

IMF and Energy Pirates Made Brazil's Electricity Crisis, 'California Style'

by Nilder Costa

The following history of the systematic takedown of the Brazilian national electricity industry, was first published in the June 4-11 issue of EIR's Portuguese-language weekly, Alerta Científico e Ambiental.

The current chaotic state of the Brazilian electricity grid has brought the country to the most predictable and catastrophic energy crisis ever suffered by the population during peacetime, imposing a drastic, yet merely palliative 20% cut in general electricity consumption, which will bring grave and unforeseeable damage to the national economy.

In reality, as we show below, the energy crisis constitutes a "loss of control" of the "controlled disintegration" model adopted for the Brazilian electrical industry by President Fernando Henrique Cardoso's government. He complied with accords reached with the Anglo-American establishment, by which the flow of dollars into Brazil would be maintained, in exchange for handing over the state electrical, telecommunications, and other companies.

The model's underlying premise, is that the Brazilian energy grid would be modified to allow the "natural gas cartel" of Enron and other energy multinationals linked to the Bush family, to play a central role in supplying electricity to Brazil. Imposing the gas cartel on Brazil, in turn, is but the cutting edge of the hoped-for "Energy Free Trade Area of the Americas" (Energy FTAA) pushed by the U.S. State Department.

As is his wont, President Cardoso is attempting to avoid his responsibility for the crisis, taking refuge in extemporaneous arguments of the sort that he made shortly before the collapse of the national currency, the real. This he blamed upon "the international financial crisis." Now, he blames the energy crisis on "St. Peter's moods," which did not bring the desired amount of rain. In both cases, Cardoso had made a very risky bet, to put off long-forecast crises until after the Presidential elections of 1998 and 2002, respectively.¹

1. In statements published in the June 19, 1997 issue of *Gazeta Mercantil*, Fernando Henrique Cardoso declared that what he most feared during his administration, was "a crash in the world financial system," adding that his government was betting on the world monetary casino: "Here, we are betting that this risk is a temporary one; you know, that in economics, as in politics, you always bet on something, because politics is the kingdom of the unpredictable. . . . Our bet is that we're in a phase in which we're changing the structural pattern of our productive system. . . . Yes, we're betting on this, and hope it will take three or four years."

Cardoso was re-elected in 1998, but he lost the bet, throwing the country into a grave monetary crisis, whose "solution" had embedded within it, the embryo of the current energy disaster. Under an agreement signed with the International Monetary Fund (IMF) in 1999, the state electrical companies, which control the generation and transmission of electricity in the country (its distribution was already privatized), were tacitly prohibited from making new investments, because any such investments would have to be counted as part of the public deficit, thus endangering the government's ability to meet the sacrosanct primary surplus. (The requirement that Brazil generate a "primary" budget surplus — i.e., excluding debt service payments — is the central conditionality of the 1999 IMF agreement.)

It is important to emphasize that this conditionality also had a dramatic effect on other vital areas of national infrastructure which are the state's responsibility. To get an idea of the brutal financial dictatorship imposed by the government's economic team, in its eagerness to achieve the goal of a primary surplus, look at the percentage of the budget actually allocated for the Ministries of Transport, Communications, and Mines and Energy, as compared to what had been initially appropriated for these three ministries: In 1999, 80% was paid; in 2000, 34%; and, in the first five months of 2001, 3%. The status of Brazil's highways, for example, is so precarious that Transport Minister Eliseu Padilha, himself, has already warned of a highway "blackout." This year, only 0.82% of his respective budget has been released!

In December 1999, the country escaped electricity rationing by only a hair, when the reservoirs of the Rio Grande and Parnaíba basins, which supply the Brazilian industrial heartland, reached their lowest levels in the 70 years since Eletrobrás began collecting data on water supply. Brazil avoided rationing, when the rains became abnormally heavy, and the crisis was put off for a year.

At the beginning of 2001, Cardoso bet again on the Summer rains, and lost, throwing the country into a crisis which is going to make Brazil "lose three or four years of development," according to the unimpeachable Luiz Carlos Mendonça de Barros, former minister and member of Cardoso's political group, for whom "it is unacceptable that [the energy crisis] occurred." Without a doubt, Mendonça de Barros's discontent stems from the fact that the supremely unpopular electricity rationing — which will worsen over the coming



By the Cardoso government's electricity deregulation scheme, eerily like California's, Brazil's state energy company Petrobras has been forced to stop domestic energy development and take hyperinflationary natural gas imports from the same pirate companies—AES and George Bush's Enron.

months, and can be expected to be repeated next year, when general elections are scheduled—shall form the counterpoint of the final requiem for Cardoso and his political group, whose initial project was to remain in power for at least 20 years.

The 'Saudi Arabia' of Electricity

Before analyzing the process of “controlled disintegration” of the Brazilian electrical industry, it is necessary to understand some of its structural and operational characteristics. Decades ago, the industry's experts referred to Brazil as the “Saudi Arabia” of electricity, because nature had endowed the country with the mighty rivers of the plateau—the *Cerrado* or Central Plateau—which flow both in the general northerly direction (the Amazon, Tocantins, and São Francisco basins), and to the south (the Rio de la Plata basin). Once dammed in cascade, these rivers generate the cheapest energy in the world: The average cost of electricity produced by the most recently built hydroelectric plants is in the range of \$16 per megawatt-hour, and, for those whose construction cost has already been paid off, half of that.

Correctly, between 1950-90, successive governments, notably the military governments, invested heavily in hydroelectric plants, which today produce 91% of the electricity generated in the country, a situation unparalleled in the world. This fantastic comparative advantage was one of the primary reasons that Brazil's accumulated growth rate (GNP) over the last 100 years, was surpassed only by Japan.

In addition to the “free” availability of the fuel, the system permitted energy to be stored in liquid form in its immense

reservoirs, and managed adequately over two- to five-year periods, depending on the varying hydrological dry-rainy cycles (Winter-Summer) of the respective basins. The fact that they are different hydrological cycles, adds another great comparative advantage, given the possibility of “linking basins” through transmission lines, greatly optimizing the whole system, and lowering the risk of an eventual collapse.

If one basin becomes drier in a given year, water accumulated in previous years could be used, or “transferred” in the form of electricity from another basin. It is precisely these characteristics which determine the *modus operandi* of the Brazilian electricity system.

On the other hand, it is known that the addition of fossil fuel-generated electricity to the system allows an even greater optimization, in addition to other advantages inherent to the electrical stability of the system. Conceived in this way, fossil fuel plants should only operate when it is most useful for the system—that is, to compensate for energy not generated by the hydroelectric plants which are in a period of accumulating water for the next cycle.

Naturally, an optimized, interlinked, and harmonious operation of this system, within acceptable risk levels, requires experts of the highest competence with decades of experience.

It is no accident, that Brazil became a center of world-class excellence in all aspects of hydroelectric production, whether in the planning and building of dams, the manufacture of turbines and machinery (those of the Three Gorges in China, the greatest hydroelectric project in the world, are being built in Brazil), and in the operation of the system.



Brazil's electrical industries are among the most skilled and experienced in the world: producing the turbines for China's huge Three Gorges project, for example; and here, steam vessels for Brazil's nuclear plants at the Angra site.

Planning for the system was done by Eletrobrás, responsible for drawing up the Ten-Year Plans which, among other things, determined the construction of new hydroelectric plants or other projects, necessary any time the operational deficit of the system, present or future, reached 5%.

At that rate of risk, calculated by a model designed and refined by generations of experts, who were supplied with reliable facts on the hydrology of the basins and the real functioning of the economy (demand for energy), the Brazilian electrical system stood out for its high level of reliability, and low generating costs.

‘Controlled Disintegration’

The “controlled disintegration” of the Brazilian electricity system began in 1993, when the privatization of the distribution companies—the “filet mignon” of the system—began. The rush to begin the process was such, that the National Electricity Agency (ANEEL), the regulatory body and centerpiece of the new model, was created *during* the privatization of the distributors.

The next step was the creation of the National System Operator (ONS), a private entity, and, last year, the Wholesale Energy Market (MAE), an electricity exchange.

To come up with a privatization model, the Brazilian government contracted Coopers & Lybrand, the British company with “experience” in the same process carried out in Great Britain. The result, inevitably, was the dismemberment, British-style, of the formerly interlinked and optimized system; generation, transmission and distribution, once privatized, would function at the whim of the market god.

Under this scheme, Eletrobrás’s extremely competent planning staff was dismantled—it was considered superfluous—and nothing similar was created to replace it, once planning became *indicative*: That is, the fundamental premise was the insane assumption that the companies operating in the market would invest in new projects whenever the price of energy, calculated on the basis of complex and questionable estimates of future deficits of the system, would project a profitable return on investment. This same criterion is used to “gauge” the basic price of electricity negotiated on the MAE.

Under this model, the whole system’s unified authority, which forecast and provided for future needs to satisfy the real demands of the national economy, was pulverized with the creation of ANEEL, ONS, and MAE, which did not see beyond their own navels. At the same time, the model eliminated the other well-defined chain of responsibility between a generator and the geographic area to which it must provide energy reliably, to meet its precise demand.

Under the British model adopted, whoever buys or installs a generating plant, has no goal but to obtain financial gains from the sale of energy, preferably on the MAE spot market.

The next item demanded was the raising of rates, considered “very low” by potential international investors. The first privatization of a distributor had to set an example, and it did: Light (Rio de Janeiro), was auctioned in May of 1996 to EDF (French), AES (American), and CSN (Brazilian), for 2.23 billion reals. Under the contract resulting from the privatization, Light would receive energy from the state generating company, Furnas, at \$23 per megawatt-hour, and would sell

TABLE 1

Brazil's Reservoirs Dropping, 1997-2000

(Percent Capacity)

Year (December)	Southeast System	Northeast System
1997	65.5%	73.8
1998	46.3%	39.1
1999	28.5%	21.8
2000	18.1%	36.8

Source: Eletrobrás.

it to consumers for \$120, a more than fivefold increase. On average, the distributors passed on electricity at a value 2.5 times higher than what they paid the generators. Therefore, it is not surprising, that according to a survey carried out by the Consumer Defense Institute (IDEC), from 1995 to today, electricity rates charged to the Brazilian consumers have risen by 108% above the average rate of inflation for that period.

In sum, the average rate paid by the Brazilian consumer now matches the levels paid in the hegemonic powers, as demanded by the supposed international investors.

Despite all these incentives, the intended foreign investors were not interested in building new plants which were not natural gas plants, unless they were offered hydroelectric plants already built and paid off—such as those strategic plants belonging to the state sector company, Furnas, and even then, only under favorable conditions. It happens that the privatization of Furnas bogged down, in part due to the unstable model imposed by ANEEL, ONS, and MAE, over unexpected difficulties which arose in the “preparation” of the process (separating off Furnas’s nuclear component), and resistance by various nationalist sectors.

Still left to be completed in this “controlled disintegration” of the system, is the modification of the Brazilian energy grid, so as to make it virtually captive to imported natural gas. Although the idea is to have natural gas provide only 25% of generating capacity, this would be sufficient to control the whole system, as is seen today in the energy crisis.

The ‘Energy FTAA’

Last May, the government lied, when it stated that it was unaware of the gravity of the energy crisis. There were innumerable warnings and written reports issued by specialists and experts for the “appropriate authorities,” months in advance, documenting the impending collapse of accumulated supply in the reservoirs—that is, the energy available to the system. **Table 1** shows the falling reservoir levels in the Southeastern System, the national economy’s most important, recorded in December of each year.

It is apparent that the government decided to consume the energy accumulated in previous years, betting on a deluge which never came, while the process of massive establish-

ment of natural gas plants was planned, pushed by an artificially induced energy crisis, fruit of the broader strategy of “controlled disintegration” of the Brazilian electrical system. That it happened in this precise way, is seen in the fact that Eletrobrás and Furnas were prohibited from investing in new plants and transmission lines, despite having funds readily available.

When the quasi-rationing happened in December 1999, as described earlier, the government concluded that the time had come to execute the plan to make 25% of the country’s electrical grid dependent on natural gas plants. In February 2000, Cardoso launched the Thermolectric Priority Program (PPT), which planned for 49 privately built natural gas plants, which would add close to 17,000 megawatts to the system between 2001 and 2004. To get beyond the written plan, Petrobrás was drafted to participate in 29 of these undertakings.

To direct the process behind the scenes, Cardoso named his son-in-law, David Zylbersztajn, president of the National Oil Agency (ANP).

With all this, there was, however, an impasse, since the presumed investors in gas plants demanded the dollarization of *all* the rates charged for generating electricity, since the natural gas imported from Bolivia is paid for in dollars through the “take or pay” system. That is, Brazil must pay for the gas, whether it uses or needs it, or not. This scheme obliged the fossil fuel plants to operate continuously, not complementarily, thus losing one of the system’s comparative advantages, as explained earlier.

This impasse was only recently resolved, at the height of the crisis, after threats by Enron and AES—both up to their necks in the scandal exploding over their role in creating the California energy crisis through their manipulation of the spot market—to stop investing in Brazil. Once again, it fell upon Petrobrás to assume the risks, in this case, of the exchange-rate variations of the gas price for a year, after which the price difference would be automatically passed on to the consumers through rate increases. Weeks before, Zylbersztajn had already forced Petrobrás to share the Brazil-Bolivia gas pipeline with its competitors, Enron, British Gas, and Chile’s Enersis.

It happens that gas exploration in Bolivia is virtually controlled by Enron, Shell, British Gas, and other energy multinationals, which even auctioned off the whole logistical transport system of YPFB (Yacimientos Petrolíferos Fiscales de Bolivia), Bolivia’s former state oil company. Shell also owns the Camisea concession, the giant gas reserve discovered in Peru, near the Bolivian border, whose future production could be connected to the Bolivian gas pipeline system, and from there to the Brazilian system, participating also in gas exploration in Venezuela and in Brazil, together with Petrobrás. In 1997, natural gas was the star attraction at the Seventh Global Conference on Energy Studies in Latin America, held in London, at which occasion Dick de Jong, director of Shell Interna-

tional, celebrated the end of Petrobrás's monopoly, and characterized the future for gas in Brazil as "exciting": "My crystal ball tells me that demand in the region, including imports and exports could double over the next 25 years," he said.

The Nuclear Factor

The harnessing of Brazil's electrical system to natural gas imported from Bolivia, which, beyond the clear disadvantage of the "take or pay" scheme, is insufficient to meet Brazilian electricity needs, introduces other variables of great strategic importance, once the decision-making power over its supply and price is located outside of Brazil.

On the other hand, the electrical system needs the addition of thermal generation, for the reasons already explained. The obvious solution is to use nuclear energy sources for the following reasons:

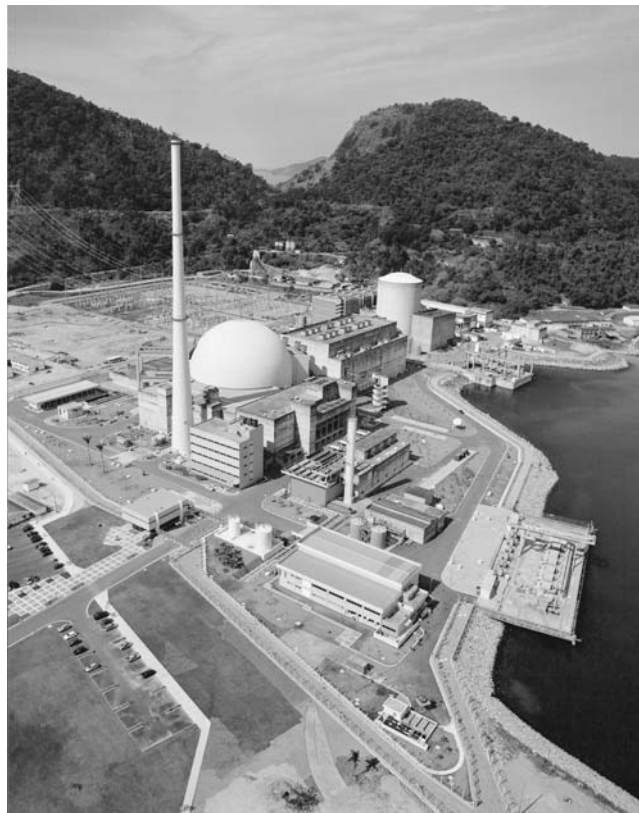
- Brazil has already mastered the technology for the entire conventional nuclear cycle, including fuel production and the planning and construction of nuclear plants, as seen in the Angra 2 nuclear plant;
- Brazil has the sixth largest uranium reserves in the world, and is totally independent in terms of fuel;
- Nuclear power would permit the use—and not the dismantling—of the enormous technical and scientific know-how built up over decades, at great cost to the nation;
- Finally, but not least important, it would create the minimal conditions necessary for the country to enter, de facto, into the scientific-technological domain of nuclear fusion, source of clean and unlimited energy, without which humanity will, inexorably, collapse from within.

In this context, building the Angra 3 plant is crucial, but won't be easy, due to the large anti-nuclear offensive in Brazil, personified by such individuals as José Goldemberg, whose influence on energy policy was evident in the Collor de Mello government (1990-92) and carried over into the Cardoso Administration through his protégé, Zylbersztajn.

Zylbersztajn is a declared enemy of Angra 3, and is one of the "guiding lights" of Greenpeace, according to *Epoca* magazine. As Energy Secretary of São Paulo state during the first administration of Gov. Mario Covas, he "buried" the Navy's project to develop a 100 megawatt nuclear reactor. Aside from his line that, "Anyone who appeals to the courts will get a blackout in exchange" (an arrogant display of contempt for citizens' constitutional rights), Zylbersztajn has another one from years ago, which demonstrates the depth of his knowledge of nuclear plants: "Any technology which requires an evacuation plan, can't be considered safe."

In statements published in the June 11 issue of *O Globo* on the building of Angra 3, to be decided at the next meeting of the National Council on Energy Policy, of which he is a member, Zylbersztajn was categorical: "A decision of this magnitude, which has no impact on the current crisis, shouldn't be made this way."

To successfully escape the U.S. establishment's "Energy



The Angra 1 and 2 nuclear power plants, in operation. In its current, artificially created but extreme power crisis, Brazil needs to build the planned third unit, as well as expanding hydroelectric and fossil-fuel capacity of its own electricity production.

FTAA," Brazil should, for reasons of state, make some strategic decisions, along the following general lines:

- Halt the process of privatizing and deregulating the electricity sector, returning to the system of integrated generation-transmission-distribution, and eliminating the option of a "free market" in energy.
- Through state companies, or in partnership with private companies, invest heavily in building new hydroelectric plants and transmission lines, for which foreign currency would be unnecessary, requiring only the sovereign issuance of credit. Eventually, some plants could be directly auctioned to the private sector.
- Immediately begin building Angra 3, and plan the construction of other nuclear plants.
- Halt the Priority Thermo-Electric Program, but keep projects already under way.
- Consider new hydroelectric plants to be built as part of the integrated plan for developing the whole basin, modelled on the U.S. Tennessee Valley Authority (TVA), and the more recent, inexplicably abandoned, PRODIAT (Integrated Program for the Development of Araguaia-Tocantins). As part of this approach, building waterways and linking basins, should be a priority.