

know how much dependence should be placed on shale oil, and only an industry in being is of any use in an emergency. At least a decade will be needed to attain a significant flow of oil from oil shale if we start now. I believe it to be in the public interest for the Federal government to encourage the early initiation of shale oil production.

Federal policy favors the use of coal as a source of oil and gas and provides direct Federal assistance through the Office of Coal Research. Of the more than \$50 million of contracted research by OCR about 90% is for projects to convert coal to oil and gas. Conventional petroleum operates under a system of state and Federal regulation that encourages the maintenance of a strong domestic industry, including sufficient productive capacity to meet extraordinary needs.

But where is the encouragement for what is admitted to be our largest petroleum resource—oil shale? Where else do we have the potential for hundreds of billions of barrels of oil and ultimately even trillions? Furthermore, industry has indicated its willingness to develop shale oil without the expenditure of government funds. Yet our policies discriminate against oil shale (1) by a significant differential in tax treatment, (2) by highly restrictive provisions in the proposed Federal leasing regulations, and (3) by a suspicious and hostile attitude toward private enterprise as the vehicle for shale oil development.

I would like to mention one other facet of the overall energy supply problem—competition. Electric power is produced from oil, gas, coal, uranium and falling water. This competition has reduced electric power costs despite the inflationary trend. Coal, thought once to be on the way out, is now a solid competitor of nuclear energy thanks for improved technology. Coal miners, by the way, are the third highest paid group in industry.

The market for liquid fuels on the other hand, gasoline being the most important, has been the sole province of petroleum. If coal is to be brought into this competition, why a de facto exclusion of oil shale? There has been a suggestion from time to time that shale oil should be "phased" into the energy supply. Why not open the competition and make it effective by establishing ground rules that give each source an even break?

In short, I would like to see a vigorous competition for the energy market by all forms of energy—gaseous, liquid, electrical (or magnetic, if Dick Tracy is right) and by all potential sources of energy—petroleum, natural gas, coal, oil shale, tar sands, nuclear, solar and hydro. Inter-fuel competition has one sure winner—the consumer.

FEDERAL OIL SHALE LEASING

Our company responded to Secretary Udall's invitation to comment on the proposed oil shale leasing regulation, Mr. Chairman, and I have attached to this statement a copy of our comments which I offer for the record of your hearings. In summary we have told the Department:

- (1) That a limited opening of Federal oil shale lands is needed to prevent windfall profits, to promote competition in oil shale and to accelerate the development of the resource.
- (2) That leases should be granted under a competitive bidding procedure with due diligence requirements to maintain the lease, and a provision to credit a part of the bonus payment against royalties during the first 10 years of the lease to encourage higher bids and early development.
- (3) That the election of production or research be that of the lessee since some companies already have acquired shale oil production technology.
- (4) That government not attempt to own or control the technology thereby removing the competitive force created by the "better mousetrap" philosophy.
- (5) That research by the lessee be allowed the same confidential status as exploration for oil, gas and other minerals on public lands with appropriate government agencies having access to information needed for efficient administration of the lease.
- (6) That the method of applying royalty under these initial leases conform to conventional practice, leaving to the Public Land Law Review Commission and the Congress the responsibility for changes in concept; further, that the royalty burden be moderate so as not to discourage the heavy investment of capital that is needed.
- (7) Finally, we recommended, as discussed earlier in this statement, a policy of encouragement rather than restriction, since oil shale, though large