

David and Goliath: The Procedures for Selling ENEL Distribution Lines to City-Owned Companies

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ABSTRACT

The sale of ENEL energy distribution networks to city-owned companies is regulated by Article 9, paragraph 4, of the Legislative Decree of 16 March 1999 (known as the Bersani Decree) which states how the sale of the networks has to be done according to the "normal market rules", but which concurrently imposes on ENEL the obligation to sell its own distribution network. The provision pursuant to Article 9 encourages the purchaser to behave opportunistically. The city-owned company, in fact, enjoys greater bargaining power, because its monopolistic counterpart is forced by law to sell part of its distribution network. In this context, it is in the best interest of the purchaser to renegotiate the price as far down as possible and the seller to increase the amount of time to complete the contract. As a result, this study will focus on the economic analysis (from the perspective of the theory of complete contracts) and the discussion of the effects created by the provisions that Article 9 of the Bersani Decree has introduced in the deregulation process of the Italian electricity sector.

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1. INTRODUCTION

This paper tackles the study of several problems relating to deregulation implementation methods of the electricity market in Italy. In particular, the research focuses on an economic analysis of the standards relating to sales of the distribution networks belonging to ENEL to city-owned companies.

Article 9, paragraph 4, of the Legislative Decree no. 79 (Bersani Decree) of 16 March 1999, issued in implementation of the EC Directive 96/92 bearing the Community standards for the domestic electricity market, provides that a single license for distribution is issued on the municipal territory for the purpose of rationalisation of electricity distribution and retail supply. The reorganisation of the electricity distribution is made by means of the sale to each local distribution and retail supply company¹ of the ENEL distribution lines, corresponding to the territory where the company operates. According to Article 9, the sale procedures must be done according to “market rules²”. This means the parties have to autonomously agree about the price and other sales conditions without the interference of any outside party or regulatory agency. At the same time, Article 9 forces the seller (ENEL) to sell the distribution lines³. Such contract for sale affects the contractual autonomy in a very unique way: on the one hand, it encourages the parties to contract according to the regulations and methods of the market and contractual private parties’ autonomy; on the other, it requires one of the parties (the seller) to sell *en tous cas*, substantially limiting the possibility to influence negotiations and the relative power of negotiation. This is mostly because the seller can only sell to a unique buyer (the local distributor and retail supplier), and there is not competition among buyers⁴.

The sale procedures had to be concluded no later than 30 September 2000, based on the agreements (for the determination of the size and the value of the assets and the personnel to relocate) or by the term (not

¹ The local company are pre-existing the restructuring process of the electricity market, by supplying retail services, after having purchased electricity from the incumbent distributor (ENEL). After, the restructuring, the local company will own the local distribution line formerly belonged to ENEL.

² “Market rules is the translation” of the law provision “*regole di mercato*”. This means private contractual autonomy and negotiation process.

³ As pointed out by the referee, in this work, the fact that “ENEL is forced to sell the distribution lines” does not refer to discussing or criticizing the theoretical foundations of electricity markets restructuring, but means that the government is mandating the terms of private companies transactions. This is the main incentives distortion problem, analysed in the paper.

⁴ This peculiarity of the distribution reorganisation rules out the possibility to auction the ex-incumbent distribution lines and sell them to the “best-bidder”.

peremptory) of 31 March 2001⁵, by means of arbitration procedures assigned to "three qualified independent individuals" operating according to "tested financial methodologies that consider the market values." After that phase, the parties can appear before the Court of jurisdiction.

Article 9 of the Bersani Decree states:

1. The energy distribution companies are required to connect to their proprietary networks all the individuals or companies that submit a request, without jeopardising the continuity of the service and so that the technical rules and the resolutions issued by the authorities for electricity and gas relating to rates, contributions and charges are respected. The energy distribution companies operating at the date this decree takes effect, including (by the diverse share of the members) the cooperative companies of generation and distribution pursuant to Article 4, number 8 of Law no. 1643 of 6 December 1962, continue to provide the distribution services based on the licenses issued by 31 March 2001 by the Minister of Industry, Commerce and Small Business, which lapse on 31 December 2030. The same provisions identify the persons in charge of management, maintenance and, if necessary, development of the distribution networks and the relative provisions of interconnection which must maintain the secret of the confidential commercial information; the licenses envisage, among other things, measures to increase the energy efficiency of the final uses of energy according to the quantitative objectives determined with Decree of the Minister of Industry, Commerce and Small Business in concert with the Minister of the Environment no more than 90 days from the date that this decree takes effect.
2. The regulation of the Minister of Industry, Commerce and Small Business, adopted pursuant to Article 17, paragraph 3 of Law 400 of 23 August 1988, after consulting with the Unified Conference, established pursuant to Legislative Decree no. 281 of 28 August 1997 and the Electricity and Gas Authorities, lays down the methods, conditions and criteria, including remuneration for the investments made by the aforementioned license issuer, for the new licenses to be issued at the expiration date of 31 December 2030, subject to definition of the area of interest, which cannot be less than the municipal territory and not more than one-fourth of all the final customers. This service is assigned based on the contract announcements to call, in compliance with the national and Community standards governing public contracts no later than the five-year period preceding the aforementioned deadline.
3. With a view to rationalising distribution of electricity, a single distribution license is issued for the municipal area. In municipalities where several distributors operate at the date this decree takes effect, these latter, through the normal market regulations, adopt the appropriate initiatives for their aggregation and submit for approval the respective proposals to the Minister of Industry, Commerce and Small Business no later than 31 March 2000; if the Minister does not express objections within the following sixty days, the proposals are considered approved. The Minister of Industry, Commerce and Small Business and the Minister of the Treasury, Budget and Economic Planning promote the aforementioned aggregation including through specific programme accords.

⁵ In spite of the strict timing prescribed by the decree, the implementation of such law has been delayed and some selling procedures are not yet closed. Most of the sales followed the arbitration procedure. See further for details.

4. For the purposes referred to paragraph 3 and for the purposes of maintaining the pluralism of the offer of services and strengthening entrepreneurial spirit, including with a view to extending the distribution market, failing the proposal referred to in the aforementioned paragraph 3, namely in the case where it is justifiably rejected by the Minister of Industry, Commerce and Small Business, the distribution companies owned by the local bodies can ask ENEL S.p.A. to sell the business unit dedicated to exercising the distribution activities in the municipalities in which the aforementioned companies serve at least twenty percent of the users. For the purposes of the aforementioned sale, which must take place no later than 31 March 2001, the amount of the assets, their value, and the personnel units to transfer are determined by common agreement between the parties; in the absence of an agreement by 30 September 2000, the relative definitions will be made by the intervention of three qualified independent individuals, two of whom are appointed by the parties (who meet the respective fees) and a third individual (whose fees are met by the party asking for the sale) shall be the Presiding Judge of the competent Courts, which work according to proven financial methods that take into account market values. Except for other agreements between the parties, the sale is made based on the aforesaid determinations.
5. For the same purpose referred to in paragraph 3 relating to adjacent geographic spheres, no later than one year after this decree takes effect, the companies owned by the local bodies having no fewer than 100,000 final customers can request that the Minister of Industry, Commerce and Small Business take advantage of the procedures described in the same paragraph 3.
6. The Authority for electricity and gas sets the economic criteria and parameters for determining the annual amount to pay to owners of the distribution networks (if any) to which the relative licenses were not granted. The Minister of Industry, Commerce and Small Business can divide up or modify the license issued, subject to the agreement of the licensor.
7. Within one hundred eighty days after the date this decree takes effect, the owners of the distribution plants that serve more than 300,000 final customers make up one or more joint-stock companies; within the following six months, all the assets and relationships, assets and liabilities are transferred to said companies, with relation to the distribution of electricity and to the sale to restricted customers, including therein a percentage part of the capital base sold."

There are essentially four main principles underpinning the Bersani Decree in the section related to reorganisation of the distribution and retail supply of electricity: rationalisation of distribution; maintenance of the pluralism in the offer for services; strengthening the local entrepreneurial spirit; and the prospect to extend the distribution market.

The restructuring is based essentially on the technical and economic results. Therefore, despite the fact that the generation phase is not a natural monopoly, when it is integrated with the distribution phase it also assumes the characteristics of a natural monopoly. As a result, the city-owned

companies that generate electricity can take advantage of the economies of scale emerging from the integrated management of the generation plants and distribution networks. This would essentially allow the competitive development of the local companies, which might be developed to become “multi-utility companies” to apply lower prices to their customers by taking advantage of the savings in terms of distribution costs (and generation). At the same time, by cutting the management costs and taking in large sums of money, ENEL can invest in different sectors (such as mobile phones) and markets (Brazil)⁶.

In general, the rationale of the Decree is a development in the sense of competition of the electricity market. The scope of this work does not expand to discussion of the general and theoretical intentions of the Bersani Decree and does not challenge the literature well-acquired theoretical results⁷ that the break-up of incumbents in electricity markets and the restructuring in a competitive directions are desirable.

More prosaically, this paper intends to concentrate on the methods of restructuring and reorganising the sale of the distribution networks as envisaged by Italian standards. It will also discuss the Italian experience. In the viewpoint of Williamson, it might be said that the provision under Article 9 stimulates the purchaser to employ opportunistic behaviour. The city-owned company naturally enjoys more bargaining power because the monopolist-counterpart is obliged by law to transfer part of its distribution network. In this context, the purchaser has every interest in renegotiating the price downward. The Bersani Decree creates the incentives to the purchaser to implement strategic behaviour. A fundamental objective for ENEL is to achieve sale prices in line with the real value of the market of the business units to sell. Any sales made at inferior parameters would in most cases return to the advantage of subjects that, on par with ENEL, are no longer of exclusively publicly owned capital but are listed on the stock exchange and involved in diversified activities and managed with a view to competition and profit.

The seller, in turn, might consider it convenient to levy a delaying tactic, to the extent possible and provided that the costs do not become too high. Therefore, in most cases, the ultimate definition of the sale conditions will take place by arbitrators and the judiciary and this would inevitably lead to an increase in the time necessary for completing the scheme of rationalisation pursued by the decree and an increase in the

⁶ The referee has suggested that most experience tell us that utilities waste such funds in unproductive investments. In ENEL's experience, however, the process has just started and no empirical evidence on the returns of such investments is available.

⁷ See, for all, the seminal work Armstrong, Cowan, and Vickers (1995).

costs (out-of-pocket, of social benefit and in terms of time) for its implementation.

Therefore, the study will focus on the economic analysis and the discussion of the effects created by Article 9 of the Bersani Decree as regards the sale of energy distribution networks. Special attention will be placed on the analysis of the ENEL-AEM Milano case.

The research study is organised as follows: Section 2 comments on the procedures for selling the ENEL electricity distribution networks to AEM Milano; Section 3 illustrates the main activities of the city owned company, AEM Milano, and presents several pieces of information related to the income, assets and liability, and financial situation of the company; Section 4 investigates the economic impact of the contract for sale of the distribution networks and the related legal procedures required pursuant to the Bersani Decree; and Section 5 provides concluding observations.

2. THE SALE OF THE ENEL DISTRIBUTION NETWORKS TO AEM-MILANO: SOME PRELIMINARY REMARKS

At the date established pursuant to the law emanated on 31 March 2001, the situation relating to the sale of the distribution networks in the AEM-Milano case was as follows: after two years of negotiations, disputes and recourse to arbitration, on 7 August 2002, a deal was finally reached for sale of the Milanese electricity distribution network. ENEL sold its Milan and Rozzano network to AEM for 423.5 million Euro, a figure already established in March 2001 by the Board of Arbitrators.

Regarding the other sales, the situation differs according to the diverse city-owned companies.

For the "smaller companies," the agreements (already taken or in the negotiations phase) provide - on the part of ENEL - sales in 58 municipalities for a total of 70,000 clients and collections estimated at about 80 million Euros and acquisitions in 116 municipalities for a total of 50,000 customers and outlays of about 24 million Euros.

The most important of the agreements already taken was with the A.C.E.G.A.S. company (the city-owned company of Trieste) to which the ENEL network was sold and which served some 800 customers in the community, predominantly industrial customers, for a total value of 11 billion Euros.

With the "larger" city-owned companies, the first agreement reached was with the "ENEL distribution" business unit, in the municipality of Parma (that serves some 40,000 customers in a high concentration of industrial users), sold to the city-owned local (A.M.P.S) for a total amount of 55 million Euros, representing about 1.5 thousand Euros per customer.

At the end of March 2001, the agreement was reached with ACEA for sale of the ENEL network of Rome, that provides service to 709,000 customers, for a total of 600 million Euros (approximately 550 thousand Euros per customer).

Despite definition of the value, however, the litigation is still being argued, since the *former* electricity monopolist appealed the determinations of the Board of Arbitrators as regards the value attributed to the network. The distribution network acquired by AEM, in fact, serves 385,000 customers in the areas of Milan and the municipality of Rozzano, for a total of 4,500 kilometres of medium and low voltage lines. The dispute between the parties, which succeeded in blocking the transfer of the network, arose due to the definition of the price (820 billion lire), which was considered too low by the then top management at ENEL. The value assigned by the Board of Arbitrators, which intervened because of the lack of agreement between the two parties, established at 2.1 million the value of every electricity contract for the Milanese user with respect to the value of 1.5 million established for the changeover, however, already concluded between ENEL and ACEA, of the Roman electricity network.

To eliminate the impasse, the president of AEM Milano reached the decision to formulate a proposal to lease the part of the network still owned by ENEL, a proposal that was deemed unacceptable by top management of the monopolist.

In the same way, AEM Milano had suggested making the payment for the network with Fastweb shares, proposing the exchange of the AEM Milano share in Fastweb (telephone and fast Internet through fibre optics) with the ENEL network. AEM Milano, in fact, holds 30% of Fastweb, which is in turn owned by e.Biscom. In the assumption of payment with shares, Wind, which is a subsidiary of the ENEL for the telephony, would have become a partner of Fastweb. Nevertheless, ENEL did not express interest in the proposal.

On 29 October 2002, ENEL Distribuzione S.p.A. and AEM Distribuzione Energia Elettrica S.p.A entered into a contract that transferred to the latter, as of 1 November 2002, the ownership of the business unit related to the distribution and sale of electricity in the municipal areas of Milan and Rozzano (4,500 kilometres of medium and low voltage lines).

Sale of the business unit came about at the conditions established on 31 March 2001 by the Board of Arbitrators - appointed pursuant to the Bersani Decree - for a total amount of 423,494,658 Euro, without prejudice to the continuation of the pending lawsuits before the judicial authorities of Milan.

ENEL and AEM have expressed their mutual interest in seeking a feasible out-of-Court solution that would put an end to the dispute in progress, but the civil suit before the Court of Milan continues.

3. THE CITY-OWNED COMPANY OF MILAN: AEM

This section illustrates the main activities of the city-owned company, AEM Milano, and presents information relating to the business or financial position of the Company.

3.1 Some Notes about the History

AEM was founded at the time of the electrical revolution that marked the changeover from the 19th to the 20th Century. The City Council of Milan was instituted around 1898 and met to discuss how to get around the contract signed a few years earlier with the "General Italian Electric Company, Edison System" to provide energy to Milan. With the law for the municipalisation of 1903, the City Council decided to directly enter into the electrical energy generation market by constructing the first historic plants in the city. The first, built in Piazza Trento near the railway station of Porta Romana, became operational in June of 1905. In 1910, after a formal referendum, AEM, the Municipal Electric Company, was founded, which in a few decades quickly developed by following and fostering the development of Milan.

In the period between the two World Wars, AEM grew and consolidated. During the two decades of the Fascist regime, the Company strengthened the plants already running in the city and in the Valtellina and constructed new ones. Among the most important initiatives in those years was the artistic illumination of the main architectonic monuments (such as the Castello Sforzesco and construction of water fountains or light shows) among which are the waterfall at the Triennale and the large fountain in front of the Castello that AEM completed and donated in 1940.

The serious damage suffered during World War II was repaired during the 1950s with substantial investments, hinged on the construction of a hydroelectric plant in Alta Valtellina, which in 1963 brought about the doubling of the production capacity with respect to the pre-war period.

The AEM was therefore able to provide the energy necessary for the "economic boom" of the 1960s during which the consumption of electricity increased by 7.5% every year. In 1959, AEM, in partnership with ASM of Brescia, began the construction of the thermo-electric plant of Cassano d'Adda, and expanded in 1984. This is the last undertaking of the great cycle of investments initiated in the 1970s with the plant of Braulio which completed the phase of construction of a solid and self-sufficient electric company.

Today, AEM produces, transports and distributes nearly 4 billion kilowatt hours every year, and it is the largest of the local companies in

our country. These characteristics have favoured the foundation of a second phase, namely, the energy company that since 14 July 1981 - when the gas network was purchased from Montedison - operated for more than fifteen years, giving life to the present-day multi-service company.

Based on Law 142/90 the city-owned company became a joint-stock company in 1996 (AEM S.p.A), giving support to the process of privatisation of the public companies in Italy. AEM S.p.A. began to be listed on the Italian stock exchange in 1998 with placement of 49% of the share capital on the market. The decision to develop AEM appears to have been a decisive step in 1999 with the corporate reorganisation set up in compliance with the Bersani Decree on deregulation of the electrical energy market. AEM assumes the identity of a Group divided into companies that operate in business sectors similar to international experience⁸.

In 2000, AEM added telecommunications to its long list of business interests. By making large investments, Milano now has a fibre optics network for the integrated access of Voice, Internet and Video. The development of the network will cover more than 4,000 kilometres in the first decade of 2000, of which 1,500 kilometres will be metropolitan wide-band network.

3.2 The Multi-utility Structure

The AEM Group operates in the fields of electricity, gas and heat generation, telecommunications, and other service-oriented areas, such as street lighting and artistic illumination of the city of Milan. The AEM S.p.A. holding company (AEM) has been listed on the Italian Stock Market since 1998.

Regarding the electricity market and in particular, generation of electricity, the AEM has seven hydroelectric plants with an installed power of 703 MW, four water collection basins in the Valtellina and a thermoelectric plant in Cassano d'Adda (MI) with an installed power of 550 MW. This plant is jointly owned with ASM S.p.A. of Brescia, which holds a 25% shareholding.

AEM is responsible for the technological management of the generation systems while the economic dispatch activities are assigned to AEM Trading S.r.l. The two companies have signed special contracts to economically and legally regulate their respective responsibilities.

⁸ The Bersani decree applies to private local companies. As highlighted by the referee, 'the government mandating the terms of private company transactions' is a bit odd - and represents the focus of the paper analysis.

Recently, AEM has acquired EDIPOWER S.p.A. and EUROGEN S.p.A from ENEL S.p.A. Furthermore, AEM has also recently acquired ENERGHEIA S.r.l., owner of a brown field site on which a project has been launched for building a 240 MW combined cycle plant for the cogeneration production of electricity and heat.

The transmission of electricity is handled by AEM TRASMISSIONE S.p.A., a company that has 1,092 kilometres of high voltage electrical lines that connect the AEM generation plant with the medium and low voltage distribution networks owned by AEM Elettricità S.p.A. The high voltage lines are part of the national transportation network managed by Gestore della Rete di Trasmissione Nazionale S.p.A. (G.R.T.N. S.p.A.).

AEM TRADING S.r.l. manages the exchange and the sale of electricity and gas which is responsible for the economic dispatch of the AEM generation plants. In addition, on the wholesale electricity markets, the company operates by entering into contracts for sale and purchase based on spot prices with other wholesalers. AEM Trading S.r.l. purchases natural gas from the subsidiary Plurigas S.p.A. for thermoelectric uses of the AEM plant and for civil uses of the customers of AEM Energia S.p.A. The company is responsible for supplying electricity to AEM Energia S.p.A. and AEM Elettricità S.p.A. for the respective customers on both free and restricted markets. AEM Energia S.p.A. is the company in the group that handles marketing electricity to appropriate final customers and, starting 1 January 2002, pursuant to the spin-off of the business unit, is also responsible for the sale of natural gas to all final customers previously served by AEM Gas S.p.A. Finally, ELECTRONE S.p.A. is a company whose shareholders, all with equal shareholdings, are AEM, AEM Torino S.p.A. and ACEA S.p.A. and operates in the wholesale sales of electricity and in the offer of related and accessory services.

Distribution and sale of electricity to restricted customers is handled by AEM ELETTRICITÀ S.p.A. Starting from 1 November 2002, the company acquired the business unit related to the electricity network of Milan and Rozzano from ENEL Distribuzione S.p.A. Pursuant to this acquisition, the high, medium and low voltage electricity networks have reached an extension of 8,960 kilometres. This network makes it possible to distribute and sell electricity to restricted customers and distributes electricity to qualified connected customers in the municipal areas of Milan, Rozzano and, to a lesser degree, other surrounding municipalities.

SOCIETÀ SERVIZI VALDISOTTO S.p.A. distributes and dispatches electricity to final customers and carries out the public lighting service in the Municipality of Valdisotto and in several municipal areas of the Upper Valtellina.

With regard to the natural gas sector, distribution and sale of natural gas are operated by AEM GAS S.p.A and other companies of the group. AEM GAS S.p.A. handles distribution of methane gas in the urban areas of Milan and some of the municipalities of the Milanese hinterlands. The company holds a distribution network of 9,462 kilometres; it produces, distributes and sells home heating in several areas of Milan and Sesto San Giovanni. The company owns three heat generation plants, five co-generation plants and a distribution network of 63 kilometres.

SERENISSIMA GAS S.p.A. carries out the activities of methane gas distribution and sale in the municipality of San Donà di Piave and other municipalities in the province of Venice, in the municipality of Basiliano, and in other municipalities of the province of Udine, and the municipality of Barlassina (MI). The company owns a distribution network whose total extension is greater than 600 kilometres.

MESTNI PLINOVODI d.o.o., with registered office in Capodistria (Slovenia) handles the distribution and sale of natural gas in 16 Slovene municipalities where it holds the license for installation of the gas distribution and supply network.

ALAGAZ is a company with registered offices in St. Petersburg (the Russian Federation). Its main activity is development, design and management of the gas networks in the territory of the Russian Federation and, specifically, in the city of St. Petersburg.

Finally, MALPENSA ENERGIA S.r.l. handles the methane gas powered co-generation plant of the airport of Malpensa 2000, and ensures a supply of electricity and heating and cooling sources for air conditioning to the airport.

In terms of the telecommunications sector, AEM also owns METROWEB S.p.A., a company that has an infrastructure (more than 2,700 kilometres) of fibre optics lines that covers the area of metropolitan Milan and some adjacent provinces. The company leases its fibre optics lines to operators working in the broadband telecommunications industry.

Furthermore, it belongs to the FASTWEB S.p.A. group and operates in the telecommunications services area offering broadband integrated services with Internet Protocol (IP) technology.

City illumination and local territorial services are handled by AEM S.p.A. which manages the urban illumination networks (street lamps and building lighting) in the municipality of Milan and in other municipalities for a total of 121,700 light points and 699 street lamps.

AEM SERVICE S.r.l. handles relationships with the diffused customer for the group companies and for independent companies, performing call centre, back office/front office activities, consumption and invoicing activities.

ZINCAR S.r.l. studies and executes projects correlated with the urban sustainable mobility with the environment as well as the construction and management of systems and processes for the rational use of energy.

The company, eUtile S.p.A., was formed on 22 May 2001 by AEM and Siemens Informatica, and has been operational since 1 January 2002. The objective of the joint venture is supply of "IT Solutions and Services" to the operators active in the area of utilities (among which is the AEM Group).

AEM Calore & Servizi S.p.A. was acquired from Siemens S.p.A. under the name of "Siemens Facility Management & Services S.p.A." On 15 November 2002 it changed its legal name to the one it holds today. The company works in the management and maintenance of industrial, administrative and residential properties and in the management of energy services to public and private customers.

3.3 Some Figures About AEM S.p.A.

The following charts present information about the business and financial situation of AEM S.p.A. before purchasing ENEL's distribution lines. The picture that emerges represents the growth phases of a lucrative company.

1) Economic, asset and liability and financial information.

Income statement figures (millions of Euro)	2002	2001	2000
Net revenues	1,040.5	1,112.5	767.3
External charges	(632.5)	(729.6)	(454.7)
Payroll expenses	(105.5)	(109.0)	(111.7)
Gross operating profit	302.5	273.9	200.9
Amortisation, depreciation and provisions	(118.0)	(108.4)	(79)
Operating income (losses)	(0.7)	(7.0)	(11.3)
Percentage of company revenues evaluated using the net equity method	(0.7)	(7.0)	(11.3)
Charges and income of financial management	(27.7)	(17.8)	(8.6)
Charges and income of extraordinary management	(4.2)	(1.8)	(2.3)

Pre-tax income	151.9	138.9	99.7
Income taxes for the year	(38.2)	(31.4)	(25.1)
Net income of minority interests	(1.0)	(2.4)	(0.1)
Consolidated net income for the year	112.7	105.1	74.5

Balance sheet figures (millions of Euro)	2002	2001	2000
Net capital invested	2,344.4	1,465.2	1,302.5
Group and minorities net equity	1,182.0	1,143.9	1,082.2
Net financial position (net debt)	(1,162.4)	(321.3)	(220.4)

Financial figures (millions of Euro)	2002	2001	2000
Net investments	985.7	254.8	301.8
Cash flow (*)	219.1	197.2	170.0

(*) Profits, amortisation, provisions and changes to net working capital.

- **Dividends: € 0.042 per share**
- **Capitalisation in the stock exchange as of 31-12-2002:**
2,284 million Euro
- **Customers served: 1,713,000**
- **Employees: 2,602 annual average**
- **Turnover: 1,040.5 million Euros**
- **Gross operating profit: 302.5 million Euros**
- **Net income for the year: 112.7 million Euros**

2) Operating figures

Operating figures	2000	2001	2002
(in millions of kWh)			
Electric power produced	3.1	4.7	3.6
Electric power sold	4.2	5.1	5.6
Electric power distributed	3.4	3.5	4.1
(million of cubic metres)			
Methane gas sold	1,069	1,143	1,094
Methane gas distributed	1,069	1,169	1,158
(million of thermal kWh)			
Electric power distributed	229	269	311

3)

Employee shareholdings Shareholders	% on the share capital
Municipality of Milan	
<i>Directly</i>	50.997
<i>Indirectly, through</i>	
-Metropolitana Milanese S.p.A.	0.003
For a total of	51.000
Motor Columbus AG	
<i>Indirectly, through</i>	
-AAR and Ticino SA of electricity (Atel)	5.322
For a total of	5.322

Italenergia Bis S.p.A.	
<i>Indirectly, through</i>	
-Edison S.p.A.	5.000
For a total of	5.000

Source: Official website of AEM S.p.A. Most recent up-dae made: 07/07/2003

4. THE CONTRACT FOR SALE OF THE DISTRIBUTION NETWORKS: THEORETICAL GENERAL FRAMEWORK

This section formulates, in analytical terms, the contract for sale of the distribution networks as envisaged under the Bersani decree. The analysis helps to understand the detailed account of the sales and derives the expected robust results in terms of policy.

The contract for sale affected the contractual autonomy in a very unique way: on the one hand, it encouraged the parties to contract according to the regulations and methods of the market; on the other, it required one of the parties (the seller) to sell *en tous cas*, substantially limiting the possibility to influence the negotiations and the relative power of negotiation and mandating the terms of private companies' transactions.

The legislative bill regarding bargaining according to the "rules and methods of the market" would imply that the parties involved in the negotiations work toward a process of offers and counter-offers, aiming to reach the equilibrium price between the reserve price of the purchaser and the seller, in agreement with the matters that occur in a normal negotiating process.

At the same time, however, the freedom of the seller to negotiate is limited according to the law in a specific way: the seller is required to sell.

In this way, the two transactions (to bargain according to the market rules and be bound by the law to sell in any case) are in a logically irreconcilable and ambivalent position: if the seller does not reach his or her reserve price during the bargaining procedures, he or she can decide not to continue with the agreement. This is not possible in the case considered and governed by the Bersani Decree. This is mostly because the seller can only sell to a unique buyer (the local distributor and retail supplier), and there is no competition among buyers. The seller can decide to make recourse to a Board of Arbitrators that independently establishes the sale price. The seller can make an appeal to an ordinary justice to contest the decision made by the Board of Arbitrators. But the Bersani Decree prevents the monopoly from ultimately refusing to sell in the event that an agreement is not reached with the purchaser. How can everything not be reconciled with the "normal market procedures"?

The literature that provides reference and support to the theoretical framework refers to the theory of complete contracts.⁹ The choice of this theoretical arrangement is motivated mainly by the fact that, in the case in question, the contents of the contract can easily be determined and are sufficiently exempt from elements of uncertainty or informational asymmetry. What is very relevant in the case in question is the sale price which, in our opinion, represents the most important variable for the purpose of concluding the sale agreement. Another important aspect of the analytical negotiations of the problem involves the methods of bargaining and how these influence the surplus deriving from the contract (that does not have a complex content) with unexpected circumstances that are impossible to regulate beforehand.

The objective of the research is to demonstrate how Article 9 of the Bersani Decree influences (beforehand, while twisting the effects retrospectively) the methods of bargaining for the sale of distribution networks.

Let's assume that the problem can be outlined in the following way:

- (1) There are two parties interested in the sale of the distribution network: ENEL (the seller) and the city-owned company (the purchaser). The objective of the parties is to maximise the surplus derived from the bargaining through definition of a rule of subdivision of the surplus.
- (2) The set of the actions possible is conditioned by the regulation: the parties have room for bargaining but at the same time, the seller will still be required to sell the networks. The procedure of the shares can be divided into three parts:

⁹ For a brief survey about contract theory, refer to the work by Masten (2000). For a brief survey about theory of complete contracts, refer to the work by Salaniè (1997).

- a) the parties negotiate, come to an agreement, and perfect the contract through the sale of the networks according to the market principles (*market phase*);
 - b) if an agreement is not reached, the parties appoint a Board of Arbitrators to define the sale price (*arbitration phase*).
 - c) if one or both parties do not agree with the decision taken by the Board of Arbitration, they can oppose the decision before the Court of lawful jurisdiction (*judicial phase*).
- (3) The variables considered for the analysis of the problem are as follows:
- (G, p) = contract between the parties, under which the city-owned company undertakes to purchase and ENEL undertakes to sell the distribution networks, where G represents the distribution network and p stands for the price at which it is sold;
 - $V(G, p)$ = the evaluation that the buyer makes of the contract. $V(\cdot)$ is growing and strictly concave in p ¹⁰;
 - $v(p)$ ¹¹ = evaluation made by the seller, is growing and convex in p ;
 - μ = *bargaining rule* that describes how the power of negotiation is distributed between the parties and where $\mu \in (0, 1)$ is a variable that takes in the legal provisions as per Article 9 of the Bersani Decree relating to the obligation to sell to ENEL. When $\mu=1$, then the power of negotiations belongs completely to the city-owned company. As a result, the contract and the appraisals of the parties are gauged by μ , that exchanges the methods of negotiations.

4.1 The Contract for Sale of the Distribution Networks: Legal Effects of the Bersani Decree and the Market Phase.

Let's assume that the parties define the contract by following the methods of bargaining of the market. This negotiation is based on the idea that the parties want to maximise the total *surplus* (Z). As a result :

$$(1) \max_p Z(p) = V(G, p) - v(p),$$

¹⁰ For the sake of simplicity, we will not consider the profitability of the purchase as a variable that influences the evaluation of the purchaser.

¹¹ The evaluation made by the seller is influenced by the profitability of the sale and by the possibility to realise sale prices in line with the real market value of the business units to sell.

The most important condition becomes:

$$(2) \frac{dZ}{dp} = \frac{\partial V}{\partial p} - \frac{dv}{dp} = 0,$$

where:

$$(3) \frac{\partial V}{\partial p} < 0$$

The equation shows a negative relationship between the price and the evaluation by the purchaser. The higher the sale price of the distribution networks, the lower the evaluation that the purchaser makes of the purchase.

$$(4) \frac{dv}{dp} > 0$$

On the contrary, the equation is positive because the higher the sale price, the higher the evaluation of the sale of the networks.

The optimal value of p^* can be calculated at the point of convergence between the two curves of evaluation of the contract.

If we insert the methods of bargaining between the parties, expressed by the *bargaining rule* μ , the equation (1) can be rewritten as:

$$(5) \max_p Z = \mu[V(G, p)] - (1-\mu)[v(p)]$$

The contract is defined not only on the basis of the evaluations made by the parties, but by inserting an independent variable under the law that influences the methods of defining the contract and, as a result, the methods of maximizing the *surplus*. In this case, the *bargaining rule* changes the method of bargaining and maximisation of the *surplus* by influencing the evaluation of the parties. Therefore, our problem becomes:

$$(6) \max_p Z = \mu[V(G, p)] - (1-\mu)[V(p)]$$

with $\mu = 1^{12}$.

$$(7) \max_p Z = [V(G, p)]$$

and the most important condition can be rewritten as follows:

$$(8) \frac{\partial Z}{\partial p} = \frac{\partial V}{\partial p} = 0$$

In this case, maximising the *surplus* of the sale equates to maximising the evaluation that the city-owned company makes of the sale, exerting the relationship expressed in Equation (3). As a result, considering that the evaluation of the sale increases as the price decreases, the city-owned company will tend to bid for the lowest price, offering prices that are lower compared with the price expected by ENEL. The public monopolist possibility to "counter-attack" is limited under law by the obligation to sell. ENEL (as demonstrated analytically) has no leverage to influence the bargaining (expressed as the maximisation of the *surplus* deriving from the sale)¹³.

The problem of maximisation becomes much more simple, and the optimal value of p , the value that should give us $Z(p^*)$, is none other than the optimal price of the purchaser, that optimises its function of evaluating the contracts $V(G, p)$. In this case, $Z(p^*) = V(G, p^*)$. The evaluation of the seller is completely separate from the problem of maximising the surplus.

In simple analytical terms, this explains a reality of the Italian economic commentary: first, the deferment to the market rules turns out to be wholly absurd because it is counterbalanced and blocked by the legal obligation to sell.

4.2 The Contract for Sale of the Distribution Networks: Legal effects of the Bersani Decree and the Arbitration phase

In this case, the price of the sale is set independently by an element that is not directly related to bargaining: a Board of Arbitrators. The

¹² This simple formalisation aims to model the provision under Article 9 of the Bersani Decree that considerably influences the contractual autonomy of the parties, establishing under the law the obligation for ENEL to sell its distribution networks. In this case bargaining rule μ attributes the entire power of negotiation to the city-owned company ($\mu = 1$).

¹³ The monopoly could eventually postpone the bargaining times.

Bersani Decree states that the Board of Arbitrators must be formed by three qualified independent individuals, two of whom are appointed by each of the parties (which meet the respective fees), and a third individual (whose fees are met by the party asking for the sale) in the person of the Presiding Judge of the competent Courts. The arbitrators must work in accordance with the "tested and proven market methodologies that consider market values" (art. 9, paragraph 4).

The market dynamics are, to use terminology and composition as per Williamson (1979), replaced by a hybrid *governance* (namely having both market elements and regulatory elements): the Board of Arbitrators.

The problem can be rewritten in the following way:

$$(9) \quad \max_p Z = V(G, \hat{p}) - v(\hat{p}),$$

where \hat{p} is the price fixed independently by the Board of Arbitrators (and where $0 < \text{prob}(\hat{p}) \equiv \text{prob}(p^*) < 1$), and subject to the criteria supplied by the law.

The most important condition becomes:

$$(10) \quad \frac{\partial Z}{\partial p} = \frac{\partial V}{\partial \hat{p}} - \frac{dv}{d\hat{p}} = 0$$

In this case, it is not easy to draw conclusions on the signals of the partial derivatives because the price is set independently and does not reflect the evaluations of the contracting parties; rather, it is based on the appraisals presented by the parties and made by appraisers appointed by the Board.

If the arbitrators are not able to set a price that coincides with the reserve price of the contracting parties, the contract is concluded and the parties obtain a positive surplus from the bargaining.

If the arbitrators are not able to set an appropriate price (a more likely scenario), the contract is not concluded. In this case, the refusal to accept the price proposed by the Board of Arbitrators can also be due to strategic reasons, for which the city-owned company prefers to defer the conclusion of the negotiations (by appropriately balancing the costs and benefits of the delay) to obtain an additional bargaining session of the purchase price

in a downward direction¹⁴. And thus, the third phase of the contract is opened.

4.3 The Contract for Sale of the Distribution Networks: Legal effects of the Bersani Decree and the *Judicial Phase*

By the effects of Article 9, paragraph 4 of the Bersani Decree, if the Board of Arbitrators fails in their definition of a price and cannot reach an agreement for the sale, the judicial phase begins. As was demonstrated in the AEM Milano-ENEL case, one or both of the contracting parties can appeal the decision taken by the arbitrators before the Court of jurisdiction. In this case, the judge can decide to define the price of the sale and any other related questions and provisions on a case by case basis. Considering the role of *bouche de la lois* that the Italian legal ordinance assigns to the judge, the Court cannot neglect to consider the obligation of ENEL that is imposed by the Bersani Decree in determining the price of the sale.

In economic terms, the judge will have to face a problem of maximizing the total *surplus* deriving from the sale, even in this case, by observing the restrictions imposed by the Bersani Decree. Therefore, we move from a *market* phase, through a hybrid *governance* phase, to a *governance of regulation* phase (and this procedural passage is sanctioned by a law that aims to deregulate the electrical power market).

Given the prediction capabilities of the economic analysis, we can imagine that the Court might order the seller to sell the distribution networks and define the sale price. As a result, ENEL would have no other choice but to either accept the ruling or appeal the decision to a higher authority.

Even in this case, the probability that the legal body sets out a satisfactory sale price is, in my view, fairly low. The Court does not have information relating to the reserve price of the contracting parties nor does it possess the necessary required technical skills (unlike the Board of Arbitrators). Even in this case, the price will be set in an external way and the institutions can create distortions of the bargaining process according to market rules.

Formally, the problem becomes a synthesis of the problems studied in the preceding paragraphs. More specifically, the Court will set the sale price independently (on the basis of and subsequently after hearing the opinion of the appraisers in the office and independents), as in the case of the Board of Arbitrators ($p = \hat{p}$).

¹⁴ The model does not take into account the possibility that the arbitrators may be corrupted by one of the contracting parties. In this case, the sharing rule is reactivated in favour of the whomever corrupts, who can appropriate the entire surplus for him/herself.

At the same time, the Court will be required to apply the law and will require the parties (or one of them, probably ENEL) to conclude the sale. As a result, the Court will define and follow a specific *bargaining rule* that attributes more negotiating power to one of the parties.

The problem thus becomes:

$$(11) \max_p Z = \mu[V(G, \hat{p})] - (1 - \mu)[-v(\hat{p})]$$

where \hat{p} is the *bargaining rule* chosen by the legal body and \hat{p} is the price, both set independently by the Courts. For the sake of simplicity, let's say that $\mu = 1$ (all the bargaining power is attributed by the judge who interprets the Bersani Decree in a literal way, to the purchaser).

The most important condition becomes:

$$(12) \frac{\partial Z}{\partial p} = \frac{\partial V}{\partial \hat{p}} = 0$$

Even in this case, it is not easy to draw conclusions on the signals of the partial derivatives because the price is set independently (and $0 < \text{prob}(\hat{p}) \equiv \text{prob}(p^*) < 1$). However, we can compare this result with the results obtained in the previous paragraphs.

In the market phase, application of the Bersani Decree implies that maximizing the surplus is comparable to maximising the appraisal that the city-owned company makes of the sale, exerting the relationship expressed in the equation (3). As a result, considering that the evaluation of the sale increases as the price decreases, the city-owned company will tend to offer the lowest price, tendering prices that are lower compared with the price expected by ENEL, leveraging its requirement to sell, imposed by the monopoly-breaking law.

In the judicial phase, if the judge applies the law to the letter and chooses $\mu = 1$, then all the bargaining power is granted to the city-owned company as in the market phase. In this phase, however, the tactic of forcing the prices down (which the city-owned company could make in the market phase) is controlled by the judge who might require the parties to implement the law and conclude the sale by defining the times and methods. The judge, however, might also make it more costly to renegotiate the contract for the company or enable the company to use unfair tactics against the seller because the company can be exempted from implementing the ruling by appealing the decision, while in the market phase, the company can be exempted from concluding the contract with a simple refusal.

The result has an ambiguous interpretation. On the one hand, the judge can halt and correct opportunistic behaviour and prevent conclusion of the contract. In applying the law ($\alpha = 1$), the judge applies the provisions relating to the requirement to sell the distribution networks by setting the sale price. The judge can rule both parties to settle the sale. On the other hand, however, if the sale price set does not reflect the evaluations of the parties, then the sentence can create the assumptions for a review of the law, with consequent deferment of the times of implementation of the sale and an increase in the costs for the parties and for the community¹⁵.

The case of ENEL-AEM Milano has had a different sort of development compared with the conclusions given. The parties have appealed the arbitrator's decision and have petitioned for an ordinary judicial examination before the Court of Milan. Afterwards, they finalised the sale out of Court, continuing the Court proceedings only for the portion relating to definition of the price.

In theory, we can explain the agreement for the sale out of Court in light of our economic analysis. Anticipating the sentence to sell *en tous cas* by the judge (a ruling that can imply payment of damages caused by delays), the parties could have decided to save on the cost of settlement and concluded the sale contract. Definition of the price of the sale remains the vexatious question to resolve before the Courts. Even in this case, what remains are the perplexities about the difficulties in independently setting this amount, and the problem can be traced back to the problem handled in the arbitration phase and written in the equation (9).

¹⁵ Formally, let's define a function of *welfare* as:

$$(1) W = Z(\cdot) - C(\cdot)$$

Where $Z(\cdot)$ is the *surplus* deriving from the conclusion of the contract and described in the previous paragraph and $C(\cdot)$ stands for the cost of the contract (due to delays, information gathering, administrative and bureaucratic delays, choice of increasingly complicated procedures, etc...) with $C' > 0$ and $C'' < 0$, standing for costs increasing over time but at a decreasing rate.

$$(2) \text{Max } W = Z(\mu, p, V) - C[K(\mu, p)]$$

Where K is the variable that represents the administrative and institutional costs due to the delay in the sale and, in turn, depends on μ and the price p .

As hypothesized in theory by Williamson (1979) and Coase (1937), we can assume that if the sale is based only on the market mechanisms and came about in the form of a contingent contract, which is concluded with the simple procedure of offer and acceptance, then $C(\cdot) = 0$. The longer the bargaining time and the more complex the procedures, the bigger $C(\cdot)$ becomes because K gradually gets bigger.

5. CONCLUSIONS

This paper has analysed the study of the economic impacts of the provisions under Article 9 of the Bersani Decree, relating to the sale of the ENEL distribution networks to city-owned companies. Special attention has been given to the analysis of the ENEL- AEM Milano case.

The Bersani Decree states that the sale of networks must be made according to "normal market rules" but at the same time, it rules that ENEL is obliged to sell its own distribution network.

Study of the provisions of law, performed through the use of simple analytical instruments inspired by the contract theory, has highlighted several results.

First, the deferment to the private parties bargaining in order to perform the sale turns out to be contradictory because it is counterbalanced and blocked by the legal compulsion to sell. The Bersani Decree influences the bargaining power of the parties by handing it all over to the city-owned company which makes an evaluation of the contract (and respective definition of the price) as low as possible. This stimulates the monopolist to make recourse to a Board of Arbitrators. This theoretical result is supported by the history of the sales. For the larger city-owned companies (such as ACEA Roma, AEM Torino, AMGC Verona), an arbitration ruling was necessary¹⁶.

Secondly, if the arbitrators are not able to set a satisfactory price (a very likely scenario), the contract will not be completed. In this case, the refusal to accept the price proposed by the Board of Arbitrators can also be due to strategic reasons, for which the city-owned company (or ENEL) prefers to defer the conclusion of the dealings (appropriately balancing the costs and benefits of the delay) to obtain a further negotiation of the

¹⁶ For the sale of the networks of Turin (290,000 customers) and Verona (85,000 customers), the respective city-owned companies, not having reached an agreement, have filed a claim for arbitration procedures. The procedure continued before the Board of Arbitrators board.

In the case of Verona, the Board of Arbitrators attributed a value of 108 million Euros to the electricity distribution network of Verona and Grezzana, object of sale by the ENEL group. This evaluation was accepted by AGSM Verona and the sale was perfected.

Regarding AEM Turin, the arbitral procedure closed with the sale of the city network of electricity distribution on the basis of an evaluation of 248 million Euros. Transfer of the networks was perfected on 31 December 2001.

purchase price downward (or upward)¹⁷. And thus, the judicial phase of the contract is opened (AEM Milano- ENEL case).

Thirdly, the magistrate undertakes all the bargaining power that would be granted to the parties because the magistrate has the power to order one or both parties to respect the Bersani Decree and conclude the contract. In this way, the judge can exercise power to block strategic or unscrupulous conduct by ordering the parties to pay the resulting damages. This might explain why AEM Milan and ENEL decided to conclude the sale out of Court. In turn, however, the independent setting of the sale price does not necessarily reflect the evaluations made by the parties and implies the appeal to appraisers, hearings, and research with the obvious conclusion that both parties and society's transaction costs increase.

In general, in my view, Article 9, paragraph 4, has a contradictory content because it creates a series of distortions in the bargaining process, as demonstrated by the economic analysis. The economic theory, in fact, teaches that "bargaining is efficient" (Fudenberg and Tirole, 1991).

The legislator has created a compromising situation. The parties' autonomy takes care of the pre-contractual negotiations, without any authority or state agency intervention. Then, the law requires one of the parties to sell and a series of administrative and legal procedures are defined in the (obvious) case where the parties' autonomy no longer works. Paradoxically, the legislator, a reformer in the competitive sense and an advocate of deregulation, has designed a system whereby the "bureaucratic red tape" of the administrative procedures weigh heavily on the freedom of private economic initiative¹⁸.

Perhaps, the legislator should go further and allow the market to work on its own, without mandating the terms of private companies' transactions, and without including an additional procedural phase (the arbitration phase), when the Italian legal system already foresees every form of judicial protection for the contracting parties of a legal contract achieved in a competitive market.

Such sales all present delays in the times envisaged by the law, delays due to the exercise of opportunistic conduct by the larger city-owned companies, successive reaction by ENEL and resulting establishment of the arbitration and legal procedures (some of which are still in progress, i.e., AEM-Milano vs ENEL). Perhaps a more closely "market-oriented" formulation would have avoided useless extensions and costs in the sale of

¹⁷The model does not take into account the possibility that the arbitrators may be corrupted by one of the contracting parties. In this case, the *bargaining rule* is reactivated in favour of the whoever corrupts, that can appropriate the entire surplus for him/herself.

¹⁸ The paradox of the AEM Milano and ENEL case is that after having carried out all the procedural steps, the sale was finally closed out of Court.

the ENEL-owned distribution networks to the city-owned companies. The main issue, therefore, has to do with how the idea of fair value is determined and whether incentives are right for transfer of assets to more efficient ownership arrangements rather than less.

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