

**STATEMENT OF ALICE M. RIVLIN  
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**Before the  
Energy, Nuclear Proliferation,  
and Federal Services Subcommittee of the  
Senate Committee on Governmental Affairs  
United States Senate**

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**There should be no release  
of this statement before  
its delivery, scheduled  
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**Mr. Chairman:**

**In my testimony today, I will address three issues:**

- o **How is the curtailment of Iranian oil production likely to affect the U.S. economy in the coming months?**
- o **What alternative policies could be implemented to mitigate the effects of this production shortfall?**
- o **What are the longer-term implications of the Iranian situation for U.S. energy policies?**

**THE ECONOMIC IMPACT OF THE CURTAILMENT OF IRANIAN OIL PRODUCTION**

Before oil production was disrupted, Iran was producing at a rate of almost 6 million barrels a day and was exporting about 5 million barrels a day. These exports accounted for slightly more than 10 percent of the non-communist world's oil requirements. It is estimated that about half of this shortfall has been made up by increased production from Saudi Arabia, Kuwait, and others, leaving a net shortfall to the non-communist world of about 2 to 3 million barrels a day. At present, the U.S. portion of this shortfall is estimated to be about one-half million barrels a day, or about 2.5 to 3 percent of our total domestic consumption.



The world shortfall of 2 to 3 million barrels a day has created upward pressure on world oil prices. In January, Saudi Arabia raised the price about \$1.00 a barrel on the additional production that it made available to offset part of the Iranian shortfall. This raised the average price of all Saudi Arabian oil by about \$0.15 a barrel above the previously posted price of about \$13.40. In recent weeks, the small volume of oil traded in the spot market has risen by \$3 to \$4 a barrel, with some transactions during the last few days reaching as high as \$23 a barrel. A number of producers--including Qatar, Kuwait, Libya, and Abu Dhabi--have raised the prices on all their output by 5 to 9 percent, and it appears that Venezuela will increase some of its oil prices by 15 percent effective March 1. Other producers may follow suit after an OPEC meeting scheduled for March 26 in Geneva.

We do not know at this time how quickly and to what extent Iranian production will come back or how long other producers will continue their higher production levels. There is general agreement, however, that even when political stability returns in Iran, a number of technical problems--such as the functioning of the gas reinjection system--will impede production. The estimates of how long it will take to get production up to 3 or 4 million barrels a day range from 30 to 90 days, and the estimates are considerably longer to get production up to 5 million barrels a day or more. There is also uncertainty about whether the signatory nations to the



International Energy Agency (IEA) will invoke the mandatory sharing agreements. If the IEA agreements are invoked, the shortfall to the United States might rise to as much as 1 million barrels a day. Only if other oil producers reduce their current production rates, could the shortfall exceed 1 million barrels a day.

The potential economic impact of the Iranian shortfall depends on the outlook for the U.S. economy. The latest CBO forecast, which does not allow for the Iranian situation, shows real output slowing significantly to a growth rate of 0 to 2 percent during 1979. While continued strength is anticipated in the first half of the year, a shallow downturn is expected to begin later in the year. Unemployment is projected to rise to a 6.2 to 7.2 percent range by the end of the year. Inflation is expected to remain stubbornly high; the increase in the Consumer Price Index (CPI) is forecast to range between 7 and 9 percent for 1979. The consequences of the Iranian situation could further weaken the economy and increase the risk of a recession. If, however, the CBO forecast is accurate and economic activity slows, the demand for oil will also be decreased, thereby lessening the seriousness of the shortfall.

Three separate effects of the cutbacks in Iranian oil can be distinguished:





- o The direct economic impact of the shortfall and associated short-run price increases;
- o The possible psychological effects on consumer demand; and
- o The potential for oil price increases in 1980 and beyond.

Direct Effect of the Shortfall. If the oil shortfall does not rise much above the level of one-half million barrels a day, domestic inventories are sufficient to keep the economy functioning at full steam for up to six months before they drop to their average levels over the last four years. Because oil companies made early purchases in the fourth quarter of 1978 to avoid the posted 1979 OPEC price increase, U.S. inventories are currently at record levels--approximately 1.2 billion barrels. Given the unknowns concerning future oil supplies, however, oil companies may choose not to draw down inventories, and they may begin to reduce product availability. This, in turn, would create spot shortages, layoffs, and price increases.

While there is great uncertainty in estimating the potential economic impact of the Iranian shortfall, we have based our results on an oil supply model developed in cooperation with the Wharton modeling group at the University of Pennsylvania. Two cases were examined: a shortfall of 500,000 barrels a day, and a shortfall of 1 million barrels a day. On the assumption that the government makes no effort to compensate for the effects of the shortfall, that monetary policy remains unchanged, and that inventories are maintained at their current level, it is estimated that a



shortfall of one-half million barrels a day for a period of one year would reduce real Gross National Product (GNP) by about 0.5 percent; raise the unemployment rate by about 0.2 percent, or about 200,000 jobs; and increase the inflation rate by about 0.4 percent. For a shortfall of 1 million barrels a day, these estimates would approximately double. These negative impacts on GNP, inflation, and unemployment result from the combination of the reduction in oil availability and the price increases that are expected to accompany the shortfall. For estimating purposes, it was assumed that oil import prices would increase approximately 10 percent across the board over the next year in the case of a 500,000-barrels-a-day shortfall and 20 percent in the case of a 1-million-barrels-a-day shortfall.

Psychological Effects on Consumer Demand. In addition, because of actual gasoline shortages resulting from the Iranian curtailment or fear of such shortages, consumers may postpone their purchases of autos, their consumption of travel-oriented goods and services, and possibly other items as well. Such a consumer reaction occurred at the time of the 1973-1974 oil embargo, causing some layoffs, for example, in the auto industry. If this happens and if consumer confidence drops, the odds would be increased that a short-run downturn will occur in late 1979 or early 1980. Consumers' perception of the severity of the oil shortfall may, therefore, be important in determining their purchasing patterns and thus the total impact of the Iranian shortfall on the economy.



Larger Price Increases. Perhaps the greatest danger for the long-term health of the American and the world economies is that the present oil shortfall increases the probability of larger OPEC price hikes in the future. If the Iranian shortfall were to continue until the end of 1979, and if the industrial economies did not act decisively to trim their demands for oil, the stage would be set for a large OPEC price hike during the first quarter of 1980 or possibly earlier. Under those circumstances, the risks of a worldwide recession would be considerable. This represents a strong argument for the United States and other signatories of IEA to reduce current oil demands by conservation and fuel substitution and thus diminish the upward pressure on world oil prices.

#### ALTERNATIVE POLICIES

Although it is probably impossible to offset the negative economic impacts of the recently announced oil price hikes, U.S. policies can be geared to reduce physical shortages which, in turn, would restrain oil price increases in the future. In selecting among these policies, priority should be given to accelerating the implementation of policies that would be in the long-run interest of the United States even if the Iranian situation proves to be of short duration. These policies include encouraging carpooling, vanpooling, and the use of public transportation, as well as increasing public



awareness of the energy problem so that consumers will improve their home insulation and perhaps purchase more fuel-efficient automobiles and other durable goods. Such policies also include accelerating the conversion of some industrial boilers from oil to coal. Since these policies are not expected to reduce oil consumption greatly in the short term, however, other policies may also be required to accommodate the current Iranian shortfall. Conversion of industries and utilities from oil to gas, while not part of a long-term strategy, offers a significant potential for offsetting the shortfall, since gas is at least temporarily more abundant.

In view of the expected slowing of economic growth toward the end of 1979, however, policies that are likely to cut growth further should probably be given low priority. Drastic measures such as gasoline rationing are most likely undesirable at this time, since they might adversely affect consumer purchases--of automobiles and travel-related goods and services, for example--and because they cannot be sustained over the long run.

The single most productive short-run action would be to encourage industry and utilities to substitute some alternative domestic fuels--mostly natural gas, but also coal--for scarce oil. Existing laws and regulatory schemes that are designed to allocate a scarce supply of natural gas limit, and in some cases prohibit, the burning of natural gas in boilers. Yet, estimates of the amount of excess gas from U.S. fields that can be delivered





for a period of one year or more range from 1 to 2 trillion cubic feet, or the equivalent of from 500,000 to 1 million barrels of oil a day. In terms of mere technical feasibility, up to 1 million barrels a day of oil could potentially be conserved by industrial and utility users of oil switching to gas.

The number of industrial firms and utilities that would actually switch to natural gas is difficult to estimate, but it is generally agreed that 200,000 to 400,000 barrels a day could be saved from such policies. Although this is substantially below what is technically feasible, there would undoubtedly be mismatches between the location of the additional supplies of natural gas and the firms with the technical capability and the willingness to convert.

Even to attain this savings of 200,000 to 400,000 barrels a day, however, the Administration may have to provide some regulatory changes and incentives for conversion. First, in the present regulatory environment, most of the potential substitutions of gas for oil are discouraged by federal or state laws. The Administration has recently presented some findings before the Federal Energy Regulatory Commission to facilitate the desired regulatory changes, but it is possible that stronger actions are appropriate. Second, many industrial and utility users of oil are concerned about what they perceive as changing policies on the part of the Administration, and they are seeking assurances that, if they do switch to gas, they will have a



guaranteed supply for a reasonable period. Third, because of the costs of a short-run conversion, the Administration might wish to consider some financial incentives. Fuel substitution by large industrial and utility users is critical, however, since it could potentially offset one-half of the shortage resulting from the Iranian curtailment.

Another promising approach is to encourage the "wheeling in," or transporting, of electric power from regions with excess capacity in plants fired by coal, nuclear power, or gas to oil-dependent regions like the East Coast. The Administration has estimated that it is technically feasible to conserve as much as 200,000 barrels a day by "wheeling in." Similar policies were adopted during the 1973-1974 oil embargo and more recently during last year's coal strike.

With an effective fuel-switching program, "wheeling in" of electric power, voluntary conservation, and the drawdown of inventories, the current Iranian shortage of 500,000 barrels a day could be offset for a year or more. If the current shortfall continues for six months, however, or if the IEA is invoked, or if companies do not draw down inventory levels, mandatory conservation policies might be considered to compensate for part of the projected shortfall. The four mandatory programs presently being submitted to the Congress by the Department of Energy include setting temperature restrictions on operators of commercial and public buildings, restricting



commercial lighting for advertising, closing gasoline stations on weekends, and gasoline rationing. Priority should be given to those programs that do not have potential negative impacts on GNP. Restricting temperatures in public and commercial buildings and restricting commercial lighting would therefore be slightly preferable to closing gasoline stations on weekends. Gasoline rationing should be considered only if the situation becomes more severe.

#### IMPLICATIONS FOR LONGER-RUN ENERGY POLICY

The Iranian situation again dramatizes the fact that our overall economy is vulnerable to short-run curtailments and that our current energy policy does not adequately reflect the magnitude of this risk.

Most energy legislation and federal policy over the last few years has been directed toward reducing oil imports. Just as important, however, is the goal of maintaining secure sources of oil supply. This latter goal is critical for two reasons:

- o First, oil imports are difficult to reduce, and they are expected to continue to increase through 1990.
- o Second, as our oil imports increase and as world markets tighten over time, the vulnerability of the U.S. economy to short-run curtailments will increase.



Without significant changes in the American lifestyle, our dependence on imports of foreign oil is likely to grow. Primarily because of decreasing domestic production of oil and natural gas, import levels of 12 million barrels a day in 1985, and perhaps even 14 million barrels a day by 1990, are possible. Since the current level of U.S. imports is between 8 and 9 million barrels a day, this would be a substantial increase in our overall dependence. Unfortunately, it is difficult to reduce oil imports substantially because federal policies to save oil and natural gas often conflict with other national goals such as reduced inflation, smaller federal government expenditures, economic efficiency, and minimum environmental damage.

If the United States continues to increase its oil imports over time, as we expect, the potential economic disruption from future short-run curtailments could be significant. For example, in a previous analysis, CBO estimated that a one-year loss of 3 million barrels a day of imports, which would be 30 percent of oil imports and 7 percent of domestic consumption in 1982, would reduce real GNP by about 3 percent and would add 1 percent to both the inflation rate and the unemployment rate in that year. By 1990, however, a similar 30 percent reduction in imports over a period of one year would mean a loss of 5 million barrels a day; this would cause real GNP to drop more than 10 percent and would increase the unemployment and inflation rates by more than 4 percent each. Not only would the potential impact be larger by 1990, but it is doubtful that enough excess productive





capacity would exist to offset curtailments by any one producer. This is in contrast to the present situation in which almost one-half of the Iranian reduction is being offset by Saudi Arabia and other producers.

In short, energy independence is clearly not possible in the foreseeable future. In fact, our oil imports will increase over time. We therefore need to be as concerned about policies that increase the security of our imports as we are with policies designed to reduce imports.

Several broad policy options to achieve this goal of increased security of oil supply can be considered:

- o Diversifying our sources of oil imports;
- o Providing ample strategic reserve capacity; and
- o Increasing domestic production by means of alternative energy sources.

Currently, a very high percentage of our total oil imports originate in the Persian Gulf area. If the United States assisted underdeveloped countries of the Third World to explore and develop oil reserves from which we could purchase production, then we would be able to diversify our sources and increase our security of supply. In a paper prepared for this Committee, CBO has pointed out that there is some evidence that oil and



gas reserves do exist in countries which to date have been underexplored and that some of this production could be available to the United States and other nations by the early 1990s. Several industrialized countries, including Japan and France, already have major assistance programs to provide them with an increased security of supply. Although the United States will be participating in such a strategy as part of a multilateral approach by the World Bank, we may also wish to consider making funds and technical assistance available unilaterally to countries in order to diversify our oil supplies over time. If new reserves were found, such a policy would also provide benefits in terms of additional world supplies that would likely lessen upward price pressures.

A second option that would provide a significant amount of short-run supply security is the strategic reserves. CBO has estimated that a reserve of 250 million barrels could avert as much as a \$20 million loss in real GNP during a 3-million-barrels-a-day curtailment for one year. As the overall U.S. dependence on imports grows, however, the effectiveness of our current planned reserves will decrease. Consequently, if alternative means of providing supply security cannot be found, increased oil reserves should be reconsidered.

A third option would be to accelerate development of alternative fuels such as gas and liquids from coal, as well as solar and even fusion energy.



Although this strategy needs to be continually evaluated, present evidence suggests that most of these alternative fuels have substantially greater production costs than oil and should be developed only when there is a high risk that a significant percentage of our oil imports will be curtailed. The federal government should, however, continue to stress the basic research and development for fuels such as fusion and solar energy and perhaps even demonstration plants for coal gasification and liquefaction.

#### CONCLUSION

In summary, the current shortfall of Iranian oil will most likely have only a small effect on GNP over the next year, and a large part of this could be offset through various government policies. The shortfall does increase the risk of a recession in 1979-1980. The greatest risk, however, is that the current curtailment puts additional upward pressure on long-run world oil prices. Also, the U.S. and the world economies are vulnerable, if oil production is curtailed by another major oil exporter. Finally, the Iranian situation again dramatizes the fact that the United States should elevate the goal of maintaining the security of our oil supply to a major policy objective along with the goal of reducing our dependence on oil imports.

Mr. Chairman, I would be happy to answer any questions.

