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The Myth About Crisis in Energy

By FLOYD GEORGE STEELE

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■ BOTH the development of the nation's energy resources and the expansion of its energy systems are being widely challenged and virtually blocked. The principle justifications for these actions are: (1) that we have all but exhausted our conventional energy resources, and must stretch and conserve what little is left; (2) that any expansion in the energy base entails unacceptable health risks; (3) that we now waste sufficient energy to supply all new needs from conservation alone, so that no other effort is needed; (4) that extended energy consumption will injure the world itself, both directly and in its many spheres of life; (5) that excessive energy indulgence has spoiled the American people and environment, but reduced consumption will restore lost character and improve the quality of our lives; and, (6) that the processes and techniques for converting and consuming energy seriously offend the aesthetic side of life.

These concepts are so widely accepted as to be taught as facts in the nation's government schools. The situation is now further complicated by widespread advocacy of "alternative" energy sources to power the nation. These range from drawing upon the heat of the sun and the earth, to use of the motion of wind and tide, to the burning of garbage and gas made from hog manure.

These challenges normally are mixed tightly together when they are raised. To be examined they must be separated and taken up in correct order. The first step is to estimate the extent of the nation's conventional energy resources as they yet remain. For if they are as small as is widely held, then all other challenges are redundant. Energy production soon enough will decline of itself.

Are we running out of energy? There are at present only five sources of any importance — coal, oil, natural gas, uranium, and water power. Water power can be eliminated from the list because it supplies only a small percentage of the total energy used and obviously is in no danger of running out. Nuclear power we set aside for special attention later. This leaves the big three: coal, gas, and oil for first consideration.

The *World Almanac* gives breakdowns of overall energy consumption in the U.S. for the years 1950, 1960, and 1970. The last date is recent enough for rough estimates.

Yearly rates of consumption for the three fuels are converted into a common measure — here billions of barrels per year of oil equivalent. In 1970 the natural gas consumed had the energy equivalent of 3.91 billion barrels of oil; the coal, 2.70 billion barrels of oil; and, the oil itself 5.08 billion barrels. The three together represented a yearly energy consumption equivalent to 11.69 billion barrels. About 33 percent of the total energy from the conventional fuels comes from natural gas, 25 percent from coal, and around 42 percent from oil. Evidently oil is number one.

What are the reserves? In "Mineral Facts And Figures" (1970), the Bureau of Mines gives for natural gas two different estimates. It informs us that proven reserves amount to 52.8 billion equivalent barrels of oil. Unproven reserves may amount to 226 billion. Dividing the total supply by the amount used per year gives a proven future for gas of only 13.5 years (of which 8 are now gone), but a good expectancy of *at least* 50 years more. The supply seems narrow but not calamitous.

Recently, however, the whole picture changed dramatically for the better. In 1975 a little-publicized bonanza was found. A U.S. Geological Survey estimated that onshore methane gas deposits along the edge of the Gulf of Mexico represent 4,138 billion equivalent barrels, while the total reserve, on and off shore, may run as high as 18,104. Such a reserve, if proved and fully recovered, will supply our natural gas needs at present rates for more than 4,000 years. This is the largest known gas reserve in the world by many times over. And, of course, means are available for converting methane to gasoline.

What now of domestic oil supplies? The U.S. Geological Survey, 1974, estimated that recoverable oil resources ranged from 50 to 127 billion barrels. With a yearly consumption rate of 5.08 billion barrels, and ignoring major discoveries off our Atlantic coast, that leaves only 10 to 25 years of full supply — a possibly serious problem in the coming struggles with the Soviets. We now import half our oil, but this will be available no longer than the time required for the Russians to take domination over the Middle East. Once again, however, there is a second bonanza — one which, in this case, has long been known.

* *The Review Of The News* is published in Belmont, Massachusetts, U.S.A.

The Green River Formation of oil shale in the Colorado, Utah, Wyoming corner is estimated to hold 2,000 billion barrels of oil. If full recovery is achieved, this one field assures present consumption rates for just under 1,000 years. As an oil reserve this is far larger than any other in the world — much greater indeed than that to be found in the Middle East. A rationale has arisen that the shales cannot be worked at present prices. This is so only within the narrow requirements of gently preserving the fine features of this rough and ugly wilderness. However, if small nuclear devices were exploded underground, great cavities would form and fill to be pumped for immediate yield. It is not the supply of oil but the will to produce it that is lacking.

As for coal, the Bureau of Mines estimates that 1,703 billion barrels of oil equivalent are known and recoverable at present prices. Dividing this by the yearly consumption of 2.70 billion gives a ready coal supply for 631 years. The Bureau further estimates that the total recoverable reserves, at progressively higher expense, contain the energy equivalent of 4,258 billion barrels of oil. Thus we needn't run out of coal for 1,577 years, although relatively higher prices will begin after 631 years. Means have long been available for making gasoline from coal. The Germans met most of their need for motor fuel in World War II by coal conversion. The South Africans are now converting coal to oil.

Now take the annual consumption of all three fuels (11.69 billion barrels of equivalent oil) and add up all reserves to get the total available conventional energy. The supply gives around 1,900 years of consumption at present rates — nuclear not included.

What of the nuclear resources?

To begin with there is only one natural material which is able to fission of itself. This is not ordinary uranium, U238, but one of its rare isotopes, U235. All ordinary uranium contains, evenly admixed, 1 part in 140 of U235. Rich deposits of uranium ore not only are rare, but at best contain only a small percentage of the U235. Thus the immediate supply of U235 itself is not copious. There is yet another form of loss. Present-day reactors can use only about 10 percent of the U235 with which they are charged. After that, the by-products which have formed block further fissioning. The fuel rods must be processed to remove these impurities. Only then can the remaining 90 percent of the U235 be put back into use once again. Because reprocessing of nuclear spent fuel rods has been blocked by various legal and political actions, only 10 percent of the available U235 will be used. The rest will pile up in the spent rods.

Today, opponents of nuclear power point to the small proven reserves of high-grade uranium ore, then divide these down first to the small percentage of uranium which they contain, then once again by 140 times to give the still smaller percentage of U235 within the whole. Finally, they take only 10 percent of what remains as the useful part of the rod. They then cite the result of these calculations to demonstrate that nuclear power resources will last only a few decades, so why bother with such a short-term solution?

Fortunately, the nuclear story does not end here. In fact, this is where it begins.

First, the ordinary, non-fissile uranium, if exposed to neutron radiation, transforms into a different element, plutonium — and this element will fission much like U235. Furthermore, the kind of radiation required in the conversion is just that which the U235 squanders in the process of its own fissioning. This waste radiation, instead of being thrown away into cement blocks or other shields, need only be absorbed by the useless ordinary uranium to produce a useful material. Moreover, each pound of U235 that is consumed can by its waste radiation generate more than an equivalent pound of plutonium. This action of using waste radiation to generate nuclear fuel faster than it is used is called "breeding" — a process which, surprise, also is being blocked by the government.

Evidently "breeding" can in a single bound enlarge the nuclear fuel supply by 140 times, since by its use all of the ordinary uranium may be consumed instead of only the U235 trace. Add to this government permission to reprocess spent rods and the potential energy supply from this source is increased by another 10 times. Thus if the timid have only a 20 year nuclear supply ahead of them, the bold have 28,000 years at the same consumption rate.

Even this is only a beginning. The element thorium, which left to itself is incapable of fissioning, will when exposed to waste radiation from a reactor transform into the element U233. This is yet another isotope of uranium, not found in nature, but fissionable nonetheless. Thus a reactor using U233, and packed around with thorium, can continue to generate U233 faster than it is consumed. Thorium breeding takes place without the generation of any plutonium at all. Moreover, thorium is more plentiful than uranium. Ultimately, by breeding and reprocessing, both fissile metals may be entirely consumed. The supply of nuclear fuel thus extends far beyond uranium alone.

Even so, the end is not in sight. Uranium and thorium are not found in rich deposits because their ores are readily soluble in the slightly acid surface waters of the earth. Concentrated deposits long ago carried up from the molten magma of the earth's interior into the crust have in time been leached away and redeposited far and wide. In this way the two elements have come to be almost uniformly distributed *throughout the entire crust of the earth*. Those rare deposits of rich ore now being mined generally owe their presence to an accidental sealing away from surface and subterranean water movements by means of compound faultings.

But it so happens that uranium and thorium taken together are far more common as a percentage of the earth's crust than any other of the heavy elements. They are, in fact, more common than tungsten or tin and almost as common as lead and copper. Moreover, they are much more uniformly distributed throughout the crust than are any other uncommon elements, being found in rough uniformity through all of the rocks, boulders, sands, gravels, and clays that underlie the many parts of the earth — including your own back yard. Only the limestones run conspicuously low in these elements, and limestones are not the most notable feature of the landscapes. In short there

are fissionable materials spread evenly throughout the land.

How much energy resides in this ultimate source? Present estimates are that the earth's crust averages 3 parts per million of uranium and 13 parts per million of thorium by weight — a total of 16 parts per million of fissile material.

To see what this means, consider a granite boulder weighing one ton and of average composition. This boulder will contain one-half ounce of uranium and thorium together. This seems small, but when bred and fissioned the energy released is equal to that obtainable from around 40 tons of coal. The very stones of the earth thus have locked up in them 40 times more releasable energy than does the best grade of solid coal.

Can this trace of fissile elements in the granite be used, or will it take more energy to process the stone than is recovered? There already is available a simple technique — a double liquid extraction process — developed to concentrate uranium ores, which also will work for thorium. It is uniquely well suited for separating out these elements in trace amounts. The energy used to mine, mill, and process the nuclear materials from the basic stones will, in fact, be only a small part of the amount left over, around one-twentieth of it. Stoneburning inherently is a better, cheaper, cleaner source of fuel than coal — and it requires no transportation, being at nearly every doorstep.

If we draw energy directly from the earth's crust at large, what amounts are available? The first 10 feet of the nation's crust, worked for its stone energy, will supply all of our energy needs at present rates for approximately 1.5 million years. Following that, we can start on the second 10 feet. The point is, of course, that as the good and secondary ores become depleted, the entire crust of the earth constitutes a virtually inexhaustible energy reserve.

The end is not yet in sight. We come next to fusion.

There are two ways of releasing nuclear energy — by fission and by fusion. Only the first way has as yet been mastered for producing commercial power. Today's nuclear reactors use fission only. Fusion, however, is known to work; and is, in fact utilized in both the H-bomb and the neutron bomb. Sustained, major efforts are being made to harness fusion, and these probably will succeed soon.

How much energy is then to be expected from this source?

The simplest fusion involves the combining of two atoms of heavy hydrogen — called "deuterium" — to form one atom of helium. A great deal of energy is released in the process. The fusing of one gram of heavy hydrogen is conservatively estimated to release the same useful energy as does 8.8 tons of coal.

Now heavy hydrogen is found evenly distributed throughout all of the ordinary hydrogen of water in about 1 part per 5,000 by weight. It is easily separated. Every ton of water contains 111 lbs. of hydrogen, and of this some .022 lbs. or one-third of an ounce will be fusible deuterium. That is equivalent to 88.7 tons of coal. Thus the waters of the sea offer about 2.2 times more nuclear energy per pound than the rocks of the land. However, ordinary rock is very close to being just this much denser than water. In consequence, land and water yield almost exactly equal energies for equal volumes, a rather remarkable coincidence. Of the forms of nuclear energy available, one allows us to draw limitlessly from the land, the other unendingly from the sea.*

The oceans of the world are estimated to contain 325×10^6 cubic miles of water. This in turn holds the energy equivalent of 136×10^{18} tons of coal (the number "136" with 18 zeroes placed after it). Our share today of the world's electrical consumption is around 36 percent. If this share endures throughout time, we will at present consumption rates exhaust our part of the ocean in just over 18 billion years.

A mythology now pervades the land. A whole generation has been convinced that the great problem of our time is the energy "crisis," and that the "crunch" is at hand; that a profligate America has squandered its limited energy inheritance once and for all, and must now content itself with an everlasting poverty of skimping and frugality, small thinking and abiding shame; so that a nation favored by the gods now shuffles about with its face cast down.

The rough estimates here, based upon present consumption rates, are adequate to make one point, and that one so conclusively that no amount of data refining can seriously modify the conclusions: *Obviously there is no intrinsic national energy shortage — either now or in the remotest times to which systematic thought can penetrate.*

To the exact contrary, we are just at the opening of the great days of energy. Our time is at the birth of the Soon to be Great Planet Earth. Until the primary point of energy in endless abundance is fully appreciated, no sense can be made of the projected energy crisis.

Nonetheless, even though abundant energy is there for our use, a serious energy crisis exists. There is a temporary energy problem that borders on the edge of calamity. Strategic matters are at stake. But the energy problem set forth by the government agencies or by the various energy "movements" is not the one with which to be concerned. These people cannot define the real problem, for they are themselves that problem. ■ ■

*You *are* beginning to understand the attack on nuclear power, aren't you?

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Hell-bent

For retrospection we repeat our "From Week to Week" note for August 19, 1972:

"There will probably come well within the lives of the present generation, a period at which the blind forces of destruction will appear to be in the ascendant"—C. H. Douglas, *Social Credit,* 1924. The trouble is that the forces which now *are* undoubtedly in the ascendant have been proved to be anything but blind. They have seen Christian civilisation, with its Graeco-Roman values and traditions, for centuries as a target for destruction to clear the way for a collectivist international tyranny—the contemplation of which is, as Douglas said, a glimpse of Hell.

The chief, or central mechanism of the development has been the centralised control of the monetary system which operates to licence or channel individual initiative in predetermined directions—"large-scale planning". But a parallel mechanism is epitomised in the statement that "control of credit and control of news are concentric". Progressively, however, this type of control has expanded to control 'education', which should now more properly be called indoctrination, and to control of the ballot-box in the sense that electors are merely offered alternative Parties to implement a single pre-determined policy—more and more powerful government and the substitution of internationalist objectives for national cultures. The undoubted promotion of racial and religious schisms in numerous areas is merely a "do-it-yourself" method of depopulation in what the internationalists regard as an over-populated world, for it leaves untouched the military might of the so-called super-powers —a might which is intended to be merged to constitute a world 'police'-force.

The London *Times,* which did so much to ensure the occurrence of World War II and the bi-partisan socialism which was the main objective of, and has followed, that war, is a reliable bell-wether of coming events. In its issue of July 28, 1972, it has a 17.5 column-inch (135.4 cm.) leading article entitled "Yes, We Are In Danger". Carefully considered, this article is fairly obviously an obituary for liberty in the United Kingdom; and it even singles out Mr Benn, Chairman of the Labour Party, as "most certainly" ending on "whatever may be our local, national variant of the guillotine" "if [when?] the revolution comes".

Douglas long ago warned that to look to ballot-box democracy to save us from final eclipse as a nation was completely hopeless. The last remaining potential of Parliament now is as a forum for the exemplary exposure of the thoroughly documented fact that the disaster which faces us is the outcome of *conspiracy,* not of 'mismanagement'.

We recommend that in every constituency in the United Kingdom one or more groups should be recruited to study *None Dare Call It Conspiracy* and to bring it to the attention of their Parliamentary Representatives, regardless of Party. There is not the slightest hope in another General Election, which would be interpreted by whichever Party won simply as a renewed mandate for the policy which has virtually finalised Britain's ruin as a nation and a culture.

Lemmings

The following is an editorial which appeared in these pages 32 years ago:

It is becoming a matter for serious consideration whether the instinct of the lemmings, the animals which relentlessly swim out to sea in large numbers and are drowned, is not nascent in the human race in a more complex form. No detached observer of the League of Nations in the Armistice years could have any doubt that it was an organisation which was adapted, whether by accident or design, to make war not merely certain but devastatingly general. Every issue which previously might have been a localised issue, became a world crisis; and the sob sisters of the Middle West, to go no deeper, found at Geneva a sounding board effective beyond their wildest dreams. It required a few years for the League to get into its stride; but it is clear that U.N.O. has profited by its instruction, and is off to a flying start.

The subject is one, if admittedly a major, instance of the rapturous folly which has afflicted the world. The root is in the worship of organisation or administration. We are convinced that a select body of really wicked men understands the real nature of organisation, and that very few others have more than the haziest conception of its attributes; and that their efforts are directed to the use of their knowledge to drive the soul out of humanity, leaving a mass of robots as toys with which to play their Satanic games. There are, however, other Potencies in the universe, and signs are not wanting that a momentous reaction is at hand.

We have often remarked in these pages and elsewhere on the tendency of events, and the policies from which they appear to proceed, to be exactly opposite to those which would seem rational. There are so many examples in current affairs that almost any activity is an embodiment of the phenomenon—music, morals, art, all exhibit lawless ugliness at a time when the mouthing of World Order is the theme song of every street corner politician. It is not adventitious; there is some well thought out policy in action; and the well-established Communist tactic of attacking ridiculing and debauching a policy in his enemy which he intends to pursue himself is not unconnected with it.

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- Jane Catmur, Company Secretary.

C. H. DOUGLAS CENTENARY SUPPLEMENT

You may like to know that the SCOTS INDEPENDENT March 1979 included a four-page supplement to mark the centenary of the birth on 20th January 1879 of CLIFFORD HUGH DOUGLAS.

This contains the whole of B.W. Monahan's article "A SOCIAL CREDIT PERSPECTIVE" reprinted with permission from THE SOCIAL CREDITER of November-December 1978, together with some other material.

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