

IAEE North American Conference

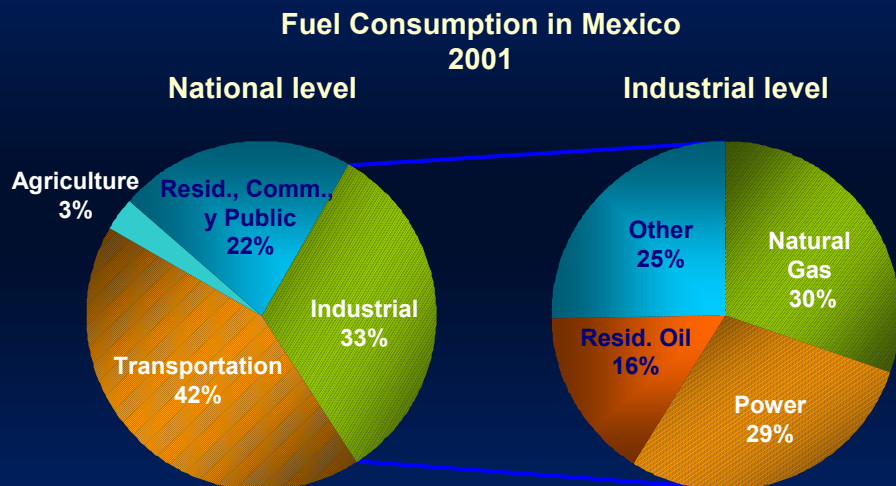
Integrating the Energy Markets in
North America: Issues & Problems, Terms & Conditions

Perspectives of Natural Gas in Mexico

Mexico City
October 20, 2003

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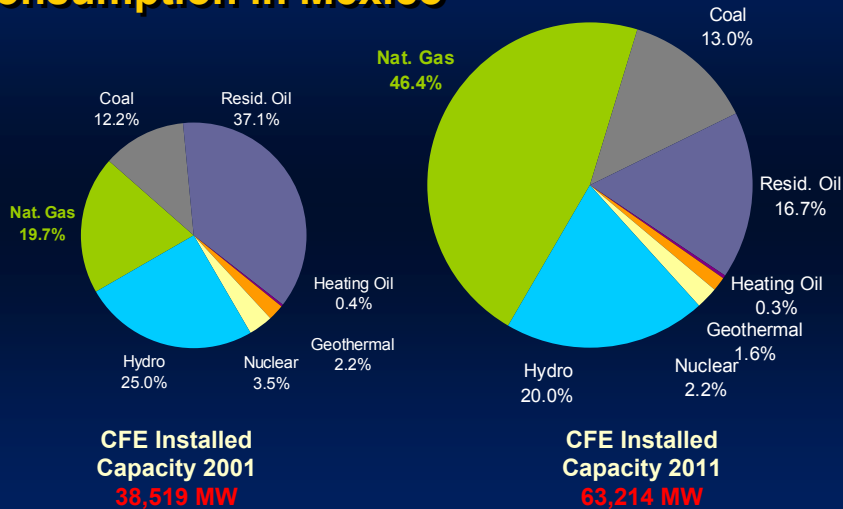
The Mexican industry relies heavily on natural gas as an energy source



Source: 2001 National Energy Balance. Ministry of Energy.
Total Domestic Consumption = 3,719 Pjoules

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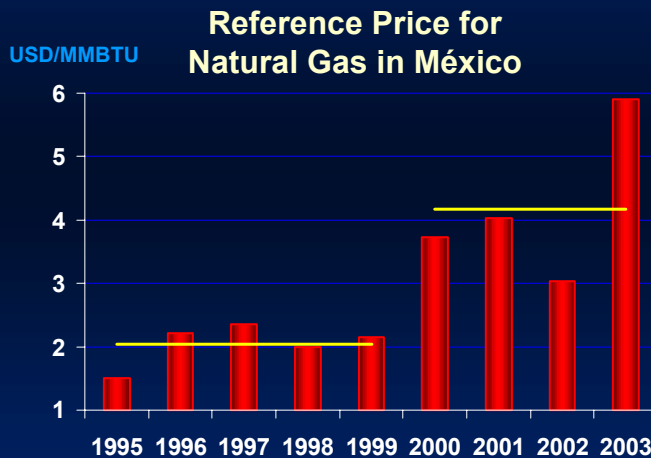
Moreover, natural gas will be privileged for power generation and residential consumption in Mexico



Source: Prospective of the Mexican Power Sector 2002-2011. Ministry of Energy

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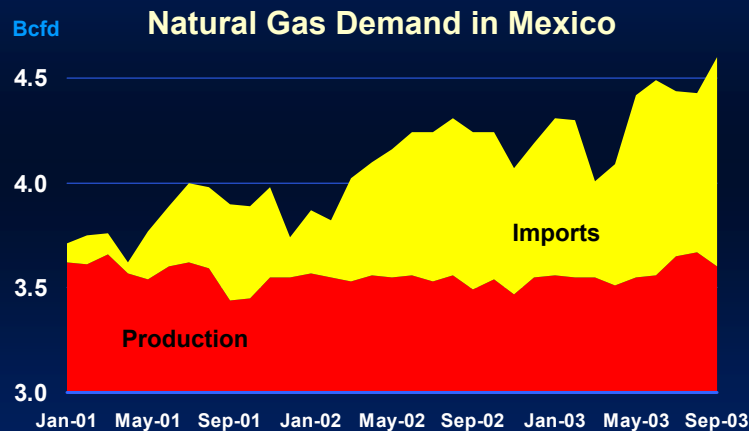
Since 2000, domestic gas prices have surged to prohibitive economic levels



Source: CRE

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Mexico has not been able to increase its natural gas production albeit high prices

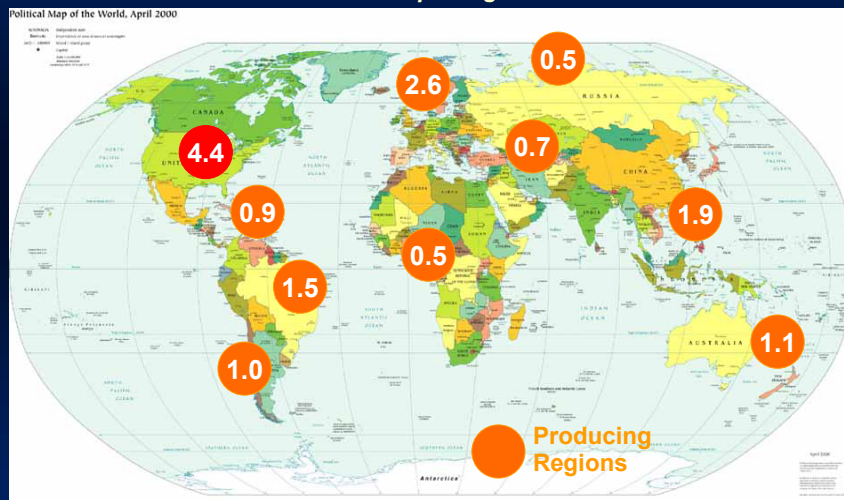


Source: Pemex, PIRA

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North America became the market with the highest natural gas cost in the world...

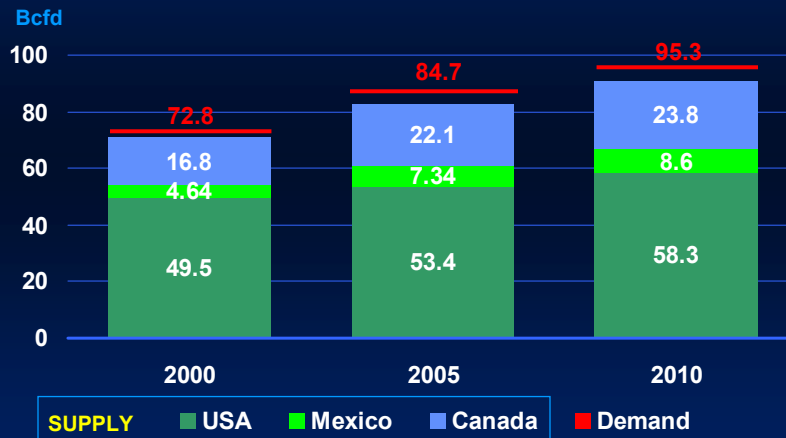
Natural Gas relative pricing with Chile = 1.0



Source: SRI, 2000, Industrial end-users, World Gas Intelligence

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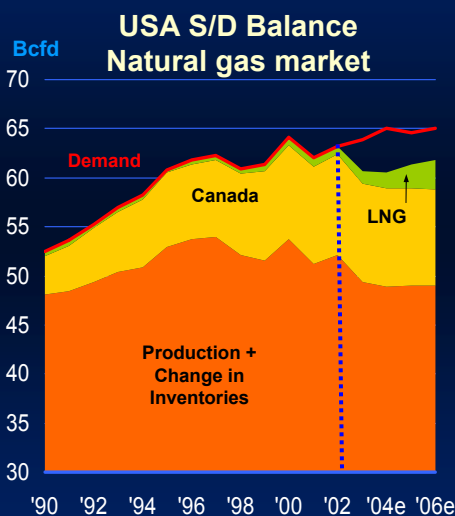
..and it will continue experiencing a very tight natural gas market under current trends



Source: PIRA - CERI

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Total supply in the US has declined causing strong unbalances



- US L-48 supply has not increased at the same rate as demand
- Constant production level since '94 and now under '96 levels
- Canada has increased gas exports from 4 Bcfd in '90 to 10 Bcfd in '02
- Demand destruction via high prices is therefore required to balance the market in the future

Source: PIRA, EIA, Cargill, Shell Trading, Morgan Stanley

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Mexican natural gas imports worsen the overall situation

- Investing including Strategic Natural Gas Program

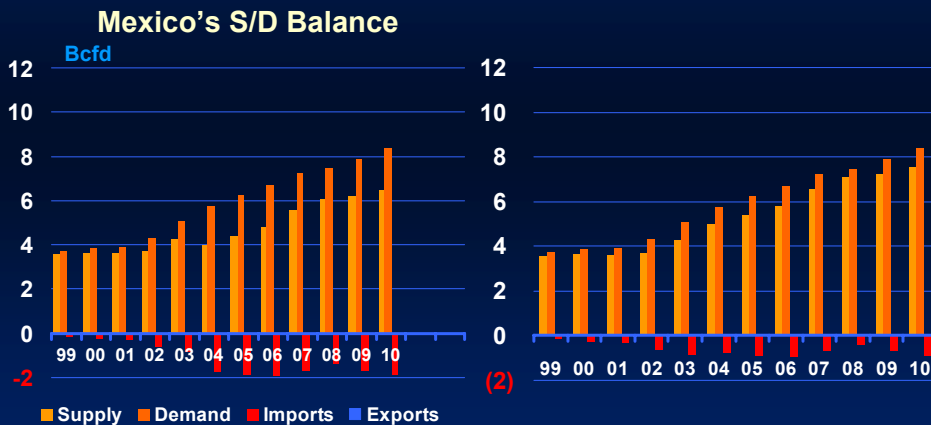


Source: Pemex, SENER

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Even with the CSM's, Mexico will continue importing continental natural gas

- Investing including Strategic Natural Gas Program
- Pemex including Multiple Service Contracts (CSM)



Source: Pemex, SENER

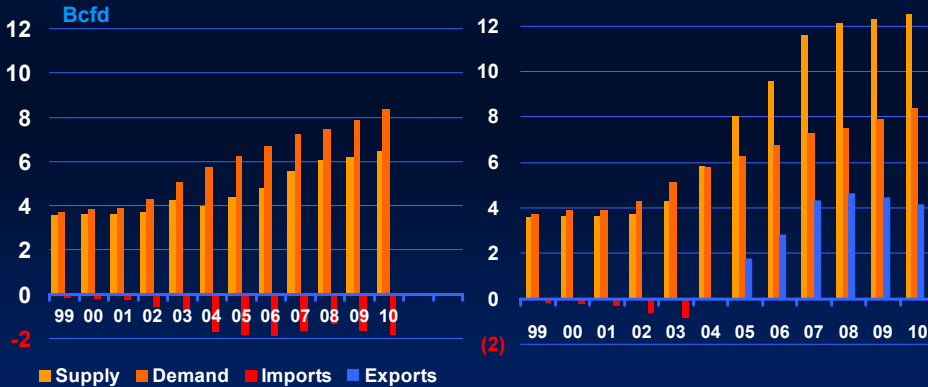
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Private capital is required to begin exporting natural gas

- Investing including Strategic Natural Gas Program

- Pemex including CSM + private investments

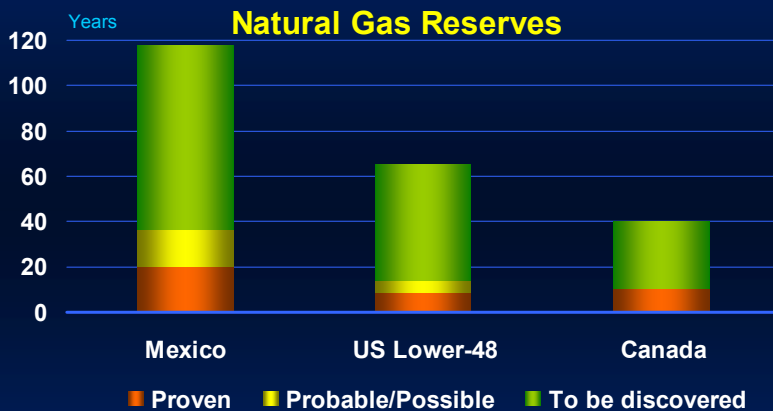
Mexico's S/D Balance



Source: Pemex, SENER

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Mexico has vast natural resources to support this turnaround...

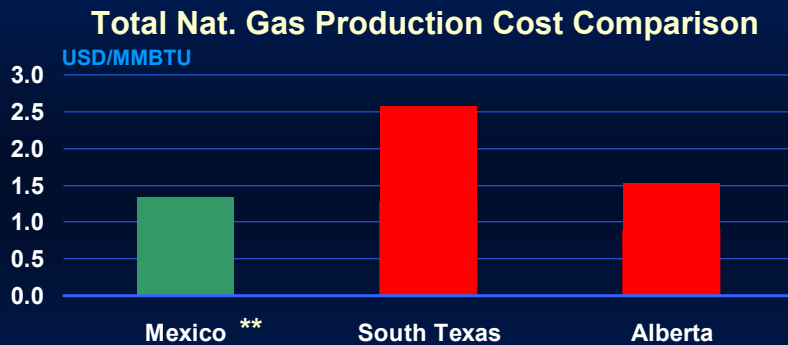


- Only the **22% of the Mexican territory** and **4% of the Gulf Coast** have been **explored**

Source: CERI, Pemex

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...and also very competitive production costs –the lowest in North America



** Mexico

Taxes, duties and royalties similar to those in Alberta,
Costs consider similar efficiencies to those in Texas and
Alberta, and the same rate of return.

Source: CERI 2000

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Canada is an adequate example to measure the benefits of private capital in the gas industry

- The provinces or the State retain ownership of natural gas
- Clear legal and regulatory framework
- Production is unregulated encouraging internal competition by having more participants

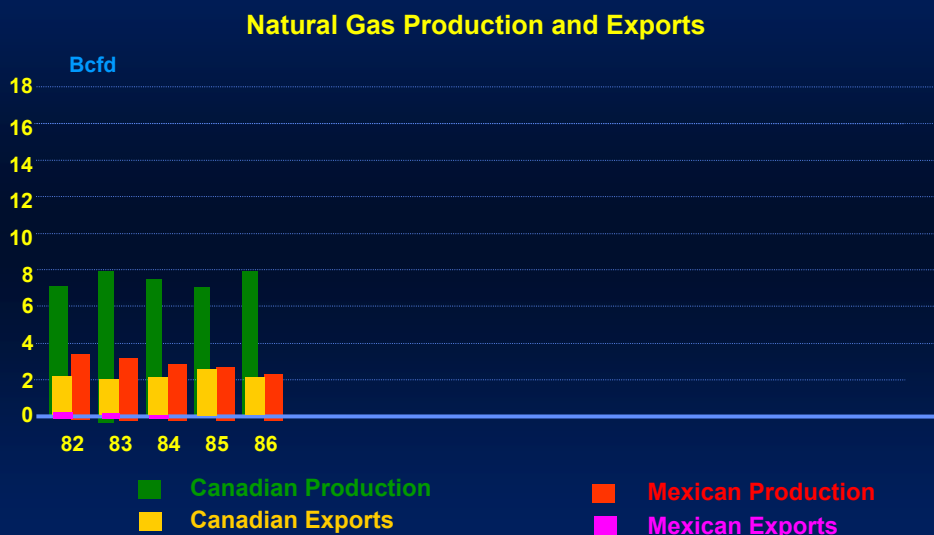
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Canada is an adequate example to measure the benefits of private capital in the gas industry

- The provinces or the State retain ownership of natural gas
- Clear legal and regulatory framework
- Production is unregulated encouraging internal competition by having more participants
- Simple fiscal and tax structure that supports continuous investments
- Simple rules for exporting
- Independent regulatory body with clear objectives that protect final customers

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Generating a continuous growth in production and exports

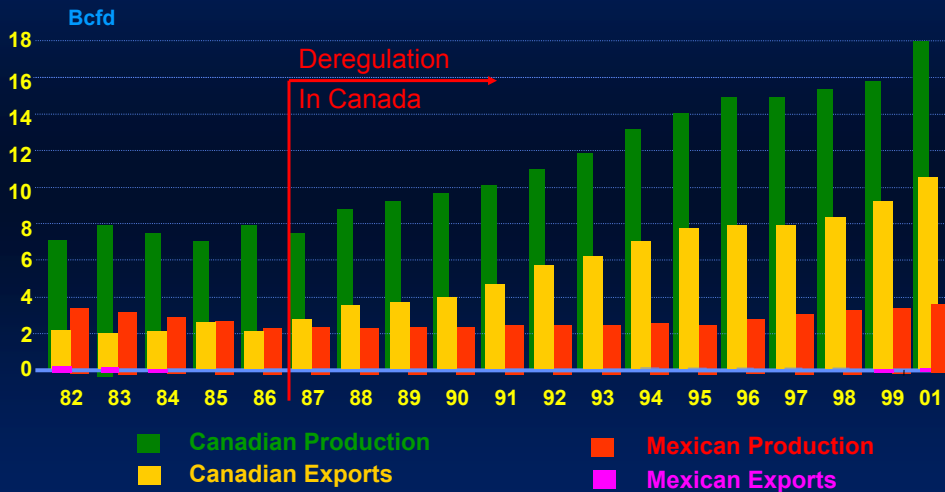


Source: CERl, EIA

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Generating a continuous growth in production and exports

Natural Gas Production and Exports



Source: CERl, EIA

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Mexico has not yet developed its full potential in the gas sector

2000	Mexico	Canada
Reserves (Tcf)	55.7	60.7
Production (Bcfd)	3.3	16
Natural gas wells (estimated)	300	9,200
Annual Capex (Million US\$)	200	6,000
Export Sales (Million US\$)	35 ^a	10,000
Players in nat. gas sector	1	600

a) From January to September 2003, natural gas imports total US\$1.1 Billion

Source: CERl

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There is a great potential of gas reserves in the Gulf of Mexico basin

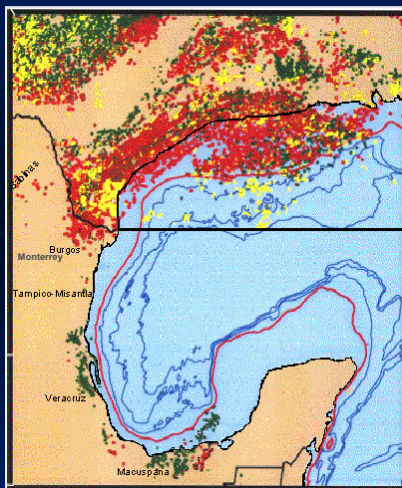
NOT ASSOCIATED Natural Gas



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The US has seriously developed such reserves

NOT ASSOCIATED Natural Gas



Key →

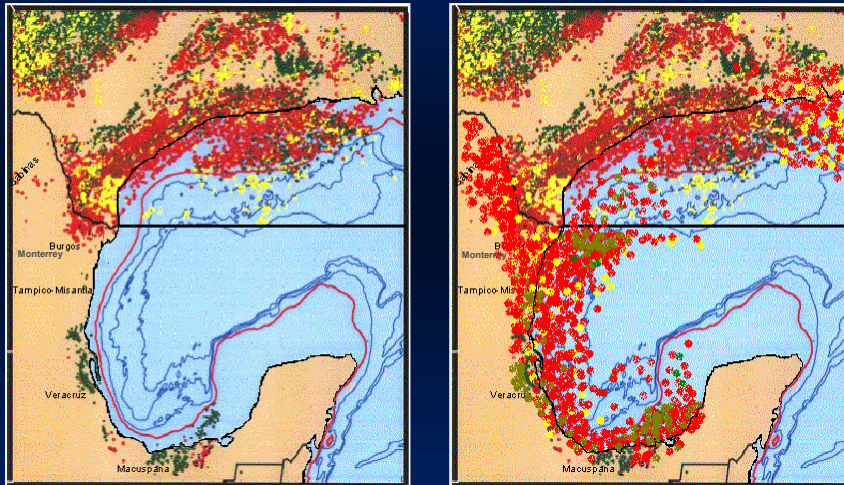
- Yellow square: Natural Gas
- Red square: Natural Gas
- Green square: Oil and Natural Gas

Source: Ministry of Energy

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A gas reform would allow Mexico to take advantage of its reserves and eliminate imports

NOT ASSOCIATED Natural Gas



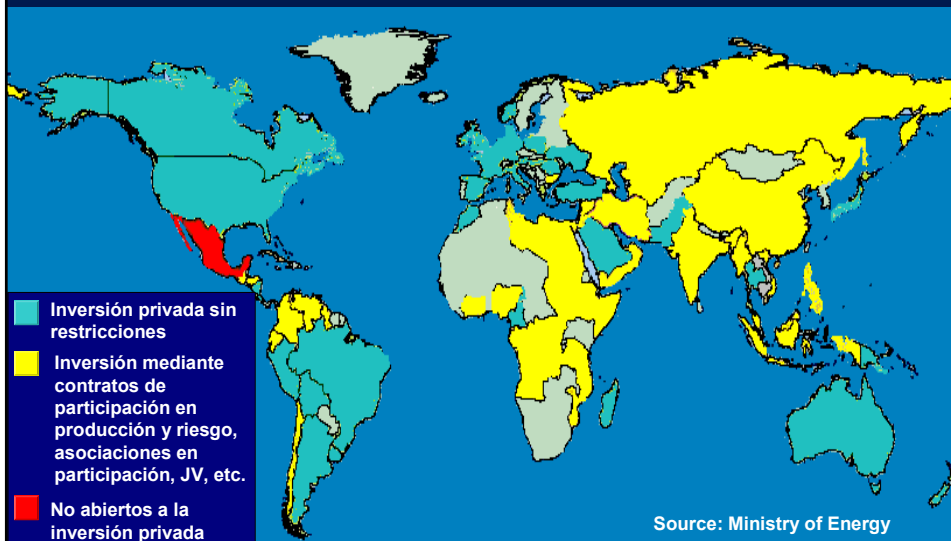
Source: Ministry of Energy

Key →

■ Natural Gas
■ Oil and Natural Gas

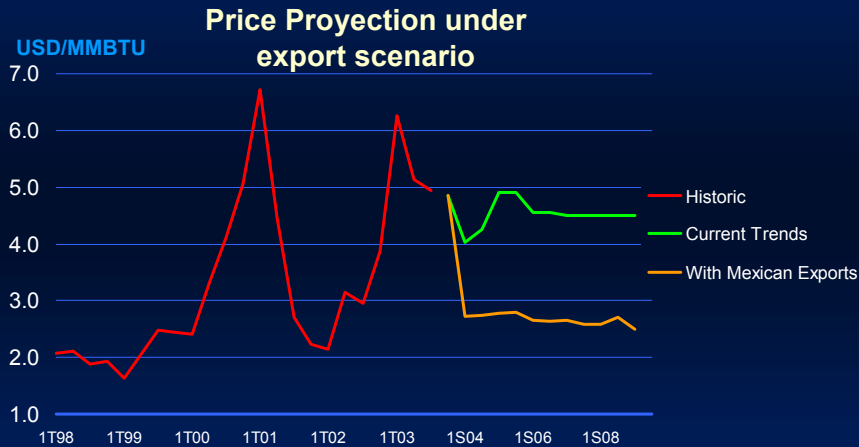
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Mexico would no longer be the ONLY country in the world that does not allow private capital in the oil and gas industries



Source: Ministry of Energy

Having augmented its domestic production and internal competition, Mexico could stabilize gas prices and increase its competitiveness



- Otherwise, uncertainty in gas supply, price shocks and lack of competitiveness will continue affecting the Mexican economy

Source: CERI

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Straightforward proposals to turn around current situation on the long run (1)

- Strengthen Pemex operations endorsing E&P gas programs as well as authorizing CSM's efforts
 - Fiscal framework that would allow Pemex to re-invest in gas rigs
 - Clear mandate for Mexico to register natural gas surplus in 2005

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 - Fiscal framework that would allow Pemex to re-invest in gas rigs
 - Clear mandate for Mexico to register natural gas surplus in 2005
- Open the natural gas sector to private capital to balance Pemex investments in natural gas exploration, production and distribution
 - The State continues to have title and ownership of the natural gas
 - The Government would receive economic benefits in royalties and duties per unit of natural gas production, in addition to income tax
 - Transfer to the states and municipalities involved some of the generated fiscal income to support their individual infrastructure and social development

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Straightforward proposals to turn around current situation on the long run (2)

- The Government remains responsible for the planning and investment promotions
 - Regulation and surveillance of E&P activities by a technical committee to protect and preserve natural gas reserves and local environment

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Straightforward proposals to turn around current situation on the long run (2)

- The Government remains responsible for the planning and investment promotions
 - Regulation and surveillance of E&P activities by a technical committee to protect and preserve natural gas reserves and local environment
- Independent regulatory body with clear mandates that protect customers
 - Industry-wide competitive contractual terms
 - Appropriate natural gas price formula until sufficient internal competition has been developed
 - Secure national supply at competitive prices before exporting natural gas
- Clear legal and regulatory framework

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A thorough energy reform would create important direct and indirect benefits

- 1.5-2.0% GDP growth
- Annual direct investments of US\$10 Billion generating over 40,000 permanent job opportunities
- Virtuous cycle that would generate 300 thousand job opportunities and additional investment for US\$ 10 billion per year

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- Increase savings and currency liquidity for US\$ 14 billion annually in natural gas, refined products and basic petrochemicals
- Greater fiscal income: US\$ 4 billion per year
- Abundant natural gas and electricity supply with stable prices, alleviating Mexico's competitiveness problem

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- Abundant natural gas and electricity supply with stable prices, alleviating Mexico's competitiveness problem
- Greenhouse emissions reduction by approx. 160 kton/year
- Imports that allow people to become employed and attract investments somewhere else are avoided
- Local development and fight against poverty

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