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ENTRY-EXIT MODEL IN EUROPE: LESSONS FOR THE BRAZILIAN NATURAL GAS INDUSTRY

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- ▶ The views expressed here do not represent an official statement of ANP, but the understanding of the authors.

Topics

- ▶ Context
- ▶ European Community Directives
- ▶ Entry–exit model in European Community countries
- ▶ Analysis for Brazil
- ▶ Concluding remarks



Context

- “*Gas to Grow*” (June/2016): introduces a set of regulatory changes to attract investments in a market environment open to competition.
- Decree n° 9.616/18: Changes the tariff model for natural gas transportation – implement the entry–exit model for capacity contracting, replacing the point–to–point contracting model.
- Objective: reduce transaction costs for natural gas transport services, increase competition and improve the efficiency of the transport capacity use.
- The entry–exit tariff for natural gas transport systems was recommended by the third European Union Energy Package, as it reflects costs, facilitates gas trading and provides locational signals of system congestion.

European Community Directives

Directive 98/30/EC and Directive 2003/55/EC

- Instituted common rules for the transport, distribution, supply and storage of natural gas.
- The main obstacles for a fully operational and competitive internal market are:
 - access to the network,
 - access to storage,
 - tariff
 - interoperability between systems, and
 - different market openness levels of Member States.
- These directives, while pointing to the implementation of free access to transmission networks and requiring the legal independence of transmission system operators in relation to the other segments of the chain, were not effective for transmission companies to adopt strategies that were in fact independent of their controlling companies.

European Community Directives

Directive 2009/73/EC and Regulations 713 and 715 (“Third Package”)

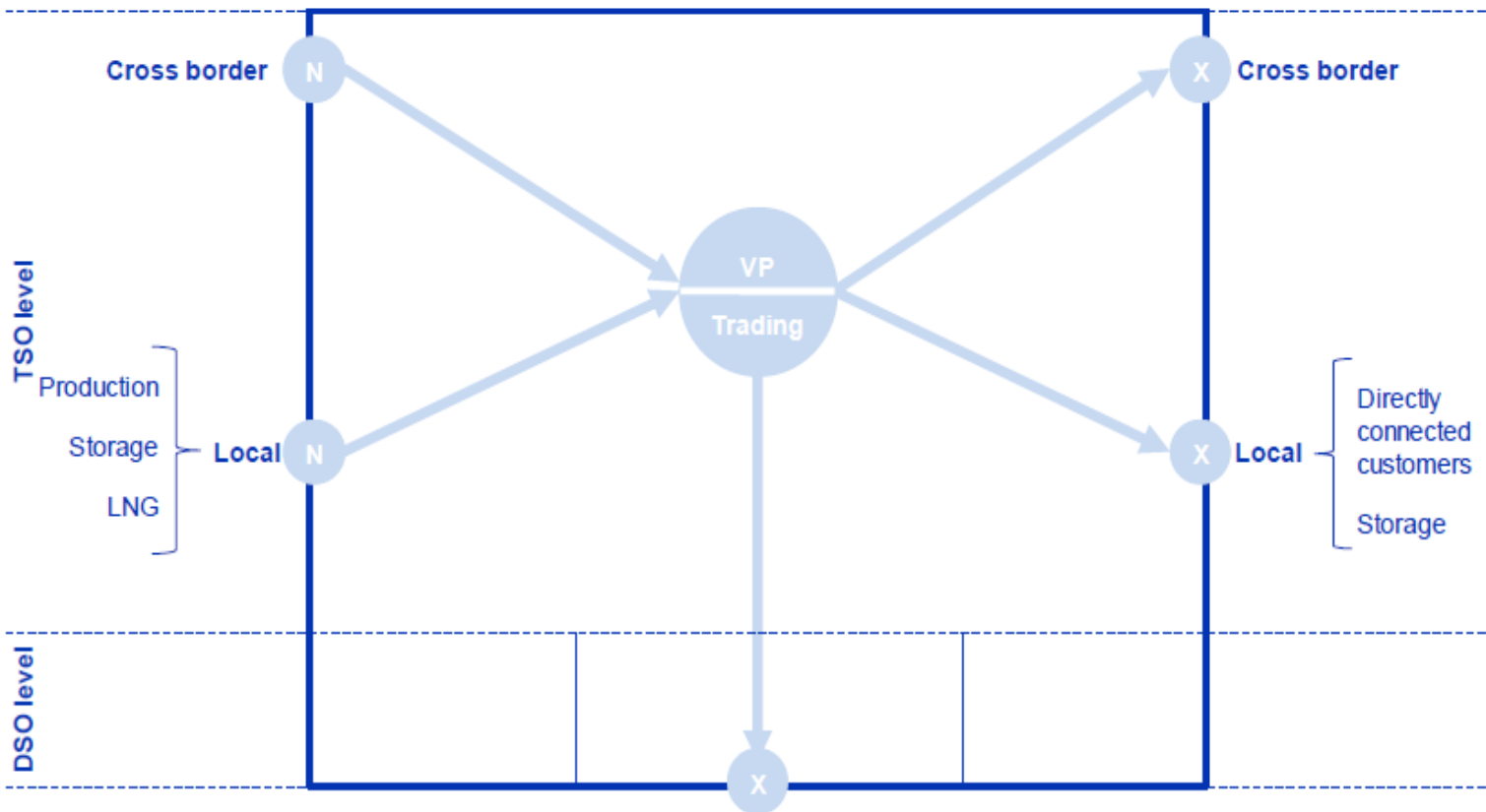
- They reinforced the separation and total independence of the transmission activity from the other activities of the natural gas chain.
- The separation of ownership in the transmission sector is the most effective means of promoting investment in infrastructure on a non-discriminatory basis, equitable access to the network by new entrants as well as market transparency.
- Regulation 713/2009: established the Agency for the Cooperation of Energy Regulators (ACER).
- Regulation 715/2009: aims to create non-discriminatory rules for the conditions of access to the natural gas transmission networks, taking into account the particular characteristics of national and regional markets. Ratifies the preference for entry-exit systems to promote competition.

Entry–exit model in European Community countries

- Characteristics of a “complete” entry–exit system:
 - Entry–exit capacity: network users can contract entry and exit capacity separately;
 - Free allocation of capacity: gas brought into the system at any point of entry can be delivered for consumers at any point of exit;
 - Virtual trading point: gas can be traded regardless of its location, network users can transfer bilaterally gas ownership and/or make swap for imbalances;
 - Distribution activity included transmission and distribution network operators consider capacity and connection problems at their interconnection points (city gate)

Entry–exit model in European Community countries

Figure 1. “Complete” entry–exit system



Source: DNK Kema (2013).

Entry–exit model in European Community countries

Figure 2 shows the status of each Member States in the implementation of entry–exit system in two large dimensions: free capacity allocation and introduction of a virtual trading point.

Figure 2 . Overview of the entry–exit system implementation *status*

		Capacity Restrictions?	
		No	Yes
Virtual Point established?	Yes	DK HU IE IT NL PT SE SK UK	AT BE CZ DE ES FR PL RO
	No	EE FI GR LT LU LV SI	BG

○ Entry only / exit only system

□ Entry–exit system

Source: DNK Kema (2013).

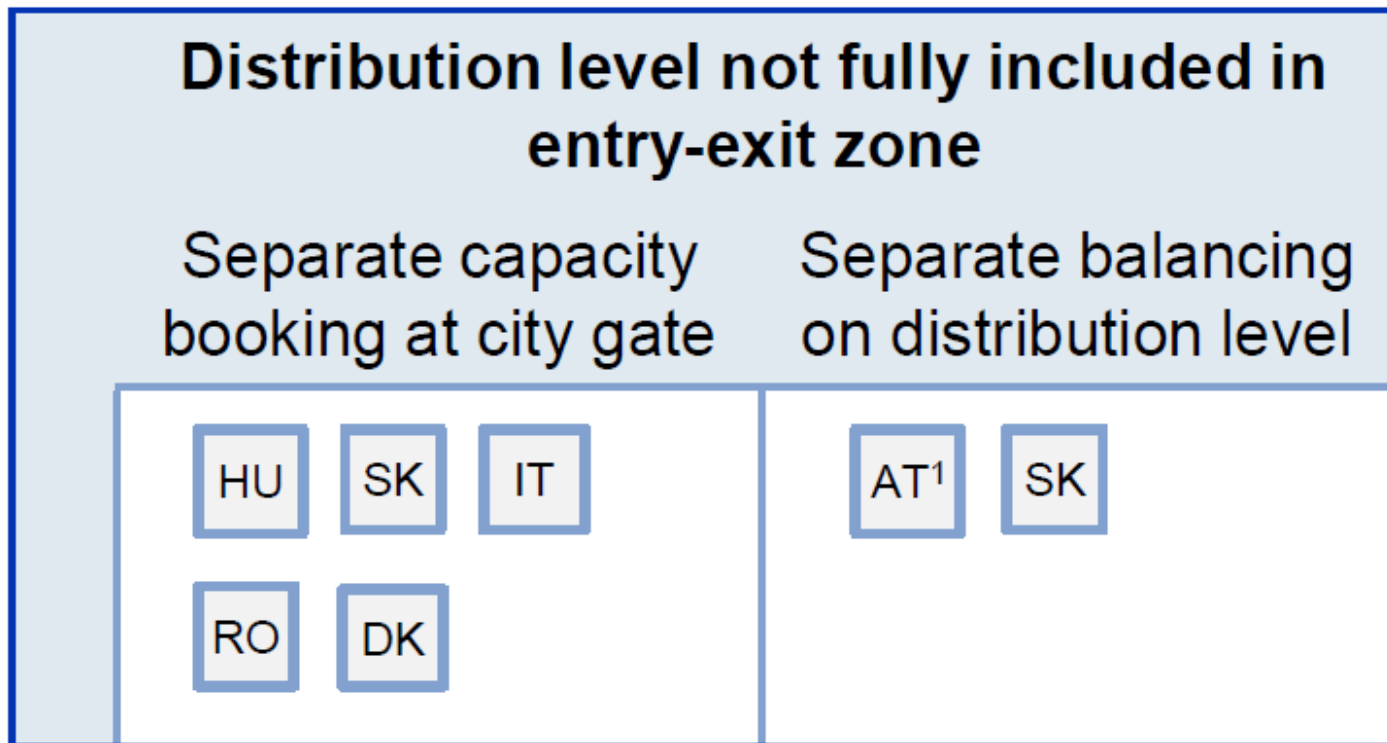
Entry–exit model in European Community countries

The point of interconnection between the transmission level and the distribution level sometimes serves as a demarcation point between different booking capacity and balancing systems:

- *Booking Capacity:* Shippers wishing to transport gas from an entry point of the transmission network to an exit point of the distribution level must book capacity separately in the citygate or the allocation of capacity is handled by network operators internally.
- *Balancing:* systems may differ to what extent the distribution level is part of the overall balancing system or whether a separate balancing mechanism is applied.

Entry-exit model in European Community countries

Figure 3 . Member States with the distribution level not fully included in the entry-exit system



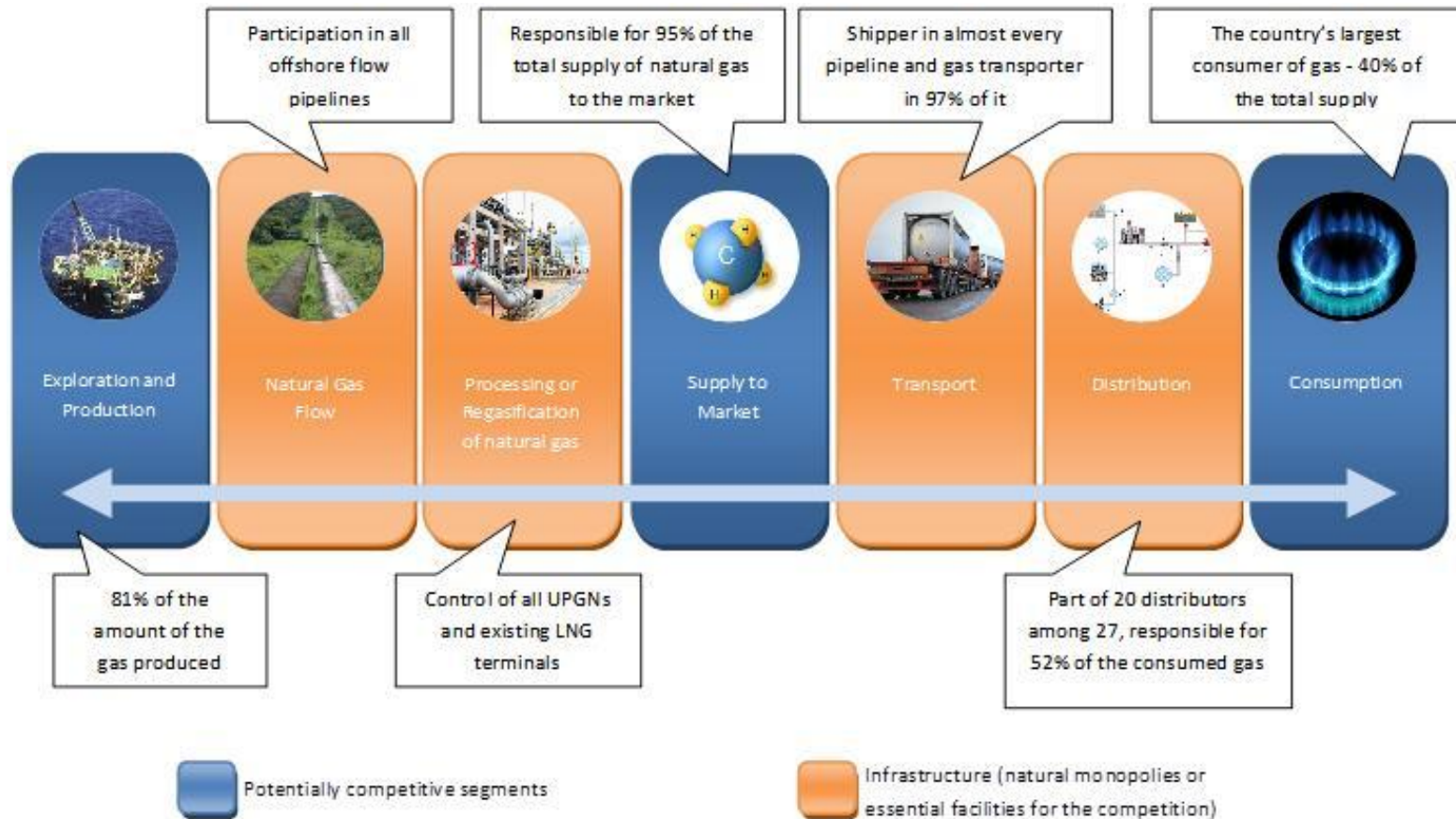
Source: DNK Kema (2013).

Analysis for Brazil

- The transition to a competitive market in the Brazilian natural gas industry should take into account a process of evolution, as has happened in other countries, in which the adaptation of the legal and regulatory framework is accompanied by the entry of an increasing number of agents in the market, until the target of a liquid competitive market is reached.

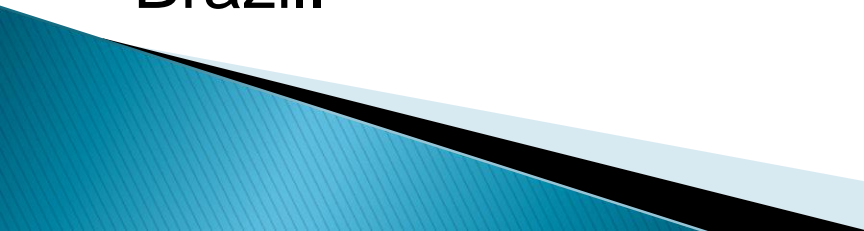
Analysis for Brazil

Figure 4 . Petrobras' Participation in the Natural Gas Chain in 2015



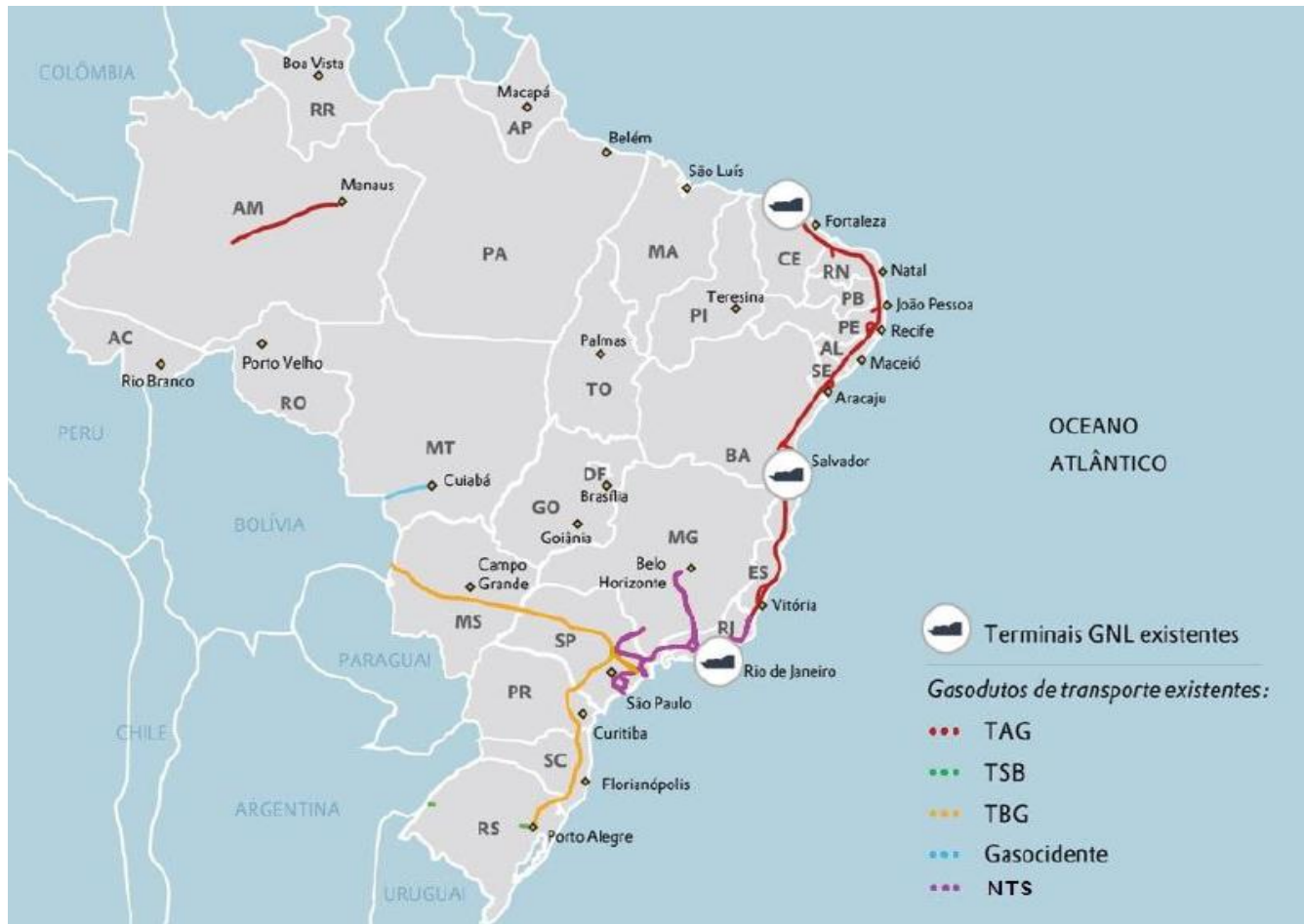
Source: MME, 2016.

Analysis for Brazil

- ▶ The control of several segments of the natural gas industry by Petrobras results in entry barriers for new agents.
 - ▶ The Brazilian natural gas industry is characterized by a high concentration of both the supply and the demand, and is in a stage of low maturity and market dynamism (MME, 2016).
 - ▶ Petrobras' decision to reduce its participation in the natural gas industry should transform this market in Brazil.
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Analysis for Brazil

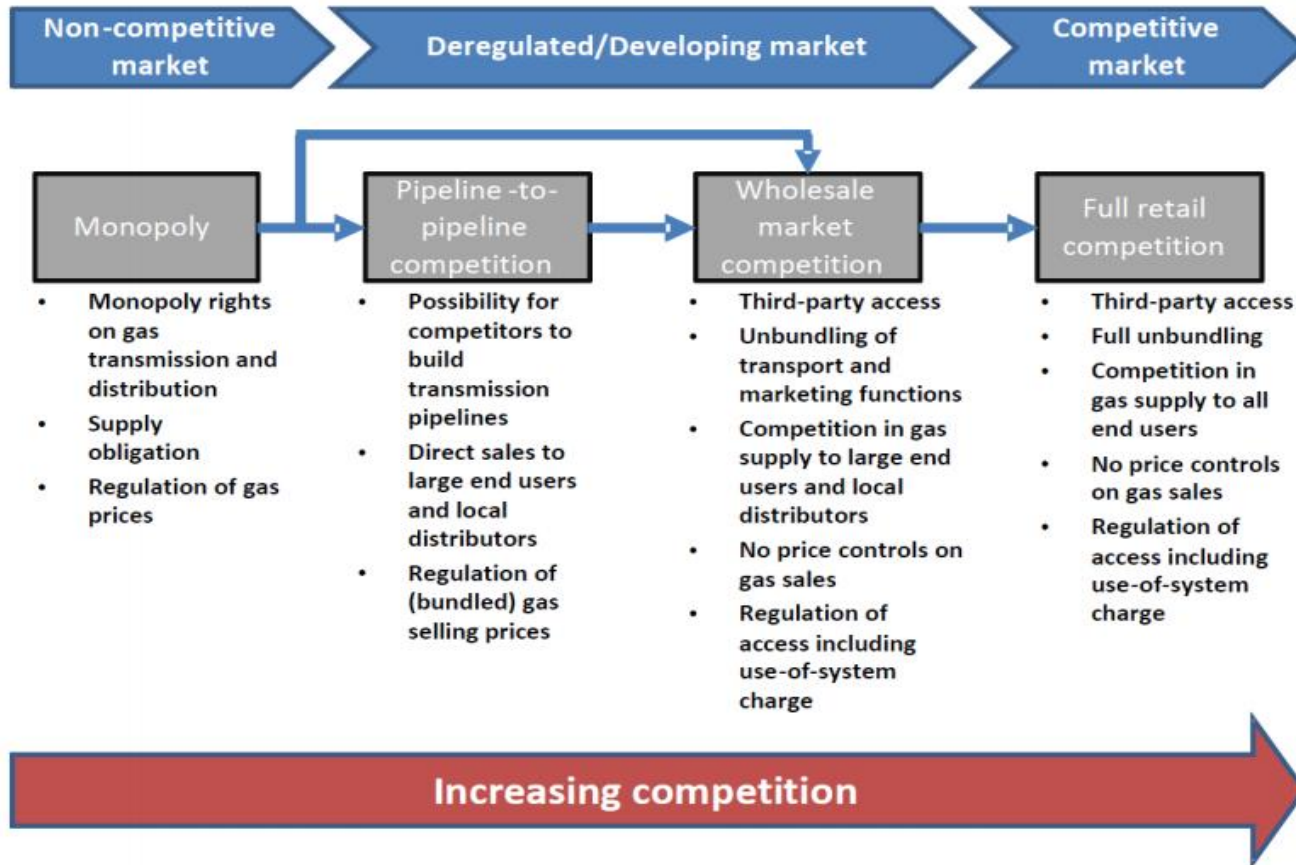
Figure 5. Transmission pipelines



Source: ANP.

Analysis for Brazil

Figure 4 . Stages of the Competition gas-gas development

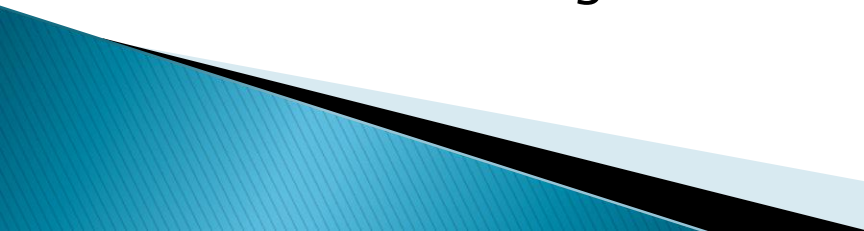


Source: OECD/IEA, "Gas Pricing and Regulation - China's Challenges and IEA Experience", 2012.

Analysis for Brazil

Gas to Grow – Market Design

Transport systems with capacity contracting in the entry–exit model:

- Transition to a competitive market in the commercialization of natural gas;
 - Independent contracting of entry capacity and exit capacity;
 - Efficient operation of the transport system;
 - Creation of capacity market areas;
 - Creation of negotiation virtual points (hubs).
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Concluding remarks

- In order to maximize the liquidity of the natural gas wholesale market, the main drivers are: standardization of the contracts and maximization of the number of market participants.
- The European example shows that:
 - the merging of market areas is an important tool to enable the necessary reinforcement of interconnections between these areas (i.e. investments in transport infrastructure) to be a unified market area;
 - countries with different specificities adopted different solutions,
 - entry-exit tariff alone does not lead to a liquid and competitive market.
- Transmission companies should cooperate to calculate and provide transport capacity in a transparent manner, as well as to balance natural gas flows from the adoption of common operational rules formalized in contractual instruments, as Network Codes.
- The search for the effective independence and autonomy of the transporters, through the unbundling, also has a prominent role.

THANK YOU!

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