SPECIAL REPORT

How to fill America's tank

Riemannian analysis shows LaRouche's energy program means economic boom

Contrary to misinformed opinion on the subject of energy, there are just *two* contending policy options for the United States. The first is the Carter administration's combination of energy cutbacks and substitution of so-called synthetic fuels derived from coal for imported petroleum and nuclear energy. The second is a full gearing up of U.S. nuclear production capabilities and the achievement of the needed breakthroughs in fusion and hydrogen technologies. This is the policy adopted by U.S. presidential candidate Lyndon H. LaRouche, Jr.

A nuclear-oriented policy will not only launch a period of tremendous economic boom if pursued in conjunction with an export-oriented monetary and high-technology investment policy. It will make it possible in the span of little more than two decades to make *water* the primary energy raw material, and electricity, hydrogen, and plasma the primary forms of consumed energy.

Presidential candidate LaRouche posed this alternative in response to the energy and domestic policy message delivered by President Carter on July 15. "The American people have refused to swallow Carter's energy hoax," said LaRouche. "Now we need to get on with an American solution to this problem. Nuclear technology defines the competent scientific future for us and for the world."

"Now is the time to mobilize the nation's resources to move our society rapidly toward a fully nuclear-based economy and also to make this nation again the principal exporter of nuclear plants and technology throughout the world. Environmentalist objections to this necessity are to be put aside as the unscientific mumbojumbo they are."

LaRouche presented the example of India with an urban labor force of 54 million people that includes the third largest number of scientists, engineers, and similar professionals of any nation of the world. But India cannot realize this vast potential because it lacks the capital goods, the technology, the means of production to provide India with new technologies. With a nuclear energy development program as the backbone of the nation's domestic and foreign policy, "we can give India a nuclear industry ... we can give India an enlarged chemical industry," said LaRouche. "India will not benefit only for itself. One billion and a half people in Southeast Asia, the Indian subcontinent, and parts of Africa will be developed and lifted out of backwardness, underdevelopment and hunger through the contributions made by India as the central base of technology for this region."

In this section

Our SPECIAL REPORT this week presents two energy programs—one based on nuclear energy development; the other, President Carter's, based on synthetic fuel development—and subjects them to the Riemannian econometric analysis pioneered by *Executive Intelligence Review's* economics staff.

The nuclear energy development program is part of a working paper on U.S. nuclear policy that was commissioned by Lyndon H. LaRouche, Jr., an independent candidate for president of the United States, from a team of scientific and technical experts from the Fusion Energy Foundation. The taskforce worked under the direction of LaRouche's Energy Advisor Uwe Parpart and, in formulating U.S. nuclear policy and goals, consulted with leading specialists at major research and production facilities throughout the country.

Formulating an energy policy

In formulating his nuclear-centered energy policy, LaRouche and the expert taskforce he has commissioned, began with a set of assumptions concerning optimal rates of growth of the U.S. economy and of energy as well as the forms of energy, their present and future availability. These assumptions are:

1) Coal, oil, and gas—the so-called fossil fuels—are much too valuable as feedstocks for the petrochemical industry (e.g., pharmaceuticals, fertilizer), by virtue of their status as highly organized hydrocarbons, to be wasted by combustion. And oil reserves, while at least several times larger than the published estimates, still represent only several decades worth of energy. Coal presents large transport costs and overriding environmental problems associated with the large-scale deposit of carbon dioxide into the atmosphere.

In order to bridge the gap over the next decade, while nuclear generation is fully brought on line, a one-time expansion of oil refinery capacity is required to provide the fuel for transport and other energy needs provided by gasoline and oil.

2) A desirable and feasible rate of nuclear energy growth is on the order of 7 percent per year. This growth rate is compatible with the required rates of growth in the other productive sectors in order to increase nuclear output—like the steel and machine tools sectors—and is also consistent with historically achieved rates of growth during the 1950s. This is the growth rate required to make U.S. nuclear energy generation greater than 50 percent of total energy output and to provide the level of nuclear energy required for economic "takeoff" in the Third World.

There are, as well, a number of related, qualitative features which define the characteristics of nuclear expansion.

The most productive use of nuclear energy will occur in the context of clusters of nuclear plants interfaced with industrial and agricultural production facilities. This productive complex is known as a nuplex and can be built around coastal or river-sited floating nuclear installations. The nuplex is the basis for building and rebuilding the cities of the world, and for making the U.S. the advanced capital goods and high-technology supplier to growing world markets.

The nuplex concept underscores the advantages in development of high temperature gas reactors and high temperature breeders, whose process heat can be used for a variety of productive purposes, from desalination to chemical processing.

The development of HTGR's will also open the way to the production of hydrogen as the means of replacing combustion of oil and gas. The first phase of hydrogen production may include the use of HTGR process heat in combination with low grade coal and steam.

The production of huge amounts of cheap hydrogen will become possible once hot fusion plasmas can be maintained economically. The major production process will likely be the *photolysis* of water by ultraviolet radiation emanating from "seeded" plasmas. Thus, commercial fusion means not only unlimited electricity but a new resource base derived from the fusion-driven "plasma torch."

The development of all hydrogen-related technologies must be undertaken now in conjunction with the nuclear production buildup and expansion of fusion research. About five years will be required to develop the various hydrogen technologies to commercially feasible form. These include the upgrading of hydrogen-burning internal combustion engines, and the solution of the materials and purity problems associated with development of low-cost and/or compact hydrogen storage systems and fuel cells based on metallic and rare earth hydride compounds.

The following report, developed by a special economic and scientific taskforce from the staff of *Executive Intelligence Review*, the Fusion Energy Foundation, and the nuclear industry summarizes:

- The year-by-year input requirements to meet production targets for a growing and balanced mix of nuclear reactors;
- The research and development program required for the realization of more advanced nuclear technologies by the end of this century;
- Carter's energy program, what it is and its cost;
- The basic economic impact, evaluated by LaRouche's Riemannian econometric computer model, of both the nuclear-based and the Carter synthetic fuel policies.

Once this material is reviewed as a whole, the implications and the choice between the two energy options will be clear: America must go nuclear.