

Unclassified

DAF/COMP/LACF(2014)4

Organisation de Coopération et de Développement Économiques
Organisation for Economic Co-operation and Development

29-Jul-2014

English - Or. English

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE**

LATIN AMERICAN COMPETITION FORUM

**Session II - Electricity Markets in Latin America: Regional Integration
and Competition Issues**

-- Contribution from Colombia --

16-17 September 2014, Montevideo, Uruguay

The attached document from Colombia is circulated to the Latin American Competition Forum FOR DISCUSSION under Session II at its forthcoming meeting to be held on 16-17 September 2014 in Uruguay.

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JT03360784

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16-17 September 2014 • Montevideo • Uruguay

Session II - Electricity Markets in Latin America: Regional Integration and Competition Issues

REGIONAL ENERGY INTEGRATION: A FORCE OF COMPETITIVE PRESSURE THAT COLOMBIAN ELECTRICITY MARKET NEEDS

-- CONTRIBUCIÓN FROM COLOMBIA --

1. The Superintendence of Industry and Commerce (from now on, “SIC”) wants to contribute to the Latin American Competition Forum with the following paper, which purpose is twofold: i) to highlight the importance of advancing in the regional integration in order to introduce a force of competitive pressure in Colombia; and ii) to share progress made in merger control analysis on electricity markets, as a result of the National Government’s decision to privatize the electric power generating company ISAGEN.

2. The economic analysis conducted in the case of ISAGEN, enabled the SIC to identify that regional electricity integration could work as a counterweight against the power generators’ current dynamic aiming towards a more concentrated market.

1. Electricity prices in Colombia, supply-side market concentration and the absence of import competition

3. In August 2013, the National Government published the results of the study on competitiveness of electricity prices in Colombia. This study was motivated by the price increase experience since 2008, up to the point that the electricity price index incremented 25% from 2008 to 2012, while inflation grew only 14% in the same period¹. The study included an analysis that compared Colombian electricity prices in 2012 with prices of OECD countries and the Americas. The result of this inquiry rated Colombia in the middle of the sample².

¹ Centro de Estudios de Economía Sistémica, Consultoría sobre la competitividad en la cadena de prestación del servicio de energía eléctrica – Generación, transmisión, distribución y comercialización, Resumen Ejecutivo, p. 6.

² Ibid. pp. 8-9.

4. Nevertheless, when comparing Colombia with the American countries included in the sample (i.e. Brazil, Chile, Mexico, Peru and United States), the study concluded that: i) Colombia had the highest prices for residential users; and ii) regarding industrial users, electricity prices in Brazil, United States and Peru were lower than the prices in Colombia, which reduces the competitiveness of our industry with respect to those countries³.

5. Concerning the structure of the electric power generation market, it should be mentioned that the supply-side is concentrated in few companies. Thus, the market is characterized by its oligopolistic nature, given that the five leaders represent about 80% of the market share⁴, as can be observed in the following table⁵:

Power company	Share
GRUPO EPM	22,9%
EMGESA S.A. E.S.P.	19,67%
GECELCA S.A. E.S.P.	14,29%
GRUPO ARGOS	11,38%
ISAGEN S.A. E.S.P.	11,03%
Total	78,27%

6. Colombia has advanced in the regional integration with Venezuela and Ecuador, but none of these advances represent a significant competitive pressure to market leaders. In the first case, there is a bilateral power purchase agreement between ISAGEN and Venezuela, in accordance to which ISAGEN is committed to dispatch power to that country under a prepaid mechanism⁶. As a consequence, the interconnection between Colombia and Venezuela does not imply import competition.

7. The case of Ecuador is different due to the existence of an interconnection system agreed between both countries within the scope of the Andean Community, known as the International Energy Transactions scheme (TIE, as it is known by its Spanish initials)⁷. However, the amount power imported by Colombia from Ecuador through this system represents a marginal competitive force.

8. The next table⁸ demonstrates that the regional integration has not been a significant force of competitive pressure for Colombia through imports:

³ Ibid.

⁴ Superintendencia de Industria y Comercio, Resolución 525 del 10 de enero de 2014, page 26.

⁵ See: <http://www.xm.com.co/Pages/VerificacindeEnergiaFirme.aspx> <last visit, July 23, 2014>

⁶ See: http://www.isagen.com.co/PregFrecuentes_inversionistas.jsp <last visit, July 23, 2014>

⁷ “The TIE scheme is the power interconnection mechanism used since may 1st 2003 between Colombia and Ecuador, regulated by the Commission of Regulation on Energy and Gas of Colombia (CREG) through Res. 004 of 2003 and the National Electricity Council of Ecuador (CONELEC) through Res. 002 of 2003, under the scope of Decision 536 of 2002 of the Andean Community of Nations - CAN; this Decision sets forth the general framework for the subregional interconnection of electric systems and the intra-community exchange of electricity (...)”. Carlos A. Cano Isaza, Análisis de escenarios para los intercambios de electricidad entre Colombia y Latinoamérica, Proyecto Final de Monografía del Curso de Pós-Graduação Lato Sensu Análise Econômica do Setor Elétrico – Integração Energética da América Latina Instituto de Economia Universidade Federal do Rio de Janeiro, Junio de 2011, p. 16.

⁸ Ver: <http://www.xm.com.co/Pages/Informes.aspx> <última visita, 23 de julio de 2014>

	Total Commercial Demand (GWH)	Imports -Ecuador (GWH)	Imports - Venezuela	Imports Ecuador Vs. Commercial Demand
2011	57.085,4	8,2	0	0,0144%
2012	59.277,6	6,6	0	0,0111%
2013	60.855,1	28,5	0	0,0468%
Jan-Jun 2014	31.162,4	8,6	0	0,0276%

9. In sum, electricity prices in Colombia have increased significantly in the last years to the detriment of residential and industrial users' welfare. Furthermore, the concentration of the market in five (5) business groups coupled with the absence of import competition, evidences that Colombian consumers could benefit from measures capable of enlarging the supply-side, as it is the case of regional integration.

2. The supply-side dynamic aiming towards a more concentrated market and progress made with respect to merger control

10. As a consequence of ISAGEN privatization project, three market leaders started pre-merger notification proceedings before the SIC due to the interest in participating in the auction process for acquiring the majority stake of ISAGEN. The economic analysis conducted by the SIC enabled it SIC to advance on: i) the use of quantitative models to estimate market power in the electricity market; and ii) minority shareholding and anticompetitive effects derived from structural links between competitors. The following is a summary of the three cases⁹:

2.1 ARGOS - ISAGEN¹⁰

11. The proposed transaction between ARGOS and ISAGEN would have resulted in a merged entity with 23% of the power generation market. According to the energy regulation, a merger between generators is permitted if the resulting share does not exceed 25% of the market share¹¹. Though the transaction was authorized by the regulation, the SIC performed an in-depth analysis in order to determine if ARGOS' market power would increase based on the quantitative model proposed by McRae & Wolak.

12. This model analyses the suppliers' profit maximizing behavior in a bid-based electricity market. The cornerstone is to estimate the elasticity of the residual demand curve, given that such elasticity enables the economist to determine if a firm has the ability to increase the market price through changes in the quantities supplied¹². Once the elasticity of the residual demand curve is calculated, the SIC estimates the market power according to the following formula derived from the Lerner index:

$$L = \frac{P - Mc}{Mc} = -\frac{1}{\varepsilon}$$

⁹ Taking into account that the proceedings to privatize ISAGEN have not finished by the time this paper is written, the paper omits any reference related to the remedies imposed by the SIC, which are confidential.

¹⁰ Superintendencia de Industria y Comercio, Resolución 525 del 10 de enero de 2014.

¹¹ Comisión de Regulación de Energía y Gas - CREG, Resolución No. 060 del 28 de junio 2007.

¹² Shaun D. McRae & Frank A. Wolak, How Do Firms Exercise Unilateral Market Power? - Evidence from a Bid-Based Wholesale Electricity Market, 2009; Frank A. Wolak, Report on Market Performance and Market Monitoring in the Colombian Electricity Supply Industry, 2009.

13. The results of the model, as applied to the particular case, enabled the SIC to demonstrate that the transaction implied a potential risk of unilateral effects due to the fact that the merged entity would have obtained a market power higher than the one that each of the parties to the transactions currently have.

2.2 *Empresa de energía de Bogotá (EEB) - ISAGEN*¹³

14. This case represented a challenge to the SIC because the EEB is the owner of 51.5% of the economic rights and the owner of 43.6% of the political rights of EMGESA. According to the proposed transaction, the EEB was interested in acquiring the majority of shares of ISAGEN, and this situation demanded from the SIC a detailed analysis on: i) antitrust control by minority shareholders; ii) risks derived from the creation of structural links between competitors. Due to the novelty of these issues, the SIC used the doctrine developed by the OECD and foreign competition authorities about this matter¹⁴.

15. Three elements were crucial to conclude that the EEB has control over EMGESA despite its minority share of political rights: i) the existence of EEB's veto power in EMGESA at the level of the board of directors and shareholders' meeting, in matters that affect the competitive performance of EMGESA (e.g. new investments, launching new business lines, granting of collaterals required in the ordinary course of the business, among others); ii) the influence of the EEB in the appointment of four out of seven members of the board of directors; and iii) the existence of the EEB's exorbitant right of inspection on financial information of EMGESA.

16. Concerning the potential distorting effects caused by the creation of structural links between competitors, the SIC introduced the modified HHI (Herfindahl-Hirschman Index) proposed by Breshahan, O'Brien and Salop¹⁵ and found an alarming variation of 348 points in the index. Additionally, the analysis evidenced that the EEB would have an incentive to adopt joint profit maximization strategies after acquiring ISAGEN, affecting rivalry between EMGESA and ISAGEN.

17. Regarding coordinated effects, the SIC concluded that the creation of communicating channels between competitors through a common shareholder, in a market full of facilitating factors such as the electric energy market, would strengthen this risk.

2.3 *EPM - ISAGEN*¹⁶

18. In this case, EPM (current owner of 13% of ISAGEN's shares) expected to participate in the auction for ISAGEN through a consortium with the Brazilian company CEMIG. If the consortium EPM-CEMIG is chosen as the winner of the auction, EPM would; i) increase its shares in ISAGEN to 20%; ii)

¹³ Superintendencia de Industria y Comercio, Resoluciones 5545 del 6 de febrero de 2014 y 32184 del 19 de mayo de 2014.

¹⁴ Organization for Economic Co-operation and Development – Competition Committee, “Antitrust Issues Involving Minority Shareholding and Interlocking Directorates”, DAF/COM(2208) 30, 23 de junio de 2009; U.S. Department of Justice & Federal Trade Commission, “Horizontal Merger Guidelines”, agosto 2010, pp.33-34; Comisión Europea, “Commission Staff Working Document: Towards more effective EU merger control”, SWD(2013) 239 final Brussels 2013.

¹⁵ Timothy F. Bresnahan & Steven Salop, “Quantifying the competitive effects of production joint ventures”, Volume 4, Issue 2, Pages 123-235 (June 1986), p. 155-175; Daniel P. O'Brien, & Steven Salop, “Competitive Effects of Partial Ownership: Financial Interest and Corporate Control”, Georgetown Law Faculty Publications and Other Works. Paper 209 (2000).

¹⁶ Superintendencia de Industria y Comercio, Resolución 38982 del 24 de junio 2014.

and would acquire the property of the hydroelectric plant “Jaguas”, currently owned by ISAGEN. On the other hand, CEMIG would manage the rest of ISAGEN power plants.

19. The SIC determined that EPM would acquire control over ISAGEN as a result of the transaction, due to the fact that EPM would have the right to appoint two members in the board of directors. According to ISAGEN bylaws, two members suffice to have veto powers over important decisions related to ISAGEN’s competitive performance. Additionally, it was part of the proposed transaction to execute a shareholders’ agreement, which would led EPM to influence the decision making process over strategic matters, such as: new investments, capitalization and awarding of contracts.

20. Regarding to risk derived from the strengthening of structural links between competitors, the SIC applied the modified HHI and evaluated the potential coordinated effects. Finally, the SIC resorted to the McRae & Wolak model in order to estimate the increase of market power caused by the acquisition of the hydroelectric plant “Jaguas” by EPM.

21. The economic analysis conducted during the pre-merger notification proceedings, led the SIC to identify that the upward trend of electricity prices in Colombia coupled with supply-side market concentration, tends to get worst over time due to: i) the absence of significant import competition; and ii) the interest of the incumbents to continue merging.

22. As a consequence, regional integration is an important opportunity to introduce a force of competitive pressure to the Colombian electric power generation market, which could benefit residential and industrial consumers.