



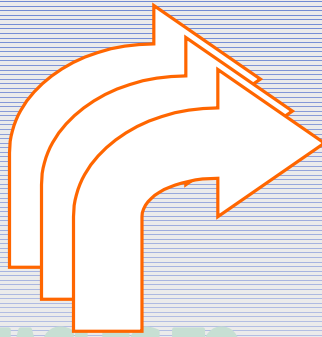
The Energy Council
2001 Global Energy and
Environmental Issues Conference

**Gas and Power Growth in Mexico: a North
American Perspective**

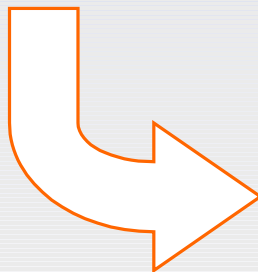
Dr. Raúl Monteforte
Commissioner
Energy Regulatory Commission of Mexico

Santa Fe, New Mexico, December 8, 2001

Mexico at the Crossroads



OBSTACLES TO
GROWTH & SUSTAINABLE
DEVELOPMENT



• FISCAL REFORM

- Increase tax revenues
- Lower oil tax (35-40%)
- Increase social spending

• FINANCIAL REFORM

- Increase savings
- Increase investment

• ENERGY REFORM

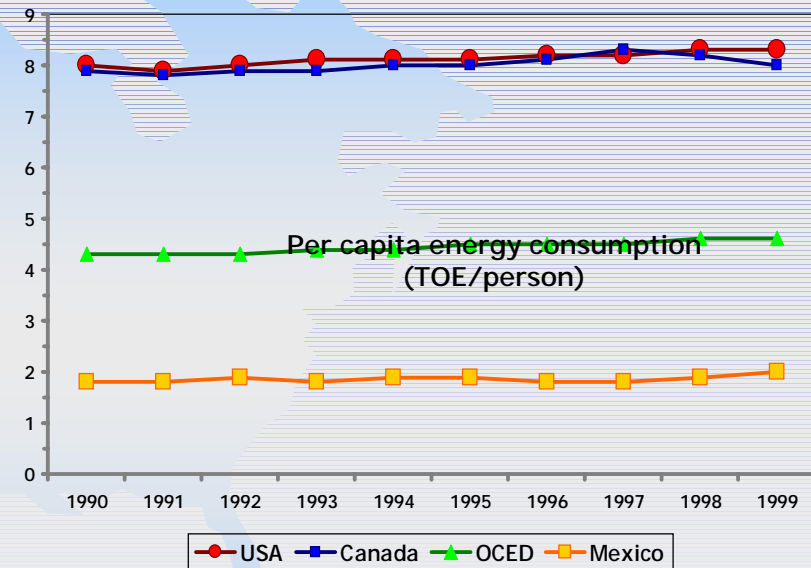
- Increase & secure energy supplies
- Increase infrastructure investment

• ENVIRONMENTAL PROTECTION

- Clean-up
- Prevention
- Enforcement

North American Energy Background

	MEXICO	US	CANADA
❖ Proved reserves			
Oil (Mn B)	28,300	29,700	6,400
Natural Gas (TCM)	0.9	4.7	1.7
❖ Production			
Oil (Mn B/d)	3.5	7.7	2.7
Natural Gas (Bn CM/yr)	36	556	168
❖ Consumption			
Oil (Mn B/d)	1.8	18.7	1.8
Natural Gas (Bn CM/yr)	36	654	78



- Canada supplies 15% of US' oil needs, and 14% of natural gas.
- Mexico supplies 12% of US' oil needs.
- US supplies 11% of Mexico's natural gas needs, and significant amounts of fuels and petrochemicals.
- There is increasing power trade in North America.

Energy reforms in Mexico (1992-1995)

General objectives:

- ◆ Allow private investment in power generation and natural gas (transmission, distribution and storage).
- ◆ Overcome lagging energy infrastructure and bottlenecks.
- ◆ Promote electricity development and gas use in industry, power generation and houses.
- ◆ Substitute for dirty fuels.



- Electricity laws (self-supply, "IPP", cogen, small-scale, import-export)
- Gas regulations (transmission, distribution & storage)
- Energy Regulatory Commission

Outcome (1995 - 2001)

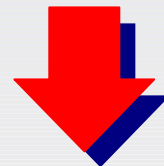
- New gas industry and markets
- More than 50 private companies (domestic and foreign) are active in gas and electricity projects.
- Natural gas infrastructure has expanded greatly. Significant private power generation projects have been completed.

Electricity

- 175 permits
- 15,779 MW new capacity authorized by the CRE (+/- US\$ 9.0 bn)
- 1,546 MW operating (excluding "IPP's and PEMEX)

Natural Gas

- 103 permits (21 distribution and 82 transportation)
- 39,766 Km of pipelines
- Investment commitments for US \$2.2 bn
- National Pipeline System is fully regulated (MOA, regulated rates, SCADA, safety & efficiency)

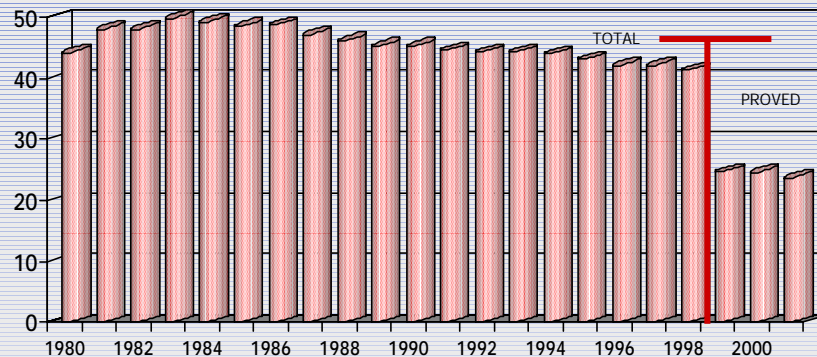


New actors, more competition, and more energy supplies to new users (e.g., LDC's customers and power self-suppliers)

Further reforms on LPG and power are under discussion

However, serious problems remain...

- Diminishing oil reserves (lack of exploration & new methodology: 23.7 bn bbl –excluding condensates)



- Increasing energy imports:

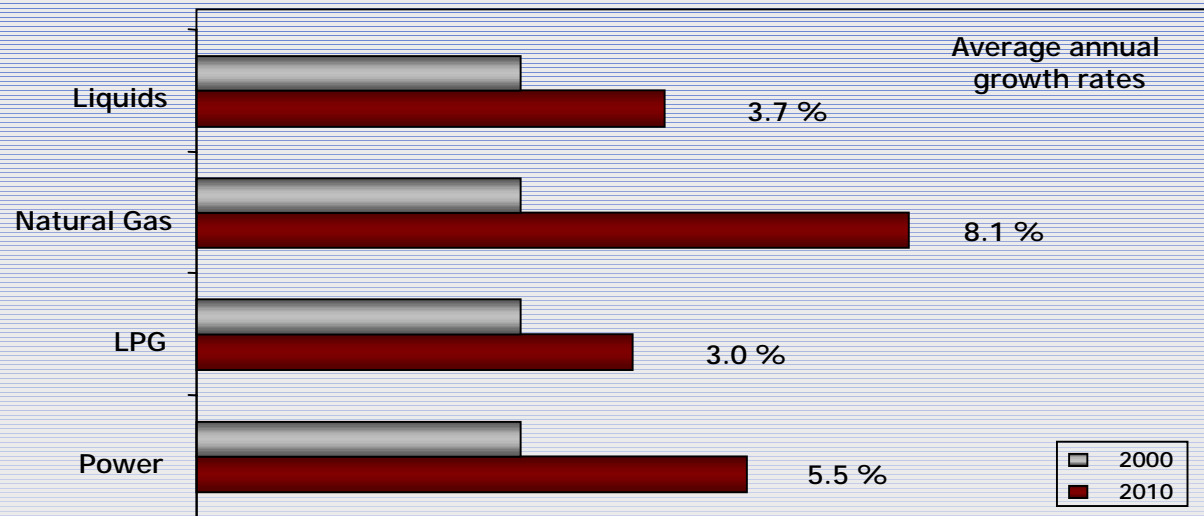
- 11% of natural gas
- 29% of LPG
- 26% of gasoline
- 20% of fuel oil
- US\$ 5 bn trade deficit in petrochemicals

- Power capacity under construction could meet 2005 demand, but gas transmission and supplies are uncertain.

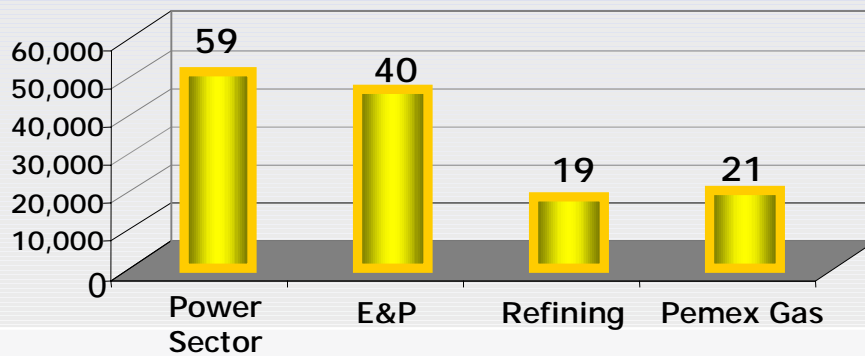
- Inadequate electricity reforms have limited “real” independent private generation (e.g. only state utility can buy power, purchase price biased, unavailable transmission, etc.)
- International bids imply state warranties and contingent public debt (PIDIREGAS for energy sector investment represent +/- 60 bn).

Growth, investment, and gas imports

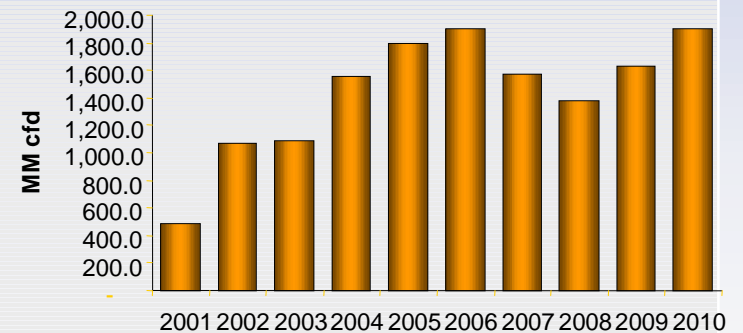
Demand growth
2000-2010



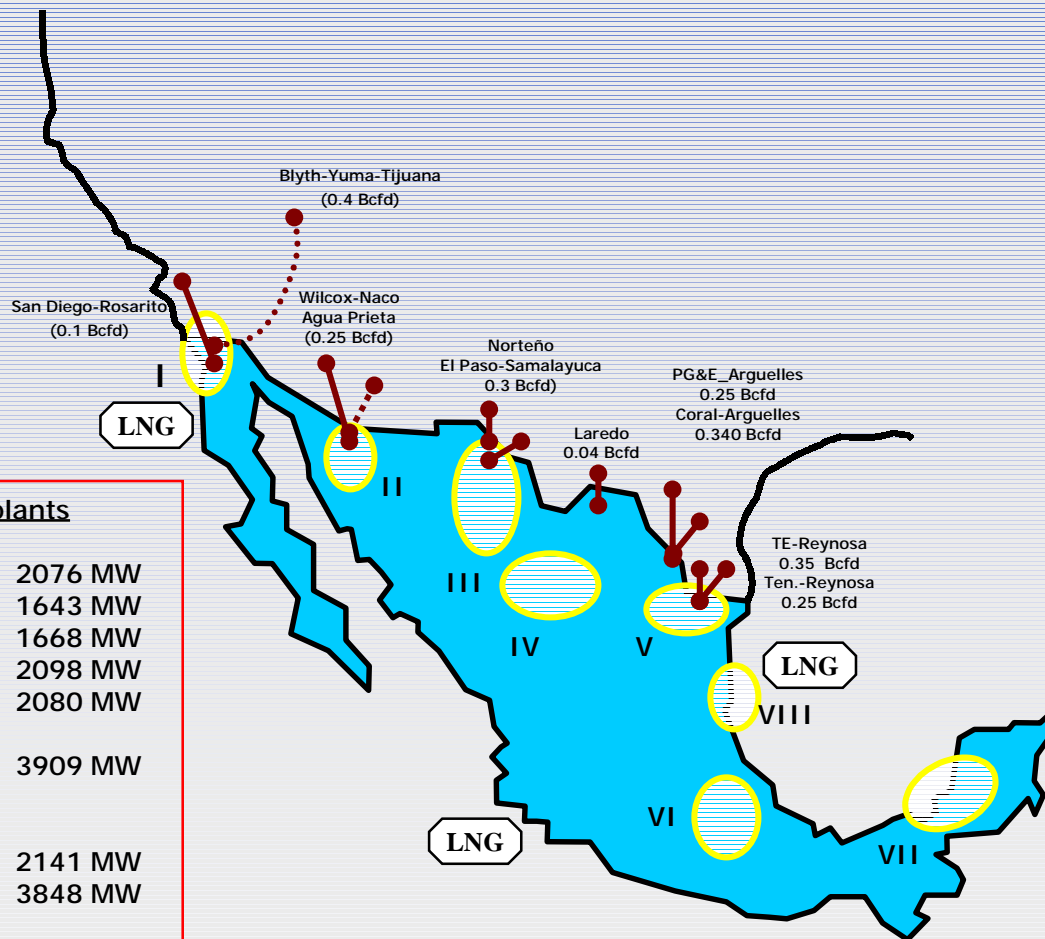
Investment requirements in energy (2001-2010)
(US\$ bn)



Natural gas imports



Power - Gas: links, pipes & loads



Power plants	
I	2076 MW
II	1643 MW
III	1668 MW
IV	2098 MW
V	2080 MW
VIII	3909 MW
VI	2141 MW
VII	3848 MW
TOTAL	22,923 MW

Power links
San Diego- Tijuana 230 kV
Imperial Valley- Rosita 230 kV (408 MW)
El Paso-Juarez 115 kV (200 MW)
Eagle Pass-P. Negras 138 kV (36 MW)
Laredo-NL 138 kV (100 MW)
Falcon 138 kV (80 MW)
Brownsville-Mata. 138 kVx2 (120 MW)

Future requirements
Total import capacity: 2.6 BCFD
6 new interconnects
Incremental capacity & compression projects

LNG in Mexico

Alaska (Sakhalin)

B. California
0.75 BCF

Manzanillo 0.5 BCF ?
L. Cardenas 0.5 BCF ?

Altamira
1 BCF

Indonesia

Australia

Bolivia



- Update**
- 3 competing consortia in Baja California
 - Link with +- 1.6 GW of power
 - Altamira contingent upon imports & domestic production
 - CRE has finished regulations:
 - 5 year "exclusivity", thereafter MOA; Heightened safety and & enhanced integrity;
 - Extensive siting analysis;
 - Cost-based, levelised rates;
 - Mexican NOMS & international codes
 - Pending governmental reviews

CONCLUSIONS

- *Energy reforms in Mexico are contributing to new gas infrastructure and convergence in gas & power development.**
- *Increased private investment and more interconnections accompanied by regulatory coherence across North America. At the same time, energy policies respond to national priorities.**
- *Cross-border energy trade and interconnections will expand significantly.**
- *Coordination is necessary to deal with contingencies, siting, permitting, energy corridors, PR, data requirements, etc.**
- *To insure adequate energy supplies in a competitive environment, Mexico needs wider and deeper structural reforms in the energy sector. CRE contribution to these goals will be as important as ever.**