

OPENING REMARKS

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Conversion

Thank you and good morning.

First I would like to publicly congratulate the personnel at the Pittsburgh Energy Technology Center for arranging yet another excellent contractor's review meeting. As shown by your attendance, you in the audience should also be congratulated on your dedication to improved technology for the production of liquids from coal.

The second thing I would like to do is express to the people here how proud I am to be a part of the coal liquefaction family and how firmly I believe that the results of the research being conducted by the people assembled here today is going to have a dramatic impact on our energy future. Or in other words; I am a very strong advocate for the liquefaction program.

In fact the link between national security and energy security and our indirect liquefaction research program is the primary subject I would like to address this morning.

I began my professional career taking off and landing jet fighter airplanes on aircraft carriers. In fact I went to Top Gun when the technical representative from the plane manufacturer wasn't nearly as pretty as that actress in the movie. I served in the Navy for 9 years before coming to the Energy Research and Development Administration in 1975 to wage the moral equivalent of war instead of the real thing.

I was moved to make the transition from flying jets to managing energy research by one primary motive.

And that was the sincere belief that I could make an equal or greater contribution to my country's security by working on energy research and development rather than flying from an aircraft carrier.

Thirteen years after making that decision I am even more convinced that our country's future security is being well served by our energy research program.

The people in this audience today and those like you working on coal liquefaction research and development have reason to be very proud of their accomplishments and ready for a very bright future. However, the struggle that was called the moral equivalent of war isn't over. The link between energy security and national security and liquids from coal is still intact and we must work even harder in the future.

In March 1987, at the request of President Reagan, the Department of Energy completed a comprehensive study to assess the energy security implications of declining domestic oil production and rising oil imports.

One of the conclusions of that study is that, if current trends continue, the U.S. and its principal allies are likely during the next decade to become more dependent on imported oil, much of which in ever increasing percentages will come from the unstable Persian Gulf.

As stated in the Energy Security Report, "Growing dependence on Persian Gulf suppliers has important implications for the economic, foreign policy, and national security interests of the United States".

Key projections show U.S. oil imports increasing from 5.2 million barrels per day (about 33% of consumption) in 1986 to between 8 and 10 million barrels per day (about 50%) in the 1990's at prices of \$30 to \$35 dollars per barrel.

That equates to a flow of \$100 billion per year from the U.S.

Between now and the year 2000, U.S. domestic oil production is projected to decrease by 40% from 8.7 million barrels per day to 6.4 million barrels per day. Today, the transportation sector alone consumes more oil than we produce domestically.

Projections also show the transportation and industrial sectors to continue their dependence on liquids with no other realistic alternatives.

When oil prices fell during 1986 and 1987, that was good economic news to energy consumers. Unfortunately, this also portended two items of potential bad news for the future.

First, the world as a whole will once again turn toward a small number of countries to fulfill its vital requirements for oil.

Second, we have been given a false sense of security by the lower prices and adequate supplies.

A final conclusion of the Energy Security Report that is very important to us here today is that the most promising technological opportunities for further reductions in oil consumption rest in the development of alternative fuel systems.

The Congress has also made a clear statement on this issue.

The Appropriations Conference Committee report for the DOE FY 1989 budget states that emphasis on research designed to produce economical liquid products for the transportation sector is needed. The committee requested that the Department submit before 1 May 1989, a five year strategy and program plan for a broad research program to meet the needs of the transportation sector based on plentiful fuels such as coal.

Coal, which represents over 90% of our recoverable fossil fuels, by definition, will be the key to our future energy security.

Because of unfavorable economics we do not have a U.S. industry in place to produce alternative fuels from coal. However, the future for liquids from coal now look better than they have ever looked.

The research being pursued by those here today is making tremendous progress. This is a result of improvements in catalysts, achieving higher activity, selectivity and life; the development of reactors with excellent heat management capability; the development of improved gasifiers and gas cleanup; and the introduction of cogeneration of alternate fuels and electricity.

By the way, none of this would be possible without the dedication and hard work of the people at the Pittsburgh Energy Technology Center and and you the researchers at laboratories, universities and contractors.

Indirect liquefaction must build on the progress made to date to achieve economically competitive processes which can be demonstrated in the mid 1990's at the projected price of \$30-\$35 per barrel of oil equivalent.

These systems may produce premium fuels such as high cetane diesel fuel, oxygenated fuels for octane enhancement and alternate fuels such as methanol for transportation fuel use in fuel flexible vehicles.

We have the opportunity to work very closely, government and industry, to examine our engineering problems, decide upon solutions, integrate all aspects of the indirect coal liquefaction system, and complete that sound base of technology that industry will need when--and not if-- the oil roller coaster starts upward again.

That may sound like we are advocating a total systems approach and industry participation and cost sharing in our research and development activities. You are absolutely correct.

I believe that it is imperative that we look at the total system as we make the decisions that guide our research and development program. It is very encouraging to see that a representative of the coal gasification and gas cleanup programs at the Morgantown Energy Technology Center are here and presenting a paper tomorrow on the production of synthesis gas from coal.

If we continue doing our job well, we will be giving U.S. industry the ability to essentially cap oil prices at the mid-1990's projected level and start a new trend of producing our own liquid fuels instead of depending on my friends who stayed in the Navy to keep the Persian Gulf open for oil tankers.

You know we don't have rear view mirrors on jet aircraft-- the future is coming so fast that you don't have time to worry about the past. Each of us as we go about our individual responsibilities associated with coal research, should work with the conviction that we really are contributing to the future security of the United States.

I would like to conclude with a quote: "Every revolutionary idea seems to evoke three stages of reaction:
Stage 1-That's completely impossible, don't waste my time!
Stage 2-That's possible, but it's not worth doing.
Stage 3-Hey, I told you that was a good idea !

Thank you for your kind attention and enjoy the review meeting.