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Testimony Presented By

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The Petroleum Industry Research Foundation (PIRINC) is a not-for-profit organization that studies energy economics, with special emphasis on oil and gas. It is not a trade association and does not speak for the oil industry, but is internationally known for providing objective analysis of energy issues. PIRINC is supported by contributions from approximately 40 oil companies ranging from major internationals to regional marketers.

Our testimony is in response to the U.S. Department of Commerce's Bureau of Export Administration request for comments on the IPAA's petition "to determine the effects on the national security of imports of crude oil and petroleum products".

The bottom line of our findings is that the current and projected level of U.S. oil imports does not present a demonstrable threat to U.S. national security. Our analysis also shows that any measure imposed to achieve a significant reduction in oil imports from their current or projected level under existing market conditions would raise the price of oil to the point where it would cause measurable damage to the U.S. economy. We will discuss the national security question first and then address the economic impact of any measure to curtail oil imports. In assessing these questions, we are sensitive, as should policymakers be, to the pivotal role played by the oil industry in the regional economies of the Southwest and other producing areas. As we discuss in this paper, the government should continue to develop a pro-active policy to stimulate drilling using targeted incentives.

Net oil imports amounted to 7.5 million B/D in 1993 and net import dependency was 44% of total U.S. oil consumption. In 1973 net imports were 6 million B/D and the dependency ratio was 35%. During this 20-year period the U.S. oil import share has greatly fluctuated: from a record high of 46% in 1977 to a low of 27% in 1985 and then back to last year's 43%. The decline in imports from 1977 to 1985 was primarily due to the coming-on-stream of Alaskan North Slope (ANS) production which rose from 0.5 million B/D in 1977 to 1.8 in 1985. Another major factor was the high price of oil imposed by OPEC, particularly from 1979 through 1985. It caused U.S. demand to decline by about 3 million B/D during this period while production rose slightly.

In 1986 a radical change took place: world oil prices collapsed and, except for a brief period during the Gulf Crisis in 1990, never again came close to the 1979-85 level. At the same time, ANS production stopped growing and from 1989 on, has declined. Lower-48 production, which had remained approximately flat during the first half of the 1980's, also resumed its decline.

The production decline was primarily of a geological nature and, thus could not have been reversed or arrested through government policy. ANS productivity per well is as high as in some major oil export areas. Yet, the recoverable resource base was such that a decline in production starting in the late 1980's had been predicted before the price collapse of 1986.

In the Lower-48 region, maintenance of the production level in the 1980-85 period was brought about by a near-doubling in drilling (compared to the previous five years) as a result of the high prices. But 94% of it was development drilling to maintain the cash flow. Lower-48 proved reserves actually declined during this period despite the all-time high prices. Thus, the decline in U.S. production since 1985 is clearly due, at least directionally, to a structural geological reality, given the present state of technology. It should also be pointed out that throughout this period -- in fact, since 1970 -- U.S. domestic crude oil production has nearly always been virtually at capacity. This is still the case. Hence, any government-imposed import reduction could not have been offset by drawing on available domestic supplies. This makes oil different from many other commodities which compete with imported goods, and which could readily increase their output if imports decline.

On the demand side a decline during the early 1980's was reversed after 1985 as prices collapsed. The very modest growth rate since then reflects the fact that, over time, a growth in the economy requires some growth in energy demand. Since oil accounts for 40% of total U.S. energy demand, a 1.1% annual growth rate in U.S. oil demand since 1985 while there was a 2.5% annual growth in the economy indicates a relatively efficient use of oil during this period. The DOE's *Annual Energy Outlook 1994* projects a 1% growth rate for oil demand to 2010 in its lowest case.

Thus, our current import dependency is an organic composite of our present resource limitations and the state of our economy. No basic changes are possible in the first, although at the margin production does respond to economic incentives or disincentives. To make significant changes on the demand side would require action which would have a spill-over effect on the entire economy.

Is this a worrisome situation which should concern our government? Obviously, a high-level dependency on imports for any essential commodity should be a matter of concern to the government. An inquiry into the national security aspect of U.S. oil imports is therefore in order.

One of the first things such an inquiry should do is look at the oil import dependency of other industrial nations. This will tell us that our current net import dependency of 43% is quite low relative to that of most other industrial and industrializing nations. In fact, with the exception of the U.K. and Norway which are net exporters, all West European countries have an oil import dependency of 90%-100%. Japan is at a 100%. Similarly, the newly industrializing countries, such as Taiwan and South Korea, import all of their oil supplies. China is just beginning to be a net oil importer but by 2010 it is expected to import 1/3 of its oil needs.

Thus, by international standards the U.S. has a relatively low oil import dependency. It should also be pointed out that most of the industrial and industrializing countries which have a high oil import dependency are also highly dependent on imported natural gas, the energy source which competes most directly with oil. The U.S. by comparison is nearly 90%

self-sufficient in natural gas, with the balance coming by pipeline from Canada which has no other export outlets for its gas. Furthermore, unlike oil, domestic natural gas production usually has some spare capacity.

The next question we must ask is, what is the future trend of U.S. oil imports? In broad terms the answer is not controversial: the share and volume will rise over time. The DOE projects a net oil import dependency of 60%, or 12.8 million B/D, by 2010 in its Reference Case. Most forecasters agree at least directionally with this projection. In other words, as of now it seems reasonable to assume a significant increase in the volume and share of U.S. oil imports by 2010. But by international standards a 60% import dependency in 2010 would still put the U.S. well below the current and future import dependency of most other industrial countries. Furthermore, according to most forecasts, the increase will be quite gradual during this 12-year period.

What, then, are the real security risks, if any, of our growing import dependency in the post-Cold War world?

The risk of Middle East oil becoming a pawn in the East-West contest has of course ended with the Cold War. It had been considered a threat during the Cold War period because of the high reliance of most industrial countries on Middle East oil imports for economic and military purposes. However, because of a publicly proclaimed Western sensitivity to any perceived Soviet threat against Middle East oil, (the "Carter Doctrine", announced in January 1980) Russia was careful to avoid any appearance of preparing to control this resource, so as not to escalate the Cold War.

Future disruptions, if any, will come mainly out of local conflicts. They could still be large but they will be limited in scope and duration. It should be pointed out in this connection that the only time Middle East oil has been used as a political weapon by its *exporters* was the Arab oil embargo of 1973/74 which was in effect for about 4 months without achieving its political goal. Since then, all uses of oil exports as a political weapon have come from *importing* countries, principally the U.S. which has a restriction on oil imports from Iran and a total ban on imports from Libya, and by the U.N., which has sanctions on nearly all Iraqi oil exports.

Given the urgent financial requirements of all oil exporters, it is unlikely that a major oil exporter would deny supplies to the U.S. for political or other non-commercial reasons. Furthermore, given the efficiency of worldwide oil markets, the old model of a targeted embargo will not work. Today's market can not zero-in on a targeted purchaser, but responds with a higher market price to allocate the reduced supply among all purchasers. Thus, the impact of a destination restriction coupled with a production cutback would be a globally higher price. It would not have a worse impact on its intended target than on other importers and could hurt the exporter more than its targeted customer. In addition, if necessary, the International Energy Agency would become involved in correcting any producer-imposed imbalance. This is one of its designated functions.

From an historical perspective these occasional future disruptions may not appear significant. But at the time of their occurrence their impact on major importers such as the U.S. could be severe. Thus, the ability to offset the temporary loss of imports, not only for domestic economic reasons but even more to give the U.S. the freedom to act during such a disruption, may be in the national interest.

Our Strategic Petroleum Reserve (SPR) has been created for precisely this purpose. Its publicly announced availability at the outbreak of allied military action in the Gulf in January 1991 was a commercially minor but psychologically significant, factor in causing the historic price collapse at the time. Had the SPR been made available in the early part of the Gulf crisis, prices might never have reached the high levels of October-November 1990.

Thus, the right policy at the present time would be to fill our SPR as rapidly as possible while world oil prices are relatively low to the 750 million barrel level for which the capacity and infrastructure are already in place. Since the oil would not enter the market absent a disruption, and hence, would not affect prices, it may be available to the U.S. government at a special price from foreign producers willing to use their spare capacity.

There are still other measures that could be taken, to encourage both domestic production and diversification of foreign supply sources. But in evaluating the diversification of future U.S. oil import sources, several paramount, immutable factors regarding Middle East oil must be kept in mind: (1) the Middle East contains 2/3 of the world's proven oil reserves but accounts for only 29% of world production; (2) the region's reserve/production ratio is 100 years compared to 20 years for the rest of the world; (3) Middle East oil has the world's lowest development and production cost; and (4) all Middle East producers are under strong domestic political and economic pressure to increase their national income by exporting more oil.

The sum total of these factors is that the volume and share of Middle East oil exports will keep rising to 2010 and probably beyond. As the world's largest oil importer the U.S. will inevitably be affected by this trend regardless of its own level of imports from that region.

We have attempted to demonstrate that our current level of oil import dependency is structurally irreversible and will, in fact, rise for the foreseeable future under any realistic scenario. A policy to use some form of price increase to slow the growth in oil imports, by reducing the growth in demand and halting the decline in domestic production, faces the problem of the structurally low price elasticity of both oil demand and oil production.

Given the high capital cost and the low operating cost of oil production, it requires a disproportionate price increase to bring forth production from new fields and a disproportionate price decrease to cut back flowing production. A similar situation exists on the demand side. Oil's very limited interfuels competition (2/3 of all oil consumption takes place in the transportation sector) and the fact that the cost of energy is generally not a major component in the total capital and operating cost of oil-fuelled equipment makes for oil's relatively low demand elasticity.

The DOE's *Annual Energy Outlook 1994* illustrates this. In its High Oil Price case where prices rise in real (inflation-adjusted) dollars by an annual rate of 3.5% (about twice the expected rate of inflation), oil imports in 2010 would still be 11.3 million B/D or 75% above the 1992 level. Yet, an oil price increase of this magnitude would affect the entire economy; it would lower the U.S. GNP, raise the general inflation rate and, since the price increase would be limited to the U.S., reduce our international competitiveness. It would be very difficult, to say the least, to justify such action by the abstract concept of reducing the hypothetical risk of our dependence on foreign oil.

The argument is sometimes made that the market price of imported oil does not reflect the so-called *externalities* of protecting our foreign oil supplies through our military establishment. This argument has no substance. There is no evidence, or even indication, that our military expenditures are, or were, in any significant way a function of our oil import level and supply source. In the post-Cold War period any such argument has become even theoretically invalid.

Another frequent argument for restricting oil imports is its supposed impact on the U.S. trade balance. Yet any such argument would apply equally to any other imported commodity. Oil is not the largest U.S. import item and its share in our trade deficit has declined from 66% in 1991 to 53% in 1992 and 39% in 1993. In the first quarter of 1994 it was 35% and will probably remain below last year's level for all of 1994. International trade is a two-way street and our foreign oil suppliers are also substantial buyers of U.S. goods. Last year OPEC countries bought nearly \$20 billion worth of U.S. merchandise, which was equal to 62% of their exports to the U.S..

In closing I would like to make one more point: Acceptance of the argument that oil imports do not present a threat to U.S. national security does not mean that the government should be unconcerned with the domestic oil producing industry. A pro-active policy to stimulate additional oil and gas drilling through tax incentives and royalty waivers for specifically defined new wells, as well as removal of existing federal and state offshore acreage restrictions, could be viewed as being in the national interest, not because of its potential impact on oil imports but because of its significant real economic impact on a core regional industry.

If properly designed, these actions would not represent a cost to the U.S. taxpayer over time, since the additional production would generate additional taxable revenues. It would also mean that the policy would only reward actual drilling. In the case of a price increase through import restrictions the amounts allocated for drilling remain at the discretion of the producer. The only certain thing would be that prices for all consumers would rise.

We have not addressed the question of crude versus refined product imports. Overall, just over 20% of our total gross imports are refined products. These imports compete of course with domestically refined supplies, particularly light products on the East Coast. But this is a trade issue, not a national security issue. Our environmental initiatives for cleaner

products and refinery operations may put U.S. refiners at an international competitive disadvantage. Evolving information must be closely monitored to assure the maintenance of a competitive domestic refining industry.