D. Miscellaneous Comments

2. Oil Companies

There will not be a synthetic fuel industry in the United States until the government says that it is national policy and in the national interest, and gives a long-term commitment.

We suggest that the government follow an approach similar to that in World War II for the construction of synthetic rubber plants. Were the government to fund construction of the synfuel plant, we would be interested in lease-back and operation under certain circumstances. We could perceive various options whereby industry could buy the plant from the government once it proved successful, as was also the precedent in World War II. We feel such an approach would be particularly desirable in the oil shale industry, as the government already owns most of the oil shale reserves.

With regard to the Project Independence goal of one million barrels of synthetic oil equivalent per day by 1985, we estimate that some $20 billion of investment (1975 dollars) would be required (i.e., forgetting inflation). We recognize the government might be disinclined to make such an investment, but we emphasize that the investment would be spread over a ten-year period of construction, so the government would be paying some $2 billion per year, or less than 1 per cent of the federal budget.

In addition to the problems of capital costs and availability, there are also state, federal, and local jurisdictional problems that we have encountered. We suggest that the government should in some ways pre-empt the states on such tax problems and related impact statement approvals.

A basic factor for us, whatever the incentive proposed, is that it must provide for a clear and persuasive means as to how, given the unprecedented risks involved, the company, as an investor on behalf of its stockholders, would get its money back, plus an acceptable percentage of profit. Government action in one area--taxation is a notable example--is certain to blunt interest in, and efforts toward, the taking of initiative and the making of costly investment in the development of synthetic fuels. Congress' passage of the tax bill, virtually eliminating the oil depletion allowance for the industry, was a blow of incalculable economic damage.

If government policy remains as it is, unclear, unfocussed, and contradictory as between agencies, there is no way industry can meet the energy demand of the Project Independence goals.

The new tax bill with its damaging oil depletion provision, environmental requirements (many of them unrealistic), government leasing policies--these create a vacuum that makes serving the demand impossible. The prospect of less drilling for oil is already clear and the withdrawal of lease tracts, the unknown quality of the land, add to the feeling that the policy is uneven and unfair.

We ask the question: Could consideration be given to an income tax moratorium through the period in which a plant was paid out, instead of participation in cost and risk as envisioned by these incentives?

Unfortunately, we have in the industry not yet succeeded in convincing the government that a coal gasification plant even one-tenth the size of that the government is talking about has never yet been put into operation. It would be impossible, under any terms, to get industry to build more than one of these in any case. Problems of cost are wholly unknown, disposal of waste products and their cost remain.

In this current economic climate and with government policies in conflict between agencies, the government might be better advised to consider those ways and means essential to free producers of conventional energy to get about their business effectively, rather than suggesting that, in addition to maintaining costly current production, they embark upon a relatively untried, costly, new endeavor, namely, synthetic fuels.

The shale oil business is highly capital intensive. The required selling price per barrel produced is critically dependent for initial demonstration plants upon the type of financing: that is, whether equity or government guaranteed loan or a mix thereof. (Only $4.60 per barrel is represented by direct operating costs net of by-product credits.) We estimate that with 75 percent of the project capital provided through a government guaranteed loan, oil shale can be sold at $11.17/barrel. However, if 100 percent equity financing is employed (and assuming a 12 percent return), the price rises by $5.58/barrel.

We believe that government should develop a program to cause construction of a demonstration plant so that industry and the financial community can learn the actual operating costs.

We suggest that the whole matter of synfuel production be derived from a well enunciated energy policy which: (1) ties in an effective conservation effort with an all-out program in the petroleum sector to increase oil and gas production particularly through more intensive and extensive off-shore work as well as increased extraction by secondary and tertiary recovery methods; and (2) pursues a vigorous R&D program for synfuel processes which will bring them to commercial stage timely to their need, as petroleum reserves and production inevitably decline in the long term.

Our overall view is that the national objective of one million barrels of synfuel per day by 1985 can only be accomplished if entirely government funded. If that goal must be attained by 1985, then the government must go to a Manhattan Project type approach. This includes 100 percent funding of construction and operation on a CPFF basis.

We would not be inclined to support the commercial development of synfuels at this time, except as part of a national commitment, with associated priorities and goals, to a Project Independence under which 100 percent of the costs were funded by the government.

Because of our belief that synthetic fuels are still in a relatively early R&D stage, we think any government incentives program should be directed to related investments rather than to inducements to commercialization at this time.

A large part of our proposed R&D program is being, and a government program should be, directed to cost reductions in synfuel production.

We feel the views presented in the March 1975 issue of "Chemical Engineering Progress" (which suggested it was not sensible to change coal to synthetic petroleum but rather that coal should be used directly in appropriately altered combustion equipment) merit consideration. The views might influence the scale of a synthetic fuels program, rather than determine whether such a program should exist at all.

One hundred percent federal funding through some form of cost plus fixed or incentive fee contracts with competent firms, is the only approach with a chance for successful 1985 production of 1.0 million BPD synthetic fuels from shale and coal.

If the federal government for reasons of national security adopts a "Manhattan Project" approach to production of synthetic fuels, we will cooperate and give careful consideration to undertaking "cost plus" contracts to support this goal. Lacking this sort of national commitment, none of the listed incentives will accomplish the results desired by the federal government. In the absence of such a program, we intend to maintain our present scale of effort on research in synthetic fuels from shale and coal, believing that major improvements in present technology are possible and that it can discover and develop better synthetic fuels processes. We will consider joint financing of appropriate synthetic fuels research programs with the federal government. Long term, we think the proper economic climate will make synthetic fuels projects attractive for private industry and we plan to be a leading company in a synthetic fuels industry. At present, however, we believe the nation's best bet for Project Independence is a return to a free market for oil and gas, vigorous exploration for remaining reserves of oil and gas, the adoption of a defined and stable energy policy, and support for an urgent research effort to improve synthetic fuels production processes (and other alternate energy projects) before attempting large scale commercialization.

We strongly feel that:

(a) the government is asking industry to embark on projects that are currently technologically wanting and uneconomic, compared to alternative available energy sources, and perhaps for the next decade. If the government, for political and other reasons, wants to proceed regardless, the cost should be borne entirely by government. It is likely that any financial incentive program (such as that proposed) would reach virtually this end anyway after full private company/. government negotiations.

(b) Accordingly, we recommend that the best way to meet government's objective and utilize industry know-how is for government to enter into contracts with industry to build and operate government-funded pilot, demo and commercial plants, as appropriate to the state of the art. For this, industry would be paid an appropriate fee for its services, its contribution of processes and its expertise. Such an arrangement would closely parallel the proposed guaranteed purchase (CPFF) incentive. We are prepared to consider a proposal from government for such a program.

When economic synfuel processes have been proven up, the most effective, least costly, long term incentive for new projects is for gov-

ernment to provide an economic climate that will make them attractive for private industry to undertake. This implies a market that is free of price controls and unthreatened by environmental, legislative or other public sector constraints of unreasonable degree which can cause costs to escalate. It would specifically involve removal of the five crucial roadblocks that have been noted in the Phase II report.

Some of our specific concerns with regard to production of synthetic fuels are financial commitments prior to commercial production, competing foreign imports, potential loss and the present and prospective tax "bite." We also firmly believe that the government must provide a continuing policy and terms either to a point of completion of the plant and price guarantee or to a point of mutual agreement to discontinue a project.

Don't concentrate solely on synfuels. Unleash conventional fuels and resources if you want the job done and in both cases, the availability of resources becomes the prime need.

The underlying base for the conduct of any business is the economic incentive for pursuing a particular course of action. The energy industry has recently witnessed a whole array of governmental disincentives to the business of maintaining and increasing energy from conventional sources. Examples are recent tax legislation and the programs of the Federal Energy Administration with respect to allocation of oil and the entitlements program which deprives companies of needed capital which could otherwise be invested in conventional and synthetic fuel production. Irrespective of any incentives which may be proposed, any company considering entering into a new area of activity such as synthetic fuels production must attempt to predict the overall business climate and governmental fiscal policy that is likely to prevail at some future time when commercial quantities of synthetic fuels may be produced. The huge capital investments required to achieve such a goal --with or without government incentives--dictate this analysis.

Though not the subject of the current study, we believe the underlying premise for any incentive or combination of incentives--the availability of the resource from which synthetic fuels may be developed--is of paramount importance. We would characterize availability of resources as an incentive of the first order. Most of the lands from which synthetic fuels may be obtained are presently in federal ownership. With respect to coal, the future availability of federal lands based upon present practices will be at the discretion of the federal government primarily by competitive bidding. Oil shale resources are even more

restricted. The prime oil shale lands are within the Piceance Creek Basin of western Colorado and are owned almost entirely by the federal government. Recently, four tracts, each comprising approximately 5,120 acres, were sold in the Prototype Leasing Program in early 1974. Except for this sale, no federal acreage has been available since the 1920s. As you know, the problem connected with unpatented mining claims prevails in this area and settlement of the land status at this time is vital to resource availability.

We, and undoubtedly many other firms interested in synthetic fuel production, simply do not have at this time lands from which synthetic fuels may be produced. Thus, resource availability must first be implemented before the implementation of any viable incentives. A coherent federal policy for making these resources available is the first step in achieving synthetic fuel production of any magnitude.

An additional problem is foreseen in connection with resource availability. The plant site may have to be constructed in an area other than that where the resource is located. Authority would be required for such offsite construction.

D. Miscellaneous Comments

3. Utilities

We believe that gasification projects are of great importance in any sensible energy program. They are urgently required in the total national interest, but are not needed for our operation.

Although, as indicated, liquefaction of coal represents an intermediate interest, we strongly believe in the rapid: (1) development of additional coal supplies from our extraordinary coal deposits, for we feel this could be "the quick fix" for many of our energy problems, and (2) revision of EPA policies as regards the utilization of eastern coal and the mining of low sulphur western coal. We are convinced that these measures are vital to the nation's development of adequate energy supply. As regards the latter, EPA must be made to see this, for it is fundamental to rapid energy production. We cannot allow ourselves to become a giant staked out by Lilliputian ideas.

Our joint research project with a neighbor, which on a modest scale is exploring liquefaction potential, has illustrated the possibility of initiating a needed program, but progress has been slow. (We are each almost totally coal-burning.) Here are the ingredients for a feasible relationship in energy production, especially as regards the limitation of private participation to no more than two companies or interests; if a multiplicity of private interests are to participate, they should be organized into a single instrumentality for maximum speed and effectiveness of performance. The Ohio Valley Electric Corporation and the Buckeye project provide good examples of this.

A single point of reference and liaison in government is essential. The creation of an energy czar, with the single authority to plan, decide and implement--to cut across the various jurisdictions and procure essentials--is imperative. Our greatest need as a nation is speed; we must have action now. By 1978 this energy shortage will be very real. Unless steps are taken now to prevent it, a shortage of generating capacity to provide needed power will be acute and this will place an inevitable lid on America's economic expansion. It must be recognized that this will occur at a time when our population will continue its expansion, when vocal minorities of all kinds will be militantly demanding an increasing share from our productivity, not only for their needs but for their wants as well, and it is only expanded production that can provide this, only energy can make this possible. Hence the need, economic and sociological and political, for action now.

There is a proven way to proceed, to move speedily toward an energy solution and to provide viability of the mechanism established for it. We refer to the World War II experience with rubber and the loss of our source of important supply when the enemy forces overran Southeast Asia. Because we had certain reserves of rubber in the U.S. and a partly developed technology for the manufacture of synthetic rubber, processes largely in the hands of certain oil companies, we had a basis from which to initiate a synthetic rubber program. But this was feasible and ultimately successful only because of the creation of a rubber czar and the providing of authority for him to proceed unencumbered. With his authority and the needed mechanism established, essential ingredients such as butadyene and styrene were commandeered and a new rubber industry was established.

A synthetic rubber industry was financed and built by the government. A program was initiated which, at the war's end, made possible the sale of all its facilities on a competitive bid basis to private industry. The plants were sold and became an integral part of our private enterprise economy and so became basic to present-day rubber production.

The Manhattan Project is a similar example in terms of the authority, scope of action and mechanism established. It did differ in that, by its very nature, private enterprise participation was not feasible, with the exception of the diffusion plants required.

In both these endeavors, government funds were essential because so much money was required. This formula for action we strongly recommend now--and with reference to all of the four fuels under consideration. (Reference is made to the reports available in the files of the Preparedness Subcommittee of the Senate Armed Services Committee on the establishment of the synthetic rubber industry.)

Obstacles to the initiation of such a procedure now are, of course, the traditional apprehension of private enterprise regarding government ownership of any economic enterprise and the fact that many of those in authority are not familiar with that program of 33 years ago.

It must be made clear from the outset--in policy statements and in legislation exactly what will be required: the purpose of the effort, the need for immediacy of action, the application of effort diligently and speedily to protect the nation and the enhancement of its future supplies, the establishment of the product's position in the market and the divestment of the government's interest into its natural setting,

the realm of private enterprise in order that the objective might be achieved without transforming any part of the economy into a semi-socialistic pattern.

Vitally important to these considerations is the role, and restraints imposed by, the EPA. These are a limiting factor of very real significance.

The risks faced by a public utility in any investment of its resources are more pervasive and significant than for companies in other areas of effort. Recognition of its costs and investment level comes only after utility commissions' decisions have been made, not before. The Prudent Investment Theory, set forth in the Southwestern Bell decision by Mr. Justice Brandeis, is even more applicable now than then.

Our investments in coal properties have been prompted by the failure of normal sources to provide coal. Delivery and price have been a problem. Authoritative decision to provide adequate supplies from normal sources is imperative.

Venturing into new areas, such as oil from shale and liquefaction of coal, might well expose us to still further economic hazards.

What, then, will the utilities do? This industry is in the worst liquidity position of any in the U.S. Even the strongest of us has insufficient capital to participate in these projects, even on a shared basis with the government. And even if liquidity were not the problem, regulatory restraints are simply too great to provide the needed leeway. We are a rate-of-return industry; money spent on ventures, if lost, is gone forever. The margin is too narrow to permit such risks. The customers would never be permitted by the regulatory authorities to bear such costs in their ultimate rates, as would, inevitably, theoretically, be the case.

The utility industry cannot, therefore, participate in such projects. The lack of available capital, the risk involved and the requirements of the regulatory agencies are all too formidable.

We emphasize again that our energy problem is one of overriding national interest, not one unique to the oil, gas, coal or utility industries. We are engaged in an economic warfare of unparalleled scope and nature and severity. This must be recognized and the attitude, spirit and action that characterized the government and our people in World War II must be revived and applied to it.

D. Miscellaneous Comments

4. Others

Our view is that coal must form the basis of any true U.S. fuel independence program. The price for imported crude that would be required to facilitate the development of synfuels by private industry is not definable at present and is the reason government assistance is needed to develop such an industry in the U.S.

We recognize that the government has attempted to be impartial with respect to different contractors at various stages of product commercialization. But in our view that impartiality does not solve the problem of transitioning from pilot to demonstration to commercialization phases efficiently and rapidly. In our view, the government should commit itself to one contractor who would carry the process forward from research through commercialization.

The major problem in synfuel development projects is the availability of capital, a problem which will become increasingly difficult as the early commercialization stages are reached.

In our view synfuel technology is not as advanced as is presupposed by the Phase II booklet. This fact only complicates the difficulty in establishing probable costs of construction and operation of future synfuel plants.

We are not yet in a position to specify exact contractual terms which would encourage us to embark upon or accelerate our own synfuel development projects. Certain requirements stand out: guaranteed purchases on a CPFF basis, capital availability, reasonable cost of money, sensible escalator terms, and a reasonable return on capital. (In the latter regard, 10 percent is inadequate, or at best marginal.)

We believe it important for the government to build a demonstration plant in whatever synfuel technology is of interest to the government in order that private industry can accurately forecast costs in both construction and operation of such plants.

In our view, environmental and regulatory problems are the major constraints outside dollar availability in synfuel commercialization.

A low BTU coal gasification program is desperately needed, yet, under present conditions, there is no way of getting the 1.2 billion tons of coal required by 1985 to meet the total U.S. need for coal. Capital requirements are severe and federal policy is far from helpful.

The existing shortage of capital is discouraging, particularly when we consider that, overall, it is estimated that $41 billion will be required through 1985 to meet coal and related needs adequately. Capital necessary just for our regular bread-and-butter needs is not available. How then can it be for syncrude purposes?

Conditions have deteriorated in almost every respect since 1973 when Project Independence was inaugurated. We have been expansion-minded, yet the coal industry has grown very little, if at all.

Government and public stress is placed upon the need for rapid progress toward solution of our energy problem, yet a commercial plant, in progress since 1972, is now not likely to be completed until 1981, if then. Government is funding this program on a 70/30 basis, and lack of money has delayed the project.

There are too many entrepreneurial programs kicking around, too great a proliferation of interests and proposed programs.

What is required is not just a determination of policy, which is all essential, but of project requirements in specific form--not for just one company but, as with NASA's space program, for a combination of the capable.

Just what does the government want? This must be defined clearly and specifically.

Environmental requirements, state law restraints, leasing provisions--all these increase the risk on new coal ventures.

With respect to government policy, just what is wanted? Oil from shale? Oil from coal? High BTU? Low BTU? Let's decide! And when deciding, think in terms, perhaps, of a profit incentive of 8 percent at least.

Hasn't the cart been put before the horse in considering an indefinite end result rather than: Who can and will do the specific job under what conditions? For example, if the government will provide the facilities, such as its coal reserves, under acceptable conditions, the job can and will be done.

The government should determine what it wants, in what quantity, under what conditions, and then buy it. Only central authority and clear, prompt decision will make any program work. Consider, for example, that a year and a half is normally required for legislative action, and even this is optimistic.

We will make no large investment of our money on new development programs with oil from the Middle East, at a $10 cost, hanging over our heads. This illustrates an essential factor in that clear, overall policy that is needed.

On very large capital expenditures advancing the state of the art, a guaranteed minimum rate of return, under certain acceptable conditions, is absolutely necessary. The best people in the industry, working together with a satisfactory profit as the real incentive, can do the job.

Our primary interest is low BTU gasification; it represents a cheaper capital cost and cheaper operating costs. And in this, it should be noted that OCR and EPA are overlooking a very simple but very basic question: how do you mine coal better than is being done now? If our fundamental know-how in the extraction and production of conventional fuels were given primary attention and government support, they would contribute as much, or more, to the solution of the energy problem as exploration and experimentation, at exhorbitant cost, within the syncrude field.

High BTU gasification will come; it is doable now but the price is too high at present or in the foreseeable future. The requisite technology is available now, but the cost is formidable; the risks from foreign energy are great.

Oil from shale is equally formidable for the same reasons and is not of interest to us now.

Coal liquefaction, too, is not of great interest to us. We will follow the state of the art in this and be guided accordingly.

We intend to stick to our last, coal; that is why, in the nation's present economic state, a consortium would be essential for real progress.

Would we submit a major proposal to FEA such as you invite us to do? We might, but were we in FEA's place, we would investigate

carefully our in-house experience and capability to complete so gigantic an assignment.

We have been under way on a project for some three years now. What if the government were to provide unlimited funding for it? A number of things could be achieved, but only by the proven NASA route of many varied sources, companies and skills combined under a clear and decisive policy and single authority. Funding is not the entire answer.

A number of programs, in various fuel areas, appear promising but lack of adequate funding, whether from the private capital market or the government, lack of clear government policy, lack of a point of authoritative decision and prompt action will present impossible obstacles.

Pending determination of what is wanted, what the obstacles are, how they can be removed promptly, we urge full governmental support of fundamental, conventional energy-producing operations--coal and oil. The coal and oil are there, the ability to produce them has been proven. While syncrude programs are in process of consideration, let us get on with the fundamental energy-producing job. We can do it.

Frankly I think the FEA is putting the cart before the horse in trying to develop financial incentives for industry participation in the production of synthetic fuel. As I view the government efforts so far, they are suffering from a great proliferation of effort by various companies undertaking their pet projects and in some cases without the necessary technical resources to produce meaningful results.

In my opinion the synthetic fuel program should be organized in a manner similar to that used by the Department of Defense in the development and production of the major weapons systems. The government should set up an organization staffed with top-notch scientists and program managers who will determine what the government wants to be accomplished in a given time frame. The government should then outline its requirements and solicit proposals from industry teams, which would include a joint effort on the part of, say, several major companies on each team. After evaluation of the proposals, a very large cost-plus-a-fixed-fee contract should be awarded to the team submitting the best proposal. This contract would provide for 100 percent cost reimbursement, as well as a reasonable profit to compensate the contractors for assigning their best people to the project.

The government should provide the special purpose facilities (probably almost 100 percent of total) required for the program and should also provide the raw materials, e.g., coal reserves or oil shale reserves. I would guess that a five-year development program would be required to demonstrate the economic feasibility of the program. At that point the government should be in a position to go all out on production, again through private industry, with some of the economic incentives currently under discussion.

I think you should make the point strongly that the government should accelerate its funding of those good programs which are currently under way. To my mind this is much more important than writing books on "Simulated Government/Industry Negotiations."

APPENDIX A

LETTER FROM FRANK G. ZARB

Dear _____:

In his State of the Union Message to Congress in January the President presented a national energy program that included the following:

> "I am proposing a program which will begin to restore our country's surplus capacity in total energy."
>
> "I have established a goal of 1 million barrels of synthetic fuels and shale oil production per day by 1985 together with an incentive program to achieve it."

Since your company is in a position to actively support the expansion of our nation's synthetic fuels goal, we would like to enlist your cooperation in helping us select those incentives which will be most effective in achieving this goal.

Last summer the Federal Energy Administration, together with the National Science Foundation, launched a project to determine those incentives which would encourage industry to accelerate research, development and early commercialization of oil shale and synthetic fuels from coal. This was a three phase project of which the first two phases have been completed. Phase I was an interview survey designed to establish baseline data on present expectations and to identify the incentives most likely to accelerate the process. Phase II was designed to work out details of the most promising incentives identified in Phase I. The third and final phase of this project begins with this letter to you and the chief executives of 29 other companies comprising a majority of the most active companies in the synthetic fuels business. The purpose of Phase III may be summarized as follows:

1. To invite your endorsement or criticism of the terms of the incentives identified and developed in Phases I and II;

2. To solicit your views on the probable effectiveness of each of the incentives;

3. To encourage you to select one or two synthetic fuels projects which your company would like to undertake. Then, for each project, develop and present a proposal which demonstrates:

   a) What kinds of incentives you would require and why; and

   b) What you would do in the absence of such incentives.

The FEA fully expects that the President and the Congress will give the highest priority to achievement of the goal of one million barrels per day of synthetic fuels and shale oil production by 1985. Your cooperation in this project will be of great value in helping us determine those incentives deemed necessary to encourage your company and others in the industry to undertake the synthetic fuels projects needed to achieve our goal.

We have engaged the services of International Planning Management Corporation (IPMC), a consulting firm in Bethesda, Maryland, to assist us with this project. Their expertise lies in conducting and analyzing surveys of this type. They will not be involved in evaluation or interpretation of the information obtained or any Federal policy analysis which might follow this information gathering step. Although we would prefer to have as much information as possible in an openly quotable form, we have agreed that IPMC may give you unqualified assurance that you or your company will not be identified with your response to any specific question if you wish to remain anonymous.

I have authorized IPMC to contact you to schedule an interview. They will provide you with the specific objectives of the meeting. You should be hearing from them within the next week or so.

Sincerely,

Frank G. Zarb
Administrator

APPENDIX B

SAMPLE INTERVIEW ARRANGEMENT LETTER

Dear _____:

I am writing to confirm our appointment for _____ o'clock on _____ to discuss your company's reaction to nine incentives the Federal government is considering to accelerate the research, development and early commercialization of certain synthetic fuels. As promised during our conversation of _____, I am also enclosing certain background materials, offered for your review prior to our meeting, including:

- Our suggested approach to the interview, detailing the specific types of information for which we are looking.

- A booklet, "Spurring Synthetic Fuel Production," which presents the details of six of the nine incentives to be discussed during our interview.

- A separate but similar description of three additional incentives, not treated in that booklet, also to be considered during our discussion.

As Frank G. Zarb, Administrator of the Federal Energy Administration, advised in his letter of February 28, 1975 (copy attached), FEA has engaged the services of International Planning Management Corporation to interview selected companies to gather their reactions to these incentives. As he mentioned in that letter, the Federal Energy Administration, together with the National Science Foundation, launched a project last summer to determine those incentives which would encourage industry to accelerate research, development and early commercialization of oil shale and synthetic fuels from coal. This was a three phase project of which the first two phases have been completed. Phase I was an interview survey designed to establish baseline data on present expectations and to identify the incentives most likely to accelerate the process. Phase II was designed to work out details of the most promising incentives identified in Phase I. The enclosed booklet summarizes the results of Phase II.

The purpose of the proposed interviews, which begin Phase III, were summarized by Mr. Zarb as follows:

• To invite your endorsement or criticism of the incentives identified and developed in Phase II; and

• To solicit your views on the probable effectiveness of each of the incentives to be discussed.

Following the interviews, Mr. Zarb would also encourage you to select one or two synthetic fuels projects which your company would like to undertake and, for each project, to develop and forward directly to FEA a proposal which demonstrates: (a) What kinds of incentives you would require and why; and (b) What you would do in the absence of such incentives.

The FEA fully expects that the President and the Congress will give the highest priority to achievement of a 1985 production goal of one million barrels per day of shale oil and synthetic fuels (including high and low BTU coal gasification and coal liquefaction). Your cooperation in this project will be of great value in helping FEA determine those incentives deemed necessary to encourage your company and others in the industry to undertake the synthetic fuels projects needed to achieve this goal.

We anticipate our coming meeting with pleasure, and thank you for your cooperation.

Sincerely yours,

George C. Sponsler

PHASE III OF SYNTHETIC FUELS INCENTIVES PROJECT

Purpose and Approach

The purpose of Phase III of the synthetic fuels incentives project is to obtain your assessment of nine specific incentives which the federal government is currently considering to accelerate the research, development and early commercialization of certain synthetic fuels.

Those areas of synthetic fuel development and commercialization to be considered are: (a) oil from shale, (b) oil from coal, (c) high BTU gas from coal, and (d) low BTU gas from coal.

The stages of commercialization to be considered are: (a) pilot plant, (b) demonstration plant, (c) first commercial plant, and (d) subsequent commercial plants.

During the interviews we will ask for the following:

A. Specific comments and criticisms by your executives of the nine incentive options to be considered and as described:

   1. under the heading "The Basic Proposition" for the first six incentives described in the booklet "Spurring Synthetic Fuel Production" on pages 33, 37, 41, 45, 47 and 51, and

   2. in the attachments for the seventh, eighth, and ninth incentives.

B. Specific comments and criticisms of the "Hypothetical Terms and Conditions" contained on pages 65-86 of the same booklet.

C. Specific suggestions as to changes in the nine incentives which would encourage your company to accelerate commercialization of those synthetic fuels of interest to you.

Subsequent to the interview, we will make available to you--and not to the federal government--our complete transcribed notes taken during the interview, inviting your additions or amendments. Upon

receipt of your edited text of those notes we will, if you so authorize, submit it to the Federal Energy Administration. If you wish, these notes will be kept wholly confidential, with the anonymity of your company preserved.

In Mr. Zarb's letter to your company he mentioned the following as the final purpose of Phase III:

> To encourage you to select one or two synthetic fuels projects which your company would like to undertake. Then, for each project, develop and present a proposal which demonstrates:
>
> a) What kinds of incentives you would require and why; and
>
> b) What you would do in the absence of such incentives.

For each of the projects you select, would you please advise FEA of the resulting construction schedule and rate of spending, together with your assessment of how your present plans would be changed by the implementation of your proposal. In addition, would you state the assumptions on which your present and proposed plans are based, including assumptions regarding any governmental barriers that affect those plans.

INCENTIVE 7: GUARANTEED PRICE/LOAN GUARANTEE

THE BASIC PROPOSITIONS

7a. Guaranteed Price

Suppose the federal government, using powers comparable to those of the Defense Production Act, were to enter into long-term contracts with private enterprises to establish a predetermined price for a fixed quantity of synthetic fuel to be produced as a result of accelerated facilities construction. The contracts would be negotiated with firms competing for specific quantities of the total quantity established by the government for the program. The contract price would be adjusted for inflation or deflation in labor and material costs, as determined using accepted indices, for the cost of construction and for operating costs over the life of the project. Adjustments for unforeseen costs would be subject to separate negotiation.

If the contract price is higher than the market price at the time of production, the government would pay the difference to the contractor. If the contract price is lower than the market price, the contractor would pay the difference into a government fund or account established for this project. During the periods when the contract price is higher than the market price, this fund would have a negative balance. If the fund accumulates a positive balance because of market prices exceeding the contract price, this balance would be divided 50-50 between the government and the contractor. (At the option of the government, a portion of this fund may be set aside as a project contingency fund for unforeseen expenditures such as for supplemental land reclamation.)

Considering this incentive alone, what is the probability that your company would initiate or accelerate synthetic fuel development activities?

7b. Guaranteed Price with Loan Guarantee

Supplementing the basic proposition described in 7a above would be an enlargement of the scope of the contract to include a government guarantee of a loan, obtained by the contractor from private sources, such guarantee not to exceed 75 percent of the cost of plant.

Considering this incentive combination, what is the probability that your company would initiate or accelerate synthetic fuel development activities?

7c. Guaranteed Price - Alternative

Suppose the federal government, using powers comparable to those of the Defense Production Act, were to enter into long-term contracts with private enterprises to establish a predetermined price for a fixed quantity of syncrude to be produced as a result of accelerated facilities construction. The contracts would be negotiated with firms competing for specific quantities of the total quantity established by the government for the program. The contract price would be adjusted for inflation or deflation in labor and material costs, as determined using accepted indices, for the cost of construction and for operating costs over the life of the project. Adjustments for unforeseen costs would be subject to separate negotiation.

In each month that the contract price is higher than the market price, the government would compute the cost of the price support. This support cost would be prorated on the basis of the total refinery runs that month by all U.S. refineries, and the government would assess the prorated cost per barrel to all U.S. refiners on the basis of their refinery runs for the month. In each month that the contract price is lower than the market price, all U.S. refiners would receive a prorated credit. In this alternative the contractor would only receive the contract price.

Considering this incentive alone, what is the probability that your company would initiate or accelerate synthetic fuel development activities?

7d. Guaranteed Price - Alternative/With Loan Guarantee

Supplementing the basic proposition described in 7c above would be an enlargement of the scope of the contract to include a government guarantee of a loan obtained by the contractor from private sources, such guarantee not to exceed 75 percent of the cost of plant.

Considering this incentive combination, what is the probability that your company would initiate or accelerate synthetic fuel development activities?

HYPOTHETICAL TERMS AND CONDITIONS

For the purpose of this discussion, it should be assumed that the terms and conditions applicable to the above options will be similar to those detailed in Appendix B of the booklet, "Spurring Synthetic Fuel

Production" for a) guaranteed procurement (fixed price), beginning on page 81, and for b) loan guarantee, beginning on page 78.

INCENTIVE 8: LIMITED PRICE AND LOAN GUARANTEES

THE BASIC PROPOSITIONS

8a. Limited Price and Loan Guarantee

Suppose the federal government were to enter into contracts for the purchase of a specific quantity of syncrude (or other synthetic fuel). The contract quantity would amount to the estimated total output of the plant during the first ten years of operation. The government would agree to guarantee the purchase price on 50 percent of the contract quantity, it being understood that such guaranteed price level would be based on the current world price at the time the contract is executed, plus an escalation factor based on U.S. inflation rates.

To assist the contractor in financing the project, the government would agree to guarantee a loan obtained by the contractor from private sources in an amount equal to 50 percent of the cost of the project.

Considering this incentive combination, what is the probability that your company would initiate or accelerate further commercial development of synthetic fuel programs?

8b. Limited Price Guarantee/Advance Payments

Suppose the federal government were to enter into contracts for the purchase of a specific quantity of syncrude (or other synthetic fuel). The contract quantity would amount to the estimated total output of the plant during the first ten years of operation. The government would agree to guarantee the purchase price on 50 percent of the contract quantity, it being understood that such guaranteed price level would be based on the current world price at the time the contract is executed, plus an escalation factor based on U.S. inflation rates.

To assist the contractor in financing the project, the government would agree to make advance payments to the contractor for syncrude in an amount not to exceed 50 percent of the cost of the project.

Considering this incentive combination, what is the probability that your company would initiate or accelerate further commercial development of synthetic fuel programs?

HYPOTHETICAL TERMS AND CONDITIONS

For the purpose of this discussion, it should be assumed that the terms and conditions applicable to the above options will be similar to those detailed in Appendix B of the booklet, "Spurring Synthetic Fuel Production," for a) guaranteed procurement (fixed price), beginning on page 81, and for b) loan guarantee, beginning on page 78.

INCENTIVE 9: SALE OF OPTIONS/GUARANTEED PRICE

THE BASIC PROPOSITION

Suppose the federal government were to ascertain the price per barrel at which a given quantity of syncrude (or other synthetic fuel) would become available. The government would then invite proposals from any interested U.S. sources to buy nontransferable options from the government for the privilege of selling a specified quantity of syncrude to the government at this contract price, adjusted for inflation/deflation at time of delivery. The contractor would be required to start production of a specific minimum quantity of syncrude within five years from the date of the contract or forfeit his option. The amount paid for the option would not be refunded under any circumstances.

If at the time of delivery the market price of syncrude is above the contract price the contractor would not exercise his right to sell that production to the government at the contract price, but would sell on the commercial market instead.

If the market price of syncrude is below the contract price, the government would take delivery of the syncrude which it could then store, use, or resell. The loss incurred by the government on the exercise of such right would be offset in whole or in part by the proceeds received by the government from the sale of the options to the contractor.

An essential feature of this incentive is that the options offered by the government have a positive value to the bidders. Also the initial sum paid for the options would not be refundable under any circumstances.

Assume that each agreement would specify a contract quantity large enough to cover the entire output of the plant for 20 years.

Considering this incentive combination, what is the probability that your company would initiate or accelerate synthetic fuel development activities?

HYPOTHETICAL TERMS AND CONDITIONS

For the purpose of this discussion, it should be assumed that the terms and conditions applicable to the above options would be similar to those detailed in Appendix B of the booklet, "Spurring Synthetic Fuel Production," for guaranteed procurement (fixed price), beginning on page 81.

APPENDIX C

OUTLINE OF HYPOTHETICAL TERMS AND CONDITIONS

Incentive 1. Direct Grant for Pilot Plants (Government 2/3 of cost, Contractor 1/3)

1. Scope of Work. Preliminary design; detailed design, construction and test operation.
2. Objective. Bring pilot plant on sooner.
3. Schedule. Failure to meet agreed upon schedule by more than 30 days constitutes default.
4. Ownership. Vested in contractor except as otherwise provided.
5. Estimated Cost of Work. No event can increases exceed percentage increase from effective date of contract as stated in Engineering News Record Index.
6. Limitation of Government Funding. Cannot exceed 2/3 of the estimated amounts for each phase. If cost exceeds estimate, the overrun is to be borne by contractor. Underruns for that phase will reduce the government funds for that phase. If contractor elects not to support cost overruns, the contractor is in default.
7. Payments. Each 90 days for work to be performed during the succeeding 90 days.
8. Project Management. Overall responsibility vests with contractor.
9. Government Liaison. Contractor will provide office space for five government employees plus utilities and administrative support at site.
10. Access to Work.
11. Patents, Data and Proprietary Data
    a. All inventions are property of contractor, except for three years after Phase IV, contractor will grant license for third parties to use at reasonable royalties.

b. All patents, secret processes, proprietary data, and copyright materials used or embodied in work but not part of the work shall be identified. Ownership shall not be affected, except for three years following Phase IV, contractor shall grant a license or permit for a third party to use at a reasonable royalty.

c. Government has irrevocable royalty free license to use any and all discoveries for government purposes.

12. Examination of Records. Standard Form Examination of Records Article will be prepared to permit GAO inspection.

13. Follow-on Use of Technology. At any time during term of contract or 180 days following completion of Phase IV, contractor agrees to present evidence satisfactory to the government that the results will be used in a demonstration or commercial scale plant producing synthetic fuels. Failure to do this constitutes default.

14. Termination. If contractor shall have defaulted, the results of any work will vest with the government. Government has responsibility for completion. Contractor agrees to supply feedstock at current market prices. Government can cancel at its convenience with no liability to contractor whatsoever.

15. Term of Contract.

16. Indemnification. Contractor subject to limitation of $_____ shall (1) furnish financial protection for public liability claims from project, and (2) reimburse government for settlements made by or on behalf of the government for such liability claims.

17. Permits. Contractor will procure all permits or licenses.

Incentive 2. Direct Grant for Demonstration Plants
(Government 1/2 of cost, Contractor 1/2)

1. Scope of Work. Plant construction and plant test, evaluation and operation.

2. Financial Provisions. Contractor's share of estimated cost is broken down by elements. Increases or decreases in total estimated costs will be shared 50/50. Government share shall not exceed $_____.

3. Inspection and Acceptance.

4. Price Adjustment. In no event shall any increase of the government's share of the estimated cost for construction of the demonstration plant exceed weighted percentage increase of Chemical Engineering Plant Cost Index (75%) and Department of Commerce Construction Composite Cost Index (25%) from effective date of contract to effective date of subcontract. If price of subcontract is less than estimate, government's obligation shall decrease. If weighted index is lower, government's obligation will decrease. Contractor is still obligated to perform.

5. Recovery of Costs. Government gets ___% of the gross revenues from any sales or licensees of the process resulting from this contract. Also government gets ___% of gross revenues from sale of all products or by-products of demonstration plant or commercial plant built. This will be included in any contract to sell process. Reimbursement shall continue for 20 years.

6. Revenues from Sale of Plant Products and By-Products. Share on proportional basis.

7. Special Data Provisions. Data Accession List.

8. Data Requirements.

9. Data Use Restriction.

10. Disposal of Government Property. Contracting officer shall have the unilateral right for 180 days to purchase the contractor's interest in the plant or to sell government's interest in plant to the contractor.

11. Patents. Government and contractor jointly hold domestic title to any subject invention. Contractor agrees to grant a domestic license to any responsible applicant at a fair royalty. Government can also grant license under same provisions.

Incentive 3. Convertible Grant
(2/3 Pilot Plant, 1/2 Demonstration Plant)

4. Grantee's Obligations.

   a. Build and operate a plant to produce synthetic fuels.

   b. Provide government with complete data, drawings, reports, developments. These are to be provided at the termination or completion of the project, or at such time as the grant is converted to a loan.

c. Allow use of all background and foreground rights if grant is not converted.

d. If grant is not converted, to give government an option to obtain a purchaser for grantee's interest.

e. Negotiate with government for conversion of the grant at a repayment amount that reflects the true value of the grantee's interest in all patents, rights, data, facilities, but in no case shall conversion be less than amount of the grant.

f. Before conversion grantee be fully committed to the next step in the development process.

g. To repay the grant upon conversion of grant.

h. That as a result of the grant, government ownership interest in facilities, technology, and rights developed is not less than prorata portion that government bears to total cost of plant.

i. Assume complete responsibility for plant site, unless government obtains another contractor to assume that responsibility.

j. Negotiate with government to acquire those portions of government's ownership interest in the facility.

5. Government's Obligations. Government agrees:

a. To provide a grant for plant construction.

b. To negotiate for conversion of the grant.

c. Upon conversion to relinquish claim to physical facilities obtained or technology or patent rights developed by the project.

6. Financial Provision.

a. Pilot plant, 2/3; demonstration plant, 1/2.

b. Government will decide what should be included as cost item.

c. If grant is not converted and all requirements are met by grantee, there is no obligation to repay grant.

7. Conversion. Any time and within six months after completion of the project.

8. Authorization to Proceed.

9. Grant Disbursements.

10. Quality Assurance.

11. Ownership.
12. Termination for Default.
13. Patents, Data, and Proprietary Information. Depends if grant is converted.

Incentive 4. Loan Guarantee - 90%

Amortization and Interest Rates. Mix guarantee period is 25 years. Amortization of principal in equal payments shall be required. Interest within range of prevailing private market rates.

Incentive 5. Guaranteed Procurement (Fixed Price)

1. Scope of Work.
2. Period of Performance. Twenty-five years.
3. Contractor's Obligation to Produce and Dispose of (Item).
4. Government's Obligation to Guarantee Purchase of (Item).
5. Production Points.
6. Determination of Quantity of Item Produced.
7. Payment for Guaranteed Quantity Produced.
8. Quality Assurance Requirements.
9. Failure to Produce. Contractor may supply from other sources.
10. Price Support Schedule. If market price is greater than support price, government and contractor share 40/60 basis. Government reserves right to take title to production or require sale on commercial market.

    (Support Price — Foreign Import Price) = Loss
    Government 85% of loss, contractor 15% of loss.

    Economic Adjustment of Price
    Use of Cost Indexes
    Option for Taking Title to Item
12. Stop Work Order. Government by written notice.
13. Cessation of Production. Contracting officer can order production halted.

Incentive 6. Guaranteed Procurement (Cost Plus Fixed Fee)

1. Contractor shall provide all personnel, equipment and facilities.
2. Period of Performance. Five years with five-year renewal at government option.
3. Performance Schedule.
4. Total Estimated Cost.
5. Limitation of Cost.
6. Limitation of Funds.
7. Payment of Costs. Reimbursed for all allowable costs.
8. Payment of Fee. Not to exceed 10% of estimated costs.
9. Allowable Cost, Fixed Fee, and Payment.
10. Negotiated Overhead Rates.
11. Authorization for Disposal of Production.