

## REGULATION OF THE COMMERCIAL LOSS PROCESSES IN THE BRAZILIAN ELECTRICAL SECTOR

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### ABSTRACT

*The financial/economic balance guaranteed by the concession agreement entered into between the concessionaires and the granting powers has as one of its prerogatives an active management by the service providing agent, which among others gives evidence of the need to control technical and commercial losses. Control of these losses in the companies in the electrical energy sector is fundamental for continuing to provide electrical energy distribution services.*

*This paper presents the evolution of the acts that regulate distribution concessionaire activities in identifying irregular consumption in order to be able to make a comparison with the current Federal Agency (ANEEL) Resolution 456. It also approaches diverse inadequate actions concerning ANEEL Resolution 456 practice by both the concessionaires and the consumers that impose the need to standardize procedures for the fourteen concessionaires in the State of São Paulo.*

### INTRODUCTION

A discussion on the recent policies adopted by the electrical energy distribution companies in Brazil, with regard to reducing commercial losses resulting from irregular energy consumption, leads us to question the following: what is the recent motivation for frontally combating this practice?

The answer to this question should be formulated based on two analyses: (1) the evolution of the regulatory acts that deal with irregular consumption and the current Articles 71, 78 and 90 of ANEEL Resolution No. 456; (2) an understanding of the changes that have occurred in the sector's regulatory system, which after 1994 and with regard to electrical energy tariffs, established a tariff system with maximum prices or a ceiling.

It should be remembered that between 1974 and 1993, a period during which there was a tariff balance, concessionaires had very little or no incentive to minimize its costs since they were not obligated to submit their cost calculations as the problem for each concessionaire was reduced to obtaining or not, coverage of its global costs from tariff earnings.

These two factors are related since there always existed the possibility of punishing consumers for fraudulent acts, however, there has never been an initiative by the concessionaires to attach the problem. If on one hand

there existed a regulation concerning the matter, although rather timid, on the other hand there existed a tariff that permitted passing on to the consumers all of the costs inherent to providing electrical energy distribution services. If the tariff recomposition at the time allowed the inclusion of commercial losses in the tariffs, and particularly in this case dealing with only the irregular consumption, what is the need for the concessionaires' greater attention with regard to consumers that take illicit attitudes?

Today, regulatory stimulation increases motivation to combat the practice of theft that leads to extremely high commercial loss percentages. According to ANEEL, the concessionaire has a strong incentive to reduce losses to levels lower than the regulatory standard since it may withhold as a benefit, during the tariff revision interval, the difference between this total amount and the amount that it may obtain in reality, valued at the purchase price.

If today the concessionaires' objective is to reduce losses in order to be able to work with the differences in earnings obtained, it results in the fundamental question of how to implement an action plan that in its totality respects the concessionaire's right and that of the consumer!

This article gives a more detailed approach to commercial losses originating from irregular consumption (fraud). However, losses resulting from clandestine connections also affect a large part of the concessionaires, mainly those active in large centers such as São Paulo and Rio de Janeiro. It is understood that in order to analyze commercial losses resulting from clandestine connections it is equally important and necessary to make a socio-economic approach, which is not the focus of this paper.

As regards the matter of delinquency, which is not considered a commercial loss, it should be emphasized that in the tariff revision process the matter was dealt with through the concept of Efficient Operational costs, adopting a transitive operational cost that develops according to a descending regulatory trajectory as a percentage of the gross earnings (without ICMS tax) up to the final amount of 0.2% at the conclusion of the second tariff period. This action by the Regulator aims to avoid consumers in good standing paying for delinquent consumers.

### PAST REGULATIONS REGARDING FRAUD

Irregular energy consumption, until publication of ANEEL Resolution 456/2000, was always treated as “fraud” in Federal Decrees and Directives published by the former National Water and Electrical Energy Department. Only after publication of the aforementioned Resolution, the term “fraud” was abandoned, since to use it one must prove the practice of bad faith.

The concessionaire’s direct responsibility is introduced in Directive 378 on March 26, 1975, which sets forth in its Article 32 that *in cases of fraud committed by the consumer, which results in incorrect billing, the concessionaire may estimate the period of the occurrence and the differences in supplying to be billed, taking into account as the correct amount the largest verified in the last twelve months of normal measurement, plus a fine of 30%*. Authorization for suspending supply in cases of fraud was set forth in this Directive in its Article 51, Item “b”; *the concessionaire should suspend supplying when it determines, unequivocally, that there is an occurrence, by the consumer, of consumption fraud, clandestine connection, interference in the meters and conductors connecting to the distribution grid, or also in the equipment installed by the concessionaire; and use of any type of artifice that aims to harm the concessionaires.*

DNAEE Directive 095 on November 17, 1981 set forth the following text for dealing with frauds: Article 53: After unequivocally verifying that as a result of fraud imputable to the consumer, in which consumption amounts or demands have been measured below the real amounts, the concessionaire shall estimate the supplying differences to be billed and considering the correct amounts to be those of the great consumption or demand verified in the previous 12 (twelve) months of normal measurement, plus a fine of 30% (thirty percent).

There are more details given in the treatment to be given when verifying fraud, which may be observed in Directive 222/87 that include the matter of retroactivity allowed for billing.

With the revision of Directive 222/87, on November 12, 1997 a revision was made to DNAEE Directive 466 that sets forth the conditions for supplying electrical energy.

In the theme available, the new was the inclusion of obligatory time interval for performing inspections on the measurement equipment (meters): Article 34: Twenty-four months for Group A and Thirty-six months for Group B (small consumer units).

In the regulatory acts presented there have been constant improvements made in the Directives that determine the procedures necessary to characterize fraud. However, the unequivocal verification of fraud needed more precise methodologies, which have been set forth in ANEEL Resolution 456/2000.

### ANEEL RESOLUTION 456/2000.

With the publication of ANEEL Resolution 456/2000, what was previously qualified as the *consumer’s fraudulent attitude* was thereafter named *irregular consumption*. This correction was very position since it only allows accusation of someone for an act of bad faith after being duly proven.

The Resolution sets forth that the first measure to be taken by the concessionaire in verifying irregular proceedings that result in consumption less than the correct amount is the issuance of an **Irregular Occurrence Report** – TOI, which includes the information necessary to record such irregularity.

According to Perlingeiro, the courts understand that the TOI is a document that constitutes unilateral proof. He also points out however, that even with this understanding the TOI sets forth indication of irregularity and may be deemed to be the main proof, which together with other means of proof shall form a set for significant evidence.

As regard billing revision, the criteria set forth in article 72 are practically equal to those established in Directive 466/97, having only the correction of the term *use of illicit means to irregular procedures*.

In the retroactivity aspect allowed for billing, one may affirm that there has been a retrocession with regard to Directive 466/1997. The maximum retroactivity allowed based on 466/97 was from 24 or 36 months, Group A and B respectively, since this period was linked to the concessionaires’ obligation to carry out periodic meter inspections.

As Resolution 456/2000, in its Article 37 only set forth: Periodic verification of the electric energy meters installed in the consumer unit should be carried out according to the criteria set forth in metrological laws, and the consumer must assure free access to the accredited inspectors at the locations where the equipment is installed, and the concessionaires, in practice, no longer have this obligation, in that up to the present date there has been no determination wither regard to this periodicity.

However, the act of the consumer filed appeals against the concessionaire’s decision shall imply that the supply may not be interrupted until the administrative proceedings have been concluded, but the Article 90 allows the immediate interruption.

Even with more details on the actions that should be adopted by the concessionaires and consumers in view of the possibility of any irregular consumption, the interpretation of the foregoing Articles, as well as the companies being able to prove any irregularity have

brought about various questions from the Energy Public Service Commission for the State of São Paulo. These involve diverse aspects associated with the characteristics of the regulation and concession agreement, where it is required to maintain courtesy in the concessionaire's commercial relationship with their clients, and the matters of civil rights that conflict, partially, with Article 90 in Resolution 456/2000.

**THE CSPE ANALYSIS PROCESS**

The CSPE is an autarchic entity connected to the Secretariat of Energy, Water Resources and Sanitation, created by Complementary Law No. 833 on 10/17/1997 and regulates Decree No. 43.036 of 04/14/1998.

Since its beginning as an oversight agency for electrical energy service concessions, it has been responsible for overseeing fourteen electrical energy concessionaires in the State of São Paulo and has recorded as of 3/18/2005, 2,899 cases of irregular consumption, and approximately 60% were dealt with during 2004 and the 1<sup>st</sup> quarter of 2005.

An analysis of the irregular consumption processes recorded with the CSPE allows one to confirm that there was not and still is no preoccupation by the concessionaires with regard to inspecting the consumer units. One may note from the consumption history for the last five years presented by the concessionaires in these processes that the majority of the consumer units have not had any meter inspections in the last 10 years.

As of 2002, a tariff revision process began for the concessionaires in the State of São Paulo, in which it was stipulated for each company a maximum loss percentage, including technical and commercial losses.

As a result of the regulation restriction there was a significant increase in inspections that sought to reduce the amount of commercial losses.

Although Resolution 456/2000 set forth more details regarding the procedures to be adopted with regard to the possibility of confirming irregular consumption, one observes by the CSPE process analyses that Article 72 of the aforementioned Resolution has only been partially performed with, and in many cases in a very particular manner by each concessionaire.

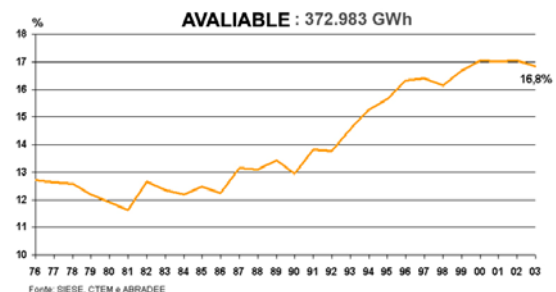
This verification has caused the CSPE, together with the fourteen energy concessionaires and with participation from the Energy Industry Union for the State of São Paulo (SIESP) to carry out discussions on the problems regarding analysis of the cases of energy measurement irregularities, seeking to homogenize the understanding and procedures for analyzing the irregularities. The result of this work has been more synergetic activities among the

concessionaires, consumers and the state regulatory agency.

**LOSSES IN THE ELECTRICAL SECTOR**

The preoccupation in combating energy losses has been extended to the other electrical energy companies in Brazil. Distributors have been implementing programs to combat energy theft, which was demonstrated in the 1<sup>st</sup> Workshop – Energy Theft/Fraud and Theft of Conductors and Equipment held in November in Curitiba (documents available on the Internet at: [www.abradee.com.br](http://www.abradee.com.br)).

Data presented by the ABRADÉE – Brazilian Association of Electrical Energy Distributors in the aforementioned event indicated a loss rate of 16.8% in 2003, as shown in Figure 1.



Source: ABRADÉE/2004  
Figure 1: BRAZIL – System loss index

The losses in Average Voltage and Low Voltage in 28 concessionaires are demonstrated in figure 2.

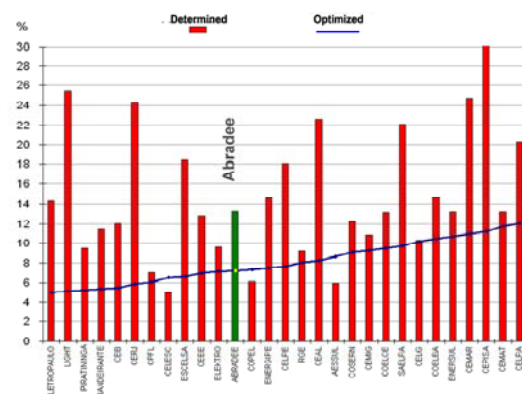


Figure 2: Loss Index of the MT and BT Systems (2003)  
Source: ABRADÉE/2004

The technical notes published by ANEEL that set forth provisions regarding tariff revisions take into account the maximum percentage of technical and commercial losses allowed to be passed on to the tariffs, because: *the concessionaire has a powerful managerial capacity over electrical energy losses that influence the quantity of electrical energy purchased. The so-called non-technical losses, defined as the difference between the total losses and the technical losses. This type of loss is directly*

*associated with the distributor concessionaire's commercial management.*

## PROCEDURES BEING ADOPTED

In the follow-up that the CSPE has been carrying out with regard to irregular energy consumption together with a State concessionaire, it is noted that the development of the analysis of processes on measurement irregularities involve various degrees, some of which are the following:

- imposition of results goals for concessionaires, resulting in undue actions in the work teams;
- characterization of unsuitable outsourcing of this activity that is still maintained by some concessionaires;
- disclosure to the public of the concept of irregularities and criminality of this practice and the consequent penalties;
- need to provide evidential documentation with no errors and improbity by the concessionaire, with the objective of guaranteeing its rights, whether administratively or legally;
- qualification of regulatory agent teams for compliance with the resolution and the need for its development by identifying lacunas, inadequacies or incompatibilities resulting from technological development;
- to facilitate the search for documents and analyses from agencies and auxiliary agents in the processes of identification, evaluation and proof of irregularity;
- characterization of the amount of unaccounted for energy and the feasibility of its recovery in view of the socio-economic characteristics of the clients involved in these processes.

The next step in this process is to the concessionaires' and regulatory agency's compliance with the process deadlines, that once complied with shall also lead to society's full compliance.

## 7. FINAL REMARKS

Within this context of lacunas, regulatory disagreement, one may cite the following:

The need to define a retroactive limit when the same is not identifiable through the historical background of the load at the time when there was a significant reduction in consumption without any documental justification.

In the current regulation there is no limitation as a result of the inexistence of a determination for the maximum inspection/calibration period for the measurement equipment. In the CSPE's understanding it is possible to maintain the deadline set forth in Resolution 466/97, that is, 24 and 36 months for Groups A and B, respectively.

Reevaluation of the index used to reconstruct the load monthly consume from the load survey done when was identified a irregularity in each consumer's unit. The index used as "load factor and diversity factor", since these no longer reflect the modern consumer habits,

(residential, services or industrial units), as a result of significant changes occurred on the Brazilian economy, since 1995, and an expressive technological development occurred of the equipments aiming for rational energy use.

Development of methodologies/actions that seek to facilitate the calibration/inspection processes and technical/scientific report. This shall enable a reduction in the costs involved with this activity as well as reduce the deadlines of issuing the final report. The search for scale economy and reduction of costs by the official metrological agencies enables the generalization of the execution of the inspection processes on measurement equipment, as explained in this CSPE by a representative of the IPEM (Weights and Measurements Institute).

Other action have been sought by electrical energy distribution companies in Brazil that is conductive to analyzing irregularity processes with impartiality, guaranteeing consumer rights and preserving those of the concessionaires. There has also been greater orientation of society in order to become cognizant of legal penalties resulting from manipulating measurement equipment of public services in general. As a consequence of this work, ANEEL, recognizing the revision need of Loss Resolution, introduced a new text about this goal trough an office n° 701/2006-SRC-ANEEL on December, 15 for public suggestions.

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