

SESSION II

Section 5

COAL GASIFICATION AND SYNTHETIC FUELS
FOR POWER PRODUCTION

W. Reals

Texaco Inc.

COAL GASIFICATION AND SYNTHETIC
FUELS FOR POWER PRODUCTION

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W.B. REALS

OPENING REMARKS

CLEAN GASEOUS FUELS

It is certainly a pleasure for me to be here today - talking about, but mostly listening to, what I like to think of as Texaco Gasification success stories. It is particularly gratifying to be a part of this program because the long road to commercial success has not always been easy. In fact, after the glitter of synthetic fuels began to fade a few years ago and the economics of many synfuel projects went from bad to worse, many wondered why Texaco stayed in this business. Quite simply, our company believed that Texaco's Process was competitive and that it offered a very attractive alternative to the utility and industrial communities for production of electricity and chemicals. I think we've been proven right.

While gasification is often referred to as "High Technology", "Advanced, Novel Technology", and other buzz words, the fact is, gasification is by no means new to Texaco.

We began coal gasification research back in the 1940's and over the past 35 to 40 years, have continued to commit money and talent to process development.

We've come a long way since the 40's. Most of you know that the technology has evolved through the stages of pilot plant testing and demonstration facilities. Cool Water is the culmination of our commercial development effort for power production. Other commercial facilities, which you will hear from today, have also proven Texaco Syngas as a cost effective, commercially viable way to produce ammonia, hydrogen, and chemicals.

Before I step down and turn the program over to the people who have the real story to tell, I'd like to comment on why we believe Texaco's technology has received such widespread recognition as a successful commercial process. And why we believe it has a very bright future.

First, it is clean. Coal based technologies must satisfy the requirements of environmental laws that will get tougher every year. Texaco's process can and has met the test. You'll hear more about this from Wayne Clark when he gives some impressive Cool Water environmental statistics.

Second, the process is flexible. That's a particularly important prerequisite for the utility industry which, like the oil business, is trying to project future demand in a climate of uncertainty. Texaco's technology allows for modular construction and incremental sizing of plants according to need. Capacity can be matched to load growth thus conserving capital and minimizing the risk of over building.

The third advantage is the bottom line. We believe Texaco's process can compete successfully with conventional coal technology. Our calculations show the cost of power from a Texaco based IGCC plant to be about ten percent below that of a conventional coal-fired plant with full clean-up equipment.

The optimism I have expressed today is not voiced in disregard to the facts around us. Uncertainty about oil and gas prices, electricity growth, new environmental legislation, and competition must make us work even harder to continually improve the technology. Cool Water, as well as the other plants represented here today, will all add to our knowledge base. This expertise, coupled with Texaco's continuing development program, will ensure the success of future plants.

Again, I am very pleased to be a part of this program. Now I look forward to hearing an update from my friends and colleagues who are experiencing first-hand the capabilities of Texaco's gasification technology. They each have impressive stories to tell.

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CLOSING REMARKS

CLEAN GASEOUS FUELS

As I listened to each of your presentations, I confess a feeling of real pride and optimism. Pride on behalf of the many dedicated men and women whose determination and foresight have made this technology a reality. Optimism, because once again, U.S. industry has met a tough energy challenge -- the challenge that says we must provide reasonably priced, clean, reliable energy and energy related products to the consumer -- and at the same time, face increasingly stringent governmental regulations and severe competition from conventional energy sources and technologies. It is an accomplishment we can all be proud of.

But I am also realistic. Those of you who have pioneered gasification, and whose profits are dependent upon its operability and reliability, know that there's more work to be done.

I am convinced gasification technology will play a major role in the power generation and chemicals business. And I'm convinced that Texaco's long term commitment to commercialization will be the key to realizing this technology potential. I'd like to assure you that our company views gasification as a continuing part of its strategic plans and as a significant revenue generator over the long term.

Some of us in the petroleum business would like to think that oil and natural gas will last forever, but at today's consumption rate, it is estimated that petroleum and natural gas supplies will be exhausted in the early to mid-21st century. Continued conservation may extend this period marginally, but time is running out.

Coal, on the other hand, represents our largest single resource. There are more than 20,000 quads of energy below ground. Some say more than 25,000. That is more than 25 times the known resources of U.S. oil and more than 20 times the known natural gas resources. It is almost 15 times the energy that today's U.S. nuclear plant inventory could produce with light water reactors from available uranium. It simply makes good business sense for all of us to develop this vast energy resource to its maximum potential.

Now let me talk more specifically. Many of you are aware that our gasification commercialization activities are the responsibility of the Alternate Energy and Resource Department. This group is actively evaluating new gasification ventures, both power generating and industrial chemical projects. Currently, the group is working on two ventures that look very promising - one on the West Coast and another on the East Coast.

Our alternate energy people meet regularly with utilities and industry to explore potential gasification applications within their respective systems. These contacts are accelerating with excellent results. We are at various stages of discussions with companies who are beginning gasification feasibility studies. Our intent is to offer whatever technical expertise is required to allow our customers to accurately assess the capabilities of a Texaco-based plant. Thanks to organizations such as EPRI who have played an important role in moving the IGCC learning curve forward in the utility industry, many "non-believers" are being converted. With the technology commercially demonstrated in both the power and chemical industries, our efforts are now focused on establishing a long term gasification business. That means a serious marketing effort on our part and we fully intend to support such an effort.

There's one caveat, however. Not every company's needs will be best met with gasification technology. Nor is Texaco in a position to conduct a detailed study of every company's requirements. But the technology is viable in many cases, and Texaco is prepared to work on those projects that make economic sense.

In my opening remarks, I mentioned the need for continuing development of the technology. Several programs are underway. As information becomes available from Cool Water and other Texaco licensed facilities, it is being very closely evaluated and will be incorporated in future plant designs. Our engineering and research staffs are working to improve specific areas of the technology, with the objective of reducing costs and further improving efficiency. Some of these areas include burner optimization, metallurgical testing and failure analysis, evaluation of refractory material and process instrumentation and control. These and other development programs will continue.

Texaco's leadership position in gasification is not being taken lightly. We're competing in a difficult, constantly changing marketplace and we intend to keep that lead. Our company has made a substantial investment in bringing the process to its current commercial status. And we're prepared to invest more.

We look forward to working with you.

Thank you.