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

16-Sep-2014

English - Or. English

DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE

DAF/COMP/LACF(2014)26
Unclassified

LATIN AMERICAN COMPETITION FORUM

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

-- Contribution from Costa Rica --

16-17 September 2014, Montevideo, Uruguay

The attached document from Costa Rica 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.

Contact: Ania Thiemann, Global Relations Manager, OECD Competition Division,
Tel: +33 1 45 24 98 87, Email: Ania.Thiemann@oecd.org

JT03362065

English - Or. English

LATIN AMERICAN COMPETITION FORUM

16-17 September 2014 • Montevideo • Uruguay

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

***

THE COSTA RICAN ELECTRICITY MARKET: A LIMITED PRIVATE INVESTMENT MODEL

-- CONTRIBUTION FROM COSTA RICA --

1. Introduction

1. While Costa Rica has achieved widespread electricity coverage and a good situation in both generation and transmission and distribution of electricity throughout the country, the electricity subsector faces risks and challenges (high vulnerability, low investment, legal barriers, noncompetitive structure, etc.) that must be resolved in order to ensure all the country's inhabitants have access to a quality electricity service at reasonable and stable prices.

2. Electricity development in the country has been based on the use of renewable sources, particularly hydroelectric, geothermal and wind. The use of clean energy has great economic, environmental and social benefits for the country. However, in recent years dependence on oil to generate electricity has increased, which has raised the cost of the service, affecting business development and citizens' quality of life.

3. Making the transition towards a model of power generation based entirely on renewable energy requires the installation of higher power reserves than usual. The role that the Central American Electricity Market can play is significant because it is the ideal commercial destination for placing surpluses when not required by the national system.

2. National Electricity System

4. The Costa Rican Electricity Institute (*Instituto Costarricense de Electricidad* – ICE) is an autonomous state institution with the legal mandate to provide the electrical power the nation requires for its development. Decree Law No.449, which created the ICE in 1949, states that the technical management, working programs, works and projects it undertakes are its own responsibility and do not

depend on any other state body. Without prejudice to the above, the ICE aligns its efforts with the rest of the country's energy sector, which is governed by the Ministry of Environment and Energy.

5. The country's plans for electricity development are developed by the ICE in line with the policies and general guidelines of the National Development Plan (PND) and the National Energy Plan (PNE).

6. Other major actors in the energy subsector in Costa Rica are:

- The National Power and Light Company (*Compañía Nacional de Fuerza y Luz S.A.* – CNFL), a public company subject to private law, the principal distributor of electricity and a subsidiary of the ICE, which owns 98% of shares in CNFL S.A. The remaining 2% are in private hands.
- The Administrative Board of the Electrical Service of Cartago (*Junta Administradora del Servicio Eléctrico de Cartago* – JASEC), a municipal electricity distributing institution that generates small amounts of electricity in its own plants.
- The Heredia Public Services Company (*Empresa de Servicios Públicos de Heredia S.A.* – ESPH) a municipal electricity distributing company that provides street lighting, drinking water, sewage services, and fire hydrants, and is currently undertaking projects for electricity generation.
- The rural electrification cooperatives: Los Santos (COOPESANTOS, R.L.), San Carlos (COOPELESCA R.L.), Alfaro Ruiz (COOPEALFARORUIZ R.L.) and COOPEGUANACASTE R.L., legal persons of public convenience and utility and social interest governed by private law. These cooperatives are involved in electricity distribution, and some of them are also generators.
- These cooperative have in turn created consortiums through the union of some or all of the rural electrification cooperatives, such as the Consorcio Nacional de Empresas de Electrificación Rural de Costa Rica (CONELÉCTRICAS R.L.) and CONSORCIO CUBUJUQUÍ, R.L., enabling them to obtain financing for the development of generation projects to supply electricity to subscribers in their distribution area.
- Private power generation companies: these operate under the framework of Chapter I and Chapter II of the Autonomous or Parallel Generation Law, No. 7200, and its amendments. Most of these are incorporated into the Costa Rican Association of Electricity Producers (*Asociación Costarricense de Productores de Electricidad* – ACOPE).
- The Public Service Regulatory Authority (*Autoridad Reguladora de los Servicios Públicos* – ARESEP) is the body responsible for fixing tariffs in the electricity chain of generation, distribution, sale and transmission; it also sets tariffs for purchasing electricity from private generators in accordance with the Autonomous or Parallel Generation Law, No. 7200 and its amendments. Likewise, it is responsibility of the ARESEP to establish quality standards in provision of public services, in accordance with the provisions of its founding Law No. 7593 and Executive Decree No. 29732-MP of August 16, 2001.

7. In general the policy adopted in the Costa Rican electricity sector has been as follows:

- Maintain the principal companies as public property (ICE and CNFL).
- Participation and strengthening of public municipal companies and cooperatives in the phases of production and distribution in the value chain of electrical services.
- Enable up to 15% private participation in the electricity generation segment (Ley N°7200).

- Enable private companies to generate a further 15% of electricity by means of renewable sources over and above that permitted by Law N°7200. In this case the purchase of the electricity must be carried out by tender.
- Sole purchaser for private generators: ICE.
- Short-, medium- and long-term planning undertaken by a state body, responsible for electricity supply: ICE.
- Energy transmission and control center owned and run by ICE.
- Maintenance of ICE as a vertically-integrated company, i.e. one that plans, designs, builds, generates, transports and distributes in the electricity sector.
- A regulated price system, under the principle of at-cost service (the price should cover costs, plus a margin for investment to cover future increase in demand).

8. The following table summarizes the different actors participating in the electricity sector and their principal activities.

Activity or responsibility	Participating Bodies
Steering role and definition of national policies	The Government, through the Ministry of Energy and the Environment, supported by the Energy Sector Directorate
Regulation of public services	The Public Service Regulatory Authority for all phases of the electricity subsector.
Long-term planning for the electricity subsector	The ICE, based on the national energy plan of the MINAE.
Control and dispatch center of the National Electricity System (SEN)	The ICE, based on the technical operating criteria of the SEN
Electricity production	ICE, Private generators, Cooperatives, Municipal companies, Co-generators
Electricity transmission	ICE
Distribution	ICE Distribution, Cooperatives, Municipal companies, CNFL

9. The National Electricity System (SEN) comprises the generation, transmission and distribution systems. All the elements of the SEN are fully interconnected in a single transmission system.

2.1 Generating system

10. Seven public and 30 private companies generate electricity in Costa Rica. The public generating companies are: ICE, CNFL, JASEC, ESPH, COOPELESCA, COOPEGUANACASTE, and COOPESANTOS.

11. On the basis of Laws N°7200 and N°7508, private electricity generation is permitted for sale to third parties under the following conditions:

- Since 1990, Law N°7200 has permitted private generation from renewable sources in Costa Rica, limited to 20 MW of installed capacity per company; moreover, the sum of such projects must not exceed 15% of the total potential of the power stations that comprise the National Electricity System. Furthermore, 35% of the share capital of any company wishing to generate electricity to sell to the ICE must belong to Costa Rican citizens.
- In 1995, Law N°7508 amended the abovementioned law and incorporated a second mode of private generation. This law enable private companies to generate an additional 15% on top of the

15% of the total produced by the National Electricity System (as permitted by Law N°7200), as long as it is from renewable sources. This mode also allows private power plants of up to 50 MW of installed capacity, although the contracting process must be carried out by public tender.

12. There is no restriction on direct foreign investment in the generation of electricity for self-consumption.

13. In December 2012 the electricity network had an effective installed capacity of 2,682 MW, of which 66% corresponds to hydroelectricity plants, 20% to thermal plants, 7% to geothermal plants, 5% to wind farms and 2% to biomass generators.

14. 76% of this installed capacity is operated by the ICE with its own power stations, and 13% with plants contracted to independent private generators. Meanwhile, the distribution companies operate power plants that cover 11% of the installed capacity.

2.2 Transmission System.

15. The ICE, through its UEN Electricity Transmission unit, is responsible for planning, operating, maintaining and expanding the transmission network (transmission lines and substations) at a national level, making it a *de facto* monopoly. It undertakes studies of network options in connection with generation projects to find the best alternative to provide the National Electricity System (SEN) with an infrastructure that is capable of providing transmission and interconnection services, high voltage connections, transformation and medium voltage connections.

2.3 Distribution System

16. Currently, the rural electrification cooperatives and the municipal companies are the only entities permitted to sell the energy they generate directly to clients in their concession area. Law No. 8345, which came into force in 2003, authorizes cooperative consortia and municipal public service companies to generate, distribute and sell electrical power to users located in the geographical area of coverage defined by their concession. It also authorizes them to sign cooperation, investment and joint operation agreements with each other and with other public and municipal companies.

17. Those regions with no company concessions, which are generally more remote and sparsely-populated, are the responsibility of the ICE.

18. The level of coverage of the electricity sector in Costa Rica is 99.4% (estimated June 2012).

3. Applicable Regulations

19. The key legislation governing the electricity sector in Costa Rica is as follows:

- Law N°449 for the creation of the Costa Rican Electricity Institute.
- Law N°8660 “Strengthening and Modernization of Public Bodies in the Telecommunications Sector.”
- Law N°7593 “Law of the Public Service Regulatory Authority.”
- Law N°7200 authorizing private generation of up to 15% of the total installed capacity with ICE purchase and sale contracts.

- Law N°7508, amending the above to allow generation using renewable sources through the BOT model with ICE electricity sale contracts. Enables up to a further 15 % of the country's installed capacity.
- Law N°8345 "Participation of rural electrification cooperatives and municipal public service companies in National Development" (Coopelesca, Coopealfaro, Coopeguanacaste, Coopesantos, Coneléctricas), which sets out the legal framework for the generation, distribution and sale of electrical power by rural electrification cooperatives to consortia they have formed and to municipal public service companies, using both renewable and non-renewable sources within the country.
- Law N°7789, which regulates the operation of the Heredia Public Services Company.
- Law N°7799 "Amendment to the Law to Create the Administrative Board of the Electrical Service of Cartago."
- Framework Treaty of the Central American Electricity Market

4. Central American Electricity Market

20. The Central American region has undergone significant reform in the electricity sector. Since the end of the 1980s, restructuring of the sector led the centralized control by vertically-integrated state-owned companies to be substituted by free market operation, particularly in the area of generation.

21. In Guatemala, El Salvador, Nicaragua and Panama profound changes were implemented in a short time period in the areas of generation, transmission and distribution, while in Honduras and Costa Rica this liberalization process took place in a more limited manner, and only in the area of generation.

22. In the four countries that restructured the sector, a generation market operates. In Honduras, a single-buyer model was created, while Costa Rica opened up the possibility of private sector investment in development of renewable sources, for plants of limited capacity.

23. In 1996, within the framework of the Central American Integration System (SICA) the governments of Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama, signed the Framework Treaty of the Central American Electricity Market, which aims to create and gradually develop a competitive regional electricity market, based on reciprocal, non-discriminatory treatment, which contributes to the sustainable development of the Central American region. The Treaty was ratified by the national congresses of the member countries and since 1999 has formed a legally binding international treaty.

24. The Framework Treaty of the Central American Electricity Market is intended to create a seventh market that is superimposed on the internal market of each member country, and respects the differences between them.

25. The Regional Electricity Market (*Mercado Eléctrico Regional* – MER) is governed by the Framework Treaty of the Regional Electricity Market, its protocols and the Regulations of the Regional Electricity Market – (RMER).

26. The Regional Commission on Electrical Interconnection (*Comisión Regional de Interconexión Eléctrica* – CRIE), made up of representatives of the regulatory bodies of each country, acts as a regional regulator. Its objectives are to: a) enforce the framework treaty, its protocols, regulations and other complementary instruments; b) promote the development and consolidation of the market; and c) promote competition between market agents.

27. The Network Operating Agency (EOR) is a regional body created by Article 18 of the framework treaty, which works together with the national electricity dispatch authorities to coordinate the operation of the electricity systems in order to procure efficient dispatch.

28. Energy trading is carried out between the agents authorized by each country with the EOR. By law, in Costa Rica the sole regional agent is the ICE. All transactions must be coordinated with the Market Operator (OM) in each country and communicated in advanced to the EOR, which verifies the technical and commercial feasibility of the exchange. Once the adjustments have been made, the EOR coordinates the pre-dispatch with the OMs the following day. The EOR coordinates the operation of the six systems and undertakes settlements for the regional market.

4.1 Network Integration

29. The countries of the Central American peninsula decided to integrate their electricity networks with the intention of leveraging their resources and energy infrastructure. With this aim, regional bodies were first created in 1985 such as the Central America Electrification Board (*Consejo de Electrificación de América Central* – CEAC), to promote cooperation, construction of infrastructure, energy trading and joint planning.

30. The first interconnections predate the Regional Electricity Market. In 1976 Honduras and Nicaragua were linked; in 1982 Nicaragua and Costa Rica were connected; in 1986 Guatemala-El Salvador and Costa Rica-Panama interconnections were established. More recently, in 2002 the connection linking El Salvador and Honduras was completed. In 2011 the "Friendship Ring" between Costa Rica and Panama entered into operation, a transmission line that links the two countries along the Caribbean coast and forms a circle with the existing system.

31. With the adoption of the Framework Treaty of the Central American Electricity Market, signed by the six Central American countries at the end of the 1990s, this integration was deepened. The project for the Electrical Integration System for Central American Countries (SIEPAC) saw the construction of a new transmission line, owned by the state electricity companies in the region, together with other external partners.

32. In the past, the limited capacity of interconnections between neighboring countries and the absence of an organized market restricted energy trading. However, the Central American electricity market has made significant advances and with the completion of the SIEPAC line, a greater volume of transactions is anticipated.

33. The Central American transmission system comprises the national systems and the country-to-country interconnections. The voltage of current interconnections is 230 kV, although within each system 138 kV, 115 kV and other lower voltages are also used.

34. The Network Owner Company (EPR) is responsible for developing, designing, financing, constructing and maintaining the first regional transmission system, known as the SIEPAC line, which has a length of 1,800 km.

35. The SIEPAC line together with the national networks increases the reliability of energy trading. In its first phase, it comprises a single circuit, but using towers designed for a double circuit.

36. The countries in the region have committed to boosting their systems such that once the SIEPAC line is completed it will enable energy exchanges of up to 300 MW.

5. Actions of the Competition Agency in the National Electricity Market

37. The actions undertaken by the Competition Promotion Commission in the national electricity market have focused on seeking to create a more competitive market that is open to private enterprise. Although it has the ability to investigate and penalize anticompetitive conducts in the market for electricity generation, in general it is a highly limited and regulated market.

38. At present there are two initiatives that seek to adapt the national electricity market to the country's growing needs. General Electricity Bill N°17.812 aims to establish the legal and institutional framework for promoting the electrical development of the country on the basis of renewable energy, guaranteeing competitive prices and quality service, leveraging the competitive advantages of the current model and incorporating regulated competition into the wholesale electricity market, consolidating the universality and solidarity of the service in a non-discriminatory manner, while modernizing the electricity networks.

39. In view of the fact that this bill aims at long-term changes that cannot be swiftly implemented, the government presented the Electrical Contingency Bill N°18.093 with the aim of guaranteeing in the short term the supply of energy to the benefit of the consumer, along with actions to incorporate into the national electricity system, in the short term, a greater generation capacity with renewable energies through more active participation by the private sector in project development; the implementation of small-scale distributed generation projects with access to the network and the development of programs and projects promoting energy efficiency, savings and rational use.

40. In both cases the Competition Promotion Commission was consulted by the Special Assessment Committee of the Legislative Assembly, and its recommendations were aimed at improving the competition regime intended to be implemented in the sector in the light of the changes it would face, as well as ensuring the application of the principles of equality and non-discrimination for new entrants to the market.

41. Furthermore, a query relating to this sector was recently raised, concerning the need for prior notification of share purchases between a company exempted from application of the law as a public service concessionary, and a private generator. The criterion of the Competition Promotion Commission indicated the legal obligation to notify of such an operation, in light of the market power held by this body.

BIBLIOGRAPHY

Proyecto de Ley N°17.812 Ley General de Electricidad. Publicado en el Diario Oficial La Gaceta el 1° de setiembre de 2010.

Proyecto de Ley N° N°18.093 Ley de Contingencia Eléctrica. Publicado en el Diario Oficial La Gaceta el 10 de junio de 2011.

Plan de Expansión de Generación Eléctrica. Período 2014-2035. Centro Nacional de Planificación Eléctrica. Instituto Costarricense de Electricidad. Abril 2014.

Sector eléctrico de Costa Rica: aplicación del Análisis Estructural para definir variables claves de una reforma neoclásica. Roberto Jiménez Gómez, Centro Nacional de Planificación Eléctrica, Instituto Costarricense de Electricidad. Cuadernos de Investigación Universidad Estatal a Distancia (Edición en Línea, ISSN: 1659-441X) Vol. 2(2): 205-230, Diciembre, 2010.

Reglamento del Mercado Eléctrico Regional (RMER).