

3. Lease terms should be fixed for at least 10 years subject to extension by production. Due to the present state of oil shale technology, less than 10 years is probably impractical.

4. Initiate an immediate rental program that will produce revenue under the Mineral Leasing Act. The failure of the Federal Government to realize any rentals is hard to understand. Even if no royalties materialize, rentals could be substantial.

5. Provide for increasing rentals or accelerating advance royalties during the lease term so that speculative nonproductive holding would be made uneconomic, and this would give to legitimate producers the opportunity to offset such penalizing expenses by obtaining successful production.

6. Discard research and development leases as the only immediate method of getting leases on Federal lands.

7. Eliminate the "net profits" approach to charging users which is repressive and would discourage commercial production.

8. Provide incentives for achievement, including elimination of the requirement that oil shale technology inventions be made available to the public without charge. It is basically unsound, under the philosophy of our private economic system, to require that a lessee make public all the knowledge, and give up title to any patents, resulting from his research on public lands. I consider the regulations relating to patents and disclosures a negation of our patent system, which is in large measure responsible for the scientific and industrial progress of our country. As a reward for innovation, and for disclosing the nature of his invention to others by publication of a patent, the inventor has traditionally been given a limited monopoly for 17 years on its use. Requiring that patents be assigned to the Federal Government and that all results of research be made public immediately will remove the most powerful competitive force that can be brought into oil shale development.

9. Allow State and Federal governments cooperatively to provide pollution and conservation controls under laws applicable to all lands rather than use special rules applicable to Federal oil shale lands only.

Mr. Chairman, the regulations as presently written would impede development, in my opinion, since they do not provide any economic incentive or advantage to a firm engaged in research and development. It is estimated that on an average it will take an investment of around \$125 million to build a plant that will produce 50,000 barrels of oil a day. Without some sort of advantage over potential competitors who might move in later and ride free, no company is going to invest millions of dollars in research and development to see that the effects of that are given away without cost to another company.

Governor John Love, of Colorado, has predicted that private industry, given a free hand, could develop feasible methods for mining the oil shale by the next decade. It is estimated the development would bring in tens of millions of dollars annually in royalties to Utah, Colorado, and Wyoming, as well as to the Federal Government.

Mr. Chairman, I don't need to remind you that my State of Utah is controlled 74 percent by the Federal Government, which means that it only has a tax base of approximately one-quarter of its area, and