Letters

Oil Shale: A Vast Resource

The basic question underlying the present confusion and conflict regarding oil shale is whether the public or private sectors of our economy should be allowed to develop this vast national resource (see Abelson's editorial, 7 July, p. 11). Since 85 percent of the shale oil in place is under govenment ownership and 15 percent is either in private hands or claimed by private interests, the private versus public argument is understandable. Whether these resources are developed by private or public means, many public policy issues must be resolved. Among these are the questions of (i) equitable tax treatment, (ii) proper conservation, pollution and waste disposal practices, (iii) a stable foreign petroleum import position, and (iv) adequate, long-term, future water resource development in the Upper Colorado River Basin. Obviously, government and private industry must cooperate if a U.S. shale industry is to grow and flourish. Each must aid the other in providing competent technical research, practical economic planning, and wise, far-sighted statesmanship in the years to come.

The thinner shale strata (less than 200 feet or 61 meters in commercial thickness) are primarily under private ownership. There is sufficient such land for initiation of a shale industry by private capital, without government subsidy, using mining and above-ground retorting technology. Private industry is spending substantial sums to bring such an industry into being. The deep, thick shale deposits, up to 1500 feet thick (457 meters) and 2000 feet (609 meters) below the surface, are primarily on public domain lands. These deep shales are most amenable to underground retorting. Such *in-situ* processing is not now technically feasible, and will require substantial additional expenditures for research and development. The Department of the Interior is perfectly competent to protect the public interest on these lands, as it has long done in the case of public domain petroleum leases.

It is not wise planning to lock these public domain deposits out of the market, and attempt to conserve them for future generations, for it is quite likely that new energy developments by and beyond the year 2000 may make oil shale and even other fossil fuel sources superfluous to future generations. The potential contribution of an oil shale industry to our national economy, in creating new jobs, new tax sources, new by-product industries, and new national wealth is enormous. None of these benefits can be realized while the shale deposits remain undeveloped in the ground. Our obligation and responsibility to our children is therefore to encourage development of this resource now—not to hoard it—in order that future generations can reap the economic rewards of a shale industry in the years to come.

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. . . As technical consultants to the oil shale industry in the United States, Brazil, Thailand, and Canada, we find the task of refuting the misconceptions held in the public mind about these resources a most frustrating one but necessary if they are ever to be developed. Those who see these resources as a fabulous national asset to be kept locked up forever should know that oil shale is not a recently discovered resource—its existence and utility having been known before our modern petroleum industry was born. Viable industries have existed in many parts of the world—Scotland, Sweden, Spain, and South Africa, to name a few. At present, oil shale is being put to beneficial use in China and Russia, largely based on technology developed by our own Bureau of Mines and by Japanese engineers.

We would further point out that "achieving optimum development of the Green River shale" has been studied by many good minds both in industry and government for many decades. The body of knowledge to do this is available today. What is needed is a more articulate citizenry urging that this be done in conformance with procedures which work best for the public interest. We can look to the development of our agriculture, coal, petroleum, metals, fertilizer and railroad industries to provide the guidelines. Certainly oil shale has no economic value unless it is developed.

We disagree with Abelson's opinion that this country has seen enough ghost towns because the remains of oil mining camps in the Rocky Mountains constitute some of our principal tourist attractions and evoke the best works of our Western artists and poets. Fortunately, our oil shale country is our most arid, desolate, and unscenic country and it would be hard for man to match the destruction nature has already wrought.

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Vietnam: Call for Scientific Help

In 1941, while an unpopular war was being waged in Europe, and while there was much dissension about our concern with it, there were, nevertheless, university scientists working at projects designed to strengthen our position. Now there are very few or none. If indeed it is true that the university scientists as a whole are opposed to the opinion of the majority of the people of the United States regarding support of the war in Vietnam, then obviously we are in a bad situation. I have no desire to influence anyone's opinion but I would feel better if a segment of American science at least were actively seeking to improve the U.S. position in Vietnam. . . . Surely, no matter what, scientific aid to strengthen our position can only help all around. The nub of our position with regard to the Vietnam War is that we seek to nullify terrorism and permit humble people (not only in Vietnam) to choose their way of life without fear for themselves or their families. We also expect to defend that way in Vietnam until terrorism has disappeared.

I suggest that there is a role for scientific aid. For example, scientific ingenuity regarding weapons and techniques to counteract terrorism can readily be devised. We should be able