Brazil embarks on alternate-energy-based 'war economy'

"We'll soon have to get used to living under a war economy,"-Brazilian President J.B. Figueiredo admonished the Brazilian people July 4. The entire economic process of that nation of 120 million people, he declared, would "have to be subordinated to the higher interest of resolving energy and balance of payments problems." His solution: oil supply cutbacks combined with inflationary, labor-intensive oil substitutes like coal, charcoal, and, especially, alcohol made from sugar cane.

The higher costs of producing these substitutes for imported petroleum will be partially compensated for by reducing further the consumption levels of the population and by postponing vital social and economic infrastructure projects for years, or even into the next century. Although the program purports to lead Brazil into a new epoch less dependent on petroleum, the energy component of Brazil's model nuclear agreement with West Germany is an apparent casualty of the "war economy." Budget cuts and the diversion of tax revenues to less efficient synthetic fuel investments are already resulting in thousands of layoffs at the nuclear construction sites. While it dares not renounce Brazil's agreement to order from Germany a complete nuclear fuel cycle and eight reactors supplying electricity by 1985, the new Brazilian government policy is to "stretch out" the program for at least the rest of this century.

The "war economy" announcement signals the end of a decade for Brazil, in which cheap energy—coupled with cheap labor and generous government subsidies—brought unparalleled profits to multinational and local industrialists, and rapid growth in Brazil. Finance Minister Mario Simonsen explained July 5, "The war economy, in the Brazilian case, demands a quota of sacrifice from everyone. ... War economy means recycling industries to adopt new forms of energy." Although a month later there was still considerable confusion even in the Presidential Palace over the "optimal" mix of depression-inducing rationing and hyper-inflationary oil derivative price increases needed to compel shifts to lower quality and more expensive fuels, there is little doubt that the upcoming Third National Development Plan will subject industry to the kind of brutal "recycling" which has victimized Brazilian labor since 1964. Especially during the peak of the "Brazilian Miracle," employers "recycled" labor through mass firings of workers just before they became eligible for annual pay increases and simultaneously hiring new crews at lower wage levels. Through "recycling" and other tricks pioneered by newly appointed Planning Minister Delfin Netto and Ambassador to London Roberto Campos, Brazilian labor lost 47 percent of its real wages, according to the DIEESE labor think tank. This has not only restricted the depth of Brazil's consumer market, but has also created an immense scrap heap of "marginalized" and bestialized population which remains as a social "time bomb" for any government.

Figueiredo blamed OPEC for Brazil's energy woes. Substantially identical to President Jimmy Carter's notorious "Eizenstat memorandum," the Brazilian leader received a late June missal from then planning minister, Mario Simonsen, which urged that the president (1) place the blame for the disastrous economic situation of his country and the world on the recent OPEC oil price increases; and (2) take strong leadership in imposing oil consumption cuts and in rapidly developing synthetic fuels as a matter of "national security." Accordingly, Figueiredo exhorted his countrymen that they must accept "more inflation, greater balance of payments deficits, have to get used to the imminence of living under a war economy. ... The nation must accept sacrifices and accept them with pride. Without them, our model of economic of social development will fall like a house of cards. ... Because of its impact on the balance of payments, the energy question will become my government's top priority...."

Simonsen's decision to use OPEC as the pretext for triggering the Brazilian "war economy" is particularly ironic, since Brazil's political friendship with Arab OPEC nations such as Iraq has given it a sure supply of oil at all times. The real problem is the mounting pressures from international bankers for Brazil to self-cannibalize in order to pay its rapidly mounting debts. Brazil's 1979 debt service is projected by the official Fundaçao Getulie Vargas (FGV) to be $10.4 billion (See chart). When combined with oil imports of $7 billion per year (up $2 billion from last year), these two items alone far outstrip Brazil's projected $15.2 billion export income. And, the FGV thinktank correctly projects that the debt crunch will worsen over the coming years.

Pilot "Dark Ages" project—what it means

What is happening is that—by means of the leverage this debt gives the international financial community over Brazil's austerity-minded military government—Brazil is being made a pilot project in low-technology "alternate energy sources" by the "New Dark Ages" advocates centered in London and the New York Council on Foreign Relations. The Brazilian energy program will be replicated in developing countries throughout the world, and even in the United States.

The situation was anticipated by the World Bank, which in successive reports on Brazil has demanded that the country abandon its ambitions to become an advanced industrial nation and instead dedicate all its resources to under-capitalized, labor-intensive agricultural and artisanal production—systems which can crank out loads of debt-paying exports while requiring little imported fuel, capital or technology. In fact, Figueiredo's selection as president was influenced by Anglo-American operations devised to effect such a policy switch. Even with radical policies of replacing imports with ersatz fuels while pumping out exports, Brazil's ability to meet its debt obligations is problematic. As even Figueiredo pointed out, if the world goes down a depressionary path, the markets in Europe and elsewhere targeted for Brazilian export expansion will be increasingly closed off by protectionist reactions. Several bankrupt state agencies are already "renegotiating" their debts, and the *Financial Times* of London concedes, "the servicing burden is reaching nightmare proportions." It is likely, therefore, that Brazil will soon be compelled to adopt ever more devastating policies in an effort to preserve the "credibility" of its $45 billion foreign debt.

Brazil's balance of payments

(in millions of dollars)

	1978	1979	1980
Total exports	12,651	15,277	17,811
Coffee	2,288	2,642	2,830
Manufactures	6,242	8,090	9,777
Total imports	13,639	17,243	19,183
Oil	4,310	6,506	7,414
Trade Deficit	− 988	− 1,966	− 1,372
Service account deficit	− 4,903	− 5,992	− 7,092
Interest on debt	− 2,695	− 3,477	− 4,243
Total current account deficit	− 5,891	− 7,958	− 8,464
Net capital inflow	9,771	5548	8,572
Foreign loans	14,035	11,510	15,691
Foreign Investments	906	1,000	1,100
Debt amortization	− 5,170	− 6,961	− 8,218
Balance of payments	3,880	− 2,410	108
total debt service	− 7,865	−10,438	−12,461
Debt service, % of exports	62.2	68.3	70.0

Source: Fundação Getúlio Vargas, July 1979 projections.
Positive amounts denote inflows; negative amounts denote outflows.

New energy programs

The main objective of the Simonsen-Figueiredo energy policy are:

1. Freeze net oil imports at current 960,000 barrels per day level. Future economic growth will depend entirely on energy conservation and bringing on line domestic non-nuclear energy sources.

2. Boosting domestic oil production from the present 170,000 barrels to 350,000, or, "if God is Brazilian," to 500,000 barrels per day by 1985. The Petrobras state monopoly over on-shore drilling and refining will be broken so that multinational oil companies can wildcat under risk contracts.

3. A scheme to turn sugar cane into ethyl alcohol—the centerpiece of the substitution program—which can be used straight by special auto engines now being mass-produced in Brazil or used in existing cars when mixed with gasoline as "gasohol." Brazil's gasohol program is the world's biggest and most advanced. Brazil has already invested $2.8 billion in alcohol production and is giving top priority to throwing another $5 billion over the next six years to sow the country with cane fields and stills.

4. The major fuel oil burning industries, starting with cement, will be forced to convert to coal. The Procarvãe program calls for $10 billion in investments by 1985 to raise coal production and convert industrial boilers. Another several billions will be required for coal transport infrastructure.

5. Simonsen's memo called for increased use of "biomass," such as firewood and charcoal, which currently supply 26 percent of Brazil's fuel consumption. Brazil has always had a high "natural fuels" component of its energy balance. Even today, 12 million impoverished rural families (40 percent of the population) have no fuel source other than firewood.

6. The nuclear industry will be recycled from being an energy source (requiring substantial investments and imports from Germany) to be become a source of foreign exchange through the export of Brazil's estimated 193,000 tons of uranium oxide ore production.

Energy Minister Cesar Cals calculates that the known Brazilian uranium would fetch $14 billion as yellow cake and $37 billion as enriched uranium in today's world market. As construction of power stations under the German accord is "stretched out" decades into the future, Brazil will seek to speed up the manpower training aspects of the deal so that Brazil can market its nuclear capacities to third nations. Rio's *O Globo* reported July 22 that the pace of construction work on the first German KWU plant at nearby Angra des Reis was halved in June and thousands of workers layed off, due to cuts in the nuclear energy budget.

7. Simonsen defended the triaging of nuclear budgets on the grounds that capital costs for nuclear plants are triple those of hydro-electric installations. However, industrialized Brazil is already 100 percent dependent on hydro sources. Last year's droughts forced energy rationing throughout the industrialized region, despite the reactivation

Despite the $14 billion dam-building program, shortages are expected to heighten during the 1980s. Energy Minister Cals announced that plans to facilitate interregional power shipments, including the transmission of the immense hydro-electric potential of the Amazon Basin to the industrialized southeast, had to be canceled due to budget cuts and the increased costs of aluminium transmission lines. By the end of the century, Cals stated, half of the country's electricity will be in the jungle, therefore, industry will have to relocate there. "Now, the entire national economy has to be oriented in terms of the origins of energy. Whoever is interested in locating projects which consume a lot of energy must endeavor to site them near the dams," Cals warned.

Fuel inflation

Figueiredo entered the presidency in March amid somber pronouncements that inflation would be the death of the nation. Simonsen was given the power of "superminister" to reduce inflation from the 39-46 percent range of the last few years. Business International's Rosemary Werrett applauded Simonsen's policies and forcast his success in cutting inflation to 37 percent. By the end of July, however, the FGV reported that prices had already risen 30.4 percent compared with 23.9 percent for the same period last year before Figueiredo took office. The cost of feed rose 9 percent in July.

The "War economy" will bring with it an added, hyper-inflationary explosion in energy costs, tempered only by stiffer enforcement of wage and price controls which will rapidly erode real earnings and profits. In July, the National Petroleum Council began enforcing diesel oil supply quotas to prevent consumption increases. By July 20, 90 percent of the tractors in the North of Rio state and Minas State were out of gas, and hundreds of trucks littered the highways. Fohla reported that Figueiredo's chief brain-truster, General Golbery de Couto e Silva, convinced him that serious rationing would bring a rapid recession and the social explosion of the unemployed. Golbery argued that in a market economy, consumption could best be cut through sharp price increases and Simonsen's anti-inflation crusade.

So, on July 30, diesel and fuel oil prices were hiked by 50 percent. The National Petroleum Council seeks to increase gasoline to $2.07 per gallon. And Eletrobras is thinking aloud about making up for its budget cuts by eliminating bulk sales discounts given to industrial users of electricity, in line with the government's proclaimed policy of "income redistribution." Inflation will go through the roof in August and following months.

No more miracles

Delfim Netto, "the architect of the Brazilian miracle," replaced monetarist Mario Simonsen in the command post of the Brazilian economy Aug. 15. Delfim served as Finance Minister during the 1968-73 period when heavy foreign investments brought average annual growth rates above 10 percent.

But nobody should expect another round of rapid growth from the ambitious new Planning Minister. Delfim's job will be to preside over the deindustrialization of Brazil at whatever cost in terms of inflation and increased foreign indebtedness. Simonsen, a notorious tight-money man, was booted out of the cabinet Aug. 10 for his reluctance to release the huge funding required for the energy autarchy policies outlined in this report.

The replacement operation was enginnered by General Golbery do Counto e Silva, the brains of the Figueiredo regime, who reportedly is feverishly at work figuring out "which alternative energy source could provide the most employment with the least investment." Golbery is seriously considering doubling the alcohol program and speeding up coal gasification, oil shale and all other synthetic fuels in proportion to the inefficiency of their use of labor.

Golbery's concept is that Brazil's "house of cards" can be held up so long as the population is kept employed, even at starvation ages. This "political" consideration will take precedence over all "economic principles" as Brazil is re-geared for a re-run of Hjalmar Schacht's hyper-inflationary German experiment.

Alternative fuels: the strange case of cement

The cement industry was selected as the first industry to be "recycled" because it is responsible for 6.5 percent of Brazil's total petroleum consumption; and 80 percent of this is concentrated in 57 large cement plants located at an average distance of about 400 miles from the Santa Catalina coal fields. Despite this concentration, it will take several billion dollars and several years for Brazil's pick and shovel mines and railroad facilities to be expanded to provide the coal, and an extremely high-ash product at that. Coal costs a third more than fuel oil, even after oil price hike, and the coal operators are expecting substantial increases in order to capitalize expansion costs.

The coal substitution program evoked a most interesting response from Jose Emirio de Moraes, the most vocal of Brazilian business "leaders" in sounding off against state involvement in the economy, against nuclear development, and for use of biomass and other domestic fuels. An outspoken "free enterprise" ideologue, De Moraes happens to own 17 cement plants and, like many free enterprises, shirks at applying Dark Ages precepts when his own pocketbook is directly at stake. De Moraes declared he would gladly convert from oil to coal, "if there is a guarantee, which only the government can give, of the availability of the product." He would even employ more energy-saving dry-process technology, "but it is necessary for the government to stimulate and finance this substitution."

But what really sent de Moraes for a loop was the suggestion by Mario Garnero, the business representative on the new government National Energy Commission, that industries immediately shift from burning oil to charcoal. De Moraes responded that it wouldn't work, because, "for example a plant which makes 1,000 tons of cement per day would need 20 million board feet of eucalyptus wood, requiring 41,500 acres of land and 6 or 7 years for tree maturation." In a year, a single cement plant would cause the deforestation of 14.5 million acres. To supply the industry permanently, 6 billion acres would have to be planted and replanted with eucalyptus.

This proposition is absurd from a logistical, economic, and even enviromnental perspective. It effectively illustrates the extremely destructive nature of biomass conversion and synthetic fuels generally when you try to run a large-scale economy on them.

Gasohol

The Brazilian gasohol program offers another example of similar nature. The distillation of synthetic fuels from crops was used by the Nazis during their periods of greatest desperation. In Brazil, the stretching of gasoline through the addition of 10 to 20 percent ethyl alcohol has been cheered on by everyone from the local leftists to General Motors President Elliot Estes, who flew down from Detroit to laud Figueiredo since, "Brazil is the first country to present a valid alternative for the fuel crisis, which is alcohol."

This year, Brazil will produce 1 billion gallons of alcohol from distilling sugar cane. In the United States, Midwest Solvents, an efficient producer of grain alcohol, estimates that 2.7 times as much energy is needed to produce the alcohol as the energy content of the final product. What permits Brazil to gain more liquid fuel than that expended in the production process is that the Brazilian system maximizes the burning of biomass (cane bagasse) to power the cane milling and heat the distillation, while utilizing human and oxen muscle power in the cane fields instead of fuel-burning machinery. A leading manufacturer of sugar mills and distilleries, Dedini, estimates that 500,000 new jobs have been provided by the alcohol industry. And the Figueiredo government aims at tripling production before leaving office.

A simple calculation shows that the average productivity of these workers is equal to 2,000 gallons of alcohol per year or about 7 gallons per working day. This 7 gallons permits Brazil to save about $2.50 per day on crude oil imports. So, even though the cane workers are paid only about $3 per day and have to bring their wives and children into the fields for the family to survive, the cost of alcohol is double that of gasoline, which saps the tax revenues and capital accumulation obtained through high gasoline prices.

To cut the cost of drying the 12 gallons of toxic distillery waste which comes with each gallon of alcohol, the distillers dump the toxic substance into the rivers, causing more river-killing pollution than the untreated sewage of Brazil's cities.

Another by-product of the alcohol program is government incentives, including long-term loans at interest rates of 40 percent below inflation, have pushed farmers to plant several million additional acres of the country's richest land in sugar canes. Although no government official will mention it in public, the $2 billion that Brazil will spend this year importing foodstuffs is probably due as much to the displacement of food crops by cane as to the regional droughts and floods. Even from a balance of payments perspective, the misuse of food-producing land and labor for Nazi-style squeezing of bits of energy may well be a false economy.

—Mark Sonnenblick