

The development of shale-oil seems to me to be in a completely different category. In the case of missiles or space-craft, *only* government can be the final "customer". Therefore, such contracts make sense.

The private sector of our economy would be the customer for most of the shale-oil. Therefore, profit incentives for private research to produce cheaply and effectively for a commercial market is in keeping with what business has always done—and done well.

FEDERALLY SPONSORED RESEARCH

First of all, I support *both* State and Federal research on such matters as:

1. The establishment of health standards and of conservation goals and standards under which industry must operate. Government must fairly establish these *ground rules* under which competitive business is required to function. It then becomes the job of business men to meet these criteria in their day to day operations.
2. Deeper knowledge of the quality, thickness and distribution of oil-shale in States where too little is now known.
3. Economic and engineering studies dealing with water requirements, both from surface and underground sources. This is crucially important to the future of a shale-oil industry.
4. Air and water pollution problems.
5. Waste disposal and the conversion of spent shale to soil.
6. Wind and water erosion problems.

This list is meant to be indicative rather than inclusive. It would certainly *not* rule out such work as broad economic studies by the Federal government on the supply and demand situation for all fuels needed by the entire nation. But it *would* rule out those narrower Federal research and development activities traditionally regarded as being within the province of industry. These activities deal primarily with the interlacing techniques of research, development and production in a competitive society.

I would now like to quote a few sentences from our Report and to comment on them:

1. At the end of a paragraph in Section III, dealing with "Basic Policy Objectives", this sentence occurs:

"In short, the Board agrees that the Federal government, working in appropriate cooperation with the States, should move positively but cautiously to encourage private oil-shale development, with full protection of the public interest in the broadest sense, and that it must expect to provide some of the support, directly or indirectly, of the Research required."

I agree with all of this sentence, except the last phrase stating that the Federal government "must expect to provide some of the support, directly or indirectly, of the research required."

What types of Federal research—in *which* areas of both the public and private sectors of our economy—are intended to be covered by this language? If it covers *only* such areas as the six points I made at the beginning of this dissent on Federally Sponsored Research, then I support this entire sentence of our Report as written—and I support it without reservation.

Even in Section IV of our Report, however—originally intended to give dissenting Board members three *clear-cut* alternatives on Means of Stimulating Oil Shale Development—this strange sentence occurs:

"Federally sponsored research could be undertaken simultaneously with R and D leasing if the responses to the R and D lease invitation were either limited in number or narrow in scope."

What a curious place to get in another "plug" for Federal research, without defining it in *concrete* terms:

I believe there is a vital area for government research and a vital area for private research. Unhappily, the *line of demarcation between the two* has never been made clear in any suggested draft submitted to Board members—notwithstanding our sharp differences of opinion on the subject. The current draft is no exception.

2. In Section VII, on Federally Sponsored Research, this sentence occurs:

"The Government should also sponsor research on those scientific and technologic problems that are of such long-range importance or are of so broad a scope that they are beyond the reach of private industry."