BC
AES Rosarito	556	AES New Energy	Rosarito, BC
Energía de Baja California	337.05	Coral Power	Mexicali, BC
Termoeléctrica de Mexicali	679.7	Sempre Energy	Mexicali, BC
Energía Azteca X	298.62	Coral Power	Mexicali, BC

Load growth in border areas 2000-2011 (% per year)



Activities and Investment in Electricity Generation Facilities

(c) Independent Power Production (IPP)

Where an IPP located in Mexico and an electric utility of another Party consider that cross-border trade in electricity may be in their interests, each relevant Party shall permit these entities and CFE to negotiate terms and conditions of power purchase and power sale contracts...

Electricity Public Service Act (LSPEE)

- CFE can export and import electric energy
- Permits for importation only for self supply
- Permits for exportation only through cogeneration, IPP and small producer

LSPEE administrative rules (CFE)

➤ The Ministry of Energy authorize the CFE 's importation in the following cases:

- When is economical and technical convenience
- When represents a lower cost for CFE

➤ The Ministry of Energy authorize the CFE 's exportation:

- When doesn't affect the national consumption
- When is economical and technical convenience

LSPEE administrative rules (permits)

➤ Exportation permits rules:

- They cannot sell energy in Mexico
- They ought to show the power sale agreement

➤ Importation permits rules:

- The permits should establish the terms when the importation company could ask supply from CFE
- The import power has to pay a tariff

Interconnections. Objectives

- Expansion of the electricity markets
- Short or long term transaction on open networks
- Reduced rates for consumers

Interconections – What is needed?

- Open access
- Strong and flexible transmission system (avoid the congestion)
- Certain rules

Benefits of the interconnections

- Access to diverse sources of low cost power
- System support in emergencies
- Economic source of reserve capacity
- Strategy for risk management
- Optimization of the systems

Operating problems of the interconnections

- Transient Stability
- Voltage Collapse
- Frequency control
- Power flow oscillations

Regulatory problems of the interconnection

- Asymmetry of regulation between the countries
- ¿The legal framework promotes the cross border trade in electricity?
- ¿Jurisdiction problems?