

# The electricity market in its delicate balance between profit and public utilities: a proposal in a systemic view

## Abstract

The article addresses the broad theme of the related party transactions (RPTs) and criteria for a related party definition, focusing on problems affecting the utilities to the reforms of privatization and regulation of their markets and considering in particular the field of electricity. These aspects are in fact problems of significant impact on strategic, organizational and managerial.

The study has different purposes: (a) to shed light on a topic, that, despite its potential impact, has not yet deserved great attention in governance studies; (b) to stress possible inconsistencies in the most popular theories in the literature regarding RPTs (conflict of interests and efficient transaction), both, to some extent, ideologically biased and unable to offer a proper picture of these heterogeneous dealings; (c) to suggest a more balanced and pragmatic approach, less influenced by a suspicious attitude (typical of the conflict of interests theory), possibly more consistent with their economic rationale (as suggested by the efficient transactions hypothesis) as well as social factors and governance practices.

To this end the study is largely based on literature review and on the analysis of the characters that in the past and today have characterized the Italian electricity sector.

**Key words:** *public company, governance, public utility, electric company, Systemic Approach*

## 1 Introduction

The paper deals with the wide issue of transactions with related parties (RPTs), that are transfers of resources, services or obligations between a reporting entity and a related party (IASB 2009). Criteria for a related party definition may significantly differ among the various accounting and governance academic studies and regulatory principles, but they usually depend upon the ability to influence contractual terms and conditions.

The topic has been neglected for a long time. In the literature two theories prevail: (a) conflict of interests, considering these dealings as potentially harmful and carried out in the interest of directors; (b) efficient transaction hypothesis, describing them as sound economic exchanges.

The paper stress possible inconsistencies in the above mentioned theories, both, to some extent, ideologically biased and unable to offer a proper picture of these heterogeneous dealings suggest a contingency perspective. It underlies how the effectiveness and the efficiency of the proposed solutions are strictly correlated to organizational contexts, institutional environments and governance practices, and therefore it points out that a contingency perspective would be far more appropriate. Then, it gets to suggest a more balanced and pragmatic approach, less influenced by a suspicious attitude (typical of the conflict of interests theory), possibly more consistent with their economic rationale (as suggested by the efficient transactions hypothesis) as well as social factors and governance practices.

In particular, the paper focuses on problems affecting the utilities to the reforms of privatization and regulation of their markets. These in fact manifest themselves as issues that has significant impact on strategic, organizational and managerial. This is especially true considering the social dynamics that have generated the results of the Italian referendum on energy and utilities.

Here we want to make some considerations in the field of electricity, proposing the adoption of a systemic view in relation to the typical structural problems of the electricity market, namely the dynamics of values and corporate governance of public services in its delicate balance between profit and public utilities.

The aim is to highlight the importance for businesses, but even more for policy makers, to focus not only on issues related to organizational and managerial efficiency gains at the individual country's system, but even more issues of vision, trajectories of systemic actions aimed at strategic re-centering in a overall community level.

To this end the paper moves from a critical examination of both theories prevalent in the literature through a deductive approach and also on the basis of their economic rationale. Thus, largely basing on a literature review, the study aims firstly to delineate the theoretical framework, referring to the creation of value in the public utility firm and then analyzing the electric energy market in Italy. Of the latter will be described the structural characteristics and operation, the EU and national legislation and will be reconstructed the evolution of governance in the electricity companies.

In light of all this, and also considering the result of the latest Italian referendum on nuclear program, the paper will finally argue that that it is desirable to take into consideration a change in perspective, adopting a systemic approach. It

would be more appropriate to think about optimization and enhancement of energy exchanges between countries outside the European Union instead of pursuing national energy efficiency and independence

## 2 The creation of value in public utility firms

Economic and management matters have a relevant tradition in terms of “ theory of value”. From 1954, the main economic thinkers through several high scientific level publications<sup>1</sup>, studied the problems concerning the processes of creation and the distribution of the economic value leading to the declining of the concept under analysis. The latest doctrine<sup>2</sup> enriched the scientific production about this issue using the interpretative object of the Systematic Approach in order to define the meaning of creation of value. According to this approach, the firm is led by two main drivers, consonance and competitiveness. If these two represent the inspiration principles of the government action executed by the top management, they can create value. In this way they allow the firm to reach its last objective represented by the increase of the survival probabilities in the context in which it acts.

In other words, consonance corresponds to the firm’s ability to create harmonic relationships with other entities<sup>3</sup> which are present in its context; the term competitiveness is referred to the ability of creating a competitive advantage, relative and absolute, through which the firm is able to generate profit in a certain period of time. The result is the generation of a value that increases the firm’s survival probabilities. After this brief introduction there is a question to answer: what value creates the public utility firm? The Systematic Approach allows us to consider that, no matter what the firm under analysis is, the value components can be partially measured through economic-financial tools (profits) and partially through the ethical-social identification (consonance, competitive advantage).

As far as public utility firms, either they are public or private, the supplied good-service is certainly a collective interest, therefore, the users’ expectations do not correspond to the choice related to the mere supply, but they focus on the quality level of the service. In this way several parts gain a deep meaning such as: the price of the supplied service, the features in terms of users’ assistance, ability to produce collateral services, the improvement of the system-country until reaching aspects that include ethic and social responsibility.

Although in terms of public utility the tests shown before can be considered preminent, it is fundamental to underline the fact that it is not possible to infringe the constrain of the economic-financial equilibrium to which the firm is related in order to achieve its main objectives.

This constrain leads the firm to create value for the economic system which can be measured in terms of added value depending from:

1. satisfaction of the main productive factors: job (employees) and capital in its two configurations of debt capital and venture capital (suitable compensation);
2. incidence of the added value on the production value in its total, which is reflected on the sector qualifying it as high (low) added value;
3. incidence of the added value on the total invested capital that generates its capital intensity;
4. incidence of the added value on the number of employees that leads to create the cost of work per product unities.

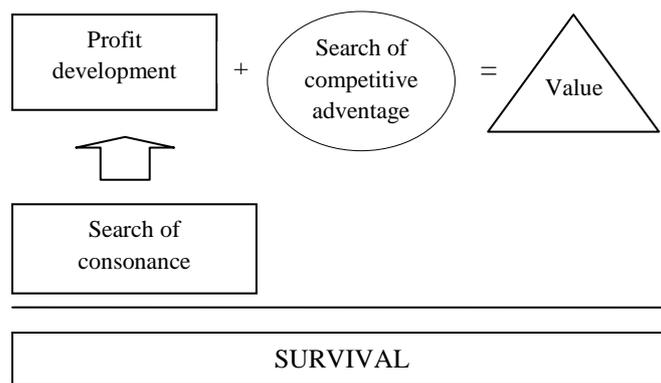
### *Figure 1: Creation of value in the systematic approach*

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<sup>1</sup> See among others, Schumpeter, JA, History of Economics Analysis, Oxford University Press, Guatri, L. The evaluation of companies, Giuffrè, 1981, The theory of value creation. A European Way, Egea, 1991, Massari, M., The distribution of value, Egea, 1992, Golinelli, Systemic Approach to Corporate Governance, Cedam, 2011.

<sup>2</sup> See Golinelli, op. cit.

<sup>3</sup> See Golinelli, op. cit., for an in-depth analysis on the subject. Here, we consider that the concept of magnitude coincides with the set of super-systems and sub-systems with which the company established relationships during his lifetime. In particular, the supra-systems, such as over-consumption of the system, over-the financial system, over-proprietary system, represent the set of entities relevant to the company, ie those who by their action , could affect survival at various degrees. In contrast the sub-systems, such as business functions of the enterprise, are those sub-systems that are affected by his actions. The concept of harmony, in a first approximation to the harmonious coexistence among all the entities of the economic environment is, in fact, very complicated. For the purposes of our analysis, it is sufficient to point out that it is subdivided into dyadic harmony, when, among the various over-, sub-systems of reference, the company makes a choice once primary satisfaction of the other instead of one. There is talk of systemic harmony when there is a policy choice made by a judge in the interests to be met, but they are all considered equivalent. This amounts to an attempt to satisfy all interests prosecuted, according to the author, through the weighed valid pro tempore.



Those firms that supply public utility services tend to consider the achievement of the main objective –consumer and community satisfaction- in contrast with the need to create value, for example, for the stockholders (see point 1). This interpretation, mainly used by policy detractors on the opening of the market for the natural monopolies sector, leans its thought on uncorrected hypothesis. Those who follow these ideas, indeed, believe that the conflict of interest generated by stock options detained by managers, for example, are in conflict with the logic of the firm value increase that needs to be interpreted under a long term point of view. This is exactly the same for the stockholders’ speculative interest who tend to increase the course of their titles in order to have short term capital gains through their buy and sell. Furthermore these ideas are pushed by the exploitation of some financial cracks of the past few years on domestic and foreign markets leading to the spread of the theory on the creation of the firm stock value that many consider “le mal du siècle” in the financial field. According to this concept that goes against the model of market capitalism, the theory of creation of firms’ stock value should not be used in the utilities sector. In reality, if the theory on the creation of the stock value is well applied, it can bring benefits to users too. According to the concepts expressed at the beginning of the paragraph, indeed, it is important to remember that the competitive advantage, one of the Systematic Approach drivers, can be defined as the advantage able to grant a higher profitability if the firm detains it on its own competitors. Detaining a current or potential profitability higher than competitors’, is absolutely needed to obtain a competitive advantage which, together with consonance, leads to the creation of value. The firm is actually called to compete on two markets, the one concerned about its own belonging sector and the financial one. In the first the firm needs to overcome its competitors through a higher profitability, in the second it needs to express a stock value higher than its competitors, that is to say the firm must offer its own “shares” at a higher price compared to the price of competitors. If the firm owns a competitive advantage, it obtains a higher profitability in the belonging sector and produces value for its own stockholders. They both express the same concept on the competitive advantage and creation of value, one under the enterprise economy point of view, the other under the financial one. Even though the financial market is the place where the value created elsewhere is measured, it is necessary to evaluate the creation of value looking for the real factors that determined it. Therefore this is the effect non the financial market of the firm politics to achieve the competitive advantage. Going back the concepts underlined at the beginning, that is to say the firms that need public utilities to reach their main objectives considered as the community’s satisfaction, it is clear that they must be obtained after an evaluation of the best tools to obtain them under a creation of value point of view. Indeed, weather the public utilities firms focused only on the social and subsidiarity aspect, the non-economical supply of a service would not lead to any benefit for anyone, not even to the first direct users. In the long run the preeminence of the only subsidiarity granting the supply of the primary service instead of the economic-financial equilibrium in the service supply, would produce an economical prejudice first of all to the user community.

In other terms, it is fear not to confuse the supply of an effective and efficient service, even if it is of public utility, with the contextual need that it needs to be usable for the entire society.

### 3 The electric energy market

#### 3.1 Peculiarities

The several and different peculiarities of the electric energy market can be divided in those connected to the general aspects of the sector and those concerning the aspect of the electric energy market in Italy.

As far as the economic-financial aspects are concerned among the features of the electric sector, the non-stockability and the natural monopoly are the most relevant ones. The first regards the impossibility for the electric energy to be

stocked, that is to say to be stocked with its qualitative features<sup>4</sup>. The production needs to be absolutely simultaneous to the demand, following the fluctuation, with considerable managerial implications (Colombi 1986), especially as far as the plants (D'Alessandro 1967; Pivato 1958) and the costs structure<sup>5</sup>. This condition gives a strategic role to the negotiations (Dezi 1994). The exploitation of the synchrony between surplus and deficit of production capability in different transactors allows them to satisfy the demands at any moment without reducing their production capability at the top of the demand (Panati and Golinelli 1991) with higher costs and a partial use of plants. The natural monopoly conditions (Croce 1993; Gullì 2000), typical of network services (De Nardis 2000), leans on the fact that the production of a good/service is more effective if made by an only firm rather than more subjects competing with each other (Dezi 2005). This can be explained, from one hand, by the economic convenience produced by a strong vertical integration, by the adequate localization of plants<sup>6</sup> and by the existence of a unique dispatching center; from the other hand by the technical and economic disadvantage of the duplication of infrastructure needed for transmitting and distributing<sup>7</sup>. As far as the managerial implications, the importance of public utility producing and supplying electric energy<sup>8</sup> is crucial. The great importance of this service for single users and for economic organizations<sup>9</sup> justifies the intervention by public powers<sup>10</sup> (D'Alessandro 1976) that conceal the development of competition and the idea of "economyness" as the way to improve the effectiveness protecting the public interest<sup>11</sup>.

As far as the domestic electric sector, Italy has a weak diversification policy for primary energetic sources whose urgency started with the oil crisis in the 70s when the national energy plans were defined. Despite the latest innovation in renewable sources and the contraction for the use of oil products, the electric sector in Italy does not have many resources, this caused a permanent dependence from foreign electricity and the related economic and politic vulnerability, especially for the stocking security and price instability.

The Italian productive structure has very high prices compared to other countries so it is more convenient to buy foreign electric energy. According to a survey by Terna in 2010, the total electric demand is 326.165 Gwh, increased by 1.8% comparing with the previous year. Dividing the consumptions per sector, these are the results: industry (43.95%), tertiary sector (31.48%) and domestic (22.74%); agriculture is marginal (1.83%). The demand in 2009, mainly by Switzerland and France<sup>12</sup>, corresponded to 86% by the domestic production and 14% by imports which increased by approximately 11% compared to 2008<sup>13</sup>. Gross production has increased by 1.9% from 2009. This is due mainly to renewable energy sources (23.96%) with an increase by 8.6% as far as their use compared to 2009 and by 1.55% as far as their incidence on gross domestic production. Among these energies, water is the most relevant (67.2%) followed by

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<sup>4</sup> This possibility has occurred instead in optical engineering and technical, though in reduced quantity and time spans (flashlight) or very high costs (pumping stations).

<sup>5</sup> Plants, large, require high fixed costs in the face of a limited rate of return (Golinelli 1991) and other economic disadvantages, and their operation are not determined by the technical standard and non-commensurate with the actual production capacity.

<sup>6</sup> To consider is the distance from the centers of consumption, since the losses due to transport are directly proportional to the length of the path.

<sup>7</sup> The condition in question is less pronounced and even denied by some in manufacturing, while it is very strong in the middle stages of the supply chain. Regards the transmission of electricity transmission from the centers of production to distribution, raising the voltage levels (medium to high) to reduce losses due to transport, inversely proportional to these and also includes the control and coordination of facilities generation and network (dispatching). The distribution covers the sale of electricity to users through the transport and transformation on high, medium and low voltage.

<sup>8</sup> Here it makes its own recognized the substantial difference in doctrine between the economic and business concepts of "public utility service" and "public service" (Borgonovi 2000; Bulchean and Cambini 2000; Dall'Occhio et al. 2001; De Nardis 2000; Dezi 2005, Freed and Fortis 2001, Mele 2003; Petretto 2000). So the electricity service, such as "public utility service", belongs (Stiglitz 1988) to the broader category of public services, addressed to the satisfaction of needs in the community widely and consistently warned (Anselmi 1995; Baccarani 1988; Pivato 1958, Sage 2000, Head 2001), but is identified and differentiated by the requirements of rivalry and excludability in the use, enjoyment and a demand for a single individual, for payment of a price for its sale and can be released to the public even without the direct intervention of the state and the second logical competitive.

<sup>9</sup> Electricity is the main form of energy in industrialized countries and has a profound impact on our country's balance of payments (for the significant import of hydrocarbons and electricity itself), in many industries the cost of production (as capital good), and the environment (due to the activity related to its production and distribution).

<sup>10</sup> Is in fact the very close link between the term "public utility service", formally introduced in Italy by Law No 481/1995 ("Rules for the competition and the regulation of public utilities. Establishment of the Authority for the regulation of public utilities"), and the change of the state's role in the management and delivery of public services, past, Following the liberalization of the electricity market and privatization of industry in the early 'nineties by "(State entrepreneur)" the "definition of rules, principles and policies that companies in the process of privatization and private sector have to follow in carry out their productive activities (State Controller)" (Dezi 2005: 15).

<sup>11</sup> It refers to the security of the service (reliability and continuity of supply), quality (consistency of parameters of frequency and voltage), universality (provision for those segments of users whose supply would diseconomy), price (sustainable and gradually decreasing).

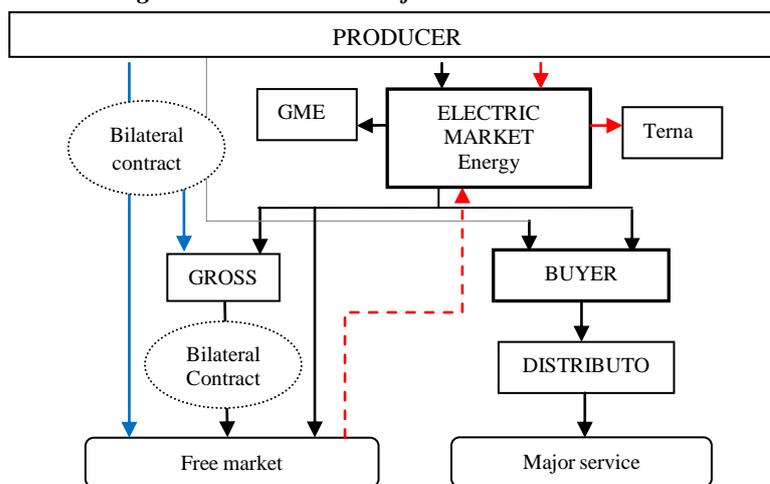
<sup>12</sup> Content of Slovenia and the marginal contribution of Greece and Austria

<sup>13</sup> In 2008 net imports were rather decreased by 13.6%.

thermal energy of bio-fuels (12.33%), wind (11.22%), photovoltaic<sup>14</sup> (2.13%) and geothermal (7.11%). The majority of electricity is produced by thermo electrical sources (73.7% decreased by 1% from 2009), dividable in natural gases (70%), solid fuels (17.25%), other fuels (7.82%) and oil products (4.94% progressively decreasing)<sup>15</sup>.

As far as the structure of the electric sector, the current asset is the result of the European countries pushing toward the liberalization of the sector, first under the legislative decree n. 333/1992<sup>16</sup> which launched the ENEL process of privatization that transformed it in S.p.a., then they became real with the legislative decree 79/99<sup>17</sup> that led to the concrete passage from the monopolistic regime to the free market. After the modifications by DPCM on May 11, 2004 and by the legislative decree 73/2007, the production is run by several players, foreign as well, among which Enel Group, Edison Group, Eni Group, Edipower and E. On (former Endesa)<sup>18</sup>; generated electricity can be self-consumed, sold through bilateral contracts (straight to clients-free market or wholesalers), given to the network as surplus or sold through Borsa Elettrica run by GME (Gestore dei mercati energetici)<sup>19</sup>. Terna S.p.a dispatches this energy. The supply to final domestic clients who do not buy on the free market is granted by Acquirente Unico<sup>20</sup> (Unique buyer) at competitive prices and under terms of continuity, safety and efficiency. The distribution and sell, instead, are given to local players<sup>21</sup> by the Ministry of productive activities (MAP) through a triennial concession<sup>22</sup> (figure 2)

**Figure 2 – Current asset of the electric sector**



The electric sector also involves GSE (Administrator of Energy services) which is since November 2005 the reference point for the implementation of the energy policy in the Country<sup>23</sup>, and AEEG (Authority for electric energy and gas), independent regulation and control authority born with the law n. 481/1995<sup>24</sup>.

<sup>14</sup> Photovoltaic production has more than doubled compared to 2009 (+ 136.5%).

<sup>15</sup> The use of petroleum products decreased by 2.31% compared to 2009, of 22.66% from 50.66% between 2003 and 1997.

<sup>16</sup> The Legislative decree "Urgent measures for the consolidation of public finances" will then be converted into Law No 359/1992.

<sup>17</sup> The decree was expressly directed to the "Implementation of Directive 96/92/EC on common rules for the internal electricity market", aimed at liberalizing the application, access to networks and the supply of electricity.

<sup>18</sup> The contribution of these operators to the gross domestic production in 2009 was respectively 30.1%, 10.9%, 9.6, 6.8%, 6.5% (Authority data).

<sup>19</sup> This SpA(holding), known until November 2009 and Electricity Market Operator established under the Legislative GRTN. 79/99 is totally owned by the GSE (see later). Its task is to organize and manage the electricity market under criteria of neutrality, transparency and competition between producers, and to ensure adequate availability of reserve power.

<sup>20</sup> Such SpA, founded by former GRTN (now GSE SpA) under the Legislative Decree no. 79/99, procures electricity from the Power Exchange or directly from producers and, according to the guidelines of the Authority enters into contracts sales with distributors to allow the application of the single charge to customers

<sup>21</sup> Since 2031 the award will be through public tender.

<sup>22</sup> These include Enel Distribuzione SpA, ACEA SpA, AEM, are responsible for the management, maintenance and development of local networks, called "networks with the obligation to connect third party" to the requirement for these businesses to connect all parties who request.

<sup>23</sup> The company, formerly named Manager of the National Transmission Grid-GRTN, Manager of Electric System, Electrical Services Manager, has as its sole shareholder, the Ministry of Economy and Finance. It focuses on the promotion, encouragement and development of renewable sources in Italy and assimilated through the management of the market system based on Green Certificates. Releases, in addition, the Guarantee of Origin (recognition established by Directive 2001/77/EC) for electricity from renewable sources and the RECS (Renewable Energy Certificate System), international stocks, on a voluntary basis, certifying the renewable energy production. Still, plays the role of "implementing body", assigned by the Authority and the DM 28/7/2005 incentive for the production of electricity by the photovoltaic conversion of solar energy.

### 3.2 Community and national legislation

Does this point to specify the most significant moments in the evolution of regulation of the electricity market, both EU and national level<sup>25</sup>. The legislation goes on to contextualized in wider and more general address of the European legislation, which sees the expansion of competitive mechanisms (market liberalization) and in the rethinking of public intervention<sup>26</sup> in sectors of the economy (privatization), starting with the public utilities, (Cassese 1995; Pera 1998) the *conditio sine qua non* for achieving efficiency by both the European market is national operators (Messori et al. 1998)<sup>27</sup>. Thus, the EU energy policy, there have already been warned by the EEC Treaty Articles on these issues<sup>28</sup> and fully established in 1968 with the CD Report Haferkamp<sup>29</sup>, looked first to the security and independence abroad, to the preferred sources and energy efficiency. COM (88) 238<sup>30</sup> sanctioned, then the urgency of the establishment of an internal electricity market (De Paoli and Vacca 1991), first as a strategic moment of the broader process of economic integration (the Single European Act of 1986) and then politics (Dear 1995) and, secondly, as an indispensable condition for the security of fuel, quality of service and containment of its environmental impact. For this purpose it was necessary to consolidate a regime within the EEC system competitive, for which purpose it was necessary to reduce the direct intervention of the Member States on economic activity inside, so restoring the internal conditions of competition and allowing the claim of the supranational character of the Community. At the completion of the integrated electricity market is addressed most of the measures that followed. COM (89) 336<sup>31</sup> defines the lines of action to expand the negotiations, the basic tools to contain and rationalize investments in energy services by exploiting the complementarity of national markets, and also introduced the Third Party Access (TPA) on admission to to the network of transport and distribution of electricity<sup>32</sup>. With the Treaty of Maastricht (1992), Member States committed themselves to promote the interconnection of infrastructure including electricity. Among many other provisions relating to the internal electricity market, we must also recall the Directive 96/92/EC, repealed by 2003/54/EC<sup>33</sup> on safety, environmental sustainability and competitiveness, the 2001/77, then repealed by 2009/28/EC "on the promotion of electricity produced from renewable sources" to the 2008/92/CE price transparency. At the national level needs to be moved by the law of nationalization No 1643<sup>34</sup> (Aa.vv. 1989), which marked the birth of ENEL in 1962 as a public body to which is reserved for "the duty to exercise within the national territory the production, import and export, transport, processing, distribution and sale of 'electricity'. Since 1975, followed by energy planning maneuvers aimed at changing the structure created, culminating in the National Energy Plan (PEN) in 1988. This, in line with the contemporary EU guidelines, is oriented to energy saving, environmental protection, development of national energy sources, diversification of sources of supply and geopolitical areas, as well as the competitiveness of Italian industry. The implementation of the laws of PEN, nos. 9 and 10 of 1991<sup>35</sup> (Albano 1991; Greek 1992), represented the first step towards the liberalization of the sector. This fact encouraged the use of renewable and assimilated sources (CHP) and legitimized the diversification of

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<sup>24</sup> In particular AEGG defined the guidelines of the transition from monopoly to free market, acting on the mechanisms of formation of tariffs, levels of service quality and other issues specified by the legislature.

<sup>25</sup> In both cases, the first steps have been amended or repealed in part by recent measures.

<sup>26</sup> This should be restricted to the production rules for the development of competitiveness and, at the same time, to protect the safety, quality and universality of services, especially utilities.

<sup>27</sup> The legislation exerts its effects on the States through three categories of binding acts (Article 249 TEC; Tesaro 2010): Regulations, of general application, binding in the entirety and directly applicable in Member States, decisions, mandatory all the elements for the intended recipient, you must adopt rules for its implementation; directives, binding the State contemplated to achieve a precise result, letting the free form and the most appropriate means. Even if the latter is required to adopt national implementing legislation. In Italy we usually choose the tool of the Legislative Decree (Legislative Decree no.), Which usually refers to a series of implementing measures adopted by ministerial orders (DM). National legislation is completed through the laws and decrees (Decree, DPCM, DM).

<sup>28</sup> See Arts. 3 ("measures" on energy), 81-86 (competition rules), 154 (trans), 174-176 (environmental policy) of L. n.1203/1957 "Ratification and implementation of the following international agreements signed in Rome on 25 March 1957: a) the Treaty establishing the European Atomic Energy Community and annexed documents, b) the Treaty establishing the European Economic Community and annexed documents; c) Convention on certain institutions common to the European Communities".

<sup>29</sup> The first guideline for a common energy policy.

<sup>30</sup> The internal energy market.

<sup>31</sup> A refinement of that document, entitled "The expansion of intra-Community trade in electricity, a fundamental step towards completing the internal energy market," the following year were issued two directives, introduced into Italy by the Decree of 26 MICA - 06-1992: The 90/337, which establishes the procedure for the transparency of prices charged to industrial end gas and electricity, and 90/547, concerning the transit of electricity grids, which is interconnected with the network high voltage.

<sup>32</sup> In this way, users could choose their supplier, without geographical constraints

<sup>33</sup> In turn, repealed by Directive 2009/72/EC

<sup>34</sup> "Establishment of the National Electricity and transfer to it of undertakings carrying out electrical industries."

<sup>35</sup> Respectively titled "Rules for the implementation of the new National Energy Plan: institutional aspects, and generating hydroelectric power, hydrocarbons and geothermal energy, and tax provisions" and "Rules for the implementation of the National Energy Plan on Rational Use of Energy, energy conservation and developing renewable sources of energy."

the producers, so this phase was separated from the next, still substantially above all sensitive to ENEL for the condition of natural monopoly activities of transmission and distribution<sup>36</sup>. The digestibility from renewable sources and sale prices, transmission, exchange and production of electricity on behalf of Enel were governed by the Act of CIP 6 / 1992 (Agostini 1992; Di Macco 1993)<sup>37</sup>. Addresses community toward the fulfillment of an internal market - free, single and integrated electricity-were implemented by Legislative Decree no. 333/1992<sup>38</sup> (Law No. 359/1992 also), which gave start to the process of privatization of Enel. It was then approved the Convention kind between ENEL SpA and self-producers for the sale, exchange, transmission and contract manufacturing of electrical energy from renewable sources or equivalent. The L. No 481/1995<sup>39</sup> also sanctioned the establishment of the Authority. But the Europeans found practical implementation guidelines with the so-called Bersani Decree (Legislative Decree no. 79, 1999). This, first, divided the market into two segments: one bound, corresponding to the phases of transmission-dispatching and distribution, and a free, on the stages of production, import-export, purchase and sale<sup>40</sup>. These are carried out by a number of operators competing freely on the basis of market forces. The activities constrained, however, remain with the state and are assigned to subjects dealers, regulated tariff level-even-by the Authority. In particular, the transmission and dispatching GRTN<sup>41</sup> to compete, while ownership of the networks pertains to Terna SpA. National Grid<sup>42</sup>, the distribution is entrusted by the MAP thirty-year concession to third parties. GRTN, in turn, had to be the Single Buyer, to ensure an adequate supply of electricity to captive customers and making them a share of the benefits of liberalization of the sector, and the Electricity Market Operator, with the task of ensuring operation of the electricity market and, in particular, the energy exchange. This was foreseen by the decree (although established in 2004) as a tool to determine daily energy prices based on the encounter between supply and demand, thus increasing both the competitiveness and transparency of the market, the efficiency of production management energy. Among the measures which the structure is changed then the Prime Minister's Decree 11 May 2004<sup>43</sup>, which sanctioned the transfer to Terna SpA no later than October 31, 2005 the business of GRTN SpA on activities for the dispatching, transmission and development of transmission network, and the Legislative Decree no. 73, 2007<sup>44</sup>. This completes the liberalization of electricity sales, which already extended to non-residential customers (01/07/2004), will cover everything from now on the market<sup>45</sup>. To complete the brief survey of the national legislation should at least mention the L. No 57/2001, the Ministerial Decree 14/03/2003; Leg. 387/2003<sup>46</sup>; No laws 239/2004<sup>47</sup>, No And No. 131/2005<sup>48</sup>, 242/2006<sup>49</sup>, the Ministerial Decree 20/7/2004 and 2/1/2009; L. No 129/2010<sup>50</sup> and Legislative Decree no. 28 of 2011<sup>51</sup>. These regulations have focused in particular (Armanini and Magni 2004; Bernard 2003; Dezi 2005) and increase the modernization of central, regional planning of supply and demand, energy conservation and its White Certificates, the development of renewable energy Green Certificates and related companies and investments in the sector.

#### 4 Governance in electric utility companies

<sup>36</sup> Law 9 / 91 also provides for the obligation for Enel to purchase from third party manufacturers, the excess energy of this nature and it has provided for free movement within the consortium. The liberalization also involved conventional sources, but with reserves by ENEL and without the possibility of transferring the electricity companies of the same consortium. The 10/91 Law promotes energy efficiency and renewable energy sources and creates the energy manager.

<sup>37</sup> The measure "constitutes a veritable model of charging for electricity based on the concepts of" avoided cost "(ENEL) and" social benefit "of renewables." The sale price is in fact determined by adding to the costs avoided (by 'Enel) - the installation, operation maintenance, fuel-a "premium" for benefits that renewable energy fee (Dezi 1994: 69 ff).

<sup>38</sup> "Urgent measures for the consolidation of public finances."

<sup>39</sup> "Rules for the competition and the regulation of public utilities. Establishment of Regulatory Authority of public utility services "

<sup>40</sup> The process of liberalization in that stage involved only the wholesale activities, meaning those customers "suitable" to enter into supply contracts with any producer, distributor or wholesaler in Italy or abroad. The other end customers were still bound to buy electricity only from the distributor responsible for the area.

<sup>41</sup> At the time Manager of the National Transmission Grid.

<sup>42</sup> These two companies were chartered by Enel in compliance with the decree.

<sup>43</sup> "Policies, procedures and conditions for the unification of ownership and management of the national grid transmission."

<sup>44</sup> The decree "Urgent measures for the implementation of Community provisions on the liberalization of energy markets" was later converted into Law No 125/2007.

<sup>45</sup> The previous customer segmentation between "suitable" to freely choose the operator and the conditions for supplies of electricity and customers, "bound" is thus replaced by that between free markets and protection service, that is delivered to end users who choose to still provide domestic from your local distributor directly without resorting to the free market.

<sup>46</sup> Implementation of Directive 2001/77/EC.

<sup>47</sup> "Reorganization of the energy sector, as well as delegates to the Government for the reorganization of the existing provisions on energy."

<sup>48</sup> "Urgent provisions on investments in companies operating in the electricity and gas."

<sup>49</sup> "Repeal of the rules of equity investments in companies involved in electricity and natural gas."

<sup>50</sup> "Urgent measures in the field of energy"

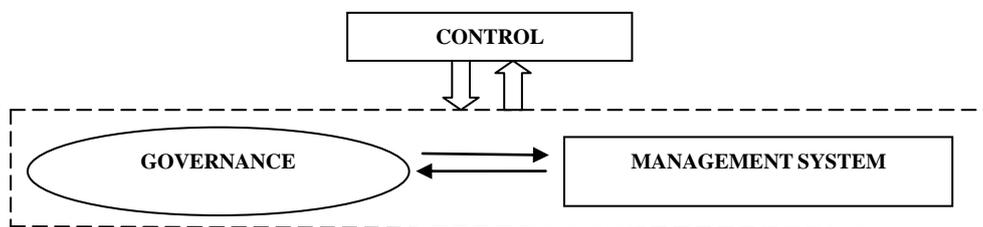
<sup>51</sup> "Implementation of Directive 2009/28/EC on the promotion of energy from renewable sources, and subsequent repeal of amending Directives 2001/77/EC and 2003/30/EC."

Before describing in a systemic perspective (Golinelli 2011) the evolution of governance in the electricity companies, we need to define and differentiate the basic concepts of governance, management and control. The notion of governance (or corporate governance, if imputed to the company) was founded in the thirties of last century (Berle and Means 1932), following the separation of ownership and management and the related dissemination of public company to balance the U.S. and UK interests of different players in the game. In the nineties it has found application in the public sector, following the failure of the traditional logic of bureaucratic management because of the usual blend of politics and economics and, in parallel, the spread of the logic of New Public Management (Del Vecchio 1998; Hood 1991 ), and the requirements implied by the gradual privatization of "public" services. Today, corporate governance, though not uniquely defined, concerns "the relationship between those who hold interests (stakeholders) in the operation of an enterprise (company) and who are called to direct it" (Airoldi et al. 1994, Prentice 1993: 2 ). So is embodied in the set of structural characteristics that govern an effective enterprise government action, oriented to create value "(Golinelli and Vagnani 2002), combining for corporate interests, potentially conflicting, multiple categories of stakeholders"<sup>52</sup>. As for the concepts of governance, management and ownership (fig. 3), it qualifies as the most important system among those present in the context in which it operates<sup>53</sup>, as proprietor of control, this intimately affects the action top management. This holds corporate governance, which is responsible for planning, directing and monitoring the dynamic evolution of the business system to increase the chances of survival<sup>54</sup>. The implementation of these strategic guidelines, translating them operationally in the various levels of the organizational structure, management responsibility at the time.

#### 4.1 Evolution of governance in the electricity companies

The evolution of the relationship between ownership and management in electric service suppliers, according to a narrow concept of governance (Cafferata 2004), it must be contextualized in the broader process that has led the utilities to the market through a series of business models characterized by the progressive separation between government, management and control: municipal company, a special company, SpA The first (Baccarani, 1988), born at the beginning of the twentieth century without legal autonomy, performing operational functions only, are very well capitalized and use of leverage, instead of acting on the balance sheets of the Local (Termini and Cella 1999)<sup>55</sup>.

**Figure 3: control, governance, management in systems (our calculations based on Golinelli 2011)**



But the system of financial flows enjoyed, does not induce an efficient use of resources and the institutional mechanism allows the exchange between the irresponsibility of the company's management over the performance and use to gain electoral support (Dezi 2005), heavy on results 'extent of costs incurred by society for the provision of service. Over the years' nineties the financial difficulties of public administration are the primary determinant of the origin of special agencies, "instrumental bodies of the local authority, with legal personality, commercial autonomy and its own Statute" (Article 43 of Law n . 142/1990). But to avoid that were affected on the one hand the maintenance of consent in connection with these companies and, secondly, their social connotations, the Local Authority retained control of these significant forms through the sieve by the City Council for their actions basic address verification. It was still possible, so the companies involved in special operations or away from the core business of special urgency, but the improvement of the political consensus, and maintain the usual and convenient lack of clarity in roles and transparency in the use of resources<sup>56</sup>. But at the end of the nineties, in the wake of the European Community guidelines and

<sup>52</sup> The value creation comes from the ability of the governing bodies corporate to achieve and maintain high corporate levels of structural harmony and resonance with the systemic context and systems over between sub-systems that compose it.

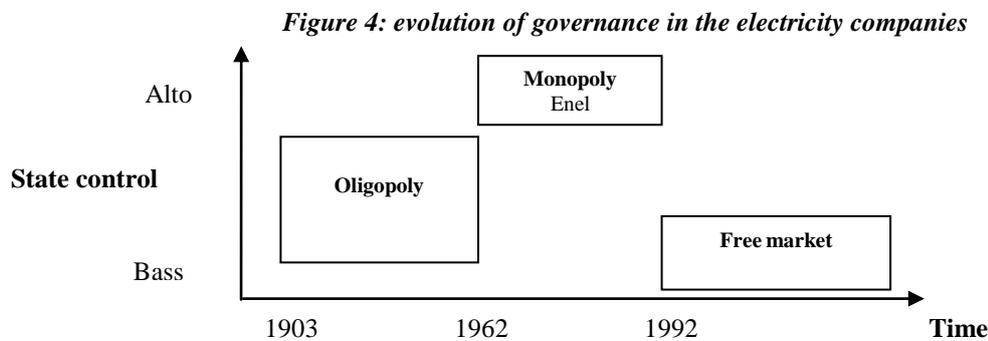
<sup>53</sup> The property is therefore defined as external to the company and supra-system.

<sup>54</sup> This, in turn, is guaranteed by the achievement of sustainable competitive advantage and positions arising from the creation of value.

<sup>55</sup> Their main source of funding was, in fact, the funds provided by the Local, the interest incurred on behalf of the City were positionable on rates, while the Agency was reimbursed for the debt service by the central government.

<sup>56</sup> Think of as a threshold to transfers made by local authorities in the profits of companies to make up for dwindling contributions from the state.

incentives promoted by the CD. Bassanini-measures, we arrived to the Company for actions. The transformation in the way of companies privatized utilities is in particular (Fazioli and Donati 1996) to give maximum autonomy to the company with respect to the subject that is the foundation and funding<sup>57</sup>, to introduce tools for monitoring and scrutiny of business the protection of all stakeholders<sup>58</sup>, and to make explicit and transparent the relationships between companies and public authorities reference. As for the specificity of the electricity sector, the process that gave rise to the present structure can also be Italian segmented into three stages (fig. 4).



The first, which began early last century, is dominated by Fordist<sup>59</sup> organizational models and a competitive oligopoly, which counts among the categories of producers and municipal enterprises large industrial-financial<sup>60</sup> groups, as well as smaller private companies and the auto manufacturers. The second is characterized by profound changes in the sixties: the birth of Enel, confirmed by so-called nationalization law<sup>61</sup>, as an institution which is reserved for the exercise of activities involved in the nationwide provision of electric service, from production to sale, gave rise to three decades of public ownership in monopoly-like conditions<sup>62</sup>. This seemed the best solution, supported by the trust placed by then teaching business management in the model of big business, determined to face the difficulties of postwar material destruction, reduction of national income, disruption of public finance. Nationalisation, in fact, evaded a private interest of essential services to the community, allowing you to implement an energy planning appropriate to the national economic development plans aimed at removing the sectoral and regional imbalances. The unified management of electric resources by the state, in fact, taking advantage of economies of scale and technology-dimensional typical of big business and not merely the return on capital employed (Anthony and Young 1992, Saraceno 1970), meet the "failures of market" (Fischer et, 1994) related in particular (Prosperetti 1993) the conditions of natural monopoly through the distribution networks<sup>63</sup> and the presence of positive externalities, allowing for efficient electricity supply in all areas of the country, including those in which the service would otherwise be uneconomical, and at prices lower than those imposed by private monopolies (Petretto 2000). The third phase of the evolution of governance in the electricity companies date to 1992<sup>64</sup>, when began the process of privatization of ENEL led to a new configuration of the market, characterized by the competitive logic of the liberal regime and the public authorities from the attribution of a new task, which is more relevant to the direct management of the company<sup>65</sup>, but inherent in the regulation of private and being privatized companies (Cafferata 1993). Following these processes of liberalization and privatization of enterprises, the sector is populated by a plurality of players as well, including foreigners, in the production, while downstream activities can still see the dominance of ENEL. As for the legal form to be favored in order to initiate the privatization (1998 Amatuucci; Antonelli 1998), the plan of "reorganization of government participation," prepared by Treasury for the listing of the company and the placement of the property on the stock market, opted for model of the public company.

<sup>57</sup> So distinguishing ownership / control and business / government.

<sup>58</sup> Including ownership.

<sup>59</sup> Are therefore favored large size, the tendency to centralization and isolation from other operators.

<sup>60</sup> Edison Company Hydroelectric SIP-Piedmont; Adriatic, Central, Southern Company-EMS.

<sup>61</sup> . L. No 1643/1962: "Establishment of the National Electricity and transfer to it of undertakings carrying out electrical industries."

<sup>62</sup> So even in Italy, as in France (1945-'46) and England (1948), the condition of monopoly, the existing "de facto" especially during transportation and distribution, was regulated by the state, assuming a configuration " Legal. " Enel integrated the more than 12,000 existing electricity companies, became the manager and the coordinator of the activities of the operators were legally autonomous (public utilities, auto-producers, local small businesses) and the only holder of the right to import and export electricity.

<sup>63</sup> It refers to the existence of economies of scale (Mele 1993), economies of vertical integration (Vickers and Yarrow 1988), technical problems for the coordination of networks (and Bulckaen Cambini 2000), transaction costs (Archibugi et al . 2000; Pizzetti and Archibugi 2001).

<sup>64</sup> The Legislative Decree no. 333/1992 "Urgent measures for the consolidation of public finances" will then be converted into Law No 359/1992.

<sup>65</sup> This shift was part of a larger pattern of government, on businesses operating in most sectors of the economy of the country (in addition to ENEL, including IRI, ENI, INA).

This, in fact, allowed companies to make the massive investment needed to adapt to the new market environment / economic capital using secured from risk, thus compensating for the inability of the moment for further borrowing. But because the implementation of this arrangement does not compromise the protection of the collective which must still guide the delivery of this service, subjugating the goal of economic efficiency that guides the logic of private law, were formed, following the U.S. business model, Authority of the industry, ultimately appointed to reconcile these two addresses. Among the determinants of such changes taking is therefore possible to attribute particular importance to the community pushed for liberalization of European markets, accepted as a way to counteract the inefficient delivery of public services, the desire to reduce the budget deficit by selling state-owned enterprises, the need for better use of national resources of capital, encouraging private participation for productive investment, and revitalize the stock market.

#### 4.2 Formal or substantial privatization?

But the process of privatization started in the nineties it is too often limited to the transformation of the legal nature of private-sector companies in transferring (formal privatization or corporatization, Malgarini 2000), rather than substantiate the significant opening of their capital to the participation of private entities (substantial privatization) (Fazioli 2001). Failure to "shift in ownership - and therefore the" power "of command - from the political system and bureaucracy linked" to private hands (Cavazzuti 1996: 9) was not sufficient to overcome harmful to the achievement of those mechanisms by of network industries providing services of public utilities to success (Fraquelli and Fabbri 1998), particularly in terms of effectiveness, efficiency and profitability / cost. Among the problems detected perpetuatisi especially the "implicit transfers" (2005 Dezi, Fazioli and Fiorni 2000, Head 2001), the levying of charges for service contracts (Balestro et al. 1995; Terms and Cell 1999; Tobacco War and 2003; Massarutto 1999) and the choices of allocation of profits. In order to enter into substantive changes are needed at least to avoid the depletion of the main assets held by these companies, or the intangible heritage of trust from the local community, and required that these firms are able to exploit the possibilities of development drawing on the resources capital market, in fact, be a profound cultural change inherent in the way of conceiving the relationship between the public and businesses to "public" services, which, among the more, to ensure customers and investors with transparent and routed paths in the logic of business development oriented to the long term. The privatization of public utilities, real, keep it reaches so divided, that is entrusted to entities other than, the power to direct (political accountability), management and control, and protecting the social significance of the service provided through the establishment of a control and regulation (Corò 2000; Ecchia and Delbono 1998; Massarutto 1998; Polidori 2000). This, though appointed by holders of political power, is in fact independent in its responsibility before the community of the availability and quality of "public" services (Brusco et al. 1995). In the case of ENEL, the transformation from a public entity to a SpA(holding) has remained virtually unchanged the functions of a public nature conferred on the first body, so that the convention-type self-producer Enel still sees society not as mere party in reports by private persons, but as a person who owns, although as a concession and no more reserves, the government of the national electricity service. Even today most of the electricity companies have a share capital held completely, or at least mostly, by the public. These include Enel, Acea SpA, Edison SpA.

In the first case (<http://www.enel.com>) the shareholder base is constructed from national and international investment funds, insurance companies, pension funds and ethical funds, along with more than a million small investors: the largest shareholder however, is the Ministry of Economy and Finance (31.2%), followed by institutional investors (37%) and by individual investors (31.2%). In the case of ACEA (<http://www.aceaspa.it>), a publicly traded since 1999, majority shareholder is the Municipality of Rome (51%), and the rest of the shares are divided between the market (22.46%), Francesco Gaetano Caltagirone (15.03%) and GdfSuezSa (11.51%). As for Edison (<http://www.edison.it>), admitted to listing in 2002 following the merger of the publicly traded subsidiary of Montedison, the shareholders with significant holdings stands Transalpina Energy Ltd (61.28%), whole and jointly owned by WGRM Holding SpA 4 (In turn wholly owned by Electricite de France SA) and Delmi (A company controlled by Italian investors A2A). Followed by Electricite de France SA (19.36%), Carlo Tassara SpA (10, 02%), and markets (9.34%).

### 5 The community management of energy supply: an alternative viable or dissonant?

How many times has pointed out, public utility companies, especially companies operating in the electricity market should aim to achieve two objectives:

1. ensure provision of service to the users;
2. comply with the conditions of effectiveness and efficiency in supply.

It is, therefore, to balance the public interest in the bonds at the base of the economic and financial. As mentioned earlier (see above para.3) the gradual process of succession to the natural monopoly conditions closer to the free market, is due in the formal privatization of enterprises producing electricity and the creation of other

companies responsible for the management services to the production side. On closer inspection, one could argue that the natural monopoly has been replaced by a private monopoly created by companies, for the most part, public control, or as an oligopoly with these characteristics.

The particular configuration of the electric lends itself to a "provocation" that takes its systemic moved by the need to balance the interests shown above with the need for a market as competitive as possible. Now borrowing, in part, the structure of the global financial system (Golinelli GM 2011), distinguished by a worldwide-european governing body, responsible actions, coordination and control system (Basel Committee, International Monetary Fund, World Bank and European Central Bank), a national governing body for purposes, for the most part, control (Bank of Italy, ISVAP, Consob, the Competition Authority and the Market) and an operating structure composed of various financial intermediaries private, more or less specialized, which realize the direct transfer of funds from surplus units to those in deficit, it would be possible to assume that an organization of electric power over certain fundamental traits? It could be argued, for example, to transfer skills in the field of protection of public interests, which presumably can be seen as the collective European interest, at Community level? Would not it be more appropriate to think about optimization and enhancement of energy exchanges between countries outside the European Union instead of pursuing national energy efficiency and independence? In the opinion of the writer, the answer may be yes. As in financial markets increased the efficiency and effectiveness in the exchange of securities and therefore the capacity to finance its business occurred as a result of the integration and connection of global financial markets, could be successfully traveled the path that leads to a strategy of optimizing the Community's electricity system. Putting ourselves in a Community perspective and considering the European energy system composed of a finite number of nodes - each node is a member country characterized by its supply and demand - by analyzing the different patterns of consumption and simultaneously enhancing the various types of energy sources , acting on the interconnections and the optimization of trade would, presumably, can reach an increase in the value of which could benefit the whole European energy system.

## 6 Conclusion

In light of the last referendum that repealed, among others, the rules relating to the nuclear program aimed to the increase of energy independence of our country, it is desirable to take into consideration a change in perspective. In other words, it seems particularly appropriate that a systemic view of the European circles and optimization of interconnects in specialized production - aimed at improving the energy exchanges between member countries and with regard to individual capacities and the individual energy demands - the creation of value throughout the system. A first conclusion of this work, therefore, concerns the need to address the problems of the electricity sector and the broader energy supply, not as a dilemma to be resolved in each individual country member, but through a "systemic" interpretation by the European Union , focusing on relations between the elements-nodes (United States) that make it up. Improve the performance management and organizational-level single node can, in fact, does not coincide with an increase in efficiency at a system level. The activation / optimization of the inter-relationships must have regard to the fulfillment of the goals and objectives of the system (principle of communion to a purpose), on the other hand, you do not see why it should be different from that pursued and sought by each country .

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