

Brazil Made Test For Carter 'Bio-Fuel' Scheme

BRAZIL

Half the drivers in Brazil now find their gasoline adulterated with up to 20 percent ethyl alcohol, distilled from sugar cane. This measure was begun in Sao Paulo in early May and spread to Rio on June 20. This program is the first phase of a generalized policy of replacing oil, mineral coke, and other raw material imports with *ersatz* fuel products made from what proponents of the scheme call Brazil's "renewable resources," namely various forms of plant life.

Environment-oriented research institutions in the United States and Brazil consider Brazil to be a fertile "theatre" for all sorts of utopian schemes for converting the supposedly limitless vegetation of that tropical and sub-tropical country into stored chemical energy. A Brazilian Science Policy Project has been set up at George Washington University in Washington, D.C. to coordinate Brazilian efforts in this area with the Carter Administration energy planners. Dr. José Miccolis, the Director of the project, told the February meeting of the American Association for the Advancement of Science (AAAS) in Denver: "Brazil is in a very privileged position to make use of this natural energy collection process, not only because Brazil occupies a huge area where the incident average solar energy is abundant, but also . . . (because of) the labor-intensive characteristics of the related agricultural processes, coupled with the availability of relatively inexpensive and arable land..."

Dr. Miccolis reports that ERDA and Carter energy czar James Schlesinger view Brazil as a test case and are pressuring him to advise on how labor-intensive bio-conversion processes could be used in the United States.

The conclusion which can be readily drawn from the data presented below is that the "renewable" fuel program now being implemented in Brazil is at best an extremely costly and totally inefficient non-solution to the energy crisis — and at worst a catalytic force for ecological, social, and economic disaster. Delays in implementing the program until last month suggest that important sectors of the government energy and finance bureaucracies, and even the alcohol industry itself, are aware of its unviability. Then why is Brazil jumping into alcohol?

One obvious reason is that it would permit diversion of dollar income from the \$4 billion currently being spent on crude oil imports to the \$6.5 billion needed to meet the nation's 1977 debt service requirements. Yet, for all the effort involved, the savings on dollar account through the alcohol program would only amount to \$90-100 million this year, and future savings would rise at only about the same rate as debt service. While bankers may give Brazil a medal for its willingness to sacrifice, that won't pay the bills.

The real motive for Brazil committing itself to become the world's first solar-powered country is that it is being used as a model of Carter energy czar Schlesinger's global energy program. Brazil was chosen to be the laboratory for this experiment in throwing a society back to late medieval "biomass" energy collection systems explicitly as an attempt to prevent it from going ahead with a deal in which West Germany would provide Brazil with an advanced nuclear fission energy cycle.

This point was argued in an editorial in the AAAS's *Science* magazine, August 8, 1975, weeks after the nuclear deal was signed, and again in an article, "Atoms For Brazil, Dangers For All," in Zbigniew Brzezinski's *Foreign Policy* magazine last summer.

After *Foreign Policy* author Norman Gall presented lengthy arguments on why Brazil must be denied access to nuclear energy technology, he concluded: "One of the ironies paving Brazil's new nuclear road is that Brazil could easily become a theater of major technological breakthroughs in using nonconventional energy sources. . . . Brazil is in an excellent position to use photosynthetic transformation of solar energy to produce liquid and gaseous fuels, such as alcohol, methane, and hydrogen. . . ."

Coinciding with Carter's international campaign against nuclear energy development this spring, Miccolis and AAAS operative Allen L. Hammond organized a Brzezinski-style group of "dissident" physicists in Brazil as a fifth column to sabotage the nuclear program from within Brazil. They promoted the "safe option" of biomass conversion to replace "dangerous" atomic energy.

Alcohol Is Inefficient and Uneconomic

Under the *ersatz* fuel program, solar energy is converted by photosynthesis into sugar cane, various other kinds of roots, fruits, grains, bushes and trees, which are then harvested, fermented, and distilled into ethanol, also called anhydrous or ethyl alcohol. The efficiency of this process is abysmally low, with only 0.23 percent of the solar energy hitting the planted area recoverable in the best of cases.

The energy cost is extremely high, too high to be even tried on an industrial scale in a country without a Nazi-type labor system. That's why Brazil was chosen, rather than the United States — although the Ford Foundation-Carter energy program calls for it to be imposed here as soon as possible.

Even in Brazil, alcohol costs 28 percent more than the cost of importing crude oil and refining gasoline. The state oil company Petrobras pays 3.7 cruzeiros per liter or \$1 per gallon for ethanol, and the producers are demanding more. Petrobras's reported operating costs, including an ambitious worldwide oil exploration and drilling program, work out to 2.9 cruzeiros per liter of gasoline or \$0.79 per gallon. Refined gasoline sells for \$0.37 per gallon offshore in the Caribbean. The alcohol would cost far more if its production weren't based on heavy manual labor at \$3 a day. Mechanization is ruled out in advance since machine cutting of the cane costs

almost double manual cutting . . . and machines burn gasoline:

The alcohol program thus locks Brazil into a low-energy throughput labor-intensive system which guarantees the destruction of generations of its labor force in the misery and illiteracy of the cane fields. Present plans for expanding the alcohol program would need up to several million more cane slaves. Even now, sugar planters report they are unable to find sufficient labor at the meager wage levels they can afford to offer. With the programmed massive expansion, workers would have to be held in subsurvival conditions through even stricter police powers than those now employed in Brazil, to prevent cane cutters from migrating in search of more human wages.

Then there are the longer-term ecological effects the scheme will produce.

The alcohol program will engender general starvation. Sugar cane needs good lands. Already 17 percent of the cultivated lands of the state of Sao Paulo are planted with sugar cane; any expansion would be at the expense of food crops — not at the expense of the debt-paying export crops whose wide cultivation has already made food scarce and expensive in the country. Under current plans, over a million hectares more would be lost to cane during the next three years. (See Table 1)

The most ambitious option, a total replacement of gasoline by alcohol by 1985, (30 billion liters of ethanol), would require putting 40 percent of the presently cultivated land in the whole country under cane. Since that could not be done, planners instead advocate colonizing millions of families to hand-cultivate manioc roots and other hardy plants for alcohol distillation on virgin lands in the interior of Brazil. A few years of Rockefeller-ordered deforestation, accomplishing just a marginal reduction in Amazon Basin energy throughput levels, was sufficient to shift global weather patterns to cause last year's global drought and the coldest northern hemisphere winter on record. (See *EIR* Vol. IV, No. 8) This is indicative of the adverse effects on world ecology one can expect from the massive shift in deployment of human populations called for in Rockefeller's Schachtian "natural fuels" program.

Meanwhile, motorists in Rio and Sao Paulo are being told that alcohol reduces pollution from auto exhausts. That could be true, if cars were to be properly adjusted to a stable percentage of mixture — which is not now the case. But government officials have admitted that the distilleries of Sao Paulo pour as much river-killing fermentation muck into the rivers by themselves as would the *untreated* sewage of a city of 15 million people!

Brazilian labor has been so destroyed and quality control in Brazilian industry is so abysmal that motorists may be surprised by accidental "flooding" of the primitive stills, allowing some sugar to be mixed in with the alcohol fuel. If this happens, the motors of all the cars in whole towns will be destroyed in a single day!

This is the incredible waste of human and natural resources which the Carter Administration is forcing on

Brazil to prevent it from developing highly productive, capital intensive energy systems. Any two of the eight 1,300 Megawatt nuclear fission plants Brazil has ordered from West Germany would put out the energy equivalent of two million hectares of sugar and the at least 400,000 stoop laborers needed to harvest it. By comparison, only about 100 workers would be needed to operate the fission plants.

And, when all is said and done, there is no evidence that the ersatz fuel program actually produces more fuel than it consumes. The sugar process researchers at the Battelle Laboratories in Ohio reported that when one adds up all the petroleum which goes into making the fertilizer, driving machinery, and supplementing cane pulp in powering the mill and distillery, one finds that more fuel has been put into the process than is produced. Dr. Miccolis states that he "disagrees with the data" and "believes" that when 5,000 calories per day hand labor replaces machines that "a positive energy balance can be achieved."

— Mark Sonnenblick

Table 1

Labor and Land Requirements of Brazil's National Alcohol Plan

| | Alcohol (billion liters) | Workers (thousands) | Hectares (thousands) |
|-----------|-----------------------------|------------------------|-------------------------|
| 1976..... | 0.8..... | 80..... | 400 |
| 1977..... | 1.6..... | 160..... | 800 |
| 1978..... | 2.7..... | 270..... | 1,350 |
| 1979..... | 3.1..... | 310..... | 1,550 |
| 1980..... | 3.4..... | 340..... | 1,700 |
| 1981..... | 3.6..... | 360..... | 1,800 |
| 1982..... | 3.8..... | 380..... | 1,900 |
| 1985..... | 30.0..... | 3,000..... | 15,000 |

NOTES:

Projected alcohol production figures for 1976-82 are those of the National Alcohol Commission (CNA), as reported in *Veja*, February 2, 1977. The 1985 figure is the goal of ex-Minister of Industries Severo Gomes.

We calculate that 10,000 liters of alcohol per year can be produced per worker. CNA figures suggest 9,500. Productivity may decrease as marginal resources are utilized.

We calculate that a hectare of cane has an annual alcohol yield of 2,000 liters on the basis of actual 47 ton per hectare cane yields and grower's estimates that 60 kilos of sugar is equivalent to 30 liters of alcohol. Miccolis calculates only 1,500 liters per hectare. Severo Gomes projected yields of over 6,500 liters per hectare based on high-technology laboratory conditions, which are unrealistic.