FÓRUM DE MEIO AMBIENTE DO SETOR ELÉTRICO

Overview of the Brazilian electricity sector in the debate on climate change

A. Presentation

This document aims to present the views of the Brazilian electricity sector on the main issues that involve discussions about climate change, helping the government and the CNI *(which represents the productive sector in discussions and negotiations on climate change)* ***in the next Conference of the Parties (COP-16) to be held in Cancun, Mexico. There are six main points in which there was convergence of views upon consultation with the agents of electric energy generation, transmission, distribution, consumers and traders.***

The following Associations, which agree with the opinions stated here and present this document, **represent almost all the agents of the Brazilian electric sector**: Brazilian Aluminium Association - ABAL; Brazilian Association of Electric Energy Concessionaires - ABCE; Brazilian Coal Association - ABCM; Brazilian Wind Energy Association - ABEEólica; Brazilian Renewable Energy Industries Association - ABEER; Brazilian Association of Investors in Self Production of Energy - ABIAPE; Brazilian Association of Large Industrial Energy Consumers and of Free Consumers - ABRACE; Brazilian Association of Electric Energy Traders - ABRACEEL; Brazilian Association of Electric Energy Generation Companies - ABRAGE; Brazilian Association of Flexible Energy Generation - ABRAGEF; Brazilian Association of Clean Energy Generation - ABRAGEL; Brazilian Association of Thermoelectric Power Generation Industries - ABRAGET; Brazilian Association of Large Electric Energy Transmission Industries - ABRATE; Brazilian Association of Electric Energy Independent Producers - APINE; National Energy Consumers Association - ANACE; Corporate Management Committee Foundation - FUNCOGE; Eletrobras Environment Subcommittee - SCMA; and National Reference Center of Small Hydropower Stations - CERPCH.

Globally, the energy sector is of paramount importance to the theme of climate change, since the production and use of energy accounted for 64.4% of total emissions of greenhouse gases (GHG) in the planet in 2005[1]. Electricity and heating are responsible for 28% of this total.

In 2005, Brazil accounted for only 6.5% of global GHG emissions, while deforestation is responsible for about 64.1% of national emissions. In turn, the **national electric power generation accounts for only 2.1% of emissions of greenhouse gases produced in the country[2]**. This index reflects the high level of renewable sources in our energy matrix. This document discusses, among other topics that will be exposed later on, the conditions that ill allow us to make a commitment to maintain our matrix balanced, making electro-energy safety and low tariffs compatible in a low carbon economy.

[1,2] Gases considered: CO_2, CH_4, N_2O, PFCs, HFCs and SF_6. Source: Climate Analysis Indicators Tool (CAIT) Version 7.0. (Washington, DC: World Resources Institute, 2010).

B. <u>Points of convergence among the agents of the Brazilian Electricity Sector</u> represented by the 18 industry associations that make up the Electricity Sector Environment Forum, the Subcommittee on Environment of the Eletrobrás Companies – SCMA – and the National Reference Center for Small Hydroelectric Power Plants - CERPCH:

1. **Currently, global climate change is considered one of the greatest challenges that the nations have been facing**, since these challenges demand joint actions for addressing them. The possible direct effects of climate change are phenomena like hurricanes, typhoons, storms, desertification, more serious floods and droughts, and rising oceans. When they happen, such events bring more drastic consequences for the poor, who tend to migrate more intensely, and this requires well structured measures: (i) mitigation of emissions of greenhouse gases, and (ii) adaptation to the economic, social and environmental impacts. In this sense, the electricity sector is willing to help with studies for implementation of sustainable measures, always observing the technical, economic and environmental feasibility.

2. **We support the adoption of voluntary action without abandoning the principle of common, yet differentiated responsibilities among developed and developing countries**. The counterpart would be the mitigation mechanisms (NAMAs - Nationally Appropriate Mitigation Action - CDM, REDD) and other mechanisms that can be created. There is a need for different mechanisms for the developed countries that have mandatory goals, and for the developing countries that may set quantifiable voluntary goals.

3. **The other nations should recognize Brazil's efforts in having developed and maintained a matrix based on 89%**[3] of renewable sources, while the world average is 18%[4.] The country, therefore, has a **"Historical Environmental Credit",** in contrast with the "historical responsibilities" of the developed countries due to large emissions in the past. Negotiations should exploit Brazil's comparative advantages. In this sense, we propose the creation of a **RENEWABLE ELECTRICAL ENERGY LABEL** and a **SUSTAINABLE ELECTRICAL ENERGY LABEL**, both internationally recognized and which specify the energy content of the sources used in the making of Brazilian products. The RENEWABLE ELECTRICAL ENERGY LABEL will certify domestic products produced with a significant percentage of renewable sources. The SUSTAINABLE ELECTRICAL ENERGY LABEL will certify products produced with fossil energy generated from carbon sequestration. With these labels, we would be contributing to the competitiveness of Brazilian industry and, at the same time, promoting our status of predominantly clean matrix.

4. The changes in the global climate may adversely affect agriculture, livestock, and public services, especially those associated with the electric system – in terms of distribution, as well as transmission and generation. In general, the facilities may be compromised by the impacts of extreme weather events, which, together with the possible significant variations in the water flows, represent a great threat to the energy security in the country. **Thus,**

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3 Source: Plano Nacional de Energia 2030. Empresa de Pesquisa Energética. Rio de Janeiro. MME/EPE, 2007.

4 *Source: Agência Internacional de Energia (Energy Balance of Non-OECD Countries 2005 -2006, 2008)*

there is a need for the EPE, ANEEL and ONS, coordinated by the MME and with the involvement of the electricity sector, to formalize a document which deals with this issue, to deepen the study of climatic effects on the electrical energy sector and to propose appropriate measures.

5. **We support the goal stated in the National Climate Change Action Plan to maintain the high share of renewable sources in the matrix**. However, we see that if some measures are not taken, we can hardly achieve this goal. We suggest the following measures to the Government in its various and appropriate agencies:

5.1. Internally:

a. To expand, support and maintain effective networks for monitoring water, weather and climate variables to enable further prospective studies considering these variables in a systematic way, including studies of vulnerability of the energy matrix.

b. . To **make the population aware of the benefits that hydraulic power plants and other renewable sources could bring to the power matrix**. The hydraulic power plants currently represent the basis of the Brazilian electricity market. The other renewable sources include wind and biomass.

c. Similarly, to raise awareness regarding thermonuclear sources, which, although not renewable, do not emit greenhouse gases.

d. **To reconsider the current priority for implementation of run-off river hydroelectric power plants, recognizing that reservoirs play a vital role in**: (i) the sector's balance and electro-energetic security; (ii) allowing for a greater potential for power plants of renewable sources, especially the wind and biomass ones, as there can be more integration among all these sources; (iii) the reduction of possible impacts that climate changes can exercise on water behavior (floods and droughts), which can get worse due to global warming.

e. To promote the sustainable use of potential water resources not previously exploited (over 100 GW), found in the Amazon.

f. To bring to the legal framework internal regulations that close the legal gaps on topics related to climate changes, such as governance, administrative and judicial competencies, compulsory and voluntary goals, and economic instruments.

5.2. Externally:

a. To defend a faster implementation of mitigation mechanisms, such as the NAMAs - (Nationally Appropriate Mitigation Actions), which allow that the emission reduction goals proposed by the country actually result in effective access to resources that will be available for the implementation of all renewable and non-emitting sources. Moreover, the other consideration provided for in the discussions within the NAMAs is the transfer of technology, so the negotiations should also seek external credits and other arrangements that allow the transfer of clean technologies to other thermal sources, including the capture and use or storage of CO2 (Carbon Capture Usage or Storage), in order to make these thermal sources non-emitting.

b. To treat thermoelectric plants and their emissions in the context of their status in the matrix. These plants are indispensable to the system's energy security, so one should consider incentives for clean technology transfer, rather than penalties, within the concept of the "Historical Environmental Credit", since the sector planning already includes measures to minimize the thermoelectric plants' operation periods.

c. All the negotiations should avoid the establishment of commitments that may result in rising electricity taxes to Brazilian consumers. The population should benefit from the fact that the country has made tremendous investment in renewable sources and therefore has managed to have a clean matrix. Access to electricity must be guaranteed to everyone and it should be affordable, since it ensures social inclusion and competitiveness of national products;

d. It is of interest to the Electricity Sector to simplify, improve and give continuity to the Additional Mechanisms of Implementation, especially the Clean Development Mechanism (CDM).

6. The electricity sector**, aware of its role in the sustainable expansion of infrastructure necessary for development of the country, presents the** following actions to be implemented regarding climate change**:**

a. Preparation of periodic emission reports which include a comprehensive value chain, if possible.

b. Expansion of the Programs for Conservation and Efficient Use of Energy;

c. Promoting scientific research and instruction undertaken by public and private agencies.

d. Undertaking studies exploring the potential of the reservoirs in mitigating or adapting to the effects of climate change.

e. Development of studies on anthropogenic emissions of greenhouse gases from hydroelectric reservoirs: evaluation of gross and net emissions of greenhouse gases from such reservoirs, in order to reduce the uncertainties in the GHG balance in the hydroelectric reservoirs.

f. Investments in R&D for studies on the impact of, and adaptation to, the climate changes.

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Abbreviations:

CNI - National Confederation of Industry

EPE - Company of Energy Research

ONS - National Operator of the Electric System

ANEEL - National Agency of Electric Energy

MME - Ministry of Mines and Energy