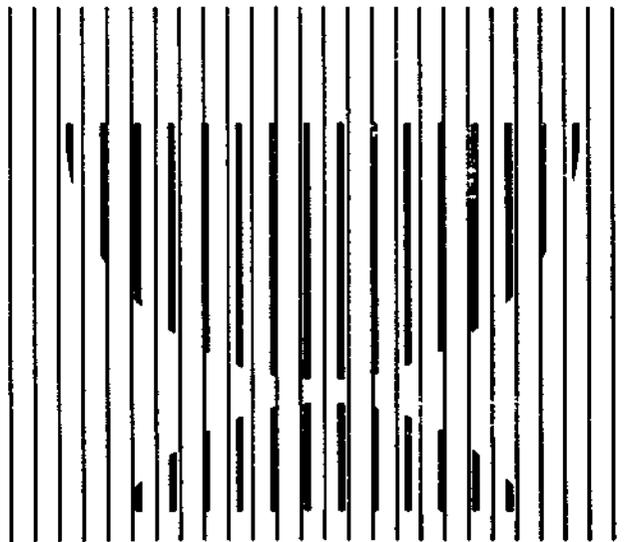


CBO STAFF MEMORANDUM

**THE SIZE AND FINANCING OF
THE STRATEGIC PETROLEUM RESERVE**

April 1990



**THE CONGRESS OF THE UNITED STATES
CONGRESSIONAL BUDGET OFFICE
SECOND AND D STREETS, S.W.
WASHINGTON, D.C. 20515**

This memorandum provides additional details relating to the testimony by the Director of the Congressional Budget Office (CBO) on the size and financing of the Strategic Petroleum Reserve (SPR). The testimony was given before the Senate Committee on Energy and Natural Resources at its hearings on the proposed Energy Policy and Conservation Act Amendments (S. 2088) on March 20, 1990. The analysis was done by Richard Farmer of CBO's Natural Resources and Commerce Division (NRCD) with assistance on financing issues from Pete Fontaine, Robert Sunshine, and Gail Del Balzo. The memorandum was prepared under the supervision of Roger Hitchner, Unit Chief for Natural Resources, and W. David Montgomery, Assistant Director for NRCD. Questions concerning the analysis should be directed to Richard Farmer at 226-2965.

INTRODUCTION

At the request of the Senate Energy and Natural Resources Committee, the Congressional Budget Office (CBO) reviewed two recent reports prepared by the Department of Energy (DOE) that examined the size and financing of the Strategic Petroleum Reserve (SPR). The DOE reports were *Strategic Petroleum Reserve: Analysis of Size Options* (February 1990) and *Report to the Congress on Alternative Financing Methods for the Strategic Petroleum Reserve* (February 1, 1990). CBO's analysis of the size and financing of the SPR focuses on two broad questions:

- o Should the SPR be expanded from 600 million barrels to 750 million barrels only, or further to 1 billion barrels?
- o Should the government purchase the additional oil for the SPR, or lease it from oil producers?

CBO's review of the issues on SPR size was intended to help identify and assess the key assumptions that support DOE's conclusion that the SPR should not be expanded to 1 billion barrels. Since no controversy appeared over the interim decision to expand the SPR to 750 million barrels, this memorandum focuses on the merits of the incremental 250 million barrels. This increment represents 42 days of oil supply at current oil import levels (24 days at levels forecast for 2010).

CBO's review of the issue of financing the SPR reflects, for the most part, its views on the proper treatment of oil leasing in the federal budget. Since no specific leasing agreements are available for consideration, this memorandum concentrates on the general merits of leasing and on the pros and cons of some legislative changes that might be required before implementing a leasing program.

CBO's analysis of SPR size and of leasing excludes evaluations of DOE's policy on releasing SPR oil; questions on the best mix of crude oils needed for the reserve; the location of storage facilities; or the need for regional inventories of oil products. In addition, the analysis makes no attempt to evaluate the benefits to national security of a further expansion of the SPR.

SIZE OF THE STRATEGIC PETROLEUM RESERVE

The DOE report on SPR size recommends that the SPR not be expanded to 1 billion barrels. This finding stands in sharp contrast to those of a report prepared for DOE by Oak Ridge National Laboratory just over one year earlier.¹ Whereas the present DOE report concludes that the measurable costs of expanding the reserve exceed the benefits by a wide margin (\$3.4 billion total costs versus \$0.75 billion gross benefits in expanding from 750 million barrels to 1 billion barrels), the earlier Oak Ridge report presented the opposite finding.² The assumptions and methodologies that led

1. Paul N. Leiby and Russell Lee, Preliminary Results of the SPR Size Cost-Benefit Study, Oak Ridge National Laboratory, November 17, 1988.

2. Costs indicate present value, in 1988 dollars.

this more recent DOE report to such a different recommendation are worth examining.

In general, CBO does not find any significant difference between the basic cost-benefit methodology used by DOE and that used in other recent reports. The desirability of an expansion of the SPR to 1 billion barrels rests most critically on several assumptions: the likelihood of large supply disruptions, the amount of offsetting supplies available from unaffected sources during a disruption, and the demand for oil during a supply emergency.

By DOE's own accounting, the costs of expanding the SPR from 600 million barrels to 750 million barrels exceed the expected incremental measurable benefits by \$1.06 billion (in 1988 dollars). In effect, this amount represents the insurance premium that the nation is willing to pay for the added security. The nonmeasurable benefits listed by DOE, which justify this higher cost, include the deterrent value of the SPR and the protection of national security. If the 250 million barrel expansion from 750 million barrels to 1 billion barrels generated nonmeasurable benefits that were as great as those for the preceding 150 million barrels, a 1 billion barrel SPR could be justified by any changes in assumptions that reduced the difference between costs and benefits on that final increment to less than \$1.06 billion.

CBO is not in a position to judge the soundness of specific assumptions. The following sections of this memorandum, however, indicate the sensitivity of DOE's results to assumptions on the likelihood of a disruption, the costs and benefits of the SPR, the discount rate, and the market response to a disruption in oil supply.

Reasons for a Strategic Petroleum Reserve

The Energy Policy and Conservation Act of 1975 authorized a petroleum reserve with a minimum size of 500 million barrels and a maximum size of 1 billion barrels. The SPR currently holds about 580 million barrels, enough to replace current net oil imports for about 80 days. Current SPR facilities, however, can release oil into the market at a maximum rate of 3.0 million to 3.5 million barrels per day, or about one-half the current daily net imports. Administration policy has favored a reserve of 750 million barrels. That policy was first set in 1982, when net oil imports had reached a two-decade low of 4.3 million barrels per day. Since then, net imports have grown nearly 50 percent.

The purpose of the SPR is to provide the nation with insurance against the threat a major disruption in oil supply poses for the economy and for national security. In today's largely unregulated domestic oil market, that harm would come not through the inability of the nation's industries and homes to buy oil, but rather through the effects of the price increase needed to clear the market. Even with the price and allocation controls that were in place during the 1974 Arab oil embargo and the 1979-1980 Iranian Revolution, sufficient additional supplies were able to reach the United States. Significant damage to the U.S. economy was caused, however, by the quadrupling and then doubling of world oil prices during those two periods. Numerous studies have confirmed the link between oil price shocks and economic growth. For example, the Energy Modeling Forum reported the average result for a group of macroeconomic models and estimated that U.S. gross national

product would decline by 2.5 percent in the first year after a 50 percent increase in oil prices.³

The availability of strategic reserves of crude oil during a disruption provides two clear economic benefits. First, releasing these stocks in an emergency serves to moderate the rise in oil prices caused by a disruption in oil supply and, thereby, mitigates its impact on the economy. Second, less oil is imported at inflated prices. Other, less readily quantifiable benefits may result from deterring disruptions and guarding national security interests.

Determining the Size of the Strategic Petroleum Reserve

Agreement that the federal government should maintain strategic reserves of crude oil still leaves policymakers with the decision of how large those reserves should be. The optimal size should balance the costs of building a reserve with the economic and noneconomic benefits to be expected during a disruption. Those costs include the direct cost of purchasing the oil and storing it. Costs to the public also include any increase in the cost of oil attributable to the effect of increased SPR demand on world oil prices.

The measurable expected benefits include the lowered cost of oil imports during a disruption (from lowered oil prices and lowered oil import levels as SPR oil is sold) and the reduced economic disruption as a result of lowered oil prices. The federal government has decided that government-owned reserves, rather than government-mandated or subsidized additions to private reserves, are the best way to realize these benefits.

If there were complete certainty about the future, the government's decision about the best size of the SPR would reflect the simple economic ranking of net benefits to be derived from different reserve levels. Given any level of uncertainty about the future, however, the optimal size of the reserve will be larger than this simple ranking would indicate. This increased size reflects the insurance premium that the country is willing to pay to mitigate the risks of a net loss from a disruption in oil supply. The difficulty in selecting the optimal size for the SPR comes from uncertainty about the economic parameters needed to evaluate the costs and benefits of a reserve and about the likelihood of a disruption.

Analysis of how large the reserve should be requires assumptions about the likelihood of disruptions in oil supply. Usually an array of assumptions is presented, showing different sizes of disruptions occurring with different probabilities. The analysis further requires analytical judgments about how the disruptions would affect oil markets and the economy. Finally, the analyst estimates expected costs and benefits for a given size of the reserve. The procedure of cost-benefit accounting is well established. However, disagreement remains among analysts as to what costs or benefits should be included in the analysis and how they should be estimated.

3. Energy Modeling Forum, *Macroeconomic Impacts of Energy Shocks: A Summary of the Key Results* (Stanford University, Stanford, Calif., 1987).

In all these areas--the likelihood of a disruption, the response of oil markets and the economy in general, and the accounting of costs and benefits--the analyst's assumptions can have a profound impact on the outcome: whether and how much to expand the SPR.

The Likelihood of a Disruption

How much does the country need to worry about disruptions of oil supplies large enough to require a sale of SPR oil? Given DOE assumptions about available offsets to supply and demand in an emergency (increased domestic oil production, use of foreign inventories, and fuel switching), only the biggest and least likely disruptions would trigger a SPR release. Expected benefits from an expanded SPR are directly proportional to the probability of large disruptions.

The DOE report on SPR size assumes a much lower probability of a disruption in oil supply than did the earlier Oak Ridge report. Based on an assessment of risks by the Central Intelligence Agency, the DOE report assumed that an annual probability of large disruptions would be about 1 percent. Severe supply disruptions were judged to be those amounting to 15 percent or more of the demand by market economies, or about 10 million barrels per day in 2010, and lasting six months. One example of such an event would be the closing of the Straits of Hormuz through which 10.5 million barrels of oil pass daily. The Oak Ridge report assumed the probability of such a large disruption to be in the range of 4 percent to 22 percent, although Oak Ridge only considered three-month disruptions. Despite DOE's longer expected duration of large disruptions, the DOE assessment is much more optimistic about energy security.

To underscore the importance of these assumptions, if the probability of large disruptions was raised to 2 percent or 3 percent, an expansion of the SPR to 1 billion barrels would be justified using the DOE criterion for accepting the 750 million barrel SPR.

CBO can offer little help in assessing the reasonableness of estimates of the likelihood of disruptions in oil supply. Nevertheless, the large difference between the DOE and the Oak Ridge reports--and the important consequence of the differences in their assumptions about the probability of disruptions--requires some effort toward a consensus. How secure is the world oil supply and why? How well does the DOE report reflect that sense of security (or insecurity)? The Committee may wish to hear from those who make these assessments.

It is worth noting, however, that the world has changed a great deal in the last few years and even in the last few months. In particular, important structural changes have taken place since the supply disruptions of 1974 and of 1979 and 1980 that may have significantly reduced the likelihood of large disruptions resulting from political or military events. These changes include the greater diversity of petroleum sources today, the greater flexibility of oil consumers in conserving energy and in choosing between forms of energy, the growing investment by OPEC members in consuming nations (both in oil refining and marketing and in the general economy), better cooperation by consumer nations through the sharing agreements of the International Energy Agency, and the end of hostilities between Iran and Iraq. The

easing of East-West tensions may also carry over to the Middle East. In the future, the growth of free-market institutions in Eastern Europe and the Soviet Union may add to world oil supply and flexibility in demand. (However, local political conflicts that have been contained in the bipolar world may escalate in a multipolar environment).

Costs and Benefits of a Strategic Petroleum Reserve

Before assessing DOE's economic assumptions, it will be useful to identify the social costs and benefits attributable to an expansion of the SPR. The major costs are those of acquiring and storing crude oil. Estimates of the present value of the costs of acquiring oil depend most directly on assumptions about the future path of world oil prices. (Additional important assumptions about fill rates and discount rates will be discussed at the end of this section.)

While CBO is more inclined to accept a forecast of oil prices that increase slowly in real terms, the difference between DOE's assumed mid- and low-price paths implies a cost saving of only \$0.6 billion (in 1988 dollars)--not enough to argue for expanding the reserve, which would require savings of at least \$1.6 billion. The effect of SPR purchases on world oil prices would be small.

In measuring benefits from an expanded SPR in the event of a disruption, the United States derives an immediate gain from the reduced outlay for imported oil. This gain is a consequence both of lower import levels while the SPR is being drawn and of lower prices on all oil imports that result from adding the drawdown to world oil supply. The reduction in the import bill also reflects federal revenues from the sale of reserves. To what degree these revenues would benefit the U.S. economy depends on how the increased federal income is used--whether to offset federal deficits or to reduce taxes and increase the purchasing power of consumers during the disruption. (Most studies assume full offset to the deficit, as does the DOE report.) In terms of welfare economics, the lower value of oil imports results in fewer economic resources being transferred abroad. Assuming full employment of labor and capital resources, the U.S. economy would gain dollar for dollar from lowered imports.

Other major benefits relate to the economic losses that would be avoided in the event of a disruption. These benefits are measured in most studies in terms of gross national product. An expanded SPR would mean that the domestic economy would incur smaller real adjustment costs in transferring resources away from oil-consuming activities and regions. Adjustment costs would be reflected in higher unemployment rates and lower capacity use in industry. This avoided loss would be minus any incremental benefit forgone by the nation's oil-producing regions.

CBO concurs with this basic definition of the measurable economic costs and benefits of an expanded SPR. As noted earlier, however, widely different views are likely on the disruptions in oil supply of various sizes and durations. Probabilities of disruptions affect the calculation of expected benefits of the reserve. Different views also exist about the discount rates used to compare costs and benefits from different years.

Present-Value Discounting of Costs and Benefits

The benefits of an expanded SPR will come in future years after the costs of expanding the reserve have been incurred. To compare the benefits and costs that occur at different times, analysts reduce these figures to present-value terms using a real discount rate (that is, applied to inflation-adjusted data). Two effects of discounting should be noted. First, for any given discount rate, the SPR benefits, which are more distant, will be lowered more than the SPR costs, which are more immediate. Second, lower discount rates result in higher discounted values, so that the ratio of benefits to costs will increase with a lower discount rate. Thus, the choice of a discount rate can be crucial for the outcome of the decision on expanding the SPR. The level of impact will depend, however, on additional assumptions about the rate at which the SPR is filled (the fill rate) and the rate of growth in world oil prices, which also affects costs and benefits over time.

The real discount rate used by DOE and Oak Ridge is 10 percent, a rate encouraged by the Office of Management and Budget (OMB) for use by the Executive Branch. CBO's view is that the discount rate used to estimate the present value of future benefits from government outlays should be commensurate with the real cost of government spending. That real cost is the cost of private investment displaced, measured as the real return (minus inflation) on longer-term government securities. That return indicates the rate of compensation required by the private sector (of late, the foreign private sector) to forgo its own investment. By this criterion, a more appropriate discount rate may be as low as 3 percent or 4 percent. Without changes in other DOE assumptions, however, lowering the discount rate may not, by itself, change the outcome of the cost-benefit analysis.

Given DOE's assumed SPR fill rate (75,000 barrels per day) and growth in real oil prices (3.5 percent), the difference between the costs and expected benefits of a reserve with 1 billion barrels declines only marginally as the discount rate is lowered from 10 percent to 3 percent. The present value of measurable benefits does rise more rapidly than costs as the discount rate is reduced but would only approach costs at a near-zero rate. This insensitivity of relative costs and benefits to the discount rate depends on other assumptions about growth in oil prices and the rate at which oil is added to the SPR. Different combinations of assumptions may yield different results.

In the DOE analysis, lowering the growth rate of oil prices lowers the present value of acquisition costs by \$0.6 billion (in 1988 dollars) but leaves the present value of benefits almost unchanged (since the change in oil prices during a disruption is assumed not to depend on the price of oil before the disruption). Raising the growth rate of oil prices raises costs and still leaves benefits unchanged. Lowering the SPR fill rate from 75 thousand to 50 thousand barrels per day would result in a drop of \$0.7 billion (in 1988 dollars) in the present value of the costs of acquiring oil, but would also lower gross benefits by \$0.2 billion since fewer reserves would be available for emergencies early on. The net effect of a lower fill rate is that benefits increase relative to costs, making an expansion of the SPR more attractive. Alternatively, raising the fill rate to 100 thousand barrels per day would increase costs relative to benefits, making expansion less attractive.

Oil Market and Macroeconomic Response to a Disruption

In today's oil market, the economic harm from a disruption in oil supply will be caused by the effects of the price increase needed to bring demand in line with supply. Numerous economic studies exist on how movements in oil prices affect the economy and on how best to measure the benefits of government actions that would mitigate price increases. Both the DOE and the Oak Ridge reports reflect this thinking and use appropriate measures of the benefits from having a larger SPR available in the event of a disruption. But these measures depend on uncertain conjectures.

Different studies make different assumptions about how oil supply and demand will respond to significant disruptions in oil prices and about how the national economy will respond to changes in the oil market. These economic responses form the basis of the estimates of benefits discussed previously. DOE's approach may result in some underestimation of the impact of a disruption on oil prices and, hence, on the level of SPR benefits.

On the supply side, even if political or military events were to cause a disruption in oil supplies from some regions of the world, an oil crisis might not develop. Excess production capacity and usable inventories of oil in other parts of the world could significantly offset or lessen the severity of a disruption. These inventories include strategic reserves in West Germany and Japan and a portion of private stocks above minimum operating levels elsewhere. The limited ability of the United States to switch some petroleum uses to other fuels on short notice can also help lessen a disruption.

DOE currently estimates these total offsets at 7.5 million barrels per day, compared with total world production of about 65 million barrels per day. These offsets are assumed to remain large for at least the next five years and then to decline as world demand catches up with world production capacity, most of which is in the OPEC Gulf states. A noticeable loss of oil on world markets may not even be possible until after 2000 because of these offsets.

This assessment of available offsets to a supply disruption, however, appears to understate some serious risks. Will excess capacity continue in regions relatively invulnerable to disruptions, or will oil markets tighten more rapidly than DOE envisions? Will other consuming countries continue to hold large strategic stocks? And, most important, will decisions be made to use excess capacity and stocks rapidly and fully in the event of a crisis? CBO has not conducted an independent analysis of these offsets, but a simple example illustrates the importance of these assumptions. Lower levels of offsets mean any disruption in supply will have a more severe impact. If DOE's assumed total offsets of about 7 million barrels per day (on average for the next 30 years) were cut to 4 million barrels per day, the difference in costs and benefits for the 1 billion barrel SPR would be comparable with that for the 750 million barrel SPR already endorsed by DOE.

On the demand side, one cannot overstate the importance of reactions by oil companies and consumers to rapidly rising oil prices. Experience has shown that, in the face of severe disruptions, oil companies do not immediately reduce their private inventories and oil users do not immediately reduce purchases. In fact, they

do just the opposite, adding to inventories and filling gas tanks. They respond in this way, of course, because they cannot know at the outset of a disruption how much supply will be lost, how long the disruption will last, or how high prices will rise. Speculative hoarding of oil can be a rational economic response and can reallocate supplies to later dates, when they will be needed more. But such actions can be destabilizing in the near term, as increased demand for storage drives prices up further and spurs more hoarding.

The DOE report assumes no speculative price movements during a disruption, despite the likelihood of such events. If prices were driven higher during a disruption than DOE has assumed--perhaps as a consequence of speculative incentives to hoard oil--then the benefits of a larger SPR might turn out to have been underestimated in the DOE report. Consequently, a further expansion of the SPR might be warranted.

The growth of forward oil markets may have dampened speculative shifts in supply and demand by providing an alternative channel for speculating in or hedging against uncertain oil prices. Forward markets allow traders to speculate by buying oil contracts rather than by hoarding oil. This system worked well when oil prices fell by more than 50 percent in early 1986 and, more recently, this past winter when record cold temperatures pushed up the demand for heating oil. The question remains whether the market can accommodate the strains of a major disruption in oil supplies.

The cost-benefit accounting described here is an approach to evaluating insurance, such as provided by the SPR, that is neutral with respect to attitudes toward risk. Decisionmakers who are averse to risk would be willing to incur an additional cost (or insurance premium) to reduce the uncertainty about future levels of oil prices. DOE may have taken this approach in recommending that the SPR be raised to 750 million barrels, even though measurable costs exceeded benefits by \$1.06 billion for that expansion. This \$1.06 billion could be viewed as an insurance premium.

LEASING OIL FOR THE STRATEGIC PETROLEUM RESERVE

The question also arises as to how additions to the SPR should be financed. Recently, a good deal of attention has focused on the potential advantages of leasing rather than buying additional barrels of oil for the SPR. A federal lease is a contractual agreement by the government, as lessee, to pay some periodic rent for a building or commodity, while the lessor retains ownership.

Two general approaches to oil leasing were considered in the DOE report on SPR financing. The first is lease/option, in which the United States would effectively rent the oil it holds in storage, while retaining an option to buy that oil outright at any time of its choosing. The second is lease/purchase, in which the United States would lease the oil for a set number of years after which it would own the oil. Lease/purchase is a way of financing ownership over a number of years.

Lease arrangements raise three issues. First, oil leasing, with or without the option to buy, will not have any effect on calculating the benefits from the SPR so

long as the terms of the lease leave the government with complete control over disposing of the leased oil. Thus, the merits of leasing versus purchasing must rest on cost considerations alone. Second, the decision to lease oil should be based on economic costs and not necessarily on how lease costs are treated in the budget. In any case, the budgetary treatment of government leasing is still under discussion; a lease arrangement would not necessarily have less of a budgetary impact than an outright purchase. Third, leasing oil for any significant period of time, such as a decade or more, would almost certainly result in greater costs than would direct federal purchase, unless the U.S. government can negotiate a leasing agreement with another country for oil at below-market rates.

Budgetary Treatment of Oil Leasing

CBO, OMB, and the Budget Committees of both Houses are currently working together to formulate principles for treating federal lease costs in the budget. In particular, these agencies are focusing on the budgetary treatment of multiyear contracts, such as lease/purchases for federal buildings. Leasing oil, with or without the option to buy, could be treated similarly to lease/purchases of buildings in at least some cases. The key issue is the government's long-term commitment to hold on to the oil it leases.

In general, CBO's position has been that budget scorekeeping should look beyond the specific form of a financial transaction (for example, government leases) and instead reflect the substance of a transaction. Budgetary treatment should reflect the federal government's true financial commitment. For many lease/purchase arrangements, this means counting the actual costs of acquisition right away, rather than counting some artificially low, annual lease payments that do not reflect the true cost of federal ownership. However, this is not a closed case.

The concern over the size of the SPR is more about the long-term security of oil supplies than about near-term market events. Thus, no matter what the duration of any lease arrangement for filling the SPR, the mechanism can be looked on as a long-term commitment if the United States exercises full control over disposing of that oil. In leasing oil, the government is effectively acquiring the oil when it takes possession of it. One can argue that the budget should record budget authority and outlays that are equal to the greater of (1) the full purchase price of the oil or (2) the total payments required by the lease. If this were done, a lease would have a smaller budgetary impact than an outright purchase only if the leasing actually resulted in the United States acquiring oil at a lower cost.

Economic Costs of Leasing Versus Buying

Because the federal government has a lower cost of borrowing than private financial entities, the least costly approach for most capital acquisitions by the federal government is a direct purchase using regular Treasury financing. In the short term, the government would be able to reduce its cash outlays by leasing rather than by buying a commodity. Over the long term, however, leasing buildings or commodities is almost always more expensive for the government than direct purchase.

Only under extraordinary circumstances would it be cheaper for the government to lease than to buy. Such circumstances could exist in the case of potential oil leasing for the SPR if any countries were willing to lease oil at below-market rates. Any cost concessions could result in lower federal costs of reaching and maintaining a given reserve size. Potential lease arrangements and future oil market conditions both entail significant uncertainties, however, and these uncertainties make it impossible either to endorse or simply to dismiss the possibility of oil leasing.

Because many oil-exporting countries have unused production capacity and oil production costs that are considerably below the current world price for oil, some countries may be willing to lease oil to the U.S. government at below-market costs. OPEC countries, for example, could conceivably export volumes of oil for lease that exceed the cartel's agreed quotas for oil sales, while still providing that oil at a lease cost effectively below the market price for sales. In any case, there is certainly no guarantee of such cost concessions. Along these lines, however, the possibility of a favorable lease arrangement assumes that the OPEC cartel does not significantly change its current quota system in a way that would limit the incentives of its members to lease oil.

In contrast, the U.S. government would probably incur leasing costs that were comparable with market prices if it were to lease oil competitively from private firms. CBO agrees with the DOE conclusion that a long-term competitive lease of oil would be likely to have a greater cost than a direct purchase. Other means of financing reviewed in the DOE report do not show any promise for further reducing real federal spending for the SPR. Regular Treasury financing of direct federal purchase already provides the least costly method.

Terms of Potential Oil Leases

The terms for leasing oil and oil storage facilities could raise a number of public policy issues. The DOE report examined several issues, including whether the authority to sell leased oil leaves the United States with effective control over the oil and whether other laws and regulations related to oil imports should apply.

Some oil-producing countries have apparently expressed interest in retaining some option to get their oil back at some price agreed to in the lease when the lease expires. In addition to the obvious but not insurmountable concern this arrangement would pose for full U.S. control of its SPR and the physical damage that repeated oil releases could cause to SPR facilities, CBO does not see the necessity of physically returning oil. If oil producers see potential profits in leasing oil, those profits could be achieved by taking possession of any comparable quality (or appropriately discounted) oil that the United States could acquire on open markets and deliver under terms of the lease. In any case, the option to release SPR oil into the market at any time should rest exclusively with the United States.

Regarding the applicability of other laws and regulations, CBO sees no compelling reason why the government should exempt itself from legal or policy restrictions unless major cost concessions result. Cargo preferences, environmental impact statements, normal contractual procedures, and import duties and charges are

all well-intentioned programs with clear policy objectives. For example, legislative requirements for granting cargo preference to U.S. flag vessels for shipping SPR oil are based on national security concerns (maintaining a viable merchant fleet), safety and environmental concerns, and a desire to benefit U.S. shipping. Before any significant volume of oil imports is excused from the 50 percent U.S. flag shipping requirement (mandated by the Cargo Preference Act), careful consideration should be given to whether the cost advantages would outweigh the consequences for national security and safety.

CBO has not studied the advantages and disadvantages of exempting lessors of oil from federal or local taxes. Tax exemption can be a powerful tool for channeling investments and would probably ensure some cost concessions from oil producers. But these concessions might not offset the loss of federal revenues, which would then increase the deficit. In addition, it is difficult to see how a change in tax laws could discriminate between national and private oil companies in this area--exempting only oil-producing countries--without encouraging creative maneuvers for subverting its intent.

CONCLUSIONS

CBO does not find any significant difference between the basic cost-benefit methodology used by DOE and that used in other recent studies with respect to its conclusion that the SPR should be filled only to 750 million barrels. DOE's recommendation that the SPR not be expanded to 1 billion barrels rests on several key assumptions as to the likelihood of large supply disruptions, the amount of offsetting supplies available from unaffected sources during a disruption, and the demand for oil during a supply emergency. This memorandum has described alternative assumptions that demonstrate how critically the recommendation for expanding the SPR depends on DOE's assessment in those areas.

Given any particular goal for oil stocks, the federal government should acquire oil for the reserve in the most economically efficient manner. As DOE suggests, leasing oil directly from another country could result in real economic savings under certain favorable assumptions. Therefore, it does not seem warranted to discourage attempts to acquire strategic reserves of oil by leasing. CBO believes that the budgetary treatment of any lease should reflect the true federal costs of oil. If obtaining oil through a leasing arrangement that provides real economic savings to the government proves possible without hampering the ability of the President to respond to energy emergencies, that option should be undertaken. A proper system of budgetary accounting would recognize such savings. Similarly, if oil leasing ultimately costs more than direct purchases of oil, the budget should reflect such cost.