

Promotion of Natural Gas Exploration and Non-conventional Gas Development

Analysis of two cases in the Argentine experience

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Patron



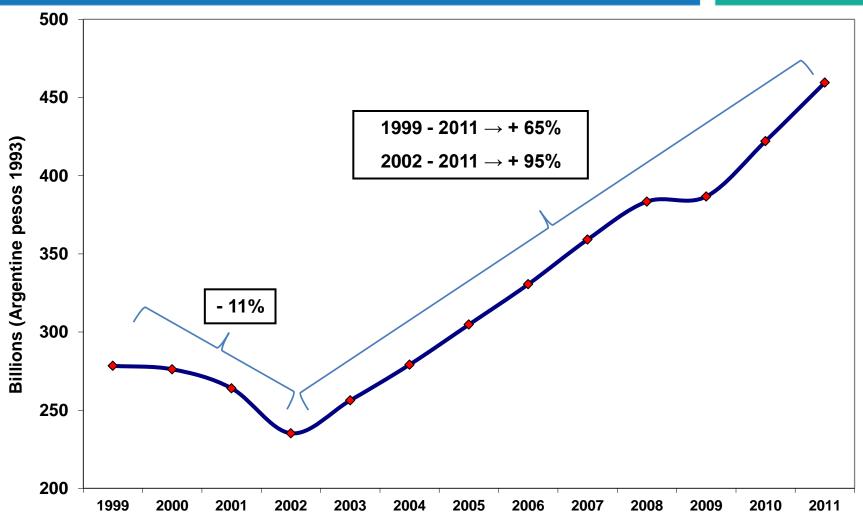




- Argentina general overview on the natural gas sector
- Analysis of the current situation
- Opportunities for non-conventional development
- Challenges
- Conclusions



Gross Domestic Product (GDP)

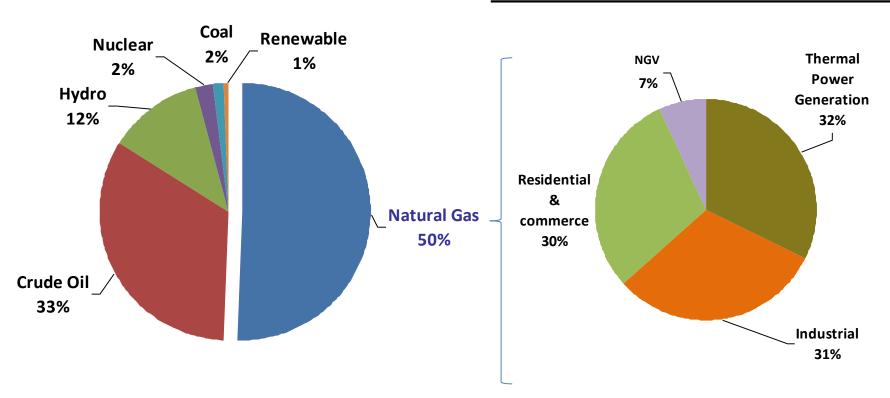


Argentina - Energy Matrix



BY TYPE OF FUEL

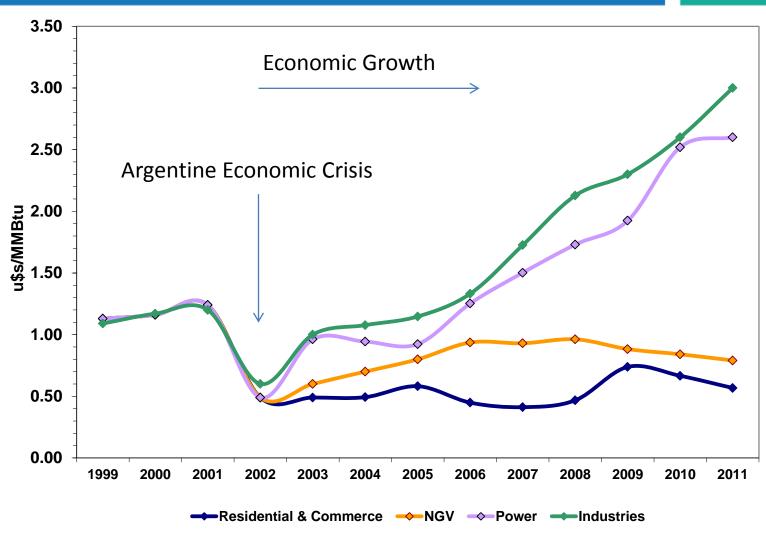
BY SEGMENT OF NATURAL GAS DEMAND



Gas Prices Effect of 2002 Economic Crisis in Argentina

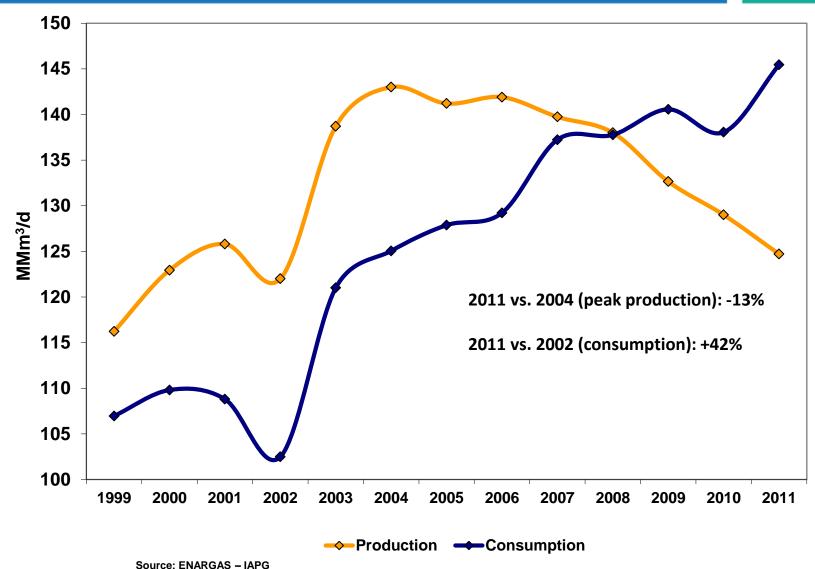






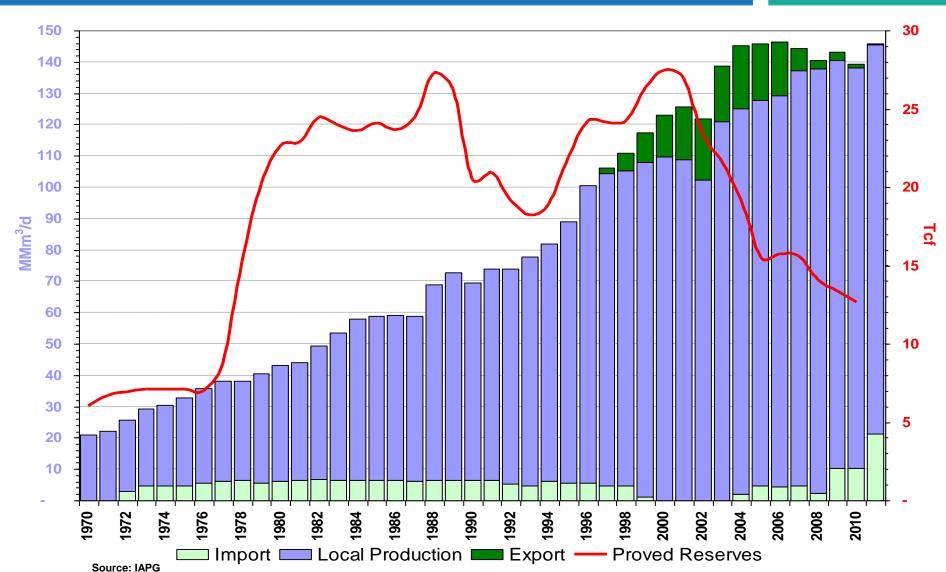
Historical Production and Consumption Evolution





Natural Gas Reserves Evolution









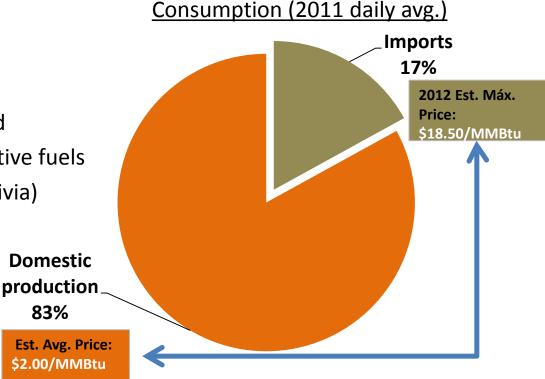
- **General Context:**
 - Surged Economic Growth (GDP:95% 2002 base)

83%

- Depressed Prices
- Production Decline

Measures Taken: Export cuts

- Cuts on Natural Gas demand
- Subsidy for usage of alternative fuels
- Imports increase (LNG + Bolivia)
- "Gas Plus" Program



"Gas Plus Program"



- Set by Resolution by Federal Secretary of Energy in 2008 (Nbr. 24/08)
- Creates incentives for gas producers (Conventional and Tight-Sand Gas)

Advantages:

- Approves gas prices that would turn projects economically viable
- Recognizes difference in price if Gas Plus is re-directed (for producer)
- Guarantees to be the last gas to be re-directed, if needed (both for producer and buyer)

Requirements:

- Submit a project for technical approval by the Federal Secretary of Energy
- Submit an economic evaluation of the project

"Gas Plus Program" Highlights



- Approximately 66 Projects technically approved:
 - 260 new wells originally presented for drilling
 - Tight Gas: 1.36Tcf Investments: \$2.4B
 - Exploration: 0.87Tcf Investments: \$1.45B
 - Reactivation of Exploitation: 0.97Tcf Investments: \$0.6B

Program Results:

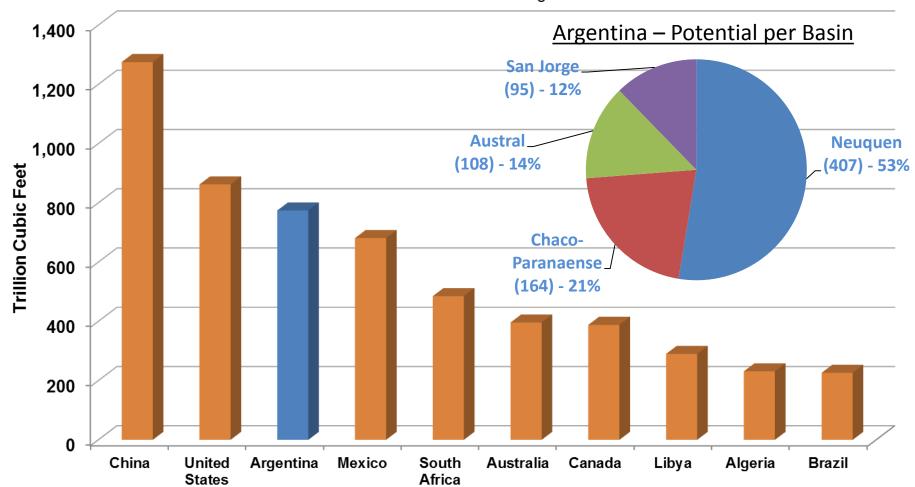
- 85% successful wells drilled and re-completed
- Addition of 2.7Tcf of Reserves
- Maximum depth reached of 5,800 meters (NW Basin)
- Price approved ranges from \$4.10/MMBtu to \$6.80/MMBtu
- Estimated Gas Plus volume currently producing :12.5MMm³/d ~ 441MMcfd





Estimated Shale Gas Technically Recoverable Resources

World Shale Gas Resources: An Initial Assessment of 14 Regions Outside the United States - EIA



Opportunities for Argentina



- 100 years of natural gas production history
- Energy is a key factor to guarantee the current Argentine economic growth
- Import prices are currently 5 times the price paid for the domestic production
- Mature natural gas market with available infrastructure
- Human capital highly qualified on Exploration & Production
- Recent positive results and increased interest in exploration
- Large scale potential for non-conventional resources

Challenges



- Improvement of the Regulatory Framework
 - Incentives for investments
 - Cost control
 - Equipment availability
 - Environmental policies
 - Labor policies
 - Relation with native communities
- Change in the business model

Conclusions



- According to the EIA (June´11), Argentina holds the World´s 3rd largest
 Shale Gas potential resources
- Current difference between import and domestic prices are an opportunity for domestic prices increase. Non-conventional gas development would conduct to this object
- Current trade balance becomes a significant issue to be resolved
- Technology already exists for developing non-conventional gas

"Argentina has a mature natural gas industry and market with a significant infrastructure available. In consequence, a quick monetization of investments in non-conventional resources would be possible, if an adequate regulatory framework is in place."



THANK YOU!