

MIT Energy Study: Chicken Little Revisited

When President Carter made his television speech on energy April 18, he tried to convince the American public that "the sky is falling." We are running out of energy, especially oil, the President gravely warned, and therefore we must conserve. Unfortunately for Mr. Carter's energy program, the vast majority of the public reacted with the same justifiable skepticism which greeted the original announcement by Chicken Little. Administration mootings of mysterious CIA reports on energy have done little to dispel such skepticisms.

Last week, fellow Trilateral Commission member Carroll L. Wilson made an attempt to come to the rescue of Mr. Carter's tattered credibility. Armed with an array of charts and tables, computer printout and other appropriate paraphernalia, Mr. Wilson has attempted to prove in a new book "Energy — Global Prospects" that the sky is indeed falling. The book, a report of a Massachusetts Institute of Technology (MIT) Workshop on Energy Alternatives, had been liberally funded by the normal assortment of interested parties, such as the Rockefeller and Ford Foundations, and was given a good deal of ballyhoo in the front pages of the nation's press, complete with banner scare headlines on the coming crisis.

Mr. Wilson's conclusions are sobering indeed. The demand for oil will exceed supply sometime between 1980 and 1995, probably no later than 1985. The only way to avoid catastrophe, therefore is a "wartime" program of conservation and conversion to coal — oddly enough, the same recommendations as Mr. Carter's program.

To prove these conclusions, Mr. Wilson's workshop has contributed 300 pages of arguments. But careful reading indicates there is one major problem with the effort to prop up Chicken Little. *The conclusions of the report are totally wrong because the premises on which the report is based are false.*

When the large amount of fluff in the report is stripped away, the argument used is seen to be very simple. Paraphrased like this: "Considering the world outside the socialist countries, the maximum oil production which can ever be achieved is about twice the present rate, of 80-90 million barrels a day. Given a modest rate of increase of energy production of 3.5 percent a year, this level will be reached in 20 years, or by the late 1990s. It may be reached sooner, since it is likely that OPEC will limit oil production below its ultimate capacity, possibly no more than 20 percent above current levels. Therefore, sometime in the next ten to twenty years or less, oil supply will fail to meet even a moderately growing demand. Nuclear energy cannot fill the gap since neither the breeder reactor nor fusion will be available before the end of the century. Therefore we must use more coal and conserve to cut demand."

Thus, the whole argument is based on two premises — oil production cannot exceed about double present levels; the breeder and fusion will not be ready before 2000. Given these premises, the rest of the argument follows (in far less than 300 pages and without any necessity to consult computers.)

Both these premises are false.

Take oil first. The MIT report admits there is something like 2,000 billion barrels of oil ultimately available in the ground, of which 500-600 billion are already discovered — proven reserves. Since the maximum rate of oil extraction from available reserves is generally agreed to be 10 percent a year, one might naively think that total oil production can peak at as high as 10 percent of 2,000 billion, or 200 billion a year — about eleven times current production. The MIT report reduces this number to a mere double current production by making an additional key assumption. The major premise is that the rate of discovery of new or expanded

Senator Calls MIT Report 'Self-Serving Propaganda'

Senator James McClure this week entered into the Congressional Record an angry refutation of the "authoritative studies," including the MIT report, that support Jimmy Carter's energy program. The Senator, an Idaho Republican, titled his statement "More Energy Scare Tactics."

"Mr. President," McClure's statement said, "the American people are being misled by deliberate distortion of the facts concerning our nation's energy problems. First, we had the Ford Foundation-MITRE Corporation 'study' of nuclear power which ignore logic and scientific judgment. Then came the convenient CIA report which just happened to support the Carter energy position. Now we have another self-serving propaganda piece released by the so-called Works on Alternative Energy Strategies," written by Dr. Carroll L. Wilson of MIT.

"Who is Dr. Wilson?" McClure asked. "He has been a member of the World Peace Foundation of Boston, the Trilateral Commission, the Commission on Critical Choices, and the Club of Rome. He also served on the UN Conference on Human Development. In other words, Dr. Wilson's background may qualify him to publish reports on the environment and the desire by many for increasing government authority to control growth."

proven reserves will never exceed the average rate for the last 20 years — about 20 billion barrels a year. Since this is little more than the current rate of production, it takes no computer to see that if this discovery rate is maintained, then not much more oil can ever be produced than is being produced now — possibly 40-50 billion barrels a year at maximum, or twice current rates.

But the report in no way justifies the incredible assertion that the rate of exploration of oil can not in any way be increased! All it says (p.223) is that, as there is less oil to be found, discovery rates should decline. But Mr. Wilson and company omit a vital caveat — at the end of that sentence — *given a constant effort*. The amount of oil found is roughly proportional at any given time to the amount of wells drilled and the amount of investment into exploration and exploitation of new or existing reserves.

There is absolutely no question in the minds of any oil geologists that in every part of the world, especially the

Mideast where oil has been discovered, ultimate reserves are far larger than proven reserves — this is the very basis for the overall estimate of 2,000 billion barrels of oil worldwide. If the oil companies were to increase five-fold *now* their investment in exploration in the Mideast, for example, where drilling efforts have been desultory for a decade, there is absolutely no doubt that oil discoveries will be increased by an approximately comparable amount — it is, after all, down there to be found.

Second, the report utterly dismisses the possibility of improvements in rate of recovery which can vastly increase the oil produced from existing deposits, or improvements in exploration techniques. It simply assumes a fixed investment in exploration, fixed technology of exploration and fixed technology of extraction. With these assumptions, the conclusions follow without any work whatsoever.

If we on the other hand assume an increase in the allocation of the rather modest sums now expended on,

Soviets Say CIA 'Oil Study' Conclusions 'Clash With Reality'

As for the Soviet Union's attitude toward the MIT report and the rest of Jimmy Carter's "energy studies," this recent release from Novosti Press Agency on the CIA's similarly slanted report on world oil reserves shows that the Soviets are not impressed.

USSR OIL PRODUCTION: THE SOVIET POINT OF VIEW

By Boris Rachkov
Observer of the *Ekonomicheskaya Gazeta*

In a recently prepared CIA report on the state and prospects of world oil reserves, it is pointed out that some long-established oilfields are now being depleted. The CIA is very near the truth here, but it draws political conclusions which clash with reality. It claims, for example, that the growth of the world oil deficit will force the Soviet Union to compete with the United States and Western Europe for Persian Gulf oil.

This is not the first time far-fetched conclusions regarding the USSR's policy in the world market were made in the U.S. In 1958, for example, it was predicted that, by the early 1970s, the USSR would annually sell up to 100 million tons of oil on the Western market. At that time, the prospect of the operating oilfields being exhausted seemed rather remote. Predictions in the U.S. were that the westward flow of Soviet oil would damage both the Western coal mining industries and the Third World oil-exporting countries. In 1963 NATO even insisted on a Western embargo on selling pipes for pipelines to the Soviet Union.

That decision, however, did not slow down the development of the Soviet oil industry. In the period between 1960 and 1976, Soviet oil extraction went up

from 148 to 520 million tons, and the bulk of it is consumed inside the Soviet Union and in other socialist countries. In 1975, Soviet exports of oil and oil products to nonsocialist countries, including developing countries, amounted to 148 million tons, which is less than half of the volume predicted in the West. Yet the demand for Soviet oil in Western countries is very high now, and is no longer associated with the "Red Menace."

The CIA has gone to the other extreme now, predicting the inevitability of an energy crisis in the Soviet Union. This agency too carelessly applies the West's problems to the Soviet power industry, which does not run on the basis of market anarchy, but on the basis of long-term planning and the even, balanced development of all fuel industries.

The USSR continues to develop new deposits situated in places like Western Siberia, which has now become the main oil extracting base in the USSR. The 182 million tons of oil extracted there last year advanced the Soviet Union to first place in the world.

The CIA also discounts the stand taken by the Soviet Union regarding the world economy and trade. For a number of years the USSR has been proposing that the West should cope with particularly complicated economic problems, its energy problem included. Similar ideas were reflected in agreements between the USSR and the USA and a number of other Western countries. It is only necessary to put them to practice more energetically.

The assumption that the USSR wants to compete for Persian Gulf oil seems especially doubtful as the Soviet Union sells primary and fuel goods, including oil, and does not intend to stop selling them in the future.

especially, Mideast or say, Mexican oil exploration, increases in oil reserves of 100 billion, rather than 20 billion barrels a year, would reasonably be expected. No great sums of money are really involved — current Mideast investment in exploration amounts to only a small fraction of overall development costs and this is in an area where ultimate reserves are estimated to be 1,000 billion barrels!

With this sort of policy, the picture changes radically. Now let us assume not a piddling 3.5 percent rate of growth but a rapid 20 percent annual rate of growth, and we will find that by 1990 an additional 1,200 billion barrels of oil will have been discovered, 600 billion consumed, and current production will be running about 120 billion barrels a year, or nearly seven times current rates!

With natural gas, it should be noted, the situation is even better, since gas exploitation rates are very low. Given a rule of thumb estimate that gas production gives about two-thirds the energy of oil production from a given region, gas production over the same period could rise to the equivalent of 80 billion barrels of oil a year or nearly a dozen times current output.

What Happens Then?

So, the idea that we can get only a small and crippled rate of growth out of existing oil and gas reserves is absurd. But, even in the scenario here, oil production will in fact top out, although at a much higher level sometime in the 1990s, as the MIT report asserts. The key question however is what happens then? The answer is that first the breeder and then fusion take up the slack.

The assertion that the fission breeder cannot contribute to energy needs before the year 2000 is just as bald an assumption as the limit on oil development. On p. 210 of the book, it is asserted that no more than 5 percent of total nuclear energy can be supplied by breeders by the year 2000. Given well-known limitations on the supply of natural U-235 for existing reactors, the conclusion that nuclear energy can do little to fill the energy gap is inevitable.

But what are the real facts? The first commercial scale breeder reactor is now under construction in France, the Superphoenix, and will be operating as early as 1983. The technology is already in hand, tested out on smaller models and well understood. Given a commitment now to start construction on a large scale of

Superphoenixes, and given the elimination, in this and other countries of laws which virtually prevent nuclear construction, such as the National Environmental Protection Act, within a few years, a major breeder construction industry could be under way. By 1985, large numbers of breeders could be moving directly into the fuel production cycle, accompanied by even larger numbers of light water reactors to use the fuel produced. Given a large overall growth rate to the world economy, and thus to the energy capital goods sector, by 1990, between 10 and 15 percent of total energy needs, and about half of all electricity could be produced by the breeder cycle. The technology is there — all that is required is the necessary investment.

The MIT report handles fusion even more cavalierly. In devoting a total of one paragraph to the subject (p. 215) the report asserts fusion will not contribute any energy by the year 2000. But in the real world, the scientific feasibility of fusion production has already been demonstrated a few blocks from where the Energy Workshop labored, at the MIT Bitter Magnet Lab's Alcator device. And Stephen Dean of the Energy Research and Development Administration states flatly on the basis of all available experimental evidence that given sufficient investment, a fusion reactor could be producing commercial power by the late 1980s.

Given the achievement of fusion power on a small scale in the late 1980s, a full scale production program could bring fusion on line as the dominant energy source, replacing oil and gas in the course of the 1990s. All this assumes a much faster (20) percent annual rate of growth, not the Trilateral Commission's conservatism. In fact such accelerated growth is necessary to produce the high standard of living and skill levels which will be needed by a fusion powered economy.

Now of course it is true that time is short, as Mr. Wilson says. We agree. It is almost true that the sort of engineering research and development projects involved in rapid energy growth requires nothing short of a "wartime" mobilization. But the question is war for what? War for sacrifices, austerity and the destruction of the energy base of an industrial society? Or war for rapid expansion of energy, the basis of technological growth, and higher standards of living? Mr. Wilson's Rockefeller-funded report is nothing more than a flimsy cover for the policies of austerity.

— Eric Lerner

Reagan: 'Energy Cover-Up?'

In his syndicated column of May 20, Ronald Reagan, still mentioned as a presidential possibility, questioned whether Jimmy Carter is coming clean with the American people on the issue of Energy. Reprinted below is Reagan's column as taken from the Los Angeles Times.

Energy Cover-Up?

Is the Carter Administration leveling with the people on the energy issue, or is there a heavy dose of propaganda involved in its moves?

Skeptics and sympathizers will debate this for months,

no doubt. But there are some nagging concerns that the Administration hasn't been telling all the truth when it comes to the energy situation.

First, it let the C.I.A. release an unusually gloomy assessment of world energy reserves on the eve of President Carter's energy plan announcement — totally ignoring a recent United Nations survey which draws far more optimistic conclusions.

Next, Mark Siegel, a Deputy Assistant to the President, told the Washington Press Club details of the White House's plans for saturation selling of the Carter program, including the view that they would like to manipu-