

**Energy — key to growth
and a better environment
for Asia-Pacific nations**

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World Petroleum Congress
Beijing, People's Republic of China

October 13, 1997

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It's a pleasure to be back in Beijing and an honor to address the World Petroleum Congress.

It's entirely fitting that we meet in this seat of ancient civilization and source of world culture. For centuries, people from far parts of the Earth have come to China seeking commercial and other opportunities.

The Romans came here seeking silk – traveling along a network of trails that became known as the Silk Road. In the 13th century, history's most famous traveling salesman, Marco Polo, took this road to Cathay, returning to Venice with treasures and tales that astonished all of Europe.

More than a century ago, William Herbert Libby, representing Jersey Standard, the predecessor to Exxon, came here to persuade Chinese families to try Esso's kerosene in their lamps and cooking stoves.

The odorless oil and its clear white light proved an instant success, and by 1910 China had become Exxon's largest customer in the Far East.

To build sales, Libby gave away small, inexpensive kerosene lamps that became widely popular. The company was known by the name "Keepers of Light."

Today, Exxon and the world petroleum industry are still "Keepers of Light." We earn that title by providing energy to light the way to economic progress,

higher standards of living and hope for a brighter future for people around the world.

Nowhere is that progress more evident than in the Asia-Pacific region.

I've traveled to this part of the world often in recent years, and I'm constantly impressed by the commitment to economic growth that's prevalent throughout the region.

All across this region – from Bangkok to Beijing, Jakarta to Shanghai, Singapore to Seoul – the signs of growth are unmistakable.

Homes, apartments and office buildings going up. Factories, refineries and power plants under construction. More cars, trains and airplanes on the move than ever before. In 15 years, this region's economy should almost double, shifting the global economic center of gravity toward the East.

The people of this region, representing some 40 percent of the world's population, have a lot to smile about: new and better-paying jobs, more and better consumer goods and services, and greater opportunities for the next generation. Their smiles and looks of hope and optimism are the human face on the economic transformation that's gaining force in Asia.

I know all of us here today want to see this transformation continue. But we have to remember that progress is not automatic. As recent economic difficulties in the region demonstrate, there is no guarantee when it comes to economic growth.

In fact, some argue that the easy growth from increasing capital and labor inputs has already occurred. They say that the road ahead will be more difficult and will require strong boosts in productivity to keep Asian economies growing.

I see no reason why economic growth can't continue strongly in this region in the future. But I do agree that sustained growth is only possible when it is built on sound fundamentals -- education and training, a strong work ethic, sound regulatory policies, incentives to invest, and many other factors that don't come easily or cheaply.

We might also remind ourselves that this region's growth depends on strong economic ties with other parts of the world. Today, the world is much more economically interdependent than it was a few years ago.

Advances such as fiber optic cable, communications satellites and the computer have created better tools for communicating and conducting business. As a result, opportunities and challenges flow more quickly from one area of the world to another.

Political change has also played an important role in laying a foundation for growth. As more and more governments have turned to market principles, trade barriers have fallen, fostering a rising tide of international investment and commerce.

One result of these changes is that the area of the world open for energy development has increased by more than one-third.

That's very good news indeed because, as we all know, economic growth and higher standards of living require energy. Energy use and economic growth are inextricably linked. The countries with the highest economic growth and the highest standards of living are also those with the highest energy use per capita.

Today, most of that energy, both in Asia and in the world as a whole, comes from fossil fuels – about 85 percent. Of these, oil and natural gas supply the majority, with coal also being a major player. That's especially true here in China, where coal remains the dominant fuel source.

I know there are some people who argue that we should drastically curtail our use of fossil fuels for environmental reasons, and I'll have more to say about that in a moment. But let me state at this point my belief that such proposals are neither prudent nor practical.

With no readily available economic alternatives on the horizon, fossil fuels will continue to supply most of the world's and this region's energy for the foreseeable future. Their use is essential both for economic growth and for the elimination of poverty, which is itself the worst polluter.

In recognition of this, we must continue to develop and apply technology and expertise that enable us to use fossil fuels in ways that are efficient and environmentally sound. Doing that will require a great deal, from both government and the petroleum industry.

Looking specifically at oil, demand in the region has grown vigorously, increasing reliance on imports, despite efforts to develop indigenous supplies.

China itself, with growth rates among the highest in the world, became a net importer in 1995.

I do expect some moderation in the rate of oil demand growth in all of the region as economies become larger, more sophisticated and efficient. But with the volume increase that is expected, I do not see how growing import dependence can be avoided.

In anticipation of this, it appears that supply strategies are changing, with Chinese and other Asian companies becoming more active in exploration in other parts of the world. But this change should not cause us to lose sight of the need to maintain and, if possible, increase local production and reserves.

Asia still has numerous areas with hydrocarbon potential. But it will take a major effort to unlock these resources for the benefit of consumers.

Increasingly, this is a difficult task, often involving seismic and drilling in deep waters or harsh terrain, with complex geological formations. Examples include the Sakhalin islands off Russia and the Tarim Basin in China.

Developing such resources at an affordable cost is going to require the application of the very best technology and practices known to the industry. Private petroleum companies have those tools. And so, an essential step to achieve further progress is for governments to accelerate the opening up of prospective resources for development by private industry.

One resource with great potential for Asia is natural gas. But producing and using it will require some visionary thinking and the application of new and as yet unproved technology.

Vast resources of gas exist off Natuna Island in Indonesia, in Papua New Guinea, and along the Northwest Shelf of Australia, to name a few.

Others may develop along the Asia-Pacific coast as far north as Russia.

And, of course, there are major gas deposits west of the region as well. The key issues are how to get this gas to markets, and how to develop markets once it is determined that the gas can be produced at reasonable cost.

Today, most gas is transported to this region as liquefied natural gas, LNG. In the United States and Europe, most gas moves through pipelines – as it will in South America in the years ahead. Could the same not take place in Asia?

The distances are greater here, the markets less developed, but technology may yet lead the way to a pipeline grid serving the countries of this region. New high-strength steel and other technology may make pipelines feasible from Sakhalin, Natuna or as far away as Turkmenistan.

On the demand side, we estimate that oil for transportation and industrial use in the region will grow by nearly 10 million barrels per day by 2010. That's equivalent to about 40 new large refineries over that period – 3 per year.

Of course, along with demand comes the need for improved products, new chemicals and better processes. Increasingly, refineries and chemical plants are integrated into single sites as we're seeing in Singapore, for instance.

Finding new and better ways to produce, refine and market oil in the midst of change is not new to the petroleum business. What is new is the remarkable pace at which the need for petroleum fuels and products is accelerating in Asia.

Such conditions are creating opportunities for a synergy between governments of the region and private petroleum companies, with the potential to speed and strengthen the whole process of economic development.

Clearly, private companies such as Exxon have a lot to offer. Developing energy resources in new and difficult areas, building safe, reliable, and efficient refineries and chemical plants, and bringing new and better products to market are just a few of the contributions we can make.

We also bring hard-won technological expertise tested and proven in other areas of the world. This can make it practical to develop resources that would not have been economic just a few years ago. It can also lead to significant employment and educational opportunities. Time will not have to be spent in developing technology or training from scratch – they're already available without the growing pains.

Of course, all of this will require massive outlays of capital – financial, intellectual and technical. Projects will likely be large and complex, requiring multiple management skills. Familiarity with challenging environments, flexibility, and strong technological support will be key elements of a successful venture.

Private petroleum companies offer all of these essentials. But to draw on them, countries must be willing to provide incentives that cause companies to want to invest.

This is particularly true now, with so many new opportunities throughout the world. Competition among countries eager to develop petroleum reserves is at an

all-time high. Resources are being stretched to the limit. To attract companies to make the huge investments needed, nations need to offer tax-and-take provisions that will encourage businesses to bring their best people and technology.

Governments also need to provide a stable investment climate, one that vigorously protects physical and intellectual property rights. They should avoid the temptation to intervene in energy markets in ways that give advantage to one competitor over another – or one fuel over another. Governments' goal should be to promote a fair contest on a level playing field.

Another key contribution governments can make to economic development is in setting rational environmental standards. People the world over want a clean environment, and some are concerned that fossil fuel use – especially oil use – is incompatible with that objective.

Today, concern about the environment focuses on the issue of global climate change. In December, representatives from some 160 nations will meet in the beautiful city of Kyoto, Japan, to decide on legally binding agreements that would have the effect of cutting the use of oil and other fossil fuels. Clearly, all of us here today have a big stake in the decisions that will be made.

Proponents of the agreements say they are necessary because burning fossil fuels causes global warming. Many people – politicians and the public alike – believe that global warming is a rock-solid certainty. But it's not.

Let me briefly address three key questions: Is the Earth really warming? Does burning fossil fuels cause global warming? And do we now have a reasonable scientific basis for predicting future temperature?

In answer to the first question, we know that natural fluctuations in the Earth's temperature have occurred throughout history – with wide temperature swings. The ice ages are a good example.

In fact, one period of cooling occurred from 1940 to 1975. In the 1970s, some of today's prophets of doom from global warming were predicting the coming of a new ice age.

Some measurements suggest that the Earth's average temperature has risen about half a degree centigrade since the late 19th century. Yet sensitive satellite measurements have shown no warming trend since the late 1970s. In fact, the earth is cooler today than it was 20 years ago.

We also have to keep in mind that most of the greenhouse effect comes from natural sources, especially water vapor. Less than a quarter is from carbon dioxide, and, of this, only four percent of the carbon dioxide entering the atmosphere is due to human activities – 96 percent comes from nature.

Leaping to radically cut this tiny sliver of the greenhouse pie on the premise that it will affect climate defies common sense and lacks foundation in our current understanding of the climate system.

Forecasts of future warming come from computer models that try to replicate Earth's past climate and predict the future. They are notoriously inaccurate. None can do it without significant overriding adjustments.

Even then, 1990's models were predicting temperature increases of two to five degrees Celsius by the year 2100. Last year's models say one to three degrees. Where to next year?

As one climate modeling researcher said in the May issue of the prestigious magazine, *Science*, "The more you learn, the more you understand that you don't understand very much."

So the case for so called global warming is far from air tight. You would think that all the uncertainty would give political leaders pause. Unfortunately, it hasn't, and officials continue to insist that agreement is needed in Kyoto.

To achieve the kind of reduction in carbon dioxide emissions most advocates are talking about, governments would have to resort to energy rationing administered by a vast international bureaucracy responsible to no one. This could include the imposition of punishing, high energy taxes.

This heavy burden of taxes and regulation would take its toll in many ways – in slower economic growth, lost jobs and a profound and unpleasant impact on the way we live. Companies in industrialized nations that compete in world markets would be seriously handicapped.

Currently, most proposals exclude developing nations, including China, Indonesia and many other countries here in the Far East. The rationale is that these

countries are trying to grow economically and need to consume fossil fuels to do so.

Of course, this is true. But excluding developing countries from the reductions will not prevent them from being hurt. Their exports will suffer as the economies of industrialized nations slow.

So all of us would suffer from these proposals. The U.S. Senate recognized that fact this summer when it voted 95-0 in favor of a resolution expressing its concern about the proposals under consideration.

What should we do? First, let's agree there's a lot we really don't know about how climate will change in the 21st century and beyond. That means we need to understand the issue better, and fortunately, we have time. It is highly unlikely that the temperature in the middle of the next century will be significantly affected whether policies are enacted now or 20 years from now.

It also means it's bad public policy to impose very costly regulations and restrictions when their need has yet to be proven, their total impact undefined, and when nations are not prepared to act in concert.

In fact, in the U.S. the administration says it is futile to attempt to determine the impact on the economy in 2010 of reducing CO₂ emissions – although many studies indicate the impact will be vast.

Before we make choices about global climate policies, we need an open debate on the science, an analysis of the risks, and a careful consideration of the costs and benefits. So far, this has not taken place, and until it has, I hope that

the governments of this region will work with us to resist policies that could strangle economic growth.

Fostering economic growth will require a broader understanding of the environment than many environmental activists seem to appreciate. The most pressing environmental problems of the developing nations are related to poverty, not global climate change. Addressing these problems will require economic growth, and that will necessitate increasing, not curtailing, the use of fossil fuels.

Such use does not mean inevitable environmental degradation. New technologies have allowed industrialized countries to enjoy both economic growth and environmental progress.

Studies in the economic community support this idea. A recent study at Princeton University found "no evidence that environmental quality deteriorates steadily with economic growth." Instead, it found that after an initial decline, a nation's environment improved as its economy grew.

So the real secret to environmental improvement is economic growth. And as this growth continues, the economies of this region will need to import more oil, and, to a lesser extent, gas.

This growing reliance on petroleum imports will cause a major eastward shift in the politics of energy. Nations may form new alliances, some based on commercial interests, others on geo-political considerations. The temptation may be strong to make these exclusive or restrictive, reversing recent trends toward more openness and harmony.

I hope that such factionalism will not be the case. We need the smooth functioning of an increasingly interdependent world economic and energy system. And this requires that barriers to trade and to the free movement of goods, services and people be dismantled, not raised.

It also requires that nations practice energy cooperation, not selfishness – and that they do so both in times of prosperity and of crisis.

Finally, some people say that, in pursuing economic development, Asia must follow a western model. I believe that the region must find its own way.

But I also believe that the most direct path is the one many countries in the region and around the world have chosen over the past 20 years – the free market approach. This approach has many antecedents, including the Chinese philosopher Lao-Tzu.

He wrote in the sixth century B.C.: "Govern a great nation as you would cook a small fish – do not overdo it."

It would be tragic indeed if the people of this region were deprived of the opportunity for continued prosperity by misguided restrictions and regulations.

It is up to all of us – the petroleum industry, the governments of this great region, and the international community – to ensure that this does not happen. By working together, we can lay a solid foundation for continued prosperity and rising standards of living that will benefit not only the people of Asia, but also people around the world. And the petroleum industry, convened at this Congress, will play a key role.