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Energy & America

**Understanding the problems.
Looking for answers.**

Let's face the facts about our energy outlook.

The nation's requirements for energy will about double between now and 1985. In this period, we shall have to rely upon oil, gas, coal, and nuclear power for at least 95% of our needs. If present trends continue, our indigenous resources of these materials will not be developed fast enough to meet our growing requirements.

NATURAL GAS IS SCARCE. Shortages already confronting us will increase. Domestic production is projected to decline about one-third during the next 15 years. With more imports of natural and liquefied gas and synthetic gas from naphtha and coal, we may hold gas availability at about its present level. This will be sufficient to satisfy less than half of our potential gas requirements by 1985.

CRUDE OIL IMPORTS WILL HAVE TO QUADRUPLE. Domestic production of crude oil is projected to show little net change. To meet rising demand, imports will about quadruple, reaching 10 to 15 million barrels a day in 1985. Even larger imports will be needed if we fail to meet our goals with respect to nuclear power and coal.

NUCLEAR POWER—WHERE IS IT? We should launch a major new effort to construct the equivalent of at least 280 nuclear energy plants of 1,000 megawatts each during the next 15 years. Today, we have the equivalent of only ten such size plants in operation and only 46 actually under construction. Progress is being retarded by technical difficulties and environmental restraints.

COAL—WE PRODUCE NO MORE NOW THAN 50 YEARS AGO. Production of coal should be approximately doubled during the next 15 years. We have adequate reserves. Limiting factors are the availability of manpower, environmental considerations, and mine health and safety precautions.

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INVESTMENT—WE'LL HAVE TO DOUBLE IT. Enormous capital inputs will be necessary to provide for our energy requirements. Between now and 1985, the United States energy industries will have to invest between \$400 and \$500 billion in new productive and distribution facilities, an annual average of about \$30 billion, compared to present outlays of about \$16 billion.

NEAR-TERM SHORTAGES—WE CAN'T ESCAPE THEM. We may be able to relieve our near-term energy problems through appropriate government and industry action, but there is no realistic probability of a complete escape from them. This is true because of the long lead times—often five to eight years—required for the development of major new energy supplies. The critical “balance wheel” will be the volume of foreign oil imports; this will be the element which will adjust for our failures or successes in other energy areas.

What do the facts foreshadow?

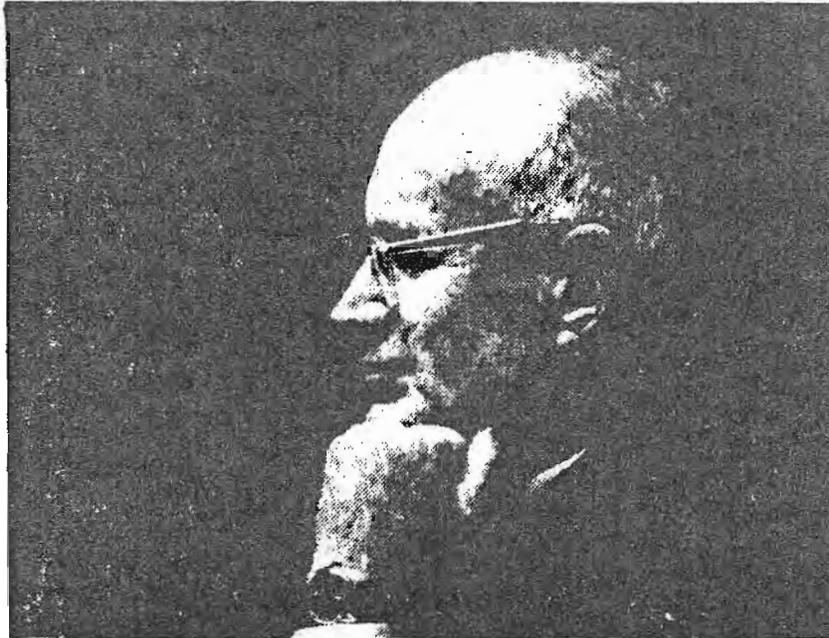
We shall become increasingly dependent upon foreign countries, primarily in the Middle East, for a vital portion of our energy supplies. At the present time, we obtain about 26% of our crude oil and 12% of our total energy requirements from foreign sources. By 1985, we will probably draw about 40% to 55% of our oil and 23% to 32% of our total energy from abroad.

CONCENTRATED DEPENDENCE. Most of the oil will have to come from the eleven OPEC countries (particularly Saudi Arabia and Iran), which today have 85% of the Free World crude oil reserves outside the United States and Canada and account for 90% of the oil exports moving into world markets. Dependence upon a small number of distant foreign countries for a vital portion of our energy supplies will be a new fact of life in the history of this nation. We shall need to take a new look at our foreign policies with respect to the Middle East and attach to them a much higher priority than they have thus far been accorded.

We will be vitally dependent upon peace in that troubled area for continuity in oil supplies; our friends in Western Europe and Japan will be in a similar position; and Russia will be the only major world power in the coming decade that will be self-sufficient in energy resources. The diplomatic and national security aspects of this situation demand a great deal more attention than they have yet been given.

NPC ENERGY STUDY: WHAT IS IT? At the request of the Department of Interior, the NPC's Committee on U.S. Energy Outlook undertook the development of a comprehensive two-part study of the nation's energy situation, with special emphasis on energy projections in the 1971-1985 period. The first part was published in July 1971; the second part will be published later this year. The committee is composed of more than 200 experts drawn from all the energy industries in the U.S.

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John G. McLean, chairman and chief executive officer of Continental Oil Company, is also chairman of the National Petroleum Council's Committee on U.S. Energy Outlook. The committee's initial appraisal provides the statistical basis for the following. The conclusions are Mr. McLean's.

BALANCE OF PAYMENT PROBLEMS. Growing oil and gas imports will provoke a large, growing deficit in the U.S. balance of trade in fuels. By the early 1980's, this deficit could be in the \$20 to \$30 billion range, compared to a current deficit of less than \$3 billion. Today, our total exports of goods and services are only about \$66 billion. To pay for our imports of fuel, we will need to seek additional exports of other goods and services.

What will we sell and to whom? We cannot look to the industrialized countries of Western Europe and Japan, because they will be struggling to increase their own net exports to pay for growing fuel imports. Ultimately, the situation can come to equilibrium worldwide only when the oil exporting countries are able to absorb greatly increased imports from us and other oil importing countries. But they do not have the populations, markets, and economic infrastructures to accept large imports from us. This problem will be a critical national issue in the decade ahead.

NEW FINANCIAL CENTERS: Our growing purchases of oil and gas, coupled with those of Western Europe and Japan, will create major new centers of financial power. By 1985, the oil-producing countries of Africa and the Middle East could be collecting oil revenues at an annual rate of almost \$50 billion. Most of these countries are not yet ready to use internally new funds of this magnitude. A large portion of the oil tax revenues will thus move into the short- and long-term money markets of the Free World in ways, and with impacts, which are difficult to predict. One clear possibility is that these countries could become large equity holders in the financial institutions and industrial companies of the United States, Western Europe and Japan.

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ENERGY COSTS ARE BOUND TO RISE. We have exhausted a large share of our cheapest and most accessible energy materials. New indigenous supplies will come at higher prices. Coal mines will be further underground; oil and gas wells will be drilled to greater depths and in deeper waters offshore; the development of oil shale and other synthetics will require expensive new technology.

At present, the composite wellhead or minemouth cost of energy produced in the United States is about 35 cents per million BTU's. By 1985, it could easily be 50% to 100% higher.

These increases are significant, but they can be absorbed in our economy without serious disruptive effects. For the past decade, the real cost of energy in the United States has been declining. Today, we spend only about 5% of our national income for fuels. We are in a favorable position vis-a-vis the other world powers with respect to basic energy costs and will probably continue to be so even after the increases I have suggested. Our most urgent problem is one of adequacy and continuity of energy supplies—not one of energy costs.

What can we do to improve our situation?

We should take prompt action to establish a single, high-level agency in our government to develop a national energy policy and to coordinate our efforts relating to energy matters. I do not mean that our federal government should play a larger role in the discovery and development of natural resources. This task should be left to private enterprise. The chief mission of the central government agency should be to establish priorities and guidelines and to eliminate delays, conflicts, and confusion.

WE CAN INCREASE DOMESTIC ENERGY PRODUCTION. We should take prompt action to stimulate the development of our indigenous energy resources. We have an adequate resources base; our problem is to get new supplies at a faster rate.

We need some practical trade-offs in the ecological area. The production and consumption of energy inevitably involves some ecological impairment. We cannot achieve our environmental goals overnight and still give the U.S. economy all the energy it requires and the public demands. Some pragmatic, graduated approaches to our ecological goals are urgently needed. Here the federal government should take decisive action—and very promptly.

We need to decontrol natural gas prices and to establish that the price of synthetic gas manufactured from coal and naphtha will not be subject to federal restraints. Our present preoccupations with imports of liquefied natural gas from Russia and Algeria are a national absurdity in the face of continued control of indigenous gas prices at much lower levels.

We need to accelerate the leasing of federal lands on reasonable terms for resource development, particularly the Outer Continental Shelf which contains some of our most promising potentials for new oil and gas discoveries.

WE CAN CONSERVE ENERGY. We should reduce waste in the consumption of energy. I am not suggesting curtailments which would have a negative impact on the growth of our economy. On the contrary, I believe the consumption of energy should be encouraged because it increases the efficiency of our economy—providing that the energy is used for socially desirable ends.

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There are, however, many areas in which we could conserve energy without impairing economic growth. For example, 20% of our energy is used for commercial and residential heating; savings can be made through better insulation. About 25% of our energy is used for transportation; savings can be made through the development of mass transportation and smaller and more efficient automotive engines. Another 25% of our energy is used for the generation of electric power in processes which waste about 70% of the energy input; savings can be made through the development of more efficient conversion systems.

WE CAN COOPERATE WITH OTHER NATIONS. Most of the major industrial nations of the Free World will be facing the same energy problems as we do. Clearly, the situation provides opportunities for cooperative research and engineering in the development of new energy sources. And clearly, there is a need for collaboration in the development of a sound framework of political relationships with the countries of the Middle East to promote stability and peace in that area.

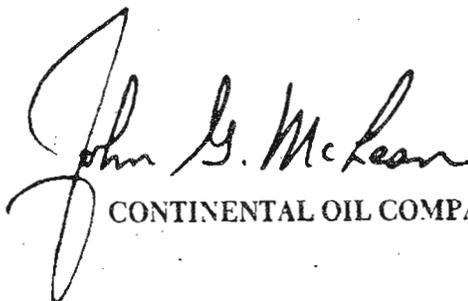
What about our long-term energy position?

While our medium-term problems—through about 1985—are acute, our long-term energy position is reasonably sound. Our country is liberally endowed with energy materials. To meet our long-term requirements, we have:

- Potentially recoverable oil reserves sufficient to meet present demands for over 65 years;
- Potentially recoverable gas reserves sufficient to meet present demands for over 50 years;
- Measured and indicated coal reserves, commercially accessible with current mining methods, equivalent to nearly 300 years' supply;
- Uranium reserves sufficient to meet our present total electric power needs for 25 years; and
- Recoverable shale oil reserves sufficient to meet our oil needs, at present demand levels, for about 35 years after our natural oil reserves are exhausted.

Taken in the aggregate, our potential energy resources have an energy content sufficient to meet our needs for at least 200 years, at present consumption rates. Long before the end of that period, advances in technology should bring us new energy sources, such as nuclear fusion and solar power, which will greatly diminish the drain upon our natural energy materials.

It is our medium-term energy outlook that is of serious concern. We can and will solve these problems. But the task will not be easy, and it will require a greater sense of urgency and commitment on the part of both industry and government than presently exists.


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