Panel Session: Market Mechanisms and Supply Adequacy in the Second Wave of Power Sector Reforms in Latin America

(Luiz Augusto Barroso, Tom Hammons, and Hugh Rudnick)

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Topic: Critical Infrastructure of the Power System

INTRODUCTION

Latin America has emerged in the recent years as one of the most dynamic regions for electricity markets. The region is characterized by high demand growth rates (over 4-5% yearly), strong hydro share (about 60%). In the 1990s the region was one of the world leaders in private investments in the electricity sector. The process of reform of the electricity sectors so far has not reached all countries in the region and has occurred in "waves" in the countries with deregulated markets. The example of Chile was first followed by Argentina in the early 1990s and shortly later by Bolivia and Peru. By the mid-1990s it had spread to Brazil, Colombia, and several Central American countries. While the motivations of power sector reform in developed countries was introduced to facilitate competition as a means to reach the ultimate goal of greater efficiency, the reforms in Latin America had the additional motivation of relieving the government to fund investments in new generation capacity that were required to match predicted load growth.

Although differing in the degrees and details of implementation, the first "generation" of power sector reforms in the Latin American countries was inspired by similar reforms in more developed countries. Purely market mechanisms formed the backbone of the regulatory frameworks to achieve the objectives of reliable and efficient guarantee of energy supply and adequate tariffs. In particular, the key driver for decisions was the spot prices in the short-term market, which would then be used to provide the correct economic signal for the entrance of new generation: if there is an imbalance between supply and demand, then these prices should increase and thus create incentives for the construction of new plants. The market risk resulting from the spot price volatility would be managed through purely risk-management instruments, such as forward contracts, options, etc. The only "non financial" instrument would be the capacity charge, whose main objective would be to ensure the remuneration of peaking units and reserve generation. With those market mechanisms in place, State-owned utilities were privatized and consumer choice was introduced in different degrees.

The accumulated experience so far has shown many positive aspects, such as a greater efficiency of the private utilities, the positive effect of the eligible consumers as market benchmark and the transparency brought by the regulatory agencies, which provide confidence for investors.

On the other hand, some important difficulties (power crisis, rationings) have appeared, in particular with respect to the security of supply in many countries of the region. A first reason for these supply difficulties is that the economical signal provided by the spot market is too volatile to correctly indicate and stimulate the entrance of new capacity. This is especially true for the countries with a strong hydro-share, where the occurrence of conjuncture favorable hydro conditions can drive downwards the spot prices even if there are structural problems with supply. It has also been observed that in hydro systems the spot price increases substantially only when the system is "too close" from a power crisis, when there is not time anymore to make investments. A second reason is the combination of a strong demand growth but with a large volatility in the growth rates ("stop and go" economies that can be heavily affected by international crisis). This makes the generation activity very risky and makes difficult the closing of "project finance" by the financing institutions for new projects, which ends up constraining the entrance of new capacity.

Furthermore, some additional features have had influence on the sectarian behavior, especially in the development of power generation:

- the ever increasing connection of power generation with natural gas production and transport
- the distortion of regional prices without a global policy shared by the countries in front of market conditions: lack of public and private financing, rise of oil prices, etc.
- the doubt about risk management in a "transitional" period in many countries, due to political adjustments, even under a "contract-based" regime of supply
- the revision of current regulations and contracts for international exchange of power and natural gas
- the difficulties in developing additional transport infrastructure needed to optimize national and international transactions.

Due to these difficulties and new conditions, some countries in the region have made adjustments in their regulatory frameworks over the last years aiming at keeping positive aspects of the first stage of their reforms, but correcting the issues that have not worked as expected. Ingredients of this "second generation" include: (i) incentives to forward contracts to induce the entrance of new capacity (the so-called competition "for the market", instead of "in the market"), (ii) in some countries these contracts need to have physical coverage (ballast), (iii) the use of procurement auctions to incentive efficient contracting and setting up pass-through price, and (iv) the possible complementation of state and market in the expansion of generation and transport.

The Panel will address the design and outcomes of this second generation of power sector reforms in Latin American countries, aiming at identifying the common challenges and the schemes adopted to tackle them such as the use of PPA auctions, strategies to deal with demand uncertainty, capacity expansion and degree of state intervention, among others.

Panelist and titles of their presentations are:

1. Luis V. Sbértoli, SIGLA, Argentina, *The State and The Market in The Power Sector Planning* (paper 06GM0209)
2. Luiz Augusto Barroso, José Rosenblatt, Bernardo Bezerra, André Resende, and Mario Pereira, Mercados de Energia/PSR, Brazil. *Auctions of Contracts and Energy Call Options to Ensure Supply Adequacy in the Second Stage of the Brazilian Power Sector Reform* (paper 06GM0205)
3. Hugh Rudnick, Pontificia Universidad Catolica de Chile, Chile. *Contract auctions to assure supply adequacy in an uncertain energy environment.* (paper 06GM1192)
4. Daniel Camac, Víctor Ormeño and Luis Espinoza, Peru. *Assuring the efficient development of electricity generation in Peru* (paper 06GM0208)
5. Jorge Karacsonyi, Manuel Tinoco, Ricardo Rios and Fernando Montoya. *Supply Adequacy Mechanisms and Cross-Border Contracts in the Central American Regional Electricity Market* (paper 06GM0207)
6. Marcelino Madrigal, Jaime Millan, Rachel Robboy and Javier Molina, IDB, USA. *Financing Challenges for Generation Investments in New Supply Adequacy Mechanisms in Latin America.* (paper 06GM0206)

Panelist will speak for approximately 20 minutes. Each presentation will be discussed immediately following the respective presentation. There will be a further opportunity for discussion of the presentations following the final presentation**.**

The Panel Session is organized by Luiz Augusto Barroso (Mercados de Energia/PSR, Brazil), Tom Hammons (Chair of International Practices for Energy Development and Power Generation, University of Glasgow, UK) and Hugh Rudnick (Pontificia Universidad Catolica de Chile, Chile).

Luiz Augusto Barroso, Tom Hammons, and Hugh Rudnick will chair the Panel Session.

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