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Spring, 1980

*A Newsletter of The Belden Center for Private Enterprise Education
Harding University School of Business*

The Entrepreneur

This issue courtesy of Mr. Claude Collins, President, C & S Energy Co., Atlanta, GA.

Understanding Our Current Energy Options

Friedman Comes To Harding

(The Summer, 1980 issue of the Center's ENTREPRENEUR will contain the text of Nobel Prize winner in Economics, Dr. Milton Friedman, presented on the Harding University campus, Searcy, Arkansas on March 27, 1980.)

FREE TO CHOOSE

MILTON FRIEDMAN
WARNS OF THE DANGERS
OF BIG GOVERNMENT

A Personal Statement
BY MILTON FRIEDMAN

I feel strongly that America is at a critical point in its history. For the past fifty years, we have been moving away from the fundamental principles that made this a great country, the fundamental principles of freedom: relying on the individual, keeping government in its place, keeping government as an umpire.

We have to find a way to prevent government from continuing to take over more and more control of our lives. About fifty years ago, shortly after the Great Depression started, government came to play a larger and larger role in our lives. We shifted from an emphasis on individual responsibility to an emphasis on social responsibility.

The fundamental forces that made this country great — the productivity, the ingenuity, the energy — are still with us, and they have been with us over that fifty years. But at the same time, we have (become) an over-governed, over-regulated society.

We have been moving down the road that Friedrich Hayek called the road to serfdom. We do not have to continue down that road. We can be the masters of our own destiny. In order to stop going down that road, we have to go back to some of the basic principles that underlie our nation.

I do not know whether we can succeed in this venture. I do know that there is no task more important for this country, and for the world, than ending the growth of government and enabling the United States to be what it has been: a beacon for free men throughout the world.

It is generally agreed that both reducing inflation and increasing productivity depend on finding workable solutions to the nation's energy difficulties. In addition, U. S. flexibility in foreign affairs is limited by the country's reliance on imported oil.

In March, 1980, a presidential commission called for stepped up conversion of electric power plants from oil and natural gas to coal, saying coal production can be increased significantly without harming the environment.

The commission, completing a 21-month study of the nation's coal industry, said increased use of coal by utilities could replace up to 2 million barrels of oil a day within a decade and not violate the Clean Air Act.

Currently, coal accounts for more than 80 percent of the U. S. fossil fuel reserves, but supplies only 18 percent of the country's energy needs. The nation's utilities burn 5.5 million barrels of oil and natural gas daily. The commission said that amount could be cut by 2 million barrels a day by 1990 by added use of coal.

The supply of fossil fuels is ultimately finite, but there is no shortage of energy resources in the United States or in the world — either now or in the foreseeable future. This country is not in the final days of the petroleum era. Such doomsday projections are based on the increasing cost and complexity of developing new energy sources, and excessive dependence on oil and gas resulting from political interventions in the market.

— The United States has sufficient bituminous and anthracite coal reserves to supply the nation's total energy needs for 120 years and sustain a 3 percent annual growth rate. Used in combination with other fuels proven and estimated reserves could extend this to 500-600 years.

— The U. S. has enough high grade oil shale (25 gallons of oil per ton) to meet the nation's total energy needs for fifty years at a 3 percent annual rate of growth.

— Utilized in light water reactors, uranium now available would supply the U. S. with nuclear energy for 10 years at a 3 percent growth rate. Using breeder

technology, this amount of uranium would last 118 years.

— Enough sunshine strikes the U. S. to meet the nation's energy requirements 700 times over.

— The United States has, on the other hand, used more of its oil and gas reserves than the world as a whole. Historically, however, the petroleum industry has never identified huge reserves. Rather, new supplies have been developed more or less as needed. Since the 1973 oil embargo, well completions have increased 80 percent.

THE HISTORICAL VIEW

From the birth of America to the mid 1800s the principle sources of energy in the U. S. were wood, coal and whale oil. Around 1829 the demand for whale oil was so great, and the cost of hunting whales so high, that prices increased over 400 percent. The only other oil available was kerosene made from petroleum that had seeped to the surface.

It sold for \$42 a barrel in 1850 dollars — roughly twice the current price of a barrel of oil in today's inflated dollars. Then, using data provided by a Yale chemist, a group of New Haven investors decided to drill for oil. On Aug. 27, 1859, near Titusville, Pennsylvania, they struck oil and a new industry was born.

From the start, the amount of oil was thought to be limited. In 1866 the U. S. Revenue Commission suggested the need for synthetic fuel when petroleum ran out. In 1891 geologists agreed there was little chance of finding oil in Texas. In 1914 the Bureau of Mines estimated total future U. S. production at six billion barrels of oil.

In 1919 there was an oil crisis. According to University of Hartford economist D. T. Armentano, "government controls during World War I had produced shortages, and everyone was urged to drive less and turn down their thermostats." Armentano continues, "When the war-time regulations ended so did the energy crisis."

Shortages reappeared during World War II, but when wartime controls were lifted, supplies increased. Between 1950 and 1972 the price, adjusted for inflation, fell almost 30 percent.

Prior to World War II, the U. S. produced 95 percent of the oil it used. As late as 1960, oil imports totaled only 16 percent of supply. In the late 1960s the pattern began to change. In 1968 the State Department notified friendly governments that this country was reaching capacity in oil production, and in the future could not be counted on for additional oil in emergencies.

U. S. production peaked in 1970 at 11.3 million barrels per day and began to decline. Since demand has not declined, the U. S. has imported increasing amounts of oil — primarily from the Middle East.

THEN CAME THE 1970's

When President Nixon announced that the U. S.

would furnish military aid to Israel to offset losses suffered in the 1973 October War, Saudi Arabia countered with an embargo on oil shipments to the U. S. Other Arab nations soon followed suit. At the same time, they stopped negotiating prices and began unilaterally setting prices on a take it or leave it basis. Between 1973 and 1974 world oil prices quadrupled.

Over the last 6 years — since the Arab oil embargo of 1973 that accompanied the Egyptian-Israeli military confrontation — the world has become acutely aware that the conventional oil supplies upon which its economies depend are not unlimited nor can they be counted on to be available without interruption.

Furthermore, energy has suddenly become expensive rather than cheap. OPEC oil that sells today at prices from \$20 to \$50 a barrel, could be bought 10 years ago at one-tenth present day prices. This quantum jump in prices is bringing about a transfer of wealth from oil consumers to oil producers on a scale that the world has not seen since Spain occupied Central and South America in the 16th and 17th centuries.

Government policies have kept the price of domestic oil and gas well below world market values. This has discouraged conservation because the public simply hasn't considered it necessary to skimp on a low cost commodity. Legislative controls on prices have at the same time discouraged exploratory drilling that would have led to increased supplies.

The average cost of drilling a well is \$200,000 to \$300,000. About one in 10 exploratory wells is successful. With risks of this size, investment capital isn't available unless substantial returns are possible. For this reason, drilling activities have been concentrated in proven areas to minimize risk. During the 1970's, domestic oil production, including that from Alaska, shrank from 11.3 million barrels a day in 1970 to 8.6 million barrels today.

Artificially low prices on oil and natural gas, coupled with regulatory requirements, have also discouraged utilization of America's "other" energy reserves such as coal, shale, solar power and uranium.

The net result of these policies is that 46 percent of the energy used in the U. S. today is petroleum. Close to half this oil comes from countries whose pricing and production policies the U. S. cannot control.

The relationship of energy to jobs, a rising standard of living and national security is inescapable. As staff correspondent Harry B. Ellis observed in the *The Christian Science Monitor*—

Like a bewildered Gulliver bound by Lilliputians, the United States has awakened in the 1970s to find its future hobbled by a clutch of foreign oil-producing states

. . . Any substantial and prolonged cutoff of foreign oil would throw millions of Americans out of work and plunge the nation into a depression that might rival the economic cataclysm of the 1930s.

Policies and decisions affecting the development of the nation's energy reserves must be analyzed against this possibility.

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OUR EXISTING TECHNOLOGIES

It seems evident that in the short and intermediate term the U.S. must rely primarily on existing technologies. Coping with the energy crisis will require this nation to utilize its resources to the fullest.

Coal: Buried Sunshine. A recent analysis sponsored by the Ford Foundation and administered by Resources For The Future, concluded that "coal is the only energy source that can increase its absolute contribution rapidly and economically." One ounce of coal can generate as much electric power as 100 tons of water falling one foot.

During 1979 coal provided about 19 percent (725 million tons) of the nation's energy, including generating 47 percent of its electricity. The government has called for an increase in coal production by 1985 to 1.2 billion tons a year. According to Carl E. Bagge, president of the National Coal Association (NCA), the industry is growing at less than half the yearly pace needed to reach this goal.

In reality, the industry can already produce more coal than the country is willing to use. The NCA estimates unused productive capacity is 150 million tons per year.

A major reason is that environmental regulations restrict both usage and production and increase overall costs.

— A 1,500 Mw power plant costing more than \$1 billion is now under construction in Wyoming. Environmental regulations account for close to 25 percent of the cost.

— It takes up to 10 years to bring a new mine into production. Over half that time is spent on studies, permits and paperwork.

— For purposes of determining eligibility for workmen's compensation, coal miners are assumed to have black-lung disease after a certain number of years, even without medical tests to back up the claim.

— According to the NCA, one location in Virginia needed flat farmland. However, following strip mining operations, the company was required by law to replace the hills.

Other problems slowing greater utilization of coal include availability of capital and transportation difficulties. To double coal production by 1985 will require \$18 billion to \$20 billion in current dollars. The entire capitalization of the 700 coal companies in operation today is only about \$4 billion. Transportation is a problem because "roadbeds on some railroads are almost destroyed."

Efforts to move coal through pipelines are hindered by lack of availability of water and opposition by environmentalists. These problems, coupled with artificially low prices on oil and gas which frequently make it more expensive to burn coal, discourage use of the nation's abundant coal reserves.

Petroleum. Despite shortages, closed down wells in this country contain up to 300 billion barrels of previously discovered oil. With modern technology up to 40 billion barrels can be recovered at a cost just slightly over current world prices. In addition, there are undoubtedly considerable quantities of undiscovered reserves.

The federal government controls one-third of U.S. lands and holds mineral rights to another 63 million acres. The U.S. Geological Survey estimates that these lands contain much of the nation's undiscovered resources. In many cases the government refuses to allow exploration.

For example, less than 4 percent of the Outer Continental Shelf has been leased for drilling even though in 1977 this 4 percent produced 304 million barrels of oil and 3.7 trillion cubic feet of natural gas. Estimates are that 20 billion barrels of oil, enough to provide a fifth of America's needs for 15 years, will probably be found off the coast of Alaska. Under current leasing schedules, almost none of this oil will be available before 1995!

Nuclear Energy. The fastest growing energy demand in the U.S. is for electricity, which presently accounts for a fourth of all energy consumption. By 2000 this could reach one-half. Presently, about 10 percent of the oil and 15 percent of the gas used in the country is burned to generate a third of the nation's electricity. Thirteen percent is supplied by nuclear reactors, the remainder by coal and hydroelectric power.

As recently as five years ago the Department of Energy estimates the U.S. would have 1,000 nuclear power plants producing 40 percent of the nation's electricity by the year 2000. DOE has since reduced the prediction to 380 plants, or fewer, providing as little as 20 percent. This reduction in projected capacity results largely from the opposition of special interest groups advocating limited economic growth.

While there is legitimate concern about the safety of reactor technology and waste disposal, the public seems willing to balance these concerns against the effects of low growth and the risks of continuing dependence on OPEC oil. A Harris survey conducted after Three Mile Island found that 56 percent of the public supported continued development of nuclear energy, with 37 percent opposed.

A recent study, *Energy in America's Future—The Choices Before Us*, concluded that even if nuclear accidents are 100 times more likely than predicted in the government's reactor safety report, nuclear energy still poses less risk to the U.S. than many other fuels.

CONCLUSIONS

The nation's energy problems are serious and they are real. There are no quick and easy solutions. It is evident, however, that there is no shortage of energy resources available for development. Because these "other" resources involve expensive technologies, such as extracting oil from shale, this energy will be more costly and will require certain environmental accommodations. The increased costs will be particularly difficult for the public to accept because of long term policies that have led the nation to expect cheap fuel.

Experts conclude the near-term (to the year 2000) and immediate-term (well into the 21st century) energy needs of the nation will be met primarily by traditional energy sources. Oil and natural gas will continue to play major, though slightly decreasing roles. The U.S. will continue to import close to half its oil through the 1980s. Hydroelectric power will continue to provide about 4 percent of the nation's energy.

The U.S. will, by necessity, turn to coal, shale and nuclear power to meet expanding energy needs. Former Energy Secretary Schlesinger put it this way, "Quite bluntly, unless we achieve the greater use of coal and nuclear power over the next decade, this society may just not make it."

Increased development of America's energy resources will require a reduction in regulatory delays that lead to power plant construction schedules of 10 to 12 years. Milton Copulos, policy analyst with the Heritage Foundation, maintains that if these delays continue there may be "severe power shortages, brownouts and blackouts" by the mid-1980s.

Conservation is also a key factor in coping with America's energy future. Estimates are that conservation can reduce the overall demand for energy to about 2.3 percent a year, roughly half the historic growth rate, without seriously affecting the economy. This will require conservation in industry, housing and transportation.

According to John J. Castellani, vice president of Resources and Technology, National Association of Manufacturers, industry since 1973 has reduced its total demand for all forms of energy by 6 percent and for petroleum by 6.7 percent — while increasing production by 11.8 percent.

Experts generally agree that significant conservation will not occur unless energy costs reflect the real value of the product. The study conducted by Resources for the Future concluded that if energy was treated like other consumer goods "there would be no need for public policies dealing explicitly with energy conservation." This is because the market would insure "that each person in a position to make a decision would purchase only enough energy to satisfy needs that could not be met more cheaply in some other fashion."

Given conservation and development of the nation's energy resources, a number of recent studies have also concluded that this country can manage its energy problems and sustain a healthy, expanding economy. The Committee for Economic Development sums up this point of view:

. . . Decently managed, the energy component of our economy need not be expected to interfere seriously with employment and continued economic growth But that estimate does not include an allowance for mismanagement.

The danger is that we shall attempt to insulate ourselves from the rising costs of energy, deceiving ourselves that because we do not pay the costs directly they do not have to be paid.

Energy policy itself can aggravate the problem, If the true costs are not faced we shall waste our energy resources in consumption, deny ourselves the enlarged resources that would be available at higher prices, and delay the technological changes that higher costs would encourage.

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