

THE GEORGE WASHINGTON UNIVERSITY
THE MINERVA PROGRAM
THEORY AND OPERATION OF A MODERN NATIONAL ECONOMY

**RESULTS AND PERSPECTIVES OF THE BRAZILIAN
ELECTRICAL SECTOR PRIVATIZATION PROGRAM**

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*Final Paper presented to The
Institute of Brazilian Business and
Public Management Issues-IBI*

WASHINGTON, DC – SPRING 1998

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Presentation

The purpose of this work is to evaluate the results already obtained through the *Programa Nacional de Desestatização do Setor Elétrico* (Brazilian Electrical Sector Privatization Program), essential part of the reforms that have been implemented by the government with the purpose of modernizing the economy of the country, having as a initial mark, the sale of ESCELSA (Espírito Santo Centrais Elétricas S/A), in 1995.

This study will, in only a tangential and complementary way, seek to point out the tendencies and/or perspectives concerning the development of this process - which agenda of privatization for 1998 and 1999 presents an impressive supply of assets for the private sector - given the recognized complexity of the actions involved, and mainly the importance and specificity of the national electrical system.

By the way, Chapter II includes a brief characterization of the Brazilian electrical sector. With data from January/95 (the beginning of the sectorial reform process), the main indicators are shown at level of the electric system, market and agents involved in that sector.

The word privatization must be understood not only as an alienation of assets and/or sale of shareholdings of public, federal, state and municipal enterprises, with or without the transfer of stock control, but also as the group of other operational modalities under the rule of concessions, permissions or authorizations of public services of electric power, that have been undertaken by the private sector over the last three years.

As shown in the Chapter II, the privatization of the electrical sector is within the second stage of the National Program of Privatization. Since it deals with concession of public service, this process becomes even more complex than the first stage of the PND, when the companies of the industry were privatized.

Chapter IV deals with the strategy adopted by the federal government in the privatization of companies of ELETROBRÁS Group and, mainly, in the establishment of an incentive program for the privatization of the state electric energy concessionaires, which has succeeded tremendously.

For so much, it comes being developed a wide program of sectorial reforms, involving the complementation and improvement of the regulatory mark (regulation for a transition period), along with an Electrical Sector Restructuring Project. Chapter VII offers a general vision and perspectives on the subject.

The aim of determining the results of the privatization (*lato sensu*) is, therefore, to measure the global impacts associated to this process of notable transformations under which the Brazilian electrical sector is undergoing, especially given the substitution of public resources in that period.

Therefore, in Chapter V a balance of the revenue obtained by the governments and of the debt transferred to the private sector through the privatization effected in the electrical sector is presented. Chapter VI deals with the quantification of the financial resources allocated and/or actually committed by the private initiative in the sectorial investments (undertakings of electric power generation and plans of expansion of the privatized concessionaires) in addition to other increase in economic efficiency resulting from the process of privatization.

Lastly, this Study presents, in Chapter VIII, some remarks and/or comments on the current reality lived by the Brazilian electrical sector, marked by wide opening of its market, elimination of monopolies and State's withdrawal from the functions that are typical of an entrepreneur.

I. Introduction

Privatization is a matter in debate throughout the world. Within the wide bibliography available on the subject, the discussions begin with the (relatively recent) origin of the word “privatization” and its meaning in several countries. This discussion always has, as a center focus, the evaluation of the efficiency of the State as the organizer and provider of services as compared to the performance of the respective private sector. That results in a new way of looking at the needs of society and of rethinking about the role of the government in fulfilling those needs.

Since the term “privatization” was given wide currency by the sale of British Telecom in 1984, many developing countries have launched privatization programs, and many more are in the process of joining the club.

In the Brazilian case, the legal and institutional bases of the current privatization program were launched in the beginning of the 1990s. Without properly delineated a program, the first privatization efforts in the 1980s were concentrated on attempts to contain the expansion of the state productive sector. Most of the firms sold in the eighties had originally been private concerns and in only one case did the sale value exceed US\$ 100 million. The sale of USIMINAS (the first one within the privatization program in 1991) alone brought in twice as much as all the sales of enterprises carried out in the previous decade.

Given methodological reasons and thematic delimitation, the present study will not expose the broad and complex process of definition, establishment and development of the so-called⁽¹⁾ First Stage of the National Program of Privatization - PND.

Accordingly, when dealing exclusively with the privatization of the Brazilian electrical sector, this Final Paper will be portraying a new political-institutional and socioeconomic scenario that

⁽¹⁾ Some authors, however, refer to this period as a Second Stage of the Brazilian Program of Privatization. They prefer to consider as the First Stage, the one that took place in the 80s, which didn't constitute, as mentioned, a Program. It dealt strictly with the return to the private initiative of those enterprises that, due to several problems, were captured by the Union through BNDES (what was called “Hospital Operation”).

has arisen since January 1995, with the inauguration of the Fernando Henrique Cardoso administration.

As it will be seen in the following chapter, the document will go from the enunciation of the new philosophy, principals and macro-objectives of the PND, constituent of its Second Stage, without, therefore, getting into consideration and/or analysis of the evolving factors of the process and of the important advances in connection to the preceding situation.

II- Privatization of the Electrical Sector in the context of the Second Phase of the Brazilian Privatization Program – PND

The National Privatization Program (PND-Programa Nacional de Desestatização) is an essential part of the reforms that have been implemented by the government in order to modernize the Brazilian economy.

The PND plays a key role on such a modernization as expressed in the following fundamental objectives:

- allows to change the role played by the State, transferring to the private sector activities improperly exploited by the public sector and focusing its actions and resources - known to be scarce on social areas;
- reduces the public debt, thus helping the Government perform a fiscal adjustment;
- allows the retake of investments in privatized companies and activities, with resources from their new owners;
- fosters the market competition, contributing thereby to an increase in the quality of the goods and services offered to the population;
- strengthens the stock market, with a greater capital pulverization.

The Cardoso Administration improved the PND's decision process by creating the cabinet level National Council on Privatization (CND) and by making it directly accountable to the President.

This new structure enlarges the scope of, and gives more flexibility to the PND without damaging its technical operations nor diminishing its transparency. The CND has been able of streamlining

decision implementation because the members of the Council are officials responsible for the process within their own ministries.

The National Privatization Program (PND) has been making an important contribution to the country since its creation in the early 1990s. The federal government initiated the First Stage of the Program through the sale of state enterprises in the industrial sector and specially steel, petrochemical and fertilizer companies. This process is also known as **privatization of the Industrial and Productive Sector**. Started in 1991 with the sale of USIMINAS, this first stage of PND was only concluded with the FHC administration, with the alienation of remaining assets in the petrochemical industry and, mainly, with the sale of stock control of Companhia Vale do Rio Doce – CVRD (one of the largest mining company if the world).

Starting in February of 1995, with the Law of Public Services Concessions, the Government began the so-called Second Stage of the National Privatization Program. This new phase consists of transfer of enterprises and/or public service concessions to the private sector, with focus on national infrastructure in the areas of electric power, communications and transportation.

Brazil could no longer permit large short falls in infrastructure investments, it had to look for partners in the private sector. Opening these areas to new entrepreneurs Brazil has radically altered its view of the proper role of a modern State. No longer is the government seen as a prime producer of goods and services, but rather as a regulatory agent that should focus its resources on the country's social needs.

The privatization program has entered a new, more dynamic and complex phase. This Second Stage of the PND includes assets of much greater material significance and require wide processes of sectorial restructuring. Furthermore, this modality of privatization - public service concession - involves greater commitment with a specific activity, subject to strong state regulation, while it is exposed to public judgement and demand.

The privatization of ESCELSA, the electricity distribution company in the State of Espírito Santo, in July 1995, was a milestone of the resumption of the privatization program by the

Cardoso Administration. At the same time, it represented the first experience of privatizing a public service, involving a concession regime.

Thus the process of privatization of the Brazilian electrical sector started during within the scope of the Second Stage of the PND. From this and as it will be clearly described in Chapters V and VI of this study, the participation of the private initiative in this sector has taken place with growing vigor and interest. The process already presents aggregate results of great magnitude and materiality, which place it among the greatest programs in this sector carried out in the world in recent decades.

III - Brief characterization of the Brazilian Electrical Sector in 1995

III.1 – Power System

The country's territorial extension and its prevalent power generation from hydraulic sources located in different basins, add to a peculiar electrical system in Brazil⁽²⁾:

- a great portion of the generated power originates from large-size power plants, backed by reservoirs with sufficient capacity to provide a yearlong regularization, by storing water to be continuously used over the years, during periods of low affluence;
- a high degree of electrical interconnection among the sub-systems of the various hydrographic basins, which optimizes the exploitation of the available potential, though requiring a highly complex operational management;
- considerable distances between generating sources and main consumption centers, resulting in very long high-voltage power transmission systems; the interconnection of hydroelectric potentials also forces the transmission system to ensure an optimized system operation;
- the hydrological diversity of the hydrographic basins, with differing flow distributions over the year.

The **rated installed generation capacity was of 55,512 MW**, in 1995, of which 50,687 MW originate from hydraulic sources and 4,825 MW from thermal sources.

⁽²⁾ Other countries which have notable hydraulic generation, such as Norway and Canada, show significant differences when compared to the Brazilian system. For example, Norway doesn't have the concentration of plants of high capacity capable of providing yearlong regularization as those in Brazil. There is complementation by thermal sources from the other Scandinavian countries (Sweden, Finland, Denmark). This allows exportation of surplus and importation in the years of droughts. In Canada, each province independently operates its system and the complementation by thermal sources is considerable, including importation of power from the United States in the winter and exportation in the summer (*Apud Panorama Setorial, Gazeta Mercantil - Energia Elétrica - Vol. I, p.31*).

In 1995, the **gross generation capacity reached 260,678 GWh**, complemented by 35,208 GWh from Paraguayan generation from ITAIPU and 382 GWh from auto-generators. Over 96% of the total energy was generated from hydroelectric schemes.

On the other hand, the Brazilian generation system (considering all sources) is equivalent to 33.5% of the capacity of Latin America and the Caribbean (including Mexico), or to 48.7% when referred only to hydraulic source.

The transmission system is comprised of two large interconnected subsystems, independent between themselves⁽³⁾: the South/Southeast/Midwest and the North/Northeast, and by isolated systems located in the North, and Midwest areas.

In 1995, the **total extension of the transmission system** (lines with voltage above 69 kV) **was greater than 150,000 km**, while the **distribution network** of the country **reached about 1,600,000 km**.

The South/Southeast/Midwest system services 80% of the national consumption covering, through a dense electrical network, the States of São Paulo, Minas Gerais, Rio de Janeiro, Espírito Santo, Paraná, Santa Catarina, Rio Grande do Sul, Mato Grosso do Sul and Goiás, and part of Tocantins and of Mato Grosso. It owns 73% of the country's installed capacity.

The North/Northeast system services part of the States of Pará, Tocantins and Mato Grosso and fully covers the States of the Northeast, concentrating mainly on the shoreline. It is responsible for 24% of the total installed capacity and for 17% of the national consumption.

The isolated systems service the States of Amazonas, Acre, Rondônia, Roraima, Amapá, the West of Pará and the North of Mato Grosso, corresponding to 3% of the installed capacity and the country's total consumption. These are characterized by diesel fuel and fuel oil thermal plants and by a small hydroelectric stations to service Porto Velho and Manaus. Production and

⁽³⁾ The interconnection of these two subsystems is being done with the construction of the LT 500 kV Imperatriz/MA - Brasília/DF (1000 km in extension e capacity to transport 1000 MW) to be completed in December/98. The linking North/South represents 98% of the total consumption electric power in the country.

distribution costs are high as a result of the thermal origin and the market dispersion. The operational difficulties result in a low servicing quality and in a situation of rationed supplies, which acts as an inhibiting factor toward the development of the economical activities in the area.

III.2 – Markets

As already mentioned, the market is highly diversified: States in Southern and Southeastern regions present great consumption density due to strong industrial activity. By contrast, other States present low consumption density due to less intense economical activity and population.

The country's **total electric power consumption was 249,857 GWh** in 1995 (to **35 million of consumers**), indicating a growth rate of 6% in 1994, which confirms the last fifteen year trend of more intensive growth in relation to economical growth rate. In 1995, the industrial and trade segments were responsible for 60% of the power consumption, thus confirming the market behavior of the last ten years. Specific residential consumption is low at 2,000 kWh and the household market only accounts for 25% of total sales, but is growing rapidly following introduction of the *Plano Real*.

As to the regional participation in this market, 60% fell to the Southeast Region, 14.7% to the South Region, 15.8% to the Northeast Region, 5% to the North Region and 4.5% to the Midwest Region.

The size of the sector is also reflected in its **revenues** which **totaled US\$ 16.2 billion in 1995**, giving average unit revenue of US\$ 65.83 per MWh sold. At low voltage the average tariff was US\$ 86.0 per MWh sold.

III.3 – Agents

Electrical Service is provided by concessionaires, that is, holders of concessions of the Conceding Authority (the Union) for the exploitation of the activity. In 1995, the state participation in the electrical sector was, in all aspects, hegemonic, when out of the 62 existing

concessionaires, 37 were under the stock control of the Union and/or the States. According to Table 1, these two State Agents, together, were responsible for almost all the generation and distribution of electric power in Brazil (98%), while about 25 small private companies had a derisive 2% participation in this market.

Table 1 - Approximate market shares in the electricity sector (em 1995 - %)

Ownership	Generation	Transmission *	Distribution
Federal	62.0**	29.0	19.0
State	36.0	60.0	79.3
Private	2.0	11.0	1.7***

Source: Ministry of Mines and Energy

* percentage of assets in km.

** includes the share of energy from Itaipu imported from Paraguay.

*** before privatization of ESCELSA.

In the institutional plan, the electrical sector could be depicted as follows, in 1995:

- **distribution utilities:** some 31 companies⁽⁴⁾ that are primarily responsible for distribution and retailing of electricity under public service concessions covering all or a substantial part of one of the 26 States and Federal District.
- **vertically integrated utilities:** five State level companies which have a high degree of vertical integration (CEMIG, COPEL, CEEE, CESP, and CELG⁽⁵⁾). These companies account for some 30% of available energy.
- **the four regional generation/transmission subsidiaries of Eletrobrás:** Furnas, operating in the SE/CW, is also responsible for the Angra nuclear power station (including Stage II and III

⁽⁴⁾ Before July 1995, just State of Tocantins had a private utility.

⁽⁵⁾ In September 1997, the main hydroelectric power plant of CELG (Cachoeira Dourada) was privatized. The buyers were ENDESA/Chile (60%); EDEGEL/Peru (20%); and Investment Funds (20%).

which are still under construction), although these were transferred to another Eletrobrás subsidiary, Nuclen; Eletrosul owns hydro and thermal plants in the South; CHESF owns the hydro plants on the São Francisco river in the NE; Eletronorte is responsible for some of the integrated generation/transmission system in the North and Midwest as well as many of the larger isolated systems in the North. Together these companies account for some 38% of available energy.

- **Itaipu:** the bi-national Itaipu company, responsible for the 12,600 MW Itaipu dam, which Brazil shares with Paraguay and accounting for 25% available energy (Brazil's 50% share plus purchases from Paraguay).
- **Eletrobrás** currently acts as a holding company and sector financing agent as well as being responsible for many of the integrative functions in the sector. Eletrobrás is also responsible for the CEPTEL R&D facility. As the main federal company in the sector, Eletrobrás to some extent operates as an extension of government, although 25% of its share capital is in private hands.
- **other entities:** a number of smaller entities including some 25 more public and private municipal concessionaires; small rural electricity co-operatives; auto-generators which in Brazil may have load remote from the generation site, provided that it is owned by the same company. In total, auto-generators account for some 5% of available energy.
- **Government:** the Ministry of Mines and Energy and within it, the Secretariat of Energy (MME/SEN) who are the agents of the federal government responsible for the policy formulation in the sector.
- **Regulatory authorities:** the National Department of Water and Energy (DNAEE) which became the recently authorized independent regulatory entity for the sector, ANEEL, and other Departments in the Ministry with an interest in the sector, especially DNDE responsible for energy conservation, renewable energy and rural electrification.

IV- Stages and Strategies of Development of the Brazilian Electrical Sector Privatization

Thanks to Laws 9.987/95 (the Public Service Concession Law) and 9.074/95 (complementary concession law for electric power sector), which spell out the rules for concession bidding, the controlling interest in ESCELSA and LIGHT was transferred to private owners and the relations between conceding authority and concessionaires were regulated via a concession agreement. These two enterprises (essentially distributors of electric power), controlled by ELETROBRÁS, had been included in the PND in June 1992 (still under the Collor Administration).

With this, the federal government (the Cardoso Administration) started the privatization of the Brazilian electrical sector.

The positive outcome of these first two privatization was fundamental to overcome the inertia of the process and the resistance of the minority groups, as well as to minimize the effects of the so-called regulatory risk.⁽⁶⁾

For very peculiar reasons (along with attempts of sectorial restructuring that failed in recent past) and unlike other countries, such as Chile, England, Argentina and Peru, where a legal and regulatory scheme was set up and then the sale of assets began, the privatization of the electrical sector in Brazil started without such process being concluded. In the absence of a complete set of rules, each sale was backed by a contract of concession that sought to minimize risks for the new controllers.

⁽⁶⁾ Some analysts realized that it would not be possible to attract investors and/or large foreign operators without having the Brazilian electrical sector fully restructured. The government's view was that the processes of privatization and complementation of the regulations (defined by the Laws of Concessions) could (and should) happen simultaneously. The regulatory risk could not be totally avoided, since rules, which are clear and extensive enough to cover all the possible situations that lie ahead so that the investor would not incur any risk, could not be established

Relatively to the criterion of readjustment and revision of tariffs, the “regime of service by the price” internationally known as *price-cap* was adopted⁽⁷⁾: when the initial rate is set, an automatic rule for its readjustment is established, which will prevail for a certain number of years, as well as a rule of revision, which will be done by the conceding authority

In May 1995, with a clear indication of interest in expanding privatization in this sector, the federal government included the enterprises of the System ELETROBRÁS (the regional generators/operators FURNAS, CHESF, ELETROSUL and ELETRONORTE) in the National Program of Privatization (PND). The binational enterprise Itaipu – 12,600 MW (Brazil/Paraguay Treaty) and the nuclear plant Angra I – 700 MW could not be included in the PND due to constitutional restraint.

The federal generation system in process of privatization totals about 26,000 MW (45% of the total capacity installed in the country), distributed as follows: ELETROSUL (3,222 MW); FURNAS (7,466 MW); CHESF(9,704 MW) and ELETRONORTE (5,498 MW).

This decision has implied the restructuring of the entire electric sector, due to not only the key role played by ELETROBRÁS and the importance of its plants and transmission network, but also in order to obtain fair amounts for the assets to be sold.

The evolution of the proceedings of sectorial restructuring, its current stage and tendencies for the future will be dealt with in Chapter VII of this study. It can be anticipated that the federal enterprises (subsidiaries of ELETROBRÁS) will be divided by segments (generation and transmission), but only the generation segment will be privatized in this stage.

In the beginning of 1996, the federal government took another important step for the expansion of the privatization process, especially in the public service sector. The State Privatization Stimulating Program – PEPE was created having as macro-objectives the restructuring and fiscal

⁽⁷⁾ The basic notion of this regime is to create a automatic mechanism of incentive to increase the productivity of the concessionaires, allowing them to retain the gains originating from this increase in the intervals between the revisions of the tariffs. At the same time, it should be avoided that only the enterprises have benefits, enabling transfer to consumers of the increase in productivity, by reducing the tariffs at the time of the revision.

adjustment of the States, through: (i) modernization of tax collection systems and expenditure controls; (ii) downsizing of civil servant contingent; (iii) privatization and public service concessions; (iv) agreement to a targeted fiscal revenue; (v) reduction or spreading out of state's indebtedness.

Under the leadership of BNDES, the incentives and conditions of the PEPE include:

- promoting the resolution of the States' financial status, encouraging the development of privatization projects, especially in regards to electric energy distribution companies, by means of operations to advance funds against future amounts to be collected from the sale of the states' assets;
- offering operations for the anticipation of funds to States only when the companies show economic value compatible with the amount of the desired operation and good economic & financial standing and features which permit their cleansing by means of liability restructuring, account re-conciliation, etc;
- offering assistance to the development of privatization projects in the state administration sphere;
- promoting the valuation of the state utilities' shares based upon their market value, associated with a simplified economic assessment based on discounted cash flow. Should there be no market-traded shares, comparisons with other companies which do place shares in stock exchanges will be made;
- determining that the period to render privatization program feasible be from 1 to 2 years, after which the States will be obliged to fully return the amounts paid in advance;
- demanding that the sureties of fund advancement operations be, preferably, the pledge of shares amounting to the control of the company to be privatized, in addition to others;

BNDES having specific powers to perform sale of assets, should the state fail to honor the commitment made.

Still in the first semester of 1996, some operational assets of the subsidiaries of ELETROBRÁS were included in the PND (Federal Privatization Program) for immediate privatization, which sale could be done independently of the process of transfer of stock control of these federal concessionaires. The isolated systems of Manaus and Boa Vista, which belong to ELETRONORTE and expected to be privatized in 1998, are part of this group of assets.

Following the example set by the federal government or prompted by the State Privatization Stimulating Program, several state governments have embarked on similar privatization programs, such as Rio de Janeiro (CERJ), Bahia (COELBA), Mato Grosso do Sul (ENERSUL), Sergipe (ENERGIPE), Mato Grosso (CEMAT), Rio Grande do Norte (COSERN), among others. Two States have been doing privatization with restructuring and segmentation of its power sector: São Paulo, which has already sold one of three big companies (CPFL) and has foreseen the sale of the others two one in 1998, and Rio Grande do Sul, which sold about 2/3 of the distribution facilities of CEEE. Some states have chosen partial privatization with CEMIG (Minas Gerais) offering a minority interest to a strategic investor and CELG (Goiás) divesting its main generation asset (hydro scheme of Cachoeira Dourada). Chapters V and VII of this Final Paper contain detailed information about the privatization of concessionaires of electric power already performed (by April/98) and of those planned for the years of 1998 and 1999.

The policy adopted by federal government, particularly by BNDES, supporting state utilities' privatization, in addition to offering solutions to eventual default situations and unviabilization of the required investments, has aimed to overcome the chronic payment default by such concessionaires for the respective energy supply, thus anticipating the solution pertaining to the assurances demanded by investors in the privatization and generation expansion processes.

On the other hand, new investment projects have also been the subject of private participation, as showed in detail in the chapter VI. Many of the hydro projects that had been paralyzed due to lack of finance in the public sector have been reactivated by partnerships with the private sector,

most often in the form of auto-producers. Public competition has also been held to build new gas-fired power stations, such as Uruguaiana (RS), Cuiabá (MT) e Corumbá (MS), and others are expected soon. ANEEL⁽⁸⁾ has also been developing a program of public tenders for new hydro concessions, involving 111 undertakings (about 34,000 MW of capacity and US\$ 36.5 billion of investments).

Despite the important abundance of private resources in sectorial expansion, the state investments still have been extremely significant. In this phase the transition, the government realizes, it's impossible to renounce the public resources, given the immediate need to conclude the constructions for generation and the viabilization of undertakings that are not in the private sector's best interest. Thus, government investments have been directed to fulfill the immediate demands needed to face the difficulties of the sector, subject to severe restrictions in the expansion of its generation system, given the decrease in the State's investment capacity. Linked to this scenario, are the high rates⁽⁹⁾ of market growth (an average of 6% a year) and the restrictions of unfavorable hydrological cycles, exacerbated by the effects of *El Niño*.

⁽⁸⁾ Federal regulatory agency, created by law and authorized by the President of the Republic on October/97, replacing DNAEE.

⁽⁹⁾ This has been one of the main factors of attraction and interest by the enterprises in the electric sector: the market potential, since power consumption tends to continue growing at expressive rate over the following years. For the North-American and European operators, the developing countries represent an unimaginable growth potential in their countries, where the growth is very slow. Another important factor is the improvement potential within the enterprises. With a high rate of loss of electricity and reduced number of consumers per worker, there is possibility of expressive gains in efficiency (*Apud Panorama Setorial, Gazeta Mercantil – Energia Elétrica – Vol. I*).

V - Results obtained in the Privatization of Assets of the Electrical Sector (period: July/95 to April/98) and Schedule of new Privatization

The income accrued with the Brazilian Electrical Sector Privatization Program until April 15, 1998 was US\$ 18,306 million. Added to the US\$ 4,070 million debt transferred to the private sector the grand total proceedings amounted to US\$ 22,376 million. Table 2 and Chart 1 below show these data in detail.

Table 2 - Balance of the Brazilian Electrical Sector Privatization Program

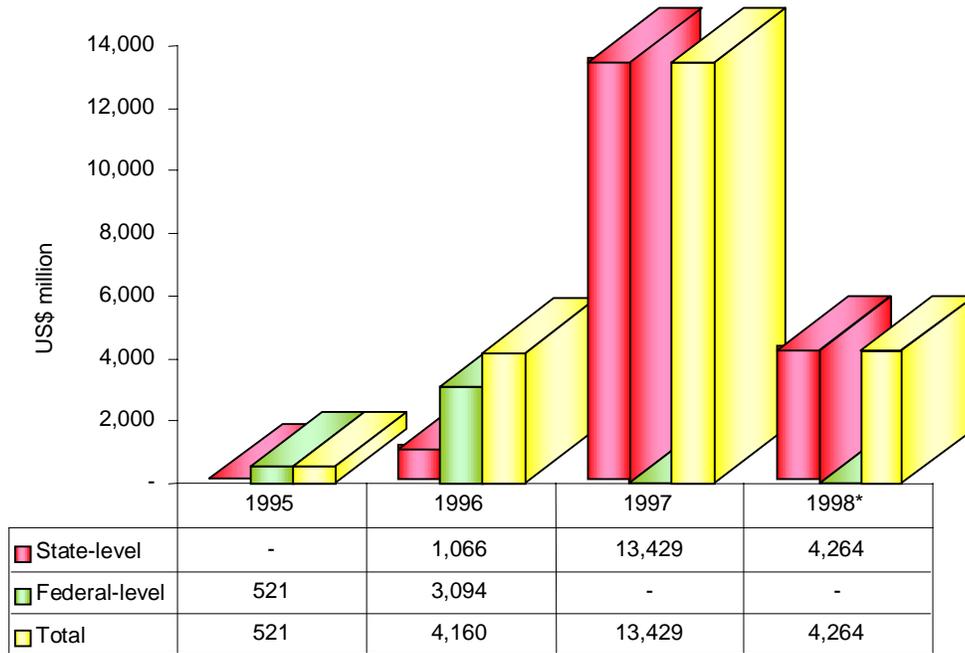
Cumulative Results - July/95 to April (15 th)/98						US\$ million	
PROGRAM/ENTERPRISE	OFFER DATE	CASH (a)	OTHER CURRENCIES (b)	SALE PROCEEDS (a+b)	DEBT TRANSFERRED	GRAND TOTAL	
Federal Privatization Program (PND)							
<u>Federal Enterprises or Assets</u>							
ESCELSA - Auction	Jul/95	258	128	386	2	388	
- Offer to Employees	Aug/95	10	5	15	-	15	
- Residual Participation	Sept/97	119	-	119	-	119	
LIGHT - Auction	May/96	1,489	782	2,271	586	2,857	
- Offer to Employees	Jul/96	167	71	238	-	238	
PND Total		2,043	986	3,029	588	3,617	
State Privatization Program							
<u>Privatized Enterprises</u>							
CERJ - Auction	Nov/96	577	10	587	364	951	
COELBA - Auction	Jul/97	1,598	-	1,598	213	1,811	
UHE Cachoeira Dourada/GO - Auction	Sept/97	714	-	714	140	854	
CEEE - Norte/Nordeste - Auction	Oct/97	1,486	-	1,486	149	1,635	
CEEE - Centro-Oeste - Auction	Oct/97	1,372	-	1,372	64	1,436	
CPFL - Auction	Nov/97	2,731	-	2,731	102	2,833	
ENERSUL - Auction	Nov/97	565	-	565	218	783	
CEMAT - Auction	Nov/97	353	-	353	461	814	
ENERGIPE - Auction	Dec/97	520	-	520	40	560	
COSERN - Auction	Dec/97	606	-	606	112	718	
COELCE - Auction	Apr/98	868	-	868	378	1,246	
ELETROPAULO Metropolitana - Auction *	Apr/98	1,777	-	1,777	1,241	3,018	
<i>Subtotal - Privatized Enterprises</i>		<i>13,167</i>	<i>10</i>	<i>13,177</i>	<i>3,482</i>	<i>16,659</i>	
<u>Sale of Minority Participation</u>							
COPEL	Set/96	87	-	87	-	87	
	Mar/97	213	-	213	-	213	
COELCE	May/97	92	-	92	-	92	
CEB	Apr/97	74	-	74	-	74	
CEMIG	May/97	1,053	-	1,053	-	1,053	
COELBA	Nov/96	28	-	28	-	28	
	May/97	126	-	126	-	126	
ELETROPAULO	Dec/97	427	-	427	-	427	
<i>Subtotal - Minority Participation</i>		<i>2,100</i>	<i>-</i>	<i>2,100</i>	<i>-</i>	<i>2,100</i>	
State Total		15,267	10	15,277	3,482	18,759	
GRAND TOTAL		17,310	996	18,306	4,070	22,376	

Source: BNDES

*The Eletropaulo's auction was suspended by judicial determination on the same date.

Chart 1

Brazilian Electrical Sector Privatization - Annual Evolution

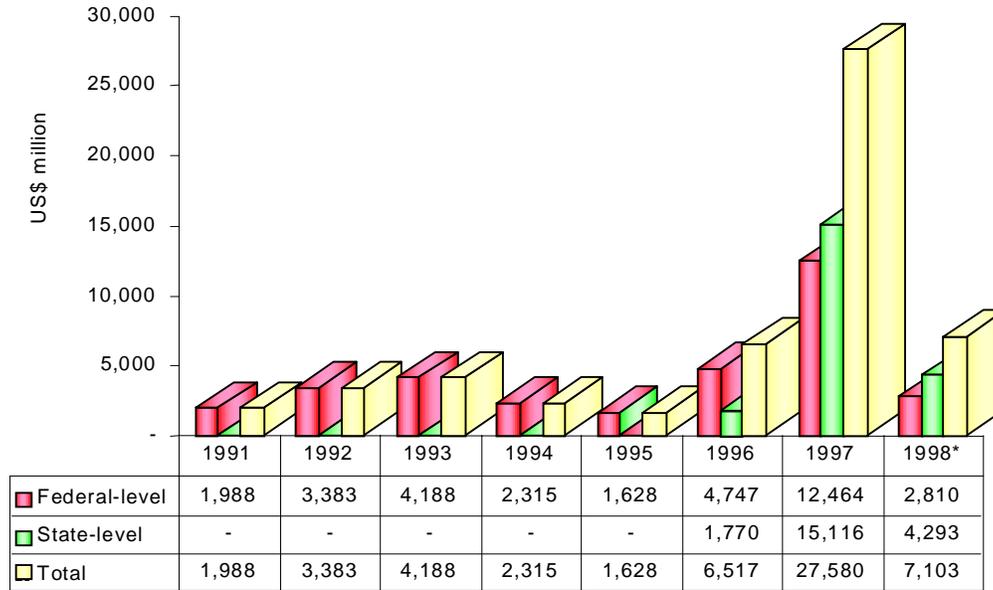


Source : BNDES
* until April 15, 1998

The cumulative results of these operations of sale of stock participation and assets in the electrical sector (US\$ 22,376 million) correspond to almost the double of the total amount reached by the National Program of Privatization - PND in the period of 1991-1994 (US\$ 11,814 million, out of which US\$ 8,608 million in revenue and US\$ 3,206 million in transferred debt). To illustrate this, the overall cumulative results of the privatization (lato sensu) in Brazil in the period of 1991-1998 are shown in Chart 2 and Table 3 below.

Chart 2

Brazilian Privatization Program - Annual Results



Source : BNDES
* until April 15, 1998

Table 3 – Brazilian Privatization Program – Cumulative Results (1991 – 1998*)

	Number of Companies	Sale proceeds	Debts transferred	TOTAL
Federal (PND)	56	17,955	8,119	26,074
State	22	17,697	3,851	21,548
Telecoms (Band - B)	9	7,544	0	7,544
Grand Total	87	43,196	11,970	55,166

source: BNDES
* until April, 15th, 1998

On the other hand, it is important to highlight the significant currency participation (cash) in the revenues obtained with the sale of assets in the electrical sector vis-à-vis the other currencies used for payment. Unlike the first phase of the PND (privatization of the metallurgical, fertilizer and petrochemical sectors), which was marked by the presence, in the period of 1991-1994,⁽¹⁰⁾ of other currencies such as government-secured debt, Siderbras debentures and Privatization Certificates (83% versus 17% in cash), the revenues in cash obtained with the privatization of the electrical sector represent about 95% against only 5% in other forms of payment.

With the privatization - with transfer of stock control - already realized in the electric power distribution segment (13 enterprises, 2 being federally owned and 11 state owned), about 46% of the Brazilian market became assisted by the private sector, compared to 1.7% in 1995. This means, in other words, that the amount of power provided by the privatized enterprises is equivalent (in terms of MWh) to 1,9 times the total electric energy's markets of the other Brazil's partners in the MERCOSUR (Argentina, Uruguay and Paraguay). Table 4 shows detailed information regarding the common shares sold to the buyers/shareholders of such electric power distribution companies and the premiums (overprices) reached in the respective auctions.

⁽¹⁰⁾ Data obtained from the Activity Report 1996-PND/BNDES, p.9.

Table 4 – Electricity Distribution Companies Privatized from July 1995 on

Company	Offer date	Market Share (%)	Common Shares Sold (%)	Premium (%)	Buyers / Shareholders
ESCELSA	7/11/95	2.02	78.72	11.78	IVEN (52.27%), GTD (25%), Employees (1.45%)
LIGHT	5/21/96	8.38	60.44	0	EDF (11.3%), AES (11.3%), HOUSTON (11.3%), BNDESPAR (9.1%), CSN (7.2%), Employees (10%)
CERJ	11/20/96	2.24	70.26	30.27	ENERSIS (21.5%), CHILECTRA (20.66%), EDP (21.07%), ENDESA (7.03%), Employees (7.81%)
COELBA	7/31/97	3.04	71.14	77.37	IBERDROLA (39%), Banco do Brasil (44%), PREVI (5%), BBDTVM (6.5%), Employees (5.5%)
CEEE(N/NE)	10/21/97	2.22	99.83	77.33	VBC (30.2%), Community Energy Alternatives (30.2%), PREVI and BB funds (30.25%), Employees (9.08%)
CEEE (CO)	10/21/97	1.74	100.00	88.28	AES (90.91%), Employees (9.09%)
CPFL	11/06/97	6.54	67.60	70.11	VBC (45.32%), PREVI (38%), Bonaire Participações (16.68%)
ENERSUL	11/19/97	0.91	84.20	83.80	ESCELSA (92.32%), Employees and Pension Funds (7.68%)
CEMAT	11/27/97	0.87	96.27	21.08	Vale do Paranapanema (55.7%), INEPAR (30%), Employees (10.5%)
ENERGIPE	12/03/97	0.54	91.80	95.05	Cataguazes Leopoldina (85.7%), Pension Funds/ Employees (14.3%)
COSERN	12/12/97	0.83	80.20	73.61	COELBA (50.3%), Guaraniãna (25.2%), Pension Funds (4.8%)
COELCE	4/02/98	1.73	82.69	27.2	DISTRILUZ: ENERSIS (26%); ENDESA (37.5%) and CERJ (35.5%)
ELETPAULO - Metropolitana	4/15/98	12.68	74.88	0	LIGHT (100.0%)
TOTAL		43.74			

As far as the results obtained, the privatization of the Brazilian electrical sector (separately) is about 20% superior to those obtained in the entire privatization program in Argentina (US\$ 18.8 billion, in the period of 1990-1994); it corresponds to 9.7 times the total revenue of the privatization program in Chile (US\$2.3 billion, in the period of 1974-1989) and it represents about 95% of the overall results reached in the privatization program in Mexico (US\$ 23.4 billion, in the period of 1984-1993)⁽¹¹⁾.

Table 4 also shows an expressive evolution in the premiums obtained in the privatization auctions of the distributors during the period considered. Among other factors, these results are due to: (i) the implementation of countless mechanisms of the Laws of Concessions (which will be covered in Chapter VII), defining rules and completing the new configuration of the Brazilian electrical sector; (ii) the growing improvement of the bills of sale and the respective contracts of concession, especially concerning the “price cap” regime of tariff; (iii) the incitement in the competition at each new auction mainly by the operators interested in the expansion of their market share (in the case of the domestic companies) or in entering the Brazilian market (in the case of the foreign enterprises) and thus willing to pay the so-called “toll”.

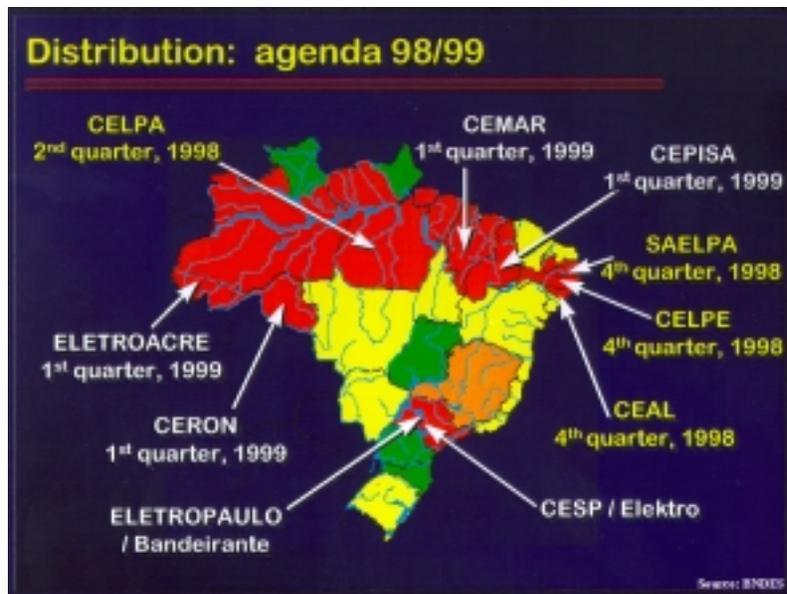
Going against the expectations of reputable analysts, the overprices in the auctions have remained at significantly high levels, even after the stock market crisis in Southeast Asia and its repercussion in the international financial market. The transfer of the stock control of CPFL, carried out on 11/09/97, could test and confirm the vitality of the electrical sector privatization program. The significant gains obtained in the value of the sale of CPFL and the high premium reached at that auction were ample evidence that investors still maintained full confidence in the Brazilian Privatization Program. Besides, the price paid for the company was the highest paid for

⁽¹¹⁾ Sources: for Argentina, communication from the Subsecretaria de Privatizaciones, Ministerio de Economia y Servicios Publicos; for Chile, Hachette and Luders (1993); for Mexico, communication from the Unidad de Desincorporacion, Secretaria de Hacienda y Credito Publico. *Apud* Armando Castelar Pinheiro and Ben Ross Schneider in the Paper *The Fiscal Impact of Privatization in Latin America (Text for Discussion no. 354, p. 5)*. Argentina's privatization program included: the national airline, banks, railways, fuel, natural gas, electricity, telecommunications, ports, water and sewerage services, and manufacturing including steel, various assembly operations and defense-related industries. *Apud* Hafeez Shaikin in the paper *Argentina Privatization Program: a Review of Five Cases. Private Sector Department. The World Bank, p.1.*

an electricity utility so far, according to figures relating to the number of megawatts sold, net operational revenue, and total number of consumers⁽¹²⁾.

With the sequence of the privatization of the state concessionaires, supported by BNDES and ELETROBRÁS⁽¹³⁾, as agenda foreseen in the Figure 1 below, it is estimated that the private participation in the segment of distribution of electric power will reach about 70% of the Brazilian market, already by the end of 1998.

FIGURE 1 – Power Sector : Agenda 1998/1999 – Distribution



The year of 1998 will probably become a landmark in the privatization of the Brazilian electrical sector. After the restructuring of ELETROBRÁS System, by Act (*Medida Provisória*) 1.531-16/98 (which will be discussed in Chapter VII), the sale of federally owned generators will be

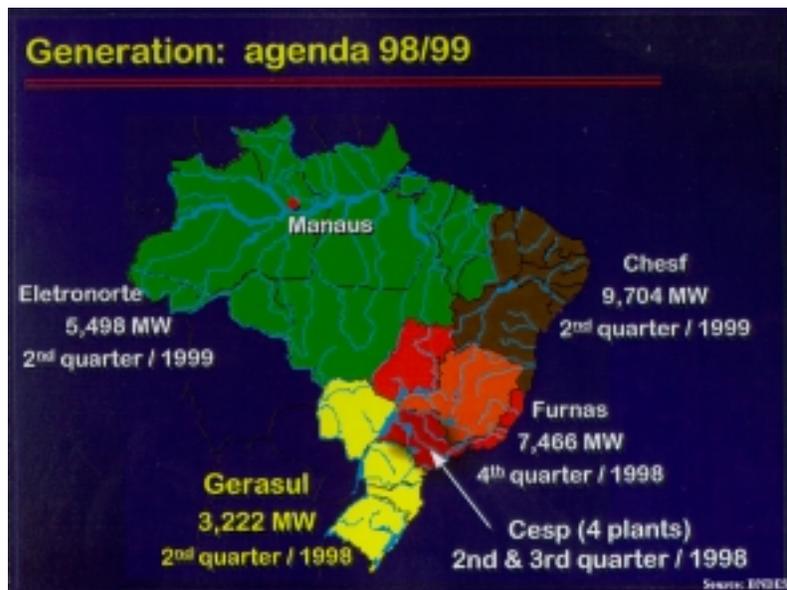
⁽¹²⁾ Statement made by the former President of BNDES (Brazilian Development Bank), Luiz Carlos Mendonça de Barros, after the auction of the CPFL.

⁽¹³⁾ Within the State Privatization Stimulating Program, ELETROBRÁS has been acting actively to make viable and to accelerate the privatization of the state distributors, in harmony and partnership with BNDES. In this period, the accounting of the debt of the electrical companies of the State of São Paulo (that reached US\$ 2.8 billion) and the normalization of the intra-sectorial financial flows occurred. By means of contracts established with the several state governments, ELETROBRÁS shares, presently, the administration of CELPA (Pará), CEAL (Alagoas), CEPISA (Piauí) and CERON (Rondônia), seeking the dealers' administrative-financial sanitation of the distributors and their privatization. Among the companies already privatized, ELETROBRÁS promoted identical procedure in ENERSUL (Mato Grosso do Sul), CEMAT (Mato Grosso), COSERN (Rio Grande do Norte) and ENERGIPE (Sergipe).

started. Also, the alienation of state owned generation assets (started with Cachoeira Dourada Hydroelectric Plant, in Goiás) will follow.

As showed by Figure 2 below, the auction of GERASUL (enterprise that resulted from the break-up of ELETROSUL and that combines generating plants totaling 3,222 MW) will take place in the first semester and that of FURNAS - Generation (plants gathering 7,466 MW) is expected to be held in the second semester of 1998. CHESF (assets of 9,704 MW) and ELETRONORTE (5,498 MW) will be privatized in 1999.

FIGURE 2 – Power Sector : Agenda 1998/1999 – Generation



In the state's sphere of action, the sale of CESP generating system (10,000 MW), expected for the 3rd and 4th quarter of 1998, has a special meaning for the privatization program in this segment. It will mean, in fact, the deverticalization of the electrical sector in the State of São Paulo, as commended by the Concessions Law. It is expected that this event encourage similar initiatives in other States, where the concessionaires still retain a significant generating system.

VI – Other Impacts of the Privatization of the Brazilian Electrical Sector

VI.1 - A new Model of Financing of the Sectorial Expansion - Allocation of Private Investments

Over the past 3 years, the volume of resources already applied by the private initiative in the electrical sector, not computing the privatizations, has reached more than US\$ 10.6 billion, revealing the great potential for its participation in the sectorial expansion. But, as already highlighted, the contribution of resources of the state companies is still fundamental, in this transition phase for the conclusion of constructions of priority undertakings for generation and transmission. Table 5 presents the summary of the several ways of private participation in the investments and/or enterprises of the national electrical sector.

Table 5 - Private Investments in The Brazilian Electrical Sector - Summary

DESCRIPTION	INVESTMENTS (US\$ Millions)	
	MADE	TO BE MADE
I) EXPANSION OF BRAZIL'S ELECTRIC POWER GENERATION FACILITIES		
Halted Constructions (Table 5.1.1)	663.6	4,996.3
New Concessions or Authorizations (Table 5.1.2)	4.2	2,861.8
Concessions or Authorizations Previous to the Law 9.074/95 (Table 5.1.3)	255.2	843.3
Tendered Power Plants of the Isolated System (Table 5.1.4)	38.2	97.4
Implantation of Thermoelectric Power Plants (Table 5.1.5)	52.7	0.0
Subtotal I	1,013.9	8,798.8
II) DEVELOPMENT OF GENERATION STUDIES AND PROJECTS - SUBSTITUTION OF PUBLIC RESOURCES		
Study of Inventory of Falling Water (Table 5.II.1)	2.5	0.0
Study of Viability and Basic Projects (Table 5.II.2)	38.2	0.0
Subtotal II	40.6	0.0
III) INVESTMENT IN THE PLAN OF EXPANSION OF THE PRIVATIZED CONCESSIONAIRES AS OF JAN/95		
Generation+Transmission+Distribution (Table 5.III.1)	714.5	0.0
Subtotal III	714.5	0.0
IV) PAYMENT FOR THE LICENSING OF NEW CONCESSIONS IN GENERATION OF ELECTRIC POWER		
Hydroelectric Power Plants (Table 5.IV.1)	0.0	44.7
Subtotal IV	0.0	44.7
SUBTOTAL	1,769.0	8,843.5
TOTAL	10,612.5	

Source: ANEEL

The results of the partnership with the private sector are reflected, for example, in the increase of the total capacity installed in Brazil, that expanded from 54.1 GW, in 1994, to 60.2 GW, in 1997. That increase (6.1 GW) is equal to the annual average of 2 GW, which is 84% above the average increase observed in the period between 1991 and 1994.

The set of ongoing actions to ensure expansion of the system and of the supply has been encompassing, among others: (i) restarted of unfinished plants; (ii) revocation of concessions for non initiated projects; (iii) bidding of hydro and thermal power plants, as required by the new concession laws; (iv) interconnection with neighboring countries.

As showed in detail in Tables 5.I.1 through 5.I.5 below, the private sector has already made commitment to invest around US\$ 9.8 billion (US\$ 1.0 billion made and US\$ 8.8 billion to be made) in 48 undertakings related to the Brazilian electric power generation, involving a total capacity of 11,673 MW. Table 5.IV.1 shows payments related to it the granting of generation concessions to the private sector.

Table 5.I.1 - Participation of Private Investors in Energy Generation Undertakings Found Halted in February / 95

Hydroelectric Plant (*)	State	Capacity (MW)	Concessionaire	Type of Partnership	Private Inv. US\$ Million (**)	
					Made	To Be Made
1 Igarapava	MG/SP	210.00	CEMIG + SELF-PRODUCERS	Partnership	74.50	155.90
2 Itá	SC/RS	1,450.00	ELETROSUL + SELF-PRODUCERS	Partnership	70.10	750.10
3 Serra da Mesa	GO	1,293.00	FURNAS/SEMESA	Lease	512.50	506.30
4 Funil	MG	180.00	CEMIG + SELF-PRODUCERS	Partnership	0.00	233.70
5 Rondon II	RO	73.50	ELETROGOES	Individual Concession	0.00	108.20
6 Dona Francisca	RS	125.00	CEEE + SP + IP + PUBLIC SERVICE	Partnership	0.00	135.90
7 Canoas I	SP	82.50	CESP + SELF-PRODUCERS	Partnership	3.80	90.30
8 Canoas II	SP	72.00	CESP + SELF-PRODUCERS	Partnership	2.40	78.80
9 Machadinho	SC/RS	1,140.00	ELETROSUL + SELF-PROD. + IND. PROD.	Partnership	0.00	785.00
10 Porto Primavera	SP/MS	1,814.00	CESP + INVESTORS	Private Financing Project	0.00	1,901.60
11 Pai Joaquim	MG	23.00	CEMIG + SELF-PRODUCERS	Partnership	0.00	15.80
12 Costa Rica	MS	16.00	ENERSUL + IND. PROD.	Partnership	0.30	12.50
13 Santa Branca	SP	50.00	LIGHT	Individual Concession	0.00	45.10
14 Aimorés	MG	300.00	CEMIG + SELF-PRODUCERS	Partnership	0.00	175.10
GRAND TOTAL		6,829.00			663.60	4,996.30
LEGEND						
(*) Undertakings with contracts of association already performed among the parts or, in the case of individual concessions, with strong commitment to contributions of resources on the holder's part.						
(**) The investments refer to December of 96 and are according to the FAR (real cost) charts and the FAO (budget cost) presented to DNAEE.						

Source: ANEEL

Table 5.I.2 - Private Investments in New Concessions or Authorizations for Generation Undertakings

Undertaking	State	Capacity (MW)	Use of Energy (*)	Concessionaire or Authorized Party	Legal Act Date	State Participation	Private Investment US\$ million	
							Made	To Be Made
1 Cubatão Hydroelectric Plant	SC	45.0	PS	INEPAR/DESENVIX/CELESC	Concession Contract 10/10/96	CELESC = 40%	0.0	30.1
2 Rosal Hydroelectric Plant	RJ/ES	55.0	PS	VALE PARANAPANEMA	Concession Contract 05/08/97	0	1.0	51.3
3 Emboque Hydroelectric Plant	MG	18.0	PS	CATAGUAZES LEOPOLDINA	Concession Contract 07/04/96	0	3.2	18.1
4 Porto Estrela Hydroelectric Plant	MG	112.0	IP	CVRD/NOVA ERA SILICON/COTEMINAS/CEMIG	Concession Contract 07/10/97	CEMIG 20% of 67% = 13,4%	0.0	94.8
5 Uruguaiana Hydroelectric Plant	RS	450.0	PS	AES - URUGUAIANA EMPREENDIMENTOS LTDA.	IP Contract, performed by CEEE on 09/19/97	0	0.0	230.0
6 Cuiabá Hydroelectric Plant	MT	450.0	PS	ENRON - SERVIÇOS DO BRASIL LTDA.	IP Contract, performed by Eletronorte on 11/17/97	0	0.0	225.0
7 Manaus System	AM	50.0	PS	CMI - POWER AMAZONAS	IP Contract, performed by Eletronorte on 08/08/97	0	0.0	40.0
8 Manaus System	AM	270.0	PS	EL PASO AMAZONAS ENERGIA LTDA.	IP Contract, performed by Eletronorte on 08/15/97	0	0.0	135.0
9 Importation of Argentina's Energy	RS	1,000.0	PS	CONSÓRCIO ENRON	Contract being signed by Eletrobrás	0	0.0	350.0
10 Lajeado Hydroelectric Plant	TO	850.0	SP/PI	INVESTCO	Concession Contract 12/16/97	20	0.0	1,114.4
11 Cana Brava Hydroelectric Plant	GO	450.0	SP/PI	TRACTEBEL	Concession Contract being signed	0	0.0	573.1
TOTAL		3,750.0					4.2	2,861.8

Source: ANEEL

(*) Use of Energy: PS = Public Service SP = Self-Producer IP = Independent Producer

Table 5.I.3 - Private Investments - Concessions Granted Prior to Law 9.074/95

Name of Power Plant	State	Capacity (MW)	Use of Energy (*)	Concessionaire or Authorized Party	Investment (US\$ million)	
					Made (**)	To Be Made
1 Salto das Nuvens	MT	15.0	SP	Cim. Port. Mato Grosso	0.0	17.0
2 Guilman Amorim	MG	140.0	SP	BELGO-SAMARCO	120.0	30.0
3 Mello	MG	10.0	SP	VALESUL	30.0	3.5
4 Guaporé	MT	120.0	SP	Min. Santa Elina	0.0	130.0
5 Muniz Freire	ES	25.0	SP	SAMARCO	25.0	0.0
6 Jauru	MT	70.0	SP	Cinco Estrelas	0.0	82.0
7 Itiquira	MT	156.0	SP	Triunfo Agropecuária	0.0	187.2
8 Sá Carvalho	MG	30.0	SP	ACESITA	37.0	2.0
9 Sobragi	MG	60.0	SP	Cia. Paraibúna de Metais	43.2	28.8
10 Tijuco Alto	SP	144.0	SP	CBA	0.0	172.8
11 Porto Bello	SC	15.0	SP	Refinadora Catarinense	0.0	18.0
12 Pilar	MG	174.8	SP	FIAT - ALCAN	0.0	150.0
13 Cachoeira da Fumaça	MG	18.0	SP	CASIL	0.0	22.0
TOTAL		977.8			255.2	843.3

Source: ANEEL

LEGEND

(*) Use of Energy: PS = Public Service SP = Self-Producer IP = Independent Producer
 (**) Starting in 1995

Table 5.I.4 - Private Investments in Plants with Concessions Granted through Process of Bids to Serve the Isolated System

Name of the Power Plant	State	Capacity (MW)	Use of Energy (*)	Concessionaire or Authorized Party	Investment (US\$ million)	
					Made (**)	To Be Made (**)
1 Salto Belo	MT	3.3	PS	ENERCOOP S.A.	4.0	0.0
2 Cachoeira	RO	9.9	PS	ELETROGÔES	11.0	0.0
3 Braço Norte II	MT	9.6	PS	ELETRAN	18.0	8.2
4 Alta Floresta	RO	4.4	PS	ELETRON	4.8	7.8
5 Ponte de Pedra	MT	24.0	PS	ELMA	0.0	48.0
6 Baruito	MT	9.5	PS	GLOBAL	0.4	18.1
7 Cachimbo	RO	5.0	PS	ELETRON	0.0	15.3
TOTAL		65.7			38.2	97.4

Source: ANEEL

LEGEND

(*) Use of Energy: **PS** = Public Service **SP** = Self-Producer **IP** = Independent Producer
 (**) Starting in 1995

Table 5.I.5 - Private Investments in the Installation of Thermoelectric Power Plants

Plant	State	Owner	Use of Energy (*)	Capacity (MW)	Investment Made (US\$ Million) (**)
Igaras	SC	Igaras Papéis e Embalagens	SP	17.0	22.30
Bacell	BA	Camaçari	SP	13.6	17.50
CST	ES	Cia. Siderúrgica Tubarão	SP	20.2	12.90
TOTAL				50.8	52.70

Source: ANEEL

LEGEND

(*) Use of Energy: **PS** = Public Service **SP** = Self-Producer **IP** = Independent Producer
 (**) Starting in January/95

Table 5.IV.1 - Payment for the Licensing of New Concessions of Generation of Electric Energy

Undertaking / Service	State	Capacity (MW)	Use of Energy (*)	Concessionaire or Authorized Party	Financial Fee for the Concession To Be Paid (US\$ thousandds)
1 Hydroelectric Plant Cubatão	SC	45.0	SP	CUBATÃO S.A.	302.3 (**)
2 Hydroelectric Plant Emboque	MG	18.0	SP	CFCL	125.9 (**)
3 Hydroelectric Plant Rosal	RJ/ES	55.0	SP	VALE PARANAPANEMA	212.9 (**)
4 Hydroelectric Lajeado	TO	850.0	SP/PI	INVESTCO	6,166.2 (***)
5 Hydroelectric Cana Brava	GO	450.0	SP/PI	TRACTEBEL	37,964.7 (***)
TOTAL		1,418.0			44,772.0

(*) Use of Energy: **PS** = Public Service **SP** = Self-Producer **IP** = Independent Producer
 (**) Current value, estimated considering 0.5% of the revenue, calculated based on the offered tariff.
 (***) Reduced to Current Net Value. The payment will be done in annual instalments starting on the 5th year after the signing of the contract.

Source: ANEEL

The potential of private participation opportunities in the sectorial expansion can be assessed through the goals of the Generation Concessions Tendering Program, in the period between 1998 and 2004, involving investments estimated at US\$33.4 billion and 32,200 MW added capacity.

As another important demonstration of interest of the private sector in the sectorial undertakings, the expedition, by DNAEE/ANEEL (in the period of 1995-1997), of about 200 authorizations of studies and projects of new exploitation for generation of electric power to private companies, involving potential above 9,500 MW should be highlighted. The development of these new projects had commenced even in the absence of previous assurance of being granted the respective concessions.

The investments associated with those works have allocated and replaced public resources. Until then, the totality of inventory and viability studies and the elaboration of projects of hydroelectric exploitation were accomplished by state companies. Tables 5.II.1 and 5.II.2 relate the undertakings with studies or concluded projects and already approved by the conceding authority and the respective investments made by the private companies.

Table 5.II.1 - Substitution of Public Resources in the Development of Studies of Inventory of Falling Water

Undertaking	State	Estimated Capacity (MW)	Title-Holder of the Authorization	Private Investment Made (US\$ thousands) (*)
1 Rio Correntes	GO	384.0	Itamarati S.A.	148
2 Rio Manhuaçu	MG	67.0	CONSITA-PRONERG	101
3 Rio Mucuri	MG	161.0	Workinvest	200
4 Rio Novo	MG	35.0	Hidrelétrica São Pedro	53
5 Rio Paraúna	MG	127.0	Mendes Júnior	112
6 Rio Piranga	MG	325.0	Consórcio Fiat Energia	488
7 Rio Pomba	MG	120.0	CFLCL	246
8 Rio José Pedro	MG	87.0	Hidrelétrica São Pedro	131
9 Rio Alto Jauru	MT	15.0	Agro Araputanga	30
10 Rio Turvo	PR	2.3	RDR Consultores	5
11 Rio Chapecó	SC/RS	550.0	Const. Queiroz Galvão	825
12 Rio Sono	TO	568.0	CELTINS	123
TOTAL	-	1,079.0	-	2,482

Source: ANEEL

(*) Amounts subject to ANEEL recognition.

Table 5.II.2 - Substitution of Public Resources in the Study of Viability or of Basic Project for Generation of Electric Energy

Undertaking	State	Estimated Capacity (MW)	Title-Holder of the Authorization	Private Investment Made (US\$ thousands) (*)
1 Hydroelectric Plant Gatos I	BA	33.0	Caraíbas Metais S.A.	950
2 Hydroelectric Plant Queimado	GO/MG	105.0	EPP Ltda	5,010
3 Hydroelectric Cana Brava	GO/MG	450.0	TRACTEBEL	11,704
4 Hydroelectric Plant Emboque	MG	18.0	CFLCL	432
5 Hydroelectric Plant Mello	MG	10.0	Valesul Alumínio S.A.	240
6 Hydroelectric Plant Sá Carvalho	MG	30.0	Acesita	480
7 Hydroelectric Plant Ponte de Pedra	MS/MT	170.0	ITAMARATI	1,300
8 Hydroelectric Plant Juba Zero	MT	55.0	ITAMARATI	1,230
9 Hydroelectric Plant Alto Jauru	MT	9.5	Agroindustrial Araputanga	228
10 Hydroelectric Lajeado	TO	850.0	INVESTCO	16,580
TOTAL		1,730.5		38,154

Source: ANEEL

(*) Amounts subject to ANEEL recognition.

In another slope, and as consequence of the process of state privatization of the concessionaires, the substitution of public resources should be observed in the plan of expansion of those companies. Table 5.III.1 relates the investments already made by the new controllers of the privatized companies, starting in July of 95 and up to December of 97, which totaled about of US\$ 715 million.

Table 5.III.1 - Investment of the Private Initiative in the Concessionaires of the Electrical Sector After its Privatization - Substitution of Public Resources

Concessionaire	State	Date of Auction	Private Investment Made (US\$ million) (*)				
			Segment	1995	1996	1997	Total
ESCELSA	ES	July/97	G	1.4	5.5	15.6	22.5
			T	10.1	26.0	38.8	74.9
			D	11.2	30.5	34.5	76.3
LIGHT	RJ	May/96	G	-	51.1	97.4	148.4
			T+D	-	122.7	209.7	322.4
CERJ	RJ	Nov/96	G+T+D	-	-	60.0	60.0
COELBA	BA	July/97	G+T+D	-	-	-	-
CACHOEIRA DOURADA	GO	Sept/97	G+T	-	-	-	-
DISTRIBUIDORA NORTE/NORDESTE - CEEE	RS	Oct/97	G+T+D	-	-	-	-
DISTRIBUIDORA CENTRO-OESTE - CEEE	RS	Oct/97	G+T+D	-	-	-	-
CPFL	SP	Nov/97	G+T+D	-	-	-	-
ENERSUL	MS	Nov/97	G+T+D	-	-	-	-
CEMAT	MT	Nov/97	G+T+D	-	-	-	-
ENERGIPE	SE	Dec/97	G+T+D	-	-	-	-
COSERN	RN	Dec/97	G+T+D	-	-	-	-
COELCE	CE	Apr/98	G+T+D	-	-	-	-
ELETROPAULO Metropolitana	SP	Apr/98	G+T+D	-	-	-	-
GRAND TOTAL				22.6	235.8	456.0	714.5

Source: ANEEL

LEGEND
G = Generation **T** = Transmission **D** = Distribution (*) - Amounts reached after privatization.

VI.2 - Other Contributions - Improving the Economic Efficiency

Being a relatively recent approach (11 companies were privatized in the period between July/97 and April /98 and just ESCELSA - the first privatization in the sector - counts with more than 2,5 years of private administration), an analysis (even empiric) on the effects of the privatization in the Brazilian electrical sector is still considered premature.

At any rate, some considerations and conclusions of studies and analyses on the impacts of the Brazilian privatization program (1st phase of PND) are shown below, with views to offer a reference for suitable evaluation of the effects of the privatization in the electrical sector.

"The many privatization programs implemented all over the world in the past years had two main motivations: to increase the efficiency of the economy and to contribute for the adjustment of the public budget. Generally speaking, the experience has shown that the fiscal motivation has prevailed in the practice, with the privatization being usually adopted by governments with difficulty in meeting their budgets. But it is the pursuit of efficiency that indeed justifies, on a theoretical point of view, the implementation of privatization programs. This because, while the fiscal gains with privatization are largely transitory, the increase in efficiency allows for a permanent increase in income"⁽¹⁴⁾

"A well documented empiric analysis of the impacts of the privatization on the performance of the former-state owned enterprises is presented in a paper by BNDES (1995), which analyzes the three main sectors, in which privatization occurred - metallurgy, (petro)chemical and fertilizers, which were responsible for 97,5% of the total revenues of the PND through December of 1994. Generally speaking, it is observed that, with the privatization (and even before it), production, revenue, investment, profit and productivity of the companies increased, with a reduction in the number of workers"⁽¹⁵⁾

Such paper also highlights the fact that the privatized companies have been investing significantly in the rescue of its environmental obligation, contradicting the expectation of some authors that the environment would be sacrificed with the privatization. It points out, however (in the case of the metallurgy), that along with the privatization, the liberalization of prices and the adjustments previous to the privatization also influenced positively in the evolution of the sector.

⁽¹⁴⁾ Pinheiro, Armando Castelar. BNDES - Texts for Discussion n.º. 40 - NO QUE DEU, AFINAL, A PRIVATIZAÇÃO? p. 5

⁽¹⁵⁾ Ditto, p. 13

With this evaluation methodology and base of data ⁽¹⁶⁾ to test whether there was or not change in the performance of the privatized state enterprises up to 1994, the mentioned author reached the following conclusions:

- in general, the results obtained confirm that, with the privatization, there is a very significant improvement, in statistical and economic terms, in the performance of the companies;
- the companies are more efficient and lucrative;
- the impacts of the privatization on the efficiency of the companies are larger when it is combined with other measures of liberalization and austerity;
- the most notable result was the increase in the equity of the companies. Another quite positive result was the tendency presented by the companies to increase investment after the privatization.

⁽¹⁶⁾ The same methodology used by Meggison, Nash and Randenborgh (1994) and Costa (1994): Wilcoxon Signed Rank Test and the test of the signal. These tests are applied to a group of variables which seek to rate the economic-operational performance of the companies. It tries to compare the average of the 4 years previous to the sale with the 4 years after it.

VII - Restructuring of the Brazilian Electrical Sector - Overview and Perspectives

As already mentioned, the Brazilian Electrical Sector has entered a transitional period, after the Laws Concession (Laws no. 8.987/95 e 9.074/95), that established the basic foundations of the new sectorial model⁽¹⁷⁾. From the standpoint of new legal configurations, the federal government activities have been focused on changing the structure of this sector, entailing the clear definition of most organizational and operating regulatory aspects.

In this direction, the government have faced a complex challenge in order to work simultaneously with very different interconnected and independent programs, such as:

- to advance and accelerate privatization of the electric energy grants and generating units, anticipating the sector restructuring, selected in such a manner as to ensure fair sale price, efficient organization and adequate industry functioning;
- to promote an investment program for the duration of this transitional period, aimed at circumventing an electricity crisis in the immediate future;
- to immediately adjust the electric sector to the new legislation, in such a manner as to make the continued expansion of the system during transition possible;
- to pursue the process of privatization of the federal assets in the electricity industry and encourage the United States to privatize their distributors.;
- finally, as all previous programs depend on it, detailed and final sector restructuring.

⁽¹⁷⁾ Deep changes were introduced (drawn up through close relationship between the Executive and the Congress), especially with respect to tenders for new projects in the area of power generation, the licensing of Independent Power Producers, free access to the transmission grid and distribution network, and freedom for large consumers to chose their electric power supplier.

This set of ongoing actions has caused the surprising reaction of the private sector. As far as the privatization of the electric energy concessionaires, the results already reached reveal, by themselves, the full success of the program carried out so far (Chapter V). Concerning the establishment of a new model of sectorial expansion financing, the private sector's answer has also been prompt and affirmative to the government proposal. As indicated in the Chapter VI, the volume of private participation in investments for expansion of the Brazilian electric sector is growing and significant. As previously mentioned, the strategy adopted by the government to carry out these processes has been aimed at the progressive complementation and improvement of the regulatory mark (through regulation for a transition period), along with the development of a wide study on the sectorial reform, known as Project of Restructuring of the Brazilian Electrical Sector(RE-SEB).

Among the new measures introduced starting in 1995, the following can be mentioned:

- Constitutional Amendment 6/95 was passed putting an end to the restrictions on foreign investment in the energy sector;
- Decree 1717/95 established the conditions necessary for the extension and regrouping of public service concessions and the approval of conclusion of power plants' unfinished works;
- Act DNAEE 526/95 determined the accounting separation (deverticalisation) of the generating, transmission and distribution segments of the electric energy concessionaires;
- Act DNAEE 244/96 and 459/97 defined, respectively, the basic net of the transmission system and the rules and tariffs associated with the free access to the transmission and distribution systems, which are fundamental for the establishment of competition in the sector. This regulation assures any sectorial agents and/or free consumers⁽¹⁸⁾ the use of the national net (superior to 500,000 km), for the transportation of energy;

⁽¹⁸⁾ Consumers with option of choice of electric energy supplier, assisted in tension equal or superior to 69 kV and with installed capacity above 10 MW.

- Decree 2003/96 provided regulations governing independent and self producers;
- Rules that limit the concentration of asset ownership in the sector were created, seeking to reduce the influence of a single private agent and to avoid monopoly formation;

Law 9.427/96 established the National Electric Power Agency - ANEEL. This new independent regulatory body has greater administrative autonomy than its predecessor (the Department of Water and Electric Power - DNAEE) and is charged with ensuring stability within the sector during the transition period and with protecting the interest of both consumers and investors, while preparing the path for further institutional changes resulting from privatization. Decree 2335/97 regulated that law, approving its organizational structure and its table of positions and functions⁽¹⁹⁾. The beginning of operation of that Agency, in novembro/97, starting from the inauguration of its directors (named by the President of the Republic, after previous approval by the Federal Senate, with non coincident mandates), represented, undoubtedly, an important and necessary achievement to assure the harmonious development of the sector.

To carry out the sectorial restructuring task, the Ministry of Mines and Energy hired, by means of international bidding, the consortium headed by the firm Coopers & Lybrand, in the middle of 1996.

The core of the reform is, above all, to allow the government to focus on its role as policy-maker and regulator for the sector and permit transfer of responsibility of operations and investments to the private sector. In doing so, the government intends to achieve the following objectives:

- ensure a secure and reliable supply of electricity for the nation and access to electricity for those not already connected;

⁽¹⁹⁾ During its introduction process, ANEEL will be supported by a national net of Centers of Excellency at the Universities, in the agreement with the University of Brasília - UnB.

- establish conditions to encourage economic efficiency in all segments of the sector, notably through the maximization of competition (where feasible), the design of appropriate regulatory arrangements and the continuity of the relevant integrative functions;
- support the further development of economic hydroelectric sites as the largest source of indigenous energy;
- create conditions which support the continuation of the privatization program and make new investments attractive to the private sector, in particular through appropriate allocation of risks.

Thus, the Terms of Reference fall into four broad areas:

- a) the design of new trading arrangements for the sector, covering the sale and purchase of bulk energy, access to transmission and distribution networks and mechanisms to ensure planning and expansion of the sector, especially the optimum development of new hydro sites;
- b) the legal and regulatory measures needed to permit sector reform, including adjustments to the existing legal framework and regulation of concessions, economic regulation of natural monopolies, regulation to facilitate competition as well as technical and customer service standards;
- c) institutional changes needed within government and within the sector to complement the proposed trading arrangements and regulatory framework. These changes include refocused responsibilities at Ministry level, established of an independent regulator (ANEEL), revisions to the role of ELETROBRÁS and structural changes within the sector companies;
- d) work on sector financing, on the allocation of risk and on the level of returns for different activities.

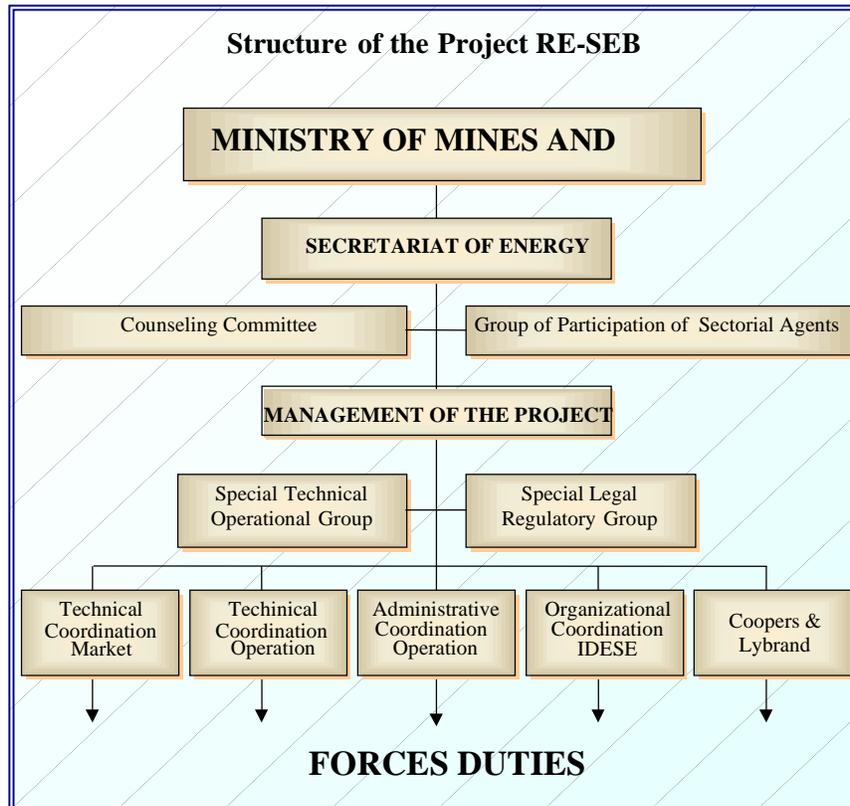
The first report of consolidation of the tasks of the consultants was officially handed to the Ministry of Mines and Energy in June/97. Containing about 200 recommendations, preceded by intense discussion with the groups of support⁽²⁰⁾ created by MME, the Consolidated Report (Stage IV) had, soon after, wide popularization of its Executive Summary with all the sectors interested in the subject (press, government institutions, sectorial agents and representative entities, etc.), with access also via Internet.

Presenting a consistent group of propositions concerning *industry trading model, sector structure and commercial arrangements; legal and regulatory framework; institutional changes and re-defined responsibilities; sector finance and risk assessment*, the Report RE-SEB - Coopers was due great acceptance, within the government as well as out of it, becoming adopted as referential for the restructuring in course.

Since then , and incorporating other resulting contributions of the wide program of consulting the interested segments and adjustments made by the consulting firm itself during the process, the development phase of the Brazilian Electrical Sector Restructuring Project began. Figure 3 shows the deciding and operational structure of that process, in which about 150 technicians, selected among the best available within the companies and the sectorial agents has participated in their respective fields.

⁽²⁰⁾ Composed for about 60 technicians, representatives of a wide variety of companies and other sectorial agents.

Figure 3



As a result of the efforts made in that stage (including new recommendations from the consulting firm in the Report – Stage VII, revised version of the Report - Stage IV), with priority for the introduction of the industry trading model and independent system operator, Temporary Measure no. 1531-1618⁽²⁰⁾ was published in March/98, which, among other dispositions, establishes the following:

- definition of basic rules for institution of *Whole Sale Energy Market - WEM/MAE*, as an environment in which the transactions of the amounts of energy and capacity not covered by the freely agreed bilateral contracts will be carried out;

⁽²⁰⁾ The Temporary Measure mentioned was published by the President of the Republic on 03/05/97, with force of Law. Since then, it has been in process within the National Congress, in urgency status.

- creation of the *independent system operator*, to be integrated by the several concessionaires, permitted and authorized groups, and interested free consumers, as new private agent that will replace GCOI and CCON⁽²¹⁾, in the coordination and operation of the generation and transmission facilities, according to rules defined in the Market Agreement;
- definition of new guidelines for the restructuring of ELETROBRÁS and of its subsidiaries, in order to facilitate the modeling of its generation and distribution assets with the purpose of privatization;
- attribution of legal right to ANEEL to declare of public usefulness, for the purpose of disappropriation and servitude constitution, the necessary goods to the implantation of electric facilities;
- attribution of legal right to ANEEL to set the amounts of administrative fines to the concessionaires, permitted and authorized groups of facilities and services of electric energy, in percentage not to exceed 2%, for each violation, of the revenue or of the assessed value of the produced energy;
- elevation of the capacity limit, to 25,000 MW, to carry out hydroelectric exploitation, after ANEEL authorization, for independent production or autoproduction, thus stimulating private investments to increase the supply of electric energy;
- possibility to freely negotiate new conditions of supply of energy between concessionaires and consumers;
- possibility to establish new conditions of concession or authorization extinction, including the compensation eventually due to the concessionaire or authorized enterprise, in cases of change in the regime of exploration of the generation, for independent production.

⁽²¹⁾ Coordinating Group for Interconnected Operation - GCOI and Coordinating Committee of Operation North/North-East - CCON.

Starting from periods set in the Temporary Measure mentioned above, the schedule of the activities in development for the application of the new sectorial model can be summarized as follows:

a) Whole Energy Market - WEM/MAE

- institution (through Market Agreement) – August/98
- conclusion - May/99

b) Independent System Operator - ISO/ONS

- constitution - August/98
- conclusion (complete assumption of the activities and attributions currently carried out by GCOI and CCON) - May/99

c) Institute for Development of the Electrical Sector - IDSE/IDESE (indicative planning role and sector services role)

- organization - August/98
- installation - November/98

d) A comprehensive Electricity Code (to be submitted to Congress as a bill of law to consolidate and rationalize all existing sector legislation and to implement less urgent legal changes)

- conclusion: December/99.

Figures 4 through 7 show parts of the configuration proposed by the consultants and currently at appreciation and/or development by the government.

Figure 4

Overview of the Wholesale Energy Market (WEM)

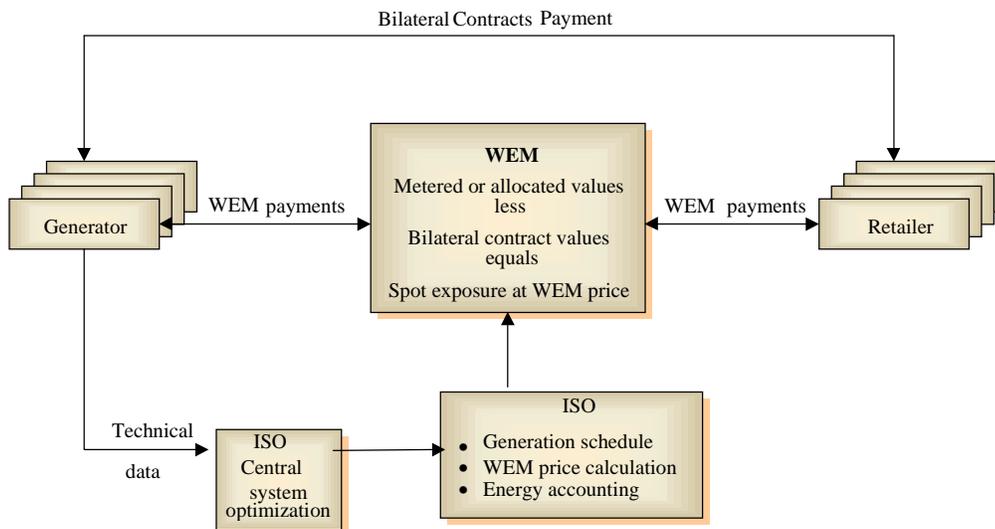


Figure 5

ISO's transmission function

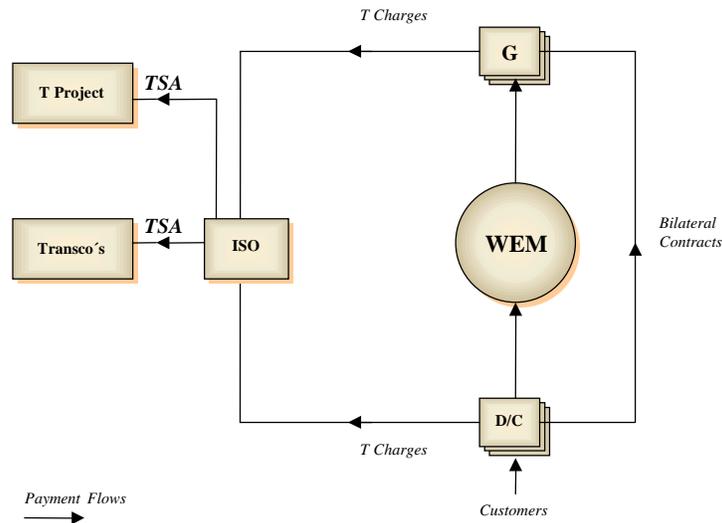


Figure 6

Industry structure: main types of agent

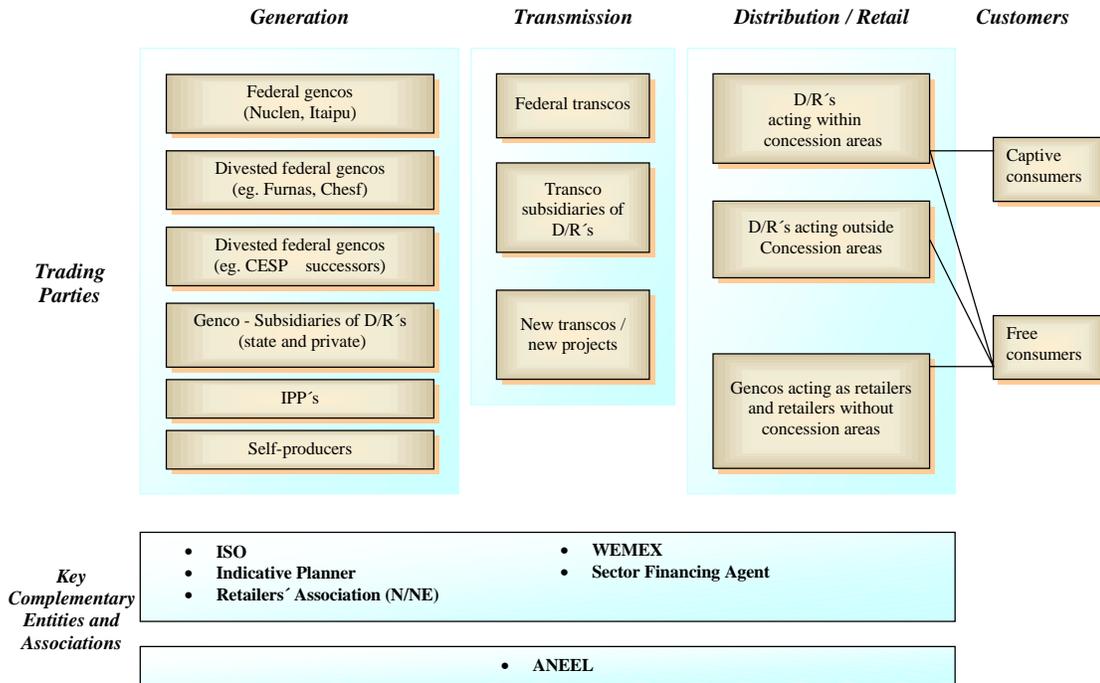
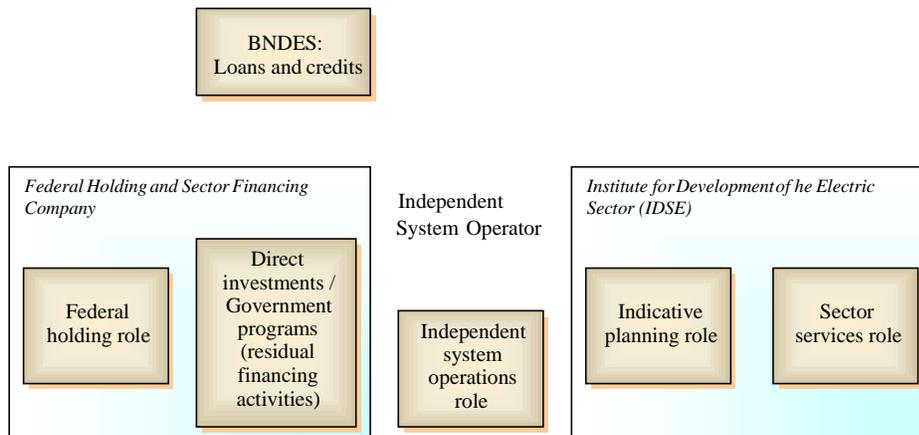


Figure 7

Recommended grouping of roles to form new sector entities



VIII - Final Remarks

As before mentioned, the Privatization of assets in the Brazilian Electrical Sector has reached (until April 15, 1998) the significant amount of US\$ 22.3 billion (US\$ 18.3 billion from sales revenue and US\$ 4.0 billion of transferred debt to the private sector). This result already place it among the greatest programs in this sector carried out in the world in recent decades.

The overall amount of these privatizations added to the resources already committed by the private sector in the electric industry (US\$ 10.6 billion) reaches the impressive mark of US\$ 32.9 billion, along the period of 3 years.

The total assets of the Brazilian electrical sector are estimated above US\$100 billion⁽²⁰⁾ . Therefore, there are much more to be achieved over the next two years, as showed in the schedule of new privatizations, especially in the power generation segment.

However, it is important to point out that the changes and institutional transformations in the electric sector are only a part of the Brazilian State Reform Program. Besides deep modifications in the social security, fiscal/tributary and in the administrative systems, it is under course an extensive process of reform of the economic order, constituted by: (i) the privatization of the Telecommunication, Transportation (Rail - 100% accomplished - and Road), Ports, Water Treatment and Banking (at state level) sectors; (ii) the opening of the oil and gas sector to the private investors, in all its segments (exploration, production, refining, transportation, importation, exportation and distribution), starting from the regulation of the Constitutional Amendment 6/95 that put an end to the monopoly in this sector.

As also mentioned, in the public services area, regulating agencies, autonomous and independent, were created and are already in operation in the telecommunication (ANATEL), Electric Energy (ANEEL) and petroleum & gas (ANP) sectors. The board of directors of these new regulating

⁽²⁰⁾ It is included the assets of the Itaipu binational hydro plant, Angra I and II nuclear power plants, and transmission systems, which will not be privatized in the first stage of the Brazilian Privatization Program.

agencies, appointed by the President of Brazil after previous approval of the Senate, took office and began their activities in october/97, december/97 and february/98, respectively.

As pointed out by the President Fernando Henrique Cardoso " *the Brazilian reform process is advanced, but it is important not to forget: it is a deeply democratic and mature process, for this reason it has necessarily its ritual, it has its times. The reform process is in course and it is irreversible. It strengthens in the democracy and it is democratically that it will be accomplished*".⁽²¹⁾

Thus, particularly in the electrical sector, the actions which have been taken by the government represent a notable evolution, based on responsibility and commitment to long term, enduring solutions, through an open and participative process.

The sale of utilities is the beginning - not the end - of the process. The utilities and the regulators now have to deal with new audiences: the investors who bought the shares of the privatized utilities and the consumers of the utilities' output who now have to make their wishes known through the regulatory process.

In that way, and as a respected Brazilian journalist⁽²²⁾ said, " *the LIGHT episode was a landmark to check the consolidation of the new privatization model and the new controls on the public services*". The above mentioned analyst was referring to the problems that happened in the supply of electric energy to the city of Rio de Janeiro (area of concession of the privatized LIGHT), that obliged ANEEL to fine the company with a percentage of its revenue, besides the formal commitment of LIGHT to improve its operational indicators.

On the other hand, it is usually recognized that the restructuring of the Brazilian electrical sector is one of the most complex cases if all limitations and factors are taken into account in the elaboration of alternatives and the formulation of strategies to conduct the process.

⁽²¹⁾ Speech before the Diet of Japan - Tokyo, March 14, 1996. Excerpts of speeches of the President - 1996. Brasília 1997, p. 283.

⁽²²⁾ NASSIF, Luís. *Light, um divisor de águas*. Folha de São Paulo. March 3, 1998, p. 3, Caderno 2.

However, despite those limitations, it has been possible to conceive a model more adjusted to the reality of Brazil, mainly supported by an active and proficient Congress, and due to a close collaboration of the Brazilian technicians with the consultants.

The acceptance of high level objectives set up by the government and the pressure imposed by an aggressive privatization schedule - especially from 1997 on - enabled the sector to define a clear agenda and an effective process for change. However, the sense of urgency did not compromise the government to find an optimal, long term solution.

As far as it was approached in this Study, it remains clear - besides the expressive results already reached in the privatization and opening of the national infrastructure sectors, particularly in the electric industry - the government's strong commitment and determination in the reform of the Brazilian State. It is intended to transform the State into a more effective one in its typical functions and to strengthen the role of the private sector in the implementation of the Country's development process, making possible its competitive insertion in the globalized markets.

In this scenario of profound transformations in Brazil, the words uttered by eminent personalities sound quite close and convergent (although with world visions and roles pretty different), such as:

"To privatize is not to reinforce the Government's cash flow. To privatize is to increase the efficiency of the economy". Paulo Rabello de Castro.

"Competition is indisputably the most effective means - perhaps ultimately the only effective means - of protecting consumers against monopoly power. Regulation is essentially a means of preventing the worst excesses of monopoly; it is not a substitute for competition. It is a means of holding the fort until competition arrives." [Littlechild(1983,p.7), as cited in Ergas (1997,p.207)]

"Privatization is the only way to make sure that the infrastructure needs will be satisfied. No government in the world today has enough resources to do it independently, be through taxation or loans. However, the capital is there, in abundance, as well as the opportunities for lucrative investments". Peter Drucker (Gazeta Mercantil of July 7, 1995, Special Report, p.4)

"Public companies don't belong to the public but to the employees that run them and to the politicians that manipulate them". Roberto Campos.

"Private Company is the one that the government controls; Public Company is the one that nobody controls ". Roberto Campos, Diplomat's Diary.

"For the first time in Brazilian history, the following configuration starts to take shape: on one side, clear distinction between the conceding power, in the hands of the State, and the private concessionaire, who now retains the production control of goods and services, under conditions set by contract; on another, a regulatory devise able to protect the interests of the consumer citizen, within parameters suitable to the efficiency of the sector". Fernando Henrique Cardoso. Message to the National Congress, 1998, p. 9-10.

"It has already been said that the good regulation is the new regulation [Weaver (1978)], what means that, on final analysis, regulating well means re-regulating, as it has been said that to know is to recognize (Plato) and to write is to rewrite (Machado)". Apud Hamilton Nonato Marques - IPEA - Text for Discussion n° 426, p. 24.

"It is important that the privatization has a political, economic and social role, strengthening the State so that it can carry out the basic functions demanded by a democratic country with great social challenges to overcome. We don't want a smaller and weaker State, we want a smaller and a more efficient one". Fernando Henrique Cardoso, Speech before the Diet of Japan - Tokyo, March 14, 1996.

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