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**Renewal of electric energy concessions in Brazil and their
Accounting Impacts on the Financial Statements of
Eletrobras in December 2012**

Marcos José Lopes

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Advisor: Dr. Luiz Maurer

Table of Contents

1.	Introduction	2
2.	The Brazilian Economic Scenario	2
3.	Energy Concessions in Brazil	5
	3.1 Concession Renewals – Provisional Measure 579, Law 12.783 of 2013	6
	3.2 The expected outcome of the renewal of concessions	9
4.	Eletrobras	10
	4.1 Financial Statements of Eletrobras and bases for their preparation	13
5.	Public Policy in the Electricity Sector	
6.	Option of renewal and Measurement and effects of the extension of concessions of the public service of electricity at Eletrobras	14
	6.1 Impairment and Burdensomeness	18
	6.2 Impacts on Business of Generation	20
	6.3 Impacts on Business of Transmission	22
	6.4 Impacts on Business of Distribution	23
	6.5 Premises for the measurement of accounting effects	24
	6.5.1 Generation	24
	6.5.2. Distribution	25
	6.5.3. Transmission	25
	6.6 Indemnity Values	25
	6.7 Summary of Impacts on Accounting	28
7.	Results and Conclusions	32
8.	Reference.....	34

1. Introduction

Over the course of 2012 and 2013, the Brazilian government has been developing efforts to set up a new economic policy to guarantee a new cycle of sustainable growth in Brazil. In its effort to reduce costs and stimulate investment, the government has used the electricity sector as an important instrument of this new economic policy.

The objective of this study is to examine (1) Provisional Measure 579, which became Law 12.873¹ on January 14, 2013 and which imposes significant changes on the rates of older energy generation and transmission assets² that had their contracts renewed, and (2) to show the accounting effects in December 2012 on the largest Electric Energy Company in Latin America, Eletrobras.

Law 12.873 allowed companies in the electricity sector to opt to renew these expired concession contracts, causing large accounting losses on their financial statements due to the regulated indemnificatory³ values and the post-renewal reduction of rates.

First, this study presents the Brazilian economic scenario that resulted in the enactment of Law 12.873 and, afterwards, highlights the important points of this new legislation that significantly affected the electricity sector in Brazil, pointing out the expectations of the Government on the renewal of Concessions.

Lastly, the impacts on the 2012 financial statements of *Eletrobras*, brought about by changes in legislation, are presented. In closing, conclusions and prospects are discussed.

2. The Brazilian Economic Scenario

¹ Law 12.783, Article 1 – As of September 12, 2012, concessions for hydroelectric power generation affected by Article 19 of Law 9.074, of July 7, 1995, may be extended at the discretion of the granting authority, once only, for a period of 30 (thirty) years, to ensure continuity, efficiency of service and reasonable rates.

² Generation and transmission assets with their concessions expiring in 2015.

³ The assets of generation and transmission not fully depreciated will be indemnified in accordance the values released by the regulator - ANEEL.

Over the past thirty years, participation of the industrial sector in the Brazilian economy has been decreasing gradually, dropping from 31.3% in 1980 to 17.2% in 2000. It is expected to drop to 14.6% in 2016⁴. Referred to as deindustrialization in the literature, this phenomenon has already been verified in developed countries but has always been directly associated with high per capita income. In Brazil, the causes of deindustrialization differ from those that characterize the process of development in more advanced economies. This is because the process occurred before Brazil reached the level of systemic productivity and per capita income comparable to that of advanced economies.

In this sense, one could call the Brazilian experience a case of “*premature deindustrialization*,”⁵ that is, it is not associated with significant gains in productivity.

Premature deindustrialization puts Brazilian economic and social development at risk. It does so to the extent that the dynamism of the process of creating and disseminating productivity gains in the economy involve and are derived mainly from the industrial sector. This is so first, because the expansion itself of industrial production tends to elevate gains in efficiency, productivity and positive externalities beyond the industrial sector. Second, because the introduction and dissemination of technological innovations in the production process, responsible for the systematic (and systemic) increase in economic productivity, are strongly linked to business activity in the industry. Third, because the production of new goods by the industrial sector stimulates the creation of new activities in the tertiary sector, which positively impacts overall productivity. An example of this is the commercialization of new goods or the growing number of available support services for industrial production. It also should be highlighted that industrial activity and, specifically, gains in economies of scale and productivity are mutually reinforcing in that they constitute decisive factors in increasing external competition in the dispute (or creation) of markets internationally.

⁴ Nassif, A., Feijó, C., & Araujo, E. Structural change and economic development: Is Brazil falling behind. V International Meeting of the Brazilian Keynesian Association, August 2012, São Paulo, Brazil.

⁵ Recent Brazilian economic data reveal a significant change in course in export and import tariffs with expansion of the recent deterioration of the business profile, made evident also by the loss of participation of manufactured goods of high technology in export tariffs. In this sense the recent trajectories of Brazilian export and import tariffs have been affected dramatically by Chinese exports, which, in turn, have caused a reduction in the participation of domestic production in apparent consumption items, at the same time in which Brazilian external sales in third markets has moved – typical symptoms of premature deindustrialization (IPEA. *Análise Temática, Conjuntura em Foco*, n. 17, Feb 2013).

A number of factors can be cited as causing declining participation of the industry, which began in the 1990s, in the Brazilian economy. Worthy of mention is the trade and financial liberalization of the Brazilian economy associated with the increase in the exchange rate. These new macroeconomic restraints caused Brazilian industry to specialize in lower-value-added segments due to the profusion of natural resources in contrast to the low productivity of industrial segments with higher technological content. On the other hand, issues such as the high tax burden, cost of energy, logistics and inefficient infrastructure made the business environment for Brazilian industry even more difficult, including for the primary goods processing industry. As a result, one can note a reduction in the density of Brazilian production chains.

For Brazil to follow a path of sustainable economic growth and development, Brazilian industrial and economic competitiveness is essential.

In the last four years, important strategic changes in Brazilian economic policy guidelines have taken place. Besides monetary and fiscal expansionism, which aims at increasing consumption, monetary measures have been adopted – specifically, a significant reduction in interest rates, currency devaluation, industrial policy and foreign trade – to allow private investment to resume in the infrastructure of transportation: roads, railroads, ports and airports. In this way, measures were announced that aim to increase economic competitiveness by reducing what is known as “the cost of Brazil.”⁶

Within this context, we highlight restructuring the electricity industry with the principal aim of reducing the cost of electricity - specifically, Provisional Measure 579, passed into Law 12.783 on 14 January 2013. The energy tariff reduction will serve two purposes: 1) reduce sectorial costs and 2) renew concessions of hydroelectric power plants and transmission lines that expire between 2015 and 2017.

This law and its effects should help decrease industry costs since electricity is at the base of the cost chain of all goods and services, and lower costs will increase competitiveness

6 The Brazilian government plans to invest R\$ 133 billion in modernization and construction of railroads and roads through the Investments in Logistics Program (*Programa de Investimentos em Logística*). In addition, under the Investment Support Program (*Sustentação do Investimento (PSI)*) of the National Bank of Economic and Social Development (*Banco Nacional de Desenvolvimento Econômico e Social (BNDES)*), interest rates were reduced from 5.5% to 2.5% per annum for the purchase of machines and equipment. See www.fazenda.gov.br Brazilian Economy in Perspective, 2012.

The expression ‘cost of Brazil’ (*custo Brasil*) is a term used to describe the set of structural, bureaucratic and economic difficulties that raise the cost of investing in Brazil, making national development difficult in that it increases unemployment, increases tax evasion and foreign currency drain, and encourages participation in the informal economy. It is used to refer to the set of factors that affect the competitiveness and efficiency of national industry.

of all sectors. It should also lower the inflation by nearly 0.5% in 2013. Reducing tariffs on electricity is part of a wider set of economic policy instruments that clearly signal the government's effort to guarantee sustainable growth of the Brazilian economy over the next few years.

3. Energy Concessions in Brazil

Concessions are contracts of the rendering of services to attract private sector participation in the development, financing, operation and maintenance of the public service infrastructure. This infrastructure may already exist or be constructed during the period of the concession.

Concessions typically involve a private sector entity, operator or concessionaire to operate and maintain the infrastructure for a specific time. They are governed by performance standards, mechanisms for price adjustments and agreements to arbitrate disputes.

A characteristic of a Concession is the public service nature of the obligation assumed by the concessionaire. Public policy applies to infrastructure-related services to be provided to the public, regardless of the identity of the party that operates the services.

The service agreement contractually requires the concessionaire to provide the services to the public on behalf of the public sector entity. Typically, the grantor is a federal government; the concessionaire is responsible for the administration of the infrastructure and is not a mere agent; the initial prices to be charged by the concessionaire are established in the contract; and upon expiration of the contract, the concessionaire is required to return the infrastructure to the grantor, with or without compensation.

Under Law 12.783, the government opted to renew concessions, within a strictly legalistic approach: the reversion of the assets to the Union with the option of the current concessionaires to keep the concession assets if they accept the acceleration of the maturity of the contract and become simple operators and maintainers of the hydroelectric plants, receiving a fee for the cost of these activities. In this way, companies holding generation assets become providers of services, no longer selling electric energy at market price.

To illustrate, the tariff reduction is significant, going from R\$ 95,00 per MWh prior to the new law to less than R\$ 30,00 per MWh after its enactment. The same happens with the

transmission concessionaires, who will now begin to be paid only operation and maintenance costs. The calculation of operation and maintenance costs (O&M) was defined by the Brazilian Electricity Regulatory Agency (ANEEL)⁷ on the basis of a method similar to that applied to distribution companies and using information from the database that serves as a basis to fix ceiling prices of energy and transmission auctions.

It should be emphasized that the impact of the renewal of concessions will occur essentially on generators and transmitters, because the distributors are already regulated in order to transfer productivity gains to consumers every periodic cycle of tariff revision.

Therefore, and according to the government, considering the adherence of all current concessionaires, the expectation is that approximately 20% of generation and 67% of transmission could reach the final consumer for the cost of operation and maintenance, allowing for an average reduction of tariffs of 20.2% beginning in February 2013. Of this, 7.0% percentage points would be due to changes in fees and 13.2 percentage points due to concession renewals.

3.1 Concession Renewals – Provisional Measure 579, Law 12.783 of 2013

On September 11, 2012, to promote the reduction of the cost of energy, to ensure reasonable tariffs, to guarantee the supply of electricity and make the Brazilian productive sector more attractive, the Brazilian Government submitted and approved Provisional Measure 579. On 11 January 2013, Provisional Measure 579 became Law 12.783, which deals with the process of the renewal of concessions of the public service of Energy. This new law empowers the Union to extend, once only, maturing Concessions of generation, transmission and distribution of Electricity for a maximum of 30 (thirty) years and, in the case of thermoelectric generation, for a maximum of 20 (twenty) years.

The basis used for the desired effect was the finding that the majority of these assets were heavily amortized and depreciated due to the operating time of approximately 30 years but in full operating conditions and with great potential to continue generating revenue for

7 ANEEL – *Agência Nacional de Energia Elétrica* (Brazilian Electricity Regulatory Agency) The Brazilian Electricity Regulatory Agency is a quasi-governmental agency under a special regime (Regulatory Agency), linked to the Ministry of Mines and Energy, with its headquarters and venue in the Federal District, whose purpose is to regulate and monitor the production, transmission and sale of electricity in accordance with the Policies and Guidelines of the Federal Government.

many years ahead with their respective returns on investments already fully recovered. This scenario provided consumers of electricity in Brazil the possibility of immediately benefiting from lower rates for electric energy use, a basic component of the productive sector and an essential service to society.

The concessions that Law 12.783 made possible are those concessions of generation, transmission and distribution of electric energy granted before the publication of Law 8.987 of 1995 and that did not go through the bidding process, since, until the promulgation of the Federal Constitution of 1988, concessions were granted only when there was a suitable applicant. When there was not, the Federal Government was authorized to open public bids to explore electric energy services.

These concessions begin to mature in 2015 because Law 9.074 of 1995 permitted the extension of their maturity date by up to 20 years, calculated from 8 July 1995, for those that were due. For those that were not yet due, the maturity date would be calculated when the concession reached maturity.

For the generation of electric energy, 20 concession contracts reach maturity between 2015 and 2017, totaling 22,341 MW of installed capacity, equivalent to approximately 20% of Brazil's generation capacity. Mostly large, state-owned (CEE, CEMIG, CESP, COPEL, EMAE) and federally-owned (Eletrobras Chesf, Eletrobras Eletronorte and Eletrobras Furnas) generation companies find themselves in this situation as shown in Table 2:

Table 2 – Participation of the Concessionaires of Energy

Participation of Concessionaires		
Concessionaires	Capacity (MW)	Participation %
Eletrobras Group	15,022	67.26
State	6,842	30.62
Private	468	2.09
Municipalities	9	0.03

For the transmission of electric energy, 9 contracts reach maturity in 2015, totaling 85,326 km of transmission lines, of which 68,789 km are components of the Basic Network of the

National Interconnected System (*Rede Básica do Sistema Interligado Nacional – (SIN)*) which corresponds to approximately 67% of this system.

These contracts are owned by the federal companies Eletrobras Chesf, Eletrobras Eletronorte, Eletrobras Eletrosul and Eletrobras Furnas, and by the state companies COPEL, CEMIG, CEEE e CELG, and a private company CTEEP.

In the case of electric power distribution, 44 concession contracts will expire between 2015 and 2016, which represents approximately 35% of the market served. Among the state-owned concessionaires in this situation, CEA, CEB, CEEE, CEMIG, CELESC, CELG, COPEL and CERR are of special interest as are 6 distribution companies (AME, BOVESA, CEAL, CEPISA, CERON and ELETROACRE), which were nationalized in the 90s and are controlled at present by Eletrobras.

The main effect of renewal is the total regulation of the rates applied and set by The Brazilian Electricity Regulatory Agency (ANEEL) under its parameters of quality and services. Before, concessionaires could freely set their tariffs allowing for higher profitability. With the new law, increased regulation will restrict the profits of energy companies.

With the adoption of the renewals on the part of the Companies, the Law stipulates that the companies will be indemnified for assets not completely depreciated using the New Value of Replacement (*Valor Novo de Reposição (VNR)*). The New Value of Replacement was already being used to define the basis of remuneration of the concessions of Transmission and Distribution.

The new replacement value refers to the value of the new asset and that of an asset that is identical or similar to the one being evaluated, obtained from the prices approved by the regulatory agency. This value was used by the government to calculate indemnity of the companies that were not totally depreciated or amortized.

The origin of the resources for indemnity of these assets will come from the Global Reversion Fund⁸ (*Reserva Global de Reversão (RGR)*) which is managed by Eletrobras

⁸ Law 12.783/2013 §4 At the discretion of government authorities and for bidding purposes of extension or renewal, the Global Reversion Reserve (*Reserva Global de Reversão (RGR)*) may be used for indemnity, in whole or in part, of investments linked to reversible assets not yet amortized or depreciated.

and created for reversions, improvement projects and the expansion of the electric system in the areas of generation, transmission and distribution of energy.

3.2 The expected outcome of the renewal of concessions

From 2000 to 2010, the Brazilian electric energy tariff has been singled out, mainly by large business, as one of the causes of the loss of competitiveness of the national economy. Seeking to make the tariff more attractive, the government, with its policy to spur economic development and reduce the 'cost of Brazil,' sought to lower the cost of electricity through Law 12.783.

To this end, the government acts directly on two factors of the tariff structure: sector charges and the electric power industry.

Eletrobras is the administrator for the government of some sectorial charges. The Fuel Consumption Account⁹ (*Conta de Consumo Combustível (CCC)*) is a charge created by the government in early 1970 to cover part of the costs of the acquisition of fuel used in thermal power plants. The Global Reversion Fund¹⁰ (*Reserva Global de Reversão (RGR)*) holds financial resources used for the universalization of electric energy services (especially in remote areas) street lighting, electrical energy conservation programs and asset reversion. The Energy Development Account¹¹ (*Conta de Desenvolvimento Energético (CDE)*) is a resource designed to promote the development of electric energy in the states, and subsidize low-income consumers in addition to expanding the supply of natural gas to States that do not have a piped network.

In relation to the tariffs, Law 12.783 determined the extinction of the Fuel Consumption Account (*Conta de Consumo de Combustíveis (CCC)*), the Global Reversion Reserve

⁹ The Fuel Consumption Account (*Conta de Consumo de Combustíveis (CCC)*) is an obligation of the Brazilian electric sector, charged on the "distribution tariffs" and "usage tariffs" of the electrical transmission and distribution systems – TUSD and TUST, which is paid by all concessionaire electricity distribution companies.

¹⁰ The Global Reversion Fund is an obligation of the Brazilian electricity sector paid monthly by the concessionary companies of generation, transmission and distribution of electricity, for the purpose of providing resources to replenish lumber, of the public services of electric energy.

¹¹ The Energy Development Account (*Conta de Desenvolvimento Energético (CDE)*) is a sectorial responsibility, established by law, and paid by distribution companies, whose annual value is set by The Brazilian Electricity Regulatory Agency (ANEEL) to provide resources to States for energy development to achieve viability and competitiveness of electric energy produced from wind sources, small hydroelectric plants, biomass, natural gas and coal in the areas served by the interconnected electrical systems and to bring electric power service to all consumers in the national territory (universalization).

(*Reserva Global de Reversão (RGR)*), and decreased the value of the Energy Development Account (*Conta de Desenvolvimento Energético (CDE)*) to 25% on consumer tariffs. The reduction of charges proposed represents an average reduction of R\$ 18/MWh on the energy tariff. At the same time, it is justified with the argument that the electricity sector should not be burdened with costs to meet demands that are eminently social, within the logic that energy consumers should bear only intrinsically charges that belong to the electricity sector, while social charges should be borne by the National Treasury.

The federal government has committed itself, through the National Treasury, to make an annual contribution of R\$ 3.3 billion to partially sustain the programs funded by these charges.

Along the same lines, Law 12.783 also intends to reduce the costs of the electric power industry, by way of the proposed renewal of concessions of hydroelectric power plants and transmission lines with contracts that would expire between 2015 and 2017.

4. Eletrobras

Centrais Elétricas Brasileiras S.A. (Eletrobras or Company) is a corporation registered with the Brazilian Securities and Exchange (*Comissão de Valores Mobiliários – CVM*) and with the Securities and Exchange Commission – SEC, with shares traded in the stock exchanges in São Paulo (BOVESPA) – Brazil, Madrid (LATIBEX) – Spain and New York's (NYSE) – United States of America stock markets. The company is a mixed capital company controlled by the Federal Government. Its business purpose is to study, project, build and operate power plants, electricity transmission and distribution lines, and trade transactions arising from these activities. Its purpose is also to grant funding, provide guarantees, in Brazil and abroad, to public service electricity companies that are under its control and in favor of technical-scientific research entities; promote and support research in the electricity sector, especially that which is connected to the activities of generation, transmission and distribution, as well as to perform studies of watershed harnessing for multiple purposes; to contribute to the education of technical staff required by the Brazilian electricity sector, and to prepare qualified workers, through specialized courses, who may also provide assistance to schools in the country or scholarships abroad and sign contracts with entities contributing to the training of specialized technical personnel; to

collaborate technically and administratively with the companies in which it participates as a shareholder and with the Ministry of Mines and Energy in Brazil.

The Company operates as a holding company, managing investments in shareholding interest, holding direct controlling interest in six electricity generation and/or transmission companies, listed below:

- Furnas Centrais Elétricas S.A. - FURNAS
- Centrais Elétricas do Norte do Brasil S.A. - ELETRONORTE
- Companhia Hidro Elétrica do São Francisco - CHESF
- ELETROSUL Centrais Elétricas S.A
- Eletrobras Termonuclear S.A. – ELETRONUCLEAR
- Companhia de Geração Térmica de Energia Elétrica – CGTEE

In addition to controlling the companies of generation and/or transmission of electricity listed above, the Company holds direct controlling interest in five electric power distributors:

- Boa Vista Energia
- Companhia de Eletricidade do Acre – Eletroacre
- Centrais Elétricas de Rondônia – Ceron
- Companhia Energética de Alagoas – Ceal
- Companhia Energética do Piauí – Cepisa

The Company also holds the controlling interest of Amazonas Energia – AmE, not unbundled, acting in Generation and Distribution and in Eletrobras Participações S.A – Eletropar. It holds equity interest of Itaipu Binacional – Itaipu (under a joint control under the International Treaty signed by the Governments of Brazil and Paraguay), of Inambari Geração de Energia S.A. and of Centrales Hidroelectricas de Centroamerica S.A. - CHC.

The Company is the parent or participates as a minority stockholder of several other companies in the segments of generation, transmission and distribution of electricity either directly or through its controlled companies.

Figure 1 – Companies of the Eletrobras Group

the purchase of fossil fuels used in isolated systems of electricity generation, which financial transactions do not affect the net income of the Company (except for the management fee in certain Funds).

The Company also operates as an electricity trading agent of Itaipu Binacional and participating agents of Proinfa (incentive program for alternative energy sources).

Through its subsidiaries, The Company holds several concessions of electricity public utility.

4.1 Financial Statements of Eletrobras and bases for their preparation

The consolidated financial statements were prepared and are presented in accordance with accounting practices adopted in Brazil and with International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) including pronouncements, guidelines and interpretations emitted by the *Comitê de Pronunciamentos Contábeis (CPCs)*.

In December 2012, Eletrobras took a net loss of R\$ 6,879 million. This loss was strongly influenced by the effects of atypical events (impairment, onerous contracts and indemnities) arising from the renewal of concessions that totaled R\$ 11,693 million, explained in detail throughout this paper.

5. Public policy in the electricity sector

The energy sector, in particular the electricity sector, presents unique characteristics that make it very strategic in an economy. The State, by encouraging the formation of productive companies, can act in such a way as to ensure that the energy inputs, indispensable to economic growth, are provided, thereby raising the well-being of the population. When creating State-owned enterprises of this nature, the objective of the State is to ensure supply, allowing the generation of secondary effects on the economy, which tend to spill over to other productive sectors. Because electricity is essential to the industrial base, changes in rates have a multiplier effect throughout the production chain.

In this context, Law 12.783 caused a strong financial impact on generation and transmission companies holding concessions maturing between 2015-2017. This impact was immediately assessed and priced by the capital markets on the stock exchange. For

example, during 2013 Eletrobras' shares lost half their value (a low of 49.7%) in light of the fear of the reduction of the return on its shares.

6. Option of renewal and measurement and effects of the extension of concessions of the public service of electricity at Eletrobras

On December 3, 2012, assembled to consider the most profitable long-term option, Eletrobras shareholders approved the early renewal of Concessions maturing between 2015 and 2017. This act caused several impacts on the accounting of the company.

The option of not renewal was considered by the company but not accepted due to the enormous risk, because even with the guarantee of high levels of income for over three years Eletrobras would record roughly the same number of losses of assets and the same number of result, because the affected assets should be provisioned in the same way by the disclosure of the amounts of their indemnification value and this option would result in different risks as regulatory, operational and continuity.

As regulatory risks can be illustrated by the uncertainty of a future scenario maintenance of indemnification value because the current economic moment in Brazil is not progressing as expected and another point is the new rules of bidding of these property that are still unclear.

As operational risks can be mentioned that with the non renewal of the assets would be handed over to the grantor, and this fact creates a great doubts as to the labor force of these plants, which were not the case bid by Eletrobras itself entail a huge labor liabilities unprecedented in history of Brazil.

As risk of continuity Eletrobras could get lost most of its projects, thereby reducing their ability to cash generation, loss of market share and still in wide competition scenario would occur further reduction in tariffs of these projects.

For these reasons the administration of the Company decided to renew their Concessions.

In accounts numbers on the short-term, due to the tariff reduction proposed, there will be a loss of approximately R\$ 8.7 billion in annual revenue and an indemnity of the non-depreciated assets to the order of R\$ 14 billion.

In accounts numbers on the long-term, considering the group of enterprises of Eletrobras and the Brazilian macroeconomic scenario, increased profitability and the amortization of initial losses are expected. These future effects cannot be registered in the accounting of Eletrobras due to the accounting *Principle of Prudence or Conservatism*.¹²

The effects on the balance sheet of December 2012 are explained in this paper. Table 3 shows the expectation of the annual reduction of revenue over the short-term on the basis of tariff reduction.

Table 3 – Estimated revenue loss

Estimated loss of revenue in R\$ mil:

Companies	Assets Effected	Current	Law 12.783	Difference	Reduction
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¹² The Principle of Prudence or Conservatism states that the lowest value for the components of Assets and the highest value for the components of the Liabilities must be used whenever alternatives exist that are equally valid in quantifying variations in assets or liabilities that alter equity. This principal requires the enterprise to choose that which results in less equity whenever options exist that are equally acceptable. The principle is based on the premise of “never anticipate profits and always anticipate losses.” The application of this principle gains emphasis when estimates must be made to set future values with a reasonable degree of uncertainty.

Chesf	Generation	5,015	1,077	-3,938	-79%
	Transmission	1,438	591	-847	-59%
	Total	6,453	1,668	-4,785	-74%
Furnas	Generation	1,626	596	-1,030	-63%
	Transmission	2,247	694	-1,553	-69%
	Total	3,873	1,290	-2,583	-67%
Eletronorte	Generation	56	18	-38	-68%
	Transmission	1,156	308	-848	-73%
	Total	1,212	326	-886	-73%
Eletrosul	Transmission	896	448	-448	-50%
	Total	896	448	-448	-50%
Impact on Eletrobras	Generation	6,697	1,691	-5,006	-75%
	Transmission	5,737	2,041	-3,696	-64%
Total		12,434	3,732	-8,702	-70%

Source: Management Proposal (*Proposta da Administração*) – 160th AGE 201

Table 4 shows the approved values that will be indemnified on generation and transmission assets that are not completely depreciated or amortized.

Table 4 – Indemnities

Value of Indemnity	
Generation	
Chesf	5,178,303
Eletronorte	35,492
Furnas	744,248
Transmission	
Chesf	1,587,161
Eletronorte	1,682,268
Eletrosul	1,985,568
Furnas	2,878,028
Subtotal	14,091,068
Corrected Indemnities	346,204
Total	14,437,272

According to international accounting standards, the main extraordinary items of measurement in the new scenario of concessions concern the recoverability of assets of energy generation and transmission, CPC-01(R1)-Impairment corresponding to IAS-36, and the cost of signed contracts, CPC-25-Contract-Impairment corresponding to IAS-37.

The renewal of concessions presupposes the express consent of the remuneration criteria, allocation of energy, standards of quality, indemnity of assets not yet amortized or depreciated and based on the new value of replacement (*valor novo de reposição* (VNR)) all of which is foreseen in Law.

For those concessions of generation not renewed and in line with guidelines set out by the Institute of Independent Auditors of Brazil (*Instituto dos Auditores Independentes do Brasil* (Ibracon))¹³ it was necessary to maintain the same measurement of the value as was used with those that were renewed, in other words, using the new replacement value. There was soon a need to calculate this value. To do so, a manual was published by the Energy Research Company (*Empresa de Pesquisa Energética* (EPE))¹⁴ (report # EPE-DEE-RE-

¹³ Ibracon (*Instituto dos Auditores Independentes do Brasil*) is similar to the American Institute of Certified Public Accountants (AICPA) in the US.

¹⁴ The objective of the Energy Research Company (*Empresa de Pesquisa Energética* – (EPE)) is to provide services in the area of studies and research to subsidize the planning of the energy sector, such as electric power, oil and natural gas and its derivatives, coal, renewable energy sources and energy efficiency, among others.

092/2012-r1) that presented the method, parameters and basic criteria to calculate the New Replacement Value of these assets.

Following the accounting principle of conservatism or prudence¹⁵ for the long-term effects, there is no accounting norm that generates effects on the balance sheet even though an expectation exists of an increase in the profitability of future revenue.

To measure the impacts on accounting, the new scenarios of concessions, which follow, were examined:

6.1 Impairment and Burdensomeness (onerosidade)

The rates set to cover the costs of operation and maintenance (plus remuneration) of the extended concessions, in accordance with Administrative Ruling MME 578¹⁶ and 579¹⁷ of October 31, 2012, were tested from the perspective of the coverage of actual costs of operation and maintenance of the effected enterprises and, if the expected revenue stream was lower than the costs incurred, it was recognized as an accounting provision called “Onerous Contract,” in accordance with the terms of Technical Pronouncement CPC 25 “*Provision, Contingent Liabilities and Contingent Assets*”, in addition to carrying out recovery tests of assets not yet indemnified, under the terms of Technical Pronouncement CPC (R1). The tests were produced by a revenue-generating unit (a revenue generating unit is the smallest identifiable group of assets that generates cash flow, which, for the most part are independent of the cash flow of other assets or other asset groups), in connection with the philosophy of the rate system introduced by Law 12.783.

Technical Pronouncement CPC25 – Onerous Contract

“66. If an entity has an onerous contract, the obligation in accordance with the contract must be recognized and measured as a provision.”

¹⁵ The Principle of Prudence or Conservatism determines that the lowest value for the components of Assets and the highest value for the components of the Liabilities must be used whenever alternatives exist that are equally valid in quantifying variations in assets or liabilities that alter equity. This principal imposes the enterprise to choose that which results in less equity whenever options exist that are equally acceptable. The principle is based on the premise of “never anticipate profits and always anticipate losses.” The application of this principle becomes comes to one’s attention when estimates must be made to set future values with a reasonable degree of uncertainty.

¹⁶ See Table 6 – Impacts on Generation

¹⁷ See Table 7 – Impacts on Transmission

“68. This Technical Pronouncement defines an onerous contract as a contract in which the inevitable costs of fulfilling the contractual obligations exceeds the economic benefits that one hopes to receive in the long term from the same contract. The inevitable costs of the contract reflect the lowest net cost of leaving the contract, and this is determined based on (a) the cost of fulfilling the contract or (b) the cost of any compensation or of any penalties resulting from the non-fulfillment of the contract, the lowest of the two.”

“69. Before a separate provision is established for an onerous contract, the entity shall recognize any loss resulting from the devaluation that had occurred on the assets related to this contract) (see Technical Pronouncement CPC 01 – (R1) – Impairment)”

“The objective of this pronouncement is to establish procedures that the entity should apply to ensure that its assets are registered in the entities’ accounting records at a value that does not exceed their recovery value. An asset is registered in the accounting records at a value that exceeds its recovery value if its book value exceeds the amount to be recovered through use or by the sale of the asset.”

In the case of Eletrobras specifically, until September 2012, for the purposes of the Impairment test, the business segment (generation, transmission and distribution) was used as the revenue-generating unit. With the promulgation of Law 12.783 and the resulting tariff regulation by power plant, the revenue-generating changed for each power plant as well as for each transmission line, making it necessary to reanalyze all scenarios in light of the new tariffs.

These effects were significant in the segments not affected by Law 12.783, since inside a segment a non-recoverable enterprise could exist that was supported by a group of enterprises that had surplus, making it unnecessary to make provisions.

In non-renewable concessions, the analysis of recoverability of each concession was carried out through discounted cash flow, taking into consideration the new tariff scenario by enterprise and using it as a discount rate, the weighted cost of internal capital of Eletrobrás (WACC) segmented (generation and transmission) and as a basis of accounting measurement of these assets the new value replacement value (VNR) was used, which caused gains and losses.

In the concessions affected by renewal, the net present value of its cash flow was verified to define the onerousness of these enterprises. With the tariff reduction and the pre-existence of contracts that carried the obligation of buying and selling energy at

guaranteed prices and volumes, in conjunction with the delay in the completion of some enterprises, concessions that had a negative net present value were identified, making them onerous and thereby making it necessary to make a provision for these losses. Of the total onerous contracts in 2012, equaling R\$ 4,905,524, R\$ 3,082,395 were extended concession contracts. This is because the set tariff presented an imbalance in relation to actual costs. In light of this, the obligation that existed, according to each contract, was recognized and measured as a provision that could be reversed on the basis of adjustments in the cost structure.

Table 5 lists the concessions of the Eletrobras system that were affected by Law 12.783 and considered onerous contracts:

Table 5 – Onerous Contracts in December 2012

Onerous Contracts arising from Law 12.783 in 31 Dec 2012	
Transmission	
Contract # 061/2001	84,139
Contract # 062/2001	1,407,057
Generation	
Itaparica	1,018,534
Camaçari	357,043
Funil	83,158
Complexo Paulo Afonso	34,107
Purchase of Energy	98,358
Value of Loss on Results	3,082,395

The necessity of a provision of R\$ 1,160 million due the test of Impairment in 2012 was identified, R\$ 1,119 million being in the segment of generation and R\$ 41 million in the segment of transmission.

6.2 Impacts on Business of Generation

Impacts on business of generation directly affected by Law 12.783/2013

- Receiving by Eletrobras the compensation for non-amortized generation assets by values defined in Ordinance number 580¹⁸ mentioned below. The amount of compensation will be adjusted by the Extended Consumer Price Index - IPCA until the date of its effective payment.
- Amendment of the price for tariff regime, with periodic rate review in the same models as those already applied to the transmission activity hitherto. Additionally, in the future, a share of assets not yet amortized or depreciated may be included, as long as it is homologated by The Brazilian Electricity Regulatory Agency (ANEEL). The tariff will be calculated based on the operation and maintenance costs, plus the rate of 10%.
- New investments (modernizations and improvements) occurring after December 31, 2012, if formally approved, shall be addressed in future tariffs, considering that its remuneration criterion is yet to be defined.
- Allocation of physical energy guarantee and of hydroelectric power plants potency quotas to public service concessionaires of electricity distribution from the National Interconnected System - SIN, to be set by the Brazilian Electricity Regulatory Agency (ANEEL), which will be destined to the regulated market.
- Reduction or elimination of the following regulatory charges: Global Reversion Reserve - RGR, Energy Development Account - CDE and Fuel Consumption Account - CCC.

Table 6 exemplifies tariffs, by power plant, set by the regulatory agency:

¹⁸ Table 8 - Indemnity amounts of Generation Concession Contracts, Ordinance 580/MME/MF, altered by Ordinance MME/MF 602/2012

Table 6 - Tariffs of Concession of Generation of Electrical Power – Ordinance MME 578/2012

Concessionaire	Hydroelectric Power Plant	Installed capacity (MW)	Tariff (R\$/kW)
CHESF	Complexo Paulo Afonso	4,279.60	29.92
CHESF	Xingó	3,162.00	35.61
CHESF	Luiz Gonzaga (Itaparica)	1,479.60	42.67
Furnas	Marimbondo	1,440.00	39.22
Furnas	Furnas	1,216.00	40.60
Furnas	Estreito	1,048.00	41.58
Furnas	Corumbá I	375.30	57.59
Furnas	Porto Colômbia	319.20	60.94
CHESF	Boa Esperança	237.30	66.74
Furnas	Funil	216.00	66.59
Eletronorte	Coaracy Nunes	76.95	100.25
CHESF	Funil	30.00	103.71
CHESF	Pedra	20.01	82.65
CHESF	Araras	4.00	38.86

6.3 Impacts on Business of Transmission

Impacts on business of transmission directly affected by Law N°12,783/2013

- Receiving of indemnity of unamortized transmission assets acquired after May 31, 2000 (RBNI), by values defined in Ordinance No. 580 previously mentioned. The amount of compensation will be adjusted by the Extended Consumer Price Index - IPCA (Article 3 of Ordinance No. 580 aforesaid) until the date of its effective payment.
- Transmission concessionaires should send all information to The Brazilian Electricity Regulatory Agency (ANEEL) related to assets acquired before May 31, 2000 (Basic network system existing), not yet depreciated or amortized, needed for the calculation of complement indemnity within a period to be set by the grantor, will be paid in 30 years, updated in the form of regulation.
- The tariff (new Allowed Annual Revenue – RAP) will be calculated to cover the costs of operation and maintenance, initially of 10%.

- New investments (reinforcements and improvements) occurring after December 31, 2012, if formally approved, shall be addressed in future tariffs, considering that its remuneration criterion is yet to be defined.
- Elimination of Global Reversion Reserve - RGR and Fuel Consumption Account - CCC and reduction of Energy Development Account - CDE to 25% of the current rate.

Table 7 exemplifies the tariffs, by contract, set by the regulatory agency:

Table 7 - Annual revenue permitted of Transmission Concession of Electrical Energy Ordinance MME 579/2012

Concessionaire	Concession Contract	RAP
CHESF	061/2001-ANEEL	517,607
Eletronorte	058/2001-ANEEL	276,252
Eletrósul	057/2001-ANEEL	406,109
Furnas	062/2001-ANEEL	629,803
		1,829,771

6.4 Impacts on Business of Distribution

Impacts on business of distribution in general

- Reduction or elimination of regulatory charges (CDE, CCC and RGR).
- Elimination of exchange variation impacts on the purchase of energy from Itaipu to consumers, considering that the National Treasury will take on such costs.
- On October 15, 2012, distributors whose concessions will expire in 2015 had the right to express their interest in extending the concession for an additional period of 30 years, which they did. Until the present moment, the criteria for extension of such contracts have not been regulated by the Public Authority and, therefore, the signing of the concession contract for the distributors that have expressed interest did not occur in October 15, 2012, and will occur only upon the expiration of the current concession.
- There are no guarantees that the Grantor will approve an extension in accordance with the new conditions, depending on several criteria, which will be reviewed by

the Grantor. There is a forecast of non-amortized asset indemnity at the end of the concession.

- The Company had a deadline for reviewing and accepting the conditions of indemnity and rates, the date stipulated by the Public Authority for signing the addenda to the generation and transmission concession contracts, scheduled for December 4, 2012, at which time the contractual amendments were signed.

The extension presupposed the express acceptance of the following conditions by the concessionaires:

I - remuneration for calculated rate by the National Electricity Regulatory Agency (ANEEL) for each hydropower plant;

II - allocation of physical energy guarantee and hydroelectric power plant quotas to public service concessionaires of electricity distribution of the National Interconnected System - SIN, to be defined by The Brazilian Electricity Regulatory Agency (ANEEL), according to regulation of the grantor.

6.5 Premises for the measurement of accounting effects

To measure the impact on accounting, the following premises were used:

6.5.1 Generation

Premises for Extended Concessions:

(a) Basic Project

–Book value - indemnity value = low (gain or loss)

(b) Modernization and improvements

–Book value - new value of replacement (VNR), if

VNR > book value = just report the VNR

VNR < book value = provision for loss

For non-extended Concessions, we apply the impairment test using each Power Plant as a revenue generating unit and adjust the book value to the new value of replacement (VNR)

according to the method contained in report # EPE-DEE-RE-092/2012-r1 released by the Energy Research Company – EPE.

6.5.2 Distribution

Because the book value aligned with the new replacement value and due to the non-disclosure of the renewal criteria, there were no significant accounting impacts in December 2012.

6.5.3 Transmission

Premises for the extended Concessions:

- (a) For the assets constructed after the initial Project – Basic Network of New Facilities – RBNI

Book value – value of indemnity = low (gain or loss)

- (b) For the assets included in the original Project, Basic Network of Existing System – RBSE

Book value – new value of replacement (VNR), if

VNR > book value = just report the VNR

VNR < book value = provision for loss

- (c) Assets acquired for modernization and improvements

-With tariff authorized by ANEEL = keep the asset

-Without tariff authorized by ANEEL = provision for loss

For non-extended Concessions we have the following premises:

Maintain the book value of the assets considering the new value of replacement (VNR) established by the grantor of the concession for new assets and apply the impairment test.

6.6 Indemnity Values

The assets recorded on the balance sheet prior to the renewal of the concessions were historic values and covered the improvement and modernization expenses, with the determination of the indemnities by the grantor on the renewed concession using the new value of replacement (VNR) as a base, the difference between the new value of replacement and the registered book value generated the gains or losses of these assets.

Within these premises and considering the values of indemnities reported by the regulatory agency, there was a total of R\$ 14.4 billion in indemnities and a reduction of assets totaling R\$ 2.7 billion as described in the tables below:

Table 8 - Indemnity amounts of Generation Concession Contracts, Ordinance 580/MME/MF, altered by Ordinance MME/MF 602/2012

Concessionaire	Hydroelectric Power Plant	Potential (MW)	Indemnity	Operation Start Date
CHESF	Xingó	3,162.00	2,929,832	12/16/94
CHESF	Paulo Afonso IV	2,462.40	360,473	12/1/79
CHESF	Luiz Gonzaga (Itaparica)	1,479.60	1,730,602	6/13/88
Furnas	Marimbondo	1,440.00	64,368	10/25/75
CHESF	Apolônio Sales (Moxotó)	400.00	84,613	4/15/77
Furnas	Corumbá I	375.00	679,880	4/1/97
CHESF	Boa Esperança (Castelo Branco)	237.30	72,783	4/7/70
Eletronorte	Coaracy Nunes	67.98	35,492	12/30/75
Total			5,958,043	

Table 9 - Indemnity amounts of Transmission Concession Contracts, Ordinance 580/MME/MF

Concessionaire	Concession Contract	Indemnity
CHESF	061/2001-ANEEL	1,587,161
Eletronorte	058/2001-ANEEL	1,682,268
Eletrosul	057/2001-ANEEL	1,985,568
Furnas	062/2001-ANEEL	2,878,028
		8,133,025

Table 10 - Analysis of indemnity amounts and net book values before impacts of Law 12.783/2013

	Accounting Residual Amounts	Indemnity	Gain (loss) with indemnities of extended concession
Generation			
Chesf	5,749,635	5,178,303	(571,332)
Eletronorte	113,044	35,492	(77,552)
Furnas	1,897,766	744,248	(1,153,518)
Transmission			
Chesf	3,707,071	1,587,161	(2,119,910)
Eletronorte	2,290,854	1,682,268	(608,586)
Eletrosul	1,407,766	1,985,568	577,802
Furnas	1,969,729	2,878,028	908,299
Subtotal	17,135,865	14,091,068	(3,044,797)
Interest	-	346,204	-
Total	17,135,865	14,437,272	(2,698,593)

6.7 Summary of Impacts on Accounting

With all effects registered and measured, the final global result of Law 12.783 was a loss of approximately R\$ 10.1 billion on the consolidated financial statements of Eletrobras in December 2012 and a reduction in assets of R\$ 10 billion, as shown in the table below:

Table 11 - Balance Sheet Effects in 2012

Balance on 12/31/2012 - Before Law 12.783/2013								
	(b)Fixed Assets	Intangible	(a) Financial Assets	Onerous Contracts	Provision/ Impairment	Effects of Law 12.783/2013 on 2012 Income Statement	Monetary Restatement of Indemnity	Total assets after impacts of Law 12.783/2013
Generation								
Chesf	15,244,200	77,258	-	(711,375)	-	(5,999,682)	171,485	8,781,886
Eletronorte	10,355,757	47,569	-	(21,553)	(408,207)	(77,552)	1,093	9,897,107
Eletrosul	5,663,283	71,271	-	(959,000)	(198,645)	-	-	4,576,909
Furnas	18,276,844	1,024,012	-	-	(1,028,266)	(1,236,677)	22,841	17,058,754
Others	1,729,606	1,819	-	-	(47,600)	(23,948)	-	1,659,877
Transmission								
Chesf	-	-	8,040,558	-	-	(2,245,560)	31,746	5,826,744
Eletronorte	-	-	8,169,235	-	(28,168)	(608,586)	33,647	7,566,128
Eletrosul	-	159,577	4,169,939	-	(32,115)	577,802	39,715	4,914,918
Furnas	-	711	9,053,473	-	-	(830,359)	45,677	8,269,501
Distribution								
Distributors	1,410,976	837,779	4,236,765	(131,200)	-	359,182	-	6,713,502
Total	52,680,666	2,219,996	33,669,970	(1,823,128)	(1,743,001)	(10,085,380)	346,204	75,265,326

Table 12 - Total of assets (liabilities) after the impacts of Law 12.783/2013

Total assets (liabilities) after the impacts of Law 12.783/2013	Balance on 31/12/2012 - after the effects of Law 12.783/2013				
	(b)Fixed Assets	Intangible Generation	(a)Financial Asset	Indemnity Receivable	Onerous Contracts
Chesf	8,781,886	5,086,435	77,258	487,822	5,349,788 (2,219,417)
Eletronorte	9,897,107	9,834,506	47,569	-	36,585 (21,553)
Eletrosul	4,576,909	5,464,638	71,271	-	- (959,000)
Furnas	17,058,754	14,355,093	1,024,012	995,718	767,089 (83,158)
Others	1,659,877	1,658,058	1,819	-	- -
					Transmission
Chesf	5,826,744	-	-	4,291,976	1,618,907 (84,139)
Eletronorte	7,566,128	-	-	5,850,213	1,715,915 -
Eletrosul	4,914,918	-	159,577	2,730,058	2,025,283 -
Furnas	8,269,501	-	711	6,752,143	2,923,705 (1,407,057)
					Distribution
Distributors	6,713,502	1,410,976	837,779	4,595,947	- (131,200)
Total	75,265,326	37,809,706	2,219,996	25,703,877	14,437,272 (4,905,524)

Table 13 - Effects of Law 12.783/2013 on Financial Assets

Generation	
Reclassification of assets to financial assets (upgrades and improvements)	1,483,540
Effect on financial assets	1,483,540
Transmission	
Reclassification to receive indemnity	(8,133,025)
Adjustment to the New Value of Replacement of indemnifiable assets	-331,602
Gain (loss) with indemnities of extended concessions	(1,242,395)
Installment of non-recoverable assets - impairment	-41,511
Effect on financial asset	(9,748,533)
Distribution	
Adjustment to the New Value of Replacement of the compensable assets	359,182
Effect on financial asset	359,182
Effect on total financial assets	(7,905,811)

Table 14 - Effects of the Law 12,783/2013 on the changes of the fixed assets of 2012

Generation	
Reclassification for indemnities receivable (basic project)	(5,954,768)
Adjustment to the New Value of Replacement of the compensable assets	(2,825,060)
Gain (loss) with indemnities of the extended concessions	(1,802,402)
Reclassification of financial assets (upgrades and improvements)	(1,483,540)
Installment of assets not recoverable - impairment	(1,119,198)
Total effect on fixed assets	(13,184,968)

Table 15 - Effects on Income Statement in 2012

	Chesf	Eletronorte	Eletrosul	Furnas	Others	Total
Generation	(5,999,682)	-77,552	-	(1,236,677)	-23,948	(7,337,859)
Profit (loss) with indemnities of extended concessions	-571,33	-77,552	-	(1,153,520)	-	(1,802,402)
Adjustment to the New Value of Replacement of the Indemnifiable Assets	(2,801,112)	-	-	-	-23,948	(2,825,060)
Onerous Contract	(1,508,042)	-	-	-83,158	-	(1,591,200)
Installment of non-recoverable assets - impairment	(1,119,198)	-	-	-	-	(1,119,198)
Transmission	(2,245,560)	-608,586	577,802	-830,359	-	(3,106,703)
Profit (loss) with indemnities of extended concessions	(2,119,910)	-608,586	577,802	908,299	-	(1,242,395)
Adjustment to the New Value of Replacement of the Indemnifiable Assets	-	-	-	-331,602	-	-331,602
Onerous Contract	-84,139	-	-	(1,407,056)	-	(1,491,195)
Non recoverable portion of assets – impairment	-41,511	-	-	-	-	-41,511
Distribution	-	-	-	-	359,182	359,182
Adjustment to the New Value of Replacement of the Indemnifiable Assets	-	-	-	-	359,182	359,182
Total	(8,245,242)	-686,138	577,802	(2,067,036)	335,234	(10,085,380)

7. Results and Conclusions

Eletrobras took a net loss of R\$ (6,879) million in 2012, R\$ (10,085) million being a result of Law 12.783. Excluding these atypical effects, Eletrobras would have had a profit of approximately R\$ 5.9 billion. Given this, the Administration of the Company paid dividends on R\$ 897.9 million using its reserve, which, even after losses, stood at R\$ 11 billion.

Continuing to pay dividends on its shares had a positive impact, with share prices rising between 16 and 12%. The company also revealed a new business plan that included a 30 percent reduction of funding costs over three years.

In the economic policy, the measures defined in Law 12.783 are in line with the recent government decision to stimulate productive activities. In permitting the reduction of production costs, the government hopes to improve the conditions of production of various sectors with repercussions on employment and income levels.

The tariff reduction should also help control inflation, allowing for great flexibility in monetary policy toward the inflation target.

The main consequences of Law 12.783 occurred in state-owned enterprises. It should be noted that 77% of transmission and 98% of generation belong to companies under the control of federal and state governments.

There is no disagreement about the need for tariff reduction on electricity in the country. The reduction expected by the government is due to the elevated weight that remuneration and depreciation of investments have on the tariff of generation and transmission.

For Eletrobras, Law 12.783 brought the possibility of renewing concessions if the concessionaire accepts the conditions set by the Grantor, that is, of anticipating the maturity of the concessions, prices and quality requirements. The value of indemnity was calculated in accordance with legislation, but without considering the effects of reform, improvement and expansion projects, which were lower than book value. This difference was adjusted on the financial statements of 2012 with the option of renewal; if renewal was not accepted, even then there would be a loss of assets, but with the provision, independent of which option was taken, the adjustment of costs were necessary to account for the loss of revenue (approximately R\$ 8 billion) and improvements in operational efficiency. The option to accept renewal on the part of Eletrobras was based on the analysis that concluded that its group of enterprises aligned with the natural increase of consumption and demand of electricity in Brazil would have more advantages in the long term since expected returns would amortize the initial losses and increase profitability.

With the new tariff scenario, one of the major challenges energy companies face is guaranteeing execution of investment projects. For this reason, it is important that a good methodological approach is used – one that ensures, from its conception to the delivery of the project, a technical and financial vision including risk assessment.

Companies in the sector face two major dilemmas; one financial, to increase revenue in an environment of reduced rates, and the other managerial, with the need for better management of operating costs in the face of reduced operational margin.

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