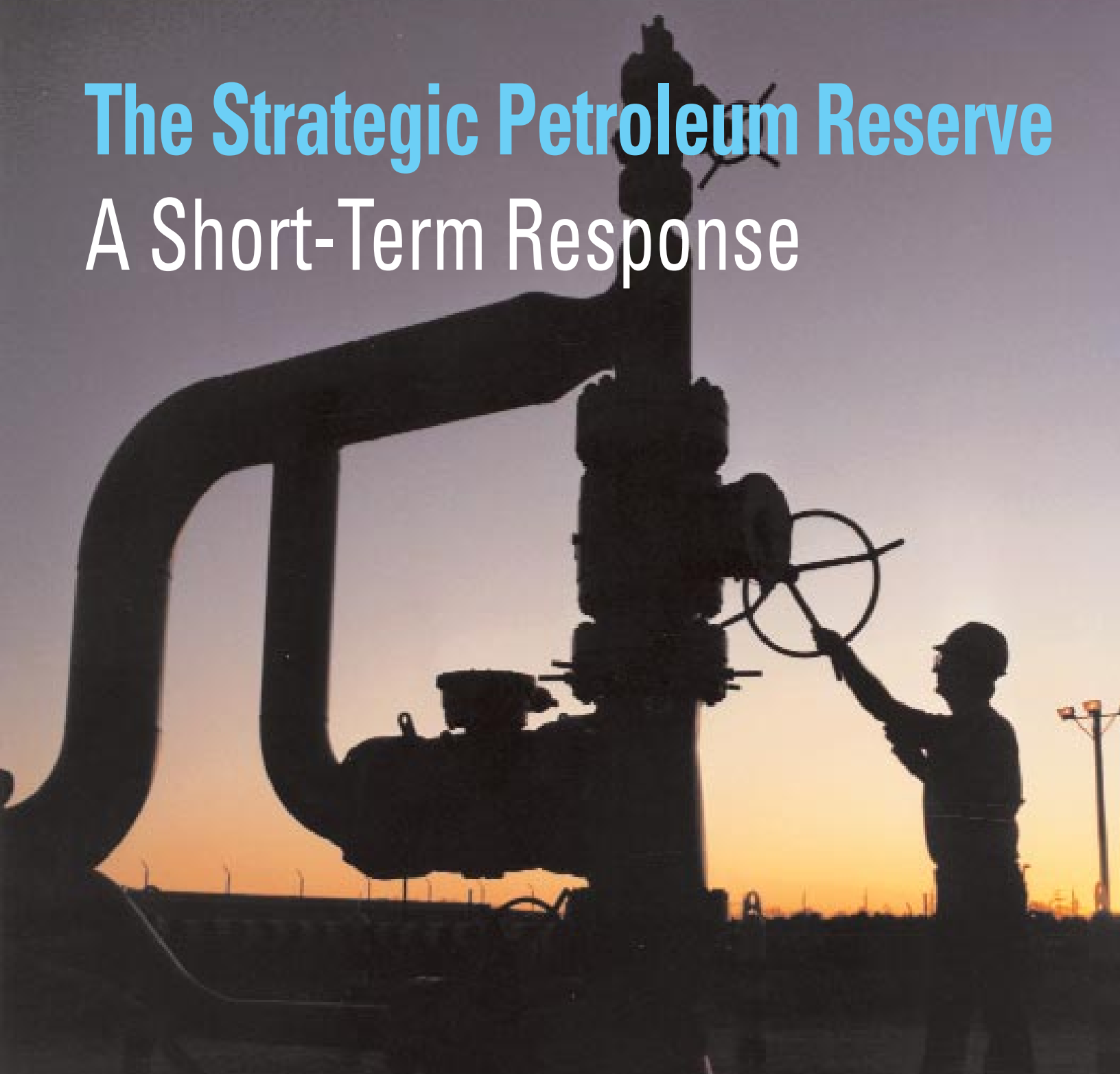
The Strategic Petroleum Reserve
A Short-Term Response



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Joseph E. Aldy

In contrast to other policies that focus on long-term solutions to the problem of oil dependence, the Strategic Petroleum Reserve (SPR) offers policymakers a short-term response to disruptions in oil markets. And, not surprisingly, they hold a variety of views on the role and purpose of the SPR: to offset an oil supply shock; to deter future oil supply shocks, such as an oil embargo; to aid diplomatic efforts to encourage additional production from major oil exporters when oil prices are high; to manage oil prices; and, in recent years, to offset supply shocks in the Northeast heating oil market.

The SPR, which was established following the 1973 oil crisis, is comprised of four sites on the Gulf of Mexico located near major petrochemical refining and processing facilities. The petroleum, all in the form of crude oil, is stored in artificial caverns created in salt domes below the surface. SPR oil has been sold on the open market under emergency conditions only twice in the reserve's history. More often, it has been "loaned" to oil companies facing major pipeline and refinery disruptions and later returned.

The primary purpose of the SPR is as a political tool; distribution of the actual oil is quite limited. Its effectiveness depends on both the magnitude of the total holdings as well as the maximum rate of drawdown (how much oil can be pumped out in one day). The Department of Energy estimates that the SPR currently holds 688 million barrels and can deliver 4.4 million barrels per day, which is less than one-third of U.S. daily imports of crude oil and petroleum products.

In an integrated world oil market, however, the economic benefits of the SPR are not defined by the ratio of the SPR stock to the flow of daily imports. Rather, the benefits reflect the ability to lessen the magnitude and duration of a shock as well as the scope for coordination with other countries. For example, the decision to increase the oil holdings at the existing SPR in October 2001, from 570 to 700 million barrels, makes sense if one is concerned about an oil supply disruption that requires the maximum daily SPR drawdown rate for more than four months (or a series of supply shocks with comparable magnitude and duration). This increase in SPR size had no impact on the drawdown rate or, therefore, the magnitude (versus duration) of shock the SPR can accommodate. To put this in context, the 1991 Desert Storm emergency drawdown was the largest in the history of the SPR at 17 million barrels over 2 months. This all suggests that the SPR could help mitigate the costs of a range of disruptions for many months.

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If It Ain't Broke...

Because of its large size (both in terms of barrels and economic value) and limited historical use, some have advocated reforms for the SPR that would focus on a more active management of its crude oil stocks. Some have called for privatizing the SPR and requiring the private SPR operator to post prices at which it would buy (at low prices) and sell (at high prices) oil. An alternative SPR reform would result in government officials buying and selling SPR oil in an attempt to stabilize oil prices—an oil equivalent of the Federal Reserve. Such active stock management policies raise serious questions about the responses of private inventory holders and major oil exporters, which often are the first to increase supply to the market when prices are high and pull product off of the market (or produce less) when prices are low. These approaches also raise questions about whether they are consistent with the economic and national security objectives of the SPR and whether they would be effective in a market where OPEC members or other producers could modify their behavior to maintain influence over prices.

In response to the spike in heating-oil prices in winter 2000, the federal government developed a two-million barrel heating-oil reserve in the Northeast. The rules for use of the heating-oil reserve stipulate that a drawdown should be authorized only as a result of a shock in heating-oil prices above and beyond spikes in crude oil markets. In recent years, some have also advocated for regional gasoline reserves. Such product reserves could help address local and regional shocks—such as ice-locked harbors in the Northeast, pipeline disruptions, or multiple refinery outages—that could cause a short-term increase in prices. However, they may also reduce the incentive for private firms to hold product inventory and, in the case of a crude-oil shock, would have little to no impact on product prices, relative to a drawdown of crude oil from the SPR.

The Strategic Petroleum Reserve was created some three decades ago to address a physical supply shortage, such as from another oil embargo. In the years since then, the global oil market has become far more integrated, and, in most circumstances, an oil embargo targeted at the United States would not adversely affect the country—we would buy oil elsewhere at essentially the same price. The SPR, in coordination with other developed countries' petroleum reserves, can address more generally the price spikes that arise from supply shocks, whether from labor strikes, hurricanes, wars, or explicit political decisions. The threat of a drawdown can complement diplomacy to encourage production from energy exporters, but an active SPR price-management policy would likely undermine such diplomatic efforts. ■