



Towards a balanced scorecard in regulated companies: A study of the Spanish electricity sector



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ABSTRACT

This paper shows how Balanced Scorecard perspectives can be used to analyze and define the strategic objectives followed by the five large electricity generating and distributing companies in Spain.

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1. Introduction

The Spanish electric market is gaining relevance in this country and in the literature. [Soria \(2014\)](#), minister for industry, energy and tourism, has confirmed that there will be refunds paid to consumers in their electricity bills in the coming months as a consequence of the average prices set by the wholesale market for electricity being less than those fixed by the government in the first quarter of the year.¹

To obtain management information, the directors need, in the first place, to well understand the business environment of the sector, to be able to evaluate and make decisions ([Villalbía et al., 2007](#)). For this, it is necessary to carry out an internal and external analysis of the electric power sector.

The electric power sector is a strategic sector currently of considerable interest, if not controversy, in Spain. The reason for this is that there still exist serious doubts on the transparency of the markets in which the price of the kilowatt to the consumer is set; another area of doubt is the concept of a tariff deficit, which could be defined as the difference between the cost of the electrical power supplied and the revenues obtained from the electric power tariff. Thus, the aim of this article is to define the factors that would enable a balanced scorecard in the companies of the electric power sector to be put into effect ([Wiersma, 2009](#)).

To achieve this objective, an analysis will be made of the functioning of the electricity markets, with a study of the chain of value of the companies of the sector; we will differentiate between those activities that are regulated and those in which there exists free competition.

In addition, this article will present and discuss the common objectives identified from the strategic plans of the principal companies of the sector operating in Spain (Endesa, Eon, Iberdrola, HC Energía and Gas Natural).

The methodology for obtaining the strategies and common objectives of the various electric power companies that operate in Spain will be based on the reading and in-depth analysis of the strategic plans of the principal electric power companies operating in Spain: Endesa, Eon, Iberdrola, HC Energía, and Gas Natural. Finally, from the strategies and objectives of each electric power company identified individually, those objectives and strategies that appear to be common will be obtained classified by studies of Kaplan and Norton (1999).

2. Characteristics of the electricity supply sector

During the last few decades, the Spanish electricity market has seen the transformation of electric power from a centralized, publicly owned service, quasi-monopolistic in nature and completely subject to tariffs imposed by the state, into a “product” that is generated and sold under free competition and whose price is set in the market.

Currently, one of the more relevant objectives in the electricity market is the constitution of an internal market for energy (electricity and gas) in the European Union that will drive

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¹ For recent news about the electrical sector, consult “Soria confirms refunds to consumers in the electricity bill” http://cincodias.com/cincodias/2014/03/24/companies1395642671_886632.html.

technical, economic, and regulatory coordination of the electric power systems of all the member countries.

Therefore, in this section, our analysis will focus on the following key factors:

- The chain of value in the electricity supply sector: activities and subjects.
- The current Spanish market for electricity.

2.1. Chain of value in the electricity supply sector: activities and subjects

Since 1998 the Spanish electricity sector has undergone a profound transformation. Law 54/1997 of the electricity supply sector established the separation between regulated activities (transmission and distribution) and non-regulated activities (production and marketing), with companies obligated to separate these activities, in both accounting and juridical respects, in their organizations (Law, 1997).

Law 17/2007 modify the Laws of the Electricity and Hydrocarbon Sectors, respectively; and for the case of vertically integrated groups of companies, they establish the separation, in functional, accounting and juridical respects, of the regulated activities (transmission and distribution) from those that are carried out under conditions of competition (generation and marketing) (Law, 2007).

Due to the introduction of competition in the electricity markets, as has been previously noted, a disaggregation has taken place of the activities that constitute the complete system for the supply of electric power: generation, transmission and distribution, operation of the system, and marketing, which are now treated differently in function of the nature of the activity (Fig. 1).

The concept of a “chain of value” was introduced by Porter (1990) (Competitive Advantage, 1990) when referring to the differentiation between an organization and its competitors, which helps it to define its positioning in the sector by means of the disaggregation of its activities and the interactions between them.

Thus, the chain of value of the electricity supply companies may be represented, in a simple and systematic way, by Fig. 2.

The transmission, distribution, and operation of the system (or the technical management of the system, as designated in the case of natural gas) are the part of the value chain for the supply of electricity and gas that is maintained under the system of regulated revenues.

For the allocation and analysis of the costs, it is interesting to disaggregate this value chain into the principal activities that the electricity companies carry out, and to know whether they come under free competition or are regulated, since the way that the

costs of these activities are allocated will depend on this. Fig. 3 (AECA, 2002) shows the primary activities that are carried out by the electricity companies, together with a general description of those activities.

In summary, generation and marketing are considered to be activities in competition and therefore, they have been liberalized. On the other hand, the infrastructures (networks of cables, transformer stations, etc.) are considered to be natural monopolies, and it would not make economic sense to duplicate these; for this reason, these activities are regulated in respect of the planning and remuneration (Comisión Nacional de Energía, 2013), with the objective of guaranteeing reliability of supply and free access for the agents in competition (the companies generating power and those marketing it to users).

The operation of the system is also considered a unique activity, at the margin of competition, the main functions being to forecast consumption and to operate and supervise, in real time, the generation plant and the transmission system, with the objective of ensuring that the production of electricity matches at all times the demand of consumers.

Having now analyzed and explained the primary activities that form part of the chain of value of an electricity company, the next topic of interest is to establish the links existing between the physical and the financial/economic flows that exist between these activities, as diagrammed in Fig. 4. It can be observed that both physical and financial flows come together in the activities of the electricity supply companies.

A more detailed explanation of this chart would involve showing how many kilowatt-hours of electricity the companies produce and transmit. When the phase of distribution is considered, both the operators of the market and the operators of the system are involved. The market operators have to ensure that the market guarantees the supply of electricity at minimum cost to the consumer, while the system operators have to guarantee the necessary quality and safety in the supply of electricity to consumers.

The distribution companies act as wholesalers and sell the electric energy to the marketing companies, who in effect are retailers; this energy is consumed by the final customer who is charged a price established by the marketing company (use and marketing of electric energy). The financial management, as explained previously, is reviewed and managed by the market operators.

In some cases, the energy consumed in one country is generated in a foreign country, which has a surplus of supply over demand or has more efficient resources for generation, because this represents a lower cost to the distribution company; then the kilowatts produced in the foreign country are carried by the appropriate transmission lines to the points of use in the country of destination.

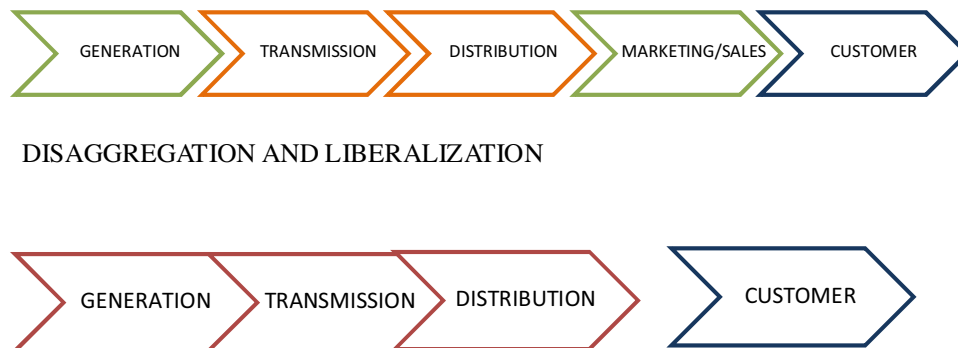


Fig. 1. Process of disaggregation and liberalization (Authors’ own elaboration from AECA, 2002).

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