
Interview

How U.S. synfuels got off the ground

What follows is an interview with Michael Hudson.

Dr. Hudson worked for the Hudson Institute from 1973 to 1976. He has also worked as a balance of payments economist for Chase Manhattan Bank, the senior economist for Continental Oil Company, and as a technical consultant to various agencies of the Canadian government.

EIR: Dr. Hudson, I understand that while you were at the Hudson Institute in 1973-76 you wrote a number of studies on coal liquefaction.

Hudson: Yes, this was part of a contract on Project Independence, which the Nixon administration had designed to increase U.S. energy self-sufficiency by using coal as the "fuel of the future." Because most growth in U.S. oil consumption was for automotive uses, coal had to be turned into liquefied forms for use in cars.

EIR: How serious was the Nixon administration about Project Independence, and specifically about coal liquefaction?

Hudson: My first impression was that the whole project was a bluff. It would set up a coal-derived synthetic liquids ["synfuel"] industry like the synthetic rubber industry in World War II, and thus cut imports, increase the world oil oversupply and force oil prices back down.

The reason why I didn't think the government was serious was because we—Basil Candella, Frank Armbruster, Herman Kahn and myself—were explicitly told *not* to look at certain issues, in particular the water issue. We were told to concentrate only on the technology, and on possible gimmicks for financing a huge \$80-100 billion industry. We're talking about huge refining plants, producing 50,000 barrels per day, that cost a billion dollars each, take up a square mile, and use enormous quantities of water.

The problem is that America's main undeveloped coal resources are located in the Northwest—Wyoming, Montana, North and South Dakota. These are also arid regions, whose land are used largely for grazing. Water

rights are at a premium, and are currently being bought up at high prices. This means that water used for coal liquefaction has to be diverted from agriculture.

Not only will this entail a write-off of these lands as prime meat producing areas, but without adequate water the topsoil may be eroded and just blow away, as in the Dust Bowl. Food output, especially meat output will decline after killing off herds that can no longer be grazed on waterless lands. Meat and food prices will rise accordingly.

EIR: Isn't the coal liquefaction plan essentially the same technology that the Nazis used during World War II?

Hudson: As a matter of fact, the Hudson Institute report had an appendix pointing this out, and quoting Albert Speer's memoirs to the effect that German synfuel production increased from 2 million metric tons in 1939 to 7.1 million in 1944.

The report also pointed out that coal liquefaction is still a first-generation technology, that is, no technological progress has been made since before World War II. This is essentially the technology that South Africa is using to produce its synthetic fuel oil.

EIR: Won't the plants be profitable? If not, where is the money to come from?

Hudson: The government's original plan was to have electric power utilities put up the money, along with the oil companies and other large energy-industry firms. But this was impossible, since utilities can't even raise the funds for their own plant expansion in the face of the past decade's stock market conditions.

Therefore, the government has decided to subsidize coal liquefaction in various ways and then "turn it over" to the private sector. For instance, I am told it already has provided zero-interest capital to coal-liquefaction plants in the West Virginia area. Now this means that plants may make a profit in terms of their own narrow corporate balance-sheet figures. But if they are financed with zero-interest capital, on which the government has to borrow and pay interest itself, then obviously this is an "external" cost that should be rightly factored into the equation. For such capital is not able to earn a return doing something else. If a billion-dollar plant is built with zero-cost capital, and interest rates for long-term industrial bonds are 12 percent, then this is the equivalent of a \$120,000,000 subsidy per annum. Try converting that into the per-gallon price, and see how cheap synfuels are. It's \$6.86 per barrel right there!

For instance, on p. 101 of the report I point out that the interest rates being used to estimate capital costs per barrel are much below the 15, 20 or 25 percent return generally used in corporate discounted cash flow (DCF) tables. "If the synfuel project attempts to provide as high

a rate of return and as rapid a payout as would be demanded by most corporations, its progress may be impeded by the much heavier debt-service charges which alone could increase the break-even price for the project's energy output by roughly \$4 per barrel." That was in 1976. Today it's nearly \$7 per barrel. I add that "the premium to be paid at a 15-20 percent discounted cash-flow rate would be so high that substantial political opposition to the program could well occur," just as it did in Canada regarding the Athabasca tar sands project.

EIR: What is the per-barrel cost?

Hudson: This all depends on how the capital inputs are "costed." We came up with anywhere from \$8 to \$50 per barrel, depending on variations in the interest rate, the "mix" between debt and equity, the amortization schedule and depreciation rate, the tax treatment, and original book-cost—not to mention the "opportunity" cost of depriving Northwest agriculture of water, and the social cost of building brand-new towns in the region.

Incidentally, the book cost might even be *negative* on the balance sheet, even if the plant costs \$1 billion. This would occur if the government finances construction of the plant (presumably on some cost-plus contract) and puts it up for auction. If nobody bids \$100 million, if nobody bids even \$1, then the price may be lowered, so that the government actually has to pay a private-sector consortium to buy the plant. Suppose it turns over the plant, plus \$100 million to some private sector group. Under these conditions they may be able to make a profit, using the \$100 million to generate enough earnings (say, \$12 million a year) to subsidize the price and be able to seal their coal-liquids under "market" or "free-enterprise" conditions. But the public sector will have used up a lot of financial capital, and driven up interest rates to "crowd out" really worthwhile investment.

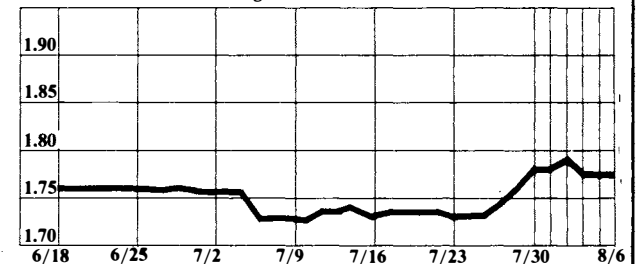
EIR: Getting back to Project Independence, what was the private sector's response to it?

Hudson: Negative. Let me give you an idea about how much we're talking about: the envisioned \$10 billion a year equals the *total* growth in U.S. government debt in years such as 1973 and 1974. We're talking about a program that is going to exhaust the nation's credit markets as much as all the rest of big government itself! In my Hudson Institute report I pointed out that it is equal to about two-thirds of recent net annual state and municipal borrowing. It surpasses the annual average total farm borrowing, and also total annual commercial mortgage lending. If long-term funds are diverted to coal liquefaction, then the program is not ultimately one of economic independence, it is going to make America economically dependent on nations using their resources for higher-technology investment.

Trade Review

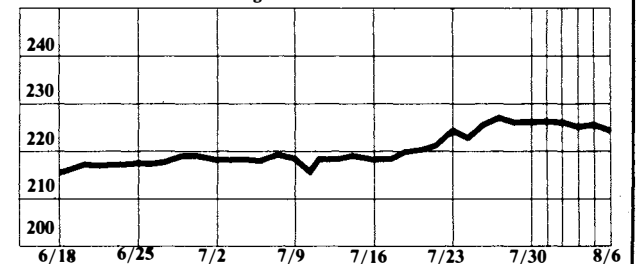
The dollar in deutschemarks

New York late afternoon fixing



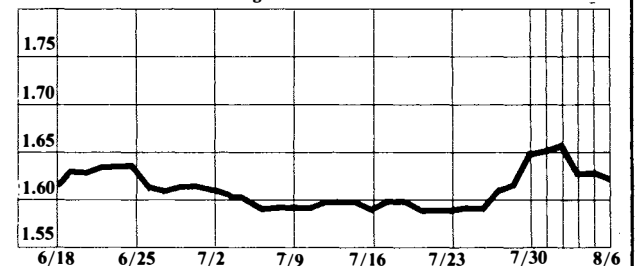
The dollar in yen

New York late afternoon fixing



The dollar in Swiss francs

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The British pound in dollars

New York late afternoon fixing

